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M-7679 IEC 60870-5-104 Communication Database Rev. 3.2

HUBBELL®

PROTOCOL

M-7679 IEC 60870-5-104 COMMUNICATION DATABASE

FOR USE WITH FIRMWARE VERSION D-0347V03.31.XX

Specifications presented herein are thought to be accurate at the time of publication but are subject to change without notice.

No warranties of any kind are implied on the information contained in this document.

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Initial Release

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Update Beckwith logos

REV 3.2 06/2024
Firmware Version D-0347V03.38.09 and Software Version D-0348V10.39.11

M-7679 IEC 60870-5-104 Communication Database

Introduction

This document specifies the implementation of the IEC 60870-5-104 Protocol in the M-7679 R-PAC Recloser Control with firmware version D-0347V03.28.00 or later. The IPScom IEC Configuration Editor tool is available in IPScom versions D-0348V10.28.00 or later.

The IEC 60870-5-104 protocol is a purchased option that provides a means to connect to the M-7679 R-PAC. The M-7679 utilizes the IEC 60870-5-104 Slave protocol. User configured points can be Read from the control and Written to the Control.

Implementation

The IPScom Configuration Editor is used to configure selected points, save the points to a file, and upload this file to the control. The following data points are supported:

- **Single Points –** Represents Boolean status of the selected points: I/O Status, Profile Active status, Recloser Close/Open, Hot Line Tag, etc.
- **Measured values –** 16 bit value that represents Primary Current, Primary Voltage, Secondary Voltage, Apparent Power, Real Power, Reactive Power, etc. If the metered quantity value is 32 bit long, for example Primary Current Magnitude, then the value is represented as two 16 bit values: a LOW_WORD that contains lower 16 bit data, and a HIGH_WORD that contains higher 16 bit data.
- **Single Commands –** Represents commands to Trip/Close the Relay, Set Profile X Active, Reset Overcurrent Pickup/Trip Counters, etc.
- **Integrated Totals –** Counters for Overcurrent Pickup/Trip, IPSlogic counters, etc.

IPScom Communication Settings

When the IEC 60870-5-104 protocol is purchased, it must also be Enabled in the **Communication/Setup/Comm Port Security/Protocol Access** screen (Figure 1).

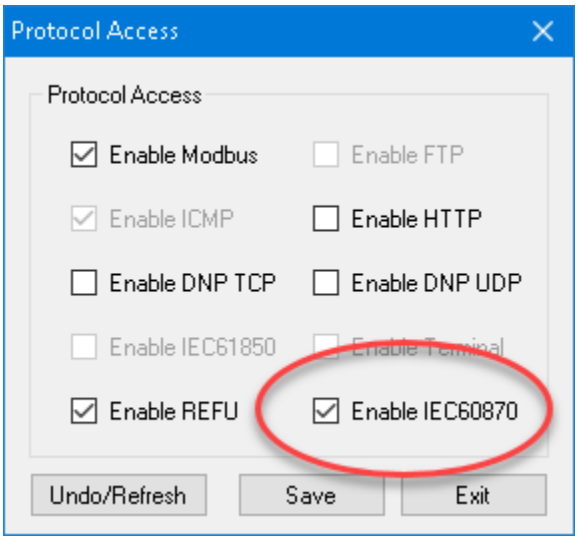


Figure 1 IPScom Protocol Access – Enable IEC 60870

IPScom IEC Configuration Editor

The IPScom **Communication/Setup/Protocol/IEC 60870** menu includes the IEC Configuration Editor. The "Send IEC File", and "Retrieve IEC File" commands allow an IEC 60870 configuration file to be sent or downloaded, when connected to a control.

The IEC Configuration Editor tool allows points from the "Available Points" side of the screen to be added to the "Selected Points" side using the "drag & drop" method. The tool also allows Dummy Points and Offset Points to be added to the configuration file. Examples of the IEC Configuration Editor screens are illustrated in Figure 2 through Figure 9.

