Chapter 2
Troubleshooting

CHAPTER CONTENTS

WARNING !

Procedures in this chapter require following biohazard, electrical hazard, and electrostatic discharge precautions.

Tools must be decontaminated before and after servicing the analyzer. Tools must be decontaminated before they are returned to the tool kit.

CAUTION !

You must perform VP-60: Decontamination before you begin and after you complete servicing the analyzer.

ISOLATION PROCEDURES LIST (pg 1 of 2)

Isolation Procedures List (pg 2 of 2)

ERROR CODE LIST (numeric order)
(pg 1 of 10)

EC	Message	Corrective action (IP/SM*)	Page number
1	Motor Driver cable disconnected	IP- 5	2- 45
2	Analog Board cable disconnected	IP- 5	2- 45
4	Bad timer device	SM-4	2- 23
5	Assay Module missing	IP- 6	2- 47
6	Invalid CMD in Mode sequence	SM-6	2- 23
7	Invalid parameters in command	SM-7	2- 23
8	Time/date reset	IP- 7	2- 49
10	Bad values in Boom Cal file XX	IP- 8	2- 50
11	Z boom failed Home	IP- 78	2- 205
12	R boom failed Home	IP- 78	2- 205
13	Carousel failed Home	IP- 79	2- 211
14	Multivalve failed Home	IP- 80	2- 213
15	Diluent Syringe failed Home	IP- 9	2- 51
16	Sample Syringe failed Home	IP- 9	2- 51
19	Photo Cal not initialized	SM-19	2- 23
20	Carousel not locked	IP- 10	2- 56
21	Z boom missing steps	IP- 78	2- 205
22	R boom missing steps	IP- 78	2- 205

**IP=Isolation Procedure SM=Status Message*

Error Code List (numeric) (pg 2 of 10)

EC	Message	IP/SM	Pg
23	Carousel missing steps	IP- 79	2- 211
24	Multivalve missing steps	IP- 80	2- 213
25	Diluent Syringe missing steps	IP- 9	2- 51
26	Sample Syringe missing steps	IP- 9	2- 51
29	Reagent Pack not on module	IP- 11	2- 61
30	Reagent bar code mismatch	IP- 10	2- 56
31	Invalid assay on module	IP- 12	2- 63
32	NOVRAM full	IP- 13	2- 65
34	Insufficient tests left XX	IP- 15	2- 66
35	No disposables to run	IP- 16	2- 68

EC	Message	IP/SM	Pg
36	Carousel load error	IP- 17	2- 73
37	Printer error	IP- 18	2- 80
38	Carousel mismatch	SM- 38	2- 23
39	Invalid mode definition	SM- 39	2- 23
40	Carousel label read error	IP- 20	2- 83
41	Reagent label read error	IP- 20	2- 83
42	Bar code error: Reagent ID=	IP- 20	2- 83
43	Door open	IP- 21	2- 88
44	Carousel ID Error: Carousel ID=	IP- 20	2- 83
45	Wash Station overflow	IP- 22	2- 90
46	Liquid level too high	IP- 22	2- 90

Error Code List (numeric) (pg 3 of 10)

EC	Message	IP/SM	Pg
47	Reagent insufficient/empty XXXX	IP- 22	2- 90
48	Diluent insufficient/empty X	IP- 23	2- 100
49	Diluent bottle not found X	IP- 23	2- 100
52	Level sense not found XXXX	IP- 22	2- 90
53	F to D hardware fail	IP- 26	2- 103
54	A to D hardware fail	IP- 27	2- 104
56	MEIA Lamp out	IP- 29	2- 105
60	Diluent temperature low __°C	IP- 33	2- 111
61	Diluent temperature high __°C	IP- 33	2- 111
62	Air temperature low __°C	IP- 81	2-217
63	Air temperature high __°C	IP- 81	2-217
70	Remote temperature low __°C	IP- 83	2-222
71	Remote temperature high __°C	IP- 83	2-222
72	Reagent block temperature low __°C	IP- 85	2-224
73	Reagent block temperature high __°C	IP- 85	2-224
74	Bad high voltage power supply	IP- 34	2-115

Error Code List (numeric) (pg 4 of 10)

