



## **AMK**

### **Diagnostic Messages**

Version: 2020/04

Part no.: 25786

Translation of the "Original Dokumentation"

# **AMK**

## Imprint

**Name:** PDK\_025786\_Diagnose\_en

**Version:**

Version	Change	Letter symbol
2020/04	<p>Following releases added:</p> <ul style="list-style-type: none"><li>• AE-R24 V2.13 2019/24 (207412)</li><li>• AE-R24-R V2.13 2019/24 (207413)</li><li>• AE-R26 V2.13 2019/24 (207415)</li><li>• ihX V2.13 2019/24 (207416)</li><li>• A7 V1.01 2019/31 (207545)</li></ul> <p>Corrections and additions:</p> <ul style="list-style-type: none"><li>• 1101 Info 1 = 11 und 12</li><li>• 1445 Info 1 = 100</li><li>• 1451 Info 1 = 2</li><li>• 2311 Info 1 = 401 - 405</li><li>• 2320</li><li>• 2333</li><li>• 2560</li></ul>	LeS / STL

**Previous version:** 2019/38

## Product versions:

Product	Firmware version (AMK part no.)	Hardware version
iX iC iDT5	V1.08 2016/04 (206178) EtherCAT V1.04 2016/08 (206355) CAN V1.00 2013/29 (204664) SERCOS III	
iX-R3 iC-R3 iDT5-R3	V2.13 2019/24 (207408) NDU V2.12 2017/10 (206771)	
ihX	V2.13 2019/45 (207626) NDU V2.12 2017/10 (206773)	
iSA	iSA V4.23 2018/37 (207252)	
KW-R26 KW-R27	AE-R26 V2.13 2019/24 (207415)	
KW-R25	AE-R25 V2.13 2019/24 (207414)	
KW-R24-R	AE-R24-R V2.13 2019/24 (207413)	
KW-R24	AE-R24 V2.13 2019/24 (207412)	
KW-R07 KW-R17	AE-R05/R06 V1.16 2018/25 (207207) AE-SF1 V1.05 2014/04 (204927)	
KW-R05 KW-R06 KW-R16	AE-R05/R06 V1.16 2018/25 (207207)	
KW-R03 KU-R03 KW-R04	AE-R03 V3.21 2012/49 (204379)	
KW-R03P KU-R03P	AE-R03P V5.21 2012/49 (204380)	
MCE-R06 (KW-R06)	MCE V1.09 2013/31 (204672)	
FSE	FSER25 SW V1.01 17/09 (206803)	
KWZ (-EC)	KWZ V1.06 2010/30 (203167)	
KE, KEN, KES	KE-E03 V3.04 2013/03 (204405)	
KEx-0EU	KE-E10 V4.03 2017/22 (206816)	
IDT4	IDT V2.08 2015/20 (205580)	IDT-R1 / -R2
A7	A7 V1.01 2019/31 (207545)	
A6S A6D	A6 V4.21 2018/43 (207289)	
A5S A5D	A5 V4.21 2016/39 (206637)	
A4S A4D	A4 V4.22 2018/43 (207290)	
AS-C AS-PL15 AS-P	AS V3.16 2013/05 (204420)	
AZ	AZ V3.13 06/20 /201362)	AZ-R02
AW	AW V2.13 07/07 (201657)	AE-VE01 / -VE02

<b>Copyright notice:</b>	<p>© AMK Arnold Müller GmbH &amp; Co. KG</p> <p>Any transfer or reproduction of this document, as well as utilisation or communication of its contents, requires express consent. Offenders are liable for the payment of damages. All rights are reserved in the event of the grant of a patent or the registration of a utility model or design.</p>
<b>Reservation:</b>	<p>We reserve the right to modify the content of the documentation as well as the delivery options for the product.</p>
<b>Publisher:</b>	<p>AMK Arnold Müller GmbH &amp; Co. KG Gaußstraße 37 - 39 D-73230 Kirchheim/Teck Germany Phone: +49 7021/50 05-0 Fax: +49 7021/50 05-176 E-mail: <a href="mailto:info@amk-group.com">info@amk-group.com</a> Personally liable shareholder: AMK Verwaltungsgesellschaft mbH, Kirchheim/Teck Registration court: Stuttgart HRB 231283; HRA 230681 Tax-Idnr.: DE 145912804</p>
<b>Service:</b>	<p>Phone: +49 7021/50 05-190, Fax -193</p> <p>For fast and reliable troubleshooting, you can help us by informing our Customer Service about the following:</p> <ul style="list-style-type: none"><li>• Type plate data for each unit</li><li>• Software version</li><li>• Device configuration and application</li><li>• Type of fault/problem and suspected cause</li><li>• Diagnostic messages (error messages)</li></ul> <p>E-mail: <a href="mailto:service@amk-group.com">service@amk-group.com</a></p>
<b>Internet address:</b>	<p><a href="http://www.amk-group.com">www.amk-group.com</a></p>

## Content

<b>Imprint</b>	<b>2</b>
<b>1 About this documentation</b>	<b>18</b>
1.1 Keeping this document	18
1.2 Target group	18
1.3 Purpose	18
1.4 Display conventions	18
1.5 Appendant documents	18
<b>2 Introduction</b>	<b>19</b>
2.1 Overview	19
2.2 Meaning of the diagnostic messages	19
<b>3 Diagnostic messages</b>	<b>21</b>
3.1 No. 257 ... 260 Control Panel	21
257 'System diagnostics'	21
258 'Leave RF active'	21
259 'System diagnostics'	21
3.2 No. 512 ... 525 Monitor	22
514 'System diagnostics'	22
515 'System diagnostics'	22
516 'System diagnostics'	22
517 'System diagnostics'	22
518 'System diagnostics'	23
519 'System diagnostics'	23
520 'System diagnostics'	23
521 'System diagnostics'	23
3.3 No. 768 ... 799 Database	24
770 'System diagnostics'	24
771 'System diagnostics'	24
772 'System diagnostics'	24
773 'System diagnostics'	24
774 'System diagnostics'	25
775 'System diagnostics'	25
776 'System diagnostics'	25
777 'System diagnostics'	25
778 'System diagnostics'	26
779 'System diagnostics'	26
780 'System diagnostics'	26
781 'System diagnostics'	26
783 'System diagnostics'	27
3.4 No. 1024 ... 1120 Central computer, Hardware	27
1024 'System diagnostics'	27
1025 'System diagnostics'	27
1026 'System diagnostics'	28
1027 'System diagnostics'	28
1028 'System diagnostics'	28
1029 'System diagnostics'	29
1030 'System diagnostics'	29
1031 'System diagnostics'	30
1032 'System diagnostics'	30
1033 'System diagnostics'	30
1034 'System diagnostics'	31
1035 'System diagnostics'	31

1036 'System diagnostics'	31
1037 'System diagnostics'	32
1038 'System diagnostics'	32
1039 'System diagnostics'	32
1040 'Tripzone'	32
1041 'Overtemperature external component mains'	33
1042 'Mains phase fault'	34
1043 'Line Voltage Error'	34
1044 'No SBM'	35
1045 'Mains overvoltage'	35
1046 'Mains undervoltage'	36
1047 'Inhibit time for UE'	36
1048 'UE switching frequency too high'	37
1049 'DC bus'	37
1050 'Phase error L1'	38
1051 'Phase error L2'	39
1052 'Phase error L3'	39
1053 'Phase sequence L1/L2'	39
1054 'Phase sequence L1/L3'	40
1055 'Phase sequence L2/L3'	40
1056 'Mains phase sequence L1, L2, L3'	40
1057 'Fault +12 V'	41
1058 'Fault -12 V'	41
1059 'DC bus overvoltage'	42
1060 'Regeneration fault'	43
1061 'Braking transistor fault'	44
1062 'System diagnostics'	44
1063 'System diagnostics'	45
1064 'System diagnostics'	47
1065 'System diagnostics'	47
1066 'System diagnostics'	48
1067 'System diagnostics'	48
1068 'System diagnostics'	49
1069 'System diagnostics'	49
1070 'System diagnostics'	49
1071 'System diagnostics'	50
1072 'System diagnostics'	50
1073 'Cooling Air Temperature Warning'	50
1074 'External line component temperature warning'	50
1075 'Power supply unit temperature warning'	51
1076 'Feed / Regeneration temperature warning'	51
1077 'Line Voltage warning'	51
1078 'Line undervoltage warning'	52
1079 'System diagnostics'	52
1080 'OPTION 1 cf. description'	52
1081 'OPTION 1 cf. description'	53
1082 'OPTION 1 cf. description'	53
1083 'OPTION 1 cf. description'	53
1084 'OPTION 2 cf. description'	53
1085 'OPTION 2 cf. description'	54
1086 'OPTION 2 cf. description'	54
1087 'OPTION 2 cf. description'	54
1088 'OPTION 3 cf. description'	54
1089 'OPTION 3 cf. description'	55

1090 'OPTION 3 cf. description'	55
1091 'OPTION 3 cf. description'	55
1092 'OPTION 4 cf. description'	55
1093 'OPTION 4 cf. description'	56
1094 'OPTION 4 cf. description'	56
1095 'OPTION 4 cf. description'	56
1096 'OPTION 1 cf. description'	56
1097 'OPTION 2 cf. description'	57
1098 'OPTION 3 cf. description'	57
1099 'OPTION 4 cf. description'	57
1100 'System diagnostics: Short-circuit / overload digital outputs'	57
1101 'Logic voltage error'	58
1102 'Line voltage limit'	59
1103 'Field bus warning'	60
1104 'No FL with RF active'	60
1105 'Reserved'	60
1106 'System diagnostic'	60
1107 'System diagnostics: Short circuit DC bus voltage'	61
1108 'System diagnostics: Main contactor'	61
1109 'System diagnostics'	62
1110 'Warning brake transistor'	62
1111 'Warning external component'	63
1112 'Overload error external component'	63
1115 'Communication monitoring'	64
3.5 No. 1280 ... 1460 Operation mode / Parameter calculation	64
1281 'System diagnostics'	64
1282 'ID32777, ID111, ID32769'	64
1283 'ID111, ID32769'	65
1284 'ID111, ID32769'	65
1285 'ID32772 wrong'	65
1286 'ID82 or ID83 too large'	66
1287 'ID32890: 1, 2, 5, 10'	66
1288 'ID110, ID111, ID32769'	66
1289 'ID83 too small'	67
1290 'ID82 too large'	67
1291 'ID32774 faulty'	67
1292 'SEEP checksum'	68
1293 'Boot strap EEPROM'	68
1294 'EEPROM defective'	68
1295 'ID100 / ID101'	69
1296 'ID211 / ID209 / ID210'	69
1297 'ID212 / ID209 / ID210'	70
1298 'ID100 faulty'	70
1299 'ID32775: even'	70
1300 'Error in Temporary Parameters'	71
1301 'ID32778 faulty'	71
1302 'System diagnostics'	71
1303 'System diagnostics'	71
1304 'System diagnostics'	72
1305 'System diagnostics'	72
1306 'System diagnostics'	72
1307 'System diagnostics'	73
1308 'System diagnostics'	73
1309 'System diagnostics'	73

1310 'System diagnostics'	74
1311 'System diagnostics'	74
1312 'System diagnostics'	74
1313 'ID82 less then ID83'	75
1314 'System diagnostics'	75
1315 'System diagnostics'	75
1316 'ID32769/ID100 too large'	76
1317 'ID32770/ID110 too large'	76
1318 'ID32774 faulty'	76
1319 'System diagnostics'	76
1320 'System diagnostics'	77
1321 'System diagnostics'	77
1322 'System diagnostics'	77
1323 'ID32769 IM < ID111 IN'	77
1324 'ID32772 nN too large'	78
1325 'ID32772 P1 reference'	78
1326 'System diagnostics'	78
1327 'ID104 kv factor'	79
1328 'System diagnostics'	79
1329 'ID111/ID110 > 80%'	79
1330 'ID32772 > ID113'	80
1331 'ID209 > ID113'	80
1332 'ID210 > ID113'	80
1333 'System diagnostics'	81
1334 'ID38 > ID113'	81
1335 ' ID39  > ID113'	81
1336 'ID32778 > ID113'	82
1337 'ID32783 > ID113'	82
1338 'ID157 > ID113'	82
1339 'ID125 > ID113'	83
1340 'ID124 > ID113'	83
1341 'AW-lmax wrong (SEEP)'	83
1342 'System diagnostics'	84
1343 'System diagnostics'	84
1344 'System diagnostics'	84
1345 'System diagnostics'	84
1346 'System diagnostics'	85
1347 'System diagnostics'	85
1348 'System diagnostics'	85
1349 'System diagnostics'	85
1350 'AW not present'	86
1351 'AW not active'	86
1352 'Can be changed only offline'	86
1353 'Parameter Set change wrong'	87
1354 'Im < Im1'	87
1355 'Date ID32785'	87
1356 'Date ID32785, ID32786'	88
1357 'AWN R ID32787, ID32789, ID32791, ID32793'	88
1358 'Source ID32787, ID32789, ID32791, ID32793'	88
1359 'ID32873, ID32968, ID32977'	88
1360 'Opt.1 ID32846, ID32855, ID32864'	89
1361 'Opt.2 ID32846, ID32855, ID32864'	89
1362 'Opt.3 ID32846, ID32855, ID32864'	90
1363 'Opt.4 ID32846, ID32855, ID32864'	90



1364 'Definition of output bits'	90
1365 'AWNR output bit'	91
1366 'Definition of input bits'	91
1367 'ID32883 Option place 1'	91
1368 'ID32884 Option place 2'	92
1369 'ID32885 Option place 3'	92
1370 'ID32886 Option place 4'	92
1371 'ID32799 Standard Periphery'	92
1372 'Option place 1 card defect'	93
1373 'Option place 2 card defect'	93
1374 'Option place 3 card defect'	94
1375 'Option place 4 card defect'	94
1376 'ID32882 Option place 1'	95
1377 'ID32882 Option place 2'	95
1378 'ID32882 Option place 3'	95
1379 'ID32882 Option place 4'	96
1380 'ID110, ID111, ID32769'	96
1381 'LIW source calculation'	96
1382 'System diagnostics'	97
1383 '2PI value wrong'	97
1384 '2PI value calculation'	97
1385 'ID116, ID32776 ratio'	98
1386 'Output DA1 ... DA4'	98
1387 'ID32846 wrong'	98
1388 'ID32855 wrong'	99
1389 'ID32864 wrong'	99
1390 'System diagnostics'	99
1391 'ID32772 wrong'	99
1392 'ID158, ID32771, ID32772'	100
1393 'AW not AZ-compatible'	100
1394 'ID32892: x times 2 to the power 16'	100
1395 'No Main Operation Mode'	101
1396 'Operation mode not defined'	101
1397 'Operation mode not impl.'	101
1398 'Setpoint source undefined'	102
1399 'Setpoint Source (SQ) is Not Admissible in this Operation Mode (BA)'	102
1400 'Option Card for Setpoint Source (SQ)'	103
1401 'MGQ not selected'	103
1402 'Source of Torque Limit (MGQ) inadmissible for this Operation Mode (BA)'	104
1403 'Source of Torque Limit (MGQ) not implemented'	104
1404 'Source of Torque Limit (MGQ) AW-analog assigned'	104
1405 'Speed Ramp (DZLRMP) function missing'	105
1406 'Speed Filter (DZLFLT) function missing'	105
1407 'Selected Operation Mode (BA) not configured'	105
1408 'Change of Operation Mode (BA) not executable'	106
1409 'Selected AW No. not active'	106
1410 'Selected Parameter Set'	106
1411 'Type of Position Controller is Inadmissible'	106
1412 'Type of External Encoder inadmissible'	107
1413 'Missing option card'	107
1414 'Unknown AW type'	107
1415 'Wrong AW type'	108
1416 'Change of Operation Mode inadmissible'	108
1417 'System diagnostics'	108

1418 'System diagnostics'	108
1419 'System diagnostics'	109
1420 'System diagnostics'	109
1421 'System diagnostics'	109
1422 'System diagnostics'	110
1423 'Inadmissible Setpoint Source'	110
1424 'Inadmissible Setpoint Source'	110
1425 'Polarity'	111
1426 'ID121/122 wrong'	111
1427 'ID44 inadmissible'	111
1428 'ID86 inadmissible'	112
1429 'ID160 inadmissible'	112
1430 'Position scaling'	112
1431 'Velocity scaling'	113
1432 'Velocity scaling IPO'	113
1433 'Torque scaling'	113
1434 'Acceleration scaling'	114
1435 'ID76 inadmissible'	114
1436 'Decade switch'	114
1437 'Configuration SIWL' (Software Pulse Transmission)	115
1438 'Band width barrier'	118
1440 'Data record changed'	118
1441 'Clock synchronization'	118
1442 'SEEP configuration'	119
1443 'Test generator'	119
1444 'PWM frequency'	120
1445 'Current controller'	121
1446 'EF can not be activated'	121
1447 'Motor encoder gear'	122
1448 'ID113 > ID34153'	122
1451 'Configuration temperature sensor'	122
1453 'Feed forward control'	123
1454 'Error initialisation angle observer'	123
1455 'Plausibility I/O'	123
1456 'Ratio ID33194 to ID33195 incorrect'	123
1457 'ID38 less then ID39'	124
3.6 No. 1536 ... 1559 Serial EEPROM	124
1537 'System diagnostics'	124
1538 'System diagnostics'	125
1539 'SEEP 1st checksum'	125
1540 'SEEP 2nd checksum'	125
1541 'Commanded AW missing'	126
1542 'System diagnostics'	126
1543 'System diagnostics'	126
1544 'ID32953 no adjustment permissible'	126
1545 'System diagnostics'	127
1546 'System diagnostics'	127
1547 'System diagnostics'	127
1548 'System diagnostics'	128
1549 'System diagnostics'	128
1550 'System diagnostics'	128
1551 'Encoder track failed'	128
1552 'Encoder adjustment abort'	128
1553 'Encoder adjustment timeout'	130

1554 'ID32776 Sinus Encoder Period is faulty'	130
1555 'Reference pulse'	131
1556 'Reference Pulse - Encoder Input'	131
1557 'Turn axis'	131
1558 'System diagnostics'	131
3.7 No. 1792 ... 1849 Drive commanding	132
1794 'System diagnostics'	132
1795 'System diagnostics'	132
1796 'System diagnostics'	132
1797 'System diagnostics'	133
1798 'System diagnostics'	133
1799 'System diagnostics'	133
1800 'System diagnostics'	134
1801 'System diagnostics'	134
1802 'System diagnostics'	134
1803 'System diagnostics'	135
1804 'System diagnostics'	135
1805 'System diagnostics'	135
1806 'System diagnostics'	136
1807 'System diagnostics'	136
1808 'System diagnostics'	136
1809 'System diagnostics'	137
1810 'System diagnostics'	137
1811 'System diagnostics'	137
1812 'System diagnostics'	137
1813 'KMD user error'	138
1814 'System diagnostics'	138
1815 'Controller enable missing'	138
1816 'Not homed'	138
1817 'System diagnostics'	139
1818 'System diagnostics'	139
1819 'System diagnostics'	139
1820 'System diagnostics'	139
1821 'System diagnostics'	140
1822 'System diagnostics'	140
1823 'System diagnostics'	140
1824 'System diagnostics'	140
1825 'System diagnostics'	141
1826 'System diagnostics'	141
1827 'System diagnostics'	141
1828 'System diagnostics'	141
1829 'System diagnostics'	142
1830 'System diagnostics'	142
1831 'System diagnostics'	142
1832 'System diagnostics'	143
1833 'System diagnostics'	143
1834 'System diagnostics'	143
1835 'System diagnostics'	143
1836 'System diagnostics'	144
1837 'System diagnostics'	144
1838 'System diagnostics'	144
1839 'System diagnostics'	145
1840 'System diagnostics'	145
1841 'System diagnostics'	145

1842 'System diagnostics'	145
1843 'System diagnostics'	146
3.8 No. 2048 ... 2079 Logical subscriber, S-BUS	146
2049 'System diagnostics'	146
2050 'System diagnostics'	146
2051 'System diagnostics'	147
2052 'System diagnostics'	147
2053 'System diagnostics'	147
2054 'System diagnostics'	147
2055 'System diagnostics'	148
2056 'System diagnostics'	148
2057 'System diagnostics'	148
2058 'System diagnostics'	148
2059 'System diagnostics'	149
2060 'System diagnostics'	149
2061 'System diagnostics'	149
2062 'System diagnostics'	149
2063 'System diagnostics'	150
2064 'System diagnostics'	150
2065 'System diagnostics'	150
2066 'System diagnostics'	150
2067 'System diagnostics'	151
2068 'System diagnostics'	151
2069 'System diagnostics'	151
2070 'System diagnostics'	151
2071 'System diagnostics'	152
2072 'System diagnostics'	152
2073 'System diagnostics'	153
2074 'System diagnostics'	153
3.9 No. 2304 ... 2370 Inverter Hardware	154
2305 'Phase U Short Circuit'	154
2306 'Phase V Short Circuit'	154
2307 'Phase W Short Circuit'	154
2308 'Supply +12 V'	154
2309 'Supply'	155
2310 'Encoder communication'	156
2311 'Encoder signal'	161
2312 'Output Terminal Ground Fault'	162
2313 'Synchronous running error'	162
2314 'Master Synchronous Telegram AW'	162
2315 'AW controller clock error'	163
2316 'Motor direction of rotation'	163
2317 'External encoder direction of rotation'	163
2318 'Control deviation'	164
2319 'n > nmax'	164
2320 'EF inactive'	165
2321 'System diagnostics'	165
2322 'System diagnostics'	166
2323 'System diagnostics'	166
2324 'System diagnostics'	166
2325 'System diagnostics'	167
2326 'System diagnostics'	167
2327 'Plausibility of the External Encoder'	167
2328 'System diagnostics'	167

2329 'System diagnostics'	168
2330 'System diagnostics'	168
2331 'System diagnostics'	168
2332 'System diagnostics'	168
2333 'Position growth too large'	169
2334 'System diagnostics'	169
2335 'Error reference pulse'	169
2336 'System diagnostics'	170
2337 'No clock enable acknowledgement'	170
2338 'Magnetizing timeout'	170
2339 'Ramp down error'	171
2340 'Communication on AW'	171
2341 'Communication on AZ'	171
2342 'System diagnostics'	171
2343 'System diagnostics'	172
2344 'Monitoring actual position'	172
2345 'Inverter overload error'	172
2346 'Converter temperature error'	173
2347 'Motor temperature error'	174
2348 'System diagnostics'	174
2349 'Inverter overload warning'	175
2350 'Device temperature warning'	175
2351 'Motor temperature warning'	176
2352 'Motor overload warning'	176
2353 'Motor overload error'	176
2354 'Handshake brake'	176
2356 'Setpoint stop active'	177
2357 'Device overload warning'	177
2358 'Device overload error'	177
2359 'Motor overload warning'	178
2360 'Motor overload error'	178
2361 'EF Logic'	178
2362 'Error Commutation Motor'	179
2365 'Error angle observer'	181
2366 'Limit switch'	181
2367 'Error Non Dual Use'	182
3.10 No. 2560 ... 2599 SERCOS / EtherCAT	182
2560 'System diagnostics'	182
2561 'System diagnostics'	191
2562 'System diagnostics'	192
2563 'System diagnostics'	192
2564 'System diagnostics'	193
2565 'System diagnostics'	194
2566 'System diagnostics'	194
2569 'System diagnostics'	194
2570 'System diagnostics'	194
2571 'System diagnostics'	195
2572 'System diagnostics'	195
2573 'System diagnostics'	198
2574 'System diagnostics'	200
2575 'System diagnostics'	200
2576 'System diagnostics'	201
2577 'System diagnostics'	201
2578 'System diagnostics'	202

2579 'System diagnostics'	202
2581 'System diagnostics'	203
2582 'System diagnostics'	203
2583 'System diagnostics'	204
2584 'System diagnostics'	205
2585 'System diagnostics'	207
2586 'System diagnostics'	208
2587 'System diagnostics'	208
2588 'System diagnostics'	209
2589 'System diagnostics'	209
2590 'System diagnostics'	209
2591 'System diagnostics'	209
2592 'System diagnostics'	210
2593 'System diagnostics'	210
2594 'System diagnostics'	210
2595 'System diagnostics'	210
2596 'System diagnostics'	211
2597 'System diagnostics'	211
2598 'System diagnostics'	212
2599 'System diagnostics'	212
3.11 No. 2600 ... 2619 Profibus (PB) / Profinet (PN)	213
2600 'System diagnostics'	213
2601 'System diagnostics'	213
2602 'System diagnostics'	214
2603 'System diagnostics'	214
2604 'System diagnostics'	214
2605 'System diagnostics'	214
2606 'System diagnostics'	215
2607 'System diagnostics'	215
2608 'System diagnostics'	216
2609 'System diagnostics'	218
2610 'System diagnostics'	218
2611 'System diagnostics'	219
2612 'System diagnostics'	219
2613 'System diagnostics'	219
2614 'System diagnostics'	220
2615 'System diagnostics'	220
3.12 No. 2620 ... 2629 ARCNET (ARC)	220
2620 'System diagnostics'	220
2621 'System diagnostics'	221
2622 'System diagnostics'	221
2623 'System diagnostics'	221
2624 'System diagnostics'	221
2625 'System diagnostics'	222
2626 'System diagnostics'	222
2628 'System diagnostics'	222
3.13 No. 2640 ... 2649 LON	223
2640 'LON failure'	223
2641 'LON timeout IN'	223
2642 'LON timeout OUT'	223
2643 'LON timeout application'	224
2644 'System diagnostics'	224
2645 'System diagnostics'	224
3.14 No. 2660 ... 2669 INTERBUS (IB)	224

2660 'System diagnostics'	224
2661 'System diagnostics'	225
2663 'System diagnostics'	225
2664 'System diagnostics'	225
2665 'System diagnostics'	225
3.15 No. 2680 ... 2699 CAN	226
2680 'System diagnostics'	226
2681 'System diagnostics'	226
2682 'System diagnostics'	226
2683 'System diagnostics'	226
2684 'System diagnostics'	227
2685 'System diagnostics'	228
2686 'System diagnostics'	228
2687 'System diagnostics'	229
2688 'System diagnostics'	229
2689 'System diagnostics'	230
2690 'System diagnostics'	231
2691 'System diagnostics'	231
2692 'System diagnostics'	232
2693 'System diagnostics'	232
2694 'System diagnostics'	232
2695 'System diagnostics'	233
2696 'System diagnostics'	233
2697 'System diagnostics'	233
2698 'System diagnostics'	234
2699 'System diagnostics'	234
3.16 No. 2720 ... 2739 EtherCAT	235
2721 'System diagnostics'	235
2722 'System diagnostics'	236
2723 'System Diagnostics'	236
2724 'System diagnostics'	237
2725 'System diagnostics'	237
2726 'System diagnostics'	238
2727 'System diagnostics'	239
2728 'System diagnostics'	242
2729 'System diagnostics'	242
2730 'System diagnostics'	245
2731 'System diagnostics'	246
2732 'System diagnostics'	247
3.17 No. 2740 ... 2749 MODBUS	247
2741 'Modbus configuration'	247
2742 'MODBUS communication'	247
2743 'MODBUS protocol'	248
2744 'MODBUS command'	248
3.18 No. 2760 ... 2764 CoE	248
2760 'System diagnostics'	248
2761 'System diagnostics'	249
2762 'System diagnostics'	249
2763 'System diagnostics'	250
2764 'System diagnostics'	250
3.19 No. 2816 ... 2819 AZ/Kx Option PS	250
2816 'PS option'	250
3.20 No. 3071 ... 3079 AZ Option SERCOS	251
3072 'Error option SERCOS'	251

3.21 No. 3328 AZ Option NC	251
3328 'NC option error'	251
3.22 No. 3584 ... 3603 Special functions	252
3584 'System diagnostics: Special software message'	252
3585 'System diagnostics: Special software message'	252
3586 'System diagnostics: Special software message'	254
3587 'System diagnostics: Special software message'	255
3588 'System diagnostics: Special software message'	256
3589 'System diagnostics: Special software message'	256
3590 'System diagnostics: Special software message'	256
3591 'System diagnostics: Special software message'	257
3592 'System diagnostics: Special software message'	257
3593 'System diagnostics: Special software message'	257
3594 'System diagnostics: Special software message'	257
3595 'System diagnostics: Special software message'	258
3596 'System diagnostics: Special software message'	258
3597 'System diagnostics: Special software message'	258
3598 'System diagnostics: Special software message'	258
3599 'System diagnostics: Special software message'	259
3600 'System diagnostics: Special software message'	259
3601 'System diagnostics: Special software message'	259
3602 'System diagnostics: Special software message'	259
3603 'System diagnostics: AFP-PLC error'	260
3.23 No. 3605 ... 3610 Functional safety	260
3605 'Safety - Invalid parameterisation'	260
3606 'Safety - Error during operation'	279
3607 'Safety - Internal system error'	290
3609 'Safety - Faulty parameter transfer'	298
3610 'Safety - Warning during operation'	305
3.24 No. 3840 ... 3871 Operating system	309
3840 'File access'	309
3841 'System diagnostics'	310
3842 'System diagnostics'	310
3843 'System diagnostics'	310
3844 'System diagnostics'	311
3845 'System diagnostics'	311
3846 'System diagnostics'	311
3847 'System diagnostics'	312
3848 'System diagnostics'	312
3849 'System diagnostics'	312
3850 'System diagnostics'	313
3851 'System diagnostics'	313
3852 'System diagnostics'	313
3853 'System diagnostics'	314
3854 'System diagnostics'	314
3855 'System diagnostics'	314
3860 'ADB-File access'	315
3861 'System start / update'	315
3862 'System diagnostics'	317
3863 'System diagnostics'	318
3864 'Bus configuration'	320
3865 'Software version option'	321
3867 'System diagnostics'	321
3868 'System diagnostics'	322



3869 'I/O Optional Card'	323
3871 'System diagnostics: Communication'	323
<b>4 Messages through control panel, error deletion</b>	<b>324</b>
<b>Glossary</b>	<b>327</b>
<b>Your opinion is important!</b>	<b>332</b>

## 1 About this documentation

### 1.1 Keeping this document

This document must permanently be available and readable at the place where the product is in use. If the product is used at another place or changed the owner, the document must be passed on.

### 1.2 Target group

Any person that is qualified and intends to work with this product must read, understand and follow this document:


- Transportation and storage
- Unpacking and installation
- Connection
- Parameterization
- Startup
- Testing and maintenance
- Service and repair
- Decommissioning and disposal
- Replacement

### 1.3 Purpose

This document is addressed to any person who handles the product. It gives information about the following topics:

- Safety messages which are absolutely necessary to take care of during handling the product
- Product identification
- Environmental conditions for storage, transportation and operation
- Assembly
- Electrical connections
- Startup and operation
- Repair
- Replacement
- Diagnosis
- Decommissioning and disposal

### 1.4 Display conventions

Display	Meaning
	This symbol points to parts of the text to which particular attention should be paid!
0x	0x followed by a hexadecimal number, e. g. 0x500A
'Names'	Names are represented with apostrophes e. g. parameters, variables, etc.

### 1.5 Appendant documents

#### Functional documentations

AMK part-no.	Title
204979	Software description AIPEX PRO V3 (PC software for startup and parameterization)

## 2 Introduction

### 2.1 Overview

#### Operating faults are reported in the following ways:

- Group ready message signal (SBM, SBT) is withdrawn, no operational readiness
- Diagnostic message on the control panel
- Diagnostic message by PC program through serial interface (SBUS protocol)
- Internal diagnostic message with access possibility through e.g. AZ-PSx or AZ-MCx, AFP
- Output of bit information through binary outputs (e.g. SBM or warning bit)

#### Further diagnostic information can be read in different ways:

- Plain language message on the control panel after calling up the DIAGNOSTICS menu item
- Contents of the internal diagnostic stack are displayed on the control panel
- Request of the diagnostic stack by PC through serial interface (SBUS protocol)
- "Clocking out" the diagnostic code through binary outputs DA1 ... DA4 by a higher-level control system (only for AZ)

#### System initialization, error deletion, display of messages

The following events lead to basic initialization of the converter system:

- First energization of the converter
- Error deletion on lack of group ready message
- Permanent data change with following activation of the controller enable

After each system initialization the intact converter system goes into the "Operational readiness" state. Starting from this state, all system functions can be used without restriction.

Messages with error character are displayed immediately on the control panel with the information for diagnosis. The characteristic of the drive can differ very much in this regard and one must refer to the following table for the concrete case. If the same messages with different diagnostic numbers arise, then the cause must be found in different sources. Messages with information character or warnings are not displayed automatically on the control panel. But these can be selected through the DIAGNOSTICS menu item on the control panel and can be deleted only by "Error deletion".

#### "See description" or "System diagnostics" message

The drive system reports internal states which cannot be influenced parametrically by the user with a number and the above text.

If this message appears in operation, please inform the AMK service (telephone: +49 (0) 70 21/50 05 - 191) and notify the associated number and the additional information which appears on pressing the F2 key on the control panel. For further information see "Clocking out the diagnostic message".

If parameters are referred to in this description (e.g. see ID 110), then for information refer to the AMKASYN Parameter Documentation.

#### "NO COMMUNICATION" message

If the physical connection between the unit and control panel is disturbed, this message is generated autonomously by the control panel (check cable or control panel).

## 2.2 Meaning of the diagnostic messages

#### Message classes:

- Warning message  
Warning messages do not influence the drive behaviour.
- Warning message with following reaction  
After the warning time is over (4 seconds after the warning message was generated) the drive generates e.g. an error message and withdrawal SBM. Within the warning time, a controller has the option to initiate the desired measures by setting setpoints.

#### Drive behaviour in case of an error:

- Coasting  
Coast to stop, because device internal the power output stage was disabled automatically.
- Braking  
Controlled braking according ID32782 'Deceleration ramp RF inactive' until standstill followed by current-less condition of the drive.

**Device behaviour:**

- System booting aborted  
The system booting could not be finished successfully. The "system ready message" is not set.
- Disconnection from the mains  
The KE stops the excitation of the main contactor. Then the main contactor opens and disconnects the KE from the mains. Depending on the device the main contactor is integrated into the KE or connected as a external component.
- Single treatment (only for AN/AZ/AW system)  
Single treatment of the faulty drive is possible according to "ID32796 Source RF".
- Automatic error reset and switch back on  
Behaviour of central inverter; see document 'PDK\_203346\_ZWR'

### 3 Diagnostic messages

#### 3.1 No. 257 ... 260 Control Panel

##### 257 'System diagnostics'

• SBM withdrawal			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Default in MNU
Error removal	System OFF/ON (HW reset)		

##### 258 'Leave RF active'

• The controller enable was withdrawn, (e.g. RF withdrawal during inching mode of an axis)			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal	RF must remain absolutely set at the commanded function		

##### 259 'System diagnostics'

• SBM withdrawal			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Deallocation of MNU out of function
Error removal	System OFF/ON (HW reset)		

### 3.2 No. 512 ... 525 Monitor

#### 514 'System diagnostics'

• Check parallel EEPROM on the control board			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Timeout MON PEEP
Error removal			

#### 515 'System diagnostics'

<ul style="list-style-type: none"><li>• Check parallel EEPROM on the control board</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			PEEP handshake
Error removal			

#### 516 'System diagnostics'

• Check AZ(X27)-AW(X57)-BUS			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Timeout AW MON
Error removal	Is the AW module connected correctly?		

#### 517 'System diagnostics'

• Check AZ(X27)-AW(X57)-BUS			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			AW-MON handshake
Error removal	Is the AW module connected correctly?		

**518 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Inadmissible monitor order
Error removal			

**519 'System diagnostics'**

• SEEP in the inverter cannot be addressed			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Timeout MON SEEPDRV
Error removal			

**520 'System diagnostics'**

• SEEP in the inverter cannot be addressed			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			SEEP DRV handshake
Error removal			

**521 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			RESERVE
Error removal			

### 3.3 No. 768 ... 799 Database

#### 770 'System diagnostics'

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Inadmissible state DTH
Error removal			

#### 771 'System diagnostics'

<ul style="list-style-type: none"><li>• Check parallel EEPROM on the control board</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Timeout PEEP
Error removal			

#### 772 'System diagnostics'

<ul style="list-style-type: none"><li>• Check parallel EEPROM on the control board</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Handshake PEEP
Error removal			

#### 773 'System diagnostics'

• Inadmissible database order			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error removal			



**774 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			DEALLOC faulty
Error removal	System OFF/ON, (HW reset)		

**775 'System diagnostics'**

<ul style="list-style-type: none"><li>• ID not supported</li></ul>			
Device		KE	
<ul style="list-style-type: none"><li>• Warning: ID access faulty on read or write</li></ul>			
Description			
Class			
Drive Behaviour			
Device Behaviour		System run-up aborted	
Additional Error Information (AMK Service)			
Error removal			

**776 'System diagnostics'**

<ul style="list-style-type: none"><li>It was attempted to use a parameter set which was not reserved for the inverter.</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32813 ... ID32820 Parameter set assignment 1 ... 8</li></ul>		

**777 'System diagnostics'**

• Check parallel EEPROM on the control board			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Overflow PEEP
Error removal			

**778 'System diagnostics'**

<ul style="list-style-type: none"><li>• The attribute of the selected data block is wrong</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**779 'System diagnostics'**

<ul style="list-style-type: none"><li>• The maximum value of the last changed parameter was exceeded</li></ul>			
Device		KE	
<ul style="list-style-type: none"><li>• Maximum value was exceeded Value of ID34170, 'Setpoint DC bus voltage', is higher than 720 VDC</li></ul>			
Description			
Class			
Drive Behaviour			
Device Behaviour		System run-up aborted	
Additional Error Information (AMK Service)			
Error removal			

**780 'System diagnostics'**

<ul style="list-style-type: none"><li>• The minimum value of the last changed parameter was not reached</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**781 'System diagnostics'**

<ul style="list-style-type: none"><li>It was attempted to write a list which can only be read</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

## 783 'System diagnostics'

• Error at distributing parameters during internal system update				
Device	KW-R24, KW-R24-R, KW-R25, KW-R26, KW-R27			
Description				
Class	Error			
Drive Behaviour				
Device Behaviour	System run-up aborted			
Additional Error Information (AMK Service)				
	Info 1	Software module number	Info 2	ID number
Error Removal	Check and correct the content of the ID according to Info 2			

## 3.4 No. 1024 ... 1120 Central computer, Hardware

### 1024 'System diagnostics'

<ul style="list-style-type: none"><li>• System fault in the control board area</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Inadmissible state in AZ graph
Error removal			

### 1025 'System diagnostics'

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Default in MNUData error in the serial EEPROM of the control board (only AZ SEEP). The checksum is checked during system initialization (configurable through ID 32901)
Error removal	Recheck parameter: <ul style="list-style-type: none"><li>ID32901 Global service bits</li></ul>		

**1026 'System diagnostics'**

• Error on writing the serial EEPROM			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1027 'System diagnostics'**

<ul style="list-style-type: none"><li>• Data error in the EPROM</li><li>• The checksum is checked during system initialization</li></ul>			
Device	KE		
<ul style="list-style-type: none"><li>• Checksum flash memory</li></ul>			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1028 'System diagnostics'**

<ul style="list-style-type: none"><li>RAM memory error, is checked during system initialization</li></ul>			
Device		Controller AS	
<ul style="list-style-type: none"><li>RAM memory error option module (Info: option place 1 or instance)</li></ul>			
Device		KE	
<ul style="list-style-type: none"><li>RAM memory error</li></ul>			
Description			
Class			
Drive Behaviour			
Device Behaviour		System run-up aborted	
Additional Error Information (AMK Service)			
Error removal			

## 1029 'System diagnostics'

<ul style="list-style-type: none"><li>• Data error in the parallel EEPROM</li><li>• The checksum is checked during system initialization</li></ul>			
Device	AZ		
<ul style="list-style-type: none"><li>• Check can be switched on/off through ID 32901</li></ul>			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

• Error reading or writing of the SEEP				
Device	iX, ihX, R2x			
Description				
Class				
Drive Behaviour				
Device Behaviour	System run-up aborted			
Additional Error Information (AMK Service)				
	Info 1	0	Error checksum	
			Info 2	Address
			Info 3	calculated checksum berechnete Checksumme
			Info 4	to compare checksum
		2	Error reading	
			Info 2	Address
			Info 3	Number of bytes
			Info 4	Module identifier
		3	Error writing	
			Info 2	Address
			Info 3	Number of bytes
			Info 4	Module identifier
Error removal	Device OFF/ON, (HW reset) If the error recurs, please send the device to AMK for repairs.			

## 1030 'System diagnostics'

• Error on writing the parallel EEPROM			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1031 'System diagnostics'**

<ul style="list-style-type: none"><li>Control panel does not report on initialization</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	<ul style="list-style-type: none"><li>System run-up aborted</li><li>The serial interface to the control panel is switched over automatically to SBUS protocol</li></ul>		
Additional Error Information (AMK Service)			
Error removal			

**1032 'System diagnostics'**

<ul style="list-style-type: none"><li>• Reception error from the serial interface 1</li></ul>			
<b>Device</b>		<b>AZ</b>	
<ul style="list-style-type: none"><li>• Overrun, parity, see AZ-R01 serial interface X77</li></ul>			
<b>Description</b>			
<b>Class</b>			
<b>Drive Behaviour</b>			
<b>Device Behaviour</b>		System run-up aborted	
<b>Additional Error Information (AMK Service)</b>			
<b>Error removal</b>			

**1033 'System diagnostics'**

<ul style="list-style-type: none"><li>• Reception error from the serial interface 2</li></ul>			
<b>Device</b>		<b>AZ</b>	
<ul style="list-style-type: none"><li>• Overrun, parity, see AZ-R01 serial interface X77</li></ul>			
<b>Description</b>			
<b>Class</b>			
<b>Drive Behaviour</b>			
<b>Device Behaviour</b>		System run-up aborted	
<b>Additional Error Information (AMK Service)</b>			
<b>Error removal</b>			

### 1034 'System diagnostics'

• Time level overflow			
Device	KE		
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info1	1	Watchdog reset
		2	Time level overflow 62,5 µs
		3	Time level overflow 250 µs
		4	Time level overflow 500 µs
		5	Time level overflow 1 ms
		6	Time level overflow 10 ms
Error removal	• External fault, system OFF/ON, (HW reset)		

### 1035 'System diagnostics'

• Faulty system initialization, possible external fault				
Device				
Description				
Class				
Drive Behaviour	Coast to stop			
Device Behaviour				
Additional Error Information (AMK Service)				
			Timeout BAV, no acknowledgement after 60 s	
Error removal	• System OFF/ON, (HW reset)			

Device	KW-R07				
Description					
Class					
Drive Behaviour	Coast to stop				
Device Behaviour					
Additional Error Information (AMK Service)					
			Timeout BAV, no acknowledgement after 60 s		
			Info2	3	Processor P3
			4	Processor P4	
Error removal	• System OFF/ON, (HW reset)				

### 1036 'System diagnostics'

• Fault			
Device	KE		
Description	Program stack overflow		
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
			Program stack overflow
Error removal	• System OFF/ON, (HW reset)		

**1037 'System diagnostics'**

• Fault			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
			System stack overflow
Error removal	System OFF/ON, (HW reset)		

**1038 'System diagnostics'**

• Fault			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
			System stack underflow
Error removal	System OFF/ON, (HW reset)		

**1039 'System diagnostics'**

<ul style="list-style-type: none"><li>Faulty memory access of the processor. Software reset is triggered. The error is displayed in the following initialization</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal	System OFF/ON, (HW reset)		

**1040 'Tripzone'**

<ul style="list-style-type: none"> <li>Hardware monitoring (Logic voltage, output terminal overcurrent or DC bus overvoltage) has disabled power output stage, but the corresponding source could not be assigned.</li> <li>Hardware configuration error</li> </ul>	
Device	KW-R24 / KW-R24-R / KW-R25 / KW-R26 / KW-R27 iX / iC / iDT5 / ihX
Description	
Class	Error
Drive Behaviour	Coast to stop
Device Behaviour	
Additional Error Information (AMK Service)	



	Info 1	0	Assignment error source
		101	Logic voltage (Configuration error)
		102	DC bus overvoltage (Configuration error)
		103	Output terminal overcurrent (Configuration error)
<b>Error removal</b>	If the error recurs, replace controller card / device  <b>Non-critical special case ihX:</b> Depending on the system, error 1040, Info 1 = 102 always occurs in combination with error 1059 'DC bus overvoltage' when the control is inactive or when control is switching on / off.		

## 1041 'Overtemperature external component mains'

<ul style="list-style-type: none"><li>Occurs after end of a warning time as consequence of the warning 1074</li><li>The fan still runs on for 60 s after withdrawing the controller enable</li></ul>			
Device	AZ		
<ul style="list-style-type: none"><li>Temperature error AZ</li><li>Occurs after end of the warning time as consequence of the 4 warnings 1073, 1074, 1075, 1076</li></ul>			
Description			
Class	Error		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			
Device	KE		
Description			
Class	Error		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info1	0	Over-temperature braking resistor ITE intern > 1.7 V, ITE (analogue, HW)
Error removal			
<ul style="list-style-type: none"><li>Over temperature mains filter / transformer inverter (n)</li></ul>			
Device	ZWR		
Description	Over temperature mains filter -Y1 or / and transformer -T1		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>Check mains filter -Y1</li><li>Check transformer -T1</li><li>Check cooling system</li><li>Check fan of mains filter</li><li>Check wiring</li></ul>		

## 1042 'Mains phase fault'

<ul style="list-style-type: none"><li>• Mains failure of one or several phases (external fuse)</li><li>• External fuse defective (failure &gt;= 100 ms)</li></ul>			
Device	AZ		
Description			
Class	Error		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• E loop ES1-ES2 separated (possibly EMERGENCY OFF)</li><li>• Fuse F7 or F8 defective (new mains modules)</li><li>• Check terminals X1, X6, X25, X26</li></ul>		

Device	KE		
Description			
Class	Error		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info1	1	Voltage before main contactor < 75 % of the line voltage (BNX1) or within 23 ms no other switching status (i.e. three-phase mains failure) (Filtered 100 ms past UE = 1)
		2	Voltage before main contactor < 75 % of the line voltage (BNX2) (Filtered 100 ms past UE = 1)
		3	Error in detection of phase-sequence
		4	Error mains frequency
		5	default
Error removal	<ul style="list-style-type: none"><li>• Check terminals X01 and X20 and external wiring</li></ul>		

<ul style="list-style-type: none"><li>• Phase failure inverter (n)</li></ul>			
Device	ZWR		
Description	Phase failure single-phase or multi-phase in the charging circuit		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check charging circuit fuses -F7 / -F8</li><li>• Check main fuse -F1</li></ul>		

## 1043 'Line Voltage Error'

<ul style="list-style-type: none"><li>• Line voltage dependent on unit<sup>1)</sup> outside the tolerance range</li></ul>			
Device	AZ		
<ul style="list-style-type: none"><li>• Occurs after the end of the warning time (currently 4 s) as consequence of the 2 warnings 1077, 1078</li></ul>			
Description			
Class	Warning message, reaction of drive after 4 seconds		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

<ul style="list-style-type: none"><li>• USV voltage &gt; 30 v</li></ul>			
Device		IDT	
Description			
Class			
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

## 1044 'No SBM'

<ul style="list-style-type: none"><li>Occurs if a system initialization was started and no group ready message was present</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>Possible causes are configuration errors or hardware errors</li><li>Evaluate and remove current error through Diagnostics</li><li>Reset system with "Delete error"</li></ul>		

Device	KE		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info1	0	Hardware Error KES module without adequate KE-E0x
Error removal			

## 1045 'Mains overvoltage'

<ul style="list-style-type: none"><li>• Mean value of the line voltage is above 530 V (smoothing approx. 6.4 s)</li></ul>			
Device	KE		
Description			
Class	Error		
Drive Behaviour			
Device Behaviour	<ul style="list-style-type: none"><li>• Reset of SBM System Ready</li><li>• Main contactor is de-energized</li></ul>		
Additional Error Information (AMK Service)			
Error removal			

• Mains overvoltage inverter (n)			
Device	ZWR		
Description	(Mains voltage + 10 %) > ID34270 'Net voltage'		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check mains voltage</li><li>• Check transformer -T1</li><li>• Check main contactor -K1</li></ul>		

## 1046 'Mains undervoltage'

<ul style="list-style-type: none"><li>• Mean value of the line voltage is below 350 V (smoothing approx. 6.4 s)</li></ul>			
Device	KE		
Description			
Class	Error		
Drive Behaviour	<ul style="list-style-type: none"><li>• Reset SBM System Ready</li><li>• Main contactor is de-energized</li></ul>		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal	Message can be deactivated by ID32901, 'Global service bits'		
<ul style="list-style-type: none"><li>• Mains undervoltage inverter (n)</li></ul>			
Device	ZWR		
Description	(Mains voltage - 10%) < ID34270 'Net voltage'		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check mains voltage</li><li>• Check transformer -T1</li><li>• Check main contactor -K1</li></ul>		

## 1047 'Inhibit time for UE'

<ul style="list-style-type: none"><li>• The prescribed off time (see converter) for renewed switching on of the converter was not complied with. Successful "Delete error" is possible at once, inverter on (UE = 1) only after the end of the stated time</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

<ul style="list-style-type: none"><li>Switching frequency for converter on (UE) is too high</li></ul>			
Device	KE		
Description	Twice positive edge of UE within off time (Off time depends on DC bus capacity)		
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

<ul style="list-style-type: none"><li>Twice ON during blocking-time inverter (n)</li></ul>			
Device	ZWR		
Description			
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>Observe at least 30 s of blocking-time before switching inverter back on</li></ul>		

## 1048 'UE switching frequency too high'

<ul style="list-style-type: none"><li>• The permissible number of maximum 10 UE switch-on processes within 10 min. was exceeded</li></ul>			
Device			
Description	Since firmware KE-E03 V2.01 2002/25 the off-time is monitored. Diagnostic message 1048 does not appear any longer.		
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

## 1049 'DC bus'

• DC bus error			
Device	KE		
Description	The charging process for the DC bus does not run correctly		
Class			
Drive Behaviour			
Device Behaviour	RF setting aborted		
Additional Error Information (AMK Service)			
	Info1	1	1.8 s past ELS1: UZ < 60 % (UE = 1)
		2	1.5 s past ELS2: UZ < 85 % (UE = 1)
		3	3 min past UE = 0: UZ > 50 V
		4, 5	$\Delta u/\Delta t$ too small while charging
Error Removal	<ul style="list-style-type: none"><li>• Check device</li><li>• Check wiring</li></ul>		

<ul style="list-style-type: none"><li>DC bus error</li></ul>			
Device	KU		
Description	<ul style="list-style-type: none"><li>At switching-on of the DC bus, voltage <math>U_Z</math> is not reached within time out</li></ul>		
Device	KU, KW, AZ/AW		
Description	<ul style="list-style-type: none"><li><math>U_Z &lt; U_{Z,threshold}</math> during RF active or RF setting</li></ul>		
Class			
Drive Behaviour	Motor brake control becomes active immediately. The brake will close independent if the motor is stopped.		
Device Behaviour	RF withdrawal		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>Check parameter:<ul style="list-style-type: none"><li>ID32837 'DC bus voltage monitoring'</li></ul></li><li>Check device</li><li>Check wiring</li></ul>		

<ul style="list-style-type: none"><li>Fault charging DC bus inverter (n)</li></ul>			
Device	ZWR		
Description	DC bus is not charged correctly, $\Delta U/\Delta t$ is too small		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>Check inverter -U1, replace if necessary</li></ul>		

## 1050 'Phase error L1'

<ul style="list-style-type: none"><li>There is an error in the AZ power feed because of a faulty connection or fuse defect</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Motor brake control becomes active immediately. The brake will close independent if the motor is stopped.		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>Line connection L1, L2 or L3 at X01 not correct</li><li>Connection L1.2, L2.2 or L3.2 at X06 or X26 not correct</li><li>Check fuse F1, F2, F3 or F4, F5, F6</li></ul>		

**1051 'Phase error L2'**

• There is an error in the AZ power feed because of a faulty connection or fuse defect			
Device			
Description			
Class			
Drive Behaviour	Motor brake control becomes active immediately. The brake will close independent if the motor is stopped.		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• Line connection L1, L2 or L3 at X01 not correct</li><li>• Connection L1.2, L2.2 or L3.2 at X06 or X26 not correct</li><li>• Check fuse F1, F2, F3 or F4, F5, F6</li></ul>		

**1052 'Phase error L3'**

<ul style="list-style-type: none"><li>• There is an error in the AZ power feed because of a faulty connection or fuse defect</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Motor brake control becomes active immediately. The brake will close independent if the motor is stopped.		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• Line connection L1, L2 or L3 at X01 not correct</li><li>• Connection L1.2, L2.2 or L3.2 at X06 or X26 not correct</li><li>• Check fuse F1, F2, F3 or F4, F5, F6</li></ul>		

**1053 'Phase sequence L1/L2'**

<ul style="list-style-type: none"><li>• Connections of the corresponding phases are confused at the terminals</li></ul>			
Device	AZ		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• E loop ES1-ES2 is open</li><li>• Fuse F4, F5, F6 defective</li><li>• Fuse F1, F2, F3 defective</li><li>• No connection at X03, fan bus</li><li>• Fuse F7, F8</li></ul>		

**1054 'Phase sequence L1/L3'**

<ul style="list-style-type: none"><li>• Connections of the corresponding phases are confused at the terminals</li></ul>			
Device	AZ		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• E loop ES1-ES2 is open</li><li>• Fuse F4, F5, F6 defective</li><li>• Fuse F1, F2, F3 defective</li><li>• No connection at X03, fan bus</li><li>• Fuse F7, F8</li></ul>		

**1055 'Phase sequence L2/L3'**

<ul style="list-style-type: none"><li>• Connections of the corresponding phases are confused at the terminals</li></ul>			
Device	AZ		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• E loop ES1-ES2 is open</li><li>• Fuse F4, F5, F6 defective</li><li>• Fuse F1, F2, F3 defective</li><li>• No connection at X03, fan bus</li><li>• Fuse F7, F8</li></ul>		

**1056 'Mains phase sequence L1, L2 , L3'**

<ul style="list-style-type: none"><li>• Connections of the corresponding phases are confused at the terminals</li></ul>			
Device	AZ		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• E loop ES1-ES2 is open</li><li>• Fuse F4, F5, F6 defective</li><li>• Fuse F1, F2, F3 defective</li><li>• No connection at X03, fan bus</li><li>• Fuse F7, F8</li></ul>		



<ul style="list-style-type: none"><li>• Voltages in front and behind the main contactor are different</li><li>• Phase is missing behind main contactor</li></ul>			
Device	KE		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			
<ul style="list-style-type: none"><li>• Fault main contactor inverter (n)</li></ul>			
Device	ZWR		
Description	Phase sequence at the terminals -U1.X01:L1.1/L2.1/L3.1 is faulty after main contactor ON		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check main contactor -K2</li><li>• Check mains filter -Y1</li><li>• Check mains choke -L2</li><li>• Check upstream mains choke -L1</li><li>• Check wiring</li></ul>		

### 1057 'Fault +12 V'

<ul style="list-style-type: none"><li>Internal supply voltage +12 V is outside the permitted limit</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

### 1058 'Fault -12 V'

• Internal supply voltage -12 V is outside the permitted limit			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1059 'DC bus overvoltage'**

<ul style="list-style-type: none"><li>• DC bus exceeds permissible maximum value. Regenerative overload</li><li>• Generatoric overload</li></ul>			
Device	KW-R05/06, iX, R2x, ihX		
Description	The DC bus voltage has risen above the upper limit according to ID34303.		
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

<ul style="list-style-type: none"><li>• DC bus exceeds permissible maximum value (device SEEP). Regenerative overload</li><li>• Generatoric overload</li></ul>			
Device	KU, KW-R05/06, iX, R2x, ihX		
Description			
Class	Error		
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• Check motor parametrization</li><li>• Check connection at external braking resistor</li></ul>		

Device	KE		
Description			
Class	Error		
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
			BZO (HW) from version 206 2004/37 recognition by IUZ
Error removal			

• DC bus overvoltage inverter			
Device	ZWR		
Description	UZ > 900 V		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	• Check voltage of PV field		

<ul style="list-style-type: none"><li>• DC bus overvoltage inverter</li></ul>			
Device	iSA		
Description			
Class	Error		
Device Behaviour	No autonomous reaction of the controller. The user must initiate appropriate action via the PLC program . e.g. moment of the engine switch off (STO)		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check motor parametrization</li><li>• Check connection at external braking resistor</li></ul>		

## 1060 'Regeneration fault'

<ul style="list-style-type: none"><li>Multiple inadmissibly high currents in the regeneration branch</li></ul>			
Device			
Description			
Class	Error		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>Loose power terminals</li><li>Power defect, check line voltage system</li><li>Read out additional info with F2 key</li><li>The diagnostic message can only be reset by power supply OFF/ON</li></ul>		

Device	KE		
Description			
Class	Error		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1	Short-circuit of the mains inverter BPH (HW) Interrupt (< 10 µs) regeneration is stopped and after min. 10 ms new start attempted
		3	Wrong state of switching pattern of IGBT (SW)
		5	Switching pattern of IGBT longer than 8 ms (SW) Regeneration is stopped and after min. 10 ms new start attempted
		9	New start of regeneration impossible Error message after 3 s
Error removal	• Error can be cleared once		

• Fault line regeneration inverter (n)			
Device	ZWR		
Description	Inadmissible high current in the regeneration path		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check inverter -U1</li><li>• Retighten terminal clamps -U1.X01:L1.1/L2.1/L3.1 if necessary</li></ul>		

## 1061 'Braking transistor fault'

<ul style="list-style-type: none"><li>Inadmissibly high current in the braking transistor</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>Wrong braking resistor value</li></ul>		

Device	KE		
Description			
Class	Error		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1	Reset by RBR pulse not successful (system run-up)
		2	Short circuit braking chopper, BBR (HW) (62.5 μs)
		3	Braking transistor does not switch off (62.5 μs)
Error removal	• Error can be cleared once		

<ul style="list-style-type: none"><li>• Inadmissibly high current in the braking transistor</li></ul>			
Device	ISA		
Description			
Class	Error		
Device Behaviour	No autonomous reaction of the controller. The user must initiate appropriate action via the PLC program . e.g. moment of the engine switch off (STO)		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• Wrong braking resistor value</li><li>• Check connection at external braking resistor</li></ul>		

## 1062 'System diagnostics'

Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Consequential error, DRV -> GRF at BAV faulty
Error removal			

## 1063 'System diagnostics'

Device	IDT		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	RF active when system run-up
		2	error after initial boot loading (caused by HW-switch)
		5	Acceleration error or time level error
		6	Heap memory error
		7	Errors in data-basic initialization (read from database)
		8	Error while stop the absolute encoder functionality
		9	Error in data calculation
		10	Error update functions
		12	Error Motion initialised
		13	IDT-C-encoder cannot be initialised
		17	Error when changing to main operation mode
		18	Error when homing in the acceleration
		20	Timeout (60s) when switching to OPERATIONAL (no Master available)
Error removal	The electronics are integrated in the motor, i.e. Message incl. Info 1 and possibly 2 for error localization at AMK Service.		