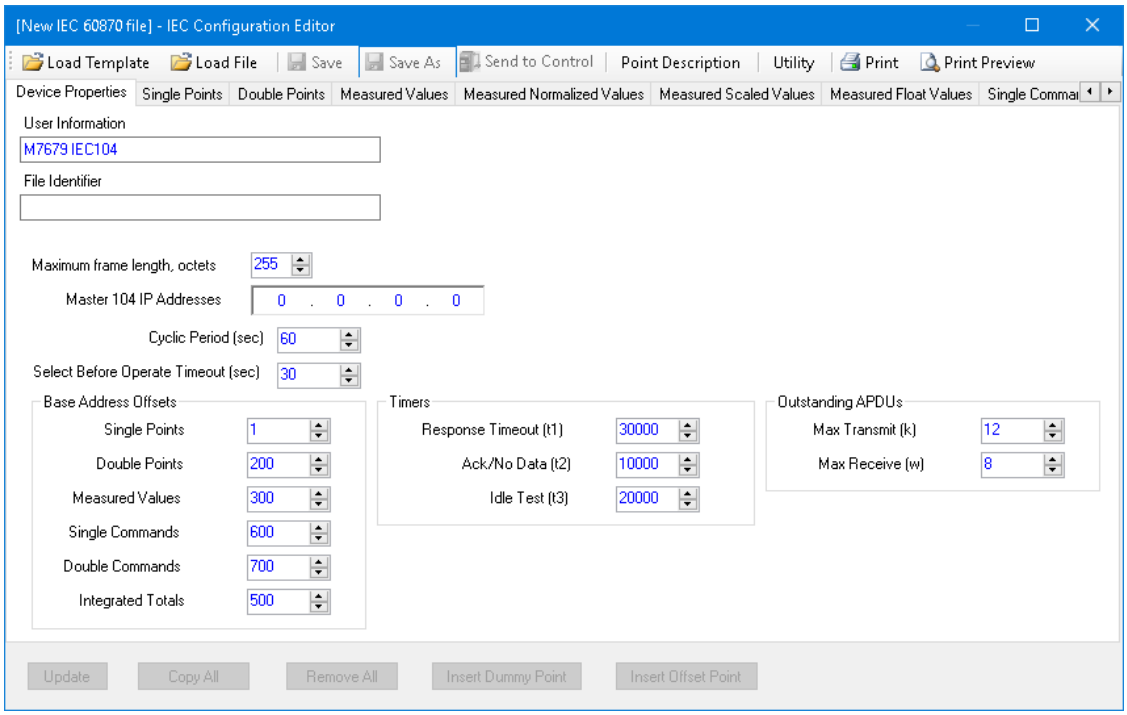


Figure 2 IEC Configuration Editor – Device Properties Tab

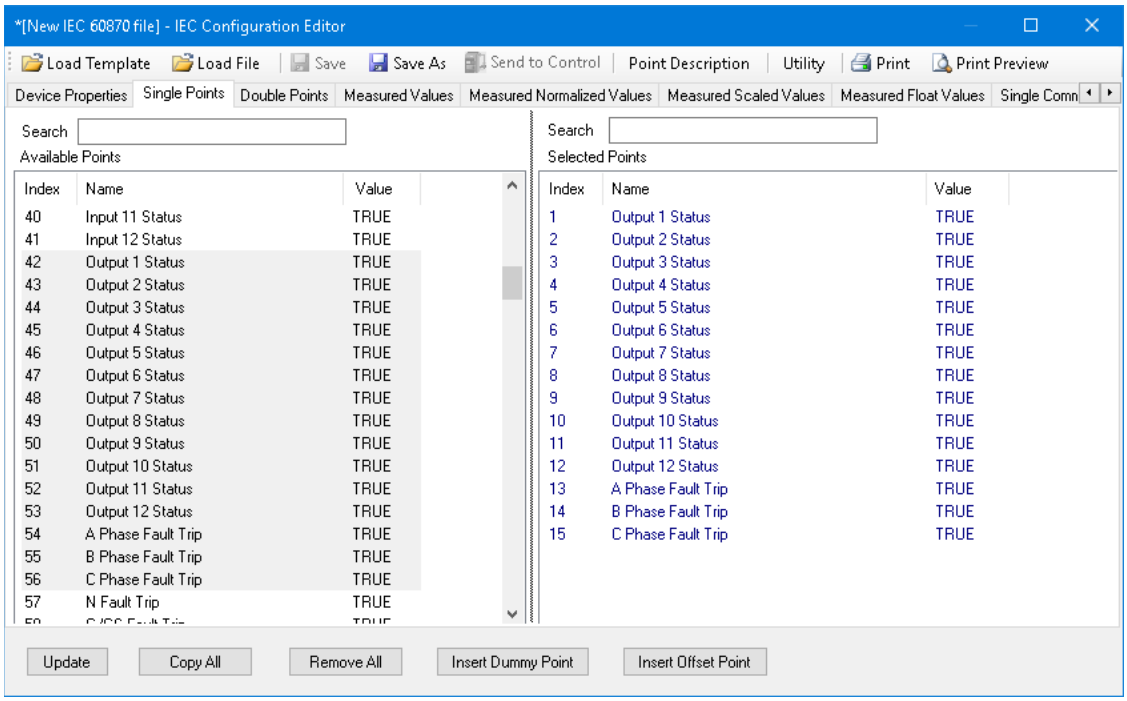


Figure 3 IEC Configuration Editor – Single Points Tab

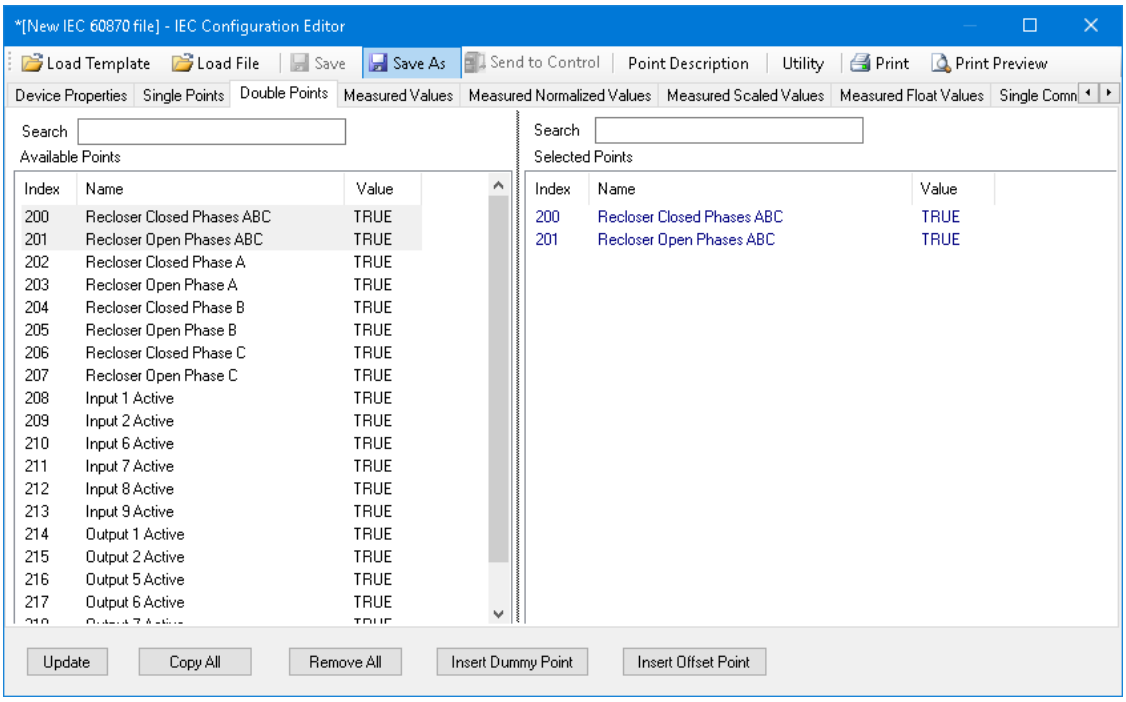


Figure 4 IEC Configuration Editor – Double Points Tab

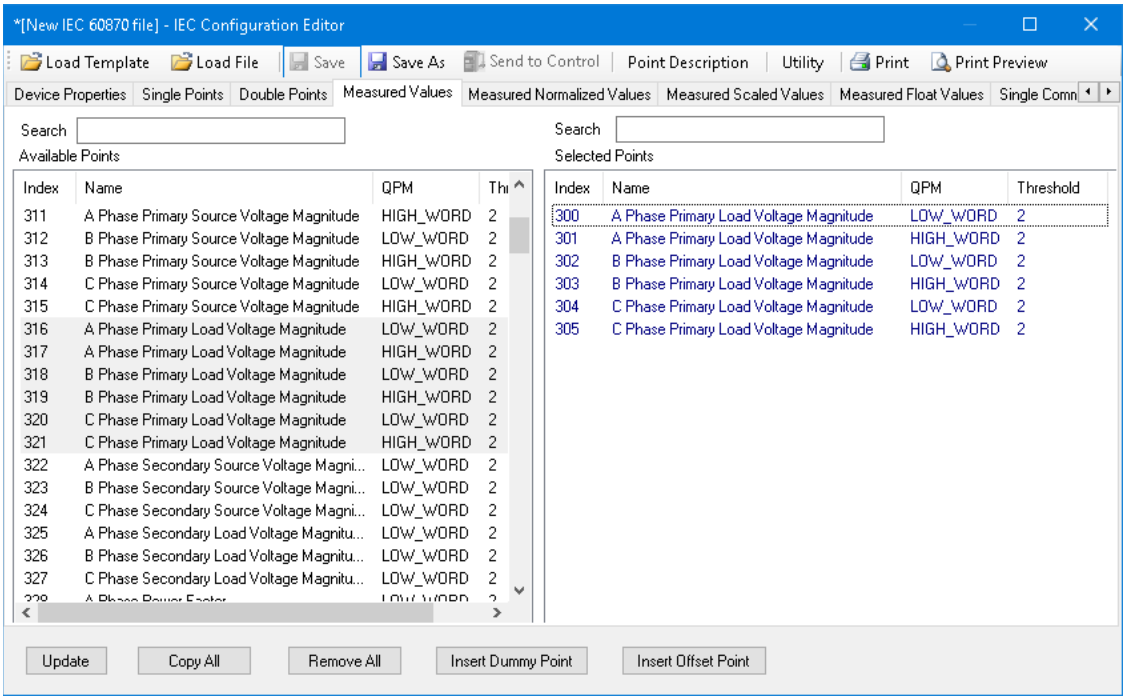
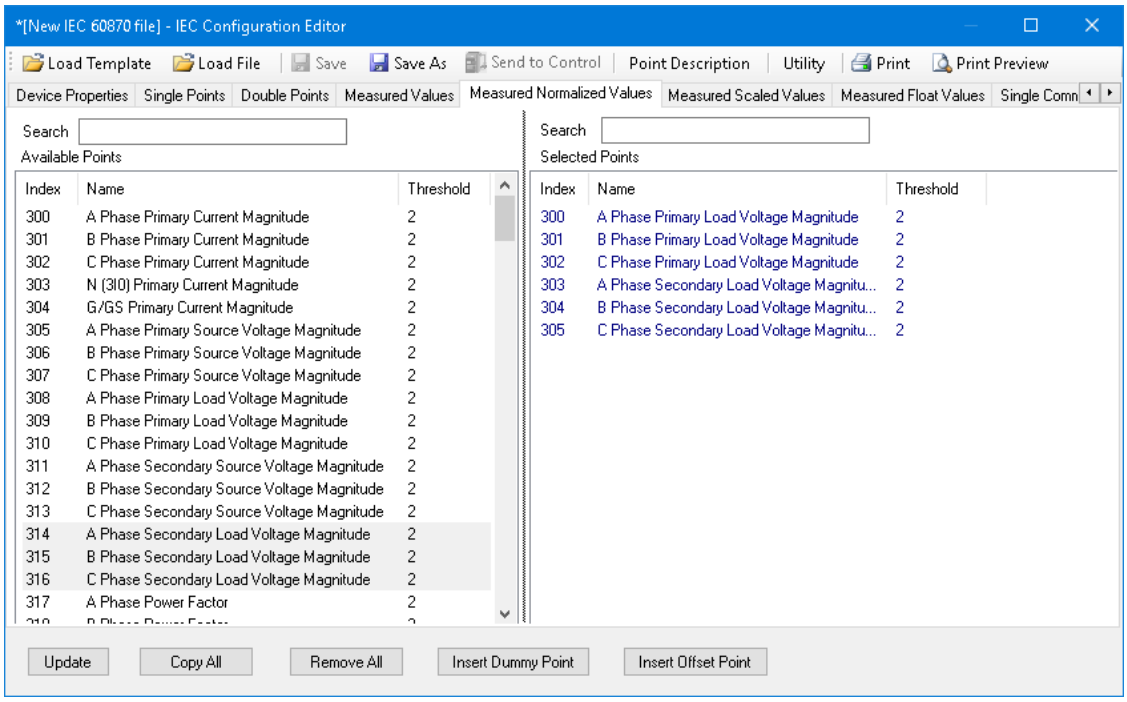


Figure 5 IEC Configuration Editor – Measured Values Tab



■NOTE: The Points Index is identical for Measured Normalized, Measured Scaled, and Measured Float values.