EC	Message	IP/SM	Pg
78	No sample/reagent found XXXX	IP- 22	2- 90
79	File reloaded X Y	IP- 45	2-127
81	V to F to D overflow error	SM- 81	2- 23
83	Sample inactivation failed XXX	SM- 83	2- 23
84	MEIA stds placed incorrectly	IP- 43	2-119
90	COM 1 port error	IP- 44	2-124
91	COM 2 port error	IP- 44	2-124
92	Incompatible assay module	SM- 92	2- 23
93	Carousel lock arm not locked	IP- 87	2-229

EC	Message	IP/SM	Pg
94	Invalid system module	SM- 94	2- 24
97	Level sense range error XXXX	IP- 22	2- 90
98	Door sensor option active	IP- 21	2- 88
99	Level sense hardware error	IP- 22	2- 90
100	Directory checksum error	IP- 45	2-127
101	File checksum error	IP- 45	2-127
102	Initialize database	IP- 45	2-127
103	Bad value in assay file XX	IP- 46	2-129
104	Assay revisions mismatch	IP- 47	2-130
105	File parameter out of range	SM-105	2- 24

Error Code List (numeric) (pg 5 of 10)

EC	Message	IP/SM	Pg
108	Check MEIA Lamp XXXXX	IP- 48	2- 131
109	MEIA lamp ref not initialized	IP- 49	2- 139
110	Time expired for entering temp	IP- 50	2- 141
111	CPU test failed	SM-111	2- 24
112	Reset test failed	SM-112	2- 24
113	CPU board configuration error	SM-113	2- 24
115	Diagnostic checksum error	SM-115	2- 24
116	NMI Test failed	IP- 51	2- 144
117	U25/CPU test failed	SM-117	2- 24
118	MEM error XXX:XXXX or UX	IP- 51	2- 144
119	Timer controller test failed	SM-119	2- 24
120	Master pic test failed	SM-120	2- 24
121	CPU slave pic test failed	SM-121	2- 24
122	I/O slave pic test failed	SM-122	2- 24
123	Clock device failed	SM-123	2- 24
124	Bad oscillator frequency	SM-124	2- 25
125	Motor ctrl failed UX	IP- 52	2- 145
126	System module missing	IP- 53	2- 146
127	Invalid system module	IP- 53	2- 146

Error Code List (numeric) (pg 6 of 10)

EC	Message	IP/SM	Pg
129	Invalid assay module	IP- 53	2- 146
130	Ready to change modules	SM-130	2- 25
131	Barcode device test failed	IP- 54	2- 148
132	Bad checksum on system module	IP- 53	2- 146
133	Bad checksum on assay module	IP- 53	2- 146
134	Incompatible system/ assay modules	SM-134	2- 25
135	Memory board/timed out	IP- 55	2- 149
136	Memory board IC timed out	IP- 55	2- 149
137	Digital board timed out	IP- 55	2-149
138	Unknown NMI .... contact CSC	IP- 55	2-149
139	Memory board 8255 device failed	IP- 55	2-149
140	H below threshold value	IP- 61	2-152
141	H is not linear	IP- 61	2-152
142	Slope/intercept out of range	IP- 68	2-172
144	B is out of range	IP- 69	2-176
145	M % diff out of spec	IP- 70	2-179
146	H % diff out of spec	IP- 70	2-179
147	Static precision out of spec	IP- 72	2-186

Error Code List (numeric) (pg 7 of 10)

EC	Message	IP/SM	Pg
148	Dynamic precision out of spec	IP- 72	2- 186
149	Level sense out of range	IP- 74	2- 192
150	Group 1 failed	IP- 75	2- 194
151	Group 2 failed	IP- 75	2- 194
152	Group 3 failed	IP- 75	2- 194
153	Group 4 failed	IP- 75	2- 194
154	Liquid heater block out of spec	IP- 33	2- 111
155	Remote temp out of range	IP- 83	2- 222
156	Reagent heater block out of spec	IP- 85	2- 224
157	Current liquid temp out of spec	IP- 73	2- 189

EC	Message	IP/SM	Pg
162	Intercept high	IP- 64	2- 155
163	NRMSE too large	IP- 65	2- 160
164	Cor. coef. low	IP- 65	2- 160
166	Read error	IP- 66	2- 164
167	DI/AS X Y ZZZZ	IP- 67	2- 169
190	Negative range failed	SM-190	2- 25
191	Negative too high	SM-191	2- 25
192	Negative too low	SM-192	2- 25
193	Positive range failed	SM-193	2- 25
194	Positive too high	SM-194	2- 25
195	Positive too low	SM-195	2- 25
196	Calibrator range failed	SM-196	2- 25
197	Calibrator too high	SM-197	2- 25