Device	KW-R02 KW-R03		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	Error in state graph (default branch reached)
		1	RF active when system run-up
		2	Errors in data-basic initialization (IDs read from database)
		3	Error 12V supply
		4	Error when changing to main operation mode
		8	Error when homing in the acceleration
		12	Timeout (60s) when switching to OPERATIONAL (no Master available)
Error removal			

Device	KW-R05 / -R06 / -R07 iX / iDT5 KE ETC / VARAN				
Description					
Class					
Drive Behaviour					
Device Behaviour	System run-up aborted				
Additional Error Information (AMK Service)					
	Info 1	3	Memory error		
			Info 3	1	Write event memory
				3	Check the database
				6	System update
				9	Change in main operation mode
				11	System start Motion Controller
				14	System start Safety Board
				16	System start ACC Master
		4	Command error		
			Info 3	2	Write event memory
				4	Check the database
				7	System update
				8	Check the Hardware abstraction
				10	Change in main operation mode
				12	System start Motion Controller
	15	System start Safety Board			
	17	System start ACC Master			
	5	Error in state graph (default branch reached)			
	10	Parameter calculation			
Error removal					

Device	KWF		
Description			
Class			
Drive Behaviour	Controlled Braking		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	Wrong state S-graph
		1	Wrong state S-graph
		2	Wrong KW-number
		4	Wrong state S-graph
		12	Timeout SGRF → ACC-BUS can not be switched to “operational mode” (Master not available or BUS disturbed)
Error removal			

Device	KE-E03		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	Wrong state S-graph
		1	Timeout 2 s checksum
		2	Wrong state checksum
		3	Timeout 2 s wait
		4	Wrong state wait
		5	Timeout 2 s Set_Bus
		6	Timeout 2 s SetIDParam
		8	Timeout 2 s SetSEEP1Param
		9	Timeout 2 s SetCountParam
		17	Error in diagnostics (subsequent error)
		18	No acknowledgment from diagnosis 1 ms task and 10 ms task after 2 s (timeout)
Error removal			

## 1064 'System diagnostics'

Device			
Description			
Class			
Drive Behaviour	Controlled Braking		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Consequential error, Err Rgrf, controller enable graph
Error removal	<ul style="list-style-type: none"><li>• In KW modules with internal overvoltage protection and brake device test the wiring between X133 and X19</li></ul>		

## 1065 'System diagnostics'

<ul style="list-style-type: none"><li>• QUE missing on RF activation</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Motor brake control becomes active immediately. The brake will close independent if the motor is stopped		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• Check main contactor activation</li><li>• Recheck parameter:<ul style="list-style-type: none"><li>• ID32837 DC-bus monitoring</li></ul></li></ul>		

## 1066 'System diagnostics'

Device	KU, KW, RM		
• Motor energization not possible			
Device	AZ, KE		
• DC bus undervoltage			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Consequential error, DRV -> AW module faulty, BES missing
Error removal			
Device	KE		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	DC bus voltage about 13 % of max. mains voltage (62.5 μs) (Function active up to SW KER3_205_0406_200417)
		1	Comparison between DC bus voltage and ID32837, 'DC bus voltage monitoring' Probe value of DC bus voltage is filtered by PT1 (100 ms)
Error removal	Info1 = 0: Error can be cleared once		
• DC bus undervoltage inverter (n)			
Device	ZWR		
Description	DC bus voltage about 13 % of max. mains voltage		
Class	Warning		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	• Check DC bus • Check PV field		

## 1067 'System diagnostics'

<ul style="list-style-type: none"><li>Fault DC bus</li></ul>			
Device		KU	
<ul style="list-style-type: none"><li>BES missing in KU 14</li><li>External DC bus choke missing</li></ul>			
Description			
Class			
Drive Behaviour		Controlled braking	
Device Behaviour		System run-up aborted	
Additional Error Information (AMK Service)			
			Consequential error, DRV -> AW module faulty, BES missing
Error removal			



**1068 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Consequential error, Timeout Err Bgrf
Error removal			

Device	KE		
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	Wrong state U-graph
Error removal			

**1069 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Consequential error, Timeout-Err Rgrf
Error removal			

**1070 'System diagnostics'**

• FL not possible (timeout 20 s)			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

## 1071 'System diagnostics'

<ul style="list-style-type: none"><li>• Brake acknowledgment does not correspond to the expected value</li><li>• Plausibility monitoring ID 32773. 13=1 is active</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info1	0	Special lift function ID32955 'Delay time'
		2	Motor holding brake - overcurrent of the supply voltage
Error removal	<ul style="list-style-type: none"><li>• Wire break Inverter / Brake</li><li>• Check connection cables for damage</li><li>• Brake defect</li><li>• Recheck parameters:<ul style="list-style-type: none"><li>• ID206 'Drive on delay time'</li><li>• ID207 'Drive off delay time'</li></ul></li></ul>		

## 1072 'System diagnostics'

Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
			Contactor shutdown monitoring in special lift function
Error removal			

## 1073 'Cooling Air Temperature Warning'

<ul style="list-style-type: none"><li>• The air inlet temperature is more than 45 °C</li></ul>			
Device	AZ		
Description	The drive withdraws SBM and switches off after 4 s and shows message "1041 External Line Over Temperature"		
Class	Warning message, reaction of the drive after 4 seconds		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

## 1074 'External line component temperature warning'

<ul style="list-style-type: none"> <li>• The temperature acquisition at the braking resistor has responded (PTC resistor &gt; 600 ohms).</li> </ul>			
Device			
Description	The system is transferred after 4 s into error "1041 External Line Over Temperature" after the end of the warning time		
Class	Warning message, reaction of the drive after 4 seconds		
Drive Behaviour			

Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			
Device	KE		
Description			
Class			
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	ITE (HW), ITE intern > 1.7 V
Error removal			

### 1075 'Power supply unit temperature warning'

<ul style="list-style-type: none"><li>• AZ switching power supply unit thermally overloaded (<math>T_{\text{cooling circuit}} &gt; 70\text{ °C}</math>)</li><li>• Fan on the AZ module does not run</li></ul>			
Device			
Description			
Class	Warning message, reaction of the drive after 4 seconds		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

### 1076 'Feed / Regeneration temperature warning'

<ul style="list-style-type: none"><li>• AZ module thermal overload (T<sub>cooling circuit</sub> &gt; 70 °C)</li><li>• Fan on the AZ module does not run</li></ul>			
Device			
Description			
Class	Warning message, reaction of the drive after 4 seconds		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

### 1077 'Line Voltage warning'

Device			
Description	The system is transferred after 4 s into error "1043 Line Voltage Error" after the end of the warning time		
Class	Warning message, reaction of the drive after 4 seconds		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1078 'Line undervoltage warning'**

Device			
Description	The system is transferred after 4 s into error "1043 Line Voltage Error" after the end of the warning time		
Class	Warning message, reaction of the drive after 4 seconds		
Drive Behaviour			
Device Behaviour	SBM is withdrawn		
Additional Error Information (AMK Service)			
Error removal			

**1079 'System diagnostics'**

<ul style="list-style-type: none"><li>• All square wave encoder breakage messages are displayed only with active encoder breaking monitoring</li></ul>			
<b>Device</b>		<b>AZ</b>	
<ul style="list-style-type: none"><li>• "ID32773 Service bits": bit 0</li><li>• "ID32901 Global Service bits": bit 4</li></ul>			
<b>Device</b>		<b>KU, KW</b>	
<ul style="list-style-type: none"><li>• "ID32773 Service bits": bit 0 and bit 12</li><li>• The message is displayed only in an operation mode with activated external source of the actual position value ("ID32800 AMK main operating mode": bit 14 / 15 = 0!)</li></ul>			
<b>Description</b>			
<b>Class</b>			
<b>Drive Behaviour</b>		Controlled braking	
<b>Device Behaviour</b>			
<b>Additional Error Information (AMK Service)</b>			
<b>Error removal</b>			

**1080 'OPTION 1 cf. description'**

Encoder line break analysis on option card, input 1 slot 1			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1081 'OPTION 1 cf. description'**

• Encoder line break analysis on option card, input 2 slot 1			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1082 'OPTION 1 cf. description'**

• Encoder line break analysis on option card, input 3 slot 1			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1083 'OPTION 1 cf. description'**

• Encoder line break analysis on option card, input 4 slot 1			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1084 'OPTION 2 cf. description'**

• Encoder line break analysis on option card, input 1 slot 2			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1085 'OPTION 2 cf. description'**

• Encoder line break analysis on option card, input 2 slot 2			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1086 'OPTION 2 cf. description'**

• Encoder line break analysis on option card, input 3 slot 2			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1087 'OPTION 2 cf. description'**

• Encoder line break analysis on option card, input 4 slot 2			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1088 'OPTION 3 cf. description'**

• Encoder line break analysis on option card, input 1 slot 3			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1089 'OPTION 3 cf. description'**

• Encoder line break analysis on option card, input 2 slot 3			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1090 'OPTION 3 cf. description'**

• Encoder line break analysis on option card, input 3 slot 3			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1091 'OPTION 3 cf. description'**

• Encoder line break analysis on option card, input 4 slot 3			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1092 'OPTION 4 cf. description'**

• Encoder line break analysis on option card, input 1 slot 4			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1093 'OPTION 4 cf. description'**

• Encoder line break analysis on option card, input 2 slot 4			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1094 'OPTION 4 cf. description'**

• Encoder line break analysis on option card, input 3 slot 4			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1095 'OPTION 4 cf. description'**

• Encoder line break analysis on option card, input 4 slot 4			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1096 'OPTION 1 cf. description'**

<ul style="list-style-type: none"><li>• Short-circuit/overload of the outputs option card, slot 1 (e.g. AZ-EA8 or AZ-EA24)</li><li>• Watchdog option error</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			



**1097 'OPTION 2 cf. description'**

<ul style="list-style-type: none"><li>• Short-circuit / overload of the outputs option card, slot 2 (e.g. AZ-EA8 or AZ-EA24)</li><li>• Active option card error (HS), see ID 32901</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1098 'OPTION 3 cf. description'**

<ul style="list-style-type: none"><li>• Short-circuit/overload of the outputs option card, slot 3 (e.g. AZ-EA8 or AZ-EA24)</li><li>• Active option card error (HS), see ID 32901</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1099 'OPTION 4 cf. description'**

<ul style="list-style-type: none"><li>• Short-circuit/overload of the outputs option card, slot 4 (e.g. AZ-EA8 or AZ-EA24)</li><li>• Active option card error (HS), see ID 32901</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

**1100 'System diagnostics: Short-circuit / overload digital outputs'**

<ul style="list-style-type: none"> <li>• Short-circuit / overload digital outputs</li> </ul>	
<b>Device</b>	see below
<b>Description</b>	see below
<b>Class</b>	Error
<b>Drive Behaviour</b>	Coast to stop
<b>Device Behaviour</b>	
<b>Error removal</b>	<ul style="list-style-type: none"> <li>• Check monitored binary outputs</li> <li>• Fix short-circuit / overload</li> </ul>

**Meaning for KW-R05 / KW-R06 / KW-R16 / KW-R07 / KW-R17 /**

<ul style="list-style-type: none"><li>• Monitoring BA3 (e.g. motor holding brake)</li><li>• <b>Prerequisite:</b> ID32901 'Global service bits', bit 7 = 1</li></ul>			
<b>Description</b>		Message is generated if the error is present for more than 50 ms	
<b>Additional error information (AMK Service)</b>			
	Info1	1	No load connected, line break
		2	Output defect
		3	Output defect
		4	Output defect
		5	Short circuit output terminal
		6	No load connected, line break

**Meaning for iX / iC / iDT5 /**

<ul style="list-style-type: none"><li>Monitoring binary outputs multi-functional I/O interface, use as binary output BA1 ... BA3</li></ul>			
Description		Message is generated as soon as the error occurs	
Additional error information(AMK Service)			
	Info1	0	Short circuit

**Meaning for KW-R03 /**

• Monitoring BA3			
Description		Message is generated if the error is present for more than 5 ms	
Additional error information(AMK Service)			
	Info1	3	Short circuit
		4	Line break

**Meaning for AZ /**

• Monitoring BA1 ... BA4			
Description	Message is generated as soon as the error occurs		
Additional error information(AMK Service)			
	Info1	0	Short circuit

**1101 'Logic voltage error'**

<ul style="list-style-type: none"><li>• Internal supply voltage +/-12 V is outside the permissible limit</li><li>• Undervoltage of the 24 V power supply (&lt;18 V)</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

Device	KE		
Description			
Class	Warning		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	Intern or extern (system run-up)
		1	Extern +24 V, BNS (HW) (62.5 μs)
		2	Intern +12 V, BVS (HW) (10 ms)
Error removal			

- Fault 24 VDC supply inverter (n)

Device	ZWR		
Description	24 VDC supply of inverter (-U1.X08:1/2) <18 V		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check 24 VDC supply -G1</li><li>• Check fuse -F12</li><li>• Check wiring</li></ul>		

- Internal supply voltage 5 VDC is outside the permissible limit

Device	ihX / MultiServo / KxW		
Description			
Class	Error		
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info1	11	Undervoltage
		12	Overvoltage
Error Removal	• Check 24 VDC supply		

## 1102 'Line voltage limit'

- Line overvoltage 460 V + 15% or line undervoltage 380 V - 20% present longer than 1 sec.
- Undervoltage of the 24 V power supply (< 20 V)

Device	KU		
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

### 1103 'Field bus warning'

<ul style="list-style-type: none"><li>• ERROR bit comes back from the drive in AFP status</li><li>• User has sent invalid command</li><li>• Running command was not ended by error event (e.g. encoder fault in positioning)</li><li>• User has sent permissible command at wrong time (e.g. reading database within active positioning)</li><li>• The ERROR bit can be deleted by means of delete error or with every new valid AFP command</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

### 1104 'No FL with RF active'

<ul style="list-style-type: none"><li>• The user attempts to delete error without withdrawing the controller enable control signal</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	For safety reasons RF must always be 0 in the case of error		

### 1105 'Reserved'

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal			

### 1106 'System diagnostic'

• Watchdog option			
Device			
Description	No communication between an option card and base system after 0,2 sec. (AMKAMAC: Info: Option slot 1 resp. Instance)		
Class			
Drive Behaviour	Controlled braking		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Option card failure		

## 1107 'System diagnostics: Short circuit DC bus voltage'

• Short circuit DC bus voltage			
Device	KE		
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	300 ms past ELS1: UZ < 10 %
Error removal	'Clear error' inadmissible, first clear cause of fault		
• Short circuit DC bus inverter			
Device	ZWR		
Description	Short circuit in the DC bus of the inverter -U1		
Class	Error		
Device Behaviour	Central inverter is disconnected from the mains		
Additional Error Information (AMK Service)			
Error Removal	• Replace inverter -U1		

## 1108 'System diagnostics: Main contactor'

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	Main contactor does not drop. The system must be shut down by the higher ranking controller.
	Error removal		'Clear error' permissible only after fault fixing
	Info 1	1	Voltage already at X01 when UE is set.
	Error removal		Check main contactor wiring
Error removal			
Device	KE		
Description			
Class			
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	Main contactor does not drop. 10 s after EHS off: Mains voltage > 75 % of amplitude
		1	Voltage at X01 when UE is set.
	Error removal		

<ul style="list-style-type: none"><li>Fault main contactor inverter (n)</li></ul>			
Device	ZWR		
Description	see additional information		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
	Info 1	1	Main contactor does not drop out. 10 s after inverter OFF, there is still voltage at the terminals -U1.X01:L1.1/L2.1/L3.1
		2	With setting of UE, the voltage is applied to -U1.X01:L1.1/L2.1/L3.1 immediately
Error Removal	<ul style="list-style-type: none"><li>Check main contactor -K2</li></ul>		

## 1109 'System diagnostics'

• Shifting of Y-point			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal	Error reset inadmissible, first clear cause of fault		

## 1110 'Warning brake transistor'

• Warning brake transistor			
Device	KE		
Description	The function of the brake transistor is not ensured any more		
Class	Warning message, reaction of the drive after 4 seconds		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	The brake transistor does not switch on
		1	The brake transistor does not switch off After 4 s error 1061, 'Braking transistor fault', Info 1 = 3, will be generated (SBM is withdrawn and power supply is disconnected)
Error removal	<ul style="list-style-type: none"><li>• Internal KE error</li><li>• Replace device</li></ul>		

## 1111 'Warning external component'

<ul style="list-style-type: none"><li>Warning external component</li></ul>			
Device	KE, KW, IC, IDT5, IX		
Description	Actual current values violate the I <sup>2</sup> t calculation, overload of the external elements e.g. at the line input: line filter, commutation choke etc, at the inverter e.g. motor cable The overload has reached the value according ID34196 'Treshold external component'		
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>Check application</li><li>Calculation check for dimensioning the rated power of the device</li><li>Recheck parameters:<ul style="list-style-type: none"><li>ID34193 Nominal current</li><li>ID34194 Peak current</li><li>ID34195 Peak current time</li><li>ID34196 Threshold external component</li></ul></li></ul>		

## 1112 'Overload error external component'

• Overload error external element line			
Device	KE, KW, IC, IDT5, IX		
Description	• Actual current values violate the I <sup>2</sup> t calculation, overload of the external elements e.g. at the line input: line filter, commutation choke etc, at the inverter e.g. motor cable		
Class	Error		
Drive Behaviour	Inverter: controlled braking of the motor		
Device Behaviour	Supply: line separation		
Additional Error Information (AMK Service)			
	Info1	1	I <sub>max</sub> < I <sub>n</sub>
		2	Overload has reached 100 %
Error removal	• Check application • Calculation check for dimensioning the rated power of the device • Recheck parameters: <ul style="list-style-type: none"><li>• ID34193 'Nominal current external component'</li><li>• ID34194 'Peak current external component'</li><li>• ID34195 'Peak current time external component'</li><li>• ID34196 'Treshold external component'</li></ul>		
• Overload mains filter converter (n)			
Device	ZWR		
Description	Overload mains filter -Y1		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	• Check mains filter -Y1, replace if necessary		

## 1115 'Communication monitoring'

• Communication monitoring	
<b>Device</b>	<b>KW-R06</b> <b>iDT5</b> <b>iX</b> <b>iC</b>
<b>Description</b>	In operation mode 'Setup', time exceeded for increasing ID33143 'Communication monitoring'
<b>Class</b>	Error
<b>Drive Behaviour</b>	Controlled braking
<b>Device Behaviour</b>	
<b>Additional Error Information (AMK Service)</b>	
<b>Error Reaction</b>	
<b>Error Removal</b>	<ul style="list-style-type: none"> <li>• Check master - slave communication</li> <li>• If necessary, replace wiring</li> </ul>

## 3.5 No. 1280 ... 1460 Operation mode / Parameter calculation

### 1281 'System diagnostics'

<b>Device</b>	
<b>Description</b>	
<b>Class</b>	
<b>Drive Behaviour</b>	
<b>Device Behaviour</b>	System run-up aborted
<b>Additional Error Information (AMK Service)</b>	
	Inadmissible status BAV
<b>Error removal</b>	Power must be switched OFF/ON after loading a parameter set from the PC into the target system

### 1282 'ID32777, ID111, ID32769'

• Standardization factor of torque-generating current, analog input	
<b>Device</b>	
<b>Description</b>	
<b>Class</b>	
<b>Drive Behaviour</b>	
<b>Device Behaviour</b>	System run-up aborted
<b>Additional Error Information (AMK Service)</b>	
	KSQA
<b>Error removal</b>	Recheck parameters: <ul style="list-style-type: none"> <li>• ID32777 Torque relative to 10 V at A1</li> <li>• ID110 Inverter peak current</li> <li>• ID111 Motor nominal current <math>I_N</math></li> <li>• ID32769 Magnetising current <math>I_M</math></li> </ul>



**1283 'ID111, ID32769'**

<ul style="list-style-type: none"><li>Standardization factor of torque-generating current, communication</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KSQK
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID110 Inverter peak current</li><li>ID111 Motor nominal current <math>I_N</math></li><li>ID32769 Magnetising current <math>I_M</math></li></ul>		

**1284 'ID111, ID32769'**

<ul style="list-style-type: none"><li>Standardization factor of actual torque values</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KIQR
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID110 Inverter peak current</li><li>ID111 Motor nominal current <math>I_N</math></li><li>ID32769 Magnetising current <math>I_M</math></li></ul>		

**1285 'ID32772 wrong'**

<ul style="list-style-type: none"><li>Slope standardization factor</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KPSI
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32769 Magnetising current <math>I_M</math></li><li>ID32770 Magnetising current <math>I_{M1}</math></li><li>ID32772 Nominal velocity <math>n_N</math></li><li>ID110 Inverter peak current</li></ul>		

**1286 'ID82 or ID83 too large'**

<ul style="list-style-type: none"><li>Torque limit factor of the analog input A2</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KMGA
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID82 Positive torque limit</li><li>ID83 Negative torque limit</li></ul>		

**1287 'ID32890: 1, 2, 5, 10'**

• Pulse multiplication			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32890 AWIW pulse multiplier</li></ul>		

**1288 'ID110, ID111, ID32769'**

<ul style="list-style-type: none"><li><math>(I_N^2 - I_M^2) &gt; I_{\max}^2</math> (inverter module maximum current, specified as ID 110)</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			ISQNNEN
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID110 Inverter peak current</li><li>ID111 Motor nominal current <math>I_N</math></li><li>ID32769 Magnetising current <math>I_M</math></li></ul>		

**1289 'ID83 too small'**

• "ID83 Negative torque limit" too small negative value			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			ISQGRN
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID110 Inverter peak current</li><li>• ID111 Motor nominal current <math>I_N</math></li><li>• ID32769 Magnetising current <math>I_M</math></li></ul>		

**1290 'ID82 too large'**

<ul style="list-style-type: none"><li>• "ID82 Positive torque limit" too large</li><li>• Relevant parameters (ID110, ID111, ID32769) in the combination outside the permissible range</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			ISQGRP
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID110 Inverter peak current</li><li>• ID111 Motor nominal current <math>I_N</math></li><li>• ID32769 Magnetising current <math>I_M</math></li></ul>		

**1291 'ID32774 faulty'**

• Standardized "ID32774 Rotor time constant"			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KROT
Error removal			

**1292 'SEEP checksum'**

• Checksum error in the device specific serial EEPROM. The check takes place in the system initialization				
Device				
Description				
Class				
Drive Behaviour				
Device Behaviour	System run-up aborted			
Additional Error Information (AMK Service)				
	Info 2	1	Faulty SEEP order	
		2	Checksum error in SEEP in AMK Info area ("34060 List SEEP 1)	
		3	Checksum error in database (DTH)	
			Info 3	Number of faulty checksum (EEPROM page number)
Error removal	Check AZ-SEEP with monitor AW0 M2001C, ffff inadmissible			

**1293 'Boot strap EEPROM'**

<ul style="list-style-type: none"><li>• The software has been replaced and is no longer address-compatible with the data of the parameter memory (e.g. EEPROM) in which all current drive and system data are filed</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• The BOOT STRAP menu item must be initialized through the control panel or the S-BUS interface</li><li>• After “Boot strapping” the user parameters must be reloaded (manually or by means of PC program)</li></ul>		

**1294 'EEPROM defective'**

<ul style="list-style-type: none"><li>Checksum error of parameter memory for application data</li><li>The parallel EEPROM can no longer be written or read</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>The BOOT STRAP menu item must be initialized through the control panel or the S-BUS interface</li><li>After “Boot strapping” the user parameters must be reloaded (manually or by means of PC program)</li></ul>		

**1295 'ID100 / ID101'**

<ul style="list-style-type: none"><li>Speed controller integral component factor</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KIDZL
Error removal	<ul style="list-style-type: none"><li>"ID100 Proportional gain speed control <math>K_p</math>" and "ID101 Integrating time speed control <math>T_N</math>" must be in a suitable ratio to one another</li><li>Recheck parameters:<ul style="list-style-type: none"><li>ID100 Proportional gain speed control <math>K_p</math></li><li>ID101 Integrating tim speed control <math>T_N</math></li><li>ID110 Inverter peak current</li><li>ID111 Motor nominal current <math>I_N</math></li><li>ID32769 Magnetising current <math>I_M</math></li></ul></li></ul>		

**1296 'ID211 / ID209 / ID210'**

<ul style="list-style-type: none"><li>• The DZR adaptation P component slope factor could not be calculated correctly in the drive</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KPS
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID100 Proportional gain speed control <math>K_p</math></li><li>• ID110 Integrating time speed control <math>T_N</math></li><li>• ID209 Lower adaption limit</li><li>• ID210 Upper adaption limit</li><li>• ID211 Proportional gain adaption</li></ul>		

**1297 'ID212 / ID209 / ID210'**

<ul style="list-style-type: none"><li>• The DZR adaptation I component slope factor could not be calculated correctly in the drive</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KIS
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID100 Proportional gain speed control <math>K_p</math></li><li>• ID110 Integrating tim speed control <math>T_N</math></li><li>• ID110 Inverter peak current</li><li>• ID209 Lower adaption limit</li><li>• ID210 Upper adaption limit</li><li>• ID211 Proportional gain adaption</li></ul>		

**1298 'ID100 faulty'**

<ul style="list-style-type: none"><li>• 1 ≤ "ID100 Proportional gain speed control K<sub>p</sub>" ≤ 32767</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KPDZL
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID100 Proportional gain speed control K<sub>p</sub></li><li>• ID110 Integrating tim speed control T<sub>N</sub></li><li>• ID111 Motor nominal current I<sub>N</sub></li><li>• ID32769 Magnetising current I<sub>M</sub></li></ul>		

**1299 'ID32775: even'**

<ul style="list-style-type: none"><li>• An uneven pole number was entered in "ID32775 Pole number motor"</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

### 1300 'Error in Temporary Parameters'

<ul style="list-style-type: none"><li>• An error in the standardization calculation occurred on entry of a temporary parameter</li><li>• The entered parameter ID is not part of the "ID270 Temporary parameter list"</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

### 1301 'ID32778 faulty'

• 0 ≤ "ID32778 Speed relative to 10 V at A1" ≤ 100 000 rpm			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

### 1302 'System diagnostics'

<ul style="list-style-type: none"><li>Operating mode incomplete, see "ID32800 AMK main operating mode" et seq.</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			BA error decoupling
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32800 AMK main operating mode</li><li>ID32800 ... ID32806 AMK secondary operating mode 1 ... 6</li></ul>		

### 1303 'System diagnostics'

<ul style="list-style-type: none"><li>Operating mode incomplete, see "ID32800 AMK main operating mode" et seq.</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			BA error DZR
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32800 AMK main operating mode</li><li>ID32800 ... ID32806 AMK secondary operating mode 1 ... 6</li></ul>		

**1304 'System diagnostics'**

<ul style="list-style-type: none"><li>Operating mode incomplete, see "ID32800 AMK main operating mode" et seq.</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			BA error position control
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32800 AMK main operating mode</li><li>ID32800 ... ID32806 AMK secondary operating mode 1 ... 6</li></ul>		

**1305 'System diagnostics'**

<ul style="list-style-type: none"><li>Operating mode incomplete, see "ID32800 AMK main operating mode" et seq.</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			BA error flux cond
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32800 AMK main operating mode</li><li>ID32800 ... ID32806 AMK secondary operating mode 1 ... 6</li></ul>		

**1306 'System diagnostics'**

<ul style="list-style-type: none"><li>Operating mode incomplete, see "ID32800 AMK main operating mode" et seq.</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Level BA error
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32800 AMK main operating mode</li><li>ID32800 ... ID32806 AMK secondary operating mode 1 ... 6</li></ul>		



### 1307 'System diagnostics'

<ul style="list-style-type: none"><li>Position resolution not realizable</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			IQLAGE_WRONG
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID116 Resolution motor encoder</li><li>ID117 Resolution external encoder</li><li>ID118 Resolution linear encoder</li></ul>		

### 1308 'System diagnostics'

<ul style="list-style-type: none"><li>Resolution of the “Speed source pulses” source not realizable</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			RDB3C_AKTGEBER
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID116 Resolution motor encoder</li><li>ID117 Resolution external encoder</li><li>ID121 Load gear input revolution</li><li>ID122 Load gear output revolution</li></ul>		

### 1309 'System diagnostics'

<ul style="list-style-type: none"><li>Speed window larger than 107372.5 rpm</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			DZLFENST
Error removal			

**1310 'System diagnostics'**

<ul style="list-style-type: none"><li>• “Pole factor POLF” calculation out of tolerance</li><li>• <math>POLF = (115200 * ZP * EIN) / (GPZ * AUS)</math></li><li>• <math>0010h \leq POLF \leq 7fffh</math></li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32775 Pole number motor (ZP)</li><li>• ID32776 Sinus encoder period (GPZ)</li><li>• ID32960 Input Motor encoder gear (EIN)</li><li>• ID32961 Output Motor encoder gear (AUS)</li></ul>		

**1311 'System diagnostics'**

• 4 GPZ calculation inconclusive			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1312 'System diagnostics'**

<ul style="list-style-type: none"><li>Negated direction of rotation permissible only for A and I encoders</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameter: <ul style="list-style-type: none"><li>ID32773 Service bits: bit 16 = 1</li></ul>		

**1313 'ID82 less then ID83'**

<ul style="list-style-type: none"> <li>Plausibility monitoring of speed limits (ID82 'Positive torque limit' <math>\geq</math> ID83 'Negative torque limit')</li> </ul>	
<b>Device</b>	iX / iC / iDT5 / ihX / KW-R24 / KW-R24-R / KW-R25 / KW-R26 / KW-R27
<b>Description</b>	The condition ID82 $\geq$ ID83 must always be true. If ID82 < ID83, the diagnostic message 1313 is generated. The error can occur during parametrization and during operation by temporary changes or by specifying the limits above a cyclic channel.
<b>Class</b>	Error
<b>Drive Behaviour</b>	Error in parametrization → system run-up aborted Error during operation → coast to stop
<b>Device Behaviour</b>	
<b>Additional Error Information (AMK Service)</b>	
<b>Error removal</b>	Check the following parameters: <ul style="list-style-type: none"> <li>ID82 'Positive torque limit'</li> <li>ID83 'Negative torque limit'</li> </ul>

**1314 'System diagnostics'**

<b>Device</b>	
<b>Description</b>	
<b>Class</b>	
<b>Drive Behaviour</b>	
<b>Device Behaviour</b>	System run-up aborted
<b>Additional Error Information (AMK Service)</b>	
<b>Error removal</b>	Recheck parameter: <ul style="list-style-type: none"> <li>ID32990 NK-shift"</li> </ul>

**1315 'System diagnostics'**

<ul style="list-style-type: none"> <li>Resolver 0 point shift inadmissible</li> </ul>	
<b>Device</b>	
<b>Description</b>	
<b>Class</b>	
<b>Drive Behaviour</b>	
<b>Device Behaviour</b>	System run-up aborted
<b>Additional Error Information (AMK Service)</b>	
<b>Error removal</b>	Recheck parameter: <ul style="list-style-type: none"> <li>ID32959 Offset resolver</li> </ul>

**1316 'ID32769/ID100 too large'**

<ul style="list-style-type: none"><li>"ID32769 Magnetising current I<sub>M</sub>" / "ID110 Inverter peak current" ratio too large</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			ISDNENN
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID110 Inverter peak current</li><li>ID32769 Magnetising current I<sub>M</sub></li></ul>		

**1317 'ID32770/ID110 too large'**

<ul style="list-style-type: none"><li>"ID32770 Magnetising current <math>I_{M1}</math>" / "ID110 Inverter peak current" ratio too large</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			ISDNENN1
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID110 Inverter peak current</li><li>ID32770 Magnetising current <math>I_{M1}</math></li></ul>		

**1318 'ID32774 faulty'**

<ul style="list-style-type: none"><li>• I component flux conduction factor</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KIFL
Error removal			

**1319 'System diagnostics'**

• Configuration of “Strobe” binary input wrong			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1320 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			RESERVE
Error removal			

**1321 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			RESERVE
Error removal			

**1322 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			RESERVE
Error removal			

**1323 'ID32769 IM < ID111 IN'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			IROOT
Error removal	Recheck parameters: ID111 Motor nominal current I <sub>N</sub> ID32769 Magnetising current I <sub>M</sub>		

**1324 'ID32772 nN too large'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			DZLNENN
Error removal	Recheck parameter: ID32772 Nominal velocity $n_N$		

**1325 'ID32772 P1 reference'**

• n <sub>N</sub> too large			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			DZLNENN1
Error removal	Recheck parameter: ID32772 Nominal velocity n <sub>N</sub>		

**1326 'System diagnostics'**

<ul style="list-style-type: none"><li>• Source converter/on (UE) incorrect</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• Check ACC Bus</li><li>• Recheck parameter:<ul style="list-style-type: none"><li>• ID32795 Source UE</li></ul></li></ul>		

Device	KE		
Description	ACC configured as source of 'DC bus on' but no ACC bus is connected		
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• Check ACC Bus</li><li>• Recheck parameter:<ul style="list-style-type: none"><li>• ID32795 'Source UE'</li></ul></li></ul>		

**1327 'ID104 kv factor'**

<ul style="list-style-type: none"><li>• <math>1 \leq K_V \leq 30000</math></li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KLAGE
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID104 Position loop <math>K_V</math>-factor</li><li>• ID115 Position feedback type</li><li>• ID116 Resolution motor encoder</li><li>• ID117 Resolution external encoder</li><li>• ID118 Resolution linear encoder</li><li>• ID121 Load gear input revolution</li><li>• ID122 Load gear output revolution</li><li>• ID123 Feed constant</li><li>• ID32776 Sinus encoder period</li></ul>		

**1328 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			RESERVE
Error removal			

**1329 'ID111/ID110 > 80%'**

• "ID111 Motor nominal current" may be maximum 80 % of "ID110 Inverter peak current"			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KSQA
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID110 Inverter peak current</li><li>• ID111 Motor nominal current</li></ul>		

**1330 'ID32772 > ID113'**

<ul style="list-style-type: none"><li>"ID32772 Nominal velocity" is greater than "ID113 Maximum speed"</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			N_NENN
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID113 Maximum speed</li><li>ID32772 Nominal velocity</li></ul>		

**1331 'ID209 > ID113'**

<ul style="list-style-type: none"><li>"ID209 Lower adaption limit" is greater than "ID113 Maximum speed"</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID113 Maximum speed</li><li>ID209 Lower adaption limit</li></ul>		

**1332 'ID210 > ID113'**

<ul style="list-style-type: none"><li>"ID210 Upper adaption limit" is greater than "ID113 Maximum speed"</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KSQA
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID113 Maximum speed</li><li>ID209 Upper adaption limit</li></ul>		



### 1333 'System diagnostics'

<ul style="list-style-type: none"><li>"ID32780 Acceleration ramp" resp. "ID32781 Deceleration ramp" are too large in reference to "ID113 Maximum speed"</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID113 Maximum speed</li><li>ID32780 Acceleration ramp</li><li>ID32781 Deceleration ramp</li></ul>		

### 1334 'ID38 > ID113'

<ul style="list-style-type: none"><li>"ID38 Positive velocity limit" is greater than "ID113 Maximum speed"</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID38 Positive velocity limit</li><li>ID113 Maximum speed</li></ul>		

### 1335 '|ID39| > ID113'

<ul style="list-style-type: none"><li>• The absolute amount of "ID39 Negative velocity limit" is greater than "ID113 Maximum speed"</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID39 Negative velocity limit</li><li>• ID113 Maximum speed</li></ul>		

**1336 'ID32778 > ID113'**

<ul style="list-style-type: none"><li>"ID32778 Speed relative to 10 Vat A1" is greater than "ID113 Maximum speed"</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID113 Maximum speed</li><li>ID32778 Speed relative to 10 V at A1</li></ul>		

**1337 'ID32783 > ID113'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			RESERVE
Error removal			

**1338 'ID157 > ID113'**

<ul style="list-style-type: none"><li>"ID157 Velocity window" is greater than "ID113 Maximum speed"</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID113 Maximum speed</li><li>ID157 Velocity window</li></ul>		

**1339 'ID125 > ID113'**

<ul style="list-style-type: none"><li>"ID125 Velocity Threshold N<sub>x</sub>" is greater than "ID113 Maximum speed"</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID113 Maximum speed</li><li>ID125 Velocity Threshold N<sub>x</sub></li></ul>		

**1340 'ID124 > ID113'**

<ul style="list-style-type: none"><li>"ID124 Zero velocity window" is greater than "ID113 Maximum speed"</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID113 Maximum speed</li><li>ID124 Zero velocity window</li></ul>		

**1341 'AW-lmax wrong (SEEP)'**

<ul style="list-style-type: none"><li>Inverter module maximum current = 0 is inadmissible. This value was read from the serial EEPROM of the inverter, possibly there is a defect at the serial EEPROM</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1342 'System diagnostics'**

<ul style="list-style-type: none"><li>• External error</li><li>• Indicated at following system run-up</li><li>• Timeout</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			PEEP Timeout
Error removal	System OFF/ON (HW reset)		

**1343 'System diagnostics'**

• Internal fault or component failure			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			DTH Timeout see Comm. Error AZ-M881C..., AW-M200
Error removal			

**1344 'System diagnostics'**

<ul style="list-style-type: none"><li>Internal fault or component failure (AWMON)</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			DTH Timeout see Comm. Error AZ-M881C..., AW-M200
Error removal			

**1345 'System diagnostics'**

<ul style="list-style-type: none"><li>Internal fault or component failure (wrong BAV order)</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			DTH Timeout see Comm. Error AZ-M881C..., AW-M200
Error removal			

**1346 'System diagnostics'**

<ul style="list-style-type: none"><li>Internal fault or component failure (Handshake BAV/DTH)</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			DTH Timeout see Comm. Error AZ-M881C..., AW-M200
Error removal			

**1347 'System diagnostics'**

• Internal fault or component failure (Handshake BAV/PEEP)			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			DTH Timeout see Comm. Error AZ-M881C..., AW-M200
Error removal			

**1348 'System diagnostics'**

• Internal fault or component failure (Handshake BAV/AWMON)			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			DTH Timeout see Comm. Error AZ-M881C..., AW-M200
Error removal			

**1349 'System diagnostics'**

<ul style="list-style-type: none"><li>Internal fault or component failure</li></ul>			
Device		AW	
<ul style="list-style-type: none"><li>Same AW numbers set at different AWs (rotary switch for AW No.)</li></ul>			
Description			
Class			
Drive Behaviour			
Device Behaviour		System run-up aborted	
Additional Error Information (AMK Service)			
Error removal			

**1350 'AW not present'**

<ul style="list-style-type: none"><li>Internal fault, AW/AZ communication</li></ul>			
Device	AZ AW		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Test comm. Error cells AZ-M881C..., AW-M200
Error removal	<ul style="list-style-type: none"><li>AW not present or does not report</li><li>AW was stated in ID32812 (active AW), but is actually not present</li><li>AW is defective</li><li>AW processor receives system reset</li><li>Check ID32812 • Check bus lines for correct contacting</li><li>An AW disturbs the entire bus</li><li>Activate AZ without Aws (pull off plug X27, ID32812 = 0)</li><li>Same AW numbers set at different Aws (rotary switch for AW No.)</li><li>Recheck parameter:<ul style="list-style-type: none"><li>ID32812 Active drives</li></ul></li></ul>		

**1351 'AW not active'**

<ul style="list-style-type: none"><li>• The operation mode defined for an operation mode change is not defined</li><li>• The selected AW is not active.</li></ul>			
Device	AZ AW		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Ba_wechs()
Error removal	Recheck parameter: <ul style="list-style-type: none"><li>• ID32812 Active drives</li></ul>		

**1352 'Can be changed only offline'**

<ul style="list-style-type: none"><li>• ID cannot be changed online</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Par_wechs(), temp. data change
Error removal			

### 1353 'Parameter Set change wrong'

<ul style="list-style-type: none"><li>Faulty commanding in the parameter set change</li><li>Parameter set not defined ID32813</li></ul>			
Device			
<ul style="list-style-type: none"><li>ID32813 ... ID32820 (depending upon AW No.) AW not active</li></ul>			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Pars_wechs( )
Error removal	Recheck parameters: ID32800 AMK main operation mode ID32801 ... ID32805 AMK secondary operation mode 1 ... 5 ID32813 ...ID32820 Parameter set assignment 1 ... 8		

### 1354 'Im < Im1'

• "ID32769 Magnetising current I <sub>M</sub> " < "ID32770 Magnetising current I <sub>M1</sub> " at the point P1			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32769 Magnetising current I<sub>M</sub></li><li>• ID32770 Magnetising current I<sub>M1</sub></li></ul>		

### 1355 'Date ID32785'

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			RESERVE
Error removal			

**1356 'Date ID32785, ID32786'**

<ul style="list-style-type: none"><li>• Contents of "ID32785 Message 16" inadmissible</li><li>• Contents of "ID32786 Message 32" inadmissible</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32785 Message 16</li><li>• ID32786 Message 32</li></ul>		

**1357 'AWNR ID32787, ID32789, ID32791, ID32793'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Filter_dac()
Error removal	Recheck parameters:		
	<div><div><ul style="list-style-type: none"><li>ID32787 Source analogue channel 1</li><li>ID32789 Source analogue channel 2</li><li>ID32791 Source analogue channel 3</li><li>ID32793 Source analogue channel 4</li></ul></div><div>Check AW-No., permissible 0 ... 8</div></div>		

Check AW-No., permissible 0 ... 8

**1358 'Source ID32787, ID32789, ID32791, ID32793'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32787 Source analogue channel 1</li><li>• ID32789 Source analogue channel 2</li><li>• ID32791 Source analogue channel 3</li><li>• ID32793 Source analogue channel 4</li></ul>		

**1359 'ID32873, ID32968, ID32977'**

<ul style="list-style-type: none"> <li>Binary input port address is not permitted.</li> </ul>	
<b>Device</b>	
<b>Description</b>	



<b>Class</b>	
<b>Drive Behaviour</b>	
<b>Device Behaviour</b>	System run-up aborted
<b>Additional Error Information (AMK Service)</b>	
	Cfg_azea( ), option place analysis, AZ-EA
<b>Error removal</b>	Recheck parameters: <ul style="list-style-type: none"> <li>• ID32873 Input port 1</li> <li>• ID32968 Input port 2</li> <li>• ID32977 Input port 3</li> </ul>

### 1360 'Opt.1 ID32846, ID32855, ID32864'

<ul style="list-style-type: none"> <li>• The output port 512 ... 519 is configured several times</li> </ul>	
<b>Device</b>	
<b>Description</b>	
<b>Class</b>	
<b>Drive Behaviour</b>	
<b>Device Behaviour</b>	System run-up aborted
<b>Additional Error Information (AMK Service)</b>	
<b>Error removal</b>	Recheck parameters: <ul style="list-style-type: none"> <li>• ID32846 Output port 1</li> <li>• ID32855 Output port 2</li> <li>• ID32864 Output port 3</li> </ul>

### 1361 'Opt.2 ID32846, ID32855, ID32864'

<ul style="list-style-type: none"> <li>• The output port 520 ... 527 is configured several times</li> </ul>	
<b>Device</b>	
<b>Description</b>	
<b>Class</b>	
<b>Drive Behaviour</b>	
<b>Device Behaviour</b>	System run-up aborted
<b>Additional Error Information (AMK Service)</b>	
<b>Error removal</b>	Recheck parameters: <ul style="list-style-type: none"> <li>• ID32846 Output port 1</li> <li>• ID32855 Output port 2</li> <li>• ID32864 Output port 3</li> </ul>

**1362 'Opt.3 ID32846, ID32855, ID32864'**

<ul style="list-style-type: none"><li>• The output port 528 ... 535 is configured several times</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32846 Output port 1</li><li>• ID32855 Output port 2</li><li>• ID32864 Output port 3</li></ul>		

**1363 'Opt.4 ID32846, ID32855, ID32864'**

<ul style="list-style-type: none"><li>• The output port 536 ... 543 is configured several times</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32846 Output port 1</li><li>• ID32855 Output port 2</li><li>• ID32864 Output port 3</li></ul>		

**1364 'Definition of output bits'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	25	Recheck ID32847 ... ID32872
		41	Recheck ID26, ID34029
		42	Recheck ID301, ID303, ID305, ID307
Error removal	<ul style="list-style-type: none"><li>• Check codes for binary outputs, invalid entry</li></ul>		

### 1365 'AWNRR output bit'

<ul style="list-style-type: none"><li>• The entered AW number is inadmissible. (Bin. Outputs)</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32847 ... ID32854 Output port 1, bit 0 ... bit 7</li><li>• ID32856 ... ID32863 Output port 3, bit 0 ... bit 7</li><li>• ID32865 ... ID32872 Output port 3, bit 0 ... bit 7</li></ul>		

