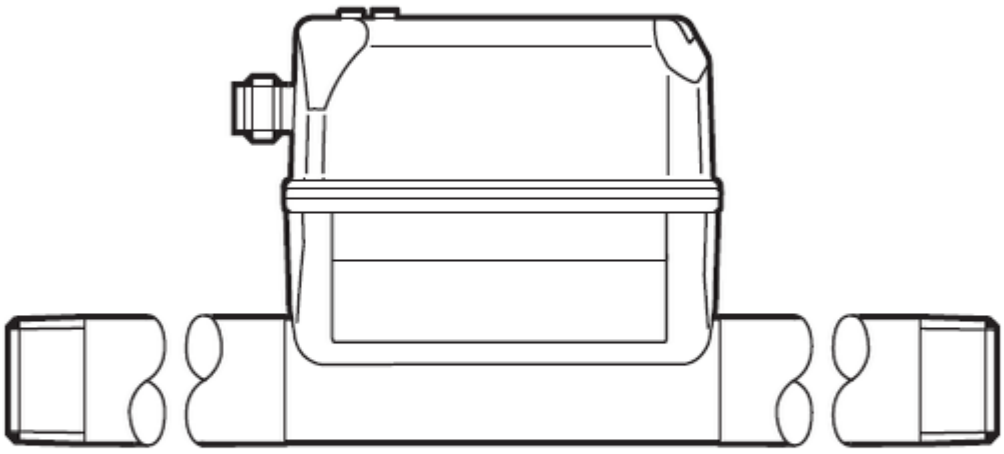
IO-Link

IO-Link Interface Description

SD6500

EN



IODD-PDFCreator V 2.0.0.74
ifm-00035E-20190430-IODD1.1, V1.3.60.824172

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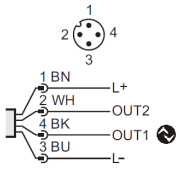
1 Device variant

SD6500 Compressed air meter, 0.25...75.00 m³/h, R 1/2"		

2 Communication

Vendor ID	0x0136 310 d / Bytes 1d 54d
Device ID	0x00035E 862 d / Bytes 0d 3d 94d
Bit rate	COM2
Minimum cycle time	7,2 ms
SIO mode supported	Yes
Block parameterization	Yes
Data storage	Yes
Supported profiles	Identification and Diagnosis Measurement Data Channel (standard resolution)
Support of IO-Link 1.0	Yes

NOTE:
If the Vendor ID and Device ID is referenced in your PLC system, then it is ensured that
- the connected Device type is correct
- the IO-Link datastorage is enabled
- your application is still able to work, even your Device has been exchanged with a successor model.

- For process value update rate, as well as further information concerning sensor performance, see datasheet

3 Parameter overview

Parameter	Index	Subindex	Typ	Factory setting
Device Access Locks	12		RecordT (16 Bit)	false
Vendor name	16		StringT (19 Byte)	ifm electronic gmbh
Vendor text	17		StringT (11 Byte)	www.ifm.com
Product Name	18		StringT (6 Byte)	SD6500
Product ID	19		StringT (6 Byte)	SD6500
Product Text	20		StringT (20 Byte)	Compressed air meter
Serial Number	21		StringT (12 Byte)	
Hardware Version	22		StringT (2 Byte)	
Firmware Version	23		StringT (5 Byte)	
Application Specific Tag	24		StringT (32 Byte)	***
Function Tag	25		StringT (32 Byte)	***
Location Tag	26		StringT (32 Byte)	***
Device Status	36		UIntegerT (8 Bit)	0 (Device is OK)
Detailed Device Status	37		OctetStringT (3 byte) [11]	0x00,0x00,0x00
Process data input	40		RecordT (128 Bit)	
Process data output	41		RecordT (8 Bit)	
P-n	500		UIntegerT (8 Bit)	0 (PnP)
dAP.F	510		UIntegerT (16 Bit)	6
SEL1	520		UIntegerT (8 Bit)	1 (FLOW)
SEL2	521		UIntegerT (8 Bit)	1 (FLOW)
FOU1	531		UIntegerT (8 Bit)	4 (OFF)
FOU2	532		UIntegerT (8 Bit)	4 (OFF)
Active Events	545		RecordT (32 Bit)	
Param configuration fault	546		UIntegerT (32 Bit) [10]	0 (OK)
Loc	550		UIntegerT (8 Bit)	1 (uLoc)
uni.F	551		UIntegerT (8 Bit)	0 (m³/h)
cFL.F	555		IntegerT (16 Bit)	28
cFH.F	556		IntegerT (16 Bit)	7497
Hi.F	560		IntegerT (16 Bit)	
Lo.F	561		IntegerT (16 Bit)	
Hi.T	562		IntegerT (16 Bit)	
Lo.T	563		IntegerT (16 Bit)	
Hi.P	564		IntegerT (16 Bit)	
Lo.P	565		IntegerT (16 Bit)	
S.On	570		UIntegerT (8 Bit)	0 (OFF)
S.Tim	571		UIntegerT (8 Bit)	2 (3 min)
S.FLW	572		IntegerT (16 Bit)	3750
S.TMP	573		IntegerT (16 Bit)	2500
S.PRS	574		IntegerT (16 Bit)	800
ou1	580		UIntegerT (8 Bit)	3 (Hno / Hysteresis fct normally open)
dS1	581		UIntegerT (16 Bit)	0
dr1	582		UIntegerT (16 Bit)	0
SP1 (FH1) - FLOW	583		IntegerT (16 Bit)	1500
rP1 (FL1) - FLOW	584		IntegerT (16 Bit)	1426
SP1 (FH1) - TEMP	585		IntegerT (16 Bit)	1199