Error Code List (numeric) (pg 8 of 10)

EC	Message	IP/SM	Pg
198	Calibrator too low	SM-198	2- 25
199	Average out of range	SM-199	2- 25
200	Factory Set (A/Sys/Assay)	SM-200	2- 26
201	MEIA temperature calibration	SM-201	2- 26
202	Boom calibration	SM-202	2- 26
203	MEIA carousel calibration (pass/fail)	SM-203	2- 26
204	MEIA photo calibration (pass/fail)	SM-204	2- 26
205	Level Sense calibration (pass/fail)	SM-205	2- 26

EC	Message	IP/SM	Pg
206	CLI invocation	SM-206	2- 26
207	Assay done - remove Reagents	SM-207	2- 26
208	MEIA temperature check (pass/fail)	SM-208	2- 26
209	MEIA photo check (pass/fail)	SM-209	2- 26
210	Dispense system check (pass/fail)	SM-210	2- 26
211	Boom check	SM-211	2- 26
212	Carousel not calibrated	SM-212	2- 27
213	Error while parsing ASTM message	SM-213	2- 27

Error Code List (numeric) (pg 9 of 10)

EC	Message	IP/SM	Pg
214	Error processing ASTM order	SM-214	2- 27
215	Spooler Run Capacity (message logged) Spooler capacity remaining: N Run(s) (displayed)	SM-215	2-27
216	ASTM COMM timeout	SM-216	2- 28
217	Reset fail	SM-217	2- 28
218	Special operation	SM-218	2- 28
220	PMT high voltage out of range	IP- 76	2- 28
221	Z boom out of range	SM-221	2- 28
222	R boom out of range	SM-222	2- 28
223	Carousel out of range	SM-223	2- 28
224	Multivalve out of range	SM-224	2- 28
225	Diluent Syringe out of range	SM-225	2- 28
226	Sample Syringe out of range	SM-226	2- 28
229	Open thermistor XXXX	IP- 77	2-199
230	Shorted thermistor XXXX	IP- 77	2-199
231	Z boom timed out	SM-231	2- 29
232	R boom timed out	SM-232	2- 29
233	Carousel timed out	SM-233	2- 29
234	Multivalve timed out	SM-234	2- 29
235	Diluent Syringe timed out	SM-235	2- 29

EC	Message	IP/SM	Pg
236	Sample Syringe timed out	SM-236	2- 29
239	Clear System, ASTM, and CSC logs	SM-239	2- 29
240	Motor not homed	SM-240	2- 30
243	Motor timed out	SM-243	2- 30
244	Running	SM-244	2- 30
245	Run stopped by operator request	SM-245	2- 30
246	Not running	SM-246	2- 30
247	ASTM COMM bad message length	SM-247	2- 30
248	ASTM COMM invalid frame type	SM-248	2- 30

EC	Message	IP/SM	Pg
249	ASTM COMM NUM retries exceeded	SM-249	2- 30
250	ASTM COMM invalid response	SM-250	2- 31
251	ASTM COMM invalid frame	SM-251	2- 31
252	ASTM spooler init	SM-252	2- 31
253	ASTM COMM bad frame num	SM-253	2- 31
254	Invalid message parameters	SM-254	2- 31
255	Internal error	SM-255	2- 31

ERROR CODE LIST (alphabetical order) (pg 1 of 4)

Description	EC	IP
A to D hardware fail	54	27
Air fan not running		86
Air temperature high	63	81
Air temperature low	62	81
Analog Board cable disconnected	2	5
Analyzer operates too slowly		3
Assay Module missing	5	6
Assay results incorrect/ Controls out of range		4
Assay revisions mismatch	104	47
B is out of range	144	69
Bad checksum on Assay Module	133	53
Bad checksum on System Module	132	53
Bad High Voltage Power Supply	74	34
Bad value in assay XX	103	46
Bad values in Boom Cal file XX	10	8
Bar Code device test failed	131	54
Bar code error	42	20
Carousel failed home	13	79
Carousel ID error: Carousel ID	44	20
Carousel label read error	40	20
Carousel load error	36	17
Carousel Lock Arm not locked	93	87
Carousel missing steps	23	79
Carousel not locked	20	10
Check MEIA Lamp XXXXX	108	48
COM 1 Port error	90	44
COM 2 Port error	91	44
Cor. Coef. low	164	65
Current liquid temp out of spec	157	73