### 1366 'Definition of input bits'

<ul style="list-style-type: none"><li>• The entered code is inadmissible. (Bin. Inputs)</li><li>• Parameterization is not plausible: ID32948 calls a function which requires further parameter setting on binary input assignment (e.g. measuring function ID32948 = 24 hex regards BE3 ID32980 = 401 hex)</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32874 ... ID32881 Input port 1, bit 0 ... 7</li><li>• ID32969 ... ID32876 Input port 2, bit 0 ... 7</li><li>• ID32978 ... ID32985 Input port 3, bit 0 ... 7</li><li>• ID32948 Message 4x32</li></ul>		

### 1367 'ID32883 Option place 1'

<ul style="list-style-type: none"><li>• The ID for option place 1 was wrongly configured</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1368 'ID32884 Option place 2'**

<ul style="list-style-type: none"><li>• The ID for option place 2 was wrongly configured</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1369 'ID32885 Option place 3'**

<ul style="list-style-type: none"><li>• The ID for option place 3 was wrongly configured</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1370 'ID32886 Option place 4'**

• The ID for option place 4 was wrongly configured			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1371 'ID32799 Standard Periphery'**

• "ID32799 Configuration Standard periphery" was wrongly configured			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1372 'Option place 1 card defect'**

<ul style="list-style-type: none"><li>Option card reports defect</li></ul>			
Device	AS-PL		
<ul style="list-style-type: none"><li>Ethernet may be configured only in one instance</li></ul>			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
			Program stack overflow
Error removal	<ul style="list-style-type: none"><li>Check Ethernet parameterization</li><li>Check serial interface parameterization</li></ul>		

<ul style="list-style-type: none"><li>Option 1 reports defect, not available or parameterization error</li></ul>			
Device	A4 / A5 / A6 iSA		
<ul style="list-style-type: none"><li>Ethernet may be configured only in one instance (Instance 0 or 4)</li></ul>			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	Faulty instance
Error removal	<ul style="list-style-type: none"><li>Check parameterization</li></ul>		

**1373 'Option place 2 card defect'**

<ul style="list-style-type: none"><li>Option card reports defect</li></ul>			
Device		AS-PL	
<ul style="list-style-type: none"><li>Ethernet may be configured only in one instance</li></ul>			
Description			
Class			
Drive Behaviour			
Device Behaviour		System run-up aborted	
Additional Error Information (AMK Service)			
Error removal		<ul style="list-style-type: none"><li>Check Ethernet parameterization.</li><li>Check serial interface parameterization</li></ul>	

• Option 2 reports defect, not available or parameterization error			
Device	A4 / A5 / A6 iSA		
• Fieldbus-Master, CAN or EtherCAT may be configured only in one instance (Instance 1 or 5)			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	Faulty instance
Error removal	• Check parameterization		

**1374 'Option place 3 card defect'**

<ul style="list-style-type: none"><li>Option card reports defect</li></ul>			
Device		AS-PL	
<ul style="list-style-type: none"><li>Ethernet may be configured only in one instance</li></ul>			
Description			
Class			
Drive Behaviour			
Device Behaviour		System run-up aborted	
Additional Error Information (AMK Service)			
Error removal		<ul style="list-style-type: none"><li>Check Ethernet parameterization.</li><li>Check serial interface parameterization</li></ul>	

<ul style="list-style-type: none"><li>Option 3 reports defect, not available or parameterization error</li></ul>			
Device	A4 / A5 / A6 iSA		
<ul style="list-style-type: none"><li>Fieldbus-Slave may be configured only in one instance (Instance 2 or 6)</li></ul>			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	Faulty instance
Error removal	<ul style="list-style-type: none"><li>Check parameterization</li></ul>		

**1375 'Option place 4 card defect'**

<ul style="list-style-type: none"><li>Option card reports defect</li></ul>			
Device		AS-PL	
<ul style="list-style-type: none"><li>Ethernet may be configured only in one instance</li></ul>			
Description			
Class			
Drive Behaviour			
Device Behaviour		System run-up aborted	
Additional Error Information (AMK Service)			
Error removal		<ul style="list-style-type: none"><li>Check Ethernet parameterization.</li><li>Check serial interface parameterization</li></ul>	

<ul style="list-style-type: none"><li>Option 4 reports defect, not available or parameterization error</li></ul>			
Device	A4 / A5 / A6 iSA		
<ul style="list-style-type: none"><li>IO-option may be configured only in one instance (Instance 3 or 7)</li></ul>			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	Faulty instance
Error removal	<ul style="list-style-type: none"><li>Check parameterization</li></ul>		

**1376 'ID32882 Option place 1'**

<ul style="list-style-type: none"><li>ID32882 or ID32799 wrongly configured</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32799 Configuration standard periphery</li><li>ID32882 Slot assignment</li></ul>		

**1377 'ID32882 Option place 2'**

<ul style="list-style-type: none"><li>ID32882 or ID32799 wrongly configured</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32799 Configuration standard periphery</li><li>ID32882 Slot assignment</li></ul>		

**1378 'ID32882 Option place 3'**

<ul style="list-style-type: none"><li>ID32882 or ID32799 wrongly configured</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32799 Configuration standard periphery</li><li>ID32882 Slot assignment</li></ul>		

**1379 'ID32882 Option place 4'**

<ul style="list-style-type: none"><li>ID32882 or ID32799 wrongly configured</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32799 Configuration standard periphery</li><li>ID32882 Slot assignment</li></ul>		

**1380 'ID110, ID111, ID32769'**

• Wrong torque display standardization			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KM_WRONG
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID110 Inverter peak current</li><li>• ID111 Motor nominal current</li><li>• ID32769 Magnetising current I<sub>M</sub></li></ul>		

**1381 'LIW source calculation'**

Resolution of actual position value is outside the permissible range			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			LAM_WRONG
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID104 Position loop KV-factor</li><li>• ID115 Position feedback type</li><li>• ID116 Resolution motor encoder</li><li>• ID117 Resolution external position feedback</li><li>• ID118 Resolution linear encoder feedback</li><li>• ID121 Load gear input revolution</li><li>• ID122 Load gear output revolution</li><li>• ID123 Feed constant</li><li>• ID32776 Sinus encoder period</li></ul>		



### 1382 'System diagnostics'

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	"ID32953 encoder type" defined wrongly
		7	HW revision status ≤ 1.03
Error removal			

### 1383 '2PI value wrong'

<ul style="list-style-type: none"><li>• 2π value not defined</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			PI_IQEA_WRONG
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID115 Position feedback type</li><li>• ID116 Resolution motor encoder</li><li>• ID117 Resolution external position feedback</li><li>• ID118 Resolution linear encoder feedback</li><li>• ID123 Feed constant</li><li>• ID32776 Sinus encoder period</li></ul>		

### 1384 '2PI value calculation'

<ul style="list-style-type: none"><li>• 2π value cannot be calculated</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			PI_WRONG
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID115 Position feedback type</li><li>• ID116 Resolution motor encoder</li><li>• ID117 Resolution external position feedback</li><li>• ID118 Resolution linear encoder feedback</li><li>• ID123 Feed constant</li><li>• ID32776 Sinus encoder period</li></ul>		

## 1385 'ID116, ID32776 ratio'

Device	AZ/AW		
<ul style="list-style-type: none"><li>• Resolver use: ID 32953 = 3 =&gt; ID32776 = 128</li><li>• Mandatory use of AW software ≥ 0210</li></ul>			
Device	KE/KW		
<ul style="list-style-type: none"><li>• Resolver use: ID 32953 = 8 =&gt; ID32776 = 128</li></ul>			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KLIW_WRONG
Error removal	Recheck parameters connected with encoder resolution corresponding to operation mode: <ul style="list-style-type: none"><li>• ID116 Resolution motor encoder</li><li>• ID118 Resolution linear encoder feedback</li><li>• ID32776 Sinus encoder period</li><li>• ID32934 Pulse encoder period</li><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK second operation mode 1 ... 6</li></ul>		

## 1386 'Output DA1 ... DA4'

<ul style="list-style-type: none"><li>• The output port 544 for DA1 ... DA4 is configured several times</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32846 Output port 1</li><li>• ID32855 Output port 2</li><li>• ID32864 Output port 3</li></ul>		

## 1387 'ID32846 wrong'

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameter: <ul style="list-style-type: none"><li>ID32846 Output port 1</li></ul>		

**1388 'ID32855 wrong'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameter: <ul style="list-style-type: none"><li>ID32855 Output port 2</li></ul>		

**1389 'ID32864 wrong'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameter: <ul style="list-style-type: none"><li>ID32846 Output port 3</li></ul>		

**1390 'System diagnostics'**

<ul style="list-style-type: none"><li>NC/LR time not integral.</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID1 NC cycle time</li><li>ID32958 Command value 1 cycle</li></ul>		

**1391 'ID32772 wrong'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameter: <ul style="list-style-type: none"><li>ID32772 Nominal velocity</li></ul>		

**1392 'ID158, ID32771, ID32772'**

<ul style="list-style-type: none"><li>Wrong standardization of comparative power Px</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			KPX_WRONG, PX_WRONG
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID158 Power threshold Px</li><li>ID32771 Nominal torque</li><li>ID32772 Nominal velocity</li></ul>		

**1393 'AW not AZ-compatible'**

<ul style="list-style-type: none"><li>• Software levels AW, AZ are not compatible</li><li>• The AZ and AW software level is compared in the system initialization and incompatibility displayed (e.g.: AZ x1xx does not suit AW x2xx)</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1394 'ID32892: x times 2 to the power 16'**

<ul style="list-style-type: none"><li>The numerical value in ID32892 does not correspond to an integral multiple of 2<sup>16</sup></li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameter: <ul style="list-style-type: none"><li>ID32892 Synchronous setpoint pulses divider</li></ul>		

### 1395 'No Main Operation Mode'

<ul style="list-style-type: none"><li>This message is generated on system initialization if the main operation mode(BA) has been stated with 0, i.e. NO BA or BA NOT ACTIVATED. The main operation mode must always be assigned with a valid operation mode code. Solely the secondary operation modes may also be assigned with 0 (BA NOT ACTIVATED)</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameter: <ul style="list-style-type: none"><li>ID32800 AMK main operation mode</li></ul>		

### 1396 'Operation mode not defined'

<ul style="list-style-type: none"><li>• This message is generated on system initialization if a not defined operation mode code was entered for the basic operation mode and / or for one of the secondary operation modes</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li></ul>		

### 1397 'Operation mode not impl.'

<ul style="list-style-type: none"><li>• This message is generated on system initialization if an operation mode code was entered for the basic operation mode and/or for one of the secondary operation modes which indeed is permissible, but is not yet supported in the existing version</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li></ul>		

**1398 'Setpoint source undefined'**

<ul style="list-style-type: none"><li>• This message is generated on system initialization if a code for the setpoint source was entered in one of the ID32800 ... 32809 which is not defined or if a setpoint source was preset which momentarily is not yet available. The code for the setpoint source is only checked if a sensible operation mode code has also been entered</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li><li>• ID32807 AMK secondary operation mode 7</li><li>• ID32808 AMK secondary operation mode 8</li><li>• ID32909 AMK secondary operation mode 9</li></ul>		

**1399 'Setpoint Source (SQ) is Not Admissible in this Operation Mode (BA)'**

<ul style="list-style-type: none"><li>• This message is generated on system initialization if a code for the setpoint source has been entered in one of the ID32800 ... 32809 which represents a not permissible combination in conjunction with the also entered code for the operation mode (e.g. position control with analog command value setting)</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li><li>• ID32807 AMK secondary operation mode 7</li><li>• ID32808 AMK secondary operation mode 8</li><li>• ID32909 AMK secondary operation mode 9</li></ul>		

## 1400 'Option Card for Setpoint Source (SQ)'

<ul style="list-style-type: none"><li>• This message is generated on system initialization if a code for a setpoint source was selected on an option card in one of the ID32800 ... ID32809 but the option card is not present</li></ul>			
<b>Device</b>		<b>AZ</b>	
<ul style="list-style-type: none"><li>• Option card is not present</li></ul>			
<b>Description</b>			
<b>Class</b>			
<b>Drive Behaviour</b>			
<b>Device Behaviour</b>		System run-up aborted	
<b>Additional Error Information (AMK Service)</b>			
<b>Error removal</b>		Recheck parameters: <ul style="list-style-type: none"><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li><li>• ID32807 AMK secondary operation mode 7</li><li>• ID32808 AMK secondary operation mode 8</li><li>• ID32909 AMK secondary operation mode 9</li></ul>	

## 1401 'MGQ not selected'

<ul style="list-style-type: none"><li>• This message is generated on system initialization if no valid code for the source of the torque limit was stated in one of the ID32800 ... 32809</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li><li>• ID32807 AMK secondary operation mode 7</li><li>• ID32808 AMK secondary operation mode 8</li><li>• ID32909 AMK secondary operation mode 9</li></ul>		

**1402 'Source of Torque Limit (MGQ) inadmissible for this Operation Mode (BA)'**

<ul style="list-style-type: none"><li>• This message is generated on system initialization if a source for the torque limit was stated in one of the ID32800 ... 32809 which is inadmissible in combination with the selected operation mode</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li><li>• ID32807 AMK secondary operation mode 7</li><li>• ID32808 AMK secondary operation mode 8</li><li>• ID32909 AMK secondary operation mode 9</li></ul>		

**1403 'Source of Torque Limit (MGQ) not implemented'**

<ul style="list-style-type: none"><li>• This message is generated on system initialization if a source for the torque limit was stated in one of the ID 32800 ... ID32809 which is not present in the existing system</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li><li>• ID32807 AMK secondary operation mode 7</li><li>• ID32808 AMK secondary operation mode 8</li><li>• ID32909 AMK secondary operation mode 9</li></ul>		

**1404 'Source of Torque Limit (MGQ) AW-analog assigned'**

<ul style="list-style-type: none"><li>• This message is generated on system initialization if an analog input was stated as source for the torque limit in one of the ID32800 ... 32809, but this analog input is already assigned with another source</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li><li>• ID32807 AMK secondary operation mode 7</li><li>• ID32808 AMK secondary operation mode 8</li><li>• ID32909 AMK secondary operation mode 9</li></ul>		



### 1405 'Speed Ramp (DZLRMP) function missing'

<ul style="list-style-type: none"><li>This message is generated on system initialization if a speed ramp function was stated in one of the ID32800 ... ID32809 which is not implemented in the existing system</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32800 AMK main operation mode</li><li>ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li><li>ID32807 AMK secondary operation mode 7</li><li>ID32808 AMK secondary operation mode 8</li><li>ID32909 AMK secondary operation mode 9</li></ul>		

### 1406 'Speed Filter (DZLFLT) function missing'

<ul style="list-style-type: none"><li>This message is generated on system initialization if a speed filter function was stated in one of the ID32800 ... ID32809 which is not implemented in the existing system</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32800 AMK main operation mode</li><li>ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li><li>ID32807 AMK secondary operation mode 7</li><li>ID32808 AMK secondary operation mode 8</li><li>ID32909 AMK secondary operation mode 9</li></ul>		

### 1407 'Selected Operation Mode (BA) not configured'

<ul style="list-style-type: none"><li>• This message is generated on an operation mode change if the selected operation mode number was not yet configured.</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li></ul>		

**1408 'Change of Operation Mode (BA) not executable'**

<ul style="list-style-type: none"><li>This message is generated on an operation mode change if the selected BA cannot be executed.</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32800 AMK main operation mode</li><li>ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li></ul>		

**1409 'Selected AW No. not active'**

<ul style="list-style-type: none"><li>• This message is generated on an operation mode change if the selected AW No. is not activated or not present.</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• Activate AW No. through "ID32812 Active drives"</li><li>• Do not command a not existing inverter module</li></ul>		

**1410 'Selected Parameter Set'**

• Selected parameter set not defined			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1411 'Type of Position Controller is Inadmissible'**

• The selected position controller type is momentarily not available or not permissible			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

### 1412 'Type of External Encoder inadmissible'

<ul style="list-style-type: none"><li>• The selected type of the external encoder system is not permissible.</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	<ul style="list-style-type: none"><li>• Diagnostic message comes only in connection with a position control selected in the operation mode parameter</li><li>• Recheck parameters:<ul style="list-style-type: none"><li>• ID32811 External position feed back source</li><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 secondary operation mode 1 ... 6</li></ul></li></ul>		

### 1413 'Missing option card'

<ul style="list-style-type: none"><li>• A not existing command value source was defined in the operation mode parameter (e.g. missing option card, wrong slot or missing drive)</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: ID32800 AMK main operation mode ID32801 ... ID32806 AMK secondary operation mode 1 ... 6		

### 1414 'Unknown AW type'

<ul style="list-style-type: none"><li>This message is reported if an AW module of unknown type was discovered in the analysis of the operation mode parameter, i.e. the AZ detects an AW the function of which is unknown to it. This error can arise if, for instance, an older AZ software version does not support new types of AW</li></ul>			
Device	AW AZ		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1415 'Wrong AW type'**

<ul style="list-style-type: none"><li>• The inverter does not support the stated operation mode (ID32800 ...)</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1416 'Change of Operation Mode inadmissible'**

<ul style="list-style-type: none"><li>• This message is reported if it is attempted to change the operation mode on an inverter module for parallel operation</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1417 'System diagnostics'**

<ul style="list-style-type: none"><li>• The chosen operation mode cannot be mapped</li></ul>			
Device	AZ		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li></ul>		

**1418 'System diagnostics'**

<ul style="list-style-type: none"><li>• The chosen operation mode cannot be mapped</li></ul>			
Device	AW		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li></ul>		

**1419 'System diagnostics'**

<ul style="list-style-type: none"><li>Speed filter activated but parameterised wrongly</li></ul>			
Device	AZ		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Check_dzlfilt( )
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32800 AMK main operation mode</li><li>ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li></ul>		

**1420 'System diagnostics'**

<ul style="list-style-type: none"><li>Speed ramp is activated but the ramp parameters are asymmetric or faulty</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Check_dzlrmp( )
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32780 Acceleration ramp</li><li>ID32781 Deceleration ramp</li><li>ID32800 AMK main operation mode</li><li>ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li></ul>		

**1421 'System diagnostics'**

• "ID82 Positive torque limit" faulty			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Check_momgrp()
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID82 Positive torque limit</li><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li></ul>		

## 1422 'System diagnostics'

<ul style="list-style-type: none"><li>Internal lists of controller configuration do not fit the operation mode</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Init_cfglist( )
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID32800 AMK main operation mode</li><li>ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li></ul>		

## 1423 'Inadmissible Setpoint Source'

<ul style="list-style-type: none"><li>• This warning occurs on analysis of the ID32948 Config. AZ message</li></ul>			
Device		AZ	
<ul style="list-style-type: none"><li>• Possibly AZ-IG option card not present</li></ul>			
Description			
Class			
Drive Behaviour			
Device Behaviour		System run-up aborted	
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32948 Message 4x32</li><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32806 AMK secondary operation mode 1 ... 6</li></ul>		

## 1424 'Inadmissible Setpoint Source'

<ul style="list-style-type: none"><li>This warning occurs on analysis of the ID32948 Config. AZ message</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameter: <ul style="list-style-type: none"><li>ID32849 Message 4x32</li></ul>		

**1425 'Polarity'**

<ul style="list-style-type: none"><li>• The polarities may only be changed in pair-wise (setpoint and actual value)</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	ID85 'Torque polarity'
		1	ID43 'Velocity polarity'
		2	ID55 'Closed loop polarity'
Error removal	Recheck parameter: <ul style="list-style-type: none"><li>• ID43 'Velocity polarity'</li><li>• ID55 'Closed loop polarity'</li><li>• ID85 'Torque polarity'</li></ul>		

**1426 'ID121/122 wrong'**

<ul style="list-style-type: none"><li>The gear factors ID121 and ID122 cannot be implemented. (The marginal conditions for the scaling factors are not fulfilled.)</li></ul>			
Device	AZ ihx		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>ID121 Load gear input revolution</li><li>ID122 Load gear output revolution</li></ul>		

**1427 'ID44 inadmissible'**

• An inadmissible bit combination was set in "ID44 Scaling of velocity data"			
Device	ihX		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1428 'ID86 inadmissible'**

<ul style="list-style-type: none"><li>• An inadmissible bit combination was set in "ID86 Torque data scaling"</li></ul>			
Device	ihX		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

**1429 'ID160 inadmissible'**

<ul style="list-style-type: none"><li>• An inadmissible bit combination was set in "ID160 Scaling method acceleration data"</li><li>• The data reference must agree with the position data reference in "ID76 Position data scaling"</li></ul>			
Device	ihX		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID76 Position data scaling</li><li>• ID160 Scaling method acceleration data</li></ul>		

**1430 'Position scaling'**

<ul style="list-style-type: none"><li>• The scaling set through the position scaling parameters ID77, ID78, ID79 as well as ID121, ID122 or ID123 and the current encoder resolution cannot be implemented. (The marginal conditions for the scaling factors are not fulfilled)</li></ul>			
Device	ihX		
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID77 Translation position scaling factor</li><li>• ID78 Translation position scaling exponent</li><li>• ID79 Rotatory position resolution</li><li>• ID121 Load gear input revolution</li><li>• ID122 Load gear output revolution</li><li>• ID123 Feed constant</li></ul>		



### 1431 'Velocity scaling'

<ul style="list-style-type: none"><li>• The scaling set through the velocity scaling parameters ID45, ID46 as well as ID123 cannot be implemented. (The marginal conditions for the scaling factors are not fulfilled)</li></ul>			
Device	ihX		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID45 Velocity scaling factor</li><li>• ID46 Velocity scaling exponent</li><li>• ID123 Feed constant</li></ul>		

### 1432 'Velocity scaling IPO'

<ul style="list-style-type: none"><li>• The scaling set through the velocity scaling parameters ID45, ID46 as well as ID121, ID122 or ID123 cannot be implemented. (The marginal conditions for the scaling factors are not fulfilled)</li></ul>			
Device	ihX		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID45 Velocity scaling factor</li><li>• ID46 Velocity scaling exponent</li><li>• ID121 Load gear input revolution</li><li>• ID122 Load gear output revolution</li><li>• ID123 Feed constant</li></ul>		

### 1433 'Torque scaling'

<ul style="list-style-type: none"><li>• The scaling set through the torque / force scaling parameters ID93, ID94 as well as ID123 and ID32771 cannot be implemented. (The marginal conditions for the scaling factors are not fulfilled)</li></ul>			
Device	ihX		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID93 Torque scaling factor</li><li>• ID94 Torque scaling exponent</li><li>• ID123 Feed constant</li><li>• ID32771 Nominal torque <math>M_N</math></li></ul>		

**1434 'Acceleration scaling'**

<ul style="list-style-type: none"><li>• The scaling set through the velocity scaling parameters ID161, ID162 as well as ID121, ID122 or ID123 cannot be implemented. (The marginal conditions for the scaling factors are not fulfilled)</li></ul>			
Device	ihX		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID161 Acceleration scaling factor</li><li>• ID162 Acceleration scaling exponent</li><li>• ID121 Load gear input revolution</li><li>• ID122 Load gear output revolution</li><li>• ID123 Feed constant</li></ul>		

**1435 'ID76 inadmissible'**

<ul style="list-style-type: none"><li>An inadmissible bit combination was set in "ID76 Position data scaling"</li></ul>			
Device	ihX		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal	Recheck parameter: <ul style="list-style-type: none"><li>ID76 Position data scaling</li></ul>		

**1436 'Decade switch'**

<ul style="list-style-type: none"><li>Configuration decade switch inadmissible See configuration of binary input</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error removal			

## 1437 'Configuration SIWL' (Software Pulse Transmission)

<ul style="list-style-type: none"><li>• Setpoint source in ID32964 inadmissible</li><li>• Inadmissible external actual position value selected; see ID32800 et seq.</li><li>• Encoder resolution is not compatible with ID32966 and ID32967</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

Device	KW-R05 KW-R06 KW-R07		
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	13	The encoder frequency for the observer filter is greater than 87,5 % of the maximum value.
	Error Removal		Reduce ID34259 'Maximum scanning frequency' or increase ID34251 'Line counts SIWL output' Verification is not possible until continuous operation
		19	The encoder frequency of the output encoder is greater than 87,5 % of the maximum value.
	Error Removal		<ul style="list-style-type: none"><li>Reduce ID34259 'Maximum scanning frequency' or increase ID34251 'Line counts SIWL output' Verification is not possible until continuous operation</li><li>Reduce speed</li><li>Reduce ID34253 'SIWL factor' or increase ID34254 'SIWL divisor'</li></ul>

Class	Error		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	No valid encoder type chosen in ID34250 'SIWL source'
		2	ID34252 'Offset position index' $\geq$ ID34251 'Line counts SIWL output'
		3	ID34251 'Line counts SIWL output' = 0
		4	ID34251 'Line counts SIWL output' $\geq 2^{22} \Rightarrow$ More than $2^{24}$ increments
		5	With bus encoder no line counts are specified (ID34255 'SIWL modulo IN' > 0)
		6	ID34256 'Filter observer' time constant is inadmissible (600 $\mu$ s $\leq$ ID34256 $\leq$ 20 ms)
		7	ID34259 'Maximum scanning frequency' of SIWL output encoder is inadmissible (1 kHz $\leq$ ID34259 $\leq$ 2 MHz)
		8	ID32953 'Encoder type' is not a valid encoder type as SIWL source
		9	ID32953 'Encoder type' is inadmissible as SIWL source e.g. sensorless encoder or V/f-operation mode
	Error Removal		Recheck parameters
		14	ID34253 'SIWL factor' is 0 or too large
		15	ID34254 'SIWL divisor' is 0 or too large
	Error Removal		<ul style="list-style-type: none"><li>• Reduce ID34253 and ID34254 with the same factor</li><li>• ID34254 <math>\neq</math> 0</li></ul>

Class	Error		
Drive Behaviour	Controlled Braking		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	12 <sup>1)</sup>	The encoder frequency for the observer filter is too large. So the sense of rotation can invert.
	Error Removal		Reduce ID34259 'Maximum scanning frequency' or increase ID34251 'Line counts SIWL output' Verification is not possible until continuous operation
		18 <sup>1)</sup>	The encoder frequency of the output encoder is too large. So the sense of rotation can invert.
	Error Removal		<ul style="list-style-type: none"><li>• Reduce ID34259 'Maximum scanning frequency' or increase ID34251 'Line counts SIWL output' Verification is not possible until continuous operation</li><li>• Reduce speed</li><li>• Reduce ID34253 'SIWL factor' or increase ID34254 'SIWL divisor'</li></ul>
		20 <sup>1)</sup>	Deviation is too large, the following error increases Verification is not possible until continuous operation
	Error Removal		<ul style="list-style-type: none"><li>• Reduce speed</li><li>• Increase ID34259</li><li>• Reduce ID34253</li><li>• Increase ID34254</li></ul>
		23 <sup>1)</sup>	Within application of a bus encoder ID34255 'SIWL modulo IN' is exceeded. An actual position value > Modulo IN + 1 is reported. Verification is not possible until continuous operation
	Error Removal		<ul style="list-style-type: none"><li>• Recheck ID34255</li><li>• Recheck modulo calculation</li></ul>
		24 <sup>2)</sup>	The encoder resolution is too high
	Error Removal		Select an encoder with a lower resolution
		25 <sup>2)</sup>	I encoder cannot be used as absolute encoder, pre-initialisation ≠ 0 is not possible
	Error Removal		ID34257.5 = 0
Remarks	1)	With this error occurring, the position value might be lost e.g. because the SIWL maximum frequency was exceeded After clearing the error, the SIWL must be re-initialised and the zero pulse of the SIWL output must be set again.	
	2)	This error will be displayed again with the next system run-up (e.g. after clear error) if pre-initialisation is parameterised (ID34257.5 = 1) and the error is not removed.	
Error Removal	Recheck parameters in general: <ul style="list-style-type: none"><li>• ID32953 'Encoder type'</li><li>• ID34250 'SIWL source'</li><li>• ID34251 'Line counts SIWL output'</li><li>• ID34252 'Offset position index'</li><li>• ID34253 'SIWL factor'</li><li>• ID34254 'SIWL divisor'</li><li>• ID34255 'SIWL modulo IN'</li><li>• ID34256 'Filter observer'</li><li>• ID34257 'SIWL control'</li><li>• ID34258 'SIWL status'</li><li>• ID34259 'Maximum scanning frequency'</li></ul>		

**1438 'Band width barrier'**

<ul style="list-style-type: none"><li>• Band width barrier is not configurable</li><li>• Inadmissible entry in "ID32932 Barrier frequency" or "ID32933 Band width"</li><li>• ID32933 &gt; ID32932...</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32932 Barrier frequency</li><li>• ID32933 Band width</li></ul>		

**1440 'Data record changed'**

<ul style="list-style-type: none"><li>"ID32996 Data signification" of the current data record does not agree with the serial number of the unit</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal	Recheck parameter: <ul style="list-style-type: none"><li>ID32996 Data signification</li></ul>		

**1441 'Clock synchronization'**

<ul style="list-style-type: none"><li>• Clock master / clock slave combination not permissible</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	SERCOS parameterized as clock master and ACC as clock slave
		2	SERCOS parameterized as clock master and PLC as clock slave
		3	PLC parameterized as clock master and ACC as clock slave
Error Removal			

## 1442 'SEEP configuration'

<ul style="list-style-type: none"><li>• An inadmissible value has been detected in a check of a SEEP cell</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	Test overload time cell 20014, 20018 and 20024
Error Removal			

## 1443 'Test generator'

• Incorrect parameter setting for test generator			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	"ID34044 TG Configuration list" too large (actual size > 32 bytes)
		2	Faulty configuration
		3	RF can't be activated by the test generator
		4	DC BUS enable(UE) is missing
		6	Amplitude "High" < Amplitude "Low"
		7	Unused signal destination
		8	Incorrect frequency
		9	Status "Init function"
		10	Parameters write / read error
		11	System booting could not be executed
		12	Change of operating mode could not be executed
		14	Memory error for sine table
		15	SBM System ready is missing
		16	Ramp for trapezium function could not be executed
		19	RF disable after test generator is started
Error Removal			

**1444 'PWM frequency'**

<ul style="list-style-type: none"><li>Incorrect parameter setting for PWM frequency</li></ul>			
Device			
Description			
Class	Error		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	ID34048 'PWM frequency' does not contain 4 kHz or 8 kHz
		1	4 kHz values in the device SEEP are invalid
		4	ID34048 'PWM frequency' has been changed. System OFF/ON, (HW reset) required
Error Removal	<ul style="list-style-type: none"><li>Info 1 = 4 System OFF/ON, (HW reset) or reset the PWM frequency to the original value</li></ul>		

Device	KE		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	ID34048 'PWM frequency' does not contain 8 kHz
Error Removal			



## 1445 'Current controller'

<ul style="list-style-type: none"><li>Incorrect parameter setting for current</li></ul>			
Device			
Description			
Class	Error		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	Kpi in Q controller not workable
		1	Kii in Q controller not workable
		3	Kpi in D controller not workable
		4	Kii in D controller not workable
		5	"ID34151 Kp current Q" = 0; "ID34152 Kp current D" ≠ 0
		6	Current adaptation slope Kpi in Q controller too large
		7	Current adaptation slope Kii in Q controller too large
		8	Application threshold current adaptation ID34177 'Lower threshold current adaption'> ID34178 'Upper threshold current adaption'
		100	Model-based current controller is not possible. Only for synchronous machines
Gerät	KU- / KW-R03		
	Info 1	2	"ID34051 Kp current D" = 0; "ID34052 TN current D" ≠ 0
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>ID34051 'Current path D proportional gain KP'</li><li>ID34052 'Current path D integral-action time TN'</li><li>ID34151 'Current path Q proportional gain KP'</li><li>ID34152 'Current path D proportional gain KP'</li><li>ID34177 'Lower threshold current adaption'</li><li>ID34178 'Upper threshold current adaption'</li><li>ID34179 'Gradient path Q proportional gain'</li><li>ID34180 'Gradient path Q integral-action time'</li></ul> Info 1 = 100: Deactivate model-based current control <ul style="list-style-type: none"><li>ID32773 'Service bits' bit 27</li></ul>		

## 1446 'EF can not be activated'

<ul style="list-style-type: none"><li>EF monitoring is selected in "ID32901 Global service bits" but the controller card does not meet the hardware requirements</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal	Recheck parameter: <ul style="list-style-type: none"><li>ID32901 Global service bits</li></ul>		

**1447 'Motor encoder gear'**

<ul style="list-style-type: none"><li>• The result of the calculation (ID32776 * ID32961)/32960 must be an integer value.</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32776 Sinus encoder period</li><li>• ID32960 Input motor encoder gear</li><li>• ID32961 Output motor encoder gear</li></ul>		

**1448 'ID113 > ID34153'**

<ul style="list-style-type: none"><li>"ID113 Maximum Speed" is higher than "ID34153 Maximum Speed Motor" which was written into the encoder data base.</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>ID113 Maximum speed</li><li>ID34153 Maximum speed motor</li></ul>		

**1451 'Configuration temperature sensor'**

<ul style="list-style-type: none"><li>• The sensor defined in ID34166 is not valid</li><li>• The user defined characteristic according to ID34202, ID34203, ID34204 is not plausible</li><li>• Hardware not suitable for temperature sensor PT1000</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	The configured sensor in ID34166 is not valid
		1	User defined characteristic is not plausible
		2	Hardware not suitable for temperature sensor PT1000
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID34166 Temperature sensor motor</li><li>• ID34203 Voltage at 25 degree</li><li>• ID34204 Voltage at 75 degree</li><li>• ID34205 Voltage at 125 degree</li></ul> Info 1 = 2: Replace device or use another temperature sensor		

### 1453 'Feed forward control'

• Error on feed forward control			
Device	KW-R05 / KW-R06 / iX / iC / iDT5 / ihX / KW-R26 / KW-R27		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	Source acceleration for load model is not defined. Several sources were selected. ID34225 'Mode feed forward control' Bit 0 , Bit 2, or Bit 3
Error Removal	Select only one acceleration source		

### 1454 'Error initialisation angle observer'

• Error initialisation angle observer			
Device	KW-R06 iDT5 iX / i3X iC		
Description	The observer for sensorless detection of the rotor position could not be initialised		
Class	Error		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info1	1	ID34233 = 0 and ID34164 = 0
		2	ID34045 = 0, ID34046 = 0 and ID34167 = 0
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID34045 'Inductance path D'</li><li>• ID34046 'Inductance path Q'</li><li>• ID34164 'Terminal resistance'</li><li>• ID34167 'Terminal Inductance'</li><li>• ID34233 'Phase resistance'</li></ul>		

### 1455 'Plausibility I/O'

• Configured inputs and outputs for plausibility check			
Device	KW-R0x / KW-R2x / iC / iDT5 / iX / ihX		
Description			
Class	Error		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	Only 1 analog input is configured
		2	Input and output simultaneously configured in I/O port
		3	Limit switch and stop setpoint function is simultaneously configured in positive or negative direction
Error removal	• Check I/O Konfiguration		

### 1456 'Ratio ID33194 to ID33195 incorrect'

• Plausibility check ID33194 and ID33195
--

Device	KW-R26 / KW-R27		
Description	The ratio ID33194 'Tolerance limit estimator' to ID33195 'Monitoring cycle estimator' is incorrect.		
Class	Error		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	ID33194 < 1
		2	ID33195 < 1
		3	$ID33194 \times 62,5\mu s > \frac{ID33195}{2}$
Error removal	<p>Check the following IDs:</p> <p>ID33194 'Tolerance limit estimator'</p> <p>ID33195 'Monitoring cycle estimator'</p> <p>The content of the IDs must meet the following requirements:</p> <ul style="list-style-type: none"><li>ID33194 ≥ 1</li><li>ID33195 ≥ 1</li><li><math>ID33194 \times 62,5\mu s \leq \frac{ID33195}{2}</math></li></ul>		

### 1457 'ID38 less than ID39'

<ul style="list-style-type: none"> <li>Plausibility monitoring of speed limits (ID38 'Positive velocity limit' <math>\geq</math> ID39 'Negative velocity limit')</li> </ul>	
Device	iX / iC / iDT5 / ihX / KW-R24 / KW-R24-R / KW-R25 / KW-R26 / KW-R27
Description	The condition ID38 $\geq$ ID39 must always be true. If ID38 < ID39, the diagnostic message 1457 is generated. The error can occur during parametrization and during operation by temporary changes or by specifying the limits above a cyclic channel.
Class	Error
Drive Behaviour	Error in parametrization → system run-up aborted Error during operation → Coast to stop
Device Behaviour	
Additional Error Information (AMK Service)	
Error Removal	<p>Check the following parameters:</p> <ul style="list-style-type: none"> <li>ID38 'Positive velocity limit'</li> <li>ID39 'Negative velocity limit'</li> </ul>

## 3.6 No. 1536 ... 1559 Serial EEPROM

### 1537 'System diagnostics'

<ul style="list-style-type: none"> <li>SEEP error in the inverter</li> <li>See "ID32773 Service bits", SBM withdrawal</li> </ul>	
Device	
Description	
Class	
Drive Behaviour	
Device Behaviour	System run-up aborted
Additional Error Information (AMK Service)	
	Inadmissible SEEP order
Error Removal	

**1538 'System diagnostics'**

• Taskmaster- / taskslave combination is inadmissible			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Error in AWMON reading SEEP
Error Removal			

**1539 'SEEP 1st checksum'**

• Checksum of the SEEP range 1 is not correct			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Inadmissible SEEP order
Error Removal			

Device	KE		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info1	0	Error checksum SEEP, cell 0 - 37
Error Removal			

**1540 'SEEP 2nd checksum'**

• Checksum of the SEEP range 2 is not correct			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Inadmissible SEEP order
Error Removal			

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info1	1	Error checksum SEEP, cell 39 - 49
		2	Error checksum SEEP, cell 64 - 78
		3	Error checksum SEEP, cell 79 - 93
		4	Error checksum SEEP, cell 94 - 108
		5	Error checksum SEEP, cell 109 - 123
Error Removal			

### 1541 'Commanded AW missing'

<ul style="list-style-type: none"><li>• The commanded inverter module is not present</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

### 1542 'System diagnostics'

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			SEEP driver error
Error Removal			

### 1543 'System diagnostics'

• The manufacturer information was not written correctly in the SEEP			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

### 1544 'ID32953 no adjustment permissible'

<ul style="list-style-type: none"> <li>If "ID32953 Encoder type" ≠ A type encoder no encoder basic adjustment is permissible</li> </ul>			
---	--	--	--

Device	
Description	
Class	
Drive Behaviour	
Device Behaviour	System run-up aborted
Additional Error Information (AMK Service)	
Error Removal	

### 1545 'System diagnostics'

<ul style="list-style-type: none"> <li>Errors occurred when writing the current encoder values in the SEEP. Values were not written correctly</li> </ul>	
Device	
Description	
Class	
Drive Behaviour	
Device Behaviour	System run-up aborted
Additional Error Information (AMK Service)	
Error Removal	

### 1546 'System diagnostics'

<ul style="list-style-type: none"> <li>Fault counter is missing</li> </ul>	
Device	AZ
<ul style="list-style-type: none"> <li>Possibly AW is not present, ...</li> </ul>	
Description	
Class	
Drive Behaviour	
Device Behaviour	System run-up aborted
Additional Error Information (AMK Service)	
	SEEP fault counter missing
Error Removal	

### 1547 'System diagnostics'

Device	
Description	
Class	
Drive Behaviour	
Device Behaviour	System run-up aborted
Additional Error Information (AMK Service)	
	AWMON timeout / AZSEEP driver
Error Removal	

**1548 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Default in SEEP, after ½h for not initialized SEEP
Error Removal			

**1549 'System diagnostics'**

• Clock master / clock slave combination not permissible			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			SEEP Alloc / Dealloc timeout
Error Removal			

**1550 'System diagnostics'**

• Clock master / clock slave combination not permissible			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			SEEP Alloc / Dealloc error
Error Removal			

**1551 'Encoder track failed'**

<ul style="list-style-type: none"><li>• Encoders actual position value determined internally from inputs G1N/G1I or G2N/G2I does not change over time</li><li>• Occurs during encoder basic adjustment, failure of an encoder track</li><li>• Signals not present at G1N, G1I, G2N or G2I</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**1552 'Encoder adjustment abort'**

• Encoder adjustment for was aborted			
--------------------------------------	--	--	--



Device	KW-R06 / KW-R25 / KW-R26 / KW-R27 / iX-R3 / iC-R3 / iDT5-R3 / ihX		
Description	Encoder adjustment for setting of commutation was aborted		
Class	Error		
Drive Behaviour	Coast to stop		
Device Behaviour	Controller enabled (RF) is withdrawn internally		
Additional Error Information (AMK Service)			
	Info 1	0	--
		1	RF was set before the command <i>encoder adjustment</i> was set.
		2	ID32953 'Encoder type': Encoder type or motor model not correct
		3	RF was set to zero before the function <i>encoder adjustment</i> was finished.
		4	RF is active while service command is active
Error Removal	<ul style="list-style-type: none"><li>Do not set RF before the function <i>encoder adjustment</i> is started</li><li>Do not reset RF before the function <i>encoder adjustment</i> is finished</li><li>Withdraw RF and execute the service command again</li><li>Recheck parameter:<ul style="list-style-type: none"><li>ID32953 'Encoder type'</li></ul></li></ul>		
<ul style="list-style-type: none"><li>Encoder adjustment was aborted</li></ul>			
Device	KU-R03(P) KW-R03(P) KW-R04		
Description			
Class	Error		
Drive Behaviour	Coast to stop		
Device Behaviour	Controller enabled (RF) is withdrawn internally		
Additional Error Information (AMK Service)			
	Info 1	1	Faulty encoder type (during changing encoder position)
		2	Faulty encoder type (during encoder adjustment)
		3	RF is set or withdrawn too early (alignment)
		4	RF is withdrawn (during encoder setting)
		5	RF is set or withdrawn too early (during encoder setting)
		6	Time out 29 s is exceeded with SWK
Error Removal	<ul style="list-style-type: none"><li>Set RF not before the function <i>encoder adjustment</i> is started</li><li>Reset RF not before the function <i>encoder adjustment</i> is finished</li><li>Recheck parameters:<ul style="list-style-type: none"><li>ID32953 'Encoder type'</li><li>ID34094 'Rise time SWC'</li><li>ID34099 'Delay time SWC'</li></ul></li></ul>		

## 1553 'Encoder adjustment timeout'

• Timeout encoder adjustment			
Device	Controller cards KU-R03(P) KW-R03(P) KW-R04		
Description	After command <i>encoder adjustment</i> was started RF was not set within the timeout time		
Class	Error		
Drive Behaviour	Drive keeps standstill		
Device Behaviour	RF = 0 is kept		
Additional Error Information (AMK Service)			
	Info1	1	time out exceeded during encoder adjustment
		2	time out exceeded during rotor alignment
Error Removal	• After the command <i>encoder adjustment</i> RF must be set within 60 seconds.		

• Timeout while encoder adjustment			
Device	Controller cards KW-R06		
Description	A timeout occurred during encoder adjustment		
Class	Error		
Drive Behaviour	Drive keeps standstill		
Device Behaviour	RF = 0 is kept		
Additional Error Information (AMK Service)			
	Info1	0	--
		1	RF was not set within 10 s
		2	RF was not withdrawn within 2 min
		3	RF was not withdrawn automatically within 10 s
Error Removal	<ul style="list-style-type: none"><li>• Configure a binary input as source for RF and chose it</li><li>• After the command <i>encoder adjustment</i>, RF must be set quickly</li><li>• For safety RF will be withdrawn after 2 minutes if rotor is only adjusted</li><li>• Recheck parameter:<ul style="list-style-type: none"><li>• ID32796 'Source RF'</li></ul></li></ul>		

## 1554 'ID32776 Sinus Encoder Period is faulty'

Device			
Description	The number of encoder teeth is counted over one revolution of the encoder from reference pulse to reference pulse and compared with parameter "ID32776 Sinus encoder period". A difference has occurred here		
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>Occurs during the basic encoder adjustment</li><li>Recheck parameter:<ul style="list-style-type: none"><li>ID32776 Sinus encoder period</li></ul></li></ul>		

**1555 'Reference pulse'**

Device			
Description	The reference pulse could not be detected during a determined period		
Class	Warning		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal	• Occurs during the basic encoder adjustment		

**1556 'Reference Pulse - Encoder Input'**

Device			
Description	The comparator voltage, which generates the digital pulse D0 from the encoder signal S0, is determined in the process. This comparator voltage has run to the minimum or maximum value		
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• One of the G0N / G0I signals (reference pulse track) is not present</li><li>• Occurs during the basic encoder adjustment</li></ul>		

**1557 'Turn axis'**

Device			
Description	No change of the inverter's internal encoder signal counter was determined during a defined time period		
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	• Occurs during the basic encoder adjustment		

**1558 'System diagnostics'**

• Inverter transfers faulty encoder feedback values			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Online adjustment
Error Removal			

### 3.7 No. 1792 ... 1849 Drive commanding

#### 1794 'System diagnostics'

• Interpolator			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO, end position not reached
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID41 Homing velocity</li><li>• ID136 Positive acceleration</li><li>• ID137 Negative acceleration</li><li>• ID222 Spindle position speed</li><li>• ID32956 Additional acceleration value</li></ul>		

#### 1795 'System diagnostics'

• Interpolator			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO, dxidiv factor
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID41 Homing velocity</li><li>• ID136 Positive acceleration</li><li>• ID137 Negative acceleration</li><li>• ID222 Spindle position speed</li><li>• ID32956 Additional acceleration value</li></ul>		

#### 1796 'System diagnostics'

• Interpolator			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO, mkipstart
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID41 Homing velocity</li><li>• ID136 Positive acceleration</li><li>• ID137 Negative acceleration</li><li>• ID222 Spindle position speed</li><li>• ID32956 Additional acceleration value</li></ul>		

**1797 'System diagnostics'**

• Interpolator			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO, mkipstart = 8 in Ipsteuer
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID41 Homing velocity</li><li>• ID136 Positive acceleration</li><li>• ID137 Negative acceleration</li><li>• ID222 Spindle position speed</li><li>• ID32956 Additional acceleration value</li></ul>		

**1798 'System diagnostics'**

• Interpolator			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO, mkipstart = 1 or 2 in Ipsteuer
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID41 Homing velocity</li><li>• ID136 Positive acceleration</li><li>• ID137 Negative acceleration</li><li>• ID222 Spindle position speed</li><li>• ID32956 Additional acceleration value</li></ul>		

**1799 'System diagnostics'**

• Interpolator			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO, mkipstart = 4 in Ipsteuer
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID41 Homing velocity</li><li>• ID136 Positive acceleration</li><li>• ID137 Negative acceleration</li><li>• ID222 Spindle position speed</li><li>• ID32956 Additional acceleration value</li></ul>		

**1800 'System diagnostics'**

<ul style="list-style-type: none"><li>• Interpolator</li><li>• Reduction ID136, ID137</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO standardisation avzgmax too large
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID41 Homing velocity</li><li>• ID136 Positive acceleration</li><li>• ID137 Negative acceleration</li><li>• ID222 Spindle position speed</li><li>• ID32956 Additional acceleration value</li></ul>		

**1801 'System diagnostics'**

<ul style="list-style-type: none"><li>• Interpolator</li><li>• Increase ID136, ID137</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO standardisation avzgmax too small
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID41 Homing velocity</li><li>• ID136 Positive acceleration</li><li>• ID137 Negative acceleration</li><li>• ID222 Spindle position speed</li><li>• ID32956 Additional acceleration value</li></ul>		

**1802 'System diagnostics'**

<ul style="list-style-type: none"><li>• Interpolator</li><li>• Increase ID136, ID137</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO standardisation amax too small
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID41 Homing velocity</li><li>• ID136 Positive acceleration</li><li>• ID137 Negative acceleration</li><li>• ID222 Spindle position speed</li><li>• ID32956 Additional acceleration value</li></ul>		

### 1803 'System diagnostics'

<ul style="list-style-type: none"><li>• Interpolator</li><li>• Check control speed</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO standardisation vmaxein or voein too large
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID41 Homing velocity</li><li>• ID136 Positive acceleration</li><li>• ID137 Negative acceleration</li><li>• ID222 Spindle position speed</li><li>• ID32956 Additional acceleration value</li></ul>		

### 1804 'System diagnostics'

<ul style="list-style-type: none"><li>• Check final value (target value)</li><li>• Operator transmit inadmissible data</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO standardisation xieneinneu-xiendein alt too large
Error Removal			

### 1805 'System diagnostics'

<ul style="list-style-type: none"><li>• Interpolator standardisation: dxifaktor with remainder ID136, ID137, ID116 ratio to one another</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO standardisation dxifaktor remainder
Error Removal	Recheck parameters:		
	<ul style="list-style-type: none"><li>• ID116 Resolution motor encoder</li></ul>		
	<ul style="list-style-type: none"><li>• ID136 Positive acceleration</li></ul>		
	<ul style="list-style-type: none"><li>• ID137 Negative acceleration</li></ul>		

**1806 'System diagnostics'**

<ul style="list-style-type: none"><li>Interpolator standardisation: dxifaktor = 0: increase ID136, ID137, ID116</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO standardisation dxifaktor
Error Removal	Recheck parameters:		
	<ul style="list-style-type: none"><li>ID116 Resolution motor encoder</li></ul>		
	<ul style="list-style-type: none"><li>ID136 Positive acceleration</li></ul>		
	<ul style="list-style-type: none"><li>ID137 Negative acceleration</li></ul>		

**1807 'System diagnostics'**

<ul style="list-style-type: none"><li>• Permissible time between KMD commanding and BAV operation mode management was exceeded</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Timeout KMD -> BAV
Error Removal			

**1808 'System diagnostics'**

• Operation mode management acknowledges error after commanding			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Error KMD -> BAV
Error Removal			



**1809 'System diagnostics'**

<ul style="list-style-type: none"><li>• Inadmissible commanding code in KMD-SS, check interface</li><li>• STOP order if IPO not active</li><li>• FURTHER order, if IPO not stopped</li><li>• Undefined order – Order does not correspond to START, ABORT, STOP, FURTHER, VALUE NEW</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**1810 'System diagnostics'**

<ul style="list-style-type: none"><li>Inadmissible commanding function in KMD-SS, check interface</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**1811 'System diagnostics'**

<ul style="list-style-type: none"><li>• Inverter can no longer be addressed</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Timeout KMD -> AWMON
Error Removal			

**1812 'System diagnostics'**

• Inverter can no longer be addressed			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Error KMD -> AWMON
Error Removal			

**1813 'KMD user error'**

<ul style="list-style-type: none"><li>Inadmissible order in KMD-SS</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Check interface		

**1814 'System diagnostics'**

<ul style="list-style-type: none"> <li>Inadmissible commanding operation mode selected, BA may be assigned code 0...9 according to ID32800 ...32809</li> </ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"> <li>Check interface</li> <li>Recheck parameters: <ul style="list-style-type: none"> <li>ID32800 AMK main operation mode</li> <li>ID32801 ... ID32809 AMK secondary operation mode 1 ... 9</li> </ul> </li> </ul>		

**1815 'Controller enable missing'**

Commanding without RF, QRF not possible, control interrupted.			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Order must be repeated after RF activation or starting conditions must be restored (e.g. by means of abort function code)		

**1816 'Not homed'**

<ul style="list-style-type: none"><li>Inverter is not homed, function requires a homed system</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**1817 'System diagnostics'**

• Synchronous running source in synchronous running inadmissible			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID32800 AMK main operation mode</li><li>• ID32801 ... ID32805 AMK secondary operation mode 1 ... 5</li></ul>		

**1818 'System diagnostics'**

Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Inadmissible state in KMD
Error Removal			

**1819 'System diagnostics'**

<ul style="list-style-type: none"><li>• Inverter address calculation impossible, operation mode incomplete</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Recheck parameters: ID32800 AMK main operation mode ID32801 ... ID32806 AMK secondary operation mode 1 ... 6		