3 Parameter overview

Parameter	Index	Subindex	Typ	Factory setting
rP1 (FL1) - TEMP	586		IntegerT (16 Bit)	1160
SP1 (FH1) - PRES	587		IntegerT (16 Bit)	320
rP1 (FL1) - PRES	588		IntegerT (16 Bit)	304
ou2	590		UIntegerT (8 Bit)	1 (I / Analog signal 4…20 mA)
dS2	591		UIntegerT (16 Bit)	0
dr2	592		UIntegerT (16 Bit)	0
SP2 (FH2) - FLOW	593		IntegerT (16 Bit)	3000
rP2 (FL2) - FLOW	594		IntegerT (16 Bit)	2926
SP2 (FH2) - TEMP	595		IntegerT (16 Bit)	2400
rP2 (FL2) - TEMP	596		IntegerT (16 Bit)	2361
SP2 (FH2) - PRES	597		IntegerT (16 Bit)	640
rP2 (FL2) - PRES	598		IntegerT (16 Bit)	624
ASP2 - FLOW	630		IntegerT (16 Bit)	0
AEP2 - FLOW	631		IntegerT (16 Bit)	7500
ASP2 - TEMP	632		IntegerT (16 Bit)	-1000
AEP2 - TEMP	633		IntegerT (16 Bit)	6000
ASP2 - PRES	634		IntegerT (16 Bit)	0
AEP2 - PRES	635		IntegerT (16 Bit)	1600
DIn2	676		UIntegerT (8 Bit)	2 (+EDG)
diS.U	800		UIntegerT (8 Bit)	2 (d3 / slow)
diS.R	801		UIntegerT (8 Bit)	0 (0 °)
diS.B	802		UIntegerT (8 Bit)	75 (75 %)
diS.L	803		UIntegerT (8 Bit)	5 (L3.TP)
coL.F	810		UIntegerT (8 Bit)	16 (bk/wh / Value black and white)
coL.T	811		UIntegerT (8 Bit)	16 (bk/wh / Value black and white)
coL.P	812		UIntegerT (8 Bit)	16 (bk/wh / Value black and white)
coL.V	813		UIntegerT (8 Bit)	16 (bk/wh / Value black and white)
uni.T	841		UIntegerT (8 Bit)	0 (°C)
uni.P	842		UIntegerT (8 Bit)	1 (bar)
cFL.T	861		IntegerT (16 Bit)	-1000
cFL.P	862		IntegerT (16 Bit)	-100
cFH.T	871		IntegerT (16 Bit)	6000
cFH.P	872		IntegerT (16 Bit)	1600
dAP.P	881		UIntegerT (16 Bit)	6
rEF.P	3000		IntegerT (16 Bit)	1013
rEF.T	3001		IntegerT (16 Bit)	15
LFC	3006		IntegerT (16 Bit)	10
TOTL_M	3014		Float32T	
rTo - Totaliser reset t...	3015		IntegerT (16 Bit)	0 (OFF)
TOTL_T	3016		IntegerT (32 Bit)	
ImPR1	3060		UIntegerT (8 Bit)	1 (YES)
ImPS1	3068		Float32T	0.0001
ImPR2	3160		UIntegerT (8 Bit)	1 (YES)
ImPS2	3168		Float32T	0.0001
coF	5001		IntegerT (16 Bit)	0

3 Parameter overview

Parameter	Index	Subindex	Typ	Factory setting
MDC Descr	16512		RecordT (88 Bit)	
Lower limit	16512	1	IntegerT (32 Bit)	25 (25)
Upper limit	16512	2	IntegerT (32 Bit)	7500 (7500)
Unit code	16512	3	UIntegerT (16 Bit)	1349 (m³/h)
Scale	16512	4	IntegerT (8 Bit)	-2 (-2)

4 System Commands

System Command information
- Address: Index 2, Subindex 0
- Datatype: UInteger (8 Bit)
- AccessRight: Write Only

Command	Text	Description
1	Upload Start	Start block parameter upload
2	Upload End	End block parameter upload
3	Download Start	Start block parameter download
4	Download End	Stop block parameter download
5	Store	Finalize block parameterization and start Data Storage
6	Break	Cancel block parameterization
130	Restore Factory Settings	
161	Reset [Hi.F] and [Lo.F] memory	
162	Reset [Lo.F] memory	
163	Reset [Hi.F] memory	
164	RESET_TOTALIZER	
165	Reset [Hi.T] and [Lo.T] memory	
166	Reset [Lo.T] memory	
167	Reset [Hi.T] memory	
176	Start simulation	
177	Stop simulation	
208	Reset [Hi.P] and [Lo.P] memory	
209	Reset [Lo.P] memory	
210	Reset [Hi.P] memory	

4 System Commands

Command	Text	Description
222	Flash On	
223	Flash Off	
240	IO-Link 1.1 system test command 240, Event 8DFE appears	
241	IO-Link 1.1 system test command 241, Event 8DFE disappears	
242	IO-Link 1.1 system test command 242, Event 8DFF appears	
243	IO-Link 1.1 system test command 243, Event 8DFF disappears	

5 Identification

Vendor name	Index 16	Subindex 0	StringT (19 Byte)	ReadOnly
Factory setting	ifm electronic gmbh			

Vendor text	Index 17	Subindex 0	StringT (11 Byte)	ReadOnly
Factory setting	www.ifm.com			

Product Name	Index 18	Subindex 0	StringT (6 Byte)	ReadOnly
Factory setting	SD6500			

Product Text	Index 20	Subindex 0	StringT (20 Byte)	ReadOnly
Factory setting	Compressed air meter			

Product ID	Index 19	Subindex 0	StringT (6 Byte)	ReadOnly
Factory setting	SD6500			

Serial Number	Index 21	Subindex 0	StringT (12 Byte)	ReadOnly

Hardware Version	Index 22	Subindex 0	StringT (2 Byte)	ReadOnly

Firmware Version	Index 23	Subindex 0	StringT (5 Byte)	ReadOnly

Application Specific Tag	Index 24	Subindex 0	StringT (32 Byte)	ReadWrite
Factory setting	***			

Function Tag	Index 25	Subindex 0	StringT (32 Byte)	ReadWrite
Plant designation, describes the device functionality				
Factory setting	***			

Location Tag	Index 26	Subindex 0	StringT (32 Byte)	ReadWrite
Location designation, identifies the device location				
Factory setting	***			