ERROR CODE LIST (alpha) (pg 2 of 4)

Description	EC	IP
DI/AS X Y ZZZZ	167	67
Digital Board timed out	137	55
Diluent Bottle not found	49	23
Diluent insufficient/empty XXXX	48	23
Diluent Syringe failed home	15	9
Diluent Syringe missing steps	25	9
Diluent temperature high ___ °C	61	33
Diluent temperature low ___ °C	60	33
Directory checksum error	100	45
Display blank or incorrect		1
Door open	43	21
Door Sensor option active	98	21
Dynamic Precision out of spec	148	72
F to D hardware fail	53	26
File checksum error	101	45
File reloaded X Y	79	45
Group 1 failed	150	75
Group 2 failed	151	75
Group 3 failed	152	75
Group 4 failed	153	75
H % Diff out of spec	146	70
H below threshold value	140	61
H is not linear	141	61
Heater block out of spec	156	85
Initialize database	102	45
Insufficient tests left XX	34	15
Intercept high	162	64

ERROR CODE LIST (alpha) (pg 3 of 4)

Description	EC	IP
Invalid Assay Module	129	53
Invalid assay on module	31	12
Invalid System Module	127	53
Level Sense hardware error	99	22
Level Sense not found XXXX	52	22
Level Sense out of range	149	74
Level Sense range error XXXX	97	22
Liquid Heater out of spec	154	33
Liquid level too high	46	22
M % Diff out of spec	145	70
MEIA Lamp out	56	29
MEIA Lamp Ref not initialized	109	49
MEIA Stds placed incorrectly	84	43
Mem error XXXXXXXXX or UX	118	51
Memory Board 8255 device failed	139	55
Memory Board IO timed out	136	55
Memory Board timed out	135	55
Motor CTRL failed UX	125	52
Motor Driver cable disconnected	1	5
Multivalve failed home	14	80
Multivalve missing steps	24	80
NMI Test failed	116	51
No alarm		2
No disposables to run	35	16
No Sample/Reagent found	78	22
NOVRAM full	32	13
NRMSE too large	163	65

ERROR CODE LIST (alpha) (pg 4 of 4)

Description	EC	IP
Open thermistor XXXXXXXXXXXXX	229	77
PMT High Voltage out of range XXXXXX	220	76
Printer error	37	18
R boom failed home	12	78
R boom missing steps	22	78
Read error XXXX	166	66
Reagent block temperature high	73	85
Reagent block temperature low	72	85
Reagent insufficient/empty XXXX	47	22
Reagent label read error	41	20
Reagent Pack not on module	29	11
Remote temperature high	71	83
Remote temperature low	70	83
Remote temperature out of range	155	83
Sample Syringe failed home	16	9
Sample Syringe missing steps	26	9
Shorted thermistor XXXXXXXXXXXXX	230	77
Slope/intercept out of range	142	68
Static Precision out of spec	147	72
System Module missing	126	53
Time/Date reset	8	7
Time expired for entering Temp	110	50
Unknown NMI...Contact CSC	138	55
Wash Station overflow	45	22
Z boom failed home	11	78
Z boom missing steps	22	78

CHAPTER OVERVIEW (pg 1 of 1)

This chapter provides troubleshooting information including:

- an introduction to troubleshooting
- a generic troubleshooting flow diagram
- normal operating procedure
- a list of all messages that may appear
- for each error message, suggested corrective actions [Isolation Procedure (IP) or Status Message (SM)]

CAUTION !

You must perform VP-60: Decontamination before you begin and after you complete servicing the analyzer.

WARNING !

Procedures in this chapter require following biohazard, electrical hazard, and electrostatic discharge precautions.