**1820 'System diagnostics'**

<ul style="list-style-type: none"><li>• Ramp down error e.g. in lifting axis function, time according to ID32954 was exceeded</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Recheck parameter: <ul style="list-style-type: none"><li>• ID32954 Time ramp down monitor</li></ul>		

**1821 'System diagnostics'**

• IPO cannot perform direction change			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**1822 'System diagnostics'**

• IPO cannot be activated			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO timeout
Error Removal			

**1823 'System diagnostics'**

• IPO cannot be activated			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			IPO error
Error Removal			

**1824 'System diagnostics'**

• Inadmissible KMD code in KMD-SS, inadmissible timing check interface			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			RESERVE
Error Removal			

**1825 'System diagnostics'**

<ul style="list-style-type: none"><li>SINCOS encoder, encoder does not report within 2 sec. through RS485-SS</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour	SBM withdrawal		
Additional Error Information (AMK Service)			
Error Removal	Check encoder or cable		

**1826 'System diagnostics'**

• SINCOS encoder, checksum of the encoder acknowledgement does not agree (XOR)			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour	SBM withdrawal		
Additional Error Information (AMK Service)			
Error Removal	Possible causes are faults of the RS485 signal cables, or of the RS485 input		

**1827 'System diagnostics'**

<ul style="list-style-type: none"><li>Invalid encoder type, the SINCOS encoder type is not permitted in the spindle positioning and synchronous control drive function</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Recheck parameter: <ul style="list-style-type: none"><li>ID32953 Encoder type</li></ul>		

**1828 'System diagnostics'**

<ul style="list-style-type: none"><li>• This message can occur only in connection with an abort of drive functions (or RF withdrawal during an active drive function)</li><li>• The user has not set the synchronization bit “ub_basync” for external command value synchronization and has attempted an operation mode change (inadmissible!), error message and SBM withdrawal (inverter cannot be controlled, operation mode change in the operation mode change)</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**1829 'System diagnostics'**

"ID55 Closed loop polarity" and "ID43 Velocity polarity" may be only positive in spindle positioning or synchronous control drive function

<b>Device</b>	
<b>Description</b>	
<b>Class</b>	Warning
<b>Drive Behaviour</b>	
<b>Device Behaviour</b>	
<b>Additional Error Information (AMK Service)</b>	
<b>Error Removal</b>	Recheck parameters: <ul style="list-style-type: none"> <li>• ID43 Velocity polarity</li> <li>• ID55 Closed loop polarity</li> </ul>

**1830 'System diagnostics'**

- "Flying saw" drive function, waiting distance (ID278) is greater than the reference value 2PI according to ID116, ID117 or ID103

<b>Device</b>	
<b>Description</b>	
<b>Class</b>	Warning
<b>Drive Behaviour</b>	
<b>Device Behaviour</b>	
<b>Additional Error Information (AMK Service)</b>	
<b>Error Removal</b>	Recheck parameters: <ul style="list-style-type: none"> <li>• ID103 Modulo value</li> <li>• ID116 Resolution motor encoder</li> <li>• ID117 Resolution external encoder</li> <li>• ID278 Synchronous additional angle position</li> <li>• ID32800 AMK main operation mode</li> </ul>

**1831 'System diagnostics'**

- SINCOS encoder, encoder reports error (error bit set)

<b>Device</b>	
<b>Description</b>	
<b>Class</b>	Warning
<b>Drive Behaviour</b>	
<b>Device Behaviour</b>	SBM withdrawal
<b>Additional Error Information (AMK Service)</b>	
<b>Error Removal</b>	Defective encoder or faulty system

**1832 'System diagnostics'**

<ul style="list-style-type: none"><li>• “Absolute positioning” drive function</li><li>• The preset position is more than  31Bit  removed from the current position command value (inadmissible!)</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**1833 'System diagnostics'**

• “Lifting axis” drive function, $ n_{\text{actual}}  \geq  1.2 \times n_{\text{limit}} $			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Check loading of the system in connection with the preset limits		

**1834 'System diagnostics'**

<ul style="list-style-type: none"><li>• SINCOS encoders: The difference of the double sampling of the absolute value in the “Homing” drive function does not lie in the position window according to ID 57.</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour	SBM withdrawal		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Axis in motion or system disturbed</li><li>• Recheck parameter:<ul style="list-style-type: none"><li>• ID57 In position window</li></ul></li></ul>		

**1835 'System diagnostics'**

<ul style="list-style-type: none"><li>• Special lift function</li><li>• Driver commanding &lt;-&gt; database disturbed</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Internal interface assigned or parameterized EEPROM defective</li></ul>		

**1836 'System diagnostics'**

<ul style="list-style-type: none"><li>• Special Lift function</li><li>• Check lift learning travel error</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Check KSE, KS contacts		

**1837 'System diagnostics'**

<ul style="list-style-type: none"><li>• Special Lift function</li><li>• Check invalid order input</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	KMD interface (floor input and driving order in variable 1)		

**1838 'System diagnostics'**

<ul style="list-style-type: none"><li>• Special Lift function</li><li>• "ID32798 User list 1" contains invalid data</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Recheck parameter: ID32798 User list 1		



**1839 'System diagnostics'**

<ul style="list-style-type: none"><li>• Special Lift function</li><li>• The shaft contact KS contact monitoring detects an invalid contact position. The contact monitoring can be switched through "ID32798 User list 1"</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Recheck parameter: <ul style="list-style-type: none"><li>• ID32798 User list 1</li></ul>		

**1840 'System diagnostics'**

<ul style="list-style-type: none"><li>• Special Lift function</li><li>• Inadmissible interruption of an active lift function (SBM withdrawal, emergency stop switch, ...)</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**1841 'System diagnostics'**

Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			RESERVE
Error Removal			

**1842 'System diagnostics'**

<ul style="list-style-type: none"><li>• Special lift function</li><li>• KS in the destination not equal to 1</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**1843 'System diagnostics'**

Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			RESERVE
Error Removal			

**3.8 No. 2048 ... 2079 Logical subscriber, S-BUS****2049 'System diagnostics'**

Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			No memory enable in PDU processing
Error Removal			

**2050 'System diagnostics'**

ID address or ID property is not known			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1		The command code of the PDU to be evaluated is not known (LT: Logical subscriber) only PS3 software problem version PS ≤ 2.07
		5	ID is not available
		20	ID has no unit
		21	ID has no minimum
		22	ID has no maximum
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			

**2051 'System diagnostics'**

• Waiting time after order to logical subscriber is exceeded			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			LT timeout
Error Removal			

**2052 'System diagnostics'**

<ul style="list-style-type: none"><li>• The ID to be edited is not contained in the database of the system</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2053 'System diagnostics'**

• Error acknowledgement in commanding the database			
Device			
Description	• The ID can not be written		
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1		Error LT-DTH
		0	invalid access, access to invalid parameters
		11	ID maximum is exceeded
		12	ID minimum is below
		13	ID is read only
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			
	ADB-File update in AIPEX PRO		
	ADB File update in Controller		

**2054 'System diagnostics'**

<ul style="list-style-type: none"> <li>Error acknowledgement in commanding the monitor</li> </ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			

Device Behaviour			
Additional Error Information (AMK Service)			
			Error LT-MONITOR
Error Removal			

## 2055 'System diagnostics'

• Error acknowledgement in commanding the serial EEPROM			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Error LT-SEEP
Error Removal			

## 2056 'System diagnostics'

• Error acknowledgement in commanding the operation mode management			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Error LT-BAV
Error Removal			

## 2057 'System diagnostics'

• Error acknowledgement in commanding the drive commanding KMD			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Error LT-KMD
Error Removal			

## 2058 'System diagnostics'

• Error in LT → KMD commanding inverter, LT → KMD - logical subscriber at KMD-SS			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2059 'System diagnostics'**

• Error in LT→ KMD commanding AW2			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2060 'System diagnostics'**

• Error in LT → KMD commanding AW3			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2061 'System diagnostics'**

• Error in LT → KMD commanding AW4			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2062 'System diagnostics'**

• Error in LT → KMD commanding AW5			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2063 'System diagnostics'**

• Error in LT → KMD commanding AW6			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2064 'System diagnostics'**

• Error in LT → MD commanding AW7			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2065 'System diagnostics'**

• Error in LT → KMD commanding AW8			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2066 'System diagnostics'**

• Error acknowledgement in commanding a drive control			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			LT drive error
Error Removal			

**2067 'System diagnostics'**

• Error acknowledgement in commanding the diagnostics			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			LT diagnostics error
Error Removal			

**2068 'System diagnostics'**

• Error acknowledgement in commanding the display function			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Error LT display
Error Removal			

**2069 'System diagnostics'**

• Error acknowledgement in commanding the lift function			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Error LT lift
Error Removal			

**2070 'System diagnostics'**

• LT-SBUS, inverter not present			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2071 'System diagnostics'**

<ul style="list-style-type: none"><li>Failure in the s-bus hardware; re-boot system or check hardware</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	Error during initializing of S-Bus (caused by ABK card)
		2	Error in COM port
Error Removal			

**2072 'System diagnostics'**

• S-bus software received faulty information from connected device, check sent messages			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1	Module received a PDU from wrong S-bus port
		2	S-bus PDU contains a unknown S-bus attribute
		3	S-bus PDU contains a unknown Sercos element number in task
		4	Drive has reported a SB_task_error
		5	S-bus PDU contains unknown S-bus command code
Error Removal			



## 2073 'System diagnostics'

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	33	Length of ID34040 not permissible
		34	In ID34040 Time base not permissible
		35	In ID34040 Trigger position not permissible
		36	Too many values per cycle
		37	Resource error
		39	Signal code not available
		40	Command code not permissible
		41	A new configuration was transmitted during the RUN mode
		42	Read-out mode not permissible
		44	Channel number not permissible
		45	Buffer length incorrect
		46	Configuration error – a triggering of an external source (Bit0 ... 1) and source for external triggering (Bit4) were adjusted isochronal
		47	An external triggering was configured but there is no free PDO
		48	The difference between the system watches of the trigger sender and the trigger receiver is negative
		49	No free HEAP for the buffer
Error Removal	<ul style="list-style-type: none"><li>• Check scope parameters</li><li>• Recheck Parameter<ul style="list-style-type: none"><li>• ID34040 OSC configuration list</li></ul></li></ul>		

## 2074 'System diagnostics'

• Disturbance of scope function			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	Allocate memory
		2	Re-allocate memory
Error Removal			

### 3.9 No. 2304 ... 2370 Inverter Hardware

#### 2305 'Phase U Short Circuit'

Device	AW		
<ul style="list-style-type: none"><li>As from AW 0210 replacement by message 2334</li></ul>			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour	Single treatment		
Additional Error Information (AMK Service)			
Error Removal			

#### 2306 'Phase V Short Circuit'

Device	AW		
<ul style="list-style-type: none"><li>As from AW 0210 replacement by message 2334</li></ul>			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour	Single treatment		
Additional Error Information (AMK Service)			
Error Removal			

#### 2307 'Phase W Short Circuit'

<ul style="list-style-type: none"><li>• Short-circuit between 2 phases of the output terminals</li></ul>			
<b>Device</b>		<b>AW</b>	
<ul style="list-style-type: none"><li>• Defect in the AW. As from AW 0210 replacement by message 2334</li></ul>			
<b>Description</b>			
<b>Class</b>			
<b>Drive Behaviour</b>		Coast to stop	
<b>Device Behaviour</b>		Single treatment	
<b>Additional Error Information (AMK Service)</b>			
<b>Error Removal</b>			

#### 2308 'Supply +12 V'

Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour	Single treatment		
Additional Error Information (AMK Service)			
Error Removal			

**2309 'Supply'**

<ul style="list-style-type: none"><li>Internal supply voltages of the inverter module do not have the correct value</li></ul>			
Device	AW AZ		
<ul style="list-style-type: none"><li>Damaged ribbon cable, connection at the connector X27 of the AZ module or X57 of the AW module is faulty</li></ul>			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour	Single treatment		
Additional Error Information (AMK Service)			
Error Removal			

## 2310 'Encoder communication'

<ul style="list-style-type: none"><li>• Error in communication with encoder</li><li>• Encoder does not report/no encoder present</li><li>• Encoder cable defective or not connected</li><li>• Error in encoder database</li></ul>										
Device										
Description										
Class	Fehler									
Drive Behaviour	Coast to stop									
Device Behaviour	System run-up aborted									
Additional Error Information (AMK Service)										
	Error in communication:									
	Info 1	1	Timeout: No acknowledgement of the encoder							
		2	CRC error: Faulty transmission of the encoder							
		3	Alarm bit: The internal error bit of the encoder is set							
		4	No single or multi-turn encoder recognized.							
			Info 2	0	ID32776 'Sine encoder period' is higher than the real solution of the single turn encoder. Check parameter ID32953 'Encoder type'					
			P- / Q-encoder: ID34265 'Encoder ratio'							
			Info 2	1	Motor revolution or encoder revolution not equal 1					
				2	No power of two					
		3		Motor revolution not equal 1 on singleturn encoder						
		5	Handshake: The answer of the encoder is wrong, disturbed communication, damaged encoder.							
		6	Command cannot be executed by driver since encoder not yet initialized Help: Start System run-up again							
		7/ 307	Motor was in motion when reading the position							
			<table><tr><th>Trigger</th><th>Measure</th></tr><tr><td>AFP command READ_SINCOS</td><td>Increase ID57 'In position window'</td></tr><tr><td>Run-up</td><td>Motor must stand still during encoder run-up</td></tr></table>		Trigger	Measure	AFP command READ_SINCOS	Increase ID57 'In position window'	Run-up	Motor must stand still during encoder run-up
			Trigger	Measure						
		AFP command READ_SINCOS	Increase ID57 'In position window'							
		Run-up	Motor must stand still during encoder run-up							
8	Encoder property not compatibility, e.g. digital resolution to high, encoder type at present not possible.									
9	Signal error at the interpretation of the analog pulse (SIN, COS is not equal to the absolute pulse). Help: Check the cable of the encoder feedback.									
87	The SUM bit in the DSL status is set and indicates that one or more bits are set in the encoder summary register. Each bit in the summary register displays an error message in the encoder status register. Info 2 displays the content of the encoder Summery register.									

Error in action with encoder database:			
Info 1	10	Identification: Reading error ID32842 'Encoder list customer', the encoder data are invalid Help: The ID32842 must be recorded with valid data.	
	11	Checksum wrong: Data of ID32842 'Encoder list customer' in the encoder are wrong. Data of the were changed in the system without saving them in the encoder	
	12	ID32842 'Encoder list customer' was changed without saving the data in the encoder	
	13	Identification: Reading error "encoder list motor", the wrong list is invalid or the list is empty. Help: The encoder list motor must be recorded trough AMK with valid data.	
	14	Checksum wrong: Data of the "Motor encoder list" in the encoder are wrong. Data of the "Motor encoder list" were changed in the system without saving them in the encoder	
	15	The data of the ID No. listed in the "User encoder list" require more memory than available in the encoder	
	16	The addressed memory cell may not be written	
	17	Entered address does not exist	
	18	The memory range in the encoder cannot be determined correctly	
	19	The offset address in the encoder cannot be determined correctly	
	20	ID34160 'Part number motor' is not equal with the part number motor witch is written into the encoder Help: Read the motor data from the encoder.	
	21	In DSL-encoder is no database structure applied	
	30	Reading access:Error on reading data from DTH	
	31	Writing access:Error on writing data into DTH	
	32	ID wrong: ID number not available	
	33	Setpoint in ID32942 has a invalid polarity sign, referred to the motor sense of rotation ID32773, bit 16	
	34	The absolute setpoint in ID32942 is over the limit of the encoder (ID116 x distinguishable revolutions of the encoder )	
	40	Inadmissible status	
	41	Timeout encoder commanding	
	70	A communication to FPGA has not been established	
	Info 2	0	Error initialization Hiperface
		1	Error initialization HDSL
		2	Error initialization EnDat
		4	Read error FPGA-version (I-encoder)
		5	Error in the data transfer of the FPGA
		6	Acknowledgment of the FPGA wrong

	Info 1	80	Survey the DSL-connection recognized an error																																						
			Info 2	0	Error: In status word was error bits set <table><tr><td>Info 3</td><td>Status word</td></tr></table> Online status, high-byte: Active status bits: 1Ah = 0001 1010h <table><tr><th>Bit</th><th>Name</th><th>Function</th><th>Active</th></tr><tr><td>7</td><td>INT</td><td>Status interrupt-line</td><td>-</td></tr><tr><td>6</td><td>SUM</td><td>Byte for error bits</td><td>x</td></tr><tr><td>5</td><td>VTR</td><td>CRC-error on safe channel</td><td>-</td></tr><tr><td>4</td><td>FIX1</td><td>ever '1'</td><td>x</td></tr><tr><td>3</td><td>POS</td><td>Invalid quickly position (position roughly) (Monitored separately)</td><td>-</td></tr><tr><td>2</td><td>VPOS</td><td>Invalid safety position</td><td>-</td></tr><tr><td>1</td><td>QMLW</td><td>Survey QM-value &lt; 14</td><td>-</td></tr><tr><td>0</td><td>PRST</td><td>Protocol-reset</td><td>x</td></tr></table> Online status, low-byte: Is not relevant for cyclic survey		Info 3	Status word	Bit	Name	Function	Active	7	INT	Status interrupt-line	-	6	SUM	Byte for error bits	x	5	VTR	CRC-error on safe channel	-	4	FIX1	ever '1'	x	3	POS	Invalid quickly position (position roughly) (Monitored separately)	-	2	VPOS	Invalid safety position	-	1	QMLW	Survey QM-value < 14	-	0
Info 3	Status word																																								
Bit	Name	Function	Active																																						
7	INT	Status interrupt-line	-																																						
6	SUM	Byte for error bits	x																																						
5	VTR	CRC-error on safe channel	-																																						
4	FIX1	ever '1'	x																																						
3	POS	Invalid quickly position (position roughly) (Monitored separately)	-																																						
2	VPOS	Invalid safety position	-																																						
1	QMLW	Survey QM-value < 14	-																																						
0	PRST	Protocol-reset	x																																						
			1	Error: An error was occurred to query the diagnostic register <table><tr><td>Info 3</td><td>Error number</td></tr></table>	Info 3	Error number																																			
Info 3	Error number																																								
			2	Warning: DSL-signals shows a increased interference level <table><tr><td>Info 3</td><td>EDGE-register, more as 4 bits was set</td></tr></table>	Info 3	EDGE-register, more as 4 bits was set																																			
Info 3	EDGE-register, more as 4 bits was set																																								
			3	Warning: Signal run time was more than 1000ns <table><tr><td>Info 3</td><td>Delay-register &gt; 10</td></tr></table>	Info 3	Delay-register > 10																																			
Info 3	Delay-register > 10																																								
			4	Warning: Received signal strength is not optimal <table><tr><td>Info 3</td><td>RSSI-register &lt; 6, maximum 12</td></tr></table>	Info 3	RSSI-register < 6, maximum 12																																			
Info 3	RSSI-register < 6, maximum 12																																								
			5	Error: Received signal strength is bad <table><tr><td>Info 3</td><td>RSSI-register &lt; 2</td></tr></table>	Info 3	RSSI-register < 2																																			
Info 3	RSSI-register < 2																																								
			6	Warning: Signal quality is not optimal <table><tr><td>Info 3</td><td>QM-register &lt; 15</td></tr></table>	Info 3	QM-register < 15																																			
Info 3	QM-register < 15																																								
			7	Error: Signal quality is bad <table><tr><td>Info 3</td><td>QM-register &lt; 8</td></tr></table>	Info 3	QM-register < 8																																			
Info 3	QM-register < 8																																								
			8	Error: Connection to DSL-encoder was lost																																					
			9	Error: More than 6 positions was roughly because of errors <table><tr><td>Info 3</td><td>ACCERR-register</td></tr></table>	Info 3	ACCERR-register																																			
Info 3	ACCERR-register																																								
			10	Warning: In event register error bits was set <table><tr><td>Info 3</td><td>EVENT-register</td></tr></table>	Info 3	EVENT-register																																			
Info 3	EVENT-register																																								
			11	Error: POS bit set longer than allowed (Estimator active) <table><tr><td>Info 3</td><td>Number of cycles until error message</td></tr></table>	Info 3	Number of cycles until error message																																			
Info 3	Number of cycles until error message																																								

	Info 1	81	Error group= 40h DSL-encoder has been detected an error with a resource access <table><tr><td>Info 3</td><td>error code</td></tr></table>	Info 3	error code
		Info 3	error code		
		82	Error group = 41h DSL-encoder has been detected an error with a resource access <table><tr><td>Info 3</td><td>error code</td></tr></table>	Info 3	error code
		Info 3	error code		
		83	error group = 42h DSL-encoder has been detected an error with a resource access <table><tr><td>Info 3</td><td>error code</td></tr></table>	Info 3	error code
		Info 3	error code		
		84	Error group = 43h DSL-encoder has been detected an error with a resource access <table><tr><td>Info 3</td><td>error code</td></tr></table>	Info 3	error code
		Info 3	error code		
		85	Error during initialization of the DSL encoder		
		86			
		101	No multiturn encoder available		
		102	Wrong encoder type available		
		103	No modulo operation parameterized (ID76, ID32800)		
		104	There is no modulo value in ID103		
		105	CRC of the stored data is wrong		
106	Encoder data has changed and is no longer compatible with the stored values				
107	Correction value and actual position are in the wrong quadrant				
108	Resolution in ID116 too large				
109	Resolution in ID116 or ID103 too large				
Note	Encoder errors of the option card KU-/KW-EN1 are distinguished from the motor encoder by Info 1 + 100				
Error Removal	<ul style="list-style-type: none"><li>• Check cable or plug</li><li>• Check cable shield</li><li>• Reduce cable length</li></ul> <p>Info 1 = 17 Info2 = 5 or 6: Fault or defect of the controller card</p> <ul style="list-style-type: none"><li>• Drive OFF / ON. Replace the control card if it recurs.</li></ul> <p>Info1 = 80, 85, 86 Check encoder cable / POS bit is set on the DSL line due to faults / POS bit is set due to vibrations</p> <ul style="list-style-type: none"><li>• Check the shielding of the DSL line</li><li>• Check the mechanics for vibrations</li><li>• Check ID33194 and ID33195</li></ul> <p>Info 1 = 101 bis 109</p> <ul style="list-style-type: none"><li>• Check encoder type, multiturn type F, T or V (Modulo operation is not supported at this time for encoder type Q- or Y)</li><li>• Check ID76 and ID32800, this function supports modulo operation according ID103.</li><li>• Check modulo value in ID103 (<math>0 &lt; ID103 \leq 2^{30}</math>)</li><li>• Check resolution in ID116 (<math>ID116 \leq 2^{19}</math>)</li><li>• The encoder was moved by more than a quarter of the encoder range before switching on Deactivate function and force with RF-change, that the data will be deleted. Then activate the function again and save the data with RF change.</li></ul>				
Device	IDT				
Description	Messages during initialization (ID32773.23.= 1: reading the absolute position during initialization)				
Class	see below				
Drive Behaviour					
Device Behaviour	System run-up aborted				
Additional Error Information (AMK Service)					

Device	IDT					
	ID32773.27 = 0					
	Info 1	6	Warning Monitor of the UPS supply has triggered			
		9	Error Actual position value change has been detected while no UPS was active (position reference has been lost).			
	ID32773.27 = 1					
	Info 1	3	Error			
			Info 2	10	Survey of valid Flash has activated	
		9	Error Faulty encoder angle was detected during system run-up			
Device	IDT					
Description	Error in combination with absolute encoder (type C)					
Class	see below					
Drive Behaviour						
Device Behaviour						
Additional Error Information (AMK Service)						
	Info 1	3	Absolute encoder error			
			Info 2	1	Speed higher than 6000 rpm	
				2	Motor movement during the encoder power down (no battery power supply mode)	
				6	Communication error during the read access	
				7	Communication error during the write access	
				8	System SW error	
				9	Position lost because of the deep low power mode command	
				10	No valid record for position data is detected	
		5	Error Encoder communication error			
		6	Warning Absolute encoder power off detected			
		8	Error Faulty encoder firmware			
		9	Error Motor movement in low power mode without USV			
Error Removal	<ul style="list-style-type: none"><li>Encoder included in motor electric Message incl. info 1 and info 2 to AMK service for error localisation</li></ul>					



## 2311 'Encoder signal'

- Motor encoder defective
- Encoder cable defective or not connected
- Motor is equipped with a D encoder
- Possibly A encoder with defective field plates
- The SINE encoder monitoring can be switched off through ID32773
- Overcurrent encoder supply voltage
- Quadrant error of the encoder signals
- Difference between analog angle and digital angle of the encoder too large
- When comparing between analog angle and digital angle, an error has occurred

Device							
Description							
Class							
Drive Behaviour		Coast to stop or will be decelerated sensorless to stand still					
Device Behaviour		Controller enable (RF) is withdrawn internally					
Additional Error Information (AMK Service)							
	Info 1	1	Inadmissible level at the encoder input (operating)				
		2	The amplitude at the A/D converter input of an encoder track is less than 0.6 V (normal level: 2 V). Filtration: 5x within 50 ms leads to shutdown.				
		3	In homing with T encoder or operation of synchronous machine with T encoder no feedback of the encoder.				
		4	In homing with T encoder or operation of synchronous machine with T encoder faulty transmission of the encoder.				
		5	In homing with T encoder or operation of synchronous machine with T encoder the internal error bit of the encoder was set.				
		6	On operation of synchronous machine with T encoder the drive has moved on system run-up.				
		7	Amplitude of a resolver signal at the A/D converter input is less than 0.6 V (normal level: 2 V)				
		12	The amplitude at the A/D converter input of an encoder track is too large.				
		13	Initializing ENDAT encoder				
		14	Output current of the encoder supply voltage >500 mA (>1000 mA on KW-R25 / KW-R26 / KW-R27)				
		20	Error in the evaluation of analogue and digital position (quadrant error)				
		100	When adjustment the HW counter with the digital signals, there is no stable state when acceleration.				
		101	Inadmissible level at the encoder input (acceleration)				
		401	Difference between analog angle and digital angle too large <table><tr><td>Info2</td><td>Difference</td></tr><tr><td>Info3</td><td>Limit value</td></tr></table>	Info2	Difference	Info3	Limit value
		Info2	Difference				
		Info3	Limit value				
		402	Digital resolution of the encoder too small <table><tr><td>Info2</td><td>Resolution</td></tr><tr><td>Info3</td><td>Limit value</td></tr></table>	Info2	Resolution	Info3	Limit value
		Info2	Resolution				
		Info3	Limit value				
		403	The calculated limit, which corresponds to 5 ° <sub>electrical</sub> , can not be mapped with the encoder. <table><tr><td>Info2</td><td>Calculated limit value</td></tr><tr><td>Info3</td><td>Minimum value</td></tr></table>	Info2	Calculated limit value	Info3	Minimum value
		Info2	Calculated limit value				
		Info3	Minimum value				
		404	Timeout reading position 1				
		405	Timeout reading position 2				
Device	AW						

	As from AW 2.11 4696 error analysis (code) through monitor cell M 7CFF. Data for T encoder also apply for S encoder
<b>Error Removal</b>	
	<ul style="list-style-type: none"> <li>Encoder errors of the option card KU-/KW-EN1 are distinguished from the motor encoder by Info(I) + 100</li> <li>Clear error or system OFF/ON (HW reset)</li> <li>Check encoder cable for damage</li> <li>Check encoder signals</li> </ul>

## 2312 'Output Terminal Ground Fault'

• Short-circuit between a phase of the output terminals and PE			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour	Single treatment		
Additional Error Information (AMK Service)			
Error Removal	Defective motor connection cable or a defective motor		

## 2313 'Synchronous running error'

<ul style="list-style-type: none"><li>Inadmissible 16-bit position command value input (step change) or disturbed signal paths</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Usually hardware problem, see. Com. error AZ M881C ...		

## 2314 'Master Synchronous Telegram AW'

<ul style="list-style-type: none"><li>Master synchronous telegram error on inverter</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	Single treatment		
Additional Error Information (AMK Service)			
Error Removal			

**2315 'AW controller clock error'**

Lack of the controller clock was detected by an AW			
Device	AW AZ		
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour	Single treatment		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Fault on the AZ -&gt; AW interface</li><li>• Damaged ribbon cable</li><li>• Connection at the connector X27 of the AZ module or X57 of the AW module is faulty</li></ul>		

**2316 'Motor direction of rotation'**

• Direction of rotation monitoring recognizes defect on activating RF (only motor operation)			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour	Single treatment		
Additional Error Information (AMK Service)			
Error Removal	Encoder tracks reversed polarity, output terminal phase sequence		

**2317 'External encoder direction of rotation'**

• Reserve, this message is not yet supported			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour	Single treatment		
Additional Error Information (AMK Service)			
Error Removal	Encoder tracks reversed polarity		

**2318 'Control deviation'**

<ul style="list-style-type: none"><li>• Position control difference has exceeded the increment number defined by means of ID159</li><li>• Torque limits ID82 / ID83 too low</li><li>• Check speed controller parameters ID100 / ID101</li><li>• Position control parameter ID104 not optimized</li><li>• Speed limit ID38/ID39 too low</li><li>• Motor too weak for this application</li><li>• Inverter module too weak for this motor</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Recheck parameters: <ul style="list-style-type: none"><li>• ID38 Positive velocity limit</li><li>• ID39 Negative velocity limit</li><li>• ID82 Positive torque limit</li><li>• ID83 Negative torque limit</li><li>• ID100 Proportional gain speed control KP</li><li>• ID101 Integration acting time speed control TN</li><li>• ID104 Position loop KV factor</li><li>• ID159 Excessive Error</li></ul>		

**2319 'n > nmax'**

<ul style="list-style-type: none"><li>• Safety shutdown in the inverter</li><li>• Actual speed was more than 1.25 * "ID113 Maximum speed"</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour	Single treatment		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Motor encoder faulty</li></ul>		

## 2320 'EF inactive'

• Output stage enabling (EF) inactive with controller enable RF active			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour	Single treatment		
Additional Error Information (AMK Service)			
Error Removal	Check EF		

• Output stage enabling (EF) inactive with controller enable RF active / STO active					
Device	KW-R06 / -R07 / -R16 / -R17 / -R24 / -R24-R / -R25 / -R26 / -R27 / iX / iC / iDT5 // iX-R3 / iC-R3 / iDT5-R3 / ihX				
Description					
Class	Error				
Drive Behaviour	Coast to stop				
Device Behaviour	-				
Additional Error Information (AMK Service)					
	Info 1	1	Info 2	0	
				1	
				2	
				3	
				4	
			5	Monitoring function runs system-internally with the fastest cycle time. The message can also occur in systems without safety functionality and suppress known messages with Info 2 = 0, 1 or 2.	
Error Removal	Check EF / STO Check Safety functionality				

## 2321 'System diagnostics'

• IGBT monitoring in PWM device detects overcurrent			
Device	KE/KW		
Description			
Class	Error		
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	I*t monitoring, 30 ms, 110% I <sub>max</sub> IGBT
		1	Failure in Seep-list (cell 20014)
		2	The IGBT temperature is greater than allowed for this type
Error Removal	<ul style="list-style-type: none"><li>• Check drive load / motor sizing</li><li>• Check overload by measuring motor torque</li><li>• Reduce load (torque limit) optimize gain settings</li></ul>		
Class	Warning		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			

	Info 1	3	Temperature model is not supported
<b>Error Removal</b>	<ul style="list-style-type: none"> <li>• Check revision of the device (SEEP-data)</li> <li>• Upgrade to new revision (SEEP-data)</li> <li>• Disable temperatur model via ID32901 Bit9=0 (KW-R05: Error message will be inhibited; KW-R03: Temperature model is disabled)</li> </ul>		

## 2322 'System diagnostics'

• Inverter RAM memory error			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

## 2323 'System diagnostics'

• VECON watchdog			
Device	KW-R03		
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

• Lifecheck FPGA			
Device	KW-R0x / -R1x / -R26 / -R27		
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Device OFF/ON, (HW reset)</li><li>• If the error recurs, replace controller card</li></ul>		

## 2324 'System diagnostics'

<ul style="list-style-type: none"><li>• Hardware significance in the AW SEEP invalid (M8030, 2 or 3 current measuring elements)</li><li>• Furthermore differentiation of the U<sub>Z</sub> sensors new 1/150 or old 1/200</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

**2325 'System diagnostics'**

<ul style="list-style-type: none"><li>Error (timeout 5s) current controller adjustment</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2326 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
			Rerserve
Error Removal			

**2327 'Plausibility of the External Encoder'**

• Plausibility monitoring between motor encoder and external positioning encoder initiated			
Device			
Description	Plausibility monitoring between motor encoder and ext. encoder detects too high slip (special software)		
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2328 'System diagnostics'**

<ul style="list-style-type: none"><li>Missing option card e.g. in the KU. For instance, if an AMK-A encoder is defined in "ID32953 Encoder type", then the option card AW- /KU- AG1 must also be detected</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

**2329 'System diagnostics'**

<ul style="list-style-type: none"><li>Commutation error in synchronous machine with AMK-T encoder (SINCOS absolute value encoder). Cause is a motion of the motor in system initialization</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

**2330 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Reserve
Error Removal			

**2331 'System diagnostics'**

<ul style="list-style-type: none"><li>• Ramp down error</li><li>• The actual speed value is not reduced in the 0.5 s grid. The ramp down monitoring can be switched off through ID32773</li></ul>			
Device	AW		
<ul style="list-style-type: none"><li>• As from AW 0210, AW ramp down error</li></ul>			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2332 'System diagnostics'**

Device			
Description	Motor phase error (special software)		
Class			
Drive Behaviour	Coast to stop		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal	Check motor connection and motor cable		



### 2333 'Position growth too large'

<ul style="list-style-type: none"><li>• Inverter cannot process the cyclic 32-bit position setpoint growth per ID2 'SERCOS cycle time' (sampling time)</li><li>• Wrong 32-bit input of setpoint by user</li><li>• Fault in the bus system (cycle failures cause the next valid setpoint to increase too much)</li><li>• Incorrect operating mode: Modulo operation is not permitted</li></ul>			
Device	KW-R06 / KW-R16 / KW-R07 / KW-R17 / iX(-R3) / iC(-R3) / iDT5(-R3) /ihXT /KW-R24-R / KW-R25 / KW-R26 / KW-R27		
Description			
Class			
Drive Behaviour	<ul style="list-style-type: none"><li>• System booting aborted</li><li>• Controlled braking</li></ul>		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	Inadmissible position increase with controller enable set (QRF = 1)
		10	Inadmissible operating mode (modulo operation active, see ID76 'Position scaling data' or ID32800 'AMK main operating mode') (Extended position increase monitoring is not possible in modulo mode, see ID33304 'Motion service switch')
		11	Inadmissible position increase with controller enable not set (QRF = 0)
Error Removal	<ul style="list-style-type: none"><li>• Specify permissible setpoint</li><li>• Select permissible operating mode</li><li>• Repair bus fault</li></ul>		

### 2334 'System diagnostics'

• Output terminal overcurrent			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

### 2335 'Error reference pulse'

<ul style="list-style-type: none"><li>• Monitoring of reference pulse ID32773. 6=1 is active</li><li>• Disturbance of reference pulse</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2336 'System diagnostics'**

<ul style="list-style-type: none"><li>• Current setpoint at the analog input of the slave AW was too large. (Only in parallel connection of AWs)</li></ul>			
Device	AW		
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2337 'No clock enable acknowledgement'**

<ul style="list-style-type: none"><li>• Clock enable is not acknowledged by the inverter</li><li>• Consequential error</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

**2338 'Magnetizing timeout'**

<ul style="list-style-type: none"><li>No magnetizing possible</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>e.g. motor cables not connected on activating the controller enable</li><li>Lack of DC bus voltage</li></ul>		

**2339 'Ramp down error'**

<ul style="list-style-type: none"><li>• Inverter runs inconstantly (dxi/dt) to speed n=0, ramp down monitoring can be switched off through ID32773</li><li>• Motor drifts with low speed.</li><li>• As from AW 0210 replacement by message 2331</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check motor phases (U, V, W connected correctly?)</li><li>• Encoder signal connections</li></ul>		

**2340 'Communication on AW'**

• Inverter-side communication error, fault			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2341 Communication on AZ'**

<ul style="list-style-type: none"><li>• AZ-side communication error, fault</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2342 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
			QUIT AWMON-ERROR, RGRF
Error Removal			

**2343 'System diagnostics'**

Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
			TIMEOUT BSÜ
Error Removal			

**2344 'Monitoring actual position'**

<ul style="list-style-type: none"><li>• The encoder absolute position and the internal actual position have a deviation of more than 0.5% of the encoder resolution.</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
			Deviation shown as 0.1% (Resolution absolute encoder)
Error Removal			

**2345 'Inverter overload error'**

<ul style="list-style-type: none"><li>• Current feedback values violate the <math>I^2t</math> calculation</li><li>• 100 % overload</li><li>• Previously 2349 'Inverter overload warning'</li></ul>			
Device	AW KU RM		
Description			
Class	Error		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
			$I^2t$ monitoring, 30 ms, 100% $I_{max}$ IGBT
Error Removal	<ul style="list-style-type: none"><li>• Check motor parameters</li><li>• No or wrong encoder cable connected</li><li>• Unstable, oscillating drive</li><li>• Wrong encoder period number defined</li></ul>		

Device	KE		
Description			
Class	Warning		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info1	0	$I^2t$ error, $I_{\max}$ for 60 s at KE $I^2t$ error, $I_{\max}$ for 10 s at KES
Error Removal			
• Overload inverter (n)			
Device	ZWR		
Description	Overload inverter -U1 ( $I^2t$ error, $I_{\max}$ for 10 s)		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	• Check inverter -U1		

## 2346 'Converter temperature error'

<ul style="list-style-type: none"><li>• Temperature of the device too high</li><li>• PTC resistor interruption</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			
Device	KE		
Description			
Class	Error		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info1	0	Temperature of cold plate -> SEEP cell 37 ITK (analogue)
Error Removal			
<ul style="list-style-type: none"><li>• Overtemperature inverter (n)</li></ul>			
Device	ZWR		
Description	Overtemperature inverter -U1 (> 75 °C)		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check cooling system</li></ul>		

• Temperature of the device too high			
Device	iSA		
Description			
Class	Error		
Device Behaviour	No autonomous reaction of the controller. The user must initiate appropriate action via the PLC program . e.g. device switch off		
Additional Error Information (AMK Service)			
	Info1	0	Error heat sink temperature
		1	Error temperature interior
Error Removal			

• Temperature of the device too high			
Device	ihX		
Description			
Class	Error		
Device Behaviour	Controlled braking		
Additional Error Information (AMK Service)			
	Info1	0	Error heat sink temperature
		1	Error temperature interior (≥87 °C)
Error Removal	Improve cooling		

## 2347 'Motor temperature error'

<ul style="list-style-type: none"><li>• Temperature of the motor too high</li><li>• PTC resistor interruption</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

## 2348 'System diagnostics'

Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
			Reserve
Error Removal			

**2349 'Inverter overload warning'**

<ul style="list-style-type: none"><li>• Device shuts down after 4 sec. with error 2345 'Inverter overload error'</li><li>• Current feedback values violate the I<sup>2</sup>t calculation</li></ul>			
Device	AW KU RM		
Description			
Class	Warning message, reaction of the drive after 4 seconds		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Motor wrongly connected</li><li>• No or wrong encoder cable connected</li><li>• Unstable, oscillating drive</li><li>• Wrong encoder period number defined</li></ul>		

**2350 'Device temperature warning'**

• Device shuts down after 4 sec. With error 2346			
Device			
Description			
Class	Warning message, reaction of the drive after 4 seconds		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

Device	KE		
Description			
Class			
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info1	0	Temperature of cold plate -> SEEP cell 37 ITK (analogue)
Error Removal			

• Device shuts down if the temperature $\geq 87^{\circ}\text{C}$ . With error 2346			
Device	ihX		
Description			
Class	Warning message, Status LED orange		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info1	0	Interior temperature of the device $\geq 83^{\circ}\text{C}$
Error Removal	Improve cooling		

**2351 'Motor temperature warning'**

<ul style="list-style-type: none"><li>• Motor overtemperature warning or PTC resistor interruption</li></ul>			
Device	AW		
<ul style="list-style-type: none"><li>• SBM is withdrawn, drive shuts down after 4sec with error 2347</li></ul>			
Description			
Class	Warning message, reaction of the drive after 4 seconds		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2352 'Motor overload warning'**

<ul style="list-style-type: none"><li>• The thermal overload limit of the motor is reached</li><li>• Shutting down the drive with error 2353 “Motor overload” after the time ID 32943 “WARNING TIME”</li></ul>			
Device	AZ KU		
Description			
Class	Warning message, reaction of the drive after 4 seconds		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2353 'Motor overload error'**

<ul style="list-style-type: none"><li>• The thermal overload limit of the motor is reached</li></ul>			
Device	AZ KU		
Description			
Class	Error		
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2354 'Handshake brake'**

<ul style="list-style-type: none"><li>• Plausibility monitoring is active; ID32773. 13 = 1</li><li>• Handshake does not come within "ID207 Drive off delay time"</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour	Drive is still active (QRF=1)		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Error reset is not allowed until axis is secured</li></ul>		



**2356 'Setpoint stop active'**

<ul style="list-style-type: none"><li>Setpoint stop active</li></ul>			
Device	KE/KW KU		
Description	The limit switches configured at the binary inputs for positive (code 33909) and negative (code 33910) setpoint processing are actuated at the same time (low active)		
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>Check limit switch, replace if necessary</li><li>Check signal wiring, replace if necessary</li></ul>		

**2357 'Device overload warning'**

<ul style="list-style-type: none"><li>• Current actual values infringe the overload threshold ID32999 of the I<sup>2</sup>t calculation</li><li>• Switching off the drive with 2358 'Device overload error' at 100% overload</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Motor incorrectly connected</li><li>• Check motor parameters</li><li>• No or incorrect encoder channel connected</li><li>• Unstable, oscillating drive</li><li>• Incorrect number of encoder periods defined</li></ul>		

**2358 'Device overload error'**

<ul style="list-style-type: none"><li>• Current actual values infringe the I<sup>2</sup>t calculation</li><li>• 100% overload</li><li>• Previously "2357 Device overload warning"</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2359 'Motor overload warning'**

<ul style="list-style-type: none"><li>• "ID114 Overload limit motor" is reached</li><li>• Switching off the drive with "2360 Motor overload error" at 100% overload</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Recheck parameter: <ul style="list-style-type: none"><li>• ID32920 Overload time motor</li><li>• ID34168 'Time maximum current motor'</li><li>• ID109 'Motor peak current'</li></ul>		

**2360 'Motor overload error'**

<ul style="list-style-type: none"><li>• The thermal overload limit of the motor is reached</li><li>• 100% overload</li><li>• Previously "2359 Motor overload warning"</li></ul>			
Device			
Description			
Class	Error		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2361 'EF Logic'**

<ul style="list-style-type: none"><li>• The selected EF monitor has responded</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	EF logic infringed, detected by controller
		1	EF logic infringed, detected by VECON
Error Removal	<ul style="list-style-type: none"><li>• Device is not EF compatible</li><li>• Hardware error -&gt; change device</li></ul>		

## 2362 'Error Commutation Motor'

<ul style="list-style-type: none"><li>• A fault has occurred during the evaluation of the commutation angle</li></ul>			
Device	KW KWZ KW-R06 iX / iC / iDT5		
Description			
Class	Error		
Drive Behaviour	Coast to stop		
Device Behaviour	Controller enable (RF) is withdrawn		
Additional Error Information (AMK Service)			
	Info1	20	Error occurred in alignment on homing position during SW commutation
		21	Error occurred during commutation (internal firmware error - contact AMK service)

Valid for ID32773 'Service bits', bit 28 = 0

Additional Error Information (AMK Service)				
	Info1	10	Wrong calculation	
		11	Wrong direction of rotation (phase sequence)	
		12	Slope is too large	
			Info2	Actual value of the slope measured
			Info3	Parameter limit value for the maximum slope
		13	Slope is too small	
			Info2	Actual value of the slope measured
			Info3	Parameter limit value for the maximum slope
		14	Offset is too large (absolute value)	
			Info2	Actual value of the offset measured
			Info3	Parameter limit value for the maximum offset
		15	Deviation is too large (absolute value)	
			Info2	Actual value of the offset measured
			Info3	Parameter limit value for the maximum offset
16	Wrong state (internal firmware error - contact AMK service)			
17	Error when reading the list ID34174 'SWK monitoring'			
18	Error when updating the list ID34174 'SWK monitoring'			
Error Removal	<ul style="list-style-type: none"><li>• The commutation was not able to evaluate a position (The motor was moved by an external torque)</li><li>• Motor must be able to move freely; disconnect the load and check if the shaft can move freely</li><li>• Motor current too small; check ID111 'Motor nominal current IN', ID34095 'Final value SWC'</li><li>• Wrong direction of rotation; change direction of rotation by changing 2 phases of the motor</li><li>• RF was withdrawn during the SW commutation; RF is not allowed to be withdrawn before SW commutation has finished</li><li>• Check limit values in ID34174 'SWK monitoring'</li></ul>			

Valid for ID32773 'Service bits', bit 28 = 1 (wake&shake commutation)

Additional Error Information (AMK Service)			
	1. cycle		
	Info1	1	Axis moved negatively with positive setpoint
		2	Axis moved more than 90° to positive direction
		3	Axis moved less than 2° with 90° positive setpoint
		4	Axis moved positively with negative setpoint
		5	Axis moved more than 90° to negative direction
		6	Axis moved less than 2° with 90° negative setpoint
	2. cycle		
	Info1	7	Axis moved negatively with positive setpoint
		8	Axis moved more than 90° to positive direction
		9	Axis moved less than 2° with 90° positive setpoint
		10	Axis moved positively with negative setpoint
		11	Axis moved more than 90° to negative direction
		12	Axis moved less than 2° with 90° negative setpoint
<b>Error Removal</b>	<ul style="list-style-type: none"> <li>• <b>Info1 = 1, 7:</b> Motor phases mixed up or mechanical movement to negative direction; interchange motor phases, re-commutate</li> <li>• <b>Info1 = 2, 8:</b> Axis would 'bolt' or mechanical movement to positive direction; check number of poles</li> <li>• <b>Info1 = 3, 9:</b> Axis is blocked to positive direction or encoder does not work correctly; axis must be able to move freely; check encoder and cabling</li> <li>• <b>Info1 = 4, 10:</b> Motor phases mixed up or mechanical movement to positive direction; interchange motor phases, re-commutate</li> <li>• <b>Info1 = 5, 11:</b> Axis would 'bolt' or mechanical movement to negative direction; check number of poles</li> <li>• <b>Info1 = 6, 12:</b> Axis is blocked to negativedirection or encoder does not work correctly; axis must be able to move freely; check encoder and cabling</li> </ul>		

## 2365 'Error angle observer'

• Error angle observer			
Device	KW-R06 / R16 / R07 / R17 / R2x iDT5 iX iC		
Description	An error occurred during operation of the observer for sensorless detection of the rotor position		
Class	Error		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info1	1	The difference between encoder angle and observer angle exceeds ID33151.
		2	The needful load torque of the motor can not to apply by Sensorless with low speed. The motor can not follow the actual speed value
Error Removal			
	Info1	1	<ul style="list-style-type: none"><li>• If additional message 2311 'Encoder signal': Check encoder and encoder wiring, replace if necessary</li><li>• Recheck parameters:<ul style="list-style-type: none"><li>◦ ID33151 'Maximal angular deviation of encoder-sensorless'</li><li>◦ ID34045 'Inductance path D'</li><li>◦ ID34046 'Inductance path Q'</li><li>◦ ID34164 'Terminal resistance'</li><li>◦ ID34167 'Terminal Inductance'</li><li>◦ ID34233 'Phase resistance'</li></ul></li></ul>
		2	<ul style="list-style-type: none"><li>• If possible to increase ID34069 'Starting current' for further torque.The torque ramps setting slower for less torque by the acceleration</li><li>• Recheck parameters:<ul style="list-style-type: none"><li>◦ ID100 'Speed control proportional gain KP'</li><li>◦ ID101 'Integral-action time speed control TN'</li><li>◦ ID102 'Differentiating time speed control TD'</li><li>◦ ID32780 'Acceleration ramp'</li><li>◦ ID32781 'Deceleration ramp'</li><li>◦ ID32782 'Deceleration ramp RF inactive'</li><li>◦ ID34069 'Starting current'</li></ul></li></ul>

## 2366 'Limit switch'

• Limit switch monitoring			
Device	KW-R0x, KW-R2x, iX, ihX		
Description			
Class	Warning, Error (parametrizable by ID532 Bit 2)		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	positive limit switch has triggered
		1	negative limit switch has triggered
		2	both limit switches have triggered (plausibility)
Error removal	<ul style="list-style-type: none"><li>• Check the limit switch contacts</li><li>• Check limit switch wiring</li></ul>		

## 2367 'Error Non Dual Use'

<ul style="list-style-type: none"> <li>The maximum permissible electrical output frequency of 599 Hz for non-dual-use devices was exceeded. (Torque control mode)</li> </ul>	
Device	iX / iC / ihX
Description	
Class	
Drive Behaviour	Coast to stop
Device Behaviour	
Additional Error Information (AMK Service)	
Error Removal	<ul style="list-style-type: none"> <li>Select operating point at lower output frequency</li> <li>Use of a dual-use device</li> <li>Use the BA position or speed control instead of the BA torque control. In these operating modes, the speed setpoint is internally limited. The output frequency of 599 Hz can not be exceeded.</li> </ul>

## 3.10 No. 2560 ... 2599 SERCOS / EtherCAT

### 2560 'System diagnostics'

• EtherCAT				
Device	A7			
Description				
Class				
Drive Behaviour				
Device Behaviour				
Additional Error Information (AMK Service)				
	Info 1 (ErrorCode)	1	Parsing error: Unable to find node 'VendorID'	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2001	In 'ECAT_libraryConfigure', 'memoryAlloc', 'memoryFree', 'openFile' or 'checkFile' are ZERO	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2002	Library has been initialized. Call 'ECAT_libraryConfigure'	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2003	Unable to allocate memory for EtherCAT master	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2004	Unable to parse ENI file	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0

		2005	Master configuration failed with error code	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Error code
			Addr (ErrorInfo2)	0
		2006	Trying to configure master with an inconsistent configuration state	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Configuration level
			Addr (ErrorInfo2)	0
		2008	Unable to allocate slaves queue (enhanced configuration)	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	-7
			Addr (ErrorInfo2)	0
		2009	Unable to allocate memory for acyclic frame	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	-7
			Addr (ErrorInfo2)	0
		2011	Parsing error: Variable name or product revision length exceeds maximum length	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Name length
			Addr (ErrorInfo2)	Max. name length
		2012	Parsing error: 'AutoIncAddr', 'SlavePhysAddr' and 'IdentificationAdo' are not configured	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2013	Parsing error: Unable to find node 'AutoIncAddr' or 'Value'	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Slave physical address
			Addr (ErrorInfo2)	0
		2014	Parsing error: 'AutoIncAddr', 'SlavePhysAddr' and 'IdentificationAdo' are not configured	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2016	Parsing error: Unable to find node 'ProductCode'	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2017	Parsing error: Unable to find node 'RevisionNo'	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2018	Parsing error: Unable to find node 'SerialNo'	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2019	Unable to add slave to network configuration	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0

		2020	Parsing error: Unable to add Tx PDO	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	PDO index
			Addr (ErrorInfo2)	PDO subindex
		2021	Parsing error: Unable to add Rx PDO	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	PDO index
			Addr (ErrorInfo2)	PDO subindex
		2022	Parsing error: Unable to find node 'Ado'	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Slave physical address
			Addr (ErrorInfo2)	0
		2023	Unable to allocate slaves queue	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	-7
			Addr (ErrorInfo2)	0
		2024	Master configuration failed due to Identification ADO duplication [ADO %d, Value %d]	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Identification ado (address offset)
			Addr (ErrorInfo2)	Identification value
		2024 (E)	Master configuration failed due to duplicated identification Ado	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Configuration level
			Addr (ErrorInfo2)	Slave index
		2025	Parsing error: Unable to find node 'Info'	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2026	Parsing error: Unable to find node 'Cmd'	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2027	Parsing error: Unable to find node 'Physics'	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2028	Unable to open ENI file	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2030	Unable to find ENI file	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2031	In 'ECAT_masterCreate', 'sampleTime' parameter is too big compared to network reset timeout	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0



