

Event Code	Event Name	Description	Sub-events	Group of Events						Group of Devices				Parameters (EndDeviceEventsDetails) (Note: more than Event Code and Clock)		Mandatory/Optional	Alarm	
				Standard Event Log	Fraud (Security) Event Log	Disconnect or Event Log	Power Quality Event Log	Communication Log	Power Failure Event Log	1P Meter	3P Meter (Direct Connection)	3P Meter (CT)	3P Meter (CT/PT)	Name	Value		Alarm Register No.	Bit No.
1	Power Down	Indicates a complete power down of the device. Please note that this is related to the device and not necessarily to the network.	NA	X						X	X	X	X			M	2	0
2	Power Up	Indicates that the device is powered again after a complete power down.	NA	X						X	X	X	X			M	2	1
3	Daylight Saving Time Activated Regularly	Indicates the regular change from and to daylight saving time. The time stamp shows the time before the change. This event is not set in case of manual clock changes and in case of power failures.	NA	X						X	X	X	X			M		
4	Clock Adjust (old time /date)	Indicates that the clock has been adjusted. The date/time that is stored in the event log is the old date/time before adjusting the clock. If during time synchronization, the difference between new time and old time of meter is greater than a predefined value (Clock Time Shift Limit), this event should be generated (details in FID2)	NA	X						X	X	X	X			M		
5	Clock Adjust (new time /date)	Indicates that the clock has been adjusted. The date/time that is stored in the event log is the new date/time after adjusting the clock. If during time synchronization, the difference between new time and old time of meter is greater than a predefined value (Clock Time Shift Limit), this event should be generated (details in FID2)	NA	X						X	X	X	X			M		
6	Clock Invalid	Indicates that clock may be invalid, i.e. if the power reserve of the clock has exhausted. It is set at power up.	NA	X						X	X	X	X			M	1	0
7	Replace Battery	Indicates that the battery must be exchanged due to the expected end of life time.	NA	X						X	X	X	X			M	1	1
8	Battery voltage low	Indicates that the current battery voltage is low.	NA	X						X	X	X	X			M		
9	ToU activated	Indicates that the passive TOU has been activated.	NA	X						X	X	X	X			M		
10	Error Register Cleared	Indicates that the error register is cleared.	NA	X						X	X	X	X			M		
11	Alarm Register Cleared	Indicates that the alarm register is cleared.	NA	X						X	X	X	X			M		
12	Meter Program Memory Error	Indicates a physical or a logical error in the program memory.	NA	X						X	X	X	X			M	1	8
13	RAM Error	Indicates a physical or a logical error in the RAM.	NA	X						X	X	X	X			M	1	9
14	NV Memory Error	Indicates a physical or a logical error in the non volatile memory	1 - Source Metrology 2 - Source Application	X						X	X	X	X			M	1	10

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15	Watchdog Error	Indicates a watch dog reset or a hardware reset of the microcontroller.	NA	X						X	X	X	X			M	1	12
16	Measurement System Error	Indicates a logical or physical error in the measurement system	NA	X						X	X	X	X			M	1	11
17	Firmware ready for activation	Indicates that the new firmware has been successfully downloaded and verified and is ready for activation	NA	X						X	X	X	X			M	2	21
18	Firmware activated	Indicates that a new firmware has been activated	NA	X						X	X	X	X			M		
19	Passive ToU programmed	The passive structures of ToU or a new activation date/time were programmed	1 – Calendar name 2 – Calendar season table 3 – Calendar week table 4 – Calendar day table	X						X	X	X	X			M		
20	External alert detected	Indicates signal detected on the meter's input terminal	NA	X						X	X	X	X			O	2	17
21	Auxiliary power Connected		NA	X								X	X			M	2	19
22	Auxiliary power Disconnected		NA	X								X	X			M	2	20
23	Reserved																	
24	Reserved																	
25	Reserved																	
26	Reserved																	
27	Reserved																	
28	Reserved																	
29	Reserved																	
30	Reserved																	
31	Reserved																	
32	Reserved																	
33	Reserved																	
34	Reserved																	
35	Reserved																	
36	Reserved																	
37	Reserved																	
38	module cover open		NA		X					X	X	X	X			O		
39	module cover close		NA		X					X	X	X	X			O		
40	Terminal Cover opened	Indicates that the terminal cover has been removed.	NA		X					X	X	X	X			M	1	13
41	Terminal Cover closed	Indicates that the terminal cover has been closed.	NA		X					X	X	X	X			M		
42	Strong DC field detected	Indicates that a strong magnetic DC field has been detected.	NA		X					X	X	X	X			M	1	13
43	Strong DC field removed	Indicates that the strong magnetic DC field has disappeared.	NA		X					X	X	X	X			M		
44	Meter/DCU cover opened	Indicates that the meter cover has been removed.	NA		X					X	X	X	X			M	1	13
45	Meter/DCU cover closed	Indicates that the meter cover has been closed.	NA		X					X	X	X	X			M		