Figure 6 IEC Configuration Editor – Measured Normalized Values Tab

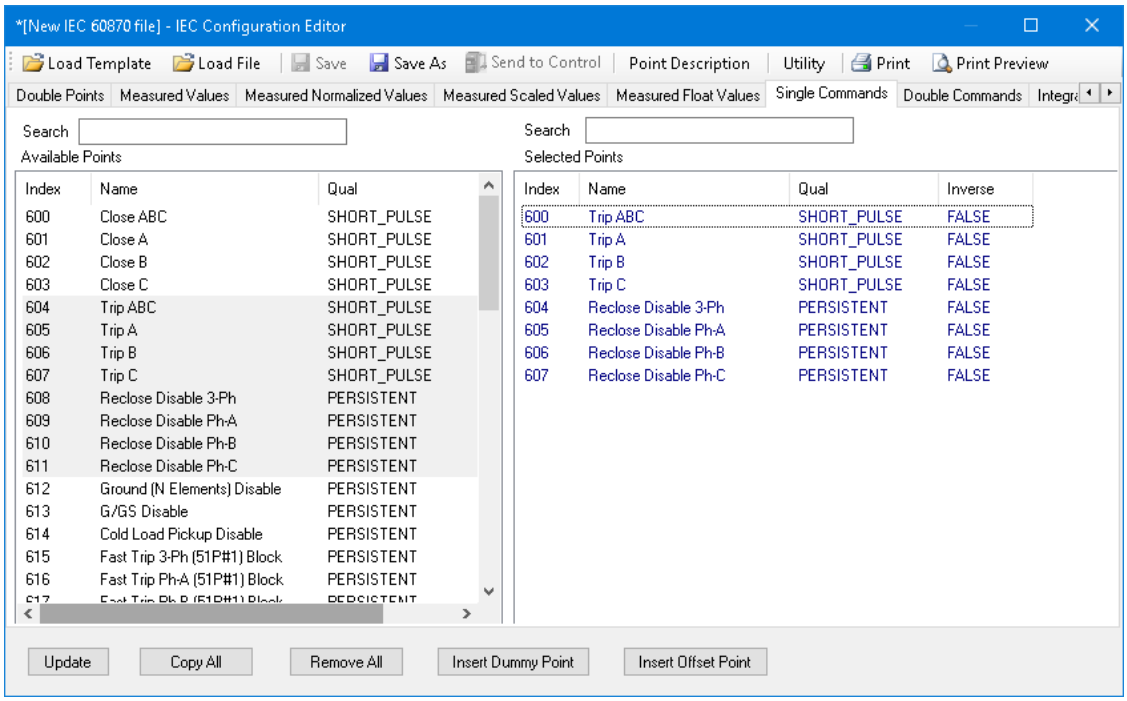


Figure 7 IEC Configuration Editor – Single Commands Tab

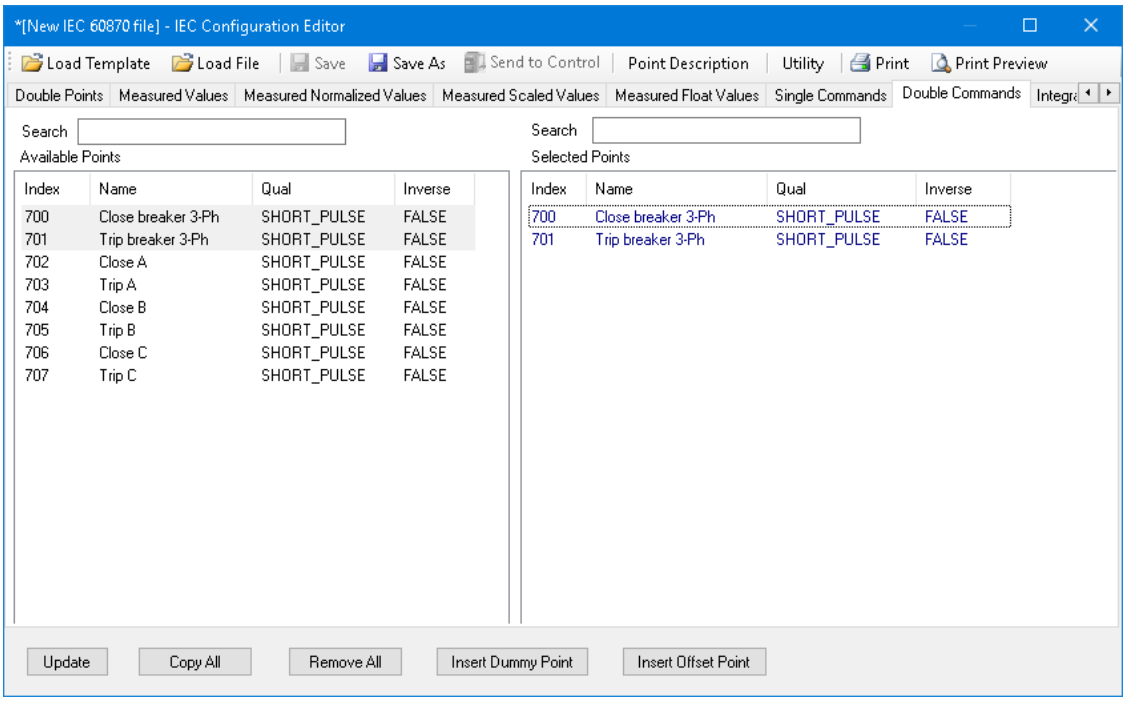


Figure 8 IEC Configuration Editor – Double Commands Tab

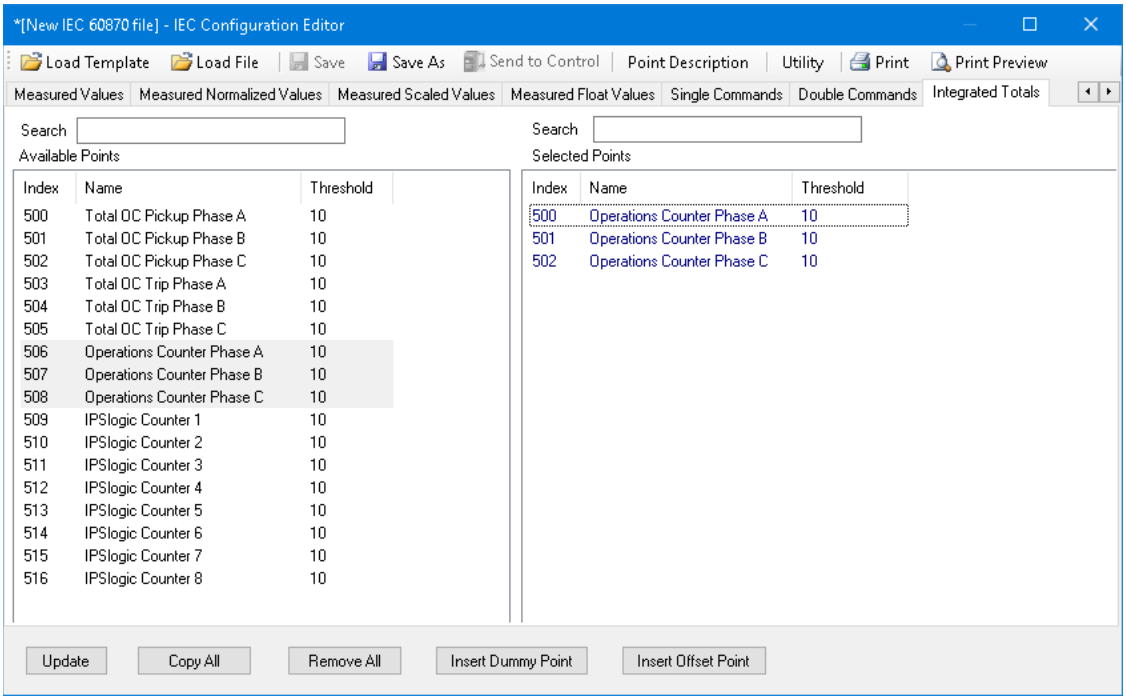


Figure 9 IEC Configuration Editor – Integrated Totals Tab

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
1	–	1906	6, 7, 8	Recloser Closed Phases ABC	0 = inactive 1 if Bit pos 6 AND Bit pos 7 AND Bit pos 8	–
2	–	1906	3, 4, 5	Recloser Open Phases ABC	0 = inactive 1 if Bit pos 3 AND Bit pos 4 AND Bit pos 5	–
3	–	1906	20	Control is Locked Out ABC	0 = inactive 1 = active	–
4	–	2052	2	Any Control or System Alarm	0 = inactive 1 = active	–
5	–	2054	–	Above Minimum Trip	0 = inactive 1 = active	–
6	–	1906	12	Remote Disable	0 = inactive 1 = active	–
7	–	1906	10	Recloser Disable	0 = inactive 1 = active	–
8	–	3942	11	Ground (N Elements) Disable	0 = inactive 1 = active	–
9	–	1906	9	SEF (G/GS Elements) Disable	0 = inactive 1 = active	–
10	–	2511	12	Cold Load Pickup Active	0 = inactive 1 = active	–
11	–	20	–	Profile 1 Active	0 = inactive 1 = active	–
12	–	20	–	Profile 2 Active	0 = inactive 1 = active	–
13	–	20	–	Profile 3 Active	0 = inactive 1 = active	–
14	–	20	–	Profile 4 Active	0 = inactive 1 = active	–
15	–	20	–	Profile 5 Active	0 = inactive 1 = active	–
16	–	20	–	Profile 6 Active	0 = inactive 1 = active	–
17	–	20	–	Profile 7 Active	0 = inactive 1 = active	–
18	–	20	–	Profile 8 Active	0 = inactive 1 = active	–
19	–	1906	13	Hot Line Tag Active	0 = inactive 1 = active	–
20	–	2279	–	VyA Voltage Present	0 = inactive 1 = active	–
21	–	2280	–	VyB Voltage Present	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
22	–	2281	–	VyC Voltage Present	0 = inactive 1 = active	–
23	–	2282	–	VzA Voltage Present	0 = inactive 1 = active	–
24	–	1942	–	VzB Voltage Present	0 = inactive 1 = active	–
25	–	1958	–	VzC Voltage Present	0 = inactive 1 = active	–
26	–	2084	13	Reverse Power Flow	0 = inactive 1 = active	–
27	–	3798	6	Battery Test in Progress	0 = inactive 1 = active	–
28	–	3798	1	No AC Power	0 = inactive 1 = active	–
29	–	1906	19	Battery Alarm	0 = inactive 1 = active	–
30	–	2253	0	Input 1 Active	0 = inactive 1 = active	–
31	–	2253	1	Input 2 Active	0 = inactive 1 = active	–
32	–	2253	2	Input 3 Active	0 = inactive 1 = active	–
33	–	2253	3	Input 4 Active	0 = inactive 1 = active	–
34	–	2253	4	Input 5 Active	0 = inactive 1 = active	–
35	–	2253	5	Input 6 Active	0 = inactive 1 = active	–
36	–	2253	6	Input 7 Active	0 = inactive 1 = active	–
37	–	2253	7	Input 8 Active	0 = inactive 1 = active	–
38	–	2253	8	Input 9 Active	0 = inactive 1 = active	–
39	–	2253	9	Input 10 Active	0 = inactive 1 = active	–
40	–	2253	10	Input 11 Active	0 = inactive 1 = active	–
41	–	2253	11	Input 12 Active	0 = inactive 1 = active	–
42	–	2254	0	Output 1 Active	0 = inactive 1 = active	–
43	–	2254	1	Output 2 Active	0 = inactive 1 = active	–
44	–	2254	2	Output 3 Active	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
45	–	2254	3	Output 4 Active	0 = inactive 1 = active	–
46	–	2254	4	Output 5 Active	0 = inactive 1 = active	–
47	–	2254	5	Output 6 Active	0 = inactive 1 = active	–
48	–	2254	6	Output 7 Active	0 = inactive 1 = active	–
49	–	2254	7	Output 8 Active	0 = inactive 1 = active	–
50	–	2254	8	Output 9 Active	0 = inactive 1 = active	–
51	–	2254	9	Output 10 Active	0 = inactive 1 = active	–
52	–	2254	10	Output 11 Active	0 = inactive 1 = active	–
53	–	2254	11	Output 12 Active	0 = inactive 1 = active	–
54	–	1990	–	A Phase Fault Trip	0 = inactive 1 if Value is 1, 4, 6, 7, 9, 10, 11 or 12	–
55	–	1990	–	B Phase Fault Trip	0 = inactive 1 if Value is 2, 4, 5, 7, 8, 10, 11 or 13	–
56	–	1990	–	C Phase Fault Trip	0 = inactive 1 if value is 3, 5, 6, 8, 9, 10, 11 or 14	–
57	–	1990	–	N Phase Fault Trip	0 = inactive 1 if value is 1, 2, 3, 7, 8, 9, 11	–
58	–	1990	–	G/GS Phase Fault Trip	0 = inactive 1 if value is 1, 2, 3, 7, 8, 9, 11	–
59	–	4735	4	N OC Trip	0 = inactive 1 = active	–
60	–	4735	3	G/GS OC Trip	0 = inactive 1 = active	–
61	–	2271	11	47 OC Trip	0 = inactive 1 = active	–
62	–	3932	–	HLT via IPSlogic	0 = inactive 1 if value is 2	–
63	–	3932	–	HLT Via Communications	0 = inactive 1 if value greater than 3	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
64	–	3932	19	HLT Local via Front Panel Switch	0 = inactive 1 if value is 3 or 19	–
65	–	2052	4	Control Circuit Interrupted ABC	0 = inactive 1 = active	–
66	–	2253	0,1	Pole Failure ABC	0 = inactive 1 if bit pos 0 is 1 AND bit pos 1 is 1	–
67	–	1906	6	Recloser Closed Phase A	0 = inactive 1 if Bit pos 6 is 1	–
68	–	1906	3	Recloser Open Phase A	0 = inactive 1 if Bit pos 3 is 1	–
69	–	4552	–	Control is Locked Out Ph A (with 69 Single Phase Config)	0 = inactive 1 if Value is 11	–
70	–	2253	–	Control Circuit Interrupted Phase A	0 = inactive 1 if Bit pos 0 is 1 OR Bit pos 1 is 1	–
71	–	2253	–	Pole Failure Phase A	0 = inactive 1 if Bit pos 0 is 1 AND Bit pos 1 is 1	–
72	–	1906	7	Recloser Closed Phase B	0 = inactive 1 = active	–
73	–	1906	4	Recloser Open Phase B	0 = inactive 1 = active	–
74	–	4567	–	Control is Locked Out Ph B (with 69 Single Phase Config)	0 = inactive 1 if value is 11	–
75	–	2253	5,6	Control Circuit Interrupted Phase B	0 = inactive 1 if Bit pos 5 is 1 OR Bit pos 6 is 1	–
76	–	2253	5,6	Pole Failure Phase B	0 = inactive 1 if Bit pos 5 is 1 AND Bit pos 6 is 1	–
77	–	1906	8	Recloser Closed Phase C	0 = inactive 1 = active	–
78	–	1906	5	Recloser Open Phase C	0 = inactive 1 = active	–
79	–	4582	–	Control is Locked Out Ph C (with 69 Single Phase Config)	0 = inactive 1 if Value is 11	–
80	–	2253	7,8	Control Circuit Interrupted Phase C	0 = inactive 1 if Bit pos 7 is 1 OR Bit pos 8 is 1	–
81	–	2253	7,8	Pole Failure Phase C	0 = inactive 1 if Bit pos 7 is 1 AND Bit pos 8 is 1	–
82	–	4735	1	Phase A OC Trip	0 = inactive 1 if value is 0	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
83	–	4735	1	Phase B OC Trip	0 = inactive 1 if value is 0	–
84	–	4735	2	Phase C OC Trip	0 = inactive 1 if value is 0	–
85	–	4377	–	Operation Type A - Recloser Three Phase Ganged	0 = inactive 1 if value is 0	–
86	–	4377	–	Opertation Type T - Recloser Independent Phase Capable	0 = inactive 1 if value is 0	–
87	–	4377	–	Operation Type V - Recloser + Switch/Sectionalizer Three Phase Ganged	0 = inactive	–
88	–	4377	–	Operation Type W - Recloser + Switch/Sectionalizer Independent Phase Capable	1 if value is 1	–
89	–	30922	–	79 in 3T3L Mode	0 = inactive 1 if value is 2	–
90	–	30922	–	79 in 1T3L Mode	0 = inactive 1 if value is 3	–
91	–	30922	–	79 in 1T1L Mode	0 = inactive 1 = active	–
92	–	30922	–	79 in 3T1L Mode	0 = inactive 1 = active	–
93	–	8564	–	F81#1 Enabled/Disabled	0 = Disabled 1 = Enabled	–
94	–	8573	–	F81#2 Enabled/Disabled	0 = Disabled 1 = Enabled	–
95	–	8582	–	F81#3 Enabled/Disabled	0 = Disabled 1 = Enabled	–
96	–	8591	–	F81#4 Enabled/Disabled	0 = Disabled 1 = Enabled	–
97	–	46712	–	F81#5 Enabled/Disabled	0 = Disabled 1 = Enabled	–
98	–	46721	–	F81#6 Enabled/Disabled	0 = Disabled 1 = Enabled	–
99	–	46730	–	F81#7 Enabled/Disabled	0 = Disabled 1 = Enabled	–
100	–	46739	–	F81#8 Enabled/Disabled	0 = Disabled 1 = Enabled	–
101	–	2263	13	F81#1 pickup status bit	0 = inactive 1 = active	–
102	–	2273	13	F81#1 timeout status bit	0 = inactive 1 = active	–
103	–	3788	13	F81#1 timeout target status bit	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	Scale N/A = Not Used	Register Number	Bit Position	Description	Range Value	Request Function
104	–	2263	14	F81#2 pickup status bit	0 = inactive 1 = active	–
105	–	2273	14	F81#2 timeout status bit	0 = inactive 1 = active	–
106	–	3788	14	F81#2 timeout target status bit	0 = inactive 1 = active	–
107	–	2263	15	F81#3 pickup status bit	0 = inactive 1 = active	–
108	–	2273	15	F81#3 timeout status bit	0 = inactive 1 = active	–
109	–	3788	15	F81#3 timeout target status bit	0 = inactive 1 = active	–
110	–	2264	0	F81#4 pickup status bit	0 = inactive 1 = active	–
111	–	2274	0	F81#4 timeout status bit	0 = inactive 1 = active	–
112	–	3789	0	F81#4 timeout target status bit	0 = inactive 1 = active	–
113	–	4804	15	F81#5 pickup status bit	0 = inactive 1 = active	–
114	–	4806	15	F81#5 timeout status bit	0 = inactive 1 = active	–
115	–	4812	15	F81#5 timeout target status bit	0 = inactive 1 = active	–
116	–	4805	0	F81#6 pickup status bit	0 = inactive 1 = active	–
117	–	4807	0	F81#6 timeout status bit	0 = inactive 1 = active	–
118	–	4813	0	F81#6 timeout target status bit	0 = inactive 1 = active	–
119	–	4805	9	HCL A pickup status bit	0 = inactive 1 = active	–
120	–	4807	9	HCL A timeout status bit	0 = inactive 1 = active	–
121	–	4813	9	HCL A timeout target status bit	0 = inactive 1 = active	–
122	–	4805	10	HCL B pickup status bit	0 = inactive 1 = active	–
123	–	4807	10	HCL B timeout status bit	0 = inactive 1 = active	–
124	–	4813	10	HCL B timeout target status bit	0 = inactive 1 = active	–
125	–	4805	11	HCL C pickup status bit	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
126	–	4807	11	HCL C timeout status bit	0 = inactive 1 = active	–
127	–	4813	11	HCL C timeout target status bit	0 = inactive 1 = active	–
128	–	4805	12	HCL G pickup status bit	0 = inactive 1 = active	–
129	–	4807	12	HCL G timeout status bit	0 = inactive 1 = active	–
130	–	4813	12	HCL G timeout target status bit	0 = inactive 1 = active	–
131	–	4805	13	F81#7 pickup status bit	0 = inactive 1 = active	–
132	–	4807	13	F81#7 timeout status bit	0 = inactive 1 = active	–
133	–	4813	13	F81#7 timeout target status bit	0 = inactive 1 = active	–
134	–	4805	14	F81#8 pickup status bit	0 = inactive 1 = active	–
135	–	4807	14	F81#8 timeout status bit	0 = inactive 1 = active	–
136	–	4813	14	F81#8 timeout target status bit	0 = inactive 1 = active	–
137	–	8674	–	F81R#1 Enabled/Disabled	0 = Disabled 1 = Enabled	–
138	–	8683	–	F81R#2 Enabled/Disabled	0 = Disabled 1 = Enabled	–
139	–	46748	–	F81R#3 Enabled/Disabled	0 = Disabled 1 = Enabled	–
140	–	46758	–	F81R#4 Enabled/Disabled	0 = Disabled 1 = Enabled	–
141	–	46768	–	F81R#5 Enabled/Disabled	0 = Disabled 1 = Enabled	–
142	–	46778	–	F81R#6 Enabled/Disabled	0 = Disabled 1 = Enabled	–
143	–	46788	–	F81R#7 Enabled/Disabled	0 = Disabled 1 = Enabled	–
144	–	46798	–	F81R#8 Enabled/Disabled	0 = Disabled 1 = Enabled	–
145	–	2264	1	F81R#1 pickup status bit	0 = inactive 1 = active	–
146	–	2274	1	F81R#1 timeout status bit	0 = inactive 1 = active	–
147	–	3789	1	F81R#1 timeout target status bit	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	Scale N/A = Not Used	Register Number	Bit Position	Description	Range Value	Request Function
148	–	2264	2	F81R#2 pickup status bit	0 = inactive 1 = active	–
149	–	2274	2	F81R#2 timeout status bit	0 = inactive 1 = active	–
150	–	3789	2	F81R#2 timeout target status bit	0 = inactive 1 = active	–
151	–	4805	15	F81R#3 pickup status bit	0 = inactive 1 = active	–
152	–	4807	15	F81R#3 timeout status bit	0 = inactive 1 = active	–
153	–	4813	15	F81R#3 timeout target status bit	0 = inactive 1 = active	–
154	–	4847	0	F81R#4 pickup status bit	0 = inactive 1 = active	–
155	–	4849	0	F81R#4 timeout status bit	0 = inactive 1 = active	–
156	–	4855	0	F81R#4 timeout target status bit	0 = inactive 1 = active	–
157	–	4847	1	F81R#5 pickup status bit	0 = inactive 1 = active	–
158	–	4849	1	F81R#5 timeout status bit	0 = inactive 1 = active	–
159	–	4855	1	F81R#5 timeout target status bit	0 = inactive 1 = active	–
160	–	4847	2	F81R#6 pickup status bit	0 = inactive 1 = active	–
161	–	4849	2	F81R#6 timeout status bit	0 = inactive 1 = active	–
162	–	4855	2	F81R#6 timeout target status bit	0 = inactive 1 = active	–
163	–	4847	3	F81R#7 pickup status bit	0 = inactive 1 = active	–
164	–	4849	3	F81R#7 timeout status bit	0 = inactive 1 = active	–
165	–	4855	3	F81R#7 timeout target status bit	0 = inactive 1 = active	–
166	–	4847	4	F81R#8 pickup status bit	0 = inactive 1 = active	–
167	–	4849	4	F81R#8 timeout status bit	0 = inactive 1 = active	–
168	–	4855	4	F81R#8 timeout target status bit	0 = inactive 1 = active	–
169	–	46808	–	F46BC Enabled/Disabled	0 = Disabled 1 = Enabled	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
170	–	4847	5	F46BC pickup status bit	0 = inactive 1 = active	–
171	–	4849	5	F46BC timeout status bit	0 = inactive 1 = active	–
172	–	4855	5	F46BC timeout target status bit	0 = inactive 1 = active	–
173	–	1935	15	FBM #1 pickup status bit	0 = inactive 1 = active	–
174	–	1936	15	FBM #1 timeout status bit	0 = inactive 1 = active	–
175	–	1939	15	FBM #1 timeout target status bit	0 = inactive 1 = active	–
176	–	4847	6	FBM #2 pickup status bit	0 = inactive 1 = active	–
177	–	4849	6	FBM #2 timeout status bit	0 = inactive 1 = active	–
178	–	4855	6	FBM #2 timeout target status bit	0 = inactive 1 = active	–
179	–	4864	13	Virtual Input 1 Status	0 = inactive 1 = active	–
180	–	4864	14	Virtual Input 2 Status	0 = inactive 1 = active	–
181	–	4864	15	Virtual Input 3 Status	0 = inactive 1 = active	–
182	–	4865	0	Virtual Input 4 Status	0 = inactive 1 = active	–
183	–	4865	1	Virtual Input 5 Status	0 = inactive 1 = active	–
184	–	4865	2	Virtual Input 6 Status	0 = inactive 1 = active	–
185	–	4865	3	Virtual Input 7 Status	0 = inactive 1 = active	–
186	–	4865	4	Virtual Input 8 Status	0 = inactive 1 = active	–
187	–	4865	5	Virtual Input 9 Status	0 = inactive 1 = active	–
188	–	4865	6	Virtual Input 10 Status	0 = inactive 1 = active	–
189	–	4865	7	Virtual Input 11 Status	0 = inactive 1 = active	–
190	–	4865	8	Virtual Input 12 Status	0 = inactive 1 = active	–
191	–	4865	9	Virtual Input 13 Status	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	Scale N/A = Not Used	Register Number	Bit Position	Description	Range Value	Request Function
192	–	4865	10	Virtual Input 14 Status	0 = inactive 1 = active	–
193	–	4865	11	Virtual Input 15 Status	0 = inactive 1 = active	–