		2032	In 'ECAT_masterCreate', invalid 'sampleTime' parameter	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		2033	Unable to add detected slave due to the given error code	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Error code
			Addr (ErrorInfo2)	Slave index
		3000	Number of detected slaves differs from the expected number of slaves	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Active slaves
			Addr (ErrorInfo2)	Expected slaves
		3000 (E)		
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Network state
			Addr (ErrorInfo2)	0
		3001	Current network state and expected network state are different	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Network state
			Addr (ErrorInfo2)	Expected network state
		3002	Current network state and expected network state are different	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Network state
			Addr (ErrorInfo2)	Expected network state
		3003	Current network state and expected network state are different (network state is unknown)	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Network state
			Addr (ErrorInfo2)	Expected network state
		3004	Invalid parent Rx port	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Slave physical address
			Addr (ErrorInfo2)	Parent Rx port
		3005	Invalid parent Tx port	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Slave physical address
			Addr (ErrorInfo2)	Parent TX port
		3006	Master failed to calculate propagation delays (invalid values are provided in 'ErrorInfo1' and 'ErrorInfo2')	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Dt1
			Addr (ErrorInfo2)	Dt2
		3007	Autotopology detection disabled, but position is unknown for slave with the given physical address	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Slave physical address
			Addr (ErrorInfo2)	Number of slaves
		3011	Network DC (Distributed Clock) not synchronized	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Sync error
			Addr (ErrorInfo2)	Max sync error

		3012	Master stopped	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	FSM (finite state machine) state
			Addr (ErrorInfo2)	FSM (finite state machine) stage
		3013	Service to check network status failed	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	Number of active slaves
		3014	Failed to read a register in the initialize phase	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Register
			Addr (ErrorInfo2)	Data length
		3015	Prepare DC internal service failed	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Register
			Addr (ErrorInfo2)	Data length
		3016	Master service to check the network state failed! (An internal register access service failed)	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Register
			Addr (ErrorInfo2)	Data length
		3017	Internal error: Can not append service	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	FSM (finite state machine) state
			Addr (ErrorInfo2)	FSM (finite state machine) stage
		3018	Unable to find slave's parent to calculate propagation delay	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	FSM (finite state machine) state
			Addr (ErrorInfo2)	FSM (finite state machine) stage
		3019	Slaves are not synchronized	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	Sync error
		3021	Master stopped in fatal state. This error indicates that a fatal error happened or the user has invoked 'ECAT_masterSetComError()' per to stop the master	
			Info 2 (Alias)	
			Info 3 (ErrorInfo1)	Previous state
			Addr (ErrorInfo2)	0
		3022	Current network state and expected network state are different (network state is unknown)	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Network state
			Addr (ErrorInfo2)	Expected network state
		4000	Slave is missing	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	ECAT state
			Addr (ErrorInfo2)	0
		4001	Invalid frames received	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	EtherCAT state
			Addr (ErrorInfo2)	Port number

		4001 (E)	Invalid frames received	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Invalid frames counter
			Addr (ErrorInfo2)	Error counter
		4002	On port X detected x forwarded Errors	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	port number
			Addr (ErrorInfo2)	number of errors
		4003	SDO init cmd failed	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	SDO index
			Addr (ErrorInfo2)	SDO subindex
		4004	EtherCAT transition failed (timeout)	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Register
			Addr (ErrorInfo2)	Data length
		4005	EtherCAT transition failed (validation failed)	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Register
			Addr (ErrorInfo2)	Data length
		4007	Slave has been configured to use DC (Distributed Clock), but does not support DC	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Slave uses DC (Distributed Clocks)
			Addr (ErrorInfo2)	Slave supports DC (Distributed Clocks)
		4008	Slave [PhysAddr] uncontrolled state change from 'oldState' to 'newState'	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Old state (e. g. 8)
			Addr (ErrorInfo2)	New state (e. g. 4)
		4008 (E)	SoE init cmd failed	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Drive number
			Addr (ErrorInfo2)	ID
		4009	No answer from slave, therefore is missing	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		4010	Inconsistent link status on the given port	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Port number
			Addr (ErrorInfo2)	Link status
		4010 (E)	Inconsistent port status	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Port number
			Addr (ErrorInfo2)	Port status
		4011	Inconsistent link status on the given port (should be closed)	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Port number
			Addr (ErrorInfo2)	Link status

		4011 (E)	Inconsistent port status on the given port (should be closed)
			Info 2 (Alias) Slave physical address
			Info 3 (ErrorInfo1) Port number
			Addr (ErrorInfo2) Port status
		4012	EtherCAT reset failed with the given AL status code
			Info 2 (Alias) Slave physical address
			Info 3 (ErrorInfo1) EtherCAT state
			Addr (ErrorInfo2) Status code
		4013	Internal register access service failed (AL control)
			Info 2 (Alias) Slave physical address
			Info 3 (ErrorInfo1) Register
			Addr (ErrorInfo2) Data length
		4014	Internal register access service failed (AL status)
			Info 2 (Alias) Slave physical address
			Info 3 (ErrorInfo1) Register
			Addr (ErrorInfo2) Data length
		4016	Internal register access service failed (DL status)
			Info 2 (Alias) Slave physical address
			Info 3 (ErrorInfo1) Register
			Addr (ErrorInfo2) Data length
		4017	Wrong VendorID detected
			Info 2 (Alias) Slave physical address
			Info 3 (ErrorInfo1) Detected VendorID (Identification number of the device manufacturer)
			Addr (ErrorInfo2) Configured VendorID (Identification number of the device manufacturer)
		4018	Wrong Product ID detected
			Info 2 (Alias) Slave physical address
			Info 3 (ErrorInfo1) Detected ProductID (Identification number of the EtherCAT device)
			Addr (ErrorInfo2) Configured ProductID (Identification number of the EtherCAT device)
		4019	Detected xx Errors on the EtherCAT processing unit
			Info 2 (Alias) Slave physical address
			Info 3 (ErrorInfo1) Number of errors
			Addr (ErrorInfo2) -
		4020	Slave has been configured to use DC, but DC has been disabled in EEPROM
			Info 2 (Alias) Slave physical address
			Info 3 (ErrorInfo1) Slave uses DC (Distributed Clocks)
			Addr (ErrorInfo2) Slave supports DC (Distributed Clocks)
		4021	Error reordering slaves
			Info 2 (Alias) Slave physical address
			Info 3 (ErrorInfo1) Ado (address offset)
			Addr (ErrorInfo2) Identification value
		4022	Master stopped in fatal state
			Info 2 (Alias) 0
			Info 3 (ErrorInfo1) FSM (finite state machine) state
			Addr (ErrorInfo2) FSM (finite state machine) stage

		4023	Calculated delay exceeds cycle time	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	Slave physical address
			Addr (ErrorInfo2)	Calculated delay
		4024	Failed to get slave's parent	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Previous port
			Addr (ErrorInfo2)	0
		4026	SDO write error: Slave does not support CoE protocol	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Supported protocols
			Addr (ErrorInfo2)	0
		4028	SDO read error: Slave does not support CoE protocol	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Supported protocols
			Addr (ErrorInfo2)	0
		4029	A CoE service otification has been received, but the service is not supported	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	CoE service
			Addr (ErrorInfo2)	0
		4030	Prepare DC internal service failed	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Register
			Addr (ErrorInfo2)	Data length
		4031	The slave set up the EtherCAT error flag	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Current EtherCAT state
			Addr (ErrorInfo2)	Previous EtherCAT state
		4032	Internal slave state machine has been stopped to a specific state due to an error	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Slave internal state machine state
			Addr (ErrorInfo2)	Slave internal state machine stage
		4033	Port must be connected to the given remote slave	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Port number
			Addr (ErrorInfo2)	Remote slave physical address
		4034	Port must be connected to the master	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	Port number
		4035	Port number should be closed	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	Port number
		4036	Failed to read station physical address	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0

		4037	On port x detected x link lost events	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Port number
			Addr (ErrorInfo2)	Number of errors
		4038	Port management error	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Previous port
			Addr (ErrorInfo2)	0
		4039	Port management error	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Previous port
			Addr (ErrorInfo2)	0
		4040	Internal error: While reading SDO, Rx buffer pointer is ZERO	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		4041	Internal error: While reading fragmented SDO, rx buffer pointer is ZERO	
			Info 2 (Alias)	0
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		4042	Slave-to-slave communication failed with the given error code	
			Info 2 (Alias)	Source slave physical address
			Info 3 (ErrorInfo1)	Error code
			Addr (ErrorInfo2)	0
		4043	SDO read failed with the abort code returned by another error message	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	SDO index
			Addr (ErrorInfo2)	SDO subindex
		4043 (E)	SDO read failed. This message provides the abort error code	
			Info 2 (Alias)	Error code (MSB)
			Info 3 (ErrorInfo1)	Error code (LSB)
			Addr (ErrorInfo2)	0
		4044	Address read from register differs from configured station address	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		4045	Slave-to-slave communication request, but destination slave does not exist	
			Info 2 (Alias)	Source slave physical address
			Info 3 (ErrorInfo1)	Destination slave physical address
			Addr (ErrorInfo2)	0
		4046	Slave-to-slave communication request, but destination slave does not support mailbox	
			Info 2 (Alias)	Destination slave physical address
			Info 3 (ErrorInfo1)	Source slave physical address
			Addr (ErrorInfo2)	0
		4047	Failed to append slave-to-slave communication message	
			Info 2 (Alias)	Destination slave physical address
			Info 3 (ErrorInfo1)	Mailbox data length
			Addr (ErrorInfo2)	0

		4049	SoE read error: slave does not support SoE protocol	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Supported protocols
			Addr (ErrorInfo2)	0
		4050	SoE write error: slave does not support SoE protocol	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Supported protocols
			Addr (ErrorInfo2)	0
		4051	FoE error: slave does not support FoE protocol	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	Supported protocols
			Addr (ErrorInfo2)	0
		4052	EoE init cmd failed	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		4053	FoE init cmd failed	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		4054	FoE mismatched packet number detected	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
		4055	EoE service initialization failed	
			Info 2 (Alias)	Slave physical address
			Info 3 (ErrorInfo1)	0
			Addr (ErrorInfo2)	0
4056	EoE send packet failed			
	Info 2 (Alias)	Slave physical address		
	Info 3 (ErrorInfo1)	0		
	Addr (ErrorInfo2)	0		
4057	EoE mismatched fragment number detected			
	Info 2 (Alias)	Slave physical address		
	Info 3 (ErrorInfo1)	Fragment number		
	Addr (ErrorInfo2)	Expected fragment number		
Error Removal				

## 2561 'System diagnostics'

• SERCOS			
Device			
Description	Failure of the master within communication phase 3 or 4 Master does not send any or just irregular frames of setpoint and actual values		
Class	Error		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Check wiring		

• EtherCAT					
Device	KW-EC1 KWZ KW-R0x / KW-R1x / KW-R2x A4 / A5 / A6 iX / ihX / iC / iDT5 / iSA KE(N,S)-xEx				
Description	EtherCAT master does not send any or just irregular frames of setpoint and actual values				
Class	Behavior according ID34027				
Drive Behaviour	Coast to stop				
Device Behaviour	<ul style="list-style-type: none"><li>It will be initiated a 'AL State Change Request' in 'Safe Operational'</li><li>Adjustable, see ID34027 'BUS failure character'</li></ul>				
Additional Error Information (AMK Service)					
	Info 1	1	Failure of frame with real time data in "Operational" mode In "Operational" mode within two(1*) cycles no setpoint or actual values were written or read		
			Info 2	ID28 MST error counter	
			Info 3	Bit 0=1 - Input event (AT) missing Bit 1=1 - Output event (MDT) missing	
		2	Input 'Sync Manager Watchdog' event		
			Info 2	Actual AL state	
		3	Wrong value for the message counters (specific for VARAN communication)		
			Info 2	Last value of the message counter	
			Info 3	Previous Value of the message counter (the message counters must be increased by 1 on each cycle in operational state)	
		Error Removal	Check EtherCAT wiring		

1\*) default value according to SERCOS is 2. The value is adjustable from 2-256 on firmware 2014/16 in ID34026 instance 1.

## 2562 'System diagnostics'

• MDT reception error in the Comm.phase 3 or 4			
Device			
Description			
Class			
Drive Behaviour	Controlled Braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

## 2563 'System diagnostics'

• SERCOS			
Device			
Description	Invalid communication phase		
Class	Error		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			



• EtherCAT			
Device	KW-EC1 KWZ KW-R0x / KW-R1x / KW-R2x A4 / A5 / A6 iX / ihX / iC / iDT5 / iSA KE(N,S)-xEx		
Description	EtherCAT AL fault The EtherCAT master has requested an invalid status or bootstrap (Bootstrap is not supported)		
Class	Error		
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	Requested an invalid status
		1	Bootstrap is not supported
Error Removal	Incorrect specification from EtherCAT master.		

## 2564 'System diagnostics'

• SERCOS			
Device			
Description	Phase ramp up (sequence)		
Class	Error		
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

<ul style="list-style-type: none"><li>EtherCAT</li></ul>			
Device	KW-EC1 KWZ KW-R0x / KW-R1x / KW-R2x A4 / A5 / A6 iX / ihX / iC / iDT5 / iSA KE(N,S)-xEx		
Description	EtherCAT AL fault The EtherCAT master has specified an incorrect status sequence		
Class	Error		
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Incorrect specification from EtherCAT master.		

**2565 'System diagnostics'**

• Phase switchback (not on phase 0)			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2566 'System diagnostics'**

• Phase switchover without ready message			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2569 'System diagnostics'**

• Memory error (allocating)			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2570 'System diagnostics'**

• Memory error (deallocating)			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

## 2571 'System diagnostics'

• Timeout during communication phases switch-over (AS-PL)			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

## 2572 'System diagnostics'

<ul style="list-style-type: none"><li>• SERCOS</li><li>• AT/MDT configuration error</li><li>• During KMD ID127 read error in the database</li></ul>					
Device					
Description					
Class					
Drive Behaviour					
Device Behaviour	System run-up aborted				
Additional Error Information (AMK Service)					
	Info 1	10	MDT too large		
		11	Starting addr. (ID9) outside MDT or (ID9+data record length) > ID10		
		12	Too many MDT-IDs (cycl.)		
		13	Too many MDT-IDs		
		14	Too many AT-IDs		
		15	AT too large		
		16	One of the IDs in the AT is a list parameter		
		17	AT contains not configurable IDs		
			<table><tr><td>Info 2</td><td>ID-No.</td></tr></table>	Info 2	ID-No.
		Info 2	ID-No.		
		18	Configuration in ID24 does not fit in MDT range (too many bytes in the config. data record)		
		19	One of the IDs in the MDT is a list parameter		
		20	MDT contains not configurable ID		
			<table><tr><td>Info 2</td><td>ID-No.</td></tr></table>	Info 2	ID-No.
		Info 2	ID-No.		
		21	Too many temporary IDs		
		22	Error in initialisation of temporary IDs		
		23	ID7 too small (ID7 lies before the AT end)		
24	ID8 too small (ID8 lies before the MDT end)				
25	During CMD 127 error in reading database				
27	In phase 2 received value ID2 is unequal instance value				
Error Removal	<ul style="list-style-type: none"><li>• Info 1 = 10 ... 22: Check the MDT or AT configuration in the master ("ID16 Configuration list AT", "ID24 Configuratin list MDT").</li></ul>				

<ul style="list-style-type: none"> <li>• EtherCAT</li> </ul>	
<ul style="list-style-type: none"> <li>• EtherCAT configuration error</li> </ul>	
<b>Device</b>	<b>KW-EC1</b> <b>KWZ</b> <b>KW-R0x / KW-R1x / KW-R2x</b> <b>A4 / A5 / A6</b> <b>iX / ihX / iC / iDT5 / iSA</b> <b>KE(N,S)-xEx</b>
<b>Description</b>	
<b>Class</b>	Error
<b>Drive Behaviour</b>	Coast to stop
<b>Device Behaviour</b>	
<b>Additional Error Information (AMK Service)</b>	

	Info 1	5	"ID15 Telegram type parameter" ≠ 7							
		6	ID-No in configuration list is described incorrectly (Internal error (AMK Service)) <table><tr><td>Info 2</td><td colspan="2">ID-No. / index</td></tr></table>			Info 2	ID-No. / index			
		Info 2	ID-No. / index							
		10	MDT too large <table><tr><td>Info 2</td><td colspan="2">last ID-No. / index</td></tr></table>			Info 2	last ID-No. / index			
		Info 2	last ID-No. / index							
		11	Starting addr. (ID9) outside MDT or (ID9+data record length) > ID10							
		12	Too many MDT-IDs (cycl.)							
		13	Too many MDT-IDs							
		14	Too many AT-IDs							
		15	AT too large <table><tr><td>Info 2</td><td colspan="2">last ID-No. / index</td></tr></table>			Info 2	last ID-No. / index			
		Info 2	last ID-No. / index							
		16	One of the IDs in the AT is a list parameter							
		17	AT contains not configurable IDs <table><tr><td>Info 2</td><td colspan="2">ID-No. / CAN index</td></tr></table>			Info 2	ID-No. / CAN index			
		Info 2	ID-No. / CAN index							
		18	Configuration in ID24 does not fit in MDT range (too many bytes in the config. data record)							
		19	One of the IDs in the MDT is a list parameter							
		20	MDT contains not configurable ID <table><tr><td>Info 2</td><td colspan="2">ID-No. / CAN index</td></tr></table>			Info 2	ID-No. / CAN index			
		Info 2	ID-No. / CAN index							
		21	Too many temporary IDs							
		22	Error in initialisation of temporary IDs							
		The master has specified an inappropriate MDT or AT configuration								
			27	EtherCAT register "DC Cycle Time Sync0" is not equal to "ID2 SERCOS cycle time" when device is switched on						
	29		EtherCAT configuration: Mailbox is faulty							
	30		EtherCAT configuration: Out-Sync manager is faulty							
	31		EtherCAT configuration: In-Sync manager is faulty							
	32		EtherCAT configuration: Synchronisation is faulty							
	33		AT list ID16 is faulty							
	34		MDT list ID24 is faulty							
	79		Software error							
	81		Software error at AT <table><tr><td rowspan="2">Info 2</td><td>0</td><td>Module error</td></tr><tr><td>ID-No.</td><td>Pointer to ID not available</td></tr></table>			Info 2	0	Module error	ID-No.	Pointer to ID not available
	Info 2		0	Module error						
			ID-No.	Pointer to ID not available						
	82		Software error at MDT <table><tr><td rowspan="2">Info 2</td><td>0</td><td>Module error</td></tr><tr><td>ID-No.</td><td>Pointer to ID not available</td></tr></table>			Info 2	0	Module error	ID-No.	Pointer to ID not available
	Info 2		0	Module error						
			ID-No.	Pointer to ID not available						
	83		Memory ALLOC error when changing AL <table><tr><td>Info 2</td><td colspan="2">Function case number</td></tr></table>			Info 2	Function case number			
	Info 2		Function case number							
	84		Software error at ID read <table><tr><td>Info 2</td><td colspan="2">ID-No.</td></tr></table>			Info 2	ID-No.			
	Info 2	ID-No.								

<b>Error Removal</b>	<ul style="list-style-type: none"> <li>Info 1 = 10 ... 22: Check the MDT or AT configuration in the master ("ID16 Configuration list AT", "ID24 Configuration list MDT").</li> <li>Info 1 = 27: Check ID2 'SERCOS cycle time' in instance 0 or 2 and adapt in ID2 from EtherCAT Master. Is the EtherCAT Slave a Ax Controller, then must be entered ID2 in EtherCAT Slave manually on instance. This entry is not made in Ax controller as EtherCAT slaves trough the master. Instance 2 is the master not known.</li> <li>Info 1 = 29 ... 32: Check whether a correct XML device description file is used in the master Info 1 = 30: too many output data Info 1 = 31: too many input data</li> </ul>
----------------------	--

## 2573 'System diagnostics'

• SERCOS			
Device			
Description	Memory cell error (system error)		
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	21, 22, 23, 33, 61, 70, 72	Software error
Error Removal	Software error => Transfer information to AMK Service		

- EtherCAT

Device	KW-EC1 KWZ KW-R0x / KW-R1x / KW-R2x A4 / A5 / A6 iX / ihX / iC / iDT5 / iSA KE(N,S)-xEx			
Description	EtherCAT memory error or special error			
Class	Error			
Drive Behaviour				
Device Behaviour	Coast to stop			
Additional Error Information (AMK Service)				
	Info 1	1	Error in memory request	
		10	Module message transmission error	
		15	Timeout access Mailbox ID	
		20	Error during firmware update	
		21, 22, 23	EtherCAT software error	
		33	EtherCAT software error	
		40	ID reading error	
			Info 3	ID-No.
		41	Signal address reading error	
			Info 2	1 Bits ID13, ID182
				2 Bits ID144
				3 Bits ID301, ID303
				4 Bits ID305, ID307
			Info 3	Signal code.
		42	Device type unknown (Product code)	
			Info 2	1 SEEP value incorrect
				2 Error EEPROM content
				3 CoE device type unknown
		43	EtherCAT/VARAN initialisation error	
			Info 2	1 EtherCAT
				2 VARAN
		44	"Clear error" was not successful	
		45	"Clear error" software error	
		46	Error in "Real Time Data Manager" entry	
		47	AT DMA transfer error	
		48	MDT DMA transfer error	
		50	Error during EtherCAT slave system initialisation	
		61	EtherCAT software error	
		70	EtherCAT software error	
Error Removal	EtherCAT software error => Transfer information to AMK-Service			

**2574 'System diagnostics'**

• SERCOS			
Device			
Description	SERCOS-Asic memory test		
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

• EtherCAT			
Device	KW-EC1 KWZ		
Description	Error during memory test in the EtherCAT Chip (The memory test is carried out without EtherCAT link!)		
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Replace KU-EC1, KW-EC1.		

**2575 'System diagnostics'**

• In Kx-SC2 modules: ext. 48 V power supply is not available or has been applied too late			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			



## 2576 'System diagnostics'

Device			
Description	Internal memory initialization During initialization error in reading database		
Class	Error		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	During initialization error in reading database
		2	Too many master instances
		3	More than one slave instance
		4	Error in writing database ("ID34150 Configuration list BC")
		5	Error in deletion "ID34142 Node list"
		6	Error in writing "ID34142 Node list"
		7	Same card addresses configured
		8	Installation synchronization function failed
		9	Installation copying function before PGT failed
		10	Installation copying function after PGT failed
		11	ID2 unequal for SC-master and SC-slave
		12	Error cause of additional initializations out of the *.ccb
Error Removal	Check bus parameterization		

### • EtherCAT

Device	KW-R0x / KW-R1x / KW-R2x A4 / A5 / A6 iX / ihX / iC / iDT5 / iSA KE(N,S)-xEx		
Description	EtherCAT memory error or special error		
Class			
Drive Behaviour			
Device Behaviour	EtherCAT does not start		
Additional Error Information (AMK Service)			
	Info 1	13	Error initialising ETC SoE service
		14	BUS type not known – SoE, CoE and VARAN are possible. SEEP value incorrect
Error Removal			

## 2577 'System diagnostics'

### • Allocation of the real time control or real time status bit

Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

**2578 'System diagnostics'**

• Test function active message (continuous light, zero bit stream)			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

**2579 'System diagnostics'**

• Error on initialization of the SERCOS option card			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	Error on card access
		2	Inadmissible value IRQ
		3	Inadmissible baud rate (only cards with HP Trans/Rec can transfer more than 4 Mbit)
		4	Wrong option card type, no AMK option card or option card type does not match the master/slave setting "ID34025 BUS mode"
		5	Wrong revision of the option card (CPLD version)
		6	Option card type and redundancy incompatible
Error Removal	Check installation of the option card		

## 2581 'System diagnostics'

• SERCOS master driver initialization			
Device			
Description	Option card type invalid or option card defective		
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	Memory SERCON ASIC SercosDriverInit( )
		2	Version SERCON ASIC SercosDriverInit( )
		3	Reset error SERCON ASIC SercosDriverInit( )
		4	Memory SERCON ASIC SercosDriverInit( )
		10	Too many cyclic data (ScmFillMov( ))
		11	ID for cyclic telegram not available (ScmFillMov( ))
		12	Too many cyclic parameters (ScmFillMov( ))
		13	ID incorrect length (ScmFillMov( ))
		49	Driver not installed SercosDriverInit( )
		257	SERCOS-III FPGA code wrong
		258	SERCOS-III no master FPGA
		260	SERCOS-III FPGA version is not supported
		536	Invalid SERCOS cycle time (ID 2)
		1029	Error during memory allocation
Error Removal	Check bus parameterization		

## 2582 'System diagnostics'

• SERCOS master driver initialization			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	Memory assignment
		2	Too many slaves
		3	Too many SERCOS rings
		4	Too many slaves
Error Removal	Check bus parameterization		

## 2583 'System diagnostics'

• SERCOS master configuration "ID34036 CCB File"				
Device				
Description				
Class				
Drive Behaviour				
Device Behaviour	System run-up aborted			
Additional Error Information (AMK Service)				
	Info 1	1	"ID34036 CCB File" is empty	
		2	No slaves in "ID34036 CCB File"	
		3	Too many slaves in "ID34036 CCB File"	
		4	Entry with invalid data format in "ID34036 CCB File"	
		5	Invalid format of "ID34036 CCB File"	
		10	Too many entries in the MDT configuration	
		11	Axis in MDT master configuration does not exist	
		12	Axis in MDT slave configuration does not exist	
		13	Too many entries in the AT configuration	
		14	Axis in AT master configuration does not exist	
		15	Axis in AT slave configuration does not exist	
		16	Too many entries in the broadcast configuration	
		17	Axis in broadcast configuration is not broadcast axis	
		18	Node address for broadcast configuration does not exist	
		19	Telegram type configuration permitted only for slave	
		20	Node address for telegram type configuration does not exist	
		21	Configuration SERCOS control permitted only for master	
		22	Node address for SERCOS control configuration does not exist	
		23	Configuration SERCOS status permitted only for master	
		24	Node address for SERCOS status configuration does not exist	
		25	Unknown entry in CCB list ID34036	
		28	Node address not in the ring	
		29	Number of nodes in all ring lists is not equal to number of nodes in node list	
		30	ID (element) of the Broadcast configuration not available	
		31	ID (element) of the AT configuration not available	
			Info 2	Node address
		32	ID (element) of the MDT configuration not available	
			Info 2	Node address
		33	"ID34036 CCB-File" cannot be read	
		34	wrong attribute	
		35	"ID34054 CCB-Filename" for slave configured	
		36	MDT-konfiguration of a non valid node (8000 h)	
		37	AT-konfiguration of a non valid node (8000 h)	
		38	Error during writing ID34054 CCB-filename	
		41	XML configuration file: End tag missing	
		43	XML configuration file: File has to start with start tag	
		44	XML configuration file: Start tag name missing	
		45	XML configuration file: End tag name missing	
		47	XML configuration file: Start tag missing	
		48	XML configuration file: Invalid token	

	49	XML configuration file: Invalid tag
	50	XML configuration file: Empty configuration file
	52	XML configuration file: Configuration file without usable content
	53	XML configuration file: Tag name communication missing
	54	XML configuration file: Tag name ring missing
	55	XML configuration file: Attribute RingConfigurationID missing
	56	XML configuration file: Tag name RingGeneral missing
	57	XML configuration file: Tag name MasterAddress missing
	58	XML configuration file: Tag name MDTLengths missing
	59	XML configuration file: Tag name TelegrammLength missing
	60	XML configuration file: Tag name ATLength missing
	61	XML configuration file: Tag name Node missing
	62	XML configuration file: Attribute NodeAddress missing
	63	XML configuration file: Tag name SVCAT missing
	64	XML configuration file: Tag name SVCMDT missing
	65	XML configuration file: Tag name Connection missing
	66	XML configuration file: Attribute ConnectionID missing
	67	XML configuration file: Attribute tpcyc missing
	68	XML configuration file: Attribute TelegrammType missing
	69	XML configuration file: Attribute TelegrammNumber missing
	70	XML configuration file: Attribute Offset missing
	71	XML configuration file: Tag Producer missing
	72	XML configuration file: Tag PLCVariable missing
	73	XML configuration file: Attribute Length missing
	74	XML configuration file: Attribute Address missing
	75	XML configuration file: Attribute Name missing
	76	XML configuration file: Attribute Offset missing
	77	XML configuration file: Tag Consumer missing
	78	XML configuration file: Attribute RingConfigurationID missing
	79	XML configuration file: Error during writing the RingConfigurationID
	80	XML configuration file: Error during writing the cycle time (ID2)
	81	XML configuration file: Attribute sync missing for the PLC variable
	82	XML configuration file: Telegram Length cannot be divided by 4
	83	XML configuration file: Offset cannot be divided by 4
	84	XML configuration file: PLC address range exceeded
	85	XML configuration file: Too many cross-communication relations
	86	XML configuration file: Invalid length MDT
	87	XML configuration file: Invalid length AT
<b>Error Removal</b>	<ul style="list-style-type: none"> <li>• Check bus configuration</li> <li>• Check SERCOS-III Master XML configuration file ("ID1204 XML-File", "ID1205 SML-File"), Info2 = instance</li> </ul>	

## 2584 'System diagnostics'

• SERCOS master phase switchover	
<b>Device</b>	
<b>Description</b>	
<b>Class</b>	
<b>Drive Behaviour</b>	
<b>Device Behaviour</b>	System run-up aborted
<b>Additional Error Information (AMK Service)</b>	

	Info 1	1	Ring is open Fiberbreak	Info 2	Phase
		2	Ring is open MST late	Info 2	Phase
		3	Ring is open MST miss	Info 2	Phase
		4	Redundancy: master isolated		
		5	master no clock signal		
		9	Invalid telegram received P1 (AT wrong address)	Info 3	Address
		13	receive of non valid telegram P1 (AT data unequal 1)	Info 3	Address
		15	Phase change cannot be performed	Info 2	Phase
		35	Timeout	Info 2	Phase
		40	MST invalid phase information received	Info 2	Phase
		42	It is not possible to switch from phase 1 into 0		
		43	no drive response P1	Info 3	Address
		80	Timeout		
		81	No participant found in phase 0		
		82	Configuration file in the slave does not match the file in the master	Info 2	Address
		522	Slave sends even though a phase exchange has been initiated	Info 2	Phase
				Info 3	Address
		523	Slave does send after phase exchange	Info 2	Phase
				Info 3	Address
		524	Timeout, no stable slave detection in master		
		525	Invalid ATs in phase 0		
		527	Ring/line in phase 0 not closed		
		529	No participant found in phase 0		
		530	A specified node is missing	Info 2	Phase
				Info 3	Address
		532	Ring/line in phase 0 not closed		
		536	Invalid SERCOS cycle time (ID2)		
		545	No link at output in phase 0		
<b>Error Removal</b>	<ul style="list-style-type: none"> <li>• Check fibre optic conductors</li> <li>• Check slaves</li> </ul>				

## 2585 'System diagnostics'

• SERCOS master time slot calculation			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	6	"ID5 Minimal feedback acquisition time" from slave is not available for time slot calculation
		20	"ID3 Drive transmission reaction time" from slave is not available for time slot calculation
		25	"ID88 Recovery time receive-receive" from slave is not available for time slot calculation
		29	"ID2 SERCOS cycle time" is too short
		31	"ID90 Command value copytime" from slave is not available for time slot calculation
		44	"ID4 Transmit/receive time" from slave is not available for time slot calculation
		45	"ID96 Slave identifier (SKLN)" from slave is not available for time slot calculation
		46	"ID87 Recovery time transmit-transmit" from slave is not available for time slot calculation
		80	Timeout
		533	Invalid MDT length in configuration file
		534	Invalid AT length in configuration file
		536	Invalid "ID2 SERCOS cycle time"
		537	Invalid "ID1 NC cycle time"
		538	Internal error
		539	Internal error
		540	Internal error
		541	Internal error
		543	Too much cyclic data in SERCOS cycle
		544	Too many telegrams in SERCOS cycle
Error Removal	<ul style="list-style-type: none"><li>• Check slaves</li><li>• Check SERCOS-III Master XML configuration file ("ID1204 XML File", "ID1205 XML File"), Info2 = instance</li></ul>		

## 2586 'System diagnostics'

• SERCOS master service channel				
Device				
Description				
Class	Warning			
Drive Behaviour				
Device Behaviour				
Additional Error Information (AMK Service)				
	Info 1	1	Protocol error: HS_AT != HS_MDT + BUSY = 1 Info 3      Node address	
		2	Error on initialization of service channel	
		3	Router error Info 2      Error of the router Info 3      Error location	
		4	Data access attribute unknown Info 3      Node address	
		33	Busy Timeout Info 2      ID Info 3      Node address	
		34	Handshake timeout bit Info 2      ID Info 3      Node address	
		80	Timeout Info 2      ID Info 3      Node address	
		81	Startup error Info 3      Node address	
		9	Error service channel acc. SERCOS e.g. data transmission to long (Info 3: node address) Info 3      Node address	
		> 0x1000	Error service channel acc. SERCOS e.g. data transmission to long Info 3      Node address 0x88xxerror in ROUTER from slave Info 3      Node address	
		514	Service channel already assigned	
		Error Removal		

## 2587 'System diagnostics'

• SERCOS master incorrect data in the service channel			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Error message according to SERCOS
Error Removal			



**2588 'System diagnostics'**

<ul style="list-style-type: none"><li>SERCOS master error in command execution</li></ul>				
Device				
Description				
Class	Warning			
Drive Behaviour				
Device Behaviour				
Additional Error Information (AMK Service)				
	Info 1	36	Command timeout	
			Info 2	ID
			Info 3	Node address
Error Removal				

**2589 'System diagnostics'**

• SERCOS master has detected ring interruption			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check fibre optic cable</li><li>• Check slaves</li></ul>		

**2590 'System diagnostics'**

• SERCOS master has detected AT failure			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	xx	xx = Node address of the slave
Error Removal	Check slaves		

**2591 'System diagnostics'**

• SERCOS master software error			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Contents SERCON Register 17
Error Removal			

**2592 'System diagnostics'**

• SERCOS master has detected MST failure			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Check fibre optic cable		

**2593 'System diagnostics'**

• SERCOS master real time error			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
			Additional driver information
Error Removal			

**2594 'System diagnostics'**

• SERCOS master software error			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2595 'System diagnostics'**

• SERCOS			
Device			
Description	Error SERCOS synchronization		
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1	SERCOS master synchronization timeout
		2	SERCOS synchronization lost
Error Removal			

• EtherCAT			
Device	KW-EC1 KWZ KW-R0x / KW-R1x / KW-R2x A4 / A5 / A6 iX / ihX / iC / iDT5 / iSA KE(N,S)-xEx		
Description	Error EtherCAT synchronisation		
Class	Error		
Drive Behaviour	Coast to stop		
Device Behaviour	<ul style="list-style-type: none"><li>It will be initiated a 'AL State Change Request' in 'Safe Operational'</li><li>Adjustable, see ID34027 'BUS failure character'</li></ul>		
Additional Error Information (AMK Service)			
	Info 1	2	EtherCAT synchronisation not reached <ul style="list-style-type: none"><li>While changing from "Safe operational" to "Operational" the synchronisation on distributed clock was not reached</li></ul>
		3	EtherCAT synchronisation lost <ul style="list-style-type: none"><li>In the state "Operational" the state of the synchronisation in the cycle is checked and in 2 subsequent cycles "not synchronous" detected</li></ul>
		4	Toggle bit in control word is incorrect
Error Removal	Check settings for distributed clock in the master		

## 2596 'System diagnostics'

• SERCOS master has received the “error” acknowledgment to a command				
Device				
Description				
Class	Warning			
Drive Behaviour				
Device Behaviour				
Additional Error Information (AMK Service)				
	Info 1		Command ID	
			Info 2	Node address
			Info 3	Acknowledgment
Error Removal				

## 2597 'System diagnostics'

• SERCOS master has received an error message from a remote node			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1	Error status class 1
		2	Warning status class 2
Error Removal			

**2598 'System diagnostics'**

<ul style="list-style-type: none"><li>SERCOS has indicated a bad signal quality on the OWG receiver (excessive receive data distortion RDIST)</li><li>OWG disconnection AS-FSR1</li></ul>				
Device				
Description				
Class	Warning			
Drive Behaviour				
Device Behaviour				
Additional Error Information (AMK Service)				
	Bad signal quality on the OWG receiver			
	Info 1	1	Master	
		2	Slave	
		4	Master verify ring	
		5	Slave verify ring	
	Disconnection OWG receiver (redundant)			
	Info 1	10	Main ring error during bootup	
		11	Verify ring error during bootup	
		14	Main ring error during operation	
			Info 2	Node (256 = master)
		15	Verify ring error during operation	
		Info 2	Node (256 = master)	
	527	No link is detected during the bus booting time ("ID34026 BUS mode attribut")		
	Error Removal			

**2599 'System diagnostics'**

<ul style="list-style-type: none"><li>Error while activating the advanced operating mode</li></ul>					
Device	KW-R0x / KW-R1x / KW-R2x iX / iC / iDT5 ihX				
Description					
Class	Error				
Drive Behaviour	Coast to stop or it is braked sensorless				
Device Behaviour					
Additional Error Information (AMK Service)					
	Info 1	1	Unknown or Not Supported operating mode		
		2	Error in function "interpolation"		
		3	Operating mode active		
			Info 2	1	Allocating
			2	Handshake module	
	Error Removal	Check default values			

### 3.11 No. 2600 ... 2619 Profibus (PB) / Profinet (PN)

#### 2600 'System diagnostics'

• Error memory space			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

• Memory error			
Device	A4 / A5 / A6 iSA		
Description	Profibus error - Profibus / Profinet does not start		
Class	Error		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info1	1	Software error - memory
		10	Software error - message sending
		20	A5: Profibus option card A-SPB missing
		30	Internal error
Error Removal	<ul style="list-style-type: none"><li>• Info1 = 20: check device</li><li>• AMK service</li></ul>		

#### 2601 'System diagnostics'

<ul style="list-style-type: none"><li>• Adapter cannot be initialized</li></ul>			
Device	A4 / A5 / A6 iSA		
Description	Profibus error - Profibus / Profinet does not start		
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	Module number not permitted (>3)
		2	SPC3 buffer size not possible
		3	Initialization error (e.g. module address jumper plugged in)
		4	It's not possible to read initial parameters.
		5	AFP because of an active option card not available
		6	Number of synchronous data modules is not allowed.
		7	Configuration not possible
Error Removal			

**2602 'System diagnostics'**

<ul style="list-style-type: none"><li>• Cable is interrupted (reaction according to "ID 34027 BUS failure characteristics")</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2603 'System diagnostics'**

<ul style="list-style-type: none"><li>Data exchange mode is exited (e.g. after watchdog error; reaction according to "ID34027 BUS failure characteristics")</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2604 'System diagnostics'**

<ul style="list-style-type: none"><li>Inadmissible field bus handshake code (e.g. SERVERERROR, SERVERWARNING, ...)</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1	Input handshake
		2	Output handshake
Error Removal			

**2605 'System diagnostics'**

• PROFIBUS Initialization/ Error state			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	16	PROFIBUS Controller not in “Offline” state
		17	Node address error
		18	Input/output length error 2
Error Removal			

• PROFIBUS error bus configuration					
Device	A4 / A5 / A6 ISA				
Description	Profibus error - Profibus / Profinet does not start (bus master configuration error )				
Class	Error				
Drive Behaviour					
Device Behaviour	System run-up aborted				
Additional Error Information (AMK Service)					
	Info1	17	Slave address error		
		24	Profibus configuration: wrong length		
			Info2	1	ID1204 'XML file' / P.S.2 - length too small
				Info3	Length of ID Header
			2	Master length too large	
				Info3	Length Master
		35	Master configuration - Wrong I/O modules or not supported		
			Info2	I/O Module Identifier	
			Info3	I/O Module Offset in Master CFG Indication	
		Error Removal	• Check bus master configuration		

## 2606 'System diagnostics'

• PROFIBUS MSAC-C1 error (Master-Slave Acyclic Communication-Class1)			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

## 2607 'System diagnostics'

• PROFIBUS MSAC-C2 error (Master-Slave Acyclic Communication-Class2)			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

## 2608 'System diagnostics'

• PROFIBUS initialisation error			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1	Buffer configuration too small
		2	Input/output data size wrongly configured ("ID34025 BUS mode"/Inst1)
		3	Wrong / not supported PROFIdrive standard telegram
		5	KW software older than 2004/52
		8	ID 2<> 0.5 ms by PROFIdrive Telegram 105
		21 - 28	ID READ error during initialization
		31 - 34	Reading error during initialization
		38	ID READ error ("ID 32840 Diagnostic List")
		41	ID WRITE error ("ID34023 BUS address participant")
		42	ID WRITE error ("ID32944 SYADR")
		148 - 255	Software error
Error Removal			



• PROFIBUS error				
Device	A4 / A5 / A6 ISA			
Description				
Class	Error			
Drive Behaviour				
Device Behaviour	System run-up aborted: Profibus does not start			
Additional Error Information (AMK Service)				
	Info 1	9	DP cycle ID2 faulty, e. g. less than 1 ms	
			Info2	DP cycle ID2 / μs
		50	Number of input bytes in slave greater than number of input bytes in master	
			Info2	Input size slave
			Info3	Input size master
		51	Number of output bytes in slave greater than number of output bytes in master	
			Info2	Output size slave
			Info3	Output size master
		52	Not enough input modules in master	
			Info2	Number of input modules in slave
			Info3	Number of input modules in master
		53	Not enough output modules in master	
			Info2	Number of output modules in slave
			Info3	Number of output modules in master
		54	Input module in slave not equal to input module in master	
			Info2	Module offset / bytes
		55	Output module in slave not equal to output module in Master	
			Info2	Module offset / bytes
56	Dummy input module in slave does not match input module in master			
	Info2	Module offset / bytes		
57	Dummy output module in slave does not match output module in master			
	Info2	Module offset / bytes		
Error Removal	<ul style="list-style-type: none"><li>• Check bus configuration</li><li>• ID1204 'XML file'</li></ul>			

## 2609 'System diagnostics'

<ul style="list-style-type: none"><li>• PROFIBUS Warning – wrong parameter initialization</li><li>• Read error ID 173</li><li>• Global Control Sync Loss</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1	Wrong initialized "ID32799 Configuration standard peripherie"
		2	Wrong initialized "ID34026 BUS mode attribut"
		3	Wrong initialized "ID32926 AMK homing cycle parameter"
		4	Wrong initialized "ID32855 Output port 2"
		5	Wrong initialized "ID32863v Port 2 bit 7"
		6	Wrong initialized "ID32968 Input port 2"
		7	Wrong initialized "ID32973 Port 2 bit 4"
		8	Wrong initialized "ID32976 Port 2 bit 7"
		20	Global Control Sync Loss
		173	Error by reading "ID173 Marker position A"
Error Removal			

## 2610 'System diagnostics'

• PROFIBUS error bus configuration					
Device	A4 / A5 / A6 iSA				
Description	Profibus error - Profibus / Profinet does not start (error slave (device) bus configuration drive mode)				
Class	Error				
Drive Behaviour					
Device Behaviour	System run-up aborted				
Additional Error Information (AMK Service)					
	Info1	1	Module incorrect or not supported		
		2	Variable type not allowed		
			Info2	Typ	
				Info3	Index
Error Removal	Check bus slave configuration				

## 2611 'System diagnostics'

• PROFIBUS error bus configuration				
Device	A4 / A5 / A6 iSA			
Description	Profibus error - Profibus / Profinet does not start (error slave (device) bus configuration)			
Class	Error			
Drive Behaviour				
Device Behaviour	System run-up aborted			
Additional Error Information (AMK Service)				
	Info1	2	Variable type not allowed	
			Info2	Typ
			Info3	Index
Error Removal	Check bus slave configuration			

## 2612 'System diagnostics'

• PROFIBUS error bus configuration		
Device	A4 / A5 / A6 iSA	
Description	Profibus error - Profibus / Profinet does not start (error initialization bus driver)	
Class	Error	
Drive Behaviour		
Device Behaviour	System run-up aborted	
Additional Error Information (AMK Service)		
	Info1	Initialization error
Error Removal		

## 2613 'System diagnostics'

• PROFIBUS error bus configuration			
Device	A4 / A5 / A6 iSA		
Description	Profibus error - Profibus / Profinet does not start (error initialization bus driver)		
Class	Error		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info1	1	Initialization error synchronization
		2	Initialization error mailbox
		3	Initialization error
		4	Internal addressing error
		5	Bus status initialization error
		6	Driver initialization error
Error Removal			

**2614 'System diagnostics'**

• PROFIBUS error bus configuration			
Device	A4 / A5 / A6 iSA		
Description	Profibus error - Profibus / Profinet does not start (error slave (device) bus configuration)		
Class	Error		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info1	1	Error parsing XML bus configuration
		2	Error 'Receive' PDO definitions
		3	Error 'Transmit' PDO definitions
Error Removal	Check bus slave configuration		

**2615 'System diagnostics'**

• PROFIBUS error bus configuration					
Device	A4 / A5 / A6 iSA				
Description	Profibus error - Profibus / Profinet does not start (error message from bus driver)				
Class	Error				
Drive Behaviour					
Device Behaviour	System run-up aborted				
Additional Error Information (AMK Service)					
	Info1	Slot			
		Info2	Modul		
			Info3	Submodul	
				Info3	Alarm type
Error Removal	Check bus slave configuration				

**3.12 No. 2620 ... 2629 ARCNET (ARC)****2620 'System diagnostics'**

• Subscriber not connected with network			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2621 'System diagnostics'**

• Network error			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2622 'System diagnostics'**

<ul style="list-style-type: none"><li>• Transfer error/transmission error</li><li>• Transmission process timeout</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2623 'System diagnostics'**

• Adapter is constantly reconfigured			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Check BUS connection		

**2624 'System diagnostics'**

<ul style="list-style-type: none"><li>• ID34023=0, BUS subscriber address must be unequal to 0</li><li>• ARCNET controller error</li><li>• RAM test controller error</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

**2625 'System diagnostics'**

• ARCNET telegram too long			
Device			
Description			
Class	Controlled braking		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2626 'System diagnostics'**

<ul style="list-style-type: none"><li>Node ID is already present</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal	Recheck parameter: <ul style="list-style-type: none"><li>ID34023 BUS address participant</li></ul>		

**2628 'System diagnostics'**

<ul style="list-style-type: none"><li>• Init. state error</li><li>• Error in node ID check</li><li>• No adapter present</li><li>• RAM memory too small for ARCNET</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal			

### 3.13 No. 2640 ... 2649 LON

#### 2640 'LON failure'

<ul style="list-style-type: none"><li>• Interruption of the master → slave connection</li><li>• Recognition only by heartbeat failure</li><li>• Ramp down after BUS failure</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

#### 2641 'LON timeout IN'

<ul style="list-style-type: none"><li>• Device does not accept control block within T1</li><li>• T1 = low word after variable nvi_QhsTime</li><li>• See LON network variables for more details</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

#### 2642 'LON timeout OUT'

<ul style="list-style-type: none"><li>• Device does not output status block within T1</li><li>• T1 = low word after variable nvi_Qhs Time</li><li>• See LON network variables for more details</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2643 'LON timeout application'**

<ul style="list-style-type: none"><li>• The application lasts (Q_CODE=1) longer than T2</li><li>• T2= high word after variable nvi_QhsTime</li><li>• See LON network variables for more details</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2644 'System diagnostics'**

<ul style="list-style-type: none"><li>• Device reports within 2 s in the ramp up</li><li>• Handshake not with code “5678”</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2645 'System diagnostics'**

• DPRAM writing error			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**3.14 No. 2660 ... 2669 INTERBUS (IB)****2660 'System diagnostics'**

<ul style="list-style-type: none"><li>• The required RAM memory for the system data is not present</li></ul>			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			



**2661 'System diagnostics'**

• Unknown bus mode entry in "ID34025 BUS mode"			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2663 'System diagnostics'**

• Interbus is inactive			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	Cable is defective or not connected with master		

**2664 'System diagnostics'**

• Interbus reset			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**2665 'System diagnostics'**

• At least 20 invalid data cycles detected			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

### 3.15 No. 2680 ... 2699 CAN

#### 2680 'System diagnostics'

• CAN AFP error during initialization			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	Device does not answer during initialization longer as 2 sec.
		2	AFP timeout status
		3 - 23	Error by reading ID s
Error Removal			

#### 2681 'System diagnostics'

• Object Dictionary error			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1-13	Dictionary and variable problems
		14	Service Data Object (SDO) not found
		15	Service Data Object (SDO) not valid
Error Removal			

#### 2682 'System diagnostics'

• Too much Receive PDOs and SDOs configured			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	Too many RPDOs and SDOs in default slave dictionary
		1	Too many TPDOs, no place for Global Status TPDO
Error Removal			

#### 2683 'System diagnostics'

• Software error (Reason could be false configuration data)			
Device			
Description			
Class	Warning		
Drive Behaviour	Controlled braking		
Device Behaviour			

Additional Error Information (AMK Service)			
	Info 1	0	Invalid switch-operator value
		1-5	Internal software error
		11, 41, 51	Data pointer not adjusted
		12, 42, 52	Invalid variable type
		35	Invalid message type in the receive queue
		59	Dealloc memory error
		100	File system directory reading error
		102	Node List ID write error
Error Removal			

## 2684 'System diagnostics'

• Communication error			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1	Transmit buffer full
		2	RTR to RPDO
		3	Unknown NMT command
		4	Invalid message type
		5	Exit from OPERATIONAL state
		6	CAN controller not ready to send new message
		7	SDO access is not allowed in this bus state (only in PREOPERATIONAL or OPERATIONAL)
Error Removal			

## 2685 'System diagnostics'

<ul style="list-style-type: none"><li>• Communication error</li><li>• Hardware synchronisation error</li></ul>			
Device			
Description	<ul style="list-style-type: none"><li>• Communication error</li><li>• Hardware synchronisation error</li></ul>		
Class	Error		
Drive Behaviour			
Device Behaviour	<ul style="list-style-type: none"><li>• System run-up aborted:</li><li>• Adjustable, see ID34027 'BUS failure character'</li></ul>		
Additional Error Information (AMK Service)			
	Info1	1	CAN controller BUS off state
		2	Life guarding time-out, communication disturbed
		3	AMK hardware synchronisation not possible
		4	AMK hardware synchronisation lost
		5	Faulty cycle time of HW synchronisation
		10	Basic device synchronisation signal time-out
		11	Basic device synchronisation time-out
		12	Basic device synchronisation signal lost
		13	Basic device synchronisation lost
		14	External synchronisation signal lost
		15	External synchronisation lost
		16	External synchronisation signal time-out
		17	External synchronisation time-out
		20	Error in time system (250 µs level)
Error Removal	Info1 = 1 Info1 = 4  Info1 = 5  Info1 = 11	<ul style="list-style-type: none"><li>• Check cabling</li><li>• Check configuration of hardware synchronisation ID34026 'BUS mode attribute' in all devices</li><li>• Check ID 2 'SERCOS cycle time' in all devices</li><li>• Check cabling and terminator</li><li>• When using the AMK adaptor AP-CI4 (O778), the resistors R1 and R2 must be equipped</li><li>• Check configuration of hardware synchronisation ID34026 'BUS mode attribute' in all devices. Only one sender of hardware synchronisation cycle may be active.</li><li>• NMT 'OPERATIONAL' received but basic device synchronisation not finished. I. e. the switching to 'OPERATIONAL' must be delayed. On AMK CAN master devices, this can be done by means of ID34026 by activating a run-up delay.</li></ul>	