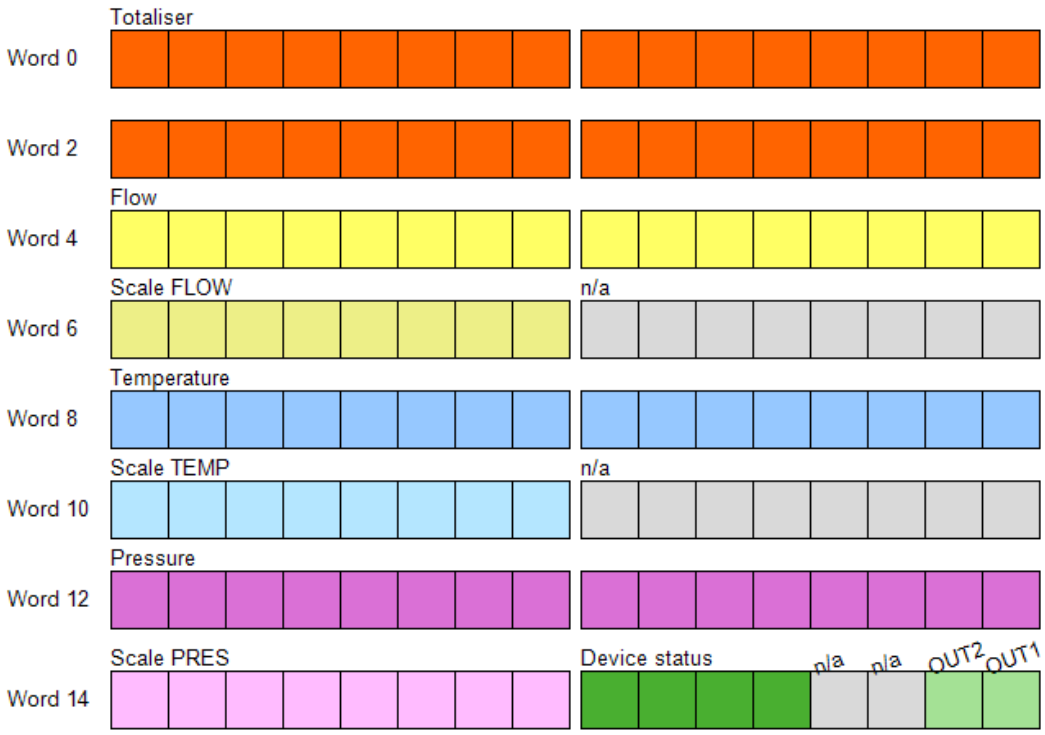
6 Observation

6.1 Process Data Input/Output

Process data input	Index 40	Subindex 0	RecordT (128 Bit)
Totaliser			Float32T
Quantity meter which continuously totals the volumetric flow since the last reset			
Value range [m³]	(0 To 10000000) * 1		
Flow			IntegerT (16 Bit)
Current flow			
Value range [m³/h]	(0 To 9000) * 0.01		
	32760	(OL)	
	32762	(cr.OL)	
	32764	(NoData)	
Temperature			IntegerT (16 Bit)
Current temperature			
Value range [°C]	(-2400 To 7400) * 0.01		
	-32760	(UL)	
	32760	(OL)	
	-32762	(cr.UL)	
	32762	(cr.OL)	
	32764	(NoData)	
Pressure			IntegerT (16 Bit)
Current pressure			
Value range [bar]	(-100 To 2000) * 0.01		
	-32760	(UL)	
	32760	(OL)	
	32764	(NoData)	
Device status			UIntegerT (4 Bit)
Current device status, a copy of the parameter [Device Status, Index 36] in the process data channel			
Value range	0	(Device is OK)	
	1	(Maintenance required)	
	2	(Out of specification)	
	3	(Functional check)	
	4	(Failure)	
OUT2			BooleanT
Current status of the digital signal [OUT2]			
Value range	false	(OFF)	
	true	(On)	

6 Observation

Process data input	Index 40	Subindex 0	RecordT (128 Bit)
OUT1			BooleanT
Current status of the digital signal [OUT1]			
Value range	false true	(OFF) (On)	



-Scale FLOW: A PLC profile function block calculates the flow value of the process data (from WORD 4) into the profiled unit [m3/h]

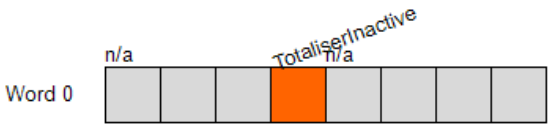
-Scale TEMP: A PLC profile function block calculates the temperature value of the process data (from WORD 8) into the profiled unit [°C]

-Scale PRES: A PLC profile function block calculates the pressure value of the process data (from WORD 12) into the profiled unit [Pa]

Process data displayed according device sort order.
Please note: Siemens PLCs swap the high and low byte when using byte addressing.

6 Observation

Process data output	Index 41	Subindex 0	RecordT (8 Bit)
TotaliserInactive			BooleanT
Sets the digital signal [TotaliserInactive]			
Value range	false true	(OFF) (On)	



7 Parameter

7.1 Output configuration

ou1	Index 580	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Output configuration [OUT 1]				
Factory setting	**3**	**(Hno / Hysteresis fct normally open)**		
Value range	3	(Hno / Hysteresis fct normally open)		
	4	(Hnc / Hysteresis fct normally closed)		
	5	(Fno / Window fct normally open)		
	6	(Fnc / Window fct normally closed)		
	9	(ImP / Impulse output)		
	16	(OFF / Output Off)		

ou2	Index 590	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Output configuration [OUT 2]				
Factory setting	**1**	**(I / Analog signal 4…20 mA)**		
Value range	3	(Hno / Hysteresis fct normally open)		
	4	(Hnc / Hysteresis fct normally closed)		
	5	(Fno / Window fct normally open)		
	6	(Fnc / Window fct normally closed)		
	9	(ImP / Impulse output)		
	14	(In.D / Digital input)		
	16	(OFF / Output Off)		
	1	(I / Analog signal 4…20 mA)		

SEL1	Index 520	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Selection of the measurand for the evaluation via [OUT 1]				
Factory setting	**1**	**(FLOW)**		
Value range	1	(FLOW)		
	2	(TEMP)		
	3	(PRES)		

SEL2	Index 521	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Selection of the measurand for the evaluation via [OUT 2]				
Factory setting	**1**	**(FLOW)**		
Value range	1	(FLOW)		
	2	(TEMP)		
	3	(PRES)		

P-n	Index 500	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Output polarity for the switching outputs				
Factory setting	**0**	**(PnP)**		
Value range	0	(PnP)		
	1	(nPn)		

7.2 Digital output 1

dS1	Index 581	Subindex 0	UIntegerT (16 Bit)	ReadWrite
Switching delay for [OUT 1]				
Factory setting	**0**			
Value range [s]	(0 To 600) * 0.1			

7 Parameter

dr1	Index 582	Subindex 0	UIntegerT (16 Bit)	ReadWrite
Reset delay for [OUT 1]				
Factory setting	**0**			
Value range [s]	(0 To 600) * 0.1			