194	–	4865	12	Virtual Input 16 Status	0 = inactive 1 = active	–
195	–	4865	13	Virtual Input 17 Status	0 = inactive 1 = active	–
196	–	4865	14	Virtual Input 18 Status	0 = inactive 1 = active	–
197	–	4865	15	Virtual Input 19 Status	0 = inactive 1 = active	–
198	–	4868	0	CLP Enabled/Disabled	0 = inactive 1 = active	–
199	–	4868	1	FCLP Block	0 = inactive 1 = active	–
200	–	4868	2	FCLP Reset	0 = inactive 1 = active	–
201	–	4868	3	FCLP Initiated	0 = inactive 1 = active	–
202	–	4868	4	FCLP 79 Lockout	0 = inactive 1 = active	–
203	–	4869	0	FCLP Arm Pickup	0 = inactive 1 = active	–
204	–	4869	1	FCLP Arm Timeout	0 = inactive 1 = active	–
205	–	4869	2	FCLP Initiate Action Pickup	0 = inactive 1 = active	–
206	–	4869	3	FCLP Initiate Action Timeout	0 = inactive 1 = active	–
207	–	4869	4	FCLP Low current Phase Pickup	0 = inactive 1 = active	–
208	–	4869	5	FCLP Low current Phase Timeout	0 = inactive 1 = active	–
209	–	4869	6	FCLP Low current Ground Pickup	0 = inactive 1 = active	–
210	–	4869	7	FCLP Low current Ground Timeout	0 = inactive 1 = active	–
211	–	4869	8	FCLP Override Active Pickup	0 = inactive 1 = active	–
212	–	4869	9	FCLP Override Active Timeout	0 = inactive 1 = active	–
213	–	4869	10	FCLP BMT Pickup	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	Scale N/A = Not Used	Register Number	Bit Position	Description	Range Value	Request Function
214	–	4869	11	FCLP BMT Timeout	0 = inactive 1 = active	–
215	–	4869	12	FCLP Low current Residual Pickup	0 = inactive 1 = active	–
216	–	4869	13	FCLP Low current Residual Timeout	0 = inactive 1 = active	–
217	–	47375	–	FCLP PhOverride Set	0 = inactive 1 = active	–
218	–	47393	–	FCLP GndOverride Set	0 = inactive 1 = active	–
219	–	47393	–	FCLP NeuOverride Set	0 = inactive 1 = active	–
220	–	4891	0	FBM #1 percent pickup	0 = inactive 1 = active	–
221	–	4891	3	FBM #1 percent timeout	0 = inactive 1 = active	–
222	–	4892	0	FBM #2 percent pickup	0 = inactive 1 = active	–
223	–	4892	3	FBM #2 percent timeout	0 = inactive 1 = active	–
224	–	2050/ 2051	22	Recloser Deactivate G/N Functions	0 = inactive 1 = active	–
225	–	3798	0	Battery Discharge test Fail	0 = inactive 1 = active	–
226	–	3798	1	Main Power is ON	0 = inactive 1 = active	–
227	–	3798	2	Battery Charging Active	0 = inactive 1 = active	–
228	–	3798	3	Battery Charging Board Condition(BCB)	0 = inactive 1 = active	–
229	–	3798	4	Charging Mode (boost or float,trickle)	0 = inactive 1 = active	–
230	–	3798	5	Battery Present (No batt)	0 = inactive 1 = active	–
231	–	3798	6	Battery Charger Test in Progress	0 = inactive 1 = active	–
232	–	3798	7	Battery Charger Mode Absorb	0 = inactive 1 = active	–
233	–	3798	8	Battery Charger Cap Charged	0 = inactive 1 = active	–
234	–	3798	9	Battery Charger Mode Bulk	0 = inactive 1 = active	–
235	–	3798	10	Battery Charger Mode Float	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
236	–	4470	6	32H Battery Charger ON/OFF	0 = inactive 1 = active	–
237	–	4901	0	32H Internal Door Status	0 = inactive 1 = active	–
238	–	4901	1	32H External Door Status	0 = inactive 1 = active	–
239	–	4901	2	32H Low Capacitor Voltage	0 = inactive 1 = active	–
240	–	4901	3	32H High Temperature Alarm	0 = inactive 1 = active	–
241	–	4901	4	32H Low Battery Alarm	0 = inactive 1 = active	–
242	–	4990	0	Power Target #1	0 = inactive 1 = active	–
243	–	4990	1	Power Target #2	0 = inactive 1 = active	–
244	–	4990	2	Power Target #3	0 = inactive 1 = active	–
245	–	4990	3	Power Target #4	0 = inactive 1 = active	–
246	–	4990	4	Power Target #5	0 = inactive 1 = active	–
247	–	4990	5	Power Target #6	0 = inactive 1 = active	–
248	–	4990	6	Power Target #7	0 = inactive 1 = active	–
249	–	4990	7	Power Target #8	0 = inactive 1 = active	–
250	–	4990	8	Power Target #9	0 = inactive 1 = active	–
251	–	4990	9	Power Target #10	0 = inactive 1 = active	–
252	–	4990	10	Power Target #11	0 = inactive 1 = active	–
253	–	4990	11	Power Target #12	0 = inactive 1 = active	–
254	–	1501	0	VLogic Output 1 Active Profile	0 = inactive 1 = active	–
255	–	1501	1	VLogic Output 2 Active Profile	0 = inactive 1 = active	–
256	–	1501	2	VLogic Output 3 Active Profile	0 = inactive 1 = active	–
257	–	1501	3	VLogic Output 4 Active Profile	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	Scale N/A = Not Used	Register Number	Bit Position	Description	Range Value	Request Function
258	–	1501	4	VLogic Output 5 Active Profile	0 = inactive 1 = active	–
259	–	1501	5	VLogic Output 6 Active Profile	0 = inactive 1 = active	–
260	–	1501	6	VLogic Output 7 Active Profile	0 = inactive 1 = active	–
261	–	1501	7	VLogic Output 8 Active Profile	0 = inactive 1 = active	–
262	–	1501	8	VLogic Output 9 Active Profile	0 = inactive 1 = active	–
263	–	1501	9	VLogic Output 10 Active Profile	0 = inactive 1 = active	–
264	–	1501	10	VLogic Output 11 Active Profile	0 = inactive 1 = active	–
265	–	1501	11	VLogic Output 12 Active Profile	0 = inactive 1 = active	–
266	–	1501	12	VLogic Output 13 Active Profile	0 = inactive 1 = active	–
267	–	1501	13	VLogic Output 14 Active Profile	0 = inactive 1 = active	–
268	–	1501	14	VLogic Output 15 Active Profile	0 = inactive 1 = active	–
269	–	1501	15	VLogic Output 16 Active Profile	0 = inactive 1 = active	–
270	–	1502	0	VLogic Output 17 Active Profile	0 = inactive 1 = active	–
271	–	1502	1	VLogic Output 18 Active Profile	0 = inactive 1 = active	–
272	–	1502	2	VLogic Output 19 Active Profile	0 = inactive 1 = active	–
273	–	1502	3	VLogic Output 20 Active Profile	0 = inactive 1 = active	–
274	–	1502	4	VLogic Output 21 Active Profile	0 = inactive 1 = active	–
275	–	1502	5	VLogic Output 22 Active Profile	0 = inactive 1 = active	–
276	–	1502	6	VLogic Output 23 Active Profile	0 = inactive 1 = active	–
277	–	1502	7	VLogic Output 24 Active Profile	0 = inactive 1 = active	–
278	–	1502	8	VLogic Output 25 Active Profile	0 = inactive 1 = active	–
279	–	1502	9	VLogic Output 26 Active Profile	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
280	–	1502	10	VLogic Output 27 Active Profile	0 = inactive 1 = active	–
281	–	1502	11	VLogic Output 28 Active Profile	0 = inactive 1 = active	–
282	–	1502	12	VLogic Output 29 Active Profile	0 = inactive 1 = active	–
283	–	1502	13	VLogic Output 30 Active Profile	0 = inactive 1 = active	–
284	–	1502	14	VLogic Output 31 Active Profile	0 = inactive 1 = active	–
285	–	1502	15	VLogic Output 32 Active Profile	0 = inactive 1 = active	–
286	–	1503	0	VLogic Output 1 Common Profile	0 = inactive 1 = active	–
287	–	1503	1	VLogic Output 2 Common Profile	0 = inactive 1 = active	–
288	–	1503	2	VLogic Output 3 Common Profile	0 = inactive 1 = active	–
289	–	1503	3	VLogic Output 4 Common Profile	0 = inactive 1 = active	–
290	–	1503	4	VLogic Output 5 Common Profile	0 = inactive 1 = active	–
291	–	1503	5	VLogic Output 6 Common Profile	0 = inactive 1 = active	–
292	–	1503	6	VLogic Output 7 Common Profile	0 = inactive 1 = active	–
293	–	1503	7	VLogic Output 8 Common Profile	0 = inactive 1 = active	–
294	–	1503	8	VLogic Output 9 Common Profile	0 = inactive 1 = active	–
295	–	1503	9	VLogic Output 10 Common Profile	0 = inactive 1 = active	–
296	–	1503	10	VLogic Output 11 Common Profile	0 = inactive 1 = active	–
297	–	1503	11	VLogic Output 12 Common Profile	0 = inactive 1 = active	–
298	–	1503	12	VLogic Output 13 Common Profile	0 = inactive 1 = active	–
299	–	1503	13	VLogic Output 14 Common Profile	0 = inactive 1 = active	–
300	–	1503	14	VLogic Output 15 Common Profile	0 = inactive 1 = active	–
301	–	1503	15	VLogic Output 16 Common Profile	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
302	–	1504	0	VLogic Output 17 Common Profile	0 = inactive 1 = active	–
303	–	1504	1	VLogic Output 18 Common Profile	0 = inactive 1 = active	–
304	–	1504	2	VLogic Output 19 Common Profile	0 = inactive 1 = active	–
305	–	1504	3	VLogic Output 20 Common Profile	0 = inactive 1 = active	–
306	–	1504	4	VLogic Output 21 Common Profile	0 = inactive 1 = active	–
307	–	1504	5	VLogic Output 22 Common Profile	0 = inactive 1 = active	–
308	–	1504	6	VLogic Output 23 Common Profile	0 = inactive 1 = active	–
309	–	1504	7	VLogic Output 24 Common Profile	0 = inactive 1 = active	–
310	–	1504	8	VLogic Output 25 Common Profile	0 = inactive 1 = active	–
311	–	1504	9	VLogic Output 26 Common Profile	0 = inactive 1 = active	–
312	–	1504	10	VLogic Output 27 Common Profile	0 = inactive 1 = active	–
313	–	1504	11	VLogic Output 28 Common Profile	0 = inactive 1 = active	–
314	–	1504	12	VLogic Output 29 Common Profile	0 = inactive 1 = active	–
315	–	1504	13	VLogic Output 30 Common Profile	0 = inactive 1 = active	–
316	–	1504	14	VLogic Output 31 Common Profile	0 = inactive 1 = active	–
317	–	1504	15	VLogic Output 32 Common Profile	0 = inactive 1 = active	–
318	–	46150	–	One Shot Sectionalizing 3-Ph Enabled/Disabled	0 = inactive 1 = active	–
319	–	46166	–	One Shot Sectionalizing Ph-A Enabled/Disabled	0 = inactive 1 = active	–
320	–	46182	–	One Shot Sectionalizing Ph-B Enabled/Disabled	0 = inactive 1 = active	–
321	–	46198	–	One Shot Sectionalizing Ph-C Enabled/Disabled	0 = inactive 1 = active	–
322	–	2052, 2053	5	SGI Target	0 = inactive 1 = active	–
323	–	5058	0	SGI Pickup IG Fund Threshold	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
324	–	5058	1	SGI Timeout IG Fund Threshold	0 = inactive 1 = active	–
325	–	5058	2	SGI IPSLogic Reset	0 = inactive 1 = active	–
326	–	5058	3	SGI IPSLogic Initiate	0 = inactive 1 = active	–
327	–	5058	4	SGI IG Frozen Trigger	0 = inactive 1 = active	–
328	–	5058	5	SGI Initiated	0 = inactive 1 = active	–
329	–	5058	8	SGI Reset_Timer Start	0 = inactive 1 = active	–
330	–	5058	9	SGI Reset Timer Expired	0 = inactive 1 = active	–
331	–	5058	10	SGI Initiate Pickup	0 = inactive 1 = active	–
332	–	5058	11	SGI Initiate Timeout	0 = inactive 1 = active	–
333	–	5058	12	SGI Reset	0 = inactive 1 = active	–
334	–	5058	13	SGI Enabled	0 = inactive 1 = active	–
335	–	5058	14	SGI Blocked	0 = inactive 1 = active	–
336	–	5058	15	SGI Pickup Delta IG Fund	0 = inactive 1 = active	–
337	–	5059	0	SGI Timeout Delta IG Fund	0 = inactive 1 = active	–
338	–	5059	1	SGI Pickup IG Harmonic	0 = inactive 1 = active	–
339	–	5059	2	SGI Timeout IG Harmonic	0 = inactive 1 = active	–
340	–	5059	3	SGI Pickup Delta IG % 3rd Harmonic	0 = inactive 1 = active	–
341	–	5059	5	SGI Reset Frozen Timer Start	0 = inactive 1 = active	–
342	–	5059	6	SGI Reset Frozen Timer Expired	0 = inactive 1 = active	–
343	–	5059	7	SGI AND Gate Enabled	0 = inactive 1 = active	–
344	–	5059	10	SGI Latch Reset Timer Start	0 = inactive 1 = active	–
345	–	5059	11	SGI Latch Reset Timer Expired	0 = inactive 1 = active	–
346	–	5060	0	SGI Pickup IA Harmonic 1	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	Scale N/A = Not Used	Register Number	Bit Position	Description	Range Value	Request Function
347	–	5060	1	SGI Pickup IB Harmonic 1	0 = inactive 1 = active	–
348	–	5060	2	SGI Pickup IC Harmonic 1	0 = inactive 1 = active	–
349	–	5060	3	SGI Pickup IA Harmonic 2	0 = inactive 1 = active	–
350	–	5060	4	SGI Pickup IB Harmonic 2	0 = inactive 1 = active	–
351	–	5060	5	SGI Pickup IC Harmonic 2	0 = inactive 1 = active	–
352	–	5060	6	SGI Pickup IA Harmonic 3	0 = inactive 1 = active	–
353	–	5060	7	SGI Pickup IB Harmonic 3	0 = inactive 1 = active	–
354	–	5060	8	SGI Pickup IC Harmonic 3	0 = inactive 1 = active	–
355	–	5060	9	SGI Pickup VA Harmonic 1	0 = inactive 1 = active	–
356	–	5060	10	SGI Pickup VB Harmonic 1	0 = inactive 1 = active	–
357	–	5060	11	SGI Pickup VC Harmonic 1	0 = inactive 1 = active	–
358	–	5060	12	SGI Pickup VA Harmonic 2	0 = inactive 1 = active	–
359	–	5060	13	SGI Pickup VB Harmonic 2	0 = inactive 1 = active	–
360	–	5060	14	SGI Pickup VC Harmonic 2	0 = inactive 1 = active	–
361	–	5060	15	SGI Pickup VA Harmonic 3	0 = inactive 1 = active	–
362	–	5061	0	SGI Pickup VB Harmonic 3	0 = inactive 1 = active	–
363	–	5061	1	SGI Pickup VC Harmonic 3	0 = inactive 1 = active	–
364	–	5061	4	SGI Pickup Vy N Harmonic	0 = inactive 1 = active	–
365	–	5061	5	SGI Pickup Delta Vy N Harmonic	0 = inactive 1 = active	–
366	–	5061	8	SGI Pickup IG Directional	0 = inactive 1 = active	–
367	–	5061	9	SGI Pickup Delta IG Harmonic Directional	0 = inactive 1 = active	–
368	–	5062	0	SGI Timeout IA Harmonic 1	0 = inactive 1 = active	–
369	–	5062	1	SGI Timeout IB Harmonic 1	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
370	–	5062	2	SGI Timeout IC Harmonic 1	0 = inactive 1 = active	–
371	–	5062	3	SGI Timeout IA Harmonic 2	0 = inactive 1 = active	–
372	–	5062	4	SGI Timeout IB Harmonic 2	0 = inactive 1 = active	–
373	–	5062	5	SGI Timeout IC Harmonic 2	0 = inactive 1 = active	–
374	–	5062	6	SGI Timeout IA Harmonic 3	0 = inactive 1 = active	–
375	–	5062	7	SGI Timeout IB Harmonic 3	0 = inactive 1 = active	–
376	–	5062	8	SGI Timeout IC Harmonic 3	0 = inactive 1 = active	–
377	–	5062	9	SGI Timeout VyA Harmonic 1	0 = inactive 1 = active	–
378	–	5062	10	SGI Timeout VyB Harmonic 1	0 = inactive 1 = active	–
379	–	5062	11	SGI Timeout VyC Harmonic 1	0 = inactive 1 = active	–
380	–	5062	12	SGI Timeout VyA Harmonic 2	0 = inactive 1 = active	–
381	–	5062	13	SGI Timeout VyB Harmonic 2	0 = inactive 1 = active	–
382	–	5062	14	SGI Timeout VyC Harmonic 2	0 = inactive 1 = active	–
383	–	5062	15	SGI Timeout VyA Harmonic 3	0 = inactive 1 = active	–
384	–	5063	0	SGI Timeout VyB Harmonic 3	0 = inactive 1 = active	–
385	–	5063	1	SGI Timeout VyC Harmonic 3	0 = inactive 1 = active	–
386	–	5063	4	SGI Timeout VN Harmonic	0 = inactive 1 = active	–
387	–	5063	5	SGI Timeout VN Delta Harmonic	0 = inactive 1 = active	–
388	–	5063	8	SGI Timeout IG Directional	0 = inactive 1 = active	–
389	–	5063	9	SGI Timeout Delta IG Harmonic Directional	0 = inactive 1 = active	–
390	–	29064	0	SGI Init Logic Enable	0 = inactive 1 = active	–
391	–	29064	1	SGI Reset Logic Enable	0 = inactive 1 = active	–
392	–	29064	2	SGI Apply Fund Delta Ig Supervision	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