## 2686 'System diagnostics'

• AFP error			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour	Adjustable, see ID34027 'BUS failure character'		
Additional Error Information (AMK Service)			
	Info 1	1	No HS reading AFP output data
		2	No HS writing AFP input data
		3	Both 1 and 2
Error Removal			

**2687 'System diagnostics'**

<ul style="list-style-type: none"><li>Invalid Node address</li><li>Invalid Baud Rate</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	Hardware switch Node address invalid
		1	"ID34023 BUS address participant": Node address invalid
		2	"ID34024 BUS transmit rate": Baud Rate invalid
		3	"ID34025 BUS mode" bit not set
Error Removal	<ul style="list-style-type: none"><li>Check participant no. at rotary coding switch</li><li>Recheck parameters:<ul style="list-style-type: none"><li>ID34023 BUS address participant</li><li>ID34024 BUS transmit rate</li><li>ID34025 BUS mode</li></ul></li></ul>		

**2688 'System diagnostics'**

<ul style="list-style-type: none"><li>• "ID34025 Bus mode":AFP bit not valid</li><li>• AFP Error by reading ID s</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Removal	Recheck parameter: <ul style="list-style-type: none"><li>• ID34025 BUS mode</li></ul>		

## 2689 'System diagnostics'

• Errors on configuring					
Device					
Description					
Class					
Drive Behaviour					
Device Behaviour	System run-up aborted				
Additional Error Information (AMK Service)					
	Info 1	1, 2 11, 12 35, 92	Internal error		
		13, 20, 81	Transmission channel busy		
		82	Bus error (BUS OFF status)		
		91	Client SDO missing in master object list		
			Info 2	Subscriber address of the slave node	
		93	Not successful SDO transmission		
		94	Data size of DCF entry too big		
		101	Resource problem (DCF too large)		
			Info 2	0	save to CCB
				1	Load from CCB
		102	Resource problem (memory)		
		103	Faulty PDO mapping in the DCF		
		112, 113	Resource problem (Heap initialization)		
		114, 115	Resource problem (memory)		
		116	DCF not available		
		117	Error on reading DCF		
		118	Invalid DCF element (incorrect index or size)		
		119	Resource problem (memory)		
		120	Internal error		
		121 - 145	Error on reading ID		
		135	Error on writing from ID 34023		
		151 - 194	Error on reading ID		
		203	CAN Bus failed, DCF present and mandatory slave(s) configured		
		211	Hardware synchronization not successful		
		212	No bus node available		
218	EndOfFile mark wrong				
Error Removal					

## 2690 'System diagnostics'

<ul style="list-style-type: none"><li>Error in Slave configuration (Data size in CCF element too big)</li></ul>				
Device				
Description				
Class				
Drive Behaviour				
Device Behaviour	System run-up aborted			
Additional Error Information (AMK Service)				
			Node ID of Slave node	
			Info 2	Index
			Info 3	Sub index
Error Removal				

## 2691 'System diagnostics'

Device	Devices with ACC-Bus connection		
Description	Bus overload		
Class	Warning		
Drive Behaviour			
Device Behaviour	Adjustable, see ID34027 'BUS failure character'		
Additional Error Information (AMK Service)			
	Info 1	13, 20, 43, 48 - 50, 53, 65, 101	Send queue full
		33, 38	Heap overflow
		45 - 47	AFP handshake failed
		57, 58	Heap overflow
		62	CAN Controller not ready to send a message
		80	Data exchange utilisation ration too high
		82	Extraction from Send Queue late
		90	Extraction from Receive Queue late
		91	Send: Too many TPDOs Receive: Sync RPDO received too late
		92	Receive: Buffer for Asynchronous Receive PDOs full
		93	Sync TPDO cant't be sent; too many PDOs in network
		201	Receive queue full
		202	Last CAN message lost
		203	Previous CAN message lost
		210	SDO Receive channel fulll
		211	SDO Transmission channel full
		212	Too many SDO sessions started
		214	DSDO multiple started
		214	DSDO Error
Error Removal	<ul style="list-style-type: none"><li>Info 1 = 91: Switch on hardware synchronisation in "ID34026 BUS mode attribut" Master: sender of signal Slave: receiver of signal</li><li>Check if "ID2 SERCOS cycle time" is the same cycle time for all nodes</li><li>Synchronous PDOs (with synchronous mapping variables) from external device must be received as EVENT PDO.</li></ul>		

**2692 'System diagnostics'**

• Software warning			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1	DCF not available
		2	Oscilloscope PDO not available
		3	CAN BUS not active
		31, 36	Invalid NMT command received
		32, 37	Exit from OPERATIONAL state
		40	Wrong / not supported DSP 402 mode of operation
		41	Wrong DSP 402 Profile Position command
		101	ID write not possible
		103	Read "ERROR FIFO" not possible
		104	Mapping conflict (copy direction)
		105	Hardware synchronization configuration error
Error Removal			

**2693 'System diagnostics'**

• Slave Node State error			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour	Adjustable, see ID34027 'BUS failure character'		
Additional Error Information (AMK Service)			
	Info 1		Node ID of slave node
Error Removal			

**2694 'System diagnostics'**

• Slave Node Guarding error					
Device					
Description					
Class	Warning				
Drive Behaviour					
Device Behaviour	Adjustable, see ID34027 'BUS failure character'				
Additional Error Information (AMK Service)					
	Info 1		Node ID of slave node		
			Info 2	1	Timeout
				2	Toggle Bit error
Error Removal					



**2695 'System diagnostics'**

• Emergency received			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1		Node ID of slave node
Error Removal			

**2696 'System diagnostics'**

• DSDO Router error			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1		Router error code
Error Removal			

**2697 'System diagnostics'**

<ul style="list-style-type: none"><li>Mandatory slave node missing</li></ul>					
Device					
Description					
Class	Warning				
Drive Behaviour					
Device Behaviour					
Additional Error Information (AMK Service)					
	Info 1		Node ID of slave node		
			Info 2	1	Network configuration
				2	Single node configuration
Error Removal					

## 2698 'System diagnostics'

• SDO error during network configuration				
Device				
Description				
Class	Warning			
Drive Behaviour				
Device Behaviour				
Additional Error Information (AMK Service)				
	Info 1		Node ID of slave node	
			Info 2	Index
			Info 3	Sub Index
	40	<b>Meaning for A4 / A6 /</b>		
		CAN configuration error in connection with a CAN Wago coupler 750-337		
Error Removal	Info 1 = 40: Set ID34026 'BUS mode attribute' instance 1 bit 7 =1			

## 2699 'System diagnostics'

• System error			
Device			
Description			
Class			
Drive Behaviour	Controlled braking		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	4	RAM-check error
		10	Watchdog or time level error
		12	User stack error
		13	System stack overflow
		14	System stack underflow
		15	Controller error
		20	Fast function overflow
		30	Initialization - Software error
		31	Initialization - error while data read
		32	Initialization - too much FCT instances
		33	Initialization - no FCT instance
		34	Initialization - error while data write "ID30 Softwareversion"
		35	Initialization - invalid bus use "ID34143 Usage port"
		36	Error while clock initialization
		37	FCT initialization – invalid CPLD version (2 FCT)
		38	FCT initialization – writing error Routing "ID32944 SYADR"
		39	FCT initialization – more than one synchronization source
Error Removal			

### 3.16 No. 2720 ... 2739 EtherCAT

#### 2721 'System diagnostics'

<ul style="list-style-type: none"><li>• Slave defective or no longer on the bus</li><li>• Cable defective</li><li>• Slave leaves the “operational” status (resulting error in case of cable break)</li></ul>				
Device	AS-PL15 AS-Cxx-1 A4 / A5 / A6 iSA			
Description				
Class	Error			
Drive Behaviour				
Device Behaviour	Controller: Switch back to status SAFE-OPERATIONAL			
Additional Error Information (AMK Service)				
	Info 1	1	Broadcast AL status not received	
		2	Broadcast working counter error	
		3	Slave offline	
			Info 4	Slave address
		4	Slave offline	
			Info 4	Slave address
		5	Slave not in “Operational” status	
			Info 2	Status
			Info 4	Slave address
		10	No Ethernet link available	
		20	DL status change	
			Info 2	Current status
			Info 4	Previous status
		30	EtherCAT input (AMK devices X86) and EtherCAT output (AMK devices X85) mixed	
Error Removal	<ul style="list-style-type: none"><li>• Check slave with the address from “Info 4”</li><li>• Replace slave</li><li>• Info 1 = 10: Exchange Ethernet cable</li><li>• Info 1 = 30: Check EtherCAT cabling</li></ul>			

**2722 'System diagnostics'**

<ul style="list-style-type: none"><li>• Cable breakage</li><li>• Error exchanging real-time data</li><li>• Synchronisation error</li></ul>			
Device	AS-PL15 AS-Cxx-1 A4 / A5 / A6 iSA		
Description			
Class	Error		
Drive Behaviour			
Device Behaviour	Controller: Switch back to status SAFE-OPERATIONAL		
Additional Error Information (AMK Service)			
	Info 1	1	Real-time telegram not received
		2	Real-time telegram working counter error
			Info 2Working counter
	10	Error in synchronisation with host	
Error Removal	<ul style="list-style-type: none"><li>• Check Ethernet cable and replace if necessary</li></ul>		

**2723 'System Diagnostics'**

<ul style="list-style-type: none"><li>• Configuration too large</li></ul>			
Device	A4 / A5 / A6 iSA		
Description			
Class	Error		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	520	Runtime error
		550	Configuration too large
Error Removal			

## 2724 'System diagnostics'

<ul style="list-style-type: none"><li>• Error during the initialisation for the EtherCAT option</li><li>• Device for the operation of the optional component AS-FEC1 not released. The option card cannot be installed subsequently.</li><li>• Configuration faulty</li></ul>			
Device	AS-PL15 AS-Cxx-1 A4 / A5 / A6 ISA		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted Controller: EtherCAT does not boot		
Additional Error Information (AMK Service)			
	Info 1	1	EtherCAT not parameterised in any instance of "ID34140 AS BUS protocol"
		2	Error while reading the bus parameters
		3	Registration at the router faulty
		4	Setting up the cyclic functions faulty
		5	Driver interface not initialised properly
		6	Device not released for the operation of the optional component AS-FEC1 (dongle code)
		7	Option not configured as master
		8	Option ACC active (Instance 1 or 5) EtherCAT and ACC-BUS can not be active both
		10	Access error to cyclic driver interface (The version of the EC driver is not compatible to the AMK library)
		11	Initialisation error
		21	Invalid task
		22	Error during bus restart
Error Removal	<ul style="list-style-type: none"><li>• Check configuration</li><li>• Order controller with the AS-FEC1 option from AMK</li></ul>		

## 2725 'System diagnostics'

Device	AS-PL15 AS-Cxx-1 A4 / A5 / A6 iSA		
Description			
Class			
Drive Behaviour			
Device Behaviour	Controller: Depends on additional information		
Additional Error Information (AMK Service)			
	Info 1	0	EtherCAT booting process cancelled. This error is a subsequent error to the errors 2726 or 2727
Error Removal			

## 2726 'System diagnostics'

• Error in the EtherCAT master booting process						
Device	AS-PL15 AS-Cxx-1 A4 / A5 / A6 ISA					
Description						
Class						
Drive Behaviour						
Device Behaviour	System run-up aborted Controller: EtherCAT does not boot					
Additional Error Information (AMK Service)						
	Info 1	1	Error while starting the master driver			
			Info 2	1, 2, 3	Internal Error (AMK Service)	
				5	No connection to slaves	
		2	Error during the stop of the master driver			
			Info 2	1	No configured slave was not found	
				Info 4 Slave network position		
				2	More slaves found than configured	
			Info 4 Slave network position			
			3	Slave has wrong revision		
				Info 3	Actual revision	
				Info 4	Slave network position	
			3	Error while activating the master function (subsequent error of 2731 process slave configuration)		
		Info 2		Internal Error (AMK Service)		
		4	Error reading the slave information			
			Info 2	Internal Error (AMK Service)		
		5	Error writing the slave addresses			
			Info 2	1	Access error to the bus configuration	
				2	Data length of the ID is not valid	
					Info 3	ID
			Info 4	Slave address		
				3	Write error at dictionary entries, seriation of the slaves wrong for this configuration	
			Info 3		ID	
			Info 4		Slave address	
			6	Error writing the PDO configuration		
		Info 2		2	“Category” information not in EEPROM of the slaves	
Info 4	Slave address					
7	Error during registering the PDOs					
	Info 2	Internal Error (AMK Service)				
8	Error during writing the RT data					
9	Error during reading the RT data					
10	Error during writing the DC configuration					

		11	Error DC configuration, Subsequent error of error 2730 datagram error			
		12	Error during switchover AL status, Subsequent error of error 2731 process slave configuration			
		14	Write error during PDO mapping			
			Info 2	1	Slave not available	
				2	Slave does not support COE protocol	
				3	Slave does not support PDO	
				4	direction of the PDO is not valid	
				5	error during start of the sync-manager	
				6	PDO already mapped	
				7	error during creating the PDO	
		8		PDO could not be copied		
		15	Command driver reset failed			
		16	Error while reading PDO mapping			
		17	Error while reading slave names			
		20	Driver command timeout			
		40, 41, 45	Error during bus start			
		42 - 44	Error while accessing slave parameter			
			Info 2	ID-no / index		
			Info 4	Slave address		
		46	Error configuring cyclical data. Additional nodes are found See ID34026 instance 5 bit 5 = 1			
			Info 2	1, 2, 3	Internal Error (AMK Service)	
		50	Return message while writing slave parameters			
		51	Return message error while reading slave parameters			
		60	Service channel protocol but number of SYNC managers too low. Possibly EEPROM content incorrect.			
		203, 205, 206, 208, 209	Internal errors (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• No EtherCAT master option card available</li><li>• No bus connection, no link</li><li>• Check optional component AS-FEC1</li><li>• Check Ethernet cable and replace if necessary</li></ul>					

## 2727 'System diagnostics'

• Error EtherCAT configuration	
<b>Device</b>	AS-PL15 AS-Cxx-1 A4 / A5 / A6 iSA
<b>Description</b>	
<b>Class</b>	Error
<b>Drive Behaviour</b>	
<b>Device Behaviour</b>	System run-up aborted Controller: EtherCAT booting process cancelled

## Additional Error Information (AMK Service)

	Info 1	1	Too much cyclic data	
		2	The configured slaves are different from the existing slaves	
		Info 2	1	A configured slave was not found
			Info 3	Slave with fixed address not found
			Info 4	Slave network position
			2	More slave exist as configured
			Info 4	Slave network position
			3	Slave has wrong revision
			Info 3	Current revision
			Info 4	Slave network position
			4	Not configured slave
			Info 4	Slave position
			5	Slave found without "category information" in EEPROM
			6	Device address already exists (twice assigned)
			Info 3	Slave address
			Info 4	Position 2nd slave
			7	Slave with "vendor id" equal zero
			Info 4	Slave position
			8	Slave found with fixed address, but not in configuration
			Info 3	Fixed address
			Info 4	Slave position
			9	Link present but no slaves found, e.g., connected to switch or KW-R05 with VARAN interface
			10	Error in composition of real time telegram
			11	Configuration file XML format error
		3	Access to the account list ("ID34142 Node list") failed	
		4	Initialisation SoE failed	
		5	Error during writing the initial dictionary entries (e.g. "ID 2 SERCOS cycle time")	
		Info 2	1	Error during access to the bus configuration
			2	Invalid data length of an ID
			Info 3	ID
			Info 4	Slave address
			3	Error during writing the dictionary entries, order of the slaves in configuration is invalid Subsequent error of 2728 or 2729
			Info 3	ID
			Info 4	Slave address
		6	Error during writing the PDO dictionary entries	
		Info 2	1	Error during access to the bus configuration
			3	Error during writing the dictionary entries Subsequent error of 2728 or 2729
			Info 3	ID
			Info 4	Slave address
		7	Timeout master synchronisation	



8	Error in PDO configuration	Info 2	1	AT is empty, has to contain at least the "ID135 Drive status word"	
			2	ID135 is not the first entry in the AT	
			3	MDT is empty, has to contain at least the "ID134 Master control word"	
			4	ID134 is not the first entry in the MDT	
			5	Data size of the PLC variable is not equal to the mapped value	
9	Error during access to the bus configuration "ID1204 XML-File", "ID1205 XML-File"	Info 2	1	Error during access to XML file	
			2	Error during access to the bus configuration ID	
			4	XML format error	
				Info 3	Internal Error (AMK Service)
10	Addresses in configuration faulty	Info 2	1	Network position not found	
				Info 3	Position
			2	Network position exists multiple times	
				Info 3	Position
			3	Address invalid, > 225	
				Info 3	Address
11	PDO structure in configuration with error	Info 2	1	Address does not exist	
				Info 4	Address
			2	Number of entries incorrect	
				Info 4	Address
12	Error PDO context	Info 2	1	Internal error	
			2	XML format error	
			3, 4	Configuration faulty	
				Info 3	Index
				Info 4	Address
			5	Chosen PDO selection not supported	
				Info 3	Index
				Info 4	Address

<b>Error Removal</b>	<ul style="list-style-type: none"> <li>• Check EtherCAT configuration</li> <li>• Check slave (Info 4)</li> <li>• Check fixed addresses in address assignment</li> <li>• Check order of slaves (slaves without fixed addresses)</li> <li>• Info 1 = 7: Check cabling Correct the EtherCAT input (AMK devices X86) and output (AMK devices X85)</li> <li>• The revision level check can be switched off via parameter ID34026 Bit 3 = 1. If the revision check is switched off, slaves with an older revision level than those entered in the existing configuration can also be used. If the revision levels in the master and slave are different, compatibility problems may occur when functions are used that are not supported by both revision stands.</li> </ul>
----------------------	--

## 2728 'System diagnostics'

• Error EtherCAT protocol during ID access				
Device	AS-PL15 AS-Cxx-1			
Description				
Class	Error			
Drive Behaviour				
Device Behaviour	Controller: ID access by service channel is cancelled			
Additional Error Information (AMK Service)				
	Info 1	1	Service channel error	
		3	Router reports error	
			Info 2	Return value router
		4	Attribute of the ID in the controller unknown (current ADB file necessary)	
		5	Service channel not yet ready, e.g. boot process still active	
		6	Slave not found	
		7	Slave not initialised	
		8	Type of protocol not supported	
			Info 2	4
		16	SOE is not supported	
	> 20	access error to driver		
Error Removal	<ul style="list-style-type: none"><li>• Check PLC program (application)</li><li>• Info 1 = 4: Install current ADB file</li><li>• Info 1 = 5: Before ID access, check bus status using FuiGetNetStatus function block</li></ul>			

## 2729 'System diagnostics'

• Error EtherCAT service channel / mailbox			
<b>Device</b>	AS-PL15 AS-Cxx-1 A4 / A5 / A6 ISA		
<b>Description</b>			
<b>Class</b>	Error		
<b>Drive Behaviour</b>			
<b>Device Behaviour</b>	Controller: ID access by service channel is cancelled		

## Additional Error Information (AMK Service)

	Info 1	1	Slave does not support the service channel	Info 4	Slave address
		2	Data length too long for the mailbox	Info 2	Length
				Info 4	Slave address
		3	Faulty service channel feedback	Info 4	Slave address
		4	Mailbox datagram not received	Info 4	Slave address
		5	Mailbox datagram working counter error	Info 4	Slave address
		6	Timeout receiving mailbox	Info 4	Slave address
		7, 8	Service channel invalid answer	Info 2	ID
				Info 4	Slave address
		9	Transmission mailbox occupied	Info 4	Slave address
		10	Timeout transmission mailbox	Info 4	Slave address
		11	Length of the list is incorrect (ADB file in controller is not current)	Info 2	ID
				Info 4	Slave address
		12 - 18	SoE Service channel invalid answer	Info 2	ID
				Info 4	Slave address
		20	Error send mailbox		
		21	Mailbox error message	Info 2	Error
				Info 4	Slave address
		22	Internal error		
		23	Mailbox error, too many requests		
		24	Unknown protocol type received		
		25	Send-mailbox timeout on retry	Info 4	Slave address
		26	Send-mailbox counter incorrect	Info 4	Slave address
		40 - 44	CoE service channel error	Info 2	Index
				Info 3	Sub index
				Info 4	Slave address
		45	CoE emergency	Info 2	Error code
				Info 3	Error register
				Info 4	Slave address

		46, 47	CoE service channel error	
			Info 2	Index
			Info 3	Sub index
			Info 4	Slave address
		48	CoE 'Toggle' error	
			Info 2	Index
			Info 3	Sub index
			Info 4	Slave address
		49	CoE Number of receive data> Number of requested data	
			Info 2	Index
			Info 3	Sub index
			Info 4	Slave address
		50	CoE received not enough data	
			Info 2	Index
			Info 3	Sub index
			Info 4	Slave address
		84	FoE Mailbox error	
		90	FoE Mailbox error message from the slave	
			Info 3	Packet number
			Info 4	Slave address
		91	FoE Busy on first packet	
			Info 4	Slave address
		102	Incorrect task	
		103	Mailbox protocol initialization	
		105, 106	Incorrect address	
		107 - 109	Incorrect protocol type	
		111 - 150	Mailbox error	
	Protocol error			
	Info 4	Slave address		
	possible causes:			
	<ul style="list-style-type: none"><li>• Device not online</li><li>• Device does not support the protocol</li><li>• Current bus status is not&gt; = PREOP, BOOTSTRAP</li></ul>			
111 - 150	Mailbox error			
200 - 399	Internal Error			
401	FoE undefined AppHeader.slCmd			
440	Unknown opcode returned after OPCODE_WR_RQ			
441	Unknown opcode returned after OPCODE_DATA_RQ			
Error Removal	<ul style="list-style-type: none"><li>• Check PLC program</li><li>• Check slave with address from “I4”</li><li>• Info 1 = 4 while booting: Check whether ACPI enable has been configured in BIOS Power Management</li><li>• ADB File update in Controller</li></ul>			

## 2730 'System diagnostics'

• Error EtherCAT datagram sending procedure, communication error					
Device	AS-PL15 AS-Cxx-1 A4 / A5 / A6 iSA				
Description					
Class	Error				
Drive Behaviour					
Device Behaviour	Controller: Further behaviour depends on the subsequent error				
Additional Error Information (AMK Service)					
	Info 1	1	Datagram memory error		
			Info 2	Size	
		2	Datagram not received		
			Info 2	Offset <sup>1)</sup>	
			Info 4	Slave address	
		3	Datagram working counter (WKC) error		
			Info 2	Offset <sup>1)</sup>	
			Info 3	WKC	
			Info 4	Slave address	
			4	Datagram timeout send	
				Info 2	Offset <sup>1)</sup>
		Info 4		Slave position	
		5, 6	Datagramm error		
			Info 2	Offset <sup>1)</sup>	
			Info 4	Slave address	
		7	Frame timeout error		
		10	Error read EEPROM		
			Info 2	Offset <sup>1)</sup>	
			Info 4	Slave address	
		11	Timeout read EEPROM		
			Info 2	Offset <sup>1)</sup>	
Info 4	Slave address				
<sup>1)</sup> Offset: Address in the EtherCAT slave controller					
Error Removal	• Communication error • Address in the EtherCAT slave controller not accessible or not existing				

## 2731 'System diagnostics'

• Error EtherCAT sequence slave configuration				
Device	AS-PL15 AS-Cxx-1 A4 / A5 / A6 iSA			
Description				
Class				
Drive Behaviour				
Device Behaviour	System run-up aborted Controller: EtherCAT does not boot			
Additional Error Information (AMK Service)				
	Info 1	1	Error during AL status change	
			Info 2	AL status code (Internal error (AMK service))
			Info 4	Slave address
		2	Timeout AL status change	
			Info 4	Slave address
		3	Status error could not be deleted	
			Info 2	AL status (Internal error (AMK service))
			Info 4	Slave address
		4	Error during the slave configuration (frequent subsequent error of 2730)	
			Info 4	Slave address
		5	Error during the configuration of the slave address	
			Info 4	Slave address
		6	Error in the configuration DL access	
			Info 4	Slave address
		7	Incorrect module address	
		8	Constant status change in slave	
			Info 4	Slave address
		10	Invalid status requested at status change	
		11	Error at status request	
12	Internal communication error			
	Info 4	Slave address		
20	Slave to slave / configuration too large			
Error Removal				
	Info 1	all	<ul style="list-style-type: none"><li>Configuration error in a slave (see error in a slave)</li><li>"ID32786 Message 32" in the AT configured as data type "INT". Needs to be changed to "DINT".</li></ul>	
		1	<ul style="list-style-type: none"><li>Check ID2 'SERCOS cycle time' in instance 0 or 2 and adapt in ID2 from EtherCAT Master. Is the EtherCAT Slave a Ax Controller, then must be entered ID2 in EtherCAT Slave manually on instance. This entry is not made in Ax controller as EtherCAT slaves trough the master. Instance 2 is the master not known.</li></ul>	

## 2732 'System diagnostics'

Device	AS-PL15 AS-Cxx-1			
Description				
Class	Error			
Drive Behaviour				
Device Behaviour				
Additional Error Information (AMK Service)				
	Info 1	18	Error while writing permanent address to EEPROM	
			Info 4	Address
Error Removal	<ul style="list-style-type: none"><li>• No slave exists at this address</li><li>• The slave with this address is offline.</li><li>• Error while writing</li></ul>			

## 3.17 No. 2740 ... 2749 MODBUS

### 2741 'Modbus configuration'

<ul style="list-style-type: none"><li>Error during the configuration of the MODBUS parameters</li></ul>			
Device	IDT		
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	Slave number in "ID34023 BUS address participant" is incorrect
		2	Baud rate in "ID34028 BUS output rate" is wrong
		3	Protocol type in "ID34025 BUS mode" is unknown
		4	Number of data bits in "ID34025 BUS mode" is incorrect
Error Removal	<ul style="list-style-type: none"><li>Inspection / correction of the ID described in the additional info</li></ul>		

### 2742 'MODBUS communication'

• Error with the MODBUS Communication			
Device	IDT		
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	6	Parity error
		7	Framing error
		8	Overrun error
		9	Receiving buffer full
Error Removal	<ul style="list-style-type: none"><li>• Check the correct setting of the communication parameters</li><li>• Replacing the MODBUS cables</li><li>• Change the connecting plug</li></ul>		

## 2743 'MODBUS protocol'

• Error in the MODBUS protocol			
Device	IDT		
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	5	CRC Check
		7	Wrong data length during the function “Read n words”
		8	Wrong data length during the function “Write n words”
		9	Wrong data length during the function “Read n bits”
		10	Wrong data length during the function “Write 1 bit”
		11	Wrong address during the function “Read n words”
		12	Wrong address during the function “Write n words”
		13	Wrong address during the function “Read n bits”
		14	Wrong address during the function “Write n bits”
		15	Unknown function code
Error Removal	• Check the settings of the MODBUS master		

## 2744 'MODBUS command'

• Error in the MODBUS command			
Device	IDT		
Description			
Class			
Drive Behaviour	Coast to stop		
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1	Unknown application mode
		3	Error detected in the control function
		4	Error detected in the status function
Error Removal	• Check the specifications of the MODBUS master		

## 3.18 No. 2760 ... 2764 CoE

### 2760 'System diagnostics'

• Missing DC bus voltage at state 'SWITCHED ON' or when switching to the state 'SWITCHED ON'			
Device	iX, ihX, R2x		
Description			
Class	Error		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	DC bus voltage missing at state 'SWITCHED ON'
		2	DC bus voltage missing when switching to the state 'SWITCHED ON'
Error Removal	<ul style="list-style-type: none"><li>• DC bus switching on</li><li>• Check cabling</li></ul>		



## 2761 'System diagnostics'

• Error when changing the operating mode				
Device	iX, ihX, R2x			
Description				
Class	Error			
Drive Behaviour	Coast to stop			
Device Behaviour	System run-up aborted			
Additional Error Information (AMK Service)				
	Info 1	1	Function 'Modes of operation'	
			Info 2	New operating mode
			Info 3	Old operating mode
Error Removal	• Check specification of the operating mode (0x6060 'Modes of operation')			

## 2762 'System diagnostics'

• Error in function 'Touch Probe'			
Device	iX, ihX, R2x		
Description			
Class	Error		
Drive Behaviour	Coast to stop		
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	0	Default condition
			Info 2    Measurement channel
		1	Measurement function not possible
			Info 2    Measurement channel
		2	Measurement source unknown
			Info 2    Measurement channel
		3	Measurement edge combination not permissible
			Info 2    Measurement channel
		4	System heap error
			Info 2    Measurement channel
		5	Measurement configuration wrong
			Info 2    Measurement channel
		6	Configuration of the measurement function zero pulse
			Info 2    Measurement channel
Error Removal	• Check indices for function 'Touch Probe'		

**2763 'System diagnostics'**

• Error in scaling configuration				
Device	iX, ihX, R2x			
Description				
Class	Error			
Drive Behaviour				
Device Behaviour	System run-up aborted			
Additional Error Information (AMK Service)				
	Info 1	x	To be calculated index	
			Info 2	To be calculated index
			Info 3	To be calculated index
Error Removal	• Check indices for scaling settings			

**2764 'System diagnostics'**

• Error in Brake function			
Device	iX, ihX, R2x		
Description			
Class	Error		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1	Default condition
		2	System heap error
		3	Internal order
		4	Error internal service command
		5	Configuration output port
		6	Bit configuration port
		7	Configured brake output as standard output
Error Removal	• Check indices for brake function		

**3.19 No. 2816 ... 2819 AZ/Kx Option PS****2816 'PS option'**

<ul style="list-style-type: none"><li>Refer to the separate description of the corresponding option card for the analyzed error</li></ul>			
Device	Option PS		
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>Check PS user program</li></ul>		

### 3.20 No. 3071 ... 3079 AZ Option SERCOS

#### 3072 'Error option SERCOS'

• Refer to separate option card manual for error description			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1	MST-failure in communication phase 3 or 4
		2	MDT-failure in communication phase 3 or 4
		3	Invalid communication phase
		4	Communication phase-incrementing (sequence)
		5	Communication phase-decrementing (not in phase 0)
		6	Communication phase-switching without ready message
		9	Memory error (allocated)
		10	Memory error (deallocated)
		11	No AZ-Handshake (AZR-failure?)
		12	AT/MDT configuration error (evaluation in command "ID127 Transition check phase 3")
		21	"ID 2 SERCOS Cycle time" is not 0.500
		23	"ID 2 SERCOS Cycle time" can not be divided by base time (ID 2 remanent)
		24	Main operating mode incorrectly
		26	Timeout in Interrupt: time level overflow
		27	Entry in ID 96 chained incorrectly
28	Hardware failure AZ-SCx or 48 V-failure		
Error Removal			

### 3.21 No. 3328 AZ Option NC

#### 3328 'NC option error'

• Refer to the separate description of the corresponding option card for the analyzed error			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

## 3.22 No. 3584 ... 3603 Special functions

### 3584 'System diagnostics: Special software message'

• Fault overload protection connectbox (n)			
Device	ZWR		
Description	Overload protection tripped		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	• Replace overload protection -F100 in connectbox		

### 3585 'System diagnostics: Special software message'

• CAN bus: Error during initialization										
Device	FSE									
Description										
Class	Error									
Drive behaviour	System run-up aborted / Coast to stop									
Device behaviour										
Additional information (Info AMK service)										
	Info1	1	Info2	3	Info3	1	Upper voltage limit ID32798-3 < Lower voltage limit ID32798-4			
						2	Upper voltage limit ID32798-3 too large or lower voltage limit ID32798-4 too small			
						8	Incorrect settings Voltage limiter ID32798-3 < ID32798-7 or ID32798-4 > ID32798-10			
		2	Info2	1	Info3	2	Limits Torque reduction Temperature IGBT interchanged ID32798-8 > = ID32798-9			
						3	Limits Torque reduction Temperature Motor interchanged ID32798-11> = ID32798-12			
						4	Limits Torque reduction Temperature inverter interchanged ID32798-5> = ID32798-6			
	Error removal	<ul style="list-style-type: none"><li>• Restart device</li><li>• AMK service</li></ul>								

• Error message Motor Controller	
Device	MCE
Description	
Class	Error
Drive behaviour	Coast to stop
Device behaviour	
Additional information (Info AMK service)	

Error removal	Info1	1	Info2	3	Info3	1	Upper voltage limit < lower voltage limit	
						2	P(motor) < 0	
						3	P(generator) < 0	
						4	Sign error of torque limit from calculation	
						5	0 V > Uz > 1000 V	
						6	-300 kW > motor shaft power > 300 kW	
						7	Error in quadrant determination	
						8	Faulty settings of voltage limitation	
		2	Faulty parameterization					
			Info2	1	I <sup>2</sup> t derating settings			
		3	Error during operation					
			Info2	2	Info3	2	Invalid system status automat	
						3	Monitoring output values	
		4	Faulty parameterization					
			Info2	4	Info3	1	Number of pulses = 0	
		5	Error during operation					
			Info2	1	Error asynchronous data storage			
		7	Info2	1	Info3	1	ID32798-10: 'MCE operation mode' not defined	
						2	ID32798-32: 'Direction forward' not defined	
						3	Plausibility accelerator	
						4	Parameter accelerator	
		9	Error during operation					
			Info2	1	Toggle bit error			
		10	Error during system check of the inverter					
			Info2	1	Analog 1			
		2	Analog 2					
		3	BI1					
		4	BI2					
		5	BI3					
		6	Speed difference					
		7	Pulse encoder input					
11	Error on inactive switching off of terminal 15							
	Info2	1	No switching off after end of 'Switch-off time'					
<ul style="list-style-type: none"><li>• Check parameterization</li><li>• Restart device</li><li>• Info1 = 11: Software used with MCE hardware: Internal hardware error; please contact AMK service Software used with KW hardware: External hardware error; please check wiring</li></ul>								

<ul style="list-style-type: none"><li>Fault monitoring power supply</li></ul>			
Device	ZWR		
Description	NA protection device -A3 has tripped		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>Check mains conditions</li><li>Check configuration NA device -A3</li></ul>		

### 3586 'System diagnostics: Special software message'

• CAN bus: Error during initialization			
Device	FSE		
Description			
Class	Error		
Drive behaviour	System run-up aborted		
Device behaviour			
Additional information (Info AMK service)			
	Info1	0	Invalid CAN configuration mode (ID34091-2)
		1	Configured index (ID) not found
		2	Invalid signal type
		3	Length of the configuration does not match the selected messages and signals
		4	Invalid transmission rate
		5	CAN module error
Error removal	<ul style="list-style-type: none"><li>• Restart device</li><li>• AMK service</li></ul>		

• Error messages of CAN communication			
Device	MCE		
Description			
Class	Error		
Drive behaviour	Coast to stop		
Device behaviour			
Additional information (Info AMK service)			
	Info1	0	Memory error
		1	Module command error
		2	Invalid value in ID34028 'BUS output rate'
		3	Invalid value in ID34024 'BUS transmit rate'
		4	Error during access CAN
		5	Error in message configuration (ID34036 'CCB-File')
Error removal	<ul style="list-style-type: none"><li>• Check parameters</li><li>• Restart device</li></ul>		

• Fault BUS			
Device	ZWR		
Description	Fieldbus interruption		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check bus wiring</li><li>• Check inverter -U1</li><li>• Check control unit -A1</li></ul>		

### 3587 'System diagnostics: Special software message'

• Error during operation			
Device	FSE		
Description			
Class	Error		
Drive behaviour	Coast to stop		
Device behaviour			
Additional information (Info AMK service)			
	Info1	0	Failure of setpoint message
		1	Checksum error
		2	Error in message counter
		3	Implausible signals (during inverted transmission)
		4	Unknown message received
		5	Message with wrong length received
		6	Error on transmission, possibly CAN not connected
Error removal	<ul style="list-style-type: none"><li>• Restart device</li><li>• AMK service</li></ul>		

• Error during operation			
Device	MCE		
Description			
Class	Error		
Drive behaviour	Coast to stop		
Device behaviour			
Additional information (Info AMK service)			
	Info1	0	Failure of setpoint message
		1	Checksum error
		2	Error in message counter
		3	Implausible signals (during inverted transmission)
		4	Unknown message received
		5	Message with wrong length received
		6	Error on transmission, possibly CAN not connected
Error removal	<ul style="list-style-type: none"><li>• Restart device</li><li>• AMK service</li></ul>		

<ul style="list-style-type: none"><li>• Temperature cabinet too high</li></ul>			
Device	ZWR		
Description	Overtemperature in cabinet		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check cooling / fan in cabinet</li><li>• Check fuse -F11</li><li>• Check thermostat -S1</li></ul>		

### 3588 'System diagnostics: Special software message'

<ul style="list-style-type: none"><li>• Frequency too low</li></ul>			
Device	ZWR		
Description	Mains frequency out of configured frequency range		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check mains frequency</li><li>• Check configured values</li></ul>		

### 3589 'System diagnostics: Special software message'

<ul style="list-style-type: none"><li>• Frequency too high</li></ul>			
Device	ZWR		
Description	Mains frequency out of configured frequency range		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check mains frequency</li><li>• Check configured values</li></ul>		

### 3590 'System diagnostics: Special software message'

<ul style="list-style-type: none"><li>• Voltage too low</li></ul>			
Device	ZWR		
Description	Mains voltage out of configured voltage range		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check mains voltage</li><li>• Check configured values</li></ul>		



**3591 'System diagnostics: Special software message'**

<ul style="list-style-type: none"><li>• Voltage too high</li></ul>			
Device	ZWR		
Description	Mains voltage out of configured voltage range		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check mains voltage</li><li>• Check configured values</li></ul>		

**3592 'System diagnostics: Special software message'**

<ul style="list-style-type: none"><li>Fault voltage (switch on)</li></ul>			
Device	ZWR		
Description	Mains voltage below configured switch-on voltage		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>Check mains voltage</li><li>Check configured values</li></ul>		

**3593 'System diagnostics: Special software message'**

<ul style="list-style-type: none"><li>Fault frequency (switch on)</li></ul>			
Device	ZWR		
Description	Mains frequency exceeds configured switch-on frequency		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>Check mains frequency</li><li>Check configured values</li></ul>		

**3594 'System diagnostics: Special software message'**

<ul style="list-style-type: none"><li>Warning string monitoring connectbox (n) string (m)</li></ul>			
Device	ZWR		
Description	String current below configured permissible deviation		
Class	Warning		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>Check string</li><li>Check configured values</li></ul>		

**3595 'System diagnostics: Special software message'**

• Fault init bus			
Device	ZWR		
Description	Bus cannot be initialised		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check bus wiring</li><li>• Check inverter -U1</li></ul>		

**3596 'System diagnostics: Special software message'**

• Fault check DC			
Device	ZWR		
Description	DC bus voltage < 300 V		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	• Check DC bus		

**3597 'System diagnostics: Special software message'**

• Fault check AC / DC			
Device	ZWR		
Description	Switch-on condition $U_{AC} \cdot \sqrt{2} + 100 \text{ V} \leq U_{DC}$ is violated		
Class	Error		
Device Behaviour	Automatic error reset and switch back on		
Additional Error Information (AMK Service)			
Error Removal	<ul style="list-style-type: none"><li>• Check AC voltage</li><li>• Check DC voltage</li></ul>		

**3598 'System diagnostics: Special software message'**

• See special descriptions corresponding to special software documentation			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**3599 'System diagnostics: Special software message'**

• See special descriptions corresponding to special software documentation			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**3600 'System diagnostics: Special software message'**

• See special descriptions corresponding to special software documentation			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**3601 'System diagnostics: Special software message'**

• See special descriptions corresponding to special software documentation			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

**3602 'System diagnostics: Special software message'**

• See special descriptions corresponding to special software documentation			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Removal			

### 3603 'System diagnostics: AFP-PLC error'

<ul style="list-style-type: none"><li>There is a program error in the KU control program (AFP-PLC) (user program is filed in "ID32798 User list 1")</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	1	AFP handshake timeout
		2	Wrong AFP command block
		3	Not allowed command
		4	Inadmissible state
		5	Loop number too high
		6	Loop end without loop start
		7	Jump to invalid block No. (>41)
		8	Invalid mark
		9	Inadmissible parameter in the RF macro
Error Removal			

## 3.23 No. 3605 ... 3610 Functional safety

### 3605 'Safety - Invalid parameterisation'

• Invalid parameterisation					
Device	Functional safety Controller cards KW-R07 / -R17 / -R27 Decentralized drives iCx-xx- <b>ES</b> x, iXx-xx- <b>ES</b> , iDT5-x-x-xxx-xxxx-xx- <b>ES</b>				
Description	An invalid parameterisation was detected during the evaluation of the safety parameters, e.g. invalid values				
Class	Error				
Drive behaviour	The drive remains torque-free (STO)				
Device behaviour	The safety monitoring does not switch to the operational state, i.e. the safety functions cannot be put into operation				
3605	Info1	7	Encoder error, sine encoder evaluation, monitoring channel 1		
			Info2	1	Prm6 'Sine encoder period' Specification for the sine encoder period too small (Prm6 < 16)
				2	Prm6 'Sine encoder period' Specification for the sine encoder period too large (Prm6 > 65536)
Error rectification	<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm6: 'Sine encoder period'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>				
3605	Info1	13	Error message during cross-communication monitoring		
			Info2	9	Error during plausibility check: Fault tolerance in the cross-communication is out of range.
Error rectification	<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Info2 = 9: Prm 9 'cc-factor'</li></ul></li></ul>				

3605	Info1	16	Error message for the safe inputs, monitoring channel 1		
			Info2	1	Dynamic sampling impulse duration is too small
				3	Dynamic sampling impulse duration is too large
			Info3	1	Input 1
				2	Input 2
				3	Input 3
Error rectification		<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm71: 'SE1.1 dynamic sampling impulse duration'</li><li>Prm73: 'SE1.2 dynamic sampling impulse duration'</li><li>Prm77: 'SE2.1 dynamic sampling impulse duration'</li><li>Prm79: 'SE2.2 dynamic sampling impulse duration'</li><li>Prm83: 'SE3.1 dynamic sampling impulse duration'</li><li>Prm85: 'SE3.2 dynamic sampling impulse duration'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>			

3605	Info1	17	Error message for the safe inputs, monitoring channel 2		
			Info2	1	Dynamic sampling impulse duration is too small
				3	Dynamic sampling impulse duration is too large
			Info3	1	Input 1
				2	Input 2
				3	Input 3
Error rectification		<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm71: 'SE1.1 dynamic sampling impulse duration'</li><li>Prm73: 'SE1.2 dynamic sampling impulse duration'</li><li>Prm77: 'SE2.1 dynamic sampling impulse duration'</li><li>Prm79: 'SE2.2 dynamic sampling impulse duration'</li><li>Prm83: 'SE3.1 dynamic sampling impulse duration'</li><li>Prm85: 'SE3.2 dynamic sampling impulse duration'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>			

3605	Info1	18	Error message for the safe inputs, monitoring channel 1		
			Info2	2	Dynamic sampling period is too large
				3	Dynamic sampling period is too small
				5	Ratio between dynamic sampling period and impulse duration is too small
			Info3	1	Input 1
2	Input 2				
3	Input 3				
Error rectification	<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm71: 'SE1.1 dynamic sampling impulse duration'</li><li>Prm72: 'SE1.1 dynamic sampling period'</li><li>Prm73: 'SE1.2 dynamic sampling impulse duration'</li><li>Prm74: 'SE1.2 dynamic sampling period'</li><li>Prm77: 'SE2.1 dynamic sampling impulse duration'</li><li>Prm78: 'SE2.1 dynamic sampling period'</li><li>Prm79: 'SE2.2 dynamic sampling impulse duration'</li><li>Prm80: 'SE2.2 dynamic sampling period'</li><li>Prm83: 'SE3.1 dynamic sampling impulse duration'</li><li>Prm84: 'SE3.1 dynamic sampling period'</li><li>Prm85: 'SE3.2 dynamic sampling impulse duration'</li><li>Prm86: 'SE3.2 dynamic sampling period'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>				

3605	Info1	19	Error message for the safe inputs, monitoring channel 2		
			Info2	2	Dynamic sampling period is too large
				3	Dynamic sampling period is too small
				5	Ratio between dynamic sampling period and impulse duration is too small
				6	Invalid value of input level
Info3	1	Input 1			
	2	Input 2			
	3	Input 3			
Error rectification	<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm70: 'SE1 input level'</li><li>Prm71: 'SE1.1 dynamic sampling impulse duration'</li><li>Prm72: 'SE1.1 dynamic sampling period'</li><li>Prm73: 'SE1.2 dynamic sampling impulse duration'</li><li>Prm74: 'SE1.2 dynamic sampling period'</li><li>Prm76: 'SE2 input level'</li><li>Prm77: 'SE2.1 dynamic sampling impulse duration'</li><li>Prm78: 'SE2.1 dynamic sampling period'</li><li>Prm79: 'SE2.2 dynamic sampling impulse duration'</li><li>Prm80: 'SE2.2 dynamic sampling period'</li><li>Prm82: 'SE3 input level'</li><li>Prm83: 'SE3.1 dynamic sampling impulse duration'</li><li>Prm84: 'SE3.1 dynamic sampling period'</li><li>Prm85: 'SE3.2 dynamic sampling impulse duration'</li><li>Prm86: 'SE3.2 dynamic sampling period'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>				

3605	Info1	20	Error message for safe input selection, monitoring channel 1		
			Info2	1	Prm17 'SE3 emergency stop function': invalid value
				2	Prm15 'SE1 safety function': invalid value
				3	Prm16 'SE2 safety function': invalid value
				4	Prm15 'SE1 safety function' and Prm17 'SE3 emergency stop function' same value
				5	Prm16 'SE2 safety function' and Prm17 'SE3 emergency stop function' same value
				6	Prm15 'SE1 safety function' and Prm16 'SE2 safety function' same value
			Error rectification		<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm15: 'SE1 safety function'</li><li>Prm16: 'SE2 safety function'</li><li>Prm17: 'SE3 emergency stop function'</li></ul></li></ul>

3605	Info1	22	Error message for safe input selection, monitoring channel 2		
			Info2	1	Prm17 'SE3 emergency stop function': invalid value
				2	Prm15 'SE1 safety function': invalid value
				3	Prm16 'SE2 safety function': invalid value
				4	Prm15 'SE1 safety function' and Prm17 'SE3 emergency stop function' same value
				5	Prm16 'SE2 safety function' and Prm17 'SE3 emergency stop function' same value
				6	Prm15 'SE1 safety function' and Prm16 'SE2 safety function' same value
				16	Prm70 'SE1 input level': invalid value
				17	Prm76 'SE2 input level': invalid value
				18	Prm82 'SE3 input level': invalid value
			Error rectification		<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm15: 'SE1 safety function'</li><li>Prm16: 'SE2 safety function'</li><li>Prm17: 'SE3 emergency stop function'</li><li>Prm70 'SE1 input level'</li><li>Prm76 'SE2 input level'</li><li>Prm82 'SE3 input level'</li></ul></li></ul>

3605	Info1	23	Error message for safe output selection, monitoring channel 1		
			Info2	2	Prm7 'Commanding' and Prm8 'Output control': Invalid parameters Prm7 and Prm8
				3	Prm7 'Commanding': Invalid parameter Prm7
				4	Prm8 'Output control': Invalid parameter Prm8
Error rectification		<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm7: 'Commanding'</li><li>Prm8: 'Output control'</li></ul></li></ul>			

3605	Info1	24	Error message for safe output selection, monitoring channel 2		
			Info2	2	Prm7 'Commanding' and Prm8 'Output control': Invalid parameters Prm7 and Prm8
				3	Prm7 'Commanding': Invalid parameter Prm7
				4	Prm8 'Output control': Invalid parameter Prm8
Error rectification		<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm7: 'Commanding'</li><li>Prm8: 'Output control'</li></ul></li></ul>			



3605	Info1	25	Error messages of the dynamic sampling of the safe outputs, monitoring channel 1		
			Info2	1	Dynamic sampling period A1 exceeds maximum
				2	Dynamic sampling period A1 drops below minimum
				3	Dynamic sampling impulse duration A1 exceeds maximum
				4	Dynamic sampling impulse duration A1 drops below minimum
				5	Dynamic sampling impulse duration A1 does not fit the 125 µs pattern
				6	Dynamic sampling period < 10 x Dynamic sampling impulse duration
				7	Prm87 'SA1 dynamic sampling': Invalid parameter Prm87
			Info2	10	Dynamic sampling period A2 exceeds maximum
				11	Dynamic sampling period A2 drops below minimum
				12	Dynamic sampling impulse duration A2 exceeds maximum
				13	Dynamic sampling impulse duration A2 drops below minimum
				14	Dynamic sampling impulse duration A2 does not fit the 125 µs pattern
				15	Dynamic sampling period < 10 x Dynamic sampling impulse duration
				17	Prm93 'SA2 dynamic sampling': Invalid parameter Prm93
			Info2	20	Dynamic sampling period Dyn exceeds maximum
				21	Dynamic sampling period Dyn drops below minimum
				22	Dynamic sampling impulse duration Dyn exceeds maximum
				23	Dynamic sampling impulse duration Dyn drops below minimum
				24	Dynamic sampling impulse duration Dyn does not fit the 125 µs pattern
				25	Dynamic sampling period < 10 x Dynamic sampling impulse duration
Error rectification			<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm87: 'SA1 dynamic sampling'</li><li>Prm88: 'SA1.1 dynamic sampling impulse duration'</li><li>Prm89: 'SA1.1 dynamic sampling period'</li><li>Prm90: 'SA1.2 dynamic sampling impulse duration'</li><li>Prm91: 'SA1.2 dynamic sampling period'</li><li>Prm93: 'SA2 dynamic sampling'</li><li>Prm94: 'SA2.1 dynamic sampling impulse duration'</li><li>Prm95: 'SA2.1 dynamic sampling period'</li><li>Prm96: 'SA2.2 dynamic sampling impulse duration'</li><li>Prm97: 'SA2.2 dynamic sampling period'</li><li>Prm99: 'SDYN1 dynamic sampling impulse duration'</li><li>Prm100: 'SDYN1 dynamic sampling period'</li><li>Prm101: 'SDYN2 dynamic sampling impulse duration'</li><li>Prm102: 'SDYN2 dynamic sampling period'</li></ul></li><li>Generate a correct parameter set and load on the target device</li><li>AMK service</li></ul>		

3605	Info1	26	Error messages of the dynamic sampling of the safe outputs, monitoring channel 2		
			Info2	1	Dynamic sampling period A1 exceeds maximum
				2	Dynamic sampling period A1 drops below minimum
				3	Dynamic sampling impulse duration A1 exceeds maximum
				4	Dynamic sampling impulse duration A1 drops below minimum
				5	Dynamic sampling impulse duration A1 does not fit the 125 µs pattern
				6	Dynamic sampling period < 10 x Dynamic sampling impulse duration
				7	Prm87 'SA1 dynamic sampling': Invalid parameter Prm87
				8	Prm92 'SA1 output level': Invalid parameter Prm92
			Info2	10	Dynamic sampling period A2 exceeds maximum
				11	Dynamic sampling period A2 drops below minimum
				12	Dynamic sampling impulse duration A2 exceeds maximum
				13	Dynamic sampling impulse duration A2 drops below minimum
				14	Dynamic sampling impulse duration A2 does not fit the 125 µs pattern
				15	Dynamic sampling period < 10 x Dynamic sampling impulse duration
				17	Prm93 'SA2 dynamic sampling': Invalid parameter Prm93
				18	Prm98 'SA2 output level': Invalid parameter Prm98
			Info2	20	Dynamic sampling period Dyn exceeds maximum
				21	Dynamic sampling period Dyn drops below minimum
				22	Dynamic sampling impulse duration Dyn exceeds maximum
				23	Dynamic sampling impulse duration Dyn drops below minimum
				24	Dynamic sampling impulse duration Dyn does not fit the 125 µs pattern
				25	Dynamic sampling period < 10 x Dynamic sampling impulse duration
				28	Prm104 'SA1.2 output type': Invalid parameter Prm104