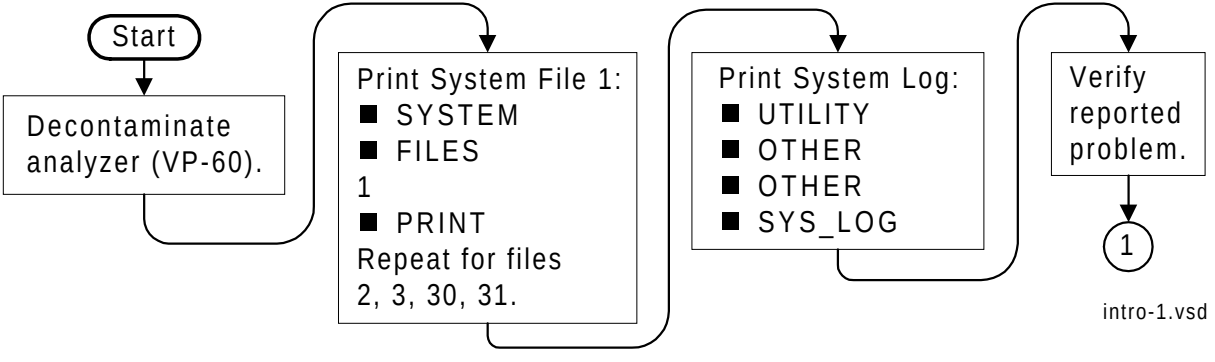
WARNING !

Tools must be decontaminated before and after servicing the analyzer.

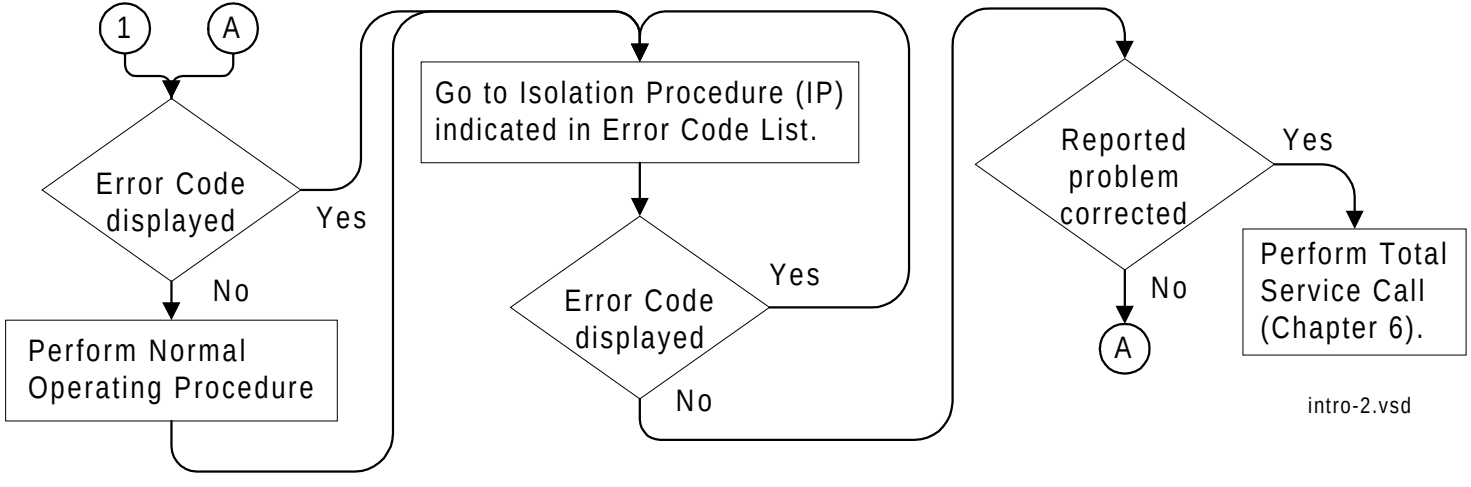
Tools must be decontaminated before they are returned to the tool kit.

INTRODUCTION TO TROUBLESHOOTING (pg 1 of 2)

To isolate problems on the analyzer, follow these steps:



Introduction to Troubleshooting (pg 2 of 2)



NORMAL OPERATING PROCEDURE
(pg 1 of 2)

Procedure	Correct Indication	Corrective Action (if indication is not correct)
1. Power on analyzer. Turn Power Switch ON.	All LEDs are on. SYSTEM DIAGNOSTICS displayed. All LEDs OFF except left. CPU TEST displayed Alarm sounds once. NOVRAM TEST displayed. All LEDs OFF, except second from left. SUBSYSTEM TEST displayed. PRINTING SYSTEM & ASSAY INFORMATION displayed. Printout provided. READY menu displayed.	 IP-1 Replace CPU Bd (RR-7.1). Replace CPU Bd (RR-7.1). IP-2 Replace CPU Bd (RR-7.1). Replace Digital I/O Bd (RR-7.10). Replace CPU Bd (RR-7.1). Replace CPU Bd (RR-7.1). IP-18 Replace CPU Bd (RR-7.1).