Single Points Information (Status) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
393	–	2085	13	SGI Pickup Status bit	0 = inactive 1 = active	–
394	–	2086	13	SGI Timeout Status bit	0 = inactive 1 = active	–
395	–	2087	13	SGI Change Pickup	0 = inactive 1 = active	–
396	–	2088	13	SGI Change Timeout	0 = inactive 1 = active	–

Table 1 Single Points Information (Status)

■**NOTE:** Double Point Info Qualifier is shown in the first table below:

Double Point Info Qualifier (DPI)	Digital Input Status	
	Data Point 1	Data Point 2
0 (Intermediate State)	OFF (Open)	OFF (Open)
1 (OFF)	ON (Closed)	OFF (Open)
2 (ON)	OFF (Open)	ON (Closed)
3 (Indeterminate State)	ON (Closed)	ON (Closed)

Double Points Information (Status)
ASDU: M_DP_NA_1 Double point information without time tag

Data Point	Register Number	Bit Position	Description	Double Point Info Qualifier	Request Function
1	1906	6, 7, 8	Recloser Closed Phases ABC	0 -3	–
2	1906	3, 4, 5	Recloser Open Phases ABC	0 -3	–
3	1906	6	Recloser Closed Phase A	0 -3	–
4	1906	3	Recloser Open Phase A	0 -3	–
5	1906	7	Recloser Closed Phase B	0 -3	–
6	1906	4	Recloser Open Phase B	0 -3	–
7	1906	8	Recloser Closed Phase C	0 -3	–
8	1906	5	Recloser Open Phase C	0 -3	–
9	4864	0	Input 1 Active	0 -3	–
10	4864	1	Input 2 Active	0 -3	–
11	4864	5	Input 6 Active	0 -3	–
12	4864	6	Input 7 Active	0 -3	–
13	4864	7	Input 8 Active	0 -3	–
14	4864	8	Input 9 Active	0 -3	–
15	2254	0	Output 1 Active	0 -3	–
16	2254	1	Output 2 Active	0 -3	–
17	2254	4	Output 5 Active	0 -3	–
18	2254	5	Output 6 Active	0 -3	–
19	2254	6	Output 7 Active	0 -3	–
20	2254	7	Output 8 Active	0 -3	–

Table 2 Double Points Information (Status)

Measured Values Points List ASDU: P_ME_NB_1 Parameter of measured values, scaled value						
Data Point	Scale N/A = Not used	Register Number	Unit	Description	Range Value	Low Word/ High Word
1	1	1800	A	A Phase Primary Current Magnitude	–	Low
2	1	1801	A	A Phase Primary Current Magnitude	–	High
3	1	1802	A	B Phase Primary Current Magnitude	–	Low
4	1	1803	A	B Phase Primary Current Magnitude	–	High
5	1	1804	A	C Phase Primary Current Magnitude	–	Low
6	1	1805	A	C Phase Primary Current Magnitude	–	High
7	1	2012	A	N (3I0) Primary Current Magnitude	–	Low
8	1	2013	A	N (3I0) Primary Current Magnitude	–	High
9	1	1806	A	G/GS Primary Current Magnitude	–	Low
10	1	1807	A	G/GS Primary Current Magnitude	–	High
11	1	1808	V	A Phase Primary Source Voltage Magnitude	–	Low
12	1	1809	V	A Phase Primary Source Voltage Magnitude	–	High
13	1	1810	V	B Phase Primary Source Voltage Magnitude	–	Low
14	1	1811	V	B Phase Primary Source Voltage Magnitude	–	High
15	1	1812	V	C Phase Primary Source Voltage Magnitude	–	Low
16	1	1813	V	C Phase Primary Source Voltage Magnitude	–	High
17	1	1814	V	A Phase Primary Load Voltage Magnitude	–	Low
18	1	1815	V	A Phase Primary Load Voltage Magnitude	–	High
19	1	1950	V	B Phase Primary Load Voltage Magnitude	–	Low
20	1	1951	V	B Phase Primary Load Voltage Magnitude	–	High
21	1	1966	V	C Phase Primary Load Voltage Magnitude	–	Low
22	1	1967	V	C Phase Primary Load Voltage Magnitude	–	High
23	0.01	2279	V	A Phase Secondary Source Voltage Magnitude	–	Low
24	0.01	2280	V	B Phase Secondary Source Voltage Magnitude	–	Low
25	0.01	2281	V	C Phase Secondary Source Voltage Magnitude	–	Low
26	0.01	2282	V	A Phase Secondary Load Voltage Magnitude	–	Low
27	0.01	1942	V	B Phase Secondary Load Voltage Magnitude	–	Low
28	0.01	1958	V	C Phase Secondary Load Voltage Magnitude	–	Low
29	0.001	2249	N/A	A Phase Power Factor	–	Low
30	0.001	2250	N/A	B Phase Power Factor	–	Low

Table 3 Measured Values Points List

Measured Values Points List ASDU: P_ME_NB_1 Parameter of measured values, scaled value						
Data Point	Scale N/A = Not used	Register Number	Unit	Description	Range Value	Low Word/ High Word
31	0.001	2251	N/A	C Phase Power Factor	–	Low
32	0.01	1530	kVa	A Phase Primary Apparent Power	–	Low
33	0.01	1531	kVa	A Phase Primary Apparent Power	–	High
34	0.01	1532	kVa	B Phase Primary Apparent Power	–	Low
35	0.01	1533	kVa	B Phase Primary Apparent Power	–	High
36	0.01	1534	kVa	C Phase Primary Apparent Power	–	Low
37	0.01	1535	kVa	C Phase Primary Apparent Power	–	High
38	0.01	1514	kW	A Phase Primary Real Power	–	Low
39	0.01	1515	kW	A Phase Primary Real Power	–	High
40	0.01	1518	kW	B Phase Primary Real Power	–	Low
41	0.01	1519	kW	B Phase Primary Real Power	–	High
42	0.01	1522	kW	C Phase Primary Real Power	–	Low
43	0.01	1523	kW	C Phase Primary Real Power	–	High
44	0.01	1516	kvar	A Phase Primary Reactive Power	–	Low
45	0.01	1517	kvar	A Phase Primary Reactive Power	–	High
46	0.01	1520	kvar	B Phase Primary Reactive Power	–	Low
47	0.01	1521	kvar	B Phase Primary Reactive Power	–	High
48	0.01	1524	kvar	C Phase Primary Reactive Power	–	Low
49	0.01	1525	kvar	C Phase Primary Reactive Power	–	High
50	0.01	2222	Hz	Line Frequency	–	Low
51	0.001	2283	A	A Phase Primary Demand Currents	–	Low
52	0.001	2284	A	B Phase Primary Demand Currents	–	Low
53	0.001	2285	A	C Phase Primary Demand Currents	–	Low
54	0.01	3796	V	Battery Voltage	–	Low
55	0.001	3797	A	Battery Current	–	Low
56	0.01	2287	V	Demand Primary VyA	–	Low
57	0.01	2288	V	Demand Primary VyB	–	Low
58	0.01	2289	V	Demand Primary VyC	–	Low
59	0.01	2290	V	Demand Primary VzA	–	Low
60	0.01	8565	Hz	F81#1 Pickup	–	Low

Table 3 Measured Values Points List

Measured Values Points List ASDU: P_ME_NB_1 Parameter of measured values, scaled value						
Data Point	Scale N/A = Not used	Register Number	Unit	Description	Range Value	Low Word/ High Word
61	0.01	8566	Sec	F81#1 Def Time	–	Low
62	0.1	8567	Hz	F81#1 Hysteresis	–	Low
63	0.01	8568	V	F81#1 Min Voltage	–	Low
64	0.01	8569	A	F81#1 Min Load	–	Low
65	1	8570	–	F81#1 Block Options	–	Low
66	0.01	8574	Hz	F81#2 Pickup	–	Low
67	0.01	8575	Sec	F81#2 Def Time	–	Low
68	0.1	8576	Hz	F81#2 Hysteresis	–	Low
69	0.01	8577	V	F81#2 Min Voltage	–	Low
70	0.01	8578	A	F81#2 Min Load	–	Low
71	1	8579	–	F81#2 Block Options	–	Low
72	0.01	8583	Hz	F81#3 Pickup	–	Low
73	0.01	8584	Sec	F81#3 Def Time	–	Low
74	0.1	8585	Hz	F81#3 Hysteresis	–	Low
75	0.01	8586	V	F81#3 Min Voltage	–	Low
76	0.01	8587	A	F81#3 Min Load	–	Low
77	1	8588	–	F81#3 Block Options	–	Low
78	0.01	8592	Hz	F81#4 Pickup	–	Low
79	0.01	8593	Sec	F81#4 Def Time	–	Low
80	0.1	8594	Hz	F81#4 Hysteresis	–	Low
81	0.01	8595	V	F81#4 Min Voltage	–	Low
82	0.01	8596	A	F81#4 Min Load	–	Low
83	1	8597	–	F81#4 Block Options	–	Low
84	0.01	46713	Hz	F81#5 Pickup	–	Low
85	0.01	46714	Sec	F81#5 Def Time	–	Low
86	0.1	46715	Hz	F81#5 Hysteresis	–	Low
87	0.01	46716	V	F81#5 Min Voltage	–	Low
88	0.01	46717	A	F81#5 Min Load	–	Low
89	1	46718	–	F81#5 Block Options	–	Low
90	0.01	46722	Hz	F81#6 Pickup	–	Low