7.2.1 Flow

SP1 (FH1) - FLOW	Index 583	Subindex 0	IntegerT (16 Bit)	ReadWrite
Switch point 1 / Flow. SP1 shall be above rP1. Min distance SP1...rP1 = 0.37 m³/h. For details, see operating manual.				
Factory setting	**1500**			
Value range [m³/h]	(65 To 7497) * 0.01			

rP1 (FL1) - FLOW	Index 584	Subindex 0	IntegerT (16 Bit)	ReadWrite
Reset point 1 / Flow. Reset point 1 / Flow. rP1 shall be below SP1. Min distance SP1...rP1 ===> see SP1.				
Factory setting	**1426**			
Value range [m³/h]	(28 To 7460) * 0.01			

7.2.2 Pressure

SP1 (FH1) - PRES	Index 587	Subindex 0	IntegerT (16 Bit)	ReadWrite
Switch point 1 / Pressure. SP1 shall be above rP1. Min distance SP1...rP1 = 0.08 bar. For details, see operating manual.				
Factory setting	**320**			
Value range [bar]	(-92 To 1600) * 0.01			

rP1 (FL1) - PRES	Index 588	Subindex 0	IntegerT (16 Bit)	ReadWrite
Reset point 1 / Pressure. Reset point 1 / Pressure. rP1 shall be below SP1. Min distance SP1...rP1 ===> see SP1.				
Factory setting	**304**			
Value range [bar]	(-100 To 1592) * 0.01			

7.2.3 Temperature

SP1 (FH1) - TEMP	Index 585	Subindex 0	IntegerT (16 Bit)	ReadWrite
Switch point 1 / Temperature. SP1 shall be above rP1. Min distance SP1...rP1 = 0.20 °C. For details, see operating manual.				
Factory setting	**1199**			
Value range [°C]	(-980 To 6000) * 0.01			

rP1 (FL1) - TEMP	Index 586	Subindex 0	IntegerT (16 Bit)	ReadWrite
Reset point 1 / Temperature. Reset point 1 / Temperature. rP1 shall be below SP1. Min distance SP1...rP1 ===> see SP1.				
Factory setting	**1160**			
Value range [°C]	(-1000 To 5980) * 0.01			

7 Parameter

7.3 Impulse Output 1

7.3.1 Impulse Output 1

ImPS1	Index 3068	Subindex 0	Float32T	ReadWrite
Pulse value				
Factory setting	**0.0001**			
Value range [m³]	(0.0001 To 1000000) * 1			

ImPR1	Index 3060	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Pulse repetition active (= pulse output) or not active (= function preset meter)				
Factory setting	**1**	**(YES)**		
Value range	1	(YES)		
	0	(no)		

7.4 Digital output 2

dS2	Index 591	Subindex 0	UIntegerT (16 Bit)	ReadWrite
Switching delay for [OUT 2]				
Factory setting	**0**			
Value range [s]	(0 To 600) * 0.1			

dr2	Index 592	Subindex 0	UIntegerT (16 Bit)	ReadWrite
Reset delay for [OUT 2]				
Factory setting	**0**			
Value range [s]	(0 To 600) * 0.1			

7.4.1 Flow

SP2 (FH2) - FLOW	Index 593	Subindex 0	IntegerT (16 Bit)	ReadWrite
Switch point 2 / Flow. SP2 shall be above rP2. Min distance SP2...rP2 = 0.37 m³/h. For details, see operating manual.				
Factory setting	**3000**			
Value range [m³/h]	(65 To 7497) * 0.01			

rP2 (FL2) - FLOW	Index 594	Subindex 0	IntegerT (16 Bit)	ReadWrite
Reset point 2 / Flow. Reset point 2 / Flow. rP2 shall be below SP2. Min distance SP2...rP2 ===> see SP2.				
Factory setting	**2926**			
Value range [m³/h]	(28 To 7460) * 0.01			

7 Parameter

7.4.2 Pressure

SP2 (FH2) - PRES	Index 597	Subindex 0	IntegerT (16 Bit)	ReadWrite
Switch point 2 / Pressure. SP2 shall be above rP2. Min distance SP2...rP2 = 0.08 bar. For details, see operating manual.				
Factory setting	**640**			
Value range [bar]	(-92 To 1600) * 0.01			

rP2 (FL2) - PRES	Index 598	Subindex 0	IntegerT (16 Bit)	ReadWrite
Reset point 2 / Pressure. Reset point 2 / Pressure. rP2 shall be below SP2. Min distance SP2...rP2 ===> see SP2.				
Factory setting	**624**			
Value range [bar]	(-100 To 1592) * 0.01			

7.4.3 Temperature

SP2 (FH2) - TEMP	Index 595	Subindex 0	IntegerT (16 Bit)	ReadWrite
Switch point 2 / Temperature. SP2 shall be above rP2. Min distance SP2...rP2 = 0.20 °C. For details, see operating manual.				
Factory setting	**2400**			
Value range [°C]	(-980 To 6000) * 0.01			

rP2 (FL2) - TEMP	Index 596	Subindex 0	IntegerT (16 Bit)	ReadWrite
Reset point 2 / Temperature. Reset point 2 / Temperature. rP2 shall be below SP2. Min distance SP2...rP2 ===> see SP2.				
Factory setting	**2361**			
Value range [°C]	(-1000 To 5980) * 0.01			

7.5 Impulse Output 2

7.5.1 Impulse Output 2

ImPS2	Index 3168	Subindex 0	Float32T	ReadWrite
Pulse value				
Factory setting	**0.0001**			
Value range [m³]	(0.0001 To 1000000) * 1			

ImPR2	Index 3160	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Pulse repetition active (= pulse output) or not active (= function preset meter)				
Factory setting	**1**	**(YES)**		
Value range	1	(YES)		
	0	(no)		

7 Parameter

7.6 Analog Output 2

7.6.1 Flow

ASP2 - FLOW	Index 630	Subindex 0	IntegerT (16 Bit)	ReadWrite
Analogue start point 2 / Flow. ASP2 shall be below AEP2. Min distance AEP2...ASP2 = 15.00 m³/h. For details, see operating manual.				
Factory setting Value range [m³/h]	**0** (0 To 6000) * 0.01			

AEP2 - FLOW	Index 631	Subindex 0	IntegerT (16 Bit)	ReadWrite
Analogue end point 2 / Flow. AEP2 shall be above ASP2. Min distance AEP2...ASP2 ===> see ASP2. For details, see operating manual.				
Factory setting Value range [m³/h]	**7500** (1500 To 7500) * 0.01			