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46	Association authentication failure after n times	Indicates that a user tried to gain LLS access with wrong password (intrusion detection) or HLS access challenge processing failed n-times	NA		X						X	X	X	X			M	1	13
47	Parameter (s) changed	Parameter (s) changed	1 – Demand register 1,2,3,4,7 period 2 - Demand register 1,2,3,4,7 number of period 3 - Limiter Threshold Normal 4 - Limiter Threshold Emergency 5 – LP1 Capture Period 6 - LP2 Capture Period 7 - LP Average Capture Period 8 - LP Max Capture Period 9 - LP Min Capture Period 10 - LP Harmonics Capture Period 11 – Secret change 12 – Security policy changed (meter) 15 – Transformer ratio- current numerator changed 16 – Transformer ratio- voltage numerator changed 17 – Transformer ratio- current denominator changed 18 – Transformer ratio- voltage denominator changed 19- Limiter action activated (Attr. 11, IC 71, changed to any action) 20- Limiter action deactivated (Attr. 11, IC 71, changed to any action) 21- Minimum Time Under Threshold 22- Minimum Time Over Threshold 23- Time Threshold for Under Voltage Detection 24- Time Threshold for Over Voltage Detection 25- Threshold for Under Voltage Detection 26- Threshold for Over Voltage Detection 27- Time Threshold for Missing Voltage 28- Threshold for Missing Voltage 29- Time threshold for long power failure 87- Credit Rates Changed 88- Credit Activated 89- Credit Deactivated	X							X	X	X	X			M		
48	Security key (s) changed	One or more security keys (Global/Master) changed.	1– Authentication Key for meter change 2 – Encryption Unicast key for meter change 3 – Encryption Broadcast key for meter change 6 – Master Key Change 7- Authentication Key for Local Port 8- Encryption Unicast Key for Local Port	X							X	X	X	X			M	2	13
49	Decryption or Message Authentication failure	Decryption with currently valid key (global or dedicated) failed to generate a valid APDU or authentication tag	NA		X						X	X	X	X			M	1	13
50	Replay attack	Receive frame counter value less or equal to the last successfully received frame counter in the received APDU.	NA		X						X	X	X	X			M	1	13
51	Firmware verification failed	Indicates the transferred firmware verification failed i.e. cannot be activated.	NA	X							X	X	X	X			M		
52	Unexpected consumption	Indicates consumption is detected at least on one phase when the disconnect has been disconnected	NA	X							X	X	X	X			M	2	12
53	Reserved																		