Table 3 Measured Values Points List

Measured Values Points List ASDU: P_ME_NB_1 Parameter of measured values, scaled value						
Data Point	Scale N/A = Not used	Register Number	Unit	Description	Range Value	Low Word/ High Word
91	0.01	46723	Sec	F81#6 Def Time	–	Low
92	0.1	46724	Hz	F81#6 Hysteresis	–	Low
93	0.01	46725	V	F81#6 Min Voltage	–	Low
94	0.01	46726	A	F81#6 Min Load	–	Low
95	1	46727	–	F81#6 Block Options	–	Low
96	0.01	46731	Hz	F81#7 Pickup	–	Low
97	0.01	46732	Sec	F81#7 Def Time	–	Low
98	0.1	46733	Hz	F81#7 Hysteresis	–	Low
99	0.01	46734	V	F81#7 Min Voltage	–	Low
100	0.01	46735	A	F81#7 Min Load	–	Low
101	1	46736	–	F81#7 Block Options	–	Low
102	0.01	46740	Hz	F81#8 Pickup	–	Low
103	0.01	46741	Sec	F81#8 Def Time	–	Low
104	0.1	46742	Hz	F81#8 Hysteresis	–	Low
105	0.01	46743	V	F81#8 Min Voltage	–	Low
106	0.01	46744	A	F81#8 Min Load	–	Low
107	1	46745	–	F81#8 Block Options	–	Low
108	0.01	8675	Hz/s	F81R#1 Pickup	–	Low
109	0.01	8676	Sec	F81R#1 Def Time	–	Low
110	0.01	8677	Hz	F81R#1 Max Frequency	–	Low
111	0.01	8678	A	F81R#1 Min Current	–	Low
112	0.01	8679	V	F81R#1 Min Voltage	–	Low
113	1	8680	–	F81R#1 Pickup Cycle Number	–	Low
114	1	8690	–	F81R#1 Operating Voltage	–	Low
115	0.01	8684	Hz/s	F81R#2 Pickup	–	Low
116	0.01	8685	Sec	F81R#2 Def Time	–	Low
117	0.01	8686	Hz	F81R#2 Max Frequency	–	Low
118	0.01	8687	A	F81R#2 Min Current	–	Low
119	0.01	8688	V	F81R#2 Min Voltage	–	Low
120	1	8689	–	F81R#2 Pickup Cycle Number	–	Low

Table 3 Measured Values Points List

Measured Values Points List ASDU: P_ME_NB_1 Parameter of measured values, scaled value						
Data Point	Scale N/A = Not used	Register Number	Unit	Description	Range Value	Low Word/ High Word
121	1	8691	–	F81R#2 Operating Voltage	–	Low
122	0.01	46749	Hz/s	F81R#3 Pickup	–	Low
123	0.01	46750	Sec	F81R#3 Def Time	–	Low
124	0.01	46751	Hz	F81R#3 Max Frequency	–	Low
125	0.01	46752	A	F81R#3 Min Current	–	Low
126	0.01	46753	V	F81R#3 Min Voltage	–	Low
127	1	46754	–	F81R#3 Pickup Cycle Number	–	Low
128	1	46755	–	F81R#3 Operating Voltage	–	Low
129	0.01	46750	Hz/s	F81R#4 Pickup	–	Low
130	0.01	46960	Sec	F81R#4 Def Time	–	Low
131	0.01	46961	Hz	F81R#4 Max Frequency	–	Low
132	0.01	46962	A	F81R#4 Min Current	–	Low
133	0.01	46963	V	F81R#4 Min Voltage	–	Low
134	1	46964	–	F81R#4 Pickup Cycle Number	–	Low
135	1	46965	–	F81R#4 Operating Voltage	–	Low
136	0.01	46769	Hz/s	F81R#5 Pickup	–	Low
137	0.01	46770	Sec	F81R#5 Def Time	–	Low
138	0.01	46771	Hz	F81R#5 Max Frequency	–	Low
139	0.01	46772	A	F81R#5 Min Current	–	Low
140	0.01	46773	V	F81R#5 Min Voltage	–	Low
141	1	46774	–	F81R#5 Pickup Cycle Number	–	Low
142	1	46775	–	F81R#5 Operating Voltage	–	Low
143	0.01	46779	Hz/s	F81R#6 Pickup	–	Low
144	0.01	46780	Sec	F81R#6 Def Time	–	Low
145	0.01	46781	Hz	F81R#6 Max Frequency	–	Low
146	0.01	46782	A	F81R#6 Min Current	–	Low
147	0.01	46783	V	F81R#6 Min Voltage	–	Low
148	1	46784	–	F81R#6 Pickup Cycle Number	–	Low
149	1	46785	–	F81R#6 Operating Voltage	–	Low
150	0.01	46789	Hz/s	F81R#7 Pickup	–	Low

Table 3 Measured Values Points List

Measured Values Points List ASDU: P_ME_NB_1 Parameter of measured values, scaled value						
Data Point	Scale N/A = Not used	Register Number	Unit	Description	Range Value	Low Word/ High Word
151	0.01	46790	Sec	F81R#7 Def Time	–	Low
152	0.01	46791	Hz	F81R#7 Max Frequency	–	Low
153	0.01	46792	A	F81R#7 Min Current	–	Low
154	0.01	46793	V	F81R#7 Min Voltage	–	Low
155	1	46794	–	F81R#7 Pickup Cycle Number	–	Low
156	1	46795	–	F81R#7 Operating Voltage	–	Low
157	0.01	46799	Hz/s	F81R#8 Pickup	–	Low
158	0.01	46800	Sec	F81R#8 Def Time	–	Low
159	0.01	46801	Hz	F81R#8 Max Frequency	–	Low
160	0.01	46802	A	F81R#8 Min Current	–	Low
161	0.01	46803	V	F81R#8 Min Voltage	–	Low
162	1	46804	–	F81R#8 Pickup Cycle Number	–	Low
163	1	46805	–	F81R#8 Operating Voltage	–	Low
164	0.1	4861	–	F46BC I2/I1 Ratio Secondary	–	Low
165	0.1	4862, 4863	–	F46BC I2/I1 Ratio Primary	–	Low
166	1	46809	%	F46BC I2/I1 Ratio Setting	–	Low
167	0.01	46810	Sec	F46BC Time Delay Setting	–	Low
168	0.01	46811	A	F46BC Min I2 Level Setting	–	Low
169	1	4871	Sec	FCLP Open To Arm Timer	–	Low
170	1	4872	Sec	FCLP Override Active Timer	–	Low
171	1	4873	Sec	FCLP Initiate Active Timer	–	Low
172	0.01	4874	Sec	FCLP BMT Phase Timer	–	Low
173	0.01	4875	Sec	FCLP BMT Ground Timer	–	Low
174	0.01	4896	Sec	FCLP BMT Residual Timer	–	Low
175	0.01	4876	A	FCLP Min Phase Pickup	–	Low
176	0.01 (Gnd) or 0.001 (Gnd Sens)	4877	A	FCLP Min Ground Pickup	–	Low
177	0.01	4895	A	FCLP Min Residual Pickup	–	Low
178	0.1	4885	%	FBM percent life used Ph-A	–	Low

Table 3 Measured Values Points List

Measured Values Points List ASDU: P_ME_NB_1 Parameter of measured values, scaled value						
Data Point	Scale N/A = Not used	Register Number	Unit	Description	Range Value	Low Word/ High Word
179	0.1	4886	%	FBM percent life used Ph-B	–	Low
180	0.1	4887	%	FBM percent life used Ph-C	–	Low
181	0.1	4888	%	BM_CONTACTSLIFEREM_PHA	–	Low
182	0.1	4889	%	BM_CONTACTSLIFEREM_PHB	–	Low
183	0.1	4890	%	BM_CONTACTSLIFEREM_PHC	–	Low
184	–	29108	–	SGI IG Fundamental	–	Low
185	–	29109	–	SGI IG 3rd Harmonic	–	Low
186	–	29105	–	SGI Delta IG Fundamental	–	Low
187	–	29104	–	SGI Delta IG Third Harmonic	–	Low

Table 3 Measured Values Points List

Measured Normalized Values Points List
ASDU: M_ME_NA_1 Measured value, Normalized value

Measured Scaled Values Points List
ASDU: M_ME_NB_1 Measured value, Scaled value

Measured Float Values Points List
ASDU: M_ME_NC_1 Measured value, Float value

Data Point	Scale	Register Number	Unit	Description	Min	Max
1	1	1800, 1801	A	A Phase Primary Current Magnitude	0	1A_5A_PRI.ISIZE. RANGE
2	1	1802, 1803	A	B Phase Primary Current Magnitude	0	1A_5A_PRI.ISIZE. RANGE
3	1	1804, 1805	A	C Phase Primary Current Magnitude	0	1A_5A_PRI.ISIZE. RANGE
4	1	2012, 2013	A	N (3I0) Primary Current Magnitude	0	1A_5A_PRI.ISIZE. RANGE
5	1	1806, 1807	A	G/GS Primary Current Magnitude	0	1A_5A_PRI.IGNDSIZE. RANGE
6	1	1808, 1809	V	A Phase Primary Source Voltage Magnitude	0	600
7	1	1810, 1811	V	B Phase Primary Source Voltage Magnitude	0	600
8	1	1812, 1813	V	C Phase Primary Source Voltage Magnitude	0	600
9	1	1814, 1815	V	A Phase Primary Load Voltage Magnitude	0	600
10	1	1950, 1951	V	B Phase Primary Load Voltage Magnitude	0	600
11	1	1966, 1967	V	C Phase Primary Load Voltage Magnitude	0	600
12	0.01	2279	V	A Phase Secondary Source Voltage Magnitude	0	600
13	0.01	2280	V	B Phase Secondary Source Voltage Magnitude	0	600
14	0.01	2281	V	C Phase Secondary Source Voltage Magnitude	0	600
15	0.01	2282	V	A Phase Secondary Load Voltage Magnitude	0	600
16	0.01	1942	V	B Phase Secondary Load Voltage Magnitude	0	600
17	0.01	1958	V	C Phase Secondary Load Voltage Magnitude	0	600
18	0.001	2249	N/A	A Phase Power Factor	0	1
19	0.001	2250	N/A	B Phase Power Factor	0	1
20	0.001	2251	N/A	C Phase Power Factor	0	1

Table 3 Measured Normalized, Scaled, & Float Values Points List

Measured Normalized Values Points List
ASDU: M_ME_NA_1 Measured value, Normalized value

Measured Scaled Values Points List
ASDU: M_ME_NB_1 Measured value, Scaled value

Measured Float Values Points List
ASDU: M_ME_NC_1 Measured value, Float value

Data Point	Scale	Register Number	Unit	Description	Min	Max
21	0.01	1530, 1531	kVa	A Phase Primary Apparent Power	0	1A_5A.PRIAPPRTPWR. RANGE
22	0.01	1532, 1533	kVa	B Phase Primary Apparent Power	0	1A_5A.PRIAPPRTPWR. RANGE
23	0.01	1534, 1535	kVa	C Phase Primary Apparent Power	0	1A_5A.PRIAPPRTPWR. RANGE
24	0.01	1514, 1515	kW	A Phase Primary Real Power	0	1A_5A.PRIREALPWR. RANGE
25	0.01	1518, 1519	kW	B Phase Primary Real Power	0	1A_5A.PRIREALPWR. RANGE
26	0.01	1522, 1523	kW	C Phase Primary Real Power	0	1A_5A.PRIREALPWR. RANGE
27	0.01	1516, 1517	kvar	A Phase Primary Reactive Power	0	1A_5A.PRIRECTPWR. RANGE
28	0.01	1520, 1521	kvar	B Phase Primary Reactive Power	0	1A_5A.PRIRECTPWR. RANGE
29	0.01	1524, 1525	kvar	C Phase Primary Reactive Power	0	1A_5A.PRIRECTPWR. RANGE
30	0.01	2222	Hz	Line Frequency	0	60
31	0.001	2283	A	A Phase Primary Demand Currents	0	1A_5A.I.RANGE
32	0.001	2284	A	B Phase Primary Demand Currents	0	1A_5A.I.RANGE
33	0.001	2285	A	C Phase Primary Demand Currents	0	1A_5A.I.RANGE
34	0.01	3796	V	Battery Voltage	0	30
35	0.001	3797	A	Battery Current	0	10
36	0.01	2287	V	Demand Primary VyA	0	600
37	0.01	2288	V	Demand Primary VyB	0	600
38	0.01	2289	V	Demand Primary VyC	0	600
39	0.01	2290	V	Demand Primary VzA	0	600
40	0.01	8565	Hz	F81#1 Pickup	40	65
41	0.01	8566	Sec	F81#1 Def Time	0	600
42	0.1	8567	Hz	F81#1 Hysteresis	0	1

Table 3 Measured Normalized, Scaled, & Float Values Points List

Measured Normalized Values Points List
ASDU: M_ME_NA_1 Measured value, Normalized value

Measured Scaled Values Points List
ASDU: M_ME_NB_1 Measured value, Scaled value

Measured Float Values Points List
ASDU: M_ME_NC_1 Measured value, Float value

Data Point	Scale	Register Number	Unit	Description	Min	Max
43	0.01	8568	V	F81#1 Min Voltage	1	180
44	0.01	8569	A	F81#1 Min Load	0	40
45	1	8570	–	F81#1 Block Options	0	7
46	0.01	8574	Hz	F81#2 Pickup	40	65
47	0.01	8575	Sec	F81#2 Def Time	0	600
48	0.1	8576	Hz	F81#2 Hysteresis	0	1
49	0.01	8577	V	F81#2 Min Voltage	1	180
50	0.01	8578	A	F81#2 Min Load	0	40
51	1	8579	–	F81#2 Block Options	0	7
52	0.01	8583	Hz	F81#3 Pickup	40	65
53	0.01	8584	Sec	F81#3 Def Time	0	600
54	0.1	8585	Hz	F81#3 Hysteresis	0	1
55	0.01	8586	V	F81#3 Min Voltage	1	180
56	0.01	8587	A	F81#3 Min Load	0	40
57	1	8588	–	F81#3 Block Options	0	7
58	0.01	8592	Hz	F81#4 Pickup	40	65
59	0.01	8593	Sec	F81#4 Def Time	0	600
60	0.1	8594	Hz	F81#4 Hysteresis	0	1
61	0.01	8595	V	F81#4 Min Voltage	1	180
62	0.01	8596	A	F81#4 Min Load	0	40
63	1	8597	–	F81#4 Block Options	0	7
64	0.01	46713	Hz	F81#5 Pickup	40	65
65	0.01	46714	Sec	F81#5 Def Time	0	600
66	0.1	46715	Hz	F81#5 Hysteresis	0	1
67	0.01	46716	V	F81#5 Min Voltage	1	180
68	0.01	46717	A	F81#5 Min Load	0	40