Error rectification	<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm87: 'SA1 dynamic sampling'</li><li>Prm88: 'SA1.1 dynamic sampling impulse duration'</li><li>Prm89: 'SA1.1 dynamic sampling period'</li><li>Prm90: 'SA1.2 dynamic sampling impulse duration'</li><li>Prm91: 'SA1.2 dynamic sampling period'</li><li>Prm92: 'SA1 output level'</li><li>Prm93: 'SA2 dynamic sampling'</li><li>Prm94: 'SA2.1 dynamic sampling impulse duration'</li><li>Prm95: 'SA2.1 dynamic sampling period'</li><li>Prm96: 'SA2.2 dynamic sampling impulse duration'</li><li>Prm97: 'SA2.2 dynamic sampling period'</li><li>Prm98: 'SA2 output level'</li><li>Prm99: 'SDYN1 dynamic sampling impulse duration'</li><li>Prm100: 'SDYN1 dynamic sampling period'</li><li>Prm101: 'SDYN2 dynamic sampling impulse duration'</li><li>Prm102: 'SDYN2 dynamic sampling period'</li><li>Prm104: 'SA1.2 output type'</li></ul></li><li>Generate a correct parameter set and load on the target device</li><li>AMK service</li></ul>				
3605	Info1	38	Error message of 'Safe encoder monitoring (SEM)', monitoring channel 1		
			Info2	1	Prm9 'Transition time in case of standstill' Prm9 > 60000 min
				2	Prm10 'Reaction time in case of standstill' Prm10 > 60000 min
Error rectification	<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm9: 'Transition time in case of standstill'</li><li>Prm10: 'Reaction time in case of standstill'</li></ul></li></ul>				
3605	Info1	39	Error message of 'Safe encoder monitoring (SEM)', monitoring channel 2		
			Info2	1	Prm9 'Transition time in case of standstill' Prm9 > 60000 min
				2	Prm10 'Reaction time in case of standstill' Prm10 > 60000 min
Error rectification	<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm9: 'Transition time in case of standstill'</li><li>Prm10: 'Reaction time in case of standstill'</li></ul></li></ul>				

3605	Info1	101	Error message for the stop function 'Safe stop 1 (SS1)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				7	Prm21 'SS1 safe speed standstill window' Prm21 exceeds the maximum permissible value (Prm21 > 60000 1/min)
				8	Prm21 'SS1 safe speed standstill window' Prm21 drops below the minimum permissible value (Prm21 < -60000 1/min)
			Ramp monitoring		
			Info3	1	Actual value exceeds maximum permissible value (60000 1/min)
				2	Prm21 'SS1 safe speed standstill window': Prm21 drops below the minimum permissible value (Prm21 < -60000 1/min)
				3	Prm21 'SS1 safe speed standstill window': Prm21 exceeds the maximum permissible value (Prm21 > 60000 1/min)
				4	Prm21 'SS1 safe speed standstill window': Limits of the speed standstill window have the same value (Prm21 = 0)
				5	Prm67 'SMS safe maximum speed': Prm67 exceeds maximum permissible value (Prm67 > 60000 1/min)
				6	Prm20 'SS1 brake ramp time': Prm20 = 0
				7	Prm 67/Prm 20: Relation of maximum speed to deceleration ramp n/t too small. (Ramp too flat) (only monitoring channel 1)
				10	Prm20 'SS1 brake ramp time': Ramp time too long (only monitoring channel 2)
				11	Current deceleration ramp violates the permissible range (only monitoring channel 2)
				13	Prm 67/Prm 20: Relation of maximum speed to ramp time wrong (only monitoring channel 2)
Error rectification					
<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm20: 'SS1 brake ramp time'</li><li>Prm21: 'SS1 safe speed standstill window'</li><li>Prm67: 'SMS safe maximum speed'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>					

3605	Info1	102	Error message for the stop function 'Safe stop 2 (SS2)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				1	Prm26 'SS2 safe speed standstill window' Speed limits are identical (Prm26 = 0)
				2	Prm27 'SS2 safe position standstill window' Position limits are identical (Prm27 = 0)
				7	Prm26 'SS2 safe speed standstill window' Prm26 exceeds the maximum permissible value (Prm26 > 60000 1/min)
				8	Prm26 'SS2 safe speed standstill window' Prm26 drops below the minimum permissible value (Prm26 < -60000 1/min)
			Ramp monitoring		
			Info3	1	Actual value exceeds maximum permissible value (60000 1/min)
				2	Prm26 'SS2 safe speed standstill window': Prm26 drops below the minimum permissible value (Prm21 < -60000 1/min)
				3	Prm26 'SS2 safe speed standstill window': Prm26 exceeds the maximum permissible value (Prm21 > 60000 1/min)
				4	Prm26 'SS2 safe speed standstill window': Limits of the speed standstill window have the same value (Prm26 = 0)
				5	Prm67 'SMS safe maximum speed': Prm67 exceeds maximum permissible value (Prm67 > 60000 1/min)
				6	Prm25 'SS2 brake ramp time': Prm25 = 0
				7	Prm 67/Prm 25: Relation of maximum speed to deceleration ramp n/t too small. (Ramp too flat) (only monitoring channel 1)
				10	Prm25 'SS2 brake ramp time': Ramp time too long (only monitoring channel 2)
				11	Current deceleration ramp violates the permissible range (only monitoring channel 2)
			13	Prm67/Prm25: Relation of maximum speed to ramp time wrong (only monitoring channel 2)	
Error rectification		<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm 25: 'SS2 brake ramp time'</li><li>Prm 26: 'SS2 safe speed standstill window'</li><li>Prm 27: 'SS2 safe position standstill window'</li><li>Prm 67: 'SMS safe maximum speed'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>			

3605	Info1	103	Error message for the safety function 'Safe operating stop (SOS)'		
			Movement monitoring		
			Info2	1	Prm28 'SOS safe speed standstill window' Speed limits are identical (Prm 28 = 0)
				2	Prm 29 'SOS safe position standstill window' Position limits are identical (Prm 29 = 0)
				7	Prm28 'SOS safe speed standstill window' Prm28 exceeds the maximum permissible value (Prm28 > 60000 1/min)
8	Prm28 'SOS safe speed standstill window' Prm28 drops below the minimum permissible value (Prm28 < -60000 1/min)				
Error rectification			<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm 28: 'SOS safe speed standstill window'</li><li>Prm 29: 'SOS safe position standstill window'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>		

3605	Info1	104	Error message for the safety function 'Safe speed range 1 (SSR1)'		
			Movement monitoring		
			Info2	1	Prm33 'SSR1 safe limit speed 1'; Prm34 'SSR1 safe limit speed 2': Speed limits are identical (Prm33 = Prm34)
				7	Prm33 'SSR1 safe limit speed 1' Prm33 exceeds the maximum permissible value ( Prm33  > 60000 1/min)
				8	Prm34 'SSR1 safe limit speed 2' Prm34 exceeds the maximum permissible value ( Prm34  > 60000 1/min)
			Ramp monitoring		
			Info3	1	Actual value exceeds maximum permissible value (60000 1/min)
				2	Prm33 'SSR1 safe limit speed 1': Prm33 exceeds the maximum permissible value ( Prm33  > 60000 1/min)
				3	Prm34 'SSR1 safe limit speed 2': Prm34 exceeds the maximum permissible value ( Prm34  > 60000 1/min)
				4	Prm33 'SSR1 safe limit speed 1'; Prm34 'SSR1 safe limit speed 2': Limits of the speed standstill window have the same value (Prm33 = Prm34)
5	Prm67 'SMS safe maximum speed': Prm67 exceeds maximum permissible value (Prm67 > 60000 1/min)				
6	Prm32 'SSR1 brake ramp time' Prm32 = 0				
7	Prm67/Prm32: Relation of maximum speed to deceleration ramp n/t too small. (Ramp too flat) (only monitoring channel 1)				
10	Prm32 'SSR1 brake ramp time': Ramp time too long (only monitoring channel 2)				
11	Current deceleration ramp violates the permissible range (only monitoring channel 2)				
13	Prm67/Prm32: Relation of maximum speed to ramp time (only monitoring channel 2)				
Error rectification			<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm32: 'SSR1 brake ramp time'</li><li>Prm33: 'SSR1 safe limit speed 1'</li><li>Prm34: 'SSR1 safe limit speed 2'</li><li>Prm67: 'SMS safe maximum speed'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>		

3605	Info1	105	Error message for the safety function 'Safe direction positive (SDIp)'		
			Movement monitoring		
			Info2	1	Prm64 'SDI safe speed standstill window'; Prm67 'SMS safe maximum speed': Speed limits are identical (Prm67 = Prm64)
				7	Prm64 'SDI safe speed standstill window': Prm64 exceeds the maximum permissible value ( Prm64  > 60000 1/min)
				8	Prm67 'SMS safe maximum speed': Prm67 exceeds the maximum permissible value ( Prm67  > 60000 1/min)
Ramp monitoring					
Info3	0	Not to be evaluated			
	5	Prm67 'SMS safe maximum speed': Prm67 exceeds maximum permissible value (Prm67 > 60000 1/min)			
Error rectification	<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm 64: 'SDI safe speed standstill window'</li><li>Prm 67: 'SMS safe maximum speed'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>				

3605	Info1	106	Error message for the safety function 'Safe direction negative (SDIn)'		
			Movement monitoring		
			Info2	1	Prm64 'SDI safe speed standstill window'; Prm67 'SMS safe maximum speed': Speed limits are identical (Prm67 = Prm64)
				7	Prm67 'SMS safe maximum speed': Prm67 exceeds the maximum permissible value ( Prm67  > 60000 1/min)
				8	Prm64 'SDI safe speed standstill window': Prm64 exceeds the maximum permissible value ( Prm64  > 60000 1/min)
Ramp monitoring					
Info3	0	Not to be evaluated			
	5	Prm67 'SMS safe maximum speed': Prm67 exceeds maximum permissible value (Prm67 > 60000 1/min)			
Error rectification	<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm 64: 'SDI safe speed standstill window'</li><li>Prm 67: 'SMS safe maximum speed'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>				



3605	Info1	108	Error message for the safety function 'Safe maximum speed (SMS)'		
			Movement monitoring		
			Info2	1	Prm67 'SMS safe maximum speed': Speed limits are identical (Prm67 = 0)
				7	Prm67 'SMS safe maximum speed': Prm67 exceeds the maximum permissible value (Prm67 > 60000 1/min)
8	Prm67 'SMS safe maximum speed': Prm67 drops below the minimum permissible value (Prm67 < -60000 1/min)				
Error rectification	<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm 67: 'SMS safe maximum speed'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>				

3605	Info1	109	Error message for the safety function 'Safe speed range 2 (SSR2)'		
			Movement monitoring		
			Info2	1	Prm39 'SSR2 safe limit speed 1'; Prm40 'SSR2 safe limit speed 2'; Speed limits are identical (Prm39 = Prm40)
				7	Prm39 'SSR2 safe limit speed 1'; Prm39 exceeds the maximum permissible value ( Prm39  > 60000 1/min)
				8	Prm40 'SSR2 safe limit speed 2'; Prm40 exceeds the maximum permissible value ( Prm40  > 60000 1/min)
			Ramp monitoring		
			Info3	1	Actual value exceeds maximum permissible value (60000 1/min)
				2	Prm39 'SSR2 safe limit speed 1'; Prm39 exceeds the maximum permissible value ( Prm39  > 60000 1/min)
				3	Prm40 'SSR2 safe limit speed 2'; Prm40 exceeds the maximum permissible value ( Prm40  > 60000 1/min)
				4	Prm39 'SSR2 safe limit speed 1'; Prm40 'SSR2 safe limit speed 2'; Limits of the speed standstill window have the same value (Prm39 = Prm40)
5	Prm67 'SMS safe maximum speed': Prm67 exceeds the maximum permissible value (Prm67 > 60000 1/min)				
6	Prm38 'SSR2 brake ramp time': Prm38 = 0				
7	Prm38 'SSR2 brake ramp time'; Prm67 'SMS safe maximum speed': Relation of maximum speed to deceleration ramp n/t too small. (Ramp too flat) (only monitoring channel 1)				
10	Prm38 'SSR2 brake ramp time': Ramp time too long (only monitoring channel 2)				
11	Current deceleration ramp violates the permissible range (only monitoring channel 2)				
13	Prm38 'SSR2 brake ramp time'; Prm67 'SMS safe maximum speed': Relation of maximum speed to ramp time wrong (Prm67/Prm38) (only monitoring channel 2)				
Error rectification		<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm 38: 'SSR2 brake ramp time'</li><li>Prm 39: 'SSR2 safe limit speed 1'</li><li>Prm 40: 'SSR2 safe limit speed 2'</li><li>Prm 67: 'SMS safe maximum speed'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>			

3605	Info1	110	Error message for the safety function 'Safe speed range 3 (SSR3)'		
			Movement monitoring		
			Info2	1	Prm45 'SSR3 safe limit speed 1'; Prm46 'SSR3 safe limit speed 2': Speed limits are identical (Prm45 = Prm46)
				7	Prm45 'SSR3 safe limit speed 1': Prm45 exceeds the maximum permissible value ( Prm45  > 60000 1/min)
				8	Prm46 'SSR3 safe limit speed 2': Prm46 exceeds the maximum permissible value ( Prm46  > 60000 1/min)
			Ramp monitoring		
			Info3	1	Actual value exceeds maximum permissible value (60000 1/min)
				2	Prm45 'SSR3 safe limit speed 1': Prm45 exceeds the maximum permissible value ( Prm45  > 60000 1/min)
				3	Prm46 'SSR3 safe limit speed 2': Prm46 exceeds the maximum permissible value ( Prm46  > 60000 1/min)
				4	Prm45 'SSR3 safe limit speed 1'; Prm46 'SSR3 safe limit speed 2': Prm45 = Prm46
5	Prm67 'SMS safe maximum speed': Prm67 exceeds the maximum permissible value (Prm67 > 60000 1/min)				
6	Prm44 'SSR3 brake ramp time': (Prm44 = 0)				
7	Prm44 'SSR3 brake ramp time'; Prm67 'SMS safe maximum speed': Relation of maximum speed to deceleration ramp n/t too small. (Ramp too flat) (only monitoring channel 1)				
10	Prm44 'SSR3 brake ramp time': Ramp time too long (only monitoring channel 2)				
11	Current deceleration ramp violates the permissible range (only monitoring channel 2)				
13	Prm44 'SSR3 brake ramp time'; Prm67 'SMS safe maximum speed': Relation of maximum speed to ramp time wrong (Prm67/Prm44) (only monitoring channel 2)				
Error rectification		<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm 44: 'SSR3 brake ramp time'</li><li>Prm 45: 'SSR3 safe limit speed 1'</li><li>Prm 46: 'SSR3 safe limit speed 2'</li><li>Prm 67: 'SMS safe maximum speed'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>			

3605	Info1	111	Error message for the safety function 'Safe speed range 4 (SSR4)'		
			Movement monitoring		
			Info2	1	Prm51 'SSR4 safe limit speed 1'; Prm52 'SSR4 safe limit speed 2': Speed limits are identical (Prm51 = Prm52)
				7	Prm51 'SSR4 safe limit speed 1': Prm51 exceeds the maximum permissible value ( Prm51  > 60000 1/min)
				8	Prm52 'SSR4 safe limit speed 2': Prm52 exceeds the maximum permissible value ( Prm52  > 60000 1/min)
			Ramp monitoring		
			Info3	1	Actual value exceeds maximum permissible value (60000 1/min)
				2	Prm51 'SSR4 safe limit speed 1': Prm51 exceeds the maximum permissible value ( Prm51  > 60000 1/min)
				3	Prm52 'SSR4 safe limit speed 2': Prm52 exceeds the maximum permissible value ( Prm52  > 60000 1/min)
				4	Prm51 'SSR4 safe limit speed 1'; Prm52 'SSR4 safe limit speed 2': Prm51 = Prm52
5	Prm67 'SMS safe maximum speed': Prm67 exceeds the maximum permissible value (Prm67 > 60000 1/min)				
6	Prm50 'SSR4 brake ramp time': Prm50 = 0				
7	Prm50 'SSR4 brake ramp time'; Prm67 'SMS safe maximum speed': Relation of maximum speed to deceleration ramp n/t too small. (Ramp too flat) (only monitoring channel 1)				
10	Prm50 'SSR4 brake ramp time': Ramp time too long (only monitoring channel 2)				
11	Current deceleration ramp violates the permissible range (only monitoring channel 2)				
13	Prm50 'SSR4 brake ramp time'; Prm67 'SMS safe maximum speed': Relation of maximum speed to ramp time wrong (Prm67/Prm50) (only monitoring channel 2)				
Error rectification		<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm 50: 'SSR4 brake ramp time'</li><li>Prm 51: 'SSR4 safe limit speed 1'</li><li>Prm 52: 'SSR4 safe limit speed 2'</li><li>Prm 67: 'SMS safe maximum speed'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>			

3605	Info1	112	Error message for the safety function 'Safely-limited speed 1 (SLS1)'		
			Movement monitoring		
			Info2	1	Prm57 'SLS1 safe limit speed': Speed limits are identical (Prm51 = Prm52)
				7	Prm57 'SLS1 safe limit speed': Prm57 exceeds the maximum permissible value (Prm57 > 60000 1/min)
				8	Prm57 'SLS1 safe limit speed': Prm57 drops below the minimum permissible value (Prm57 < -60000 1/min)
			Ramp monitoring		
			Info3	1	Actual value exceeds maximum permissible value (60000 1/min)
				2	Prm57 'SLS1 safe limit speed': Prm57 exceeds the maximum permissible value (Prm57 > 60000 1/min)
				3	Prm57 'SLS1 safe limit speed': Prm57 drops below the minimum permissible value (Prm57 < -60000 1/min)
				4	Prm57 'SLS1 safe limit speed': Limits of the speed window have the same value (Prm57 = 0)
				5	Prm67 'SMS safe maximum speed': Prm67 exceeds the maximum permissible value (Prm67 > 60000 1/min)
				6	Prm56 'SLS1 brake ramp time': Prm56 = 0
				7	Prm56 'SLS1 brake ramp time'; Prm67 'SMS safe maximum speed': Relation of maximum speed to deceleration ramp n/t too small. (Ramp too flat) (only monitoring channel 1)
				10	Prm56 'SLS1 brake ramp time': Ramp time too long (only monitoring channel 2)
				11	Current deceleration ramp violates the permissible range (only monitoring channel 2)
				13	Prm56 'SLS1 brake ramp time'; Prm67 'SMS safe maximum speed': Relation of maximum speed to ramp time wrong (Prm67/Prm56) (only monitoring channel 2)
Error rectification					
<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm 56: 'SLS1 brake ramp time'</li><li>Prm 57: 'SLS1 safe limit speed'</li><li>Prm 67: 'SMS safe maximum speed'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>					

3605	Info1	113	Error message for the safety function 'Safely-limited speed 2 (SLS2)'		
			Movement monitoring		
			Info2	1	Prm62 'SLS2 safe limit speed': Speed limits are identical (Prm62 = 0)
				7	Prm62 'SLS2 safe limit speed': Prm62 exceeds the maximum permissible value (Prm62 > 60000 1/min)
				8	Prm62 'SLS2 safe limit speed': Prm62 drops below the minimum permissible value (Prm62 < -60000 1/min)
			Ramp monitoring		
			Info3	1	Actual value exceeds maximum permissible value (60000 1/min)
				2	Prm62 'SLS2 safe limit speed': Prm62 exceeds the maximum permissible value (Prm62 > 60000 1/min)
				3	Prm62 'SLS2 safe limit speed': Prm62 drops below the minimum permissible value (Prm62 < -60000 1/min)
				4	Prm62 'SLS2 safe limit speed': Limits of the speed window have the same value (Prm62 = 0)
5	Prm67 'SMS safe maximum speed': Prm67 exceeds the maximum permissible value (Prm67 > 60000 1/min)				
6	Prm61 'SLS2 brake ramp time': Prm61 = 0				
7	Prm61 'SLS2 brake ramp time'; Prm67 'SMS safe maximum speed': Relation of maximum speed to deceleration ramp n/t too small. (Ramp too flat) (only monitoring channel 1)				
10	Prm61 'SLS2 brake ramp time': Ramp time too long (only monitoring channel 2)				
11	Current deceleration ramp violates the permissible range (only monitoring channel 2)				
13	Prm61 'SLS2 brake ramp time'; Prm67 'SMS safe maximum speed': Relation of maximum speed to ramp time wrong (Prm 67/Prm 61) (only monitoring channel 2)				
Error rectification					
<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm 61: 'SLS2 brake ramp time'</li><li>Prm 62: 'SLS2 safe limit speed'</li><li>Prm 67: 'SMS safe maximum speed'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>					

3605	Info1	114	Error message for the safety function 'Safely-limited increment (SLI)'		
			Movement monitoring		
			Info2	1	Prm67 'SMS safe maximum speed': Speed limits are identical (Prm67 = 0)
				2	Prm65 'SLI Safely limited position change 1'; Prm66 'SLI Safely limited position change 2' Position limits are identical (Prm65 = Prm66)
				7	Prm67 'SMS safe maximum speed': Prm67 exceeds the maximum permissible value (Prm67 > 60000 1/min)
8	Prm67 'SMS safe maximum speed': Prm67 drops below the minimum permissible value (Prm67 < -60000 1/min)				
Error rectification	<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm 65: 'SLI Safely limited position change 1'</li><li>Prm 66: 'SLI Safely limited position change 2'</li><li>Prm 67: 'SMS safe maximum speed'</li></ul></li><li>Generate a correct parameter set and load on the target device</li></ul>				

3605	Info1	200	faulty sine encoder period		
			Info2		value of the sine period from ID32776 (parameter in the drive controller)
			Info3		value of the sine period from Prm6 (safe parameter)
Error rectification	<ul style="list-style-type: none"><li>Parameter to be checked:<ul style="list-style-type: none"><li>Prm4: 'Channel 1 encoder type'</li><li>Prm5: 'Channel 2 encoder type'</li><li>Prm6 : 'Sine encoder period'</li><li>ID32776 'Sine encoder period'</li></ul></li><li>The sine encoder period must be set to the same value for ID32776 and Prm6.</li></ul>				

### 3606 'Safety - Error during operation'

<ul style="list-style-type: none"><li>Error in a monitoring during operation</li></ul>					
Device	Functional safety Controller cards KW-R07 / -R17 / -R27 Decentralized drives iCx-xx- <b>ES</b> x, iXx-xx- <b>ES</b> , iDT5-x-x-xxx-xxxx-xx- <b>ES</b>				
Description	A monitoring has detected a deviation from a limit value during operations				
Class	Error				
Drive behaviour	See 'Error reaction' towards the individual additional information Info1				
Device behaviour					
Additional information (Info AMK customer service)					
3606	Info1	3	Error messages of the encoder- / resolver monitorings, monitoring channel 1		
			Info2	1	Circle radius of the resolver traces too small (resolver evaluation)
				2	Circle radius of the resolver traces too great (resolver evaluation)
Error reaction	In case of an error in the encoder / resolver monitorings, 'Save torque off (STO)' follows as error reaction				
Error rectification	<ul style="list-style-type: none"><li>Check parameterisation if correct encoder type was set<ul style="list-style-type: none"><li>Prm4 'Channel 1 encoder type'</li><li>Prm5 'Channel 2 encoder type'</li></ul></li><li>Check encoder / resolver signals and wiring</li></ul>				

3606	Info1	4	Error messages of the encoder- / resolver monitorings, monitoring channel 2		
			Info2	1	Circle radius of the resolver traces too small (resolver evaluation)
				2	Circle radius of the resolver traces too great (resolver evaluation)
Error reaction	In case of an error in the encoder / resolver monitorings, 'Save torque off (STO)' follows as error reaction				
Error rectification	<ul style="list-style-type: none"><li>• Check parameterisation if correct encoder type was set<ul style="list-style-type: none"><li>• Prm4 'Channel 1 encoder type'</li><li>• Prm5 'Channel 2 encoder type'</li></ul></li><li>• Check encoder / resolver signals and wiring</li></ul>				

3606	Info1	5	Error messages of the encoder- / resolver monitorings, monitoring channel 1		
			Info2	1	Circle radius of the sine traces too great (sine encoder detection)
				2	Circle radius of the sine traces too small (sine encoder detection)
				3	Difference of the quadrants between traces and counter value greater than 1 (sine encoder detection)
Error reaction	In case of an error in the encoder / resolver monitorings, 'Save torque off (STO)' follows as error reaction				
Error rectification	<ul style="list-style-type: none"><li>• Check parameterisation if correct encoder type was set<ul style="list-style-type: none"><li>• Prm4 'Channel 1 encoder type'</li><li>• Prm5 'Channel 2 encoder type'</li></ul></li><li>• Check encoder / resolver signals and wiring</li><li>• AMK service</li></ul>				

3606	Info1	6	Error messages of the encoder- / resolver monitorings, monitoring channel 2		
			Info2	1	Circle radius of the sine traces too great (sine encoder detection)
				2	Circle radius of the sine traces too small (sine encoder detection)
				3	Difference of the quadrants between traces and counter value greater than 1 (sine encoder detection)
Error reaction	In case of an error in the encoder / resolver monitorings, 'Save torque off (STO)' follows as error reaction				
Error rectification	<ul style="list-style-type: none"><li>• Check parameterisation if correct encoder type was set<ul style="list-style-type: none"><li>• Prm4 'Channel 1 encoder type'</li><li>• Prm5 'Channel 2 encoder type'</li></ul></li><li>• Check encoder / resolver signals and wiring</li><li>• AMK service</li></ul>				

3606	Info1	7	Error messages of the encoder- / resolver monitorings		
			Info2	3	Difference between 2 position values too great (sine encoder evaluation)
Error reaction	In case of an error in the encoder / resolver monitorings, 'Save torque off (STO)' follows as error reaction				
Error rectification	<ul style="list-style-type: none"><li>• Check parameterisation if correct encoder type was set<ul style="list-style-type: none"><li>• Prm4 'Channel 1 encoder type'</li><li>• Prm5 'Channel 2 encoder type'</li></ul></li><li>• Check encoder / resolver signals and wiring</li></ul>				



3606	Info1	13	Error messages monitoring cross-communication		
			Info2	1	monitoring of the other monitoring channel failed
				2	Status difference between 2 monitoring channels detected => STO
				3	Status difference between 2 monitoring channels detected => SS1
				4	Status difference between 2 monitoring channels detected => SS2
				5	Position switch-off threshold has been exceeded. Position difference between monitoring channels is too great
				6	Speed switch-off threshold has been exceeded. Speed difference between monitoring channels is too great
				7	Invalid specification of emergency stop bit
				8	The status of 2 monitoring chnnnels is different
Error reaction		In case of an error in the cross communication, 'Save torque off (STO)' follows as error reaction			
Error rectification		<ul style="list-style-type: none"><li>• Info2 = 1, 2, 3, 4, 8: resulting error</li><li>• Parameter to be checked:<ul style="list-style-type: none"><li>• Info2 = 5: Prm2 'Switch-off threshold position'</li><li>• Info2 = 6: Prm3 'Switch-off threshold velocity'</li></ul></li><li>• Check signals of safety inputs</li></ul>			

3606	Info1	18	Error messages of the input monitorings, monitoring channel 1		
			Info2	1	No dynamic sampling pulse detected at input
				4	Measured dynamic sampling period is too small
			Info3	1	Input 1
				2	Input 2
				3	Input 3
			Error reaction		In case of an error in the input monitorings, 'Save torque off (STO)' follows as error reaction
Error rectification		<ul style="list-style-type: none"><li>• Check wiring of the inputs</li><li>• Check correctness of dynamic sampling</li><li>• Check parameterisation of dynamic sampling</li><li>• Hardware possibly faulty (e.g. bouncing switches) / check</li><li>• AMK service</li></ul>			

3606	Info1	19	Error messages of the input monitorings, monitoring channel 2		
			Info2	1	No dynamic sampling pulse detected at input
				4	Measured dynamic sampling period is too small
			Info3	1	Input 1
				2	Input 2
				3	Input 3
			Error reaction		In case of an error in the input monitorings, 'Save torque off (STO)' follows as error reaction
Error rectification		<ul style="list-style-type: none"><li>• Check wiring of the inputs</li><li>• Check correctness of dynamic sampling</li><li>• Check parameterisation of dynamic sampling</li><li>• Hardware possibly faulty (e.g. bouncing switches) / check</li><li>• AMK service</li></ul>			

3606	Info1	27	Error messages of the output monitorings, monitoring channel 1		
			Info2	1	Value of a safe output that has been read back not equal to the specification Internal plausibility monitoring; possibly short circuit of the outputs.
			Info2	1	Error safe output 1: Signal that has been read back does not match the specification
				2	Error safe output 2: Signal that has been read back does not match the specification
Error reaction		In case of an error in the output monitorings, 'Save torque off (STO)' follows as error reaction			
Error rectification		<ul style="list-style-type: none"><li>• Check wiring of the outputs</li><li>• Check correctness of dynamic sampling</li><li>• Check parameterisation of dynamic sampling</li><li>• Hardware possibly faulty / check</li></ul>			

3606	Info1	28	Error messages of the output monitorings, monitoring channel 2		
			Info2	1	Value of a safe output that has been read back not equal to the specification Internal plausibility monitoring; possibly short circuit of the outputs.
			Info2	1	Error safe output 1: Signal that has been read back does not match the specification
				2	Error safe output 2: Signal that has been read back does not match the specification
Error reaction		In case of an error in the output monitorings, 'Save torque off (STO)' follows as error reaction			
Error rectification		<ul style="list-style-type: none"><li>• Check wiring of the outputs</li><li>• Check correctness of dynamic sampling</li><li>• Check parameterisation of dynamic sampling</li><li>• Hardware possibly faulty / check</li></ul>			

3606	Info1	38	Error messages of the 'Safe encoder monitoring (SEM)', monitoring channel 1		
			Info2	4	Prm10 'Reaction time in case of standstill' was exceeded
Error reaction		In case of an error in the encoder standstill monitoring, 'Safe stop 1 (SS1)' follows as error reaction			
Error rectification		<ul style="list-style-type: none"><li>• See Safety manual; functional safety (203446), 'Safe Encoder Monitoring (SEM)'</li><li>• Move drive</li><li>• Restart device</li></ul>			

3606	Info1	39	Error messages of the 'Safe encoder monitoring (SEM)', monitoring channel 2		
			Info2	4	Prm10 'Reaction time in case of standstill' was exceeded
Error reaction		In case of an error in the encoder standstill monitoring, 'Safe stop 1 (SS1)' follows as error reaction			
Error rectification		<ul style="list-style-type: none"><li>• See Safety manual; functional safety (203446), 'Safe Encoder Monitoring (SEM)'</li><li>• Move drive</li><li>• Restart device</li></ul>			

3606	Info1	52	Error messages of the hardware monitorings				
			Info2	1	Overvoltage in the 1.8 V supply voltage		
				2	Undervoltage in the 1.8 V supply voltage		
				3	Overvoltage in the 3.3 V supply voltage		
				4	Undervoltage in the 3.3 V supply voltage		
				5	Overvoltage in the 1.5 V reference voltage		
				6	Undervoltage in the 1.5 V reference voltage		
			Error reaction		In case of an error in the hardware monitorings, 'Save torque off (STO)' follows as error reaction		
Error rectification		<ul style="list-style-type: none"><li>• Hardware possibly faulty -&gt; check</li><li>• AMK service</li></ul>					

3606	Info1	70	Error messages of the FSoE handling						
			Info2	3	monitoring channel 1				
					Info3	1	Internal system error, pointer error		
						2	Internal system error, access in non-permissible area		
						3	Resulting error that occurs when the transmission telegram of the complementary channel differs from the own transmission telegram		
						4	Internal system error occurred while generating the CRC values (resulting error)		
						5	Faulty status in FSoE state machine		
				4	monitoring channel 2				
					Info3	1	Internal system error, pointer error		
						2	Internal system error, access in non-permissible area		
						3	Resulting error that occurs when the transmission telegram of the complementary channel differs from the own transmission telegram		
						4	Internal system error occurred while generating the CRC values (resulting error)		
						5	Faulty status in FSoE state machine		
			Info2	6	The FSoE watchdog has expired, i.e. no new FSoE frame was received within the watchdog time				
					Info3	3	Monitoring channel 1		
						4	Monitoring channel 2		
Error reaction		In case of an error in the FSoE monitorings, 'Save torque off (STO)' follows as error reaction							
Error rectification		<ul style="list-style-type: none"><li>• Check FSoE communication</li><li>• Info2 = 3, 4: Info3 = 1, 2, 4, 5: AMK service</li><li>• Info2 = 3, 4; Info3 = 3: check FSoE communication and check safety configuration</li><li>• Info2 = 6: check FSoE communication and check safety configuration</li><li>• FSoE master: error analysis, error message</li></ul>							

3606	Info1	75	Error messages of the hardware monitorings, switch-off path monitoring channel 1		
			Info2	1	Malfunction of the line driver L
				2	Malfunction of the line driver H
				3	Error line driver status status of the drivers not identical
				4	Error line driver control checking short circuit control line to supply
				5	Error line drivers' control checking short circuit control line to GND
				7	Error internal data handling plausibility check of control data
				8	Error internal data handling plausibility check of test data
<b>Error reaction</b>		In case of an error in the hardware monitorings, 'Save torque off (STO)' follows as error reaction			
<b>Error rectification</b>		<ul style="list-style-type: none"><li>• Hardware possibly faulty -&gt; check</li><li>• AMK service</li></ul>			

3606	Info1	76	Error messages of the hardware monitorings, switch-off path monitoring channel 2		
			Info2	1	Malfunction of the line driver L
				2	Malfunction of the line driver H
				3	Error line driver status status of the drivers not identical
				4	Error line driver control checking short circuit control line to supply
				5	Error line drivers' control checking short circuit control line to GND
				7	Error internal data handling plausibility check of control data
				8	Error internal data handling plausibility check of test data
<b>Error reaction</b>		In case of an error in the hardware monitorings, 'Save torque off (STO)' follows as error reaction			
<b>Error rectification</b>		<ul style="list-style-type: none"><li>• Hardware possibly faulty -&gt; check</li><li>• AMK service</li></ul>			

3606	Info1	101	Error message of the stop function 'Safe stop 1 (SS1)'		
			Info2	0	Not to be evaluated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual value exceeds maximum permissible value (60000 1/min)
				8	Permitted speed range was exceeded (only monitoring channel 1)
				9	Permitted speed range was dropped below (only monitoring channel 1)
				11	Prm20 'SS1 brake ramp time': Current deceleration ramp deviates from the permissible range (only monitoring channel 2)
				14	Permissible speed range was violated (only monitoring channel 2)
				15	Standstill window following end of ramp violated (only monitoring channel 2)
Error reaction		In case of an error in the monitoring of the SS1 stop function, 'Save torque off (STO)' follows as error reaction			
Error rectification		<ul style="list-style-type: none"><li>• Check why SS1 ramp was violated by the movement of the drive</li><li>• Adjust parameterisation to physical conditions</li></ul>			

3606	Info1	102	Error message of the stop function 'Safe stop 2 (SS2)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit in standstill was violated
				4	Lower speed limit in standstill was violated
				5	Upper position limit in standstill was violated
				6	Lower position limit in standstill was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual speed value exceeds maximum permissible value (60000 1/min)
				8	Permissible speed range was exceeded (only monitoring channel 1)
				9	Permissible speed range was dropped below (only monitoring channel 1)
				11	Prm25 'SS2 brake ramp time': Current deceleration ramp deviates from the permissible range (only monitoring channel 2)
				14	Permissible speed range was violated (only monitoring channel 2)
				15	Standstill window following end of ramp violated (only monitoring channel 2)
Error reaction		In case of an error in the monitoring of the SS2 stop function, 'Save torque off (STO)' follows as error reaction			
Error rectification		<ul style="list-style-type: none"><li>• Check why SS2 ramp was violated by the movement of the drive</li><li>• Adjust parameterisation to physical conditions</li></ul>			

3606	Info1	103	Error message of the safety function 'Safe operating stop (SOS)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit in standstill was violated
				4	Lower speed limit in standstill was violated
				5	Upper position limit in standstill was violated
				6	Lower position limit in standstill was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual value exceeds maximum permissible value (60000 1/min)
Error reaction		In case of an error in the monitoring of the SOS safety function, 'Save torque off (STO)' follows as error reaction			
Error rectification		• Check by what the invalid movement of the drive was triggered			

3606	Info1	104	Error message of the safety function 'Safe speed range 1 (SSR1)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual speed value exceeds maximum permissible value (60000 1/min)
				8	Permissible speed range was exceeded (only monitoring channel 1)
				9	Permissible speed range was dropped below (only monitoring channel 1)
				11	Prm32 'SSR1 brake ramp time': Current deceleration ramp deviates from the permissible range (only monitoring channel 2)
				14	Permissible speed range was violated (only monitoring channel 2)
				15	Monitoring window following end of ramp violated (only monitoring channel 2)
Error reaction		In case of an error in the monitoring of the SSR1 safety function, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		• Check why the movement of the drive has violated the limits • Adjust parameterisation to physical conditions			

3606	Info1	105	Error message for the safety function 'Safe direction positive (SDIp)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual value exceeds maximum permissible value (60000 1/min)
Error reaction		In case of an error in the monitoring of the SDIp safety function, 'Save torque off (STO)' follows as error reaction			
Error rectification		• Check by what the invalid movement of the drive was triggered			

3606	Info1	106	Error message of the safety function 'Safe direction negative (SDIn)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
Info3	0	Not to be evaluated			
	1	Actual value exceeds maximum permissible value (60000 1/min)			
Error reaction		In case of an error in the monitoring of the SDIn safety function, 'Save torque off (STO)' follows as error reaction			
Error rectification		• Check by what the invalid movement of the drive was triggered			
3606	Info1	108	Error message for the safety function 'Safe maximum speed (SMS)'		
			Movement monitoring		
			Info2	3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
Error reaction		In case of an error in the monitoring of the SMS safety function, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		• Check why the movement of the drive has violated the limits • Adjust parameterisation to physical conditions			
3606	Info1	109	Error message of the safety function 'Safe speed range 2 (SSR2)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual speed value exceeds the maximum permissible value (60000 1/min)
				8	Permissible speed range was exceeded (only monitoring channel 1)
				9	Permissible speed range was dropped below (only monitoring channel 1)
				11	Prm38 'SSR2 brake ramp time': Current deceleration ramp deviates from the permissible range (only monitoring channel 2)
				14	Permissible speed range was violated (only monitoring channel 2)
				15	Monitoring window following end of ramp violated (only monitoring channel 2)
Error reaction		In case of an error in the monitoring of the SSR2 safety function, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		• Check why the movement of the drive has violated the limits • Adjust parameterisation to physical conditions			

3606	Info1	110	Error message of the safety function 'Safe speed range 3 (SSR3)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual speed value exceeds maximum permissible value (60000 1/min)
				8	Permissible speed range was exceeded (only monitoring channel 1)
				9	Permissible speed range was dropped below (only monitoring channel 1)
11	Prm44 'SSR3 brake ramp time': Current deceleration ramp deviates from the permissible range (only monitoring channel 2)				
14	Permissible speed range was violated (only monitoring channel 2)				
15	Monitoring window following end of ramp violated (only monitoring channel 2)				
Error reaction		In case of an error in the monitoring of the SSR3 safety function, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		<ul style="list-style-type: none"><li>• Check why the movement of the drive has violated the limits</li><li>• Adjust parameterisation to physical conditions</li></ul>			

3606	Info1	111	Error message of the safety function 'Safe speed range 4 (SSR4)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual speed value exceeds maximum permissible value (60000 1/min)
				8	Permissible speed range was exceeded (only monitoring channel 1)
				9	Permissible speed range was dropped below (only monitoring channel 1)
11	Prm50 'SSR4 brake ramp time': Current deceleration ramp deviates from the permissible range (only monitoring channel 2)				
14	Permissible speed range was violated (only monitoring channel 2)				
15	Monitoring window following end of ramp violated (only monitoring channel 2)				
Error reaction		In case of an error in the monitoring of the SSR4 safety function, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		<ul style="list-style-type: none"><li>• Check why the movement of the drive has violated the limits</li><li>• Adjust parameterisation to physical conditions</li></ul>			



3606	Info1	112	Error message of the safety function 'Safely-limited speed 1 (SLS1)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual speed value exceeds maximum permissible value (60000 1/min)
				8	Permissible speed range was exceeded (only monitoring channel 1)
				9	Permissible speed range was dropped below (only monitoring channel 1)
				11	Prm56 'SLS1 brake ramp time': Current deceleration ramp deviates from the permissible range (only monitoring channel 2)
				14	Permissible speed range was violated (only monitoring channel 2)
				15	Monitoring window following end of ramp violated (only monitoring channel 2)
Error reaction		In case of an error in the monitoring of the SLS1 safety function, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		<ul style="list-style-type: none"><li>• Check why the movement of the drive has violated the limits</li><li>• Adjust parameterisation to physical conditions</li></ul>			

3606	Info1	113	Error message of the safety function 'Safely-limited speed 2 (SLS2)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual speed value exceeds maximum permissible value (60000 1/min)
				8	Permissible speed range was exceeded (only monitoring channel 1)
				9	Permissible speed range was dropped below (only monitoring channel 1)
				11	Prm61 'SLS2 brake ramp time': Current deceleration ramp deviates from the permissible range (only monitoring channel 2)
				14	Permissible speed range was violated (only monitoring channel 2)
				15	Monitoring window following end of ramp violated (only monitoring channel 2)
Error reaction		In case of an error in the monitoring of the SLS2 safety function, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		<ul style="list-style-type: none"><li>• Check why the movement of the drive has violated the limits</li><li>• Adjust parameterisation to physical conditions</li></ul>			

3606	Info1	114	Error message for the safety function 'Safely-limited increment (SLI)'		
			Movement monitoring		
			Info2	5	Upper position limit of the monitoring range was violated
				6	Lower position limit of the monitoring range was violated
<b>Error reaction</b>	In case of an error in the monitoring of the SLI safety function, the parameterised error reaction follows (STO, SS1 or SS2)				
<b>Error rectification</b>	<ul style="list-style-type: none"> <li>Check why the movement of the drive has violated the limits</li> <li>Adjust parameterisation to physical conditions</li> </ul>				

### 3607 'Safety - Internal system error'

<ul style="list-style-type: none"><li>Internal system error</li></ul>					
Device	Functional safety Controller cards KW-R07 / -R17 / -R27 Decentralized drives iCx-xx- <b>ES</b> x, iXx-xx- <b>ES</b> , iDT5-x-x-xxx-xxxx-xx- <b>ES</b>				
Description	Internal error of a process monitoring or a self-test				
Class	Error				
Drive behaviour	The drive remains torque-free				
Device behaviour	The safety monitoring does not switch to the operational state, i.e. the safety functions cannot be put into operation				
Additional information (Info AMK customer service)					
3607	Info1	5	Encoder error, sine encoder detection, monitoring channel 1		
			Info2	4	No stable state of the counter in the determination of the offset
				5	Default branch run through
Error reaction	In case of an error in the encoder monitoring, 'Save torque off (STO)' follows as error reaction				
Error rectification	<ul style="list-style-type: none"><li>AMK service</li></ul>				
3607	Info1	6	Encoder error, sine encoder detection, monitoring channel 2		
			Info2	4	Counter value cannot be read
				5	Default branch run through
				6	No stable state of the counter
Error reaction	In case of an error in the encoder monitoring, 'Save torque off (STO)' follows as error reaction				
Error rectification	<ul style="list-style-type: none"><li>AMK service</li></ul>				
3607	Info1	16	Error messages of the input monitorings, monitoring channel 1		
			Info2	2	Faulty input value
			Info3	1	Input 1
				2	Input 2
				3	Input 3
Error reaction	In case of an error in the input / output monitorings, 'Save torque off (STO)' follows as error reaction				
Error rectification	<ul style="list-style-type: none"><li>Check wiring of the inputs</li><li>Check correctness of dynamic sampling</li><li>Check parameterisation of dynamic sampling</li><li>Hardware possibly faulty / check</li><li>AMK service</li></ul>				

3607	Info1	17	Error messages of the input monitorings, monitoring channel 2		
			Info2	2	Faulty input value
			Info3	1	Input 1
				2	Input 2
				3	Input 3
<b>Error reaction</b>		In case of an error in the input / output monitorings, 'Save torque off (STO)' follows as error reaction			
<b>Error rectification</b>		<ul style="list-style-type: none"><li>• Check wiring of the inputs</li><li>• Check correctness of dynamic sampling</li><li>• Check parameterisation of dynamic sampling</li><li>• Hardware possibly faulty / check</li><li>• AMK service</li></ul>			

3607	Info1	20	Error messages of the input monitorings, monitoring channel 1		
			Info2	7	Invalid specification for the allocation of the input 1 in the status
				8	Invalid specification for the allocation of the input 2 in the status
				9	Invalid specification for the allocation of the input 3 in the status
				10	Bit number for input 1 and input 2 in the status value identical
				11	Bit number for input 1 and input 3 in the status value identical
				12	Bit number for input 2 and input 3 in the status value identical
				13	Value of input 1 is too large
				14	Value of input 2 is too large
				15	Value of input 3 is too large
<b>Error reaction</b>		In case of an error in the input / output monitorings, 'Save torque off (STO)' follows as error reaction			
<b>Error rectification</b>		<ul style="list-style-type: none"><li>• Check wiring of the inputs</li><li>• Check correctness of dynamic sampling</li><li>• Check parameterisation of dynamic sampling</li><li>• Hardware possibly faulty / check</li><li>• Info2 = 7 ... 12: AMK service</li></ul>			

3607	Info1	22	Error messages of the input monitorings, monitoring channel 2		
			Info2	7	Invalid specification for the allocation of the input 1 in the status
				8	Invalid specification for the allocation of the input 2 in the status
				9	Invalid specification for the allocation of the input 3 in the status
				10	Bit number for input 1 and input 2 in the status value identical
				11	Bit number for input 1 and input 3 in the status value identical
				12	Bit number for input 2 and input 3 in the status value identical
				13	Value of input 1 is too large
				14	Value of input 2 is too large
			15	Value of input 3 is too large	
<b>Error reaction</b>		In case of an error in the input / output monitorings, 'Save torque off (STO)' follows as error reaction			
<b>Error rectification</b>		<ul style="list-style-type: none"><li>• Check wiring of the inputs</li><li>• Check correctness of dynamic sampling</li><li>• Check parameterisation of dynamic sampling</li><li>• Hardware possibly faulty / check</li><li>• Info2 = 7 ... 12: AMK service</li></ul>			

3607	Info1	23	Error messages of the safe outputs monitoring channel 1		
			Info2	1	A safety function is reported as active although the function is not selected
				5	Internal error
				6	Internal error
				7	Internal error
				8	Internal error
<b>Error reaction</b>		In case of an error in the input / output monitorings, 'Save torque off (STO)' follows as error reaction			
<b>Error rectification</b>		<ul style="list-style-type: none"><li>• AMK service</li></ul>			

3607	Info1	24	Error messages of the safe outputs monitoring channel 2		
			Info2	1	A safety function is reported as active although the function is not selected
				5	Internal error
				6	Internal error
				7	Internal error
				8	Internal error
<b>Error reaction</b>		In case of an error in the input / output monitorings, 'Save torque off (STO)' follows as error reaction			
<b>Error rectification</b>		<ul style="list-style-type: none"><li>• AMK service</li></ul>			

3607	Info1	25	Error messages of the output monitorings, monitoring channel 1		
			Info2	26	Setpoint A1 > 1
				27	Setpoint A2 > 1
				28	Feed forward A1 > limit
				29	Feed forward A2 > limit
				30	Feed forward Dyn > limit
<b>Error reaction</b>		In case of an error in the input / output monitorings, 'Save torque off (STO)' follows as error reaction			
<b>Error rectification</b>		<ul style="list-style-type: none"><li>• AMK service</li></ul>			

3607	Info1	26	Error messages of the output monitorings, monitoring channel 2		
			Info2	26	Setpoint A1 > 1
				27	Setpoint A2 > 1
				28	Prm104 'SA1.2 output type' > maximum value
				29	Feed forward A2 > limit
				30	Feed forward Dyn > limit
<b>Error reaction</b>		In case of an error in the input / output monitorings, 'Save torque off (STO)' follows as error reaction			
<b>Error rectification</b>		• AMK service			

3607	Info1	27	Error messages of the output test, monitoring channel 1		
			Info2	1	
			Info3	3	Read-back signal > 1
				4	Setpoint > 1
				5	Instance > 1
				6	Output no. > 1
				7	Test cycle > limit
				8	Signal changing without error monitoring > limit
				9	More than 4 signal changes per ms
<b>Error reaction</b>		In case of an error in the input / output monitorings, 'Save torque off (STO)' follows as error reaction			
<b>Error rectification</b>		• AMK service			

3607	Info1	28	Error messages of the output test, monitoring channel 2		
			Info2	1	
			Info3	3	Read-back signal > 1
				4	Setpoint > 1
				5	Instance > 1
				6	Output no. > 1
				7	Test cycle > limit
				8	Signal changing without error monitoring > limit
				9	More than 4 signal changes per ms
<b>Error reaction</b>		In case of an error in the input / output monitorings, 'Save torque off (STO)' follows as error reaction			
<b>Error rectification</b>		• AMK service			

3607	Info1	29	Module sequence monitoring				
			Info2	1	me pointer is faulty		
					Info3	1	Reset
				2		Do step	
				2	PAU pointer is faulty		
					Info3	n	Software module no.
				3		Index exceeds limit	
					Info3	n	Software module no.
				4		Identifier is faulty	
					Info3	n	Software module no.
5	Cycle time exceeds tolerance (< minimum)						
	Info3	n	Time level no.				
6		Cycle time exceeds tolerance (> maximum)					
	Info3	n	Time level no.				
Error reaction		In case of an error in the module sequence monitoring, 'Save torque off (STO)' follows as error reaction					
Error rectification		<ul style="list-style-type: none"><li>Hardware possibly faulty / check</li><li>AMK service</li></ul>					

3607	Info1	30	Error during reading of a parameter from the safe parameter set				
			Wrong parameter number or internal system error				
			Info2	nn	Parameter arrangement, position of the faulty parameter		
						Info3	0
			1	Read unsigned integer 32-Bit parameter from the safe parameter set			
					2	Read signed integer 16-Bit parameter from the safe parameter set	
			3	Read signed integer 32-Bit parameter from the safe parameter set			
					Error reaction		In case of an error while reading the parameters, 'Save torque off (STO)' follows as error reaction
			Error rectification		<ul style="list-style-type: none"><li>AMK service</li></ul>		

3607	Info1	38	Error message of 'Safe encoder monitoring (SEM)' monitoring channel 1		
			Info2	5	Wrong state selected
Error rectification		<ul style="list-style-type: none"><li>AMK service</li></ul>			

3607	Info1	39	Error message of 'Safe encoder monitoring (SEM)' monitoring channel 2		
			Info2	5	Wrong state selected
Error rectification		<ul style="list-style-type: none"><li>AMK service</li></ul>			

3607	Info1	40	Error messages communication to P1 system processor monitoring channel 1 / 2						
			Info2	1	Data length is invalid				
				2	Index for list invalid				
				3	State in system booting false				
				4	State in error deletion false				
				5	Service -> SEEP data is read (only monitoring channel 2)				
					Info3	0	No error		
						1	Reading SEEP is not possible because of system run-up		
2	Reading SEEP is not possible because of data transmission								
3	Maximum address exceeded								
Error reaction		In case of an error in the communication to the system processor, 'Save torque off (STO)' follows as error reaction							
Error rectification		• AMK service							

3607	Info1	70	Error message FSoE handling						
			Info2	7	FSoE error while reading status				
				8	FSoE error while reading process data				
Error reaction		In case of an error in the FSoE handling, 'Save torque off (STO)' follows as error reaction							
Error rectification		• AMK service							

3607	Info1	71	Error messages clock monitoring monitoring channel 1						
			Info2	1	State monitoring				
				2	Clock monitoring is faulty				
				3	Faulty state				
Error reaction		In case of an error in the clock monitoring, 'Save torque off (STO)' follows as error reaction							
Error rectification		• AMK service							