7.6.2 Pressure

ASP2 - PRES	Index 634	Subindex 0	IntegerT (16 Bit)	ReadWrite
Analogue start point 2 / Pressure. ASP2 shall be below AEP2. Min distance AEP2...ASP2 = 3.20 bar. For details, see operating manual.				
Factory setting Value range [bar]	**0** (-100 To 1280) * 0.01			

AEP2 - PRES	Index 635	Subindex 0	IntegerT (16 Bit)	ReadWrite
Analogue end point 2 / Pressure. AEP2 shall be above ASP2. Min distance AEP2...ASP2 ===> see ASP2. For details, see operating manual.				
Factory setting Value range [bar]	**1600** (220 To 1600) * 0.01			

7.6.3 Temperature

ASP2 - TEMP	Index 632	Subindex 0	IntegerT (16 Bit)	ReadWrite
Analogue start point 2 / Temperature. ASP2 shall be below AEP2. Min distance AEP2...ASP2 = 14.00 °C. For details, see operating manual.				
Factory setting Value range [°C]	**-1000** (-1000 To 4600) * 0.01			

AEP2 - TEMP	Index 633	Subindex 0	IntegerT (16 Bit)	ReadWrite
Analogue end point 2 / Temperature. AEP2 shall be above ASP2. Min distance AEP2...ASP2 ===> see ASP2. For details, see operating manual.				
Factory setting Value range [°C]	**6000** (400 To 6000) * 0.01			

7 Parameter

7.7 Digital Input 2

DIn2	Index 676	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Configuration of digital input (Pin 2)				
Factory setting	**2**	**(+EDG)**		
Value range	2	(+EDG)		
	3	(-EDG)		
	0	(HIGH)		
	1	(LOW)		

7.8 Memory

7.8.1 Flow

TOTL_M	Index 3014	Subindex 0	Float32T	ReadOnly
Consumed quantity before the last reset				
Value range [m³]	(0 To 10000000) * 1			

TOTL_T	Index 3016	Subindex 0	IntegerT (32 Bit)	ReadOnly
Time in minuten since the last reset of totaliser				
Value range [min]	(0 To 10000000) * 1			
	-1	(unknown)		

Lo.F	Index 561	Subindex 0	IntegerT (16 Bit)	ReadOnly
Minimum memory value for flow				
Value range [m³/h]	(0 To 9000) * 0.01			
	32760	(OL)		
	32762	(cr.OL)		
	32764	(NoData)		

Hi.F	Index 560	Subindex 0	IntegerT (16 Bit)	ReadOnly
Maximum memory value for flow				
Value range [m³/h]	(0 To 9000) * 0.01			
	32760	(OL)		
	32762	(cr.OL)		
	32764	(NoData)		

7.8.2 Pressure

Lo.P	Index 565	Subindex 0	IntegerT (16 Bit)	ReadOnly
Minimum memory value for pressure				
Value range [bar]	(-100 To 2000) * 0.01			
	-32760	(UL)		
	32760	(OL)		
	32764	(NoData)		

7 Parameter

Hi.P	Index 564	Subindex 0	IntegerT (16 Bit)	ReadOnly
Maximum memory value for pressure				
Value range [bar]	(-100 To 2000) * 0.01 -32760 32760 32764	 (UL) (OL) (NoData)		

7.8.3 Temperature

Lo.T	Index 563	Subindex 0	IntegerT (16 Bit)	ReadOnly
Minimum memory value for temperature				
Value range [°C]	(-2400 To 7400) * 0.01 -32760 32760 -32762 32762 32764	 (UL) (OL) (cr.UL) (cr.OL) (NoData)		

Hi.T	Index 562	Subindex 0	IntegerT (16 Bit)	ReadOnly
Maximum memory value for temperature				
Value range [°C]	(-2400 To 7400) * 0.01 -32760 32760 -32762 32762 32764	 (UL) (OL) (cr.UL) (cr.OL) (NoData)		

7.9 Fault Configuration Output 1

FOU1	Index 531	Subindex 0	UIntegerT (8 Bit)	ReadWrite
[OUT 1] behaviour in case of fault				
Factory setting Value range	**4** 1 2 4	**(OFF)** (OU) (On) (OFF)		

7.10 Fault Configuration Output 2

FOU2	Index 532	Subindex 0	UIntegerT (8 Bit)	ReadWrite
[OUT 2] behaviour in case of fault				
Factory setting Value range	**4** 1 2 4	**(OFF)** (OU) (On) (OFF)		

7 Parameter

7.11 Calibration

coF	Index 5001	Subindex 0	IntegerT (16 Bit)	ReadWrite
Zero-point calibration (Calibration offset)				
Factory setting	**0**			
Value range [bar]	(-80 To 80) * 0.01			

7.12 Damping

dAP.F	Index 510	Subindex 0	UIntegerT (16 Bit)	ReadWrite
Damping of the flow signal				
Factory setting	**6**			
Value range [s]	(0 To 50) * 0.1			

dAP.P	Index 881	Subindex 0	UIntegerT (16 Bit)	ReadWrite
Damping of the pressure signal				
Factory setting	**6**			
Value range [s]	(0 To 500) * 0.01			

7.13 Setting of the sensor display

diS.L	Index 803	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Current layout of the display				
Factory setting	**5**	**(L3.TP)**		
Value range	0	(L1)		
	1	(L2.Temp)		
	2	(L2.Pres)		
	3	(L2.Totl)		
	5	(L3.TP)		
	6	(L4)		

diS.U	Index 800	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Current display update rate				
Factory setting	**2**	**(d3 / slow)**		
Value range	0	(d1 / fast)		
	1	(d2 / medium)		
	2	(d3 / slow)		

diS.R	Index 801	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Current display rotation clockwise				
Factory setting	**0**	**(0 °)**		
Value range	0	(0 °)		
	1	(90 °)		
	2	(180 °)		
	3	(270 °)		