Table 3 Measured Normalized, Scaled, & Float Values Points List

Measured Normalized Values Points List ASDU: M_ME_NA_1 Measured value, Normalized value Measured Scaled Values Points List ASDU: M_ME_NB_1 Measured value, Scaled value Measured Float Values Points List ASDU: M_ME_NC_1 Measured value, Float value						
Data Point	**Scale**	**Register Number**	**Unit**	**Description**	**Min**	**Max**
69	1	46718	–	F81#5 Block Options	0	7
70	0.01	46722	Hz	F81#6 Pickup	40	65
71	0.01	46723	Sec	F81#6 Def Time	0	600
72	0.1	46724	Hz	F81#6 Hysteresis	0	1
73	0.01	46725	V	F81#6 Min Voltage	1	180
74	0.01	46726	A	F81#6 Min Load	0	40
75	1	46727	–	F81#6 Block Options	0	7
76	0.01	46731	Hz	F81#7 Pickup	40	65
77	0.01	46732	Sec	F81#7 Def Time	0	600
78	0.1	46733	Hz	F81#7 Hysteresis	0	1
79	0.01	46734	V	F81#7 Min Voltage	1	180
80	0.01	46735	A	F81#7 Min Load	0	40
81	1	46736	–	F81#7 Block Options	0	7
82	0.01	46740	Hz	F81#8 Pickup	40	65
83	0.01	46741	Sec	F81#8 Def Time	0	600
84	0.1	46742	Hz	F81#8 Hysteresis	0	1
85	0.01	46743	V	F81#8 Min Voltage	1	180
86	0.01	46744	A	F81#8 Min Load	0	40
87	1	46745	–	F81#8 Block Options	0	7
88	0.01	8675	Hz/s	F81R#1 Pickup	0.2	5
89	0.01	8676	Sec	F81R#1 Def Time	0	2
90	0.01	8677	Hz	F81R#1 Max Frequency	40	70
91	0.01	8678	A	F81R#1 Min Current	0	20
92	0.01	8679	V	F81R#1 Min Voltage	0	300
93	1	8680	–	F81R#1 Pickup Cycle Number	3	15
94	1	8690	–	F81R#1 Operating Voltage	0	1

Table 3 Measured Normalized, Scaled, & Float Values Points List

Measured Normalized Values Points List
ASDU: M_ME_NA_1 Measured value, Normalized value

Measured Scaled Values Points List
ASDU: M_ME_NB_1 Measured value, Scaled value

Measured Float Values Points List
ASDU: M_ME_NC_1 Measured value, Float value

Data Point	Scale	Register Number	Unit	Description	Min	Max
95	0.01	8684	Hz/s	F81R#2 Pickup	0.2	5
96	0.01	8685	Sec	F81R#2 Def Time	0	2
97	0.01	8686	Hz	F81R#2 Max Frequency	40	70
98	0.01	8687	A	F81R#2 Min Current	0	20
99	0.01	8688	V	F81R#2 Min Voltage	0	300
100	1	8689	–	F81R#2 Pickup Cycle Number	3	15
101	1	8691	–	F81R#2 Operating Voltage	0	1
102	0.01	46749	Hz/s	F81R#3 Pickup	0.2	5
103	0.01	46750	Sec	F81R#3 Def Time	0	2
104	0.01	46751	Hz	F81R#3 Max Frequency	40	70
105	0.01	46752	A	F81R#3 Min Current	0	20
106	0.01	46753	V	F81R#3 Min Voltage	0	300
107	1	46754	–	F81R#3 Pickup Cycle Number	3	15
108	1	46755	–	F81R#3 Operating Voltage	0	1
109	0.01	46750	Hz/s	F81R#4 Pickup	0.2	5
110	0.01	46960	Sec	F81R#4 Def Time	0	2
111	0.01	46961	Hz	F81R#4 Max Frequency	40	70
112	0.01	46962	A	F81R#4 Min Current	0	20
113	0.01	46963	V	F81R#4 Min Voltage	0	300
114	1	46964	–	F81R#4 Pickup Cycle Number	3	15
115	1	46965	–	F81R#4 Operating Voltage	0	1
116	0.01	46769	Hz/s	F81R#5 Pickup	0.2	5
117	0.01	46770	Sec	F81R#5 Def Time	0	2
118	0.01	46771	Hz	F81R#5 Max Frequency	40	70
119	0.01	46772	A	F81R#5 Min Current	0	20
120	0.01	46773	V	F81R#5 Min Voltage	0	300

Table 3 Measured Normalized, Scaled, & Float Values Points List

Measured Normalized Values Points List
ASDU: M_ME_NA_1 Measured value, Normalized value

Measured Scaled Values Points List
ASDU: M_ME_NB_1 Measured value, Scaled value

Measured Float Values Points List
ASDU: M_ME_NC_1 Measured value, Float value

Data Point	Scale	Register Number	Unit	Description	Min	Max
121	1	46774	–	F81R#5 Pickup Cycle Number	3	15
122	1	46775	–	F81R#5 Operating Voltage	0	1
123	0.01	46779	Hz/s	F81R#6 Pickup	0.2	5
124	0.01	46780	Sec	F81R#6 Def Time	0	2
125	0.01	46781	Hz	F81R#6 Max Frequency	40	70
126	0.01	46782	A	F81R#6 Min Current	0	20
127	0.01	46783	V	F81R#6 Min Voltage	0	300
128	1	46784	–	F81R#6 Pickup Cycle Number	3	15
129	1	46785	–	F81R#6 Operating Voltage	0	1
130	0.01	46789	Hz/s	F81R#7 Pickup	0.2	5
131	0.01	46790	Sec	F81R#7 Def Time	0	2
132	0.01	46791	Hz	F81R#7 Max Frequency	40	70
133	0.01	46792	A	F81R#7 Min Current	0	20
134	0.01	46793	V	F81R#7 Min Voltage	0	300
135	1	46794	–	F81R#7 Pickup Cycle Number	3	15
136	1	46795	–	F81R#7 Operating Voltage	0	1
137	0.01	46799	Hz/s	F81R#8 Pickup	0.2	5
138	0.01	46800	Sec	F81R#8 Def Time	0	2
139	0.01	46801	Hz	F81R#8 Max Frequency	40	70
140	0.01	46802	A	F81R#8 Min Current	0	20
141	0.01	46803	V	F81R#8 Min Voltage	0	300
142	1	46804	–	F81R#8 Pickup Cycle Number	3	15
143	1	46805	–	F81R#8 Operating Voltage	0	1
144	0.1	4861	%	F46BC I2/I1 Ratio Secondary	0	6553.5
145	0.1	4862, 4863	%	F46BC I2/I1 Ratio Primary	0	6553.5
146	1	46809	%	F46BC I2/I1 Ratio Setting	1	100

Table 3 Measured Normalized, Scaled, & Float Values Points List

Measured Normalized Values Points List
ASDU: M_ME_NA_1 Measured value, Normalized value

Measured Scaled Values Points List
ASDU: M_ME_NB_1 Measured value, Scaled value

Measured Float Values Points List
ASDU: M_ME_NC_1 Measured value, Float value

Data Point	Scale	Register Number	Unit	Description	Min	Max
147	0.01	46810	Sec	F46BC Time Delay Setting	0	600
148	0.01	46811	A	F46BC Min I2 Level Setting	0.02	20
149	1	4871	Sec	FCLP Open To Arm Timer	0	60000
150	1	4872	Sec	FCLP Override Active Timer	0	10000
151	1	4873	Sec	FCLP Initiate Active Timer	0	10000
152	0.01	4874	Sec	FCLP BMT Phase Timer	0	600
153	0.01	4875	Sec	FCLP BMT Ground Timer	0	600
154	0.01	4896	Sec	FCLP BMT Residual Timer	0	600
155	0.01	4876	A	FCLP Min Phase Pickup	–	1A_5A.50.PU.RANGE
156	0.01 (Gnd) or 0.001 (Gnd Sens)	4877	A	FCLP Min Ground Pickup	–	1A_5A_MX.IGND.RANGE
157	0.01	4895	A	FCLP Min Residual Pickup	–	1A_5A.50.PU.RANGE
158	0.1	4885	%	FBM percent life used Ph-A	0	100
159	0.1	4886	%	FBM percent life used Ph-B	0	100
160	0.1	4887	%	FBM percent life used Ph-C	0	100
161	0.1	4888	%	BM_CONTACTSLIFEREM_PHA	0	100
162	0.1	4889	%	BM_CONTACTSLIFEREM_PHB	0	100
163	0.1	4890	%	BM_CONTACTSLIFEREM_PHC	0	100
164	0.01	3796	V	Battery Voltage	0	30
165	0.001	3797	A	Battery Amps	-10	10
166	0.01	5028, 5029	–	Power Target #1 Threshold Secondary	-10000	10000
167	0.01	5030, 5031	–	Power Target #2 Threshold Secondary	-10000	10000
168	0.01	5032, 5033	–	Power Target #3 Threshold Secondary	-10000	10000
169	0.01	5034, 5035	–	Power Target #4 Threshold Secondary	-10000	10000

Table 3 Measured Normalized, Scaled, & Float Values Points List

Measured Normalized Values Points List
ASDU: M_ME_NA_1 Measured value, Normalized value

Measured Scaled Values Points List
ASDU: M_ME_NB_1 Measured value, Scaled value

Measured Float Values Points List
ASDU: M_ME_NC_1 Measured value, Float value

Data Point	Scale	Register Number	Unit	Description	Min	Max
170	0.01	5036, 5037	–	Power Target #5 Threshold Secondary	-10000	10000
171	0.01	5038, 5039	–	Power Target #6 Threshold Secondary	-10000	10000
172	0.01	5040, 5041	–	Power Target #7 Threshold Secondary	-10000	10000
173	0.01	5042, 5043	–	Power Target #8 Threshold Secondary	-10000	10000
174	0.01	5044, 5045	–	Power Target #9 Threshold Secondary	-10000	10000
175	0.01	5046, 5047	–	Power Target #10 Threshold Secondary	-10000	10000
176	0.01	5048, 5049	–	Power Target #11 Threshold Secondary	-10000	10000
177	0.01	5050, 5051	–	Power Target #12 Threshold Secondary	-10000	10000
178	–	29108	–	SGI IG Fundamental	–	–
179	–	29109	–	SGI IG 3rd Harmonic	–	–
180	–	29105	–	SGI Delta IG Fundamental	–	–
181	–	29104	–	SGI Delta IG Third Harmonic	–	–

Table 3 Measured Normalized, Scaled, & Float Values Points List

Single Commands Points List (Status) ASDU: C_SC_NA_1 Single command						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
1	–	1401	–	Close ABC 0 = Disable 1 = Enable	0-1	–
2	–	1407	–	Close A 0 = Disable 1 = Enable	0-1	–
3	–	1408	–	Close B 0 = Disable 1 = Enable	0-1	–
4	–	1409	–	Close C 0 = Disable 1 = Enable	0-1	–
5	–	1400	–	Trip ABC 0 = Disable 1 = Enable	0-1	–
6	–	1404	–	Trip A 0 = Disable 1 = Enable	0-1	–
7	–	1405	–	Trip B 0 = Disable 1 = Enable	0-1	–
8	–	1406	–	Trip C 0 = Disable 1 = Enable	0-1	–
9	–	8469	–	Reclose Disable 3-Ph 0 = Disable 1 = Enable	0-1	–
10	–	30924	–	Reclose Disable Ph-A 0 = Disable 1 = Enable	0-1	–
11	–	30931	–	Reclose Disable Ph-B 0 = Disable 1 = Enable	0-1	–
12	–	30938	–	Reclose Disable Ph-C 0 = Disable 1 = Enable	0-1	–
13	–	3942	11	Ground (N Elements) Disable 0 = Disable 1 = Enable	0-65535	–
14	–	3917	7	G/GS Disable 0 = Disable 1 = Enable	0-65535	–
15	–	8608	–	Cold Load Pickup Disable	0-1	–
16	–	7498	–	Fast Trip 3-Ph (51P#1) Block 0 = Disable 1 = Enable	0-1	–
17	–	7568	–	Fast Trip Ph-A (51P#1) Block 0 = Disable 1 = Enable	0-1	–
18	–	7581	–	Fast Trip Ph-B (51P#1) Block 0 = Disable 1 = Enable	0-1	–
19	–	7594	–	Fast Trip Ph-C (51P#1) Block 0 = Disable 1 = Enable	0-1	–
20	–	20	–	Profile 1 Active 0 = Disable 1 = Set Value to 0	0-7	–
21	–	20	–	Profile 2 Active 0 = Disable 1 = Set Value to 1	0-7	–
22	–	20	–	Profile 3 Active 0 = Disable 1 = Set Value to 2	0-7	–

Table 4 Single Commands Points List (Status)