3607	Info1	72	Error messages clock monitoring monitoring channel 2						
			Info2	1	State monitoring				
				2	Clock monitoring is faulty				
				3	Faulty state				
Error reaction		In case of an error in the clock monitoring, 'Save torque off (STO)' follows as error reaction							
Error rectification		• AMK service							

3607	Info1	73	Error message system monitoring channel 1						
			Info2	1	FSoE stack / cross communication / clock monitoring were not activated for 3 cycles successively				
				2	Life counter FSoE is activated				
				3	Outputs cannot be set				
			Info3	3	Monitoring channel 1				
Error reaction		In case of a system error, 'Save torque off (STO)' follows as error reaction							
Error rectification		• AMK service							

3607	Info1	74	Error message system monitoring channel 2		
			Info2	1	FSoE stack / cross communication / clock monitoring were not activated for 3 cycles successively
				2	Life counter FSoE is activated
				3	Outputs cannot be set
				4	Writing history is failed during data transmission
			Info3	4	Monitoring channel 2
Error reaction	In case of a system error, 'Save torque off (STO)' follows as error reaction				
Error rectification	• AMK service				



3607	Info1	100	Error message of the stop and safety functions		
			Info2	100	Start bit allocation > maximum value
				101	Reset bit allocation > maximum value
				102	Reset bit allocation = start bit allocation
				103	Active bit allocation > maximum value
				104	Status bit allocation > maximum value
				105	Error bit allocation > maximum value
				106	Active bit allocation = status bit allocation
				107	Active bit allocation = error bit allocation
				108	Error bit allocation = status bit allocation
				109	Wrong state selected
				114	Monitoring channel 1: SS1 Error reaction > maximum value
				115	Monitoring channel 2: SS1 Error reaction > maximum value
				116	Monitoring channel 1: SS2 Error reaction > maximum value
				117	Monitoring channel 2: SS2 Error reaction > maximum value
				118	Monitoring channel 1: Safety function Pointer not initialised
				119	Monitoring channel 1: Safety function Faulty state
				120	Monitoring channel 2: Safety function Pointer not initialised
				121	Monitoring channel 2: Safety function Faulty state
				122	Monitoring channel 1: SS1 Pointer not initialised
				123	Monitoring channel 1: SS1 Faulty state
				124	Monitoring channel 2: SS1 Pointer not initialised
				125	Monitoring channel 2: SS1 Faulty state
				126	Monitoring channel 1: SS2 Pointer not initialised
				127	Monitoring channel 1: SS2 Faulty state
				128	Monitoring channel 2: SS2 Pointer not initialised
				129	Monitoring channel 2: SS2 Faulty state

			Info3	100	Error message of stop function 'Save torque off (STO)'
				101	Error message of stop function 'Safe stop 1 (SS1)'
				102	Error message of stop function 'Safe stop 2 (SS2)'
				103	Error message of safety function 'Safe operating stop (SOS)'
				104	Error message of safety function 'Safe speed range 1 (SSR1)'
				105	Error message of safety function 'Safe direction positive (SDIp)'
				106	Error message of safety function 'Safe direction negative (SDIn)'
				108	Error message of safety function 'Safe maximum speed (SMS)'
				109	Error message of safety function 'Safe speed range 2 (SSR2)'
				110	Error message of safety function 'Safe speed range 3 (SSR3)'
				111	Error message of safety function 'Safe speed range 4 (SSR4)'
				112	Error message of safety function 'Safely-limited speed 1 (SLS1)'
				113	Error message of safety function 'Safely-limited speed 2 (SLS2)'
				114	Error message of safety function 'Safely-limited increment (SLI)'
<b>Error reaction</b>		In case of an error, 'Save torque off (STO)' follows as error reaction			
<b>Error rectification</b>		• AMK service			

### 3609 'Safety - Faulty parameter transfer'

<ul style="list-style-type: none"> <li>Faulty parameter transfer</li> </ul>	
<b>Device</b>	Functional safety Controller cards KW-R07 / -R17 / -R27 Decentralized drives iCx-xx- <b>ES</b> x, iXx-xx- <b>ES</b> , iDT5-x-x-xxx-xxxx-xx- <b>ES</b>
<b>Description</b>	Parameterisation error during system booting or during parameter set transfer <ul style="list-style-type: none"> <li>During system booting, the safe parameter set is checked for validity</li> <li>During parameter set transfer, the safe parameter set is checked for validity and the validation is also monitored during the transfer</li> </ul>
<b>Class</b>	Error
<b>Drive behaviour</b>	The drive remains torque-free
<b>Device behaviour</b>	The safety monitoring does not switch to the operational state, i.e. the safety functions cannot be put into operation

Additional information (Info AMK customer service)							
3609	Info1	3	Error during sending of the status from monitoring channel 2 to monitoring channel 1				
			Status: Confirmation of the adoption of the transmitted safe parameter set is requested				
			Info2	11	Internal system error Error during sending of the status from monitoring channel 2 to monitoring channel 1		
				15	Internal system error Timeout during sending of the status from monitoring channel 2 to monitoring channel 1		
Info3	58	Transfer of the safe parameter set is started (monitoring channel 2)					
Error rectification		<ul style="list-style-type: none"><li>• Transmit the safe parameter set to the device once more</li><li>• If the error occurs again, contact AMK service</li></ul>					
3609	Info1	5	Error during the importing of the safe parameter set into the SEEP				
			Info2	5	Internal system error: Timeout import parameter set into the SEEP		
				7	Internal system error: Procedural error		
				8	Internal system error: Input parameter		
			Info3	57	Transfer of the safe parameter set is started (monitoring channel 1)		
				58	Transfer of the safe parameter set is started (monitoring channel 2)		
Error rectification		<ul style="list-style-type: none"><li>• Transmit the safe parameter set to the device once more</li><li>• If the error occurs again, contact AMK service</li></ul>					
3609	Info1	6	The error occurs if certain functions are not completed during the transfer of the safe parameter set to the device.				
			Info2		Not to be evaluated		
			Info3	55	Testing of the safe parameter set is started during system booting (monitoring channel 1)		
				56	Testing of the safe parameter set is started during system booting (monitoring channel 2)		
				57	Transfer of the safe parameter set is started (monitoring channel 1)		
				58	Transfer of the safe parameter set is started (monitoring channel 2)		
			Error rectification		<ul style="list-style-type: none"><li>• Switch the device off/on</li><li>• Possibly transmit the safe parameter set to the device once more</li></ul>		

3609	Info1	7	Resulting error: Within a certain time, the expected status from monitoring channel 2 does not arrive		
			Info2	7	Internal system error: Procedural error
				8	Internal system error: Input parameter
				12	Timeout during reading of the status from monitoring channel 2
			Info3	55	Testing of the safe parameter set is started during system booting (monitoring channel 1)
57	Transfer of the safe parameter set is started (monitoring channel 1)				
Error rectification		<ul style="list-style-type: none"><li>• Switch the device off/on</li><li>• Possibly transmit the safe parameter set to the device once more</li></ul>			

3609	Info1	8	Internal system error		
			Info2		Not to be evaluated
			Info3	55	Testing of the safe parameter set is started during system booting (monitoring channel 1)
				56	Testing of the safe parameter set is started during system booting (monitoring channel 2)
				57	Transfer of the safe parameter set is started (monitoring channel 1)
				58	Transfer of the safe parameter set is started (monitoring channel 2)
				59	Testing of the safe parameter set is completed during system booting (monitoring channel 1)
				60	Testing of the safe parameter set is completed during system booting (monitoring channel 2)
				61	Transfer of the safe parameter set is completed (monitoring channel 1)
62	Transfer of the safe parameter set is completed (monitoring channel 2)				
Error rectification		<ul style="list-style-type: none"><li>• AMK service</li></ul>			

3609	Info1	9	Transfer of the safe parameter set is successfully completed		
			Info2	0	"The transfer of the safe parameter set has been successfully completed, please restart." (This information is always displayed when the safe parameter set has been successfully transmitted to the device!)
				11	Internal system error: Error during sending of the status from monitoring channel 2 to monitoring channel 1
				15	Internal system error: Timeout during sending of the status from monitoring channel 2 to monitoring channel 1
			Info3	61	Transfer of the safe parameter set is completed (monitoring channel 1)
				62	Transfer of the safe parameter set is completed (monitoring channel 2)
Error rectification		<ul style="list-style-type: none"><li>• Switch the device off/on</li><li>• Possibly transmit the safe parameter set to the device once more</li><li>• If an internal system error occurs, contact AMK service</li></ul>			

3609	Info1	10	Internal system error Error during reading of the verification number from the SEEP in monitoring channel 2		
			Info2	7	Internal system error: Procedural error
				11	Internal system error: Error during sending of the status from monitoring channel 2 to monitoring channel 1
				13	Internal system error: Reading of the check sum from the SEEP monitoring channel 2 has been completed incorrectly
				14	Internal system error: Timeout in the reading function of the check sum from the SEEP monitoring channel 2
				15	Internal system error: Timeout during sending of the status from monitoring channel 2 to monitoring channel 1
			Info3	56	Testing of the safe parameter set is started during system booting (monitoring channel 2)
Error rectification	<ul style="list-style-type: none"><li>• Switch the device off/on</li><li>• Possibly transmit the safe parameter set to the device once more</li><li>• If an internal system error occurs, contact AMK service</li></ul>				

3609	Info1	11	Internal system error		
			Info2	16	Secure the timeout in the check sum function in SEEP monitoring channel 2
			Info3	58	Transfer of the safe parameter set is started (monitoring channel 2)
Error rectification	<ul style="list-style-type: none"><li>• Switch the device off/on</li><li>• Possibly transmit the safe parameter set to the device once more</li><li>• If an internal system error occurs, contact AMK service</li></ul>				

3609	Info1	73	Internal system error		
			Info2	0	During system run-up, an error in checksum 2 was detected within CRC examination
Error reaction	In case of a system internal error, 'Save torque off (STO)' follows as error reaction				
Error rectification	<ul style="list-style-type: none"><li>• Transmit the safe parameter set to the device once more</li><li>• Following error of 3605 'Safety - Invalid parameterisation' or 3609 'Safety - Faulty parameter transfer' at system startup. The initiating error was deleted by the controller.<ul style="list-style-type: none"><li>• Switch the device off/on</li><li>• Check ID32840 'Diagnostic list'</li><li>• Check parametrization</li></ul></li><li>• AMK service</li></ul>				

3609	Info1	74	Internal system error		
			Info2	0	During system run-up, an error in checksum 2 was detected within CRC examination
				5	New parameter set is transmitted
Error reaction			In case of a system internal error, 'Save torque off (STO)' follows as error reaction		
Error rectification			<ul style="list-style-type: none"><li>Transmit the safe parameter set to the device once more</li><li>Info 2 = 0, Info 3 = 4: Following error of 3605 'Safety - Invalid parameterisation' or 3609 'Safety - Faulty parameter transfer' at system startup. The initiating error was deleted by the controller.<ul style="list-style-type: none"><li>Switch the device off/on</li><li>Check ID32840 'Diagnostic list'</li><li>Check parametrization</li></ul></li><li>AMK service</li></ul>		

3609	Info1	128	The current parameter set is invalid		
			Info2	4	Failed to calculate and compare the checksums. The checksum of the safe parameter set and the calculated checksum differ.
				6	This version of the checked parameter set is not compatible with the device version or the safe parameter set is not available on the device
				9	Error during comparison of test sums Check sum from the current safe parameter set and check sum from the SEEP, monitoring channel 2, are different Hardware was replaced
				10	The check sum read from the SEEP, monitoring channel 2 is 0
			Info3	55	Testing of the safe parameter set is started during system booting (monitoring channel 1)
				56	Testing of the safe parameter set is started during system booting (monitoring channel 2)
				57	Transfer of the safe parameter set is started (monitoring channel 1)
				58	Transfer of the safe parameter set is started (monitoring channel 2)
			Error rectification		

3609	Info1	131	Error during sending of the status from monitoring channel 2 to monitoring channel 1 Status: Confirmation of the adoption of the transmitted safe parameter set is requested The current parameter set is invalid		
			Info2	11	Internal system error Error during sending of the status from monitoring channel 2 to monitoring channel 1
				15	Internal system error Timeout during sending of the status from monitoring channel 2 to monitoring channel 1
			Info3	58	Transfer of the safe parameter set is started (monitoring channel 2)
Error rectification			<ul style="list-style-type: none"><li>Transmit the safe parameter set to the device once more</li><li>If the error occurs again, contact AMK service</li></ul>		

3609	Info1	133	Error during the importing of the safe parameter set into the SEEP The current parameter set is invalid		
			Info2	5	Internal system error: Timeout import parameter set into the SEEP
				7	Internal system error: Procedural error
				8	Internal system error: Input parameter
			Info3	57	Transfer of the safe parameter set is started (monitoring channel 1)
				58	Transfer of the safe parameter set is started (monitoring channel 2)
Error rectification		<ul style="list-style-type: none"><li>• Transmit the safe parameter set to the device once more</li><li>• If the error occurs again, contact AMK service</li></ul>			

3609	Info1	135	Resulting error: Within a certain time, the expected status from monitoring channel 2 does not arrive The current parameter set is invalid		
			Info2	7	Internal system error: Procedural error
				8	Internal system error: Input parameter
				12	Timeout during reading of the status from monitoring channel 2.
			Info3	55	Testing of the safe parameter set is started during system booting (monitoring channel 1)
				57	Transfer of the safe parameter set is started (monitoring channel 1)
Error rectification		<ul style="list-style-type: none"><li>• Switch the device off/on</li><li>• Possibly transmit the safe parameter set to the device once more</li></ul>			

3609	Info1	136	Internal system error		
			Info2		Not to be evaluated
			Info3	55	Testing of the safe parameter set is started during system booting (monitoring channel 1)
				56	Testing of the safe parameter set is started during system booting (monitoring channel 2)
				57	Transfer of the safe parameter set is started (monitoring channel 1)
				58	Transfer of the safe parameter set is started (monitoring channel 2)
				59	Testing of the safe parameter set is completed during system booting (monitoring channel 1)
				60	Testing of the safe parameter set is completed during system booting (monitoring channel 2)
				61	Transfer of the safe parameter set is completed (monitoring channel 1)
				62	Transfer of the safe parameter set is completed (monitoring channel 2)
Error rectification		<ul style="list-style-type: none"><li>• AMK service</li></ul>			

3609	Info1	137	Transfer of the safe parameter set is successfully completed The current parameter set is invalid		
			Info2	0	"The transfer of the safe parameter set has been successfully completed, please restart." (This information is always displayed when the safe parameter set has been successfully transmitted to the device!)
				11	Internal system error: Error during sending of the status from monitoring channel 2 to monitoring channel 1
				15	Internal system error: Timeout during sending of the status from monitoring channel 2 to monitoring channel 1
			Info3	61	Transfer of the safe parameter set is completed (monitoring channel 1)
				62	Transfer of the safe parameter set is completed (monitoring channel 2)
Error rectification		<ul style="list-style-type: none"><li>• Switch the device off/on</li><li>• Possibly transmit the safe parameter set to the device once more</li><li>• If an internal system error occurs, contact AMK service</li></ul>			

3609	Info1	138	Internal system error The current parameter set is invalid		
			Info2	13	Error in function 'Read checksum from SEEP monitoring channel 2'
				14	Timeout in function 'Read checksum from SEEP monitoring channel 2'
				15	Timeout during sending of the checksum to monitoring channel 1
			Info3	56	Testing of the safe parameter set is started during system booting (monitoring channel 2)
			Error rectification		<ul style="list-style-type: none"><li>• Switch the device off/on</li><li>• If the error occurs again, contact AMK service</li></ul>

3609	Info1	139	Internal system error The current parameter set is invalid					
			Info2	0	Not to be evaluated			
				16	Timeout in function 'Secure checksum to SEEP monitoring channel 2'			
			Info3	58	Transfer of the safe parameter set is started (monitoring channel 2)			
			Error rectification		<ul style="list-style-type: none"><li>• Switch the device off/on</li><li>• Possibly transmit the safe parameter set to the device once more</li><li>• If an internal system error occurs, contact AMK service</li></ul>			



### 3610 'Safety - Warning during operation'

• Warning in a monitoring during operation						
Device	Functional safety Controller cards KW-R07 / -R17 / -R27 Decentralized drives iCx-xx- <b>ES</b> x, iXx-xx- <b>ES</b> , iDT5-x-x-xxx-xxxx-xx- <b>ES</b>					
Description	A monitoring has detected a deviation from a limit value during operations					
Class	Warning					
Drive behaviour	See error reaction towards the individual additional information Info1					
Device behaviour						
3610	Info1	13	Warning message monitoring cross communication			
			Info2	3	Status difference between 2 monitoring channels detected: SS1	
				4	Status difference between 2 monitoring channels detected: SS2	
			Info3	3	Monitoring channel 1	
				4	Monitoring channel 2	
Error reaction	In case of a warning in the monitoring of the cross communication, SS1 or SS2 follows					
Error rectification	• Info2 = 3, 4: resulting error					
3610	Info1	38	Warning messages of the 'Safe encoder monitoring (SEM)' Monitoring channel 1			
			Info2	3	Warning: Prm9 'Transition time in case of standstill' was exceeded	
Error reaction	After the expiration of Prm10 'Reaction time in case of standstill' an error is generated and 'Safe stop 1 (SS1)' follows as error reaction					
Error rectification	• See 'PDK_203446_Sicherheitshandbuch_KW-R07, Safe Encoder Monitoring (SEM)' • Move device					
3610	Info1	39	Warning messages of the 'Safe encoder monitoring (SEM)' Monitoring channel 2			
			Info2	3	Warning: Prm9 'Transition time in case of standstill' was exceeded	
Error reaction	After the expiration of Prm10 'Reaction time in case of standstill' an error is generated and 'Safe stop 1 (SS1)' follows as error reaction					
Error rectification	• See 'PDK_203446_Sicherheitshandbuch_KW-R07, Safe Encoder Monitoring (SEM)' • Move device					
3610	Info1	40	Warning message of communication to P1			
			Info2	0	Flashing process is started	
					Info3	0
				1	Start identifier for flashing not found	
				2	Identifier 'SPImon' not found	
				3	Faulty state	
				10	SEEP reading invalid if RF is active	
	11	Parameter set transmission invalid if RF is active				
	15	Parameter set transmission invalid if RF is active				
Error reaction	A warning of communication to P1 can be cleared					
Error rectification	• Withdraw RF • Start flash process again • AMK service					

3610	Info1	75	Warning message of the hardware monitoring, switch-off path Monitoring channel 1		
			Info2	6	For more than 1 hour, no dynamic check of the line drivers could be carried out. Possible cause: <ul style="list-style-type: none"><li>• Power output stage enable (EF) of the device is inactive</li><li>• STO is active</li></ul>
Error reaction		A warning of hardware monitoring can be cleared			
Error rectification		<ul style="list-style-type: none"><li>• Probably hardware defect / check</li><li>• AMK service</li><li>• This warning message cannot be reset until a new dynamic check of the line drivers is done</li></ul>			

3610	Info1	76	Warning message of the hardware monitoring, switch-off path Monitoring channel 2		
			Info2	6	For more than 1 hour, no dynamic check of the line drivers could be carried out. Possible cause: <ul style="list-style-type: none"><li>• Power output stage enable (EF) of the device is inactive</li><li>• STO is active</li></ul>
Error reaction		A warning of hardware monitoring can be cleared			
Error rectification		<ul style="list-style-type: none"><li>• Probably hardware defect / check</li><li>• AMK service</li><li>• This warning message cannot be reset until a new dynamic check of the line drivers is done</li></ul>			

3610	Info1	104	Warning message for the safety function 'Safe speed range 1 (SSR1)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual speed value exceeds maximum permissible value (60000 1/min)
				8	Permitted speed range was exceeded
				9	Permitted speed range was fallen short of
				14	Permitted speed range was violated
				15	Monitoring window following end of ramp violated
Error reaction		In case of a warning in the monitoring of the safety function SSR1, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		<ul style="list-style-type: none"><li>• Check why the movement of the drive has violated the limits</li><li>• Adjust parameterisation to physical conditions</li></ul>			

3610	Info1	108	Warning message for the safety function 'Safe maximum speed (SMS)'		
			Movement monitoring		
			Info2	3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
Error reaction		In case of a warning in the monitoring of the safety function SMS, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		<ul style="list-style-type: none"><li>• Check why the movement of the drive has violated the limits</li><li>• Adjust parameterisation to physical conditions</li></ul>			

3610	Info1	109	Warning message for the safety function 'Safe speed range 2 (SSR2)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual speed value exceeds maximum permitted value (60000 1/min)
				8	Permitted speed range was exceeded
				9	Permitted speed range was fallen short of
14	Permitted speed range was violated				
15	Monitoring window following end of ramp violated				
Error reaction		In case of a warning in the monitoring of the safety function SSR2, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		<ul style="list-style-type: none"><li>• Check why the movement of the drive has violated the limits</li><li>• Adjust parameterisation to physical conditions</li></ul>			

3610	Info1	110	Warning message for the safety function 'Safe speed range 3 (SSR3)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual speed value exceeds maximum permitted value (60000 1/min)
				8	Permitted speed range was exceeded
				9	Permitted speed range was fallen short of
14	Permitted speed range was violated				
15	Monitoring window following end of ramp violated				
Error reaction		In case of a warning in the monitoring of the safety function SSR3, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		<ul style="list-style-type: none"><li>• Check why the movement of the drive has violated the limits</li><li>• Adjust parameterisation to physical conditions</li></ul>			

3610	Info1	111	Warning message for the safety function 'Safe speed range 4 (SSR4)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual speed value exceeds maximum permitted value (60000 1/min)
				8	Permitted speed range was exceeded
				9	Permitted speed range was fallen short of
14	Permitted speed range was violated				
15	Monitoring window following end of ramp violated				
Error reaction		In case of a warning in the monitoring of the safety function SSR4, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		<ul style="list-style-type: none"><li>• Check why the movement of the drive has violated the limits</li><li>• Adjust parameterisation to physical conditions</li></ul>			

3610	Info1	112	Warning message for the safety function 'Safely-limited speed 1 (SLS1)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual speed value exceeds maximum permitted value (60000 1/min)
				8	Permitted speed range was exceeded
				9	Permitted speed range was fallen short of
				14	Permitted speed range was violated
				15	Monitoring window following end of ramp violated
Error reaction		In case of a warning in the monitoring of the safety function SLS1, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		<ul style="list-style-type: none"><li>• Check why the movement of the drive has violated the limits</li><li>• Adjust parameterisation to physical conditions</li></ul>			

3610	Info1	113	Warning message for the safety function 'Safely-limited speed 2 (SLS2)'		
			Movement monitoring		
			Info2	0	Not to be evaluated
				3	Upper speed limit of the monitoring range was violated
				4	Lower speed limit of the monitoring range was violated
			Ramp monitoring		
			Info3	0	Not to be evaluated
				1	Actual speed value exceeds maximum permitted value (60000 1/min)
				8	Permitted speed range was exceeded
				9	Permitted speed range was fallen short of
				14	Permitted speed range was violated
				15	Monitoring window following end of ramp violated
Error reaction		In case of a warning in the monitoring of the safety function SLS2, the parameterised error reaction follows (STO, SS1 or SS2)			
Error rectification		<ul style="list-style-type: none"><li>• Check why the movement of the drive has violated the limits</li><li>• Adjust parameterisation to physical conditions</li></ul>			

3610	Info1	114	Warning message for the safety function 'Safely-limited increment (SLI)'				
			Movement monitoring				
			Info2	0	Not to be evaluated		
				3	Upper position limit of the monitoring range was violated		
				4	Lower position limit of the monitoring range was violated		
			Ramp monitoring				
			Info3	0	Not to be evaluated		
				1	Actual speed value exceeds maximum permitted value (60000 1/min)		
			Error reaction		In case of a warning in the monitoring of the safety function SLS2, the parameterised error reaction follows (STO, SS1 or SS2)		
			Error rectification		<ul style="list-style-type: none"><li>• Check why the movement of the drive has violated the limits</li><li>• Adjust parameterisation to physical conditions</li></ul>		

### 3.24 No. 3840 ... 3871 Operating system

#### 3840 'File access'

• General data error			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	2	Wrong parameters transferred
		3	Illegal file name
		4	Floppy drive not found
		5	To many files open
		6	No more files found
		7	Wrong device identified
		8	Unknown data system
		9	Can not find file name
		10	Unknown filehandle has been transferred
		11	Device is not supported
		12	Function is not supported
		13	Error partition table
		14	Too many devices present
		15	Wrong file position stated
		16	Access not possible (access right is active)
		17	Text buffer is to small
		18	General device error
		19	Path not found
		20	FAT is defect
		21	Root directory is full
		22	Floppy drive is full
		23	Timeout
		24	Defective sector
		25	Data error (checksum)
		26	Device has been changed
		27	Sector not found
		28	Address label not found
		29	Floppy drive not ready (e.g. no disk)
		30	Floppy is write protected
		31	DMA-Overrun
		32	CRC-error
		33	Device resource-error
		34	Defective sector size
		35	No buffer available
		36	File already exists
		37	Data position out of range
		38	File is to big
		Error Removal	• Check memory device

**3841 'System diagnostics'**

• Internal communication: Error message returned from end device			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			

**3842 'System diagnostics'**

<ul style="list-style-type: none"><li>Internal communication: No heap memory could be addressed.</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			

**3843 'System diagnostics'**

• Internal communication: Source module does not exist (not logged in?)			
Device			
Description	An access attempt came from a module unknown to the internal communications system (i.e., not logged in)		
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			

**3844 'System diagnostics'**

• Internal communication: The addressed target does not exist			
Device			
Description	An unknown target was addressed (via routing "ID32944 SYADR").		
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			

**3845 'System diagnostics'**

Device			
Description	A target has been accessed that is already occupied by another source module.		
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			

**3846 'System diagnostics'**

• Internal communication: A module has logged on that already exists (number already assigned?)			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			

**3847 'System diagnostics'**

• Internal communication: The element code is unknown			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			

**3848 'System diagnostics'**

<ul style="list-style-type: none"><li>Internal communication: Too many modules have logged in</li></ul> or <ul style="list-style-type: none"><li>Internal communication: Too many paths have been opened</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			

**3849 'System diagnostics'**

• Internal communication: Protocol or command order is incorrect			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			



**3850 'System diagnostics'**

<ul style="list-style-type: none"> <li>A bus connected to the internal communication is not in standby mode (e.g., SBUS token error)</li> </ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			

**3851 'System diagnostics'**

<ul style="list-style-type: none"><li>• An internal communication path has been occupied by a module by writing to routing "ID32944 SYADR" and has no longer been used for a fixed period (blocking).</li></ul>			
Device			
Description	Timeout internal communication		
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			

**3852 'System diagnostics'**

<ul style="list-style-type: none"><li>• An internal communication path specified by a module is not valid or is no longer valid.</li></ul>			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal			

**3853 'System diagnostics'**

• Router error in module setting			
Device	AS-PL15 AS-Cxx-1		
Description			
Class	Error		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal	Check parameterisation		

**3854 'System diagnostics'**

• Router memory overflow of the internal buffer			
Device	AS-PL15 AS-Cxx-1		
Description			
Class	Error		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal	Check parameterisation		

**3855 'System diagnostics'**

• Router memory overflow at access to the internal database			
Device	AS-PL15 AS-Cxx-1		
Description			
Class	Error		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
Error Localization			
	Info 2		Number of the addressed ID
	Info 4		Number of the parameter set
Error Removal	Check parameterisation		

**3860 'ADB-File access'**

• Access to parameter data bank ADB not possible				
Device				
Description				
Class				
Drive Behaviour				
Device Behaviour	System run-up aborted			
Additional Error Information (AMK Service)				
	Info 1	0	No adb-file found	
		1	File can not be opened	
		2	Read error	
		3	General File interpretation error (e.g. checksum, version, ...)	
		4	Entry maximum list length is missing	
			Info2	
Error Removal	• Check ADB or transfer again			

**3861 'System start / update'**

<ul style="list-style-type: none"><li>Firmware update AMKAMAC not successful (RTB-File faulty or BOOT-Device could not been generated)</li><li>Firmware update option AS-FCT1, AS-FCT2 not successful, Hex-File faulty</li></ul>			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
	Info 1	1 - 14	Software update not successful
		30	Firmware update option AS-FCT1, AS_FCT2 not successful, Hex-File faulty
Error Removal			

• Error during system start or update					
Device	A4 / A5 / iSA				
Description					
Class	Error				
Drive Behaviour					
Device Behaviour					
Additional Error Information (AMK Service)					
	Info 1	18	Timeout Problem during System Startup		
		19	Hardware Problem during System Startup		
		20	Error while flashing I/O card		
		21	Error while flashing I/O card		
			Info 2	1	Task is invalid
				2	Command from CMD file is invalid
				3	Memory problem
				4	Binary file not available for flashing
				5	Target module not available
				6	No firmware in binary file
	7	Invalid binary file			
		Info 3	7	Firmware file check sum incorrect	
	22	Error in host synchronisation			
30		Firmware update of option AS-FCT1, AS-FCT2 failed, hex file corrupt			
Error Removal					

### 3862 'System diagnostics'

• System exception, CPU error			
Device			
Description			
Class	Warning		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Exception in PLC-Tasks (user program)		
	Info1	16	Task monitoring failed
		17	Hardware monitoring failed
		18	Bus error
		19	Check sum error on program loading
		20	Field bus error
		21	I/O map update failed
		22	Cycle time exceeded
		23	“Online change” program too large
		26	Retain-memory too small or not available (AS-FCT1)
		27	Boot project could not be loaded, it was deleted
		39	PLC overload
		80	Invalid instruction
		81	Access infringement
		82	Privileged instruction
		83	Page error
		84	Stack overflow
		85	Invalid arrangement
		86	Invalid access code
		87	Access to protected page
		88	Double error
		89	Double error
		256	Access to uneven address
		257	Array limit exceeded
		258	Division by zero
		259	Overflow
		260	Not ignorable exception
		336	Floating point unit: General error
		337	Floating point unit: Not normalized operand
		338	Floating point unit: Division by zero
		339	Floating point unit: Inaccurate result
		340	Floating point unit: Inaccurate instruction
		341	Floating point unit: Overflow
		342	Floating point unit: Stack check failed
		343	Floating point unit: Underflow
	Exception AMKAMAC System program 65536...		
Error Removal			

## 3863 'System diagnostics'

• Router memory overflow internal buffer			
Device	AS-PL15 AS-Cxx-1		
Description			
Class	Warning / Error		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	Timeout PGT task
		1	Time overflow copy command (e.g. to many data's configured with SERCOS)
		2	PLC controller configuration error
		3	Too many asynchronous send data per "ID 2 SERCOS cycle time"
		4	Time overflow "timer task"
		5	Time overflow EtherCAT "send task"
		6	Time overflow task "cyclic"
		7	Access to not configured input
		8	Access to not configured output
		10	System exit
		11	Battery error, all the BIOS values were received, because they are saved into a flash module. The system time will be set on 00:00:00. The system data will be set on 01.01.2001.
		12	File system error
		13	Temperature error
		14	Error in initialisation of the system library
		15	Checksum error in root file system
Error Removal	Check parameterisation		

Device	A4 / A5 / A6 / iSA		
Description	Error / warning on system runtime		
Class	Warning / Error		
Drive Behaviour			
Device Behaviour			
Additional Error Information (AMK Service)			
	Info 1	0	Time overflow PGT task in PLC
		1	Time overflow copying functions (e.g., too much data in configuration)
		2	Error in PLC controller configuration
		3	Too much asynchronous transmission data per "ID2 SERCOS cycle time"
		4	Overflow of internal timer
		5	Overflow of EtherCAT transmission task (e.g., too much data in configuration)
		6	Overflow of cyclical task, system is overloaded
		7	Access to unassigned communications input data
		8	Access to unassigned communications output data
		9, 10	Internal error
		11	Battery error, battery is empty <ul style="list-style-type: none"><li>• All BIOS values are kept because they are stored in the flash module.</li><li>• The system time will be set on 00:00:00. The system data will be set on 01.01.2001.</li></ul>
		12	Error checking file system for PLC program and parameters.
		13	Temperature error. Device was operated at an excessively high ambient temperature.
		14	Internal error
		15	Error checking Linux file system
		20	Error in runtime system P3
	Info 2		Information about cause of error -> AMK Service
		224	Meaning for A4 / A6 / EtherCAT CC bus: Synchronization error in connection with option A-SEC
	21	Error at activation of backlight function	
Error Removal	<ul style="list-style-type: none"><li>Info 1 = 11, 12: Please send the device to AMK for repairs.</li><li>Info 1 = 20, Info 2 = 224: Set ID34026 'BUS mode attribute' instance 2 bit 15 = 1</li></ul>		

### 3864 'Bus configuration'

<ul style="list-style-type: none"><li>• Testing configuration of the buses</li><li>• Test cycle time ID 2 for the buses. The values in the different instances must in each case be divisible by all smaller values</li><li>• Ethernet faultily parameterised</li></ul>				
Device				
Description				
Class				
Drive Behaviour				
Device Behaviour	System run-up aborted			
Additional Error Information (AMK Service)				
	Info 1	1	Bus Master or slave definition invalid	
		2	"ID2 SERCOS cycle time" in the different instances invalid	
		3	<ul style="list-style-type: none"><li>• Ethernet double parameterized; see "ID34140 AS BUS protocol"</li><li>• IP addresses invalid (see Ethernet parameterisation)</li><li>• "ID34141 AS card address" invalid, wrong slot number</li></ul>	
		Info 2	Ethernet instance	
	Error Removal			

• System configuration					
Device	A5				
Description	Error in system configuration				
Class	Error				
Drive Behaviour					
Device Behaviour					
Additional Error Information (AMK Service)					
	Info 1	1	Bus master or slave definition invalid		
		2	"ID2 SERCOS cycle time" is invalid in the different instances		
		3	<ul style="list-style-type: none"><li>• Ethernet parameterised twice; see "ID34140 AS BUS protocol"</li><li>• IP addresses invalid (see Ethernet configuration)</li><li>• "ID34141 AS card address" invalid, incorrect slot number</li></ul>		
			Info 2	Ethernet instance	
		4	Invalid dongle code, device not enabled for this communication		
			Info 2	Instance	
		6	Invalid configuration "ID32917 Time zone"		
		7	Internal error		
		8	Invalid bus type, check "ID34140 AS BUS protocol"		
			Info 3	Instance	
		9	Error during bus initialisation		
			Info 2	1	Invalid bus type; check "ID34140 AS BUS protocol"
					Info 3    Instance
		2		Invalid bus type; check "ID34025 BUS mode"	
				Info 3    Instance	
	5	Bus not ready, I/O option does not exist			
		Info 3    Instance = 3			
Error Removal					



### 3865 'Software version option'

• Software version of the active option module is not compatible with the software level of the basic system			
Device			
Description			
Class			
Drive Behaviour			
Device Behaviour	System run-up aborted		
Additional Error Information (AMK Service)			
			Instance of the not compatible option module
Error Removal			

### 3867 'System diagnostics'

• Error in updating device data record					
Device	AS-PL15 AS-Cxx-1				
Description					
Class	Error				
Drive Behaviour					
Device Behaviour					
Additional Error Information (AMK Service)					
	Info 1	1	Update is faulty which is controlled by the configuration file		
			Info 2	2	Configuration file faulty
				10	Invalid device data
				11	Invalid ID selection
				17	Invalid configuration for generation of the device data record
		2	Devices can not be accessed over fieldbus		
		3	Timeout during update		
		4	Data record does not fit to device		
		Error Removal	<ul style="list-style-type: none"><li>• Info 1 = 4: Select a fitting data record</li><li>• Check configuration of fieldbus</li></ul>		

• Parameter Update					
Device	A5				
Description	Error in parameter update functionality				
Class	Fehler				
Drive Behaviour					
Device Behaviour					
Additional Error Information (AMK Service)					
	Info 1	1	Internal error		
		2	Device could not be accessed		
			Info 2	1	ASC-Bus
				2	CC-Bus
			Info 3	Busadresse	
		3	Timeout communication		
		4	Data record does not fit to device		
Error Removal					


## 3868 'System diagnostics'

• Error during initialisation of system					
Device	A5				
Description					
Class	Error				
Drive Behaviour					
Device Behaviour					
Additional Error Information (AMK Service)					
	Info 1	1	Error in module communications, source module does not exist		
		2	Error in module communications, target module does not exist		
		3	Packet transfer error in DPM gateway		
		4	Error initialising real-time data		
		5	Error initialising slave interface (P2)		
		6	Error initialising master interface (P3)		
		8	Error in memory allocation		
		9	Error in memory allocation		
		10 - 12	Internal error		
		Info 2	Module number		
Error Removal					
• Error internal communication					
Device	iSA				
Description					
Class	Error				
Drive Behaviour					
Device Behaviour	System run-up aborted				
Additional Error Information (AMK Service)					
	Info 1	1	Error in module communications, source module does not exist		
		2	Error in module communications, target module does not exist		
		3	Packet transfer error in DPM gateway		
		4	Error initialising real-time data		
		5	Error initialising slave interface (P2)		
		6	Error initialising master interface (P3)		
		8	Error in memory allocation		
		9	Error in memory allocation		
		10 - 12	Internal error		
			Info 2	Module number	
		13	Internal error: Message corrupt, invalid length in the head		
		14	Internal error: Message corrupt, invalid commando		
		15	Internal error: Message corrupt, invalid user data length		
		16	Internal error: Message corrupt, invalid user data length		
	17	Internal error: Timeout internal communication			
Error Removal					

### 3869 'I/O Optional Card'

• E/A Optionskarte			
Device	A5		
Description	Error during initialisation of system		
Class	Error		
Drive Behaviour			
Device Behaviour			
Additional Information (AMK Service)			
	Info 1	10	Incorrect check sum
		11	Incorrect SPI message ID
		12	Protocol error
		13	Error SPI real-time transmission data
		14	Error SPI real-time reception data
Error Removal			

### 3871 'System diagnostics: Communication'

• Communication error with the supply			
Device	ISA		
Description			
Class	Error		
Drive Behaviour			
Device Behaviour			
Additional Information (AMK Service)			
	Info 1	1	Internal error during access parameters
		2	Internal error during cyclical communication with the supply
		3	Programming supply not allowed. <div> <b>DANGER</b></div> <b>Danger to life by electric shock from touching electrical connections!</b> DC bus (DC bus terminals) remains loaded despite error condition.
		4	Programming supply aborted because file error.
Error Removal	<ul style="list-style-type: none"><li>• Info 1 = 2 New programming the supply (ISA) over ATF</li><li>• Info 1 = 3 When programming via ATF, create external 24V supply voltage at X08</li><li>• Info 1 = 4 New programming the supply (ISA) over ATF</li></ul>		

## 4 Messages through control panel, error deletion

1. In the case of error:

F3  
F1

(DIAGNOSTICS)

Error	
DIAGNOSTICS	NEXT

xxxx	Aqq zz
abcd	

xxxx: Diagnostic No.  
Aqq: Error source (AZ0,4Wn)  
zz: Error counter  
abcd: Diagnostic text



3.

Display of further diagnostic messages which (if present) are stored in the diagnostic stack.

4. Switch off inverter on (UE) and controller enable (RF).

5. Remove cause of fault



6.

DELETE ERROR	SYSTEM
DIAGNOSTICS	STARTUP

Shift

F3  
F1

Error deletion active

7.

For some seconds then:

DELETE ERROR	SYSTEM
DIAGNOSTICS	STARTUP

Alternatively an error deletion can take place with inactive "Inverter on and controller enable" signals through the binary input FL at AZ X30, FL at KU X33 or through active option cards such as AZ-PSx. Error deletion always results in a partial system initialization. This lasts approx. 2 s per activated drive. Only after the end of this time and the "Group ready" message can the system be restarted.

## Error deletion with active UE/RF

1. In the case of error:

F3  
F1

(DIAGNOSTICS)

Error	
DIAGNOSTICS	NEXT

xxxx	Aqq zz
abcd	

xxxx: Diagnostic No.  
Aqq: Error source (AZ0,4Wn)  
zz: Error counter  
abcd: Diagnostic text



3.

Display of further diagnostic messages which (if present) are stored in the diagnostic stack.

4. Switch off inverter on (UE) and controller enable (RF).

5. Remove cause of fault



6.

DELETE ERROR	SYSTEM
DIAGNOSTICS	STARTUP

Shift

F3  
F1

Error deletion active
-----------------------

7.

For some seconds then:

DELETE ERROR	SYSTEM
DIAGNOSTICS	STARTUP

## Internal diagnostic information

(F2 key on "System diagnostics" message, or "See description")

1.

(DIAGNOSTICS)

2.

3.

Display of the internal data structure of further messages if present. Further information can be found in the "Clocking out the diagnostic message" section.

**Please note all values and inform the AMK service (Tel.: +49 (0) 7021/50 05-191).**

F3  
F1

xxxx  
abcd

Aqq zz

F4  
F2

K: kkk      M: mmm      Z: tt  
F: fff              l: iii



## Glossary

### A

#### A1

Analog input 1

#### ADO

Address offset (EtherCAT)

#### A7

AMKAMAC controller A7

#### A-SPB

Profibus DP slave interface

#### A-SPN

Profinet IO Device interface

#### AZSSINT

AZ system-internal interface for users such as AZ-PSx, AZ-MC1, ...

#### AZB

AZ control panel

#### AZ-R01

AZ computer (board designation)

#### AZ-PSx

Programmable control option card

#### AZ-MC1

NC option card

#### AZ-EA8

EA8 option card (binary input/output card)

#### AL

Application Layer (EtherCAT)

#### AZ

AZ central drive computer (AZ/AW series)

#### AW

AMKASYN inverter (AZ/AW series)

#### A-encoder

Inductive magnetoresistor sensor with sine and cosine track and homing signal (zero pulse)

#### AT

Drive telegram from slave to master

#### ASCII

American Standard Code for Information Interchange

#### AIPEX

AMK startup and parameterizing software (PC software):  
Programming, parameterization, configuration, diagnosis,  
oscilloscope, status information

#### AZ-EA24

EA24 option card (binary input/output card)

#### AIPAR

AMKASYN startup parameterizing software

#### AFP

AMK fieldbus protocol for drive control (e.g. homing, relative Positioning, digital speed control etc.)

#### ADB

AMK database - file in XML format with information about all AMK parameters

#### ACC

AMK CAN Communication (CAN bus interface with standard CANopen protocol DS301 and additional hardware synchronization signal)

### B

#### BA

Operation mode

#### BAV

Operation mode management

#### BAx

Digital output on controller card (BA1, BA2, BA3)

#### BIN

Binary (digital)

#### BZO

DC bus ready: upper value

### C

#### CoE

CAN application protocol over EtherCAT

#### CRC

Cyclic redundancy check (Checksum)

#### CMD

Commanding

#### CAN

Controller Area Network

### D

#### Default

Factory setting

#### DO

Digital output

#### DI

Digital input

**DC**  
Distributed Clock (EtherCAT)

**DEALLOC**  
Memory enable

**DEZ**  
Decimal

**DRIVE**  
Drive-specific parameter (Value is valid inside only one parameter set)

**DTH**  
Database

**DZR**  
Speed control

## E

**EnDat 2.1**  
Motor encoder interface protocol of the company Heidenhain

**EnDat 2.2**  
Motor encoder interface protocol of the company Heidenhain

**ES1**  
Main contactor interruption

**ES2**  
Main contactor interruption

**EtherCAT**  
Real-time Ethernet bus

**EF2**  
Power output stage enable

**E-encoder**  
Absolute encoder, singleturn, EnDAT 2.1 with additional sine and cosine track

**EF**  
Power output stage enable

## F

**FSM**  
Finite State Machine (EtherCAT)

**Formal parameter**  
Formal parameters don't have remanent values in parameter handling

**FTP**  
File transfer protocol

**FSoE**  
Fail-Safe over EtherCAT

**FORMAL**  
Formal parameter

**FL**  
Command (Causes a new system run-up)

**Firmware**  
System software, loaded by AMK

**F-encoder**  
Absolute encoder, multiturn, EnDAT 2.1 with additional sine and cosine track

**FIPO**  
Fine interpolator

## G

**GLOBAL**  
Global parameter; valid for all parameter sets

## H

**Hiperface DSL**  
Motor encoder interface protocol of the company Sick Stegmann

**HEX**  
Hexadecimal, 0x...

**Hiperface**  
Motor encoder interface protocol of the company Sick Stegmann

**HW**  
Hardware

## I

**iDT**  
AMKASmart Servo motors with integrated inverter

**ihXT**  
AMKASmart Servo motors with integrated inverter

**iSA**  
AMKASmart decentralized controller with power supply

**I**  
Input

**I/O**  
Input / output

**iC**  
AMKASmart decentralized inverter with power supply

**ID**  
Parameter identification numbers acc. to SERCOS Standard

**IGBT**  
Power electronic component, e. g. transistor



## I-encoder

Incremental encoder, optical encoder with sine and cosine track and zero pulse

## i<sup>2</sup>t

Integral of the squared current over time

## IM

Magnetizing current

## IMAX

Inverter maximum current

## IN

Nominal current

## Instance

Parameters, depending on the fieldbus, are instanced. For each bus, different values can be parameterized (bus depending participant address, transmission rate etc.). Field bus interfaces and slots where field bus option cards can be installed are allocated to instances (see product documentation)

## IPO

Interpolator

## IX

AMKASMART decentralized inverter

## K

### KEN

AMKASYN compact power supply without recovery

### KWF

AMKASYN U/f double AC inverter

### Kv

Position loop factor

### KE/KW

Modular AMK drive system (contains compact power supply KE, compact inverter KW with controller card and applicable option card)

### KW

AMKASYN compact inverter

### KTY

Type of a temperature sensor

### KW-Rxx

AMKASYN controller card for installation into compact inverter

### KWD

AMKASYN compact double inverter to control two motors

### KE

AMKASYN compact power supply with recovery

### KU

AMKASYN compact converter

## KP

Proportional gain (speed control, PID controller)

## KMD-SS

Commanding interface

## KMD

Command, commanding

## KES

AMKASYN compact power supply with sinusoidal voltage and current

## L

### LIW

Actual position value

### LSB

Least Significant Bit

### LT

Logical participant

## M

### MSB

Most Significant Bit

### MDT

Master Data Telegram from master to slave

### MCE

Motor Controller Electronic

### M(N)

Nominal torque

### MNU

Menu on AZ control panel

### Modulo

Modulo processing of position setpoint and actual values

### MON

Monitor (AW or KU)

### MPU

Measuring steps of the encoder per revolution (digital value for P- and Q-encoders)

### MST

Master synchronization telegram

## N

### n

Speed

### n(act)

Actual speed value

**NIP**  
Zero pulse of encoder

**NK**  
Cam switch

**NMT**  
Network management (CANopen)

**n(n)**  
Nominal speed

**n(set)**  
Speed setpoint

## O

**OPT**  
Option slot

**Operational**  
In state operational, data are transferred cyclically via fieldbus

## P

**PTC**  
PTC resistor

**PGT**  
Periphery basic clock Fetch cycle in the basic device to which the drive controller is synchronized (The cycle time is according to ID2)

**P-encoder**  
Absolute encoder singleturn, EnDAT 2.2 light

**PEEP**  
Parallel EEPROM

**PDO**  
Process Data Object

**PDK\_XXXXXX\_abcdefgh**  
Product documentation; XXXXXX - AMK part no. , abcdefgh - name

**Parameter**  
Identification number acc. to SERCOS standard

**PS**  
Programmable controller

**PV**  
Photovoltaics

**PWM**  
Pulse width modulation

## Q

**QUE**  
Acknowledgment DC bus on; shows that DC bus is loaded

**QRF**  
Acknowledgment controller enable; the drive is controlled in the activated operation mode

**Q-encoder**  
Absolute encoder multiturn, EnDAT 2.2 light

**QBR**  
Acknowledgment motor holding brake

## R

**RM**  
Motor with integrated frequency inverter

**RF**  
Command 'Controller enable'; the drive is energized and will be controlled depending on the selected operation mode. Controller enable can only be set if the device is error-free (SBM = TRUE) and acknowledgement DC bus on is set (QUE = TRUE). Acknowledgment controller enable (QRF) is set.

**RPDO**  
Remote process data object

## S

**SW**  
Software

**STO**  
Safe torque off (Safety function acc. to DIN EN 61800-5-2)

**SSR**  
Safe speed range (Safety function acc. to DIN EN 61800-5-2)

**SS2**  
Safe stop 2 (Safety function acc. to DIN EN 61800-5-2)

**SWC**  
Software commutation

**SoS**  
Safe operating stop (Safety function acc. to DIN EN 61800-5-2)

**SA**  
Safe output

**SAK**  
Following distance error compensation

**SBM**  
System ready message; shows that the device is error-free in case of error. SBM will be reset

**SBUS**  
AMK-specific protocol for serial interfaces

**SDO**  
Service Data Object

**SE**  
Safe input

## SEEP

Device-internal memory, serial EEPROM

## SEM

Safe encoder monitoring

## S-encoder

Absolute encoder, singleturn, RS485 Hiperface with sine and cosine track

## SERCOS

Standardized digital interface for communication between controller and field bus participants.

## SS1

Safe Stop 1 (Safety function acc. to DIN EN 61800-5-2)

## SoE

Servodrive Profile (SERCOS) over EtherCAT (Acc. to IEC 61800-7-300)

## SMS

Safe maximum speed (Safety function)

## SLS

Safely-limited speed (Safety function acc. to DIN EN 61800-5-2)

## SLI

Safely-limited increment (Safety function acc. to DIN EN 61800-5-2)

## SIWL

Software pulse transmission

## T

### TR

Rotor time constant

### T

Temperature or time period

### t

Time

### Td

Differentiating time in speed control (PID controller)

### T-encoder

Absolute encoder, multiturn, RS485 Hiperface with sine and cosine track

### Tn

Integral-action time in speed control (PID controller)

## U

### U/f

Voltage / frequency control (open loop)

### UA1

Analog command value voltage for AW analog input A1

## UE

Command 'DC bus on' control signal to load the DC bus e.g. in KE. DC bus on can only be set if the device is error-free (SBM = TRUE). After the DC bus is loaded, the acknowledgement message QUE is set.

## U-encoder

Absolute encoder, singleturn, RS485 Hiperface with sine and cosine track

## V/f

Voltage / frequency control (open loop)

## ub\_basync

Bit block for controlling the command value synchronization in the drive

## UPS

Uninterruptible power supply

## V

### V-encoder

Absolute encoder, multiturn, RS485 Hiperface with sine and cosine track

### VA

Volt ampere

## X

### X(s)

Position command value

## Y

### Y-encoder

Absolute encoder, singleturn or multiturn, RS485 Hiperface DSL

## Z

### ZWR

Central inverter

## Your opinion is important!

With our documentation we want to offer you the highest quality support in handling the AMK products.

That is why we are now working on optimizing our documentation.

Your comments or suggestions are always of interest to us.

We would be grateful if you take a bit of time and answer our questions. Please return a copy of this page to us.



e-mail: [Documentation@amk-group.com](mailto:Documentation@amk-group.com)

or

fax no.: +49 7021/50 05-199

**Thank you for your assistance.**

**Your AMK documentation team**

1. How would you rate the layout of our AMK documentation?  
(1) very good (2) good (3) satisfactory (4) less than satisfactory (5) poor
  
2. Is the content structured well?  
(1) very good (2) good (3) moderate (4) hardly (5) not at all
  
3. How easy is it to understand the documentation?  
(1) very easy (2) easy (3) moderately easy (4) difficult (5) extremely difficult
  
4. Did you miss any topics in the documentation?  
(1) no (2) if yes, which ones:
  
5. How would you rate the overall service at AMK?  
(1) very good (2) good (3) satisfactory (4) less than satisfactory (5) poor

AMK Arnold Müller GmbH & Co. KG

Phone : +49 7021/50 05-0, fax: +49 7021/50 05-199

E-Mail: [info@amk-group.com](mailto:info@amk-group.com)

Homepage: [www.amk-group.com](http://www.amk-group.com)