Normal Operating Procedure (pg 2 of 2)

Procedure	Correct Indication	Corrective Action
2. Perform Total Service Call procedure (Chapter 6). 3. Perform MEIA Performance Panel Run (VP-47): A. Perform setup per procedure. B. Press **RUN**. C. Wait for run to complete. D. Press **EXIT**. E. Verify correct printout. F. Close Reagent caps in sequence (4, 3, 2, 1). G. Refrigerate Reagents. H. Individually remove Reaction Cells from Carousel and discard into biohazard waste bag. **CAUTION: Do not invert Carousel.**	RUN INITIALIZED displayed MULTI_TASK displayed (run in progress) Samples are within range found in MEIA Performance Panel Run (VP-47).	IP-4

INTERPRETING THE STATUS MESSAGES (pg 1 of 9)

SM-4 **Bad timer device**
Replace Digital I/O Bd (RR-7.10).

SM-6 **Invalid CMD in Mode sequence**
Call CSE.

SM-7 **Invalid parameters in command**
Call CSE.

SM-19 **Photo Cal not initialized**
Perform VP-27A.

SM-38 **Carousel mismatch**
- Edit load list CARSL ID to match Carousel.
- Replace Carousel Bar Code ID.

SM-39 **Invalid mode definition**
- Reload software.
- Replace software.

SM-81 **V to F to D overflow error**
- Replace MEIA Optics (RR-4.1).
- Then replace Digital I/O Bd (RR-7.1/7.10).
- Then replace CPU (RR-7.1/7.10).
- Then replace Analog Bd (RR-8.3).

SM-83 **Sample inactivation failed XXX**
(displayed as a caution when any error occurs) See error code that follows.

SM-92 **Incompatible assay module**
Ensure that System and Assay modules match.

Interpreting the Status Messages (pg 2 of 9)

SM-94 Invalid system module
- Ensure that System and Assay modules match.
- Reload system file.
- Replace System Module.
- Replace CPU Bd (RR-7.1/7.10)

SM-105 File parameter out of range
Call CSE.

SM-111 CPU test failed
Replace CPU Bd (RR-7.1/7.10).

SM-112 Reset test failed
Replace CPU Bd (RR-7.1/7.10).

SM-113 CPU board configuration error
Replace CPU Bd (RR-7.1/7.10).

SM-115 Diagnostic checksum error
Replace CPU Bd (RR-7.1/7.10).

SM-117 U25/CPU test failed
Replace CPU Bd (RR-7.1/7.10).

SM-119 Timer controller test failed
Replace CPU Bd (RR-7.1/7.10).

SM-120 Master pic test failed
Replace CPU Bd (RR-7.1/7.10).

SM-121 CPU slave pic test failed
Replace CPU Bd (RR-7.1/7.10).

SM-122 I/O slave pic test failed
Replace CPU Bd (RR-7.1/7.10).

SM-123 Clock device failed
Replace CPU or I/O Bd (RR-7.1/7.10).

Interpreting the Status Messages (pg 3 of 9)

SM-124 Bad oscillator frequency
Replace CPU or I/O Bd (RR-7.1/7.10).

SM-130 Ready to change modules
No action required.

SM-134 Incompatible system/assay modules
Call CSE.

SM-190 Negative range failed
Call CSE.

SM-191 Negative too high
Call CSE.

SM-192 Negative too low
Call CSE.

SM-193 Positive range failed
Call CSE.

SM-194 Positive too high
Call CSE.

SM-195 Positive too low
Call CSE.

SM-196 Calibrator range failed
Call CSE.

SM-197 Calibrator too high
Call CSE.

SM-198 Calibrator too low
Call CSE.

SM-199 Average out of range
Call CSE.

Interpreting the Status Messages (pg 4 of 9)

SM-200 Factory Set (A/Sys/Assay)
Status message

SM-201 MEIA temperature calibration
Status message

SM-202 Boom calibration
Status message

SM-203 MEIA carousel calibration (pass/fail)
Status message

SM-204 MEIA photo calibration (pass/fail)
Status message

SM-205 Level Sense calibration (pass/fail)
Status message

SM-206 CLI invocation
Status message

SM-207 Assay done - remove Reagents
Status message

SM-208 MEIA temperature check (pass/fail)
Status message

SM-209 MEIA photo check (pass/fail)
Status message

SM-210 Dispense system check (pass/fail)
Status message

SM-211 Boom check
Status message

SM-212 Carousel not calibrated
Perform MEIA Carousel Calibration (VP-30).