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54	Reserved																	
55	Reserved																	
56	Reserved																	
57	Disconnection function enabled	In case of En/Dis switch is in En(enabled) state	NA			X				X	X					M		
58	Disconnection function disabled	In case of En/Dis switch is in Dis(disabled) state	NA			X				X	X					M		
59	Disconnector in "Ready for Reconnection"	Indicates that the disconnector has been indicates that the disconnector has been set into the Ready_for_reconnection state and can be manually reconnected	NA			X				X	X	X	X			M		
60	Manual Disconnection	Indicates that the disconnector has been manually disconnected.	NA			X				X	X	X	X			M	2	26
61	Manual Connection	Indicates that the disconnector has been manually connected.	NA			X				X	X	X	X			M	2	25
62	remote Disconnection	it isn't allowed in meter V3 and later versions																
63	remote Connection	it isn't allowed in meter V3 and later versions																
64	local Disconnection	it isn't allowed in meter V3 and later versions																
65	Limiter threshold exceed	Indicates that the limiter threshold has been exceeded (both Normal and Emergency).	NA			X				X	X	X	X	Threshold Value		M	2	23
66	Limiter threshold OK	Indicates that the monitored value of the limiter dropped below the threshold (both Normal and Emergency).	NA			X				X	X	X	X	Threshold Value		M	2	24
67	Limiter threshold changed	Indicates that the limiter threshold has been changed (both Normal and Emergency).	NA			X				X	X	X	X	Threshold Value (new value)		M		
68	Disconnect /Reconnect failure	Indicates that a failure of disconnection or reconnection has happened.	NA			X				X	X	X	X			O	2	31
69	local Reconnection	it isn't allowed in meter V3 and later versions																
70	Fuse supervision L1, threshold exceeded	Indicates that the threshold value in L1 has been exceeded.	NA			X				X	X	X	X	Threshold Value		M		
71	Fuse supervision L1, threshold OK	Indicates that the monitored value dropped below the threshold.	NA			X				X	X	X	X	Threshold Value		M		
72	Fuse supervision L2, threshold exceeded	Indicates that the threshold value in L2 has been exceeded.	NA			X					X	X	X	Threshold Value		M		
73	Fuse supervision L2, threshold OK	Indicates that the monitored value dropped below the threshold.	NA			X					X	X	X	Threshold Value		M		
74	Fuse supervision L3, threshold exceeded	Indicates that the threshold value in L3 has been exceeded.	NA			X					X	X	X	Threshold Value		M		
75	Fuse supervision L3, threshold OK	Indicates that the monitored value dropped below the threshold.	NA			X					X	X	X	Threshold Value		M		

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76	Undervoltage (voltage SAG) L1	Indicates undervoltage on L1 phase was detected.	NA				X			X	X	X	X			M		
77	Undervoltage (voltage SAG) L2	Indicates undervoltage on L2 phase was detected.	NA				X				X	X	X			M		
78	Undervoltage (voltage SAG) L3	Indicates undervoltage on L3 phase was detected.	NA				X				X	X	X			M		
79	Overvoltage (voltage SWELL) L1	Indicates overvoltage on L1 phase was detected.	NA				X			X	X	X	X			M		
80	Overvoltage (voltage SWELL) L2	Indicates overvoltage on L2 phase was detected.	NA				X				X	X	X			M		
81	Overvoltage (voltage SWELL) L3	Indicates overvoltage on L3 phase was detected.	NA				X				X	X	X			M		
82	Missing Voltage (Voltage Cut) L1	Indicates that voltage on at least L1 phase has fallen below the Umin threshold for longer than the T time delay.	NA				X			X	X	X	X			M	2	2
83	Missing Voltage (Voltage Cut) L2	Indicates that voltage on at least L2 phase has fallen below the Umin threshold for longer than the T time delay.	NA				X				X	X	X			M	2	3
84	Missing Voltage (Voltage Cut) L3	Indicates that voltage on at least L3 phase has fallen below the Umin threshold for longer than the time delay.	NA				X				X	X	X			M	2	4
85	Normal Voltage L1	Indicates that the main voltage is in normal limits again, e.g. after overvoltage, under voltage, missing voltage	NA				X			X	X	X	X			M	2	5
86	Normal Voltage L2	Indicates that the main voltage is in normal limits again, e.g. after overvoltage, under voltage, missing voltage	NA				X				X	X	X			M	2	6
87	Normal Voltage L3	Indicates that the main voltage is in normal limits again, e.g. after overvoltage, under voltage, missing voltage	NA				X				X	X	X			M	2	7
88	Phase sequence reversal	Indicates wrong main connection. Usually indicates fraud or wrong installation. For poly phase connection only.	NA	X							X	X	X			M	2	11
89	Missing neutral	Indicates that the neutral connection from the supplier to the meter is interrupted (but the neutral connection to the load prevails). The phase voltages measured by the meter may differ from their nominal values	NA	X						X	X	X	X			O	2	8
90	Load Unbalance	Indicates phase asymmetry due to large unbalance of loads connected	NA				X				X	X	X			M	2	9
91	Current Reversal	Indicates unexpected energy export (for devices which are configured for energy import measurement only)	NA		X						X	X	X			O	2	10
92	Bad Voltage Quality L1	acc. to section 9.1.1.1 of FID2	NA				X			X	X	X	X			M	2	14
93	Bad Voltage Quality L2	acc. to section 9.1.1.1 of FID2	NA				X				X	X	X			M	2	15
94	Bad Voltage Quality L3	acc. to section 9.1.1.1 of FID2	NA				X				X	X	X			M	2	16
95	Credit Assigned		NA			X				X	X	X	X			M		
96	Credit Low	(20% of assigned credit)	NA			X				X	X	X	X			M		