7 Parameter

diS.B	Index 802	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Current display brightness				
Factory setting	**75**	**(75 %)**		
Value range	25	(25 %)		
	50	(50 %)		
	75	(75 %)		
	100	(100 %)		
	0	(OFF)		

coL.F	Index 810	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Colour configuration volumetric flow				
Factory setting	**16**	**(bk/wh / Value black and white)**		
Value range	16	(bk/wh / Value black and white)		
	17	(red / Value red)		
	18	(green / Value green)		
	20	(yellow / Value yellow)		
	10	(r-cF / Value red when the measured value is inside the limits of [cFL.F] and [cFH.F])		
	11	(G-cF / Value green when the measured value is inside the limits of [cFL.F] and [cFH.F])		

coL.T	Index 811	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Colour configuration temperature				
Factory setting	**16**	**(bk/wh / Value black and white)**		
Value range	16	(bk/wh / Value black and white)		
	17	(red / Value red)		
	18	(green / Value green)		
	20	(yellow / Value yellow)		
	10	(r-cF / Value red when the measured value is inside the limits of [cFL.T] and [cFH.T])		
	11	(G-cF / Value green when the measured value is inside the limits of [cFL.T] and [cFH.T])		

coL.P	Index 812	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Colour configuration pressure				
Factory setting	**16**	**(bk/wh / Value black and white)**		
Value range	16	(bk/wh / Value black and white)		
	17	(red / Value red)		
	18	(green / Value green)		
	20	(yellow / Value yellow)		
	10	(r-cF / Value red when the measured value is inside the limits of [cFL.P] and [cFH.P])		
	11	(G-cF / Value green when the measured value is inside the limits of [cFL.P] and [cFH.P])		

coL.V	Index 813	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Colour configuration totaliser				
Factory setting	**16**	**(bk/wh / Value black and white)**		
Value range	16	(bk/wh / Value black and white)		
	17	(red / Value red)		
	18	(green / Value green)		
	20	(yellow / Value yellow)		

7 Parameter

uni.F	Index 551	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Selection of flow unit				
Factory setting	**0**	**(m³/h)**		
Value range	0	(m³/h)		
	1	(L/min)		
	2	(m/s)		
	3	(ft³/h)		
	4	(ft³/min)		
	5	(ft/s)		

uni.T	Index 841	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Selection of temperature unit				
Factory setting	**0**	**(°C)**		
Value range	0	(°C)		
	1	(°F)		

uni.P	Index 842	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Selection of pressure unit				
Factory setting	**1**	**(bar)**		
Value range	0	(kPa)		
	1	(bar)		
	2	(psi)		

Loc	Index 550	Subindex 0	UIntegerT (8 Bit)	ReadWrite
[Loc] locks the local user interface to prevent unintentional changes, [Loc] is resettable at the device				
Factory setting	**1**	**(uLoc)**		
Value range	0	(Loc)		
	1	(uLoc)		

7.14 Colour frame flow

7.14.1 Colour frame flow

cFH.F	Index 556	Subindex 0	IntegerT (16 Bit)	ReadWrite
Upper value for flow colour change. cFH.F shall be above cFL.F. Min distance cFH.F...cFL.F = 0.37 m³/h. For details, see operating manual				
Factory setting	**7497**			
Value range [m³/h]	(65 To 7497) * 0.01			

cFL.F	Index 555	Subindex 0	IntegerT (16 Bit)	ReadWrite
Lower value for flow colour change. cFL.F shall be below cFH.F. Min distance cFH.F...cFL.F ===> see cFH.F				
Factory setting	**28**			
Value range [m³/h]	(28 To 7460) * 0.01			

7 Parameter

7.15 Colour frame temperature

7.15.1 Colour frame temperature

cFH.T	Index 871	Subindex 0	IntegerT (16 Bit)	ReadWrite
Upper value for temperature colour change. cFH.T shall be above cFL.T. Min distance cFH.T...cFL.T = 0.35 °C. For details, see operating manual.				
Factory setting	**6000**			
Value range [°C]	(-965 To 6000) * 0.01			

cFL.T	Index 861	Subindex 0	IntegerT (16 Bit)	ReadWrite
Lower value for temperature colour change. cFL.T shall be below cFH.T. Min distance cFH.T...cFL.T ===> see cFH.T				
Factory setting	**-1000**			
Value range [°C]	(-1000 To 5965) * 0.01			

7.16 Colour frame pressure

7.16.1 Colour frame pressure

cFH.P	Index 872	Subindex 0	IntegerT (16 Bit)	ReadWrite
Upper value for pressure colour change. cFH.P shall be above cFL.P. Min distance cFH.P...cFL.P = 0.08 bar. For details, see operating manual				
Factory setting	**1600**			
Value range [bar]	(-92 To 1600) * 0.01			

cFL.P	Index 862	Subindex 0	IntegerT (16 Bit)	ReadWrite
Lower value for pressure colour change. cFL.P shall be below cFH.P. Min distance cFH.P...cFL.P ===> see cFH.P				
Factory setting	**-100**			
Value range [bar]	(-100 To 1592) * 0.01			

7.17 Simulation

S.Tim	Index 571	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Simulation duration				
Factory setting	**2**	**(3 min)**		
Value range	0	(1 min)		
	1	(2 min)		
	2	(3 min)		
	3	(4 min)		
	4	(5 min)		
	5	(10 min)		
	6	(15 min)		
	7	(20 min)		
	8	(30 min)		
	9	(45 min)		
	10	(60 min)		

7 Parameter

S.On	Index 570	Subindex 0	UIntegerT (8 Bit)	ReadOnly
Simulation state				
Factory setting	**0**	**(OFF)**		
Value range	0	(OFF)		
	1	(On)		

7.17.1 Flow

S.FLW	Index 572	Subindex 0	IntegerT (16 Bit)	ReadWrite
Simulation of flow. ! Rounded on stepwidth !				
Factory setting	**3750**			
Value range [m³/h]	(25 To 9000) * 0.01			
	32760	(OL)		
	32762	(cr.OL)		

7.17.2 Pressure

S.PRS	Index 574	Subindex 0	IntegerT (16 Bit)	ReadWrite
Simulation of pressure. ! Rounded on stepwidth !				
Factory setting	**800**			
Value range [bar]	(-100 To 1680) * 0.01			
	32760	(OL)		

7.17.3 Temperature

S.TMP	Index 573	Subindex 0	IntegerT (16 Bit)	ReadWrite
Simulation of temperature. ! Rounded on stepwidth !				
Factory setting	**2500**			
Value range [°C]	(-2400 To 7400) * 0.01			
	32760	(OL)		
	32762	(cr.OL)		
	-32762	(cr.UL)		
	-32760	(UL)		

7.18 Setup

Device Access Locks	Index 12	Subindex 0	RecordT (16 Bit)	ReadWrite
Local Parameterization Lock		bitOffset 2	BooleanT	
Factory setting	**false**			

MDC Descr	Index 16512	Subindex 0	RecordT (88 Bit)	ReadOnly
Description of the measurement data channel				
Lower limit		Subindex 1	IntegerT (32 Bit)	
Lower value measurement range				
Factory setting	**25**	**(25)**		
Value range	25	(25)		