SM-213 Error while parsing ASTM message
Format error occurred in messages sent by host system to analyzer. (only occurs when host interface is activated)

SM-214 Error processing ASTM order
Error occurs while processing ASTM® orders after the complete mesage has been received. (only occurs when host interface is activated)

SM-215 Spooler capacity remaining: N Run(s) (displayed); Spooler Run Capacity (message logged)
Spooler capacity is checked after reagent pack is read at start of assay run. If remaining capacity matches System Parameter 1.20, message is displayed. Respond by pressing [PROCEED] or [CANCEL]:
To continue run, press [PROCEED].
If spooler is at partial capacity, results of current run will be written to the buffer.
If spooler buffer is full, results of current run will overwrite oldest record in buffer.
To cancel current assay run, press [CANCEL]. This establishes contact with host computer to dump spooler contents.

SM-216 ASTM COMM Timeout
Specified event did not occur within defined time constraints.

SM-217 Reset fail
Cycle power, then replace CPU Bd (RR-7.1).

SM-218 Special operation
Indicates Reagent Pack Management File has been reset.

SM-221 Z boom out of range
Move boom back into range in opposite direction.

SM-222 R boom out of range
Move boom back into range in opposite direction.

SM-223 Carousel out of range
Move carousel back into range in opposite direction.

SM-224 Multivalve out of range
Move motor back into range in opposite direction.

SM-225 Diluent syringe out of range
Move motor back into range in opposite direction.

SM-226 Sample syringe out of range
Move motor back into range in opposite direction.

Interpreting the Status Messages (pg 7 of 9)

SM-231 Z boom timed out
Power off analyzer. Reseat System Module. Replace Digital I/O Board (RR-7.10).

SM-232 R boom timed out
Power off analyzer. Reseat System Module. Replace Digital I/O Board (RR-7.10).

SM-233 Carousel timed out
Power off analyzer. Reseat System Module. Replace Digital I/O Board (RR-7.10).

SM-234 Multivalve timed out
Power off analyzer. Reseat System Module. Replace Digital I/O Board (RR-7.10).

SM-235 Diluent Syringe timed out
Power off analyzer. Reseat System Module. Replace Digital I/O Board (RR-7.10).

SM-236 Sample Syringe timed out
Power off analyzer. Reseat System Module. Replace Digital I/O Board (RR-7.10).

SM-239 Clear System, ASTM, and CSC logs
Status message

Interpreting the Status Messages (pg 8 of 9)

SM-240 Motor not homed
Home motor, then resume HND_CTRL.

SM-243 Motor timed out
Power off analyzer. Reseat System Module. See appropriate IP for motor that failed (IPs 9, 78, 79, 80).

SM-244 Running
Indicates a request was made to run something while run task was not idle. Replace CPU Bd (RR-7.1), Digital I/O Bd (RR-7.10) or Motor Driver Bd (RR-8.5).

SM-245 Run stopped by operator request
Status message

SM-246 Not Running
Indicates that an abort request is sent to run task, but run task is idle. Replace CPU Bd (RR-7.1), Digital I/O Bd (RR-7.10) or Motor Driver Bd (RR-8.5).

SM-247 ASTM COMM bad message length
Message length in a frame exceeds 240 characters.

SM-248 ASTM COMM invalid frame
The frame is not an intermediate or end type.

SM-249 ASTM COMM NUM retries exceeded
Analyzer is unable to send a frame to the host after 6 retries.

Interpreting the Status Messages (pg 9 of 9)

SM-250 ASTM COMM invalid response
Response sent by the host is incorrect.

SM-251 ASTM COMM invalid frame
Frame checksum or format is incorrect.

SM-252 ASTM spooler init
Spooler incorporates a checksum that is updated when results are saved and released. On analyzer power-up, checksum is verified. If checksum test fails, error is logged in ASTM® error log.

SM-253 ASTM COMM bad frame num
Frame number is incorrect.

SM-254 Invalid Message Parameters
Incorrect information regarding disposables was sent to Post Processor.

SM-255 Internal error

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