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97	Credit Expired		NA			X				X	X	X	X			M		
98	Reserved																	
99	Reserved																	
107	Reserved																	
108	Reserved																	
109	Reserved																	
117	Reserved																	
118	Reserved																	
119	Reserved																	
127	Reserved																	
128	Reserved																	
129	Reserved																	
137	Reserved																	
138	Reserved																	
139	Reserved																	
140	No connection timeout	There has been no remote communication on application layer for a predefined period of time; i.e. meter could not be reached remotely.	NA					X		X	X	X	X			O		
141	Modem Initialization Failure	Modem's response to initialization AT command(s) is invalid or ERROR or no response received	NA					X		X	X	X	X			M		
142	SIM Card Failure	SIM card is not inserted or is not recognized	NA					X		X	X	X	X			M		
143	SIM Card Ok	SIM card has been correctly detected	NA					X		X	X	X	X			M	1	14
144	GSM Registration Failure	Modem's registration on GSM network was not successful	NA					X		X	X	X	X			M		
145	GPRS Registration Failure	Modem's registration on GPRS network was not successful	NA					X		X	X	X	X			M		
146	PDP Context Established	PDP context is established	NA					X		X	X	X	X			M		
147	PDP Context Destroyed	PDP context is destroyed	NA					X		X	X	X	X			M		
148	PDP Context Failure	No Valid PDP context(s) retrieved	NA					X		X	X	X	X			M		
149	Modem SW Reset	Modem restarted by SW reset	NA					X		X	X	X	X			M		
150	Reserved																	
151	GSM Outgoing Connection	Modem is successfully connected, initiated by an outgoing call	NA					X		X	X	X	X			M		
152	GSM Incoming Connection	Modem is successfully connected, initiated by an incoming call	NA					X		X	X	X	X			M		
153	GSM Hang-up	Modem is disconnected	NA					X		X	X	X	X			M		
154	Reserved																	
155	User Initialization Failure	Modem's initialization AT command(s) – specified in attribute 3 of the modem configuration object - is invalid. Error message or no response from the modem.	NA					X		X	X	X	X			M		
156	Signal Quality Low	Signal strength too low, not known, or not detectable	NA					X		X	X	X	X			M		
157	Auto Answer Number of Calls Exceeded	Number of calls has exceeded. The values given in the attribute number_of_calls.	NA					X		X	X	X	X			M		