7 Parameter

MDC Descr	Index 16512	Subindex 0	RecordT (88 Bit)	ReadOnly
Upper limit		Subindex 2	IntegerT (32 Bit)	
Upper value measurement range				
Factory setting Value range	**7500** 7500	**(7500)** (7500)		
Unit code		Subindex 3	UIntegerT (16 Bit)	
Unit code of the measurement data				
Factory setting Value range	**1349** 1349	**(m³/h)** (m³/h)		
Scale		Subindex 4	IntegerT (8 Bit)	
Range shifting (10 scale)				
Factory setting Value range	**-2** -2	**(-2)** (-2)		

7.18.1 Flow

rTo - Totaliser reset time	Index 3015	Subindex 0	IntegerT (16 Bit)	ReadWrite
Determines the time for the next meter reset				
Factory setting Value range	**0** 0 4001 4002 4003 4004 4005 4006 4007 4008 4009 4010 4011 4012 4013 4014 4015 4016 4017 4018 4019 4020 4021 4022 4023 5001 5002 5003 5004 5005 5006 6001 6002 6003 6004 6005 6006 6007 6008	**(OFF)** (OFF) (1 h) (2 h) (3 h) (4 h) (5 h) (6 h) (7 h) (8 h) (9 h) (10 h) (11 h) (12 h) (13 h) (14 h) (15 h) (16 h) (17 h) (18 h) (19 h) (20 h) (21 h) (22 h) (23 h) (1 d) (2 d) (3 d) (4 d) (5 d) (6 d) (1 w) (2 w) (3 w) (4 w) (5 w) (6 w) (7 w) (8 w)		

LFC	Index 3006	Subindex 0	IntegerT (16 Bit)	ReadWrite
Low flow cutoff				
Factory setting Value range [m³/h]	**10** (9 To 80) * 0.01			

7 Parameter

7.18.2 Pressure

rEF.P	Index 3000	Subindex 0	IntegerT (16 Bit)	ReadWrite
Reference pressure which refers to all measured and displayed values				
Factory setting Value range [mbar]	**1013** (950 To 1050) * 1			

7.18.3 Temperature

rEF.T	Index 3001	Subindex 0	IntegerT (16 Bit)	ReadWrite
Reference temperature which refers to all measured and displayed values				
Factory setting Value range [°C]	**15** (0 To 25) * 1			

8 Diagnosis

8.1 Diagnosis

Device Status	Index 36	Subindex 0	UIntegerT (8 Bit)	ReadOnly
Factory setting	**0**	**(Device is OK)**		
Value range	0	(Device is OK)		
	1	(Maintenance required)		
	2	(Out of specification)		
	3	(Functional check)		
	4	(Failure)		
	(5 To 255) (Reserved)			

Detailed Device Status	Index 37	Subindex 0	OctetStringT (3 byte) [11]	ReadOnly
Factory setting	**0x00,0x00,0x00**			

Active Events	Index 545	Subindex 0	RecordT (32 Bit)	ReadOnly
Bit mask for current pending events				
Bit_31		bitOffset 31	BooleanT	
Test Event 2. Device Status = 1 (Maintenance required)				
Factory setting	**0**	**(noEv)**		
Value range	0	(noEv)		
	1	(0x8DFF)		
Bit_30		bitOffset 30	BooleanT	
Test Event 1. Device Status = 1 (Maintenance required)				
Factory setting	**0**	**(noEv)**		
Value range	0	(noEv)		
	1	(0x8DFE)		
Bit_29		bitOffset 29	BooleanT	
Flash sequence active. Device Status = 1 (Maintenance required)				
Factory setting	**0**	**(noEv)**		
Value range	0	(noEv)		
	1	(0x8CDB)		
Bit_18		bitOffset 18	BooleanT	
Component malfunction				
Factory setting	**0**	**(noEv)**		
Value range	0	(noEv)		
	1	(0x5010)		
Bit_17		bitOffset 17	BooleanT	
Measurement range over-run				
Factory setting	**0**	**(noEv)**		
Value range	0	(noEv)		
	1	(0x8C20)		
Bit_16		bitOffset 16	BooleanT	
Simulation active				
Factory setting	**0**	**(noEv)**		
Value range	0	(noEv)		
	1	(0x8C01)		
Bit_9		bitOffset 9	BooleanT	
Process variable range under-run				
Factory setting	**0**	**(noEv)**		
Value range	0	(noEv)		
	1	(0x8C30)		

8 Diagnosis

Active Events	Index 545	Subindex 0	RecordT (32 Bit)	ReadOnly
Bit_8		bitOffset 8	BooleanT	
Process variable range over-run				
Factory setting Value range	**0** 0 1	**(noEv)** (noEv) (0x8C10)		
Bit_2		bitOffset 2	BooleanT	
Short circuit				
Factory setting Value range	**0** 0 1	**(noEv)** (noEv) (0x7710)		
Bit_1		bitOffset 1	BooleanT	
Parameter error				
Factory setting Value range	**0** 0 1	**(noEv)** (noEv) (0x6320)		
Bit_0		bitOffset 0	BooleanT	
Device hardware fault				
Factory setting Value range	**0** 0 1	**(noEv)** (noEv) (0x5000)		