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158	Local communication attempt	Indicates a successful communication on any local port has been initiated.	NA	X				X		X	X	X	X			M	2	18
159																		
160																		
161																		
162																		
163																		
164																		
165																		
166																		
167	Reserved																	
168	Reserved																	
169	Reserved																	
177	Reserved																	
178	Reserved																	
179	Reserved																	
187	Reserved																	
188	Reserved																	
189	Reserved																	
197	Reserved																	
198	Reserved																	
199	Reserved																	
200	Current in absence of voltage at L1 detected		NA		X							X	X			M	1	13
201	Current in absence of voltage at L2 detected		NA		X							X	X			M	1	13
202	Current in absence of voltage at L3 detected		NA		X							X	X			M	1	13
203	Manual demand reset		NA	X						X	X	X	X			M		
204	Power direction has changed		NA				X			X	X	X	X			M		
205	Manufacturer Phase and Null current are not equal (for single phase Meter)specific	If value of current in Phase and null paths differ more than a threshold (typically 12.5%) this event recorded just for single phase meters.	NA		X					X						O		
206	Manufacturer Phase and Null current are equal again (for single phase Meter)specific	If value of current in Phase and null paths differ less than a threshold (typically 12.5%) this event recorded just for single phase meters.	NA		X					X						O		
207	Reserved																	
208	Reserved																	
209	Reserved																	
210	Long power failure in all phases		NA						X	X	X	X	X	Duration		M		
211	Long power failure in phase1		NA						X	X	X	X	X	Duration		M		
212	Long power failure in phase2		NA						X	X	X	X	X	Duration		M		
213	Long power failure in phase3		NA						X	X	X	X	X	Duration		M		
214	Communication module removed		NA					X		X	X	X	X			M		
215	Communication module inserted		NA					X		X	X	X	X			M		
216	Factory reset		NA	X						X	X	X	X			M		

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217	Under Voltage end L1		NA				X			X	X	X	X	Amplitude and Duration		M		
218	Under Voltage end L2		NA				X				X	X	X	Amplitude and Duration		M		
219	Under Voltage end L3		NA				X				X	X	X	Amplitude and Duration		M		
220	Overvoltage end L1		NA				X			X	X	X	X	Amplitude and Duration		M		
221	Overvoltage end L2		NA				X				X	X	X	Amplitude and Duration		M		
222	Overvoltage end L3		NA				X				X	X	X	Amplitude and Duration		M		
223	Missing Voltage end L1		NA				X			X	X	X	X	Amplitude and Duration		M		
224	Missing Voltage end L2		NA				X				X	X	X	Amplitude and Duration		M		
225	Missing Voltage end L3		NA				X				X	X	X	Amplitude and Duration		M		
226	Firmware activation failed		NA	X						X	X	X	X			M		
227	Reserved																	
228	Reserved																	
229	Reserved																	
230	Reserved																	
231	Reserved																	
232	Reserved																	
233	Reserved																	
234	Reserved																	
235	Reserved		NA															
236	Daily schedule disconnected		NA			X				X	X	X	X			M	2	26
237	Daily schedule connected		NA			X				X	X	X	X			M	2	25
238	Tariffication disconnected		NA			X				X	X	X	X			M	2	26
239	Tariffication connected		NA			X				X	X	X	X			M	2	25
240	Credit management disconnected		NA			X				X	X	X	X			M	2	26
241	Remote disconnected		NA			X				X	X	X	X			M	2	26
242	Remote connected		NA			X				X	X	X	X			M	2	25
243	limiter disconnected		NA			X				X	X	X	X			M	2	26
244	Limiter connected		NA			X				X	X	X	X			M	2	25
245	Fuse supervision disconnected		NA			X				X	X	X	X			M	2	26
246	Fuse supervision connected		NA			X				X	X	X	X			M	2	25
247	Reserved																	
248	Reserved																	
249	Reserved																	
250	Reserved																	
251	Reserved																	
252	Reserved																	
253	Reserved																	

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254	Load profile cleared	Any of the profiles cleared. Note: If it appears in Standard Event Log then any of the E-load profiles was cleared. If the event appears in the M-Bus Event Log then one of the M-Bus load profiles was cleared.	1 – Monthly 2 – LP1 (hourly) 3 – LP2 (daily) 4 - Supervision Average 5 - Supervision Minimum 6 - Supervision Maximum 7 - Supervision Harmonics	X						X	X	X	X			M		
255	Any of event logs were cleared	Indicates that the event log was cleared. This is always the first entry in an event log. It is only stored in the affected event log.	NA	X	X	X	X	X	X	X	X	X	X			M		