8 Diagnosis

Param configuration fault	Index 546	Subindex 0	UIntegerT (32 Bit) [10]	ReadOnly
Displays the incorrectly set parameters				
Factory setting	**0**	**(OK)**		
Value range	0	(OK)		
	786432	(Device Access Locks, Index = 12)		
	38469632	(SP1 (FH1) - PRES, Index = 587)		
	38207488	(SP1 (FH1) - FLOW, Index = 583)		
	38338560	(SP1 (FH1) - TEMP, Index = 585)		
	38535168	(rP1 (FL1) - PRES, Index = 588)		
	38273024	(rP1 (FL1) - FLOW, Index = 584)		
	38404096	(rP1 (FL1) - TEMP, Index = 586)		
	201064448	(ImPS1, Index = 3068)		
	200540160	(ImPR1, Index = 3060)		
	41549824	(ASP2 - PRES, Index = 634)		
	41287680	(ASP2 - FLOW, Index = 630)		
	41418752	(ASP2 - TEMP, Index = 632)		
	41615360	(AEP2 - PRES, Index = 635)		
	41353216	(AEP2 - FLOW, Index = 631)		
	41484288	(AEP2 - TEMP, Index = 633)		
	39124992	(SP2 (FH2) - PRES, Index = 597)		
	38862848	(SP2 (FH2) - FLOW, Index = 593)		
	38993920	(SP2 (FH2) - TEMP, Index = 595)		
	39190528	(rP2 (FL2) - PRES, Index = 598)		
	38928384	(rP2 (FL2) - FLOW, Index = 594)		
	39059456	(rP2 (FL2) - TEMP, Index = 596)		
	207618048	(ImPS2, Index = 3168)		
	207093760	(ImPR2, Index = 3160)		
	44302336	(DIn2, Index = 676)		
	197591040	(rTo - Totaliser reset time, Index = 3015)		
	34078720	(SEL1, Index = 520)		
	38010880	(ou1, Index = 580)		
	38076416	(dS1, Index = 581)		
	38141952	(dr1, Index = 582)		
	34799616	(FOU1, Index = 531)		
	34144256	(SEL2, Index = 521)		
	38666240	(ou2, Index = 590)		
	38731776	(dS2, Index = 591)		
	38797312	(dr2, Index = 592)		
	34865152	(FOU2, Index = 532)		
	36110336	(uni.F, Index = 551)		
	55115776	(uni.T, Index = 841)		
	55181312	(uni.P, Index = 842)		
	33423360	(dAP.F, Index = 510)		
	57737216	(dAP.P, Index = 881)		
	32768000	(P-n, Index = 500)		
	197001216	(LFC, Index = 3006)		
	196608000	(rEF.P, Index = 3000)		
	196673536	(rEF.T, Index = 3001)		
	327745536	(coF, Index = 5001)		
	52625408	(diS.L, Index = 803)		
	52428800	(diS.U, Index = 800)		
	52494336	(diS.R, Index = 801)		
	52559872	(diS.B, Index = 802)		
	53084160	(coL.F, Index = 810)		
	36438016	(cFH.F, Index = 556)		
	36372480	(cFL.F, Index = 555)		
	53149696	(coL.T, Index = 811)		
	57081856	(cFH.T, Index = 871)		
	56426496	(cFL.T, Index = 861)		
	53215232	(coL.P, Index = 812)		
	57147392	(cFH.P, Index = 872)		
	56492032	(cFL.P, Index = 862)		
	53280768	(coL.V, Index = 813)		
	37486592	(S.FLW, Index = 572)		
	37552128	(S.TMP, Index = 573)		
	37617664	(S.PRS, Index = 574)		
	37421056	(S.Tim, Index = 571)		
	36044800	(Loc, Index = 550)		

9 Events

Code	Status	PQ*	Class	Name	Description
0x5000 20480d	4 (Failure)	invalid	Error	Device hardware fault	Device Exchange
0x5010 20496d	3 (Functional check)	valid	Error	Component malfunction	Repair or exchange
0x6320 25376d	3 (Functional check)	invalid	Error	Parameter error	Check data sheet and values
0x7710 30480d	3 (Functional check)	valid	Error	Short circuit	Check installation
0x8C01 35841d	3 (Functional check)	valid	Warning	Simulation active	Check operational mode
0x8C10 35856d	2 (Out of specification)	valid	Warning	Process variable range over-run	Process data uncertain
0x8C20 35872d	3 (Functional check)	valid	Error	Measurement range over-run	Check application
0x8C30 35888d	2 (Out of specification)	valid	Warning	Process variable range under-run	Process data uncertain
0x8CDB 36059d	1 (Maintenance required)	valid	Warning	Flash sequence active. Device Status = 1 (Maintenance required)	Deactivate flash sequence
0x8DFE 36350d	1 (Maintenance required)	valid	Warning	Test Event 1. Device Status = 1 (Maintenance required)	Event appears by setting index 2 to value 240, Event disappears by setting index 2 to value 241
0x8DFF 36351d	1 (Maintenance required)	valid	Warning	Test Event 2. Device Status = 1 (Maintenance required)	Event appears by setting index 2 to value 242, Event disappears by setting index 2 to value 243

Events are raised by the device itself to notify irregular device states
PQ* = Process data quality

10 Error types

Code	Name	Description
0x8000 32768d	Device application error - no details	Service has been refused by the device application and no detailed information of the incident is available
0x8011 32785d	Index not available	Access occurs to a not existing index
0x8012 32786d	Subindex not available	Access occurs to a not existing subindex
0x8020 32800d	Service temporarily not available	Parameter is not accessible due to the current state of the device application
0x8021 32801d	Service temporarily not available - local control	Parameter is not accessible due to an ongoing local operation at the device
0x8022 32802d	Service temporarily not available - device control	Parameter is not accessible due to a remote triggered state of the device application
0x8023 32803d	Access denied	Write access on a read-only parameter
0x8030 32816d	Parameter value out of range	Written parameter value is outside its permitted value range
0x8033 32819d	Parameter length overrun	Written parameter length is above its predefined length
0x8034 32820d	Parameter length underrun	Written parameter length is below its predefined length
0x8035 32821d	Function not available	Written command is not supported by the device application
0x8036 32822d	Function temporarily unavailable	Written command is not available due to the current state of the device application
0x8040 32832d	Invalid parameter set	Written single parameter collides with other actual parameter settings
0x8041 32833d	Inconsistent parameter set	Parameter inconsistencies were found at the end of block parameter transfer, device plausibility check failed
0x8082 32898d	Application not ready	Read or write service is refused due to a temporarily unavailable application

Error types are used for the ISDU response. Values unequal '0' indicate the cause of a failed ISDU read or write service.

11 Unit conversion

This list provides conversion formulas to convert the transmitted IO-Link raw data into physical units.

Value in [m³]	= Transmitted value	*	1
Value in [ft³]	= Transmitted value	*	35.31466672
Value in [m³/h]	= Transmitted value	*	0.01
Value in [ft/s]	= Transmitted value	*	0.0328084
Value in [ft³/min]	= Transmitted value	*	0.00588577779
Value in [ft³/h]	= Transmitted value	*	0.3531466672
Value in [m/s]	= Transmitted value	*	0.01
Value in [l/min]	= Transmitted value	*	0.1666666667
Value in [bar]	= Transmitted value	*	0.01
Value in [psi]	= Transmitted value	*	0.1450377
Value in [kPa]	= Transmitted value	*	1
Value in [°C]	= Transmitted value	*	0.01
Value in [°F]	= Transmitted value	*	0.018 + 32