Single Commands Points List (Status) ASDU: C_SC_NA_1 Single command						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
23	–	20	–	Profile 4 Active 0 = Disable 1 = Set Value to 3	0-7	–
24	–	20	–	Profile 5 Active 0 = Disable 1 = Set Value to 4	0-7	–
25	–	20	–	Profile 6 Active 0 = Disable 1 = Set Value to 5	0-7	–
26	–	20	–	Profile 7 Active 0 = Disable 1 = Set Value to 6	0-7	–
27	–	20	–	Profile 8 Active 0 = Disable 1 = Set Value to 7	0-7	–
28	–	1403	–	Reset Targets 0 = Disable 1 = Enable	0-1	–
29	–	2001	–	Reset Demands 0 = Disable 1 = Enable	0-1	–
30	–	1403	–	Reset Alarms 0 = Disable 1 = Enable	0-1	–
31	–	6508	–	Test Battery 0 = Disable 1 = Enable	0-1	–
32	–	1402	–	Hot Line Tag Enabled 0 = Disable 1 = Enable	0-1	–
33	–	7022	–	Enable Sync Check 0 = Disable 1 = Enable	0-1	–
34	–	30922	0,1	Enable 79 in 3T3L Mode 1 = Set bits 0 and 1 to value 0	0-3	–
35	–	30922	0,1	Enable 79 in 1T3L Mode 1 = Set bits 0 and 1 to value 1	0-3	–
36	–	30922	0,1	Enable 79 in 1T1L Mode 1 = Set bits 0 and 1 to value 2	0-3	–
37	–	30922	0,1	Enable 79 in 3T1L Mode 1 = Set bits 0 and 1 to value 3	0-3	–
38	–	1150	–	Reset Total OC Pickup Phase A 0 = Disable 1 = Set Value to 0	0-1	–
39	–	1154	–	Reset Total OC Pickup Phase B 0 = Disable 1 = Set Value to 0	0-1	–
40	–	1158	–	Reset Total OC Pickup Phase C 0 = Disable 1 = Set Value to 0	0-1	–
41	–	1152	–	Reset Total OC Trip Phase A 0 = Disable 1 = Set Value to 0	0-1	–
42	–	1156	–	Reset Total OC Trip Phase B 0 = Disable 1 = Set Value to 0	0-1	–
43	–	1160	–	Reset Total OC Trip Phase C 0 = Disable 1 = Set Value to 0	0-1	–
44	–	1166	–	Reset Operations Counter Phase A 0 = Disable 1 = Set Value to 0	0-1	–

Table 4 Single Commands Points List (Status)

Single Commands Points List (Status) ASDU: C_SC_NA_1 Single command						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
45	–	1168	–	Reset Operations Counter Phase B 0 = Disable 1 = Set Value to 0	0-1	–
46	–	1170	–	Reset Operations Counter Phase C 0 = Disable 1 = Set Value to 0	0-1	–
47	–	1174	–	Reset IPSlogic Counter 1 0 = Disable 1 = Set Value to 0	0-1	–
48	–	1175	–	Reset IPSlogic Counter 2 0 = Disable 1 = Set Value to 0	0-1	–
49	–	1176	–	Reset IPSlogic Counter 3 0 = Disable 1 = Set Value to 0	0-1	–
50	–	1177	–	Reset IPSlogic Counter 4 0 = Disable 1 = Set Value to 0	0-1	–
51	–	1178	–	Reset IPSlogic Counter 5 0 = Disable 1 = Set Value to 0	0-1	–
52	–	1179	–	Reset IPSlogic Counter 6 0 = Disable 1 = Set Value to 0	0-1	–
53	–	1180	–	Reset IPSlogic Counter 7 0 = Disable 1 = Set Value to 0	0-1	–
54	–	1181	–	Reset IPSlogic Counter 8 0 = Disable 1 = Set Value to 0	0-1	–
55	–	4464	–	FCLP Initiate 0 = Disable, 1 = Enable	0-65535	–
56	–	8608	–	FCLP Enable/Disable 0 = Disable, 1 = Enable	0-1	–
57	–	3969	3	FCLP Pickup Block 0 = Disable, 1 = Enable	0-1	–
58	–	6820	–	Battery Test Schedule Enable/Disable 0 = Disable, 1 = Enable	0-1	–
59	–	6508	–	Start Battery Test Enable/Disable 0 = Disable, 1 = Enable	0-1	–
60	–	46150	–	One Shot Sectionalizing 3-Ph Enable/Disable 0 = Disable, 1 = Enable	0-1	–
61	–	46166	–	One Shot Sectionalizing Ph-A Enable/Disable 0 = Disable, 1 = Enable	0-1	–
62	–	46182	–	One Shot Sectionalizing Ph-B Enable/Disable 0 = Disable, 1 = Enable	0-1	–
63	–	46198	–	One Shot Sectionalizing Ph-C Enable/Disable 0 = Disable, 1 = Enable	0-1	–

Table 4 Single Commands Points List (Status)

■**NOTE:** Relay Output Operation for Double command is shown in the first table below:

Double Command State (DCS)	Qualifier of Command (QU)	Relay Output Operation	
		Data Point 1	Data Point 2
0 (Not permitted)	Any	No Action	No Action
1 (OFF)	0 (No Additional Definition)	Latch On	Latch Off
	1 (Short Pulse)	Short Pulse On	No Action
	2 (Long Pulse)	Long Pulse On	No Action
	3 (Persistent)	Latch On	Latch Off
2 (ON)	0 (No Additional Definition)	Latch Off	Latch On
	1 (Short Pulse)	No Action	Short Pulse On
	2 (Long Pulse)	No Action	Long Pulse On
	3 (Persistent)	Latch Off	Latch On
3 (Not permitted)	Any	No Action	No Action

Double Commands Points List ASDU: C_DC_NA_1 Double command				
Data Point	Register Number	Bit Position	Description	Output
1	1401	–	Close breaker 3-Ph	Relay Output Operation
2	1400	–	Trip breaker 3-Ph	No action
3	1407	–	Close A	Relay Output Operation
4	1404	–	Trip A	No action
5	1408	–	Close B	Relay Output Operation
6	1405	–	Trip B	No action
7	1409	–	Close C	Relay Output Operation
8	1406	–	Trip C	No action

Table 5 Double Commands Points List

Integrated Totals List ASDU: M_IT_NA_1 Integrated Totals						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Unit**	**Description**	**Range Value**	**Request Function**
1	–	1150	N/A	Total OC Pickup Phase A	0-99999999	–
2	–	1154	N/A	Total OC Pickup Phase B	0-99999999	–
3	–	1158	N/A	Total OC Pickup Phase C	0-99999999	–
4	–	1152	N/A	Total OC Trip Phase A	0-99999999	–
5	–	1156	N/A	Total OC Trip Phase B	0-99999999	–
6	–	1160	N/A	Total OC Trip Phase C	0-99999999	–
7	–	1166	N/A	Operations Counter Phase A	0-99999999	–
8	–	1168	N/A	Operations Counter Phase B	0-99999999	–
9	–	1170	N/A	Operations Counter Phase C	0-99999999	–
10	–	1174	N/A	IPSlogic Counter 1	0-65000	–
11	–	1175	N/A	IPSlogic Counter 2	0-65000	–
12	–	1176	N/A	IPSlogic Counter 3	0-65000	–
13	–	1177	N/A	IPSlogic Counter 4	0-65000	–
14	–	1178	N/A	IPSlogic Counter 5	0-65000	–
15	–	1179	N/A	IPSlogic Counter 6	0-65000	–
16	–	1180	N/A	IPSlogic Counter 7	0-65000	–
17	–	1181	N/A	IPSlogic Counter 8	0-65000	–

Table 6 Integrated Totals List

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
1	–	1906	6, 7, 8	Recloser Closed Phases ABC	0 = inactive 1 if Bit pos 6 AND Bit pos 7 AND Bit pos 8	–
2	–	1906	3, 4, 5	Recloser Open Phases ABC	0 = inactive 1 if Bit pos 3 AND Bit pos 4 AND Bit pos5	–
3	–	1906	20	Control is Locked Out ABC	0 = inactive 1 = active	–
4	–	2052	2	Any Control or System Alarm	0 = inactive 1 = active	–
5	–	2054	–	Above Minimum Trip	0 = inactive 1 = active	–
6	–	1906	12	Remote Disable	0 = inactive 1 = active	–
7	–	1906	10	Recloser Disable	0 = inactive 1 = active	–
8	–	3942	11	Ground (N Elements) Disable	0 = inactive 1 = active	–
9	–	1906	9	SEF (G/GS Elements) Disable	0 = inactive 1 = active	–
10	–	2511	12	Cold Load Pickup Active	0 = inactive 1 = active	–
11	–	20	–	Profile 1 Active	0 = inactive 1 = Value of 0	–
12	–	20	–	Profile 2 Active	0 = inactive 1 = Value of 1	–
13	–	20	–	Profile 3 Active	0 = inactive 1 = Value of 2	–
14	–	20	–	Profile 4 Active	0 = inactive 1 = Value of 3	–
15	–	20	–	Profile 5 Active	0 = inactive 1 = Value of 4	–
16	–	20	–	Profile 6 Active	0 = inactive 1 = Value of 5	–
17	–	20	–	vProfile 7 Active	0 = inactive 1 = Value of 6	–
18	–	20	–	Profile 8 Active	0 = inactive 1 = Value of 7	–
19	–	1906	13	Hot Line Tag Active	0 = inactive 1 = active	–
20	–	2279	–	VyA Voltage Present	0 = inactive 1 if Value > 2V	–
21	–	2280	–	VyB Voltage Present	0 = inactive 1 if Value > 2V	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
22	–	2281	–	VyC Voltage Present	0 = inactive 1 if Value > 2V	–
23	–	2282	–	VzA Voltage Present	0 = inactive 1 if Value > 2V	–
24	–	1942	–	VzB Voltage Present	0 = inactive 1 if Value > 2V	–
25	–	1958	–	VzC Voltage Present	0 = inactive 1 if Value > 2V	–
26	–	2084	13	Reverse Power Flow	0 = inactive 1 = active	–
27	–	3798	6	Battery Test in Progress	0 = inactive 1 = active	–
28	–	3798	1	No AC Power	0 = inactive 1 = active	–
29	–	1906	19	Battery Alarm	0 = inactive 1 = active	–
30	–	2253	0	Input 1 Active	0 = inactive 1 = active	–
31	–	2253	1	Input 2 Active	0 = inactive 1 = active	–
32	–	2253	2	Input 3 Active	0 = inactive 1 = active	–
33	–	2253	3	Input 4 Active	0 = inactive 1 = active	–
34	–	2253	4	Input 5 Active	0 = inactive 1 = active	–
35	–	2253	5	Input 6 Active	0 = inactive 1 = active	–
36	–	2253	6	Input 7 Active	0 = inactive 1 = active	–
37	–	2253	7	Input 8 Active	0 = inactive 1 = active	–
38	–	2253	8	Input 9 Active	0 = inactive 1 = active	–
39	–	2253	9	Input 10 Active	0 = inactive 1 = active	–
40	–	2253	10	Input 11 Active	0 = inactive 1 = active	–
41	–	2253	11	Input 12 Active	0 = inactive 1 = active	–
42	–	2254	0	Output 1 Active	0 = inactive 1 = active	–
43	–	2254	1	Output 2 Active	0 = inactive 1 = active	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
44	–	2254	2	Output 3 Active	0 = inactive 1 = active	–
45	–	2254	3	Output 4 Active	0 = inactive 1 = active	–
46	–	2254	4	Output 5 Active	0 = inactive 1 = active	–
47	–	2254	5	Output 6 Active	0 = inactive 1 = active	–
48	–	2254	6	Output 7 Active	0 = inactive 1 = active	–
49	–	2254	7	Output 8 Active	0 = inactive 1 = active	–
50	–	2254	8	Output 9 Active	0 = inactive 1 = active	–
51	–	2254	9	Output 10 Active	0 = inactive 1 = active	–
52	–	2254	10	Output 11 Active	0 = inactive 1 = active	–
53	–	2254	11	Output 12 Active	0 = inactive 1 = active	–
54	–	1990	–	A Phase Fault Trip	0 = inactive 1 if Value is 1,4,6,7,9,10,11 or12	–
55	–	1990	–	B Phase Fault Trip	0 = inactive 1 if Value is 2,4,5,7,8,10,11 or 13	–
56	–	1990	–	C Phase Fault Trip	0 = inactive 1 if Value is 3,5,6,8,9,10,11 or 14	–
57	–	1990	–	N Phase Fault Trip	0 = inactive 1 if Value is 1,2,3,7,8,9,11	–
58	–	1990	–	G/GS Phase Fault Trip	0 = inactive 1 if Value is 1,2,3,7,8,9,11	–
59	–	4735	4	N OC Trip	0 = inactive 1 = active	–
60	–	4735	3	G/GS OC Trip	0 = inactive 1 = active	–
61	–	2271	11	47 OC Trip	0 = inactive 1 = active	–
62	–	3932	–	HLT via IPSlogic	0 = inactive 1 if Value is 2	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
63	–	3932	–	HLT Via Communications	0 = inactive 1 if Value greater than 3	–
64	–	3932	19	HLT Local via Front Panel Switch	0 = inactive 1 if Value is 3 OR 19	–
65	–	2052	4	Control Circuit Interrupted ABC	0 = inactive 1 = active	–
66	–	2253	0,1	Pole Failure ABC	0 = inactive 1 if Bit pos 0 is 1 AND Bit pos 1 is 1	–
67	–	1906	6	Recloser Closed Phase A	0 = inactive 1 if Bit pos 6 is 1	–
68	–	1906	3	Recloser Open Phase A	0 = inactive 1 if Bit pos 3 is 1	–
69	–	4552	–	Control is Locked Out Ph A (with 69 Single Phase Config)	0 = inactive 1 if Value is 11	–
70	–	2253	–	Control Circuit Interrupted Phase A	0 = inactive 1 if Bit pos 0 is 1 OR Bit pos 1 is 1	–
71	–	2253	–	Pole Failure Phase A	0 = inactive 1 if Bit pos 0 is 1 AND Bit pos 1 is 1	–
72	–	1906	7	Recloser Closed Phase B	0 = inactive 1 = active	–
73	–	1906	4	Recloser Open Phase B	0 = inactive 1 = active	–
74	–	4567	–	Control is Locked Out Ph B (with 69 Single Phase Config)	0 = inactive 1 if Value is 11	–
75	–	2253	5,6	Control Circuit Interrupted Phase B	0 = inactive 1 if Bit pos 5 is 1 OR Bit pos 6 is 1	–
76	–	2253	5,6	Pole Failure Phase B	0 = inactive 1 if Bit pos 5 is 1 AND Bit pos 6 is 1	–
77	–	1906	8	Recloser Closed Phase C	0 = inactive 1 = active	–
78	–	1906	5	Recloser Open Phase C	0 = inactive 1 = active	–
79	–	4582	–	Control is Locked Out Ph C (with 69 Single Phase Config)	0 = inactive 1 if Value is 11	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
80	–	2253	7,8	Control Circuit Interrupted Phase C	0 = inactive 1 if Bit pos 7 is 1 OR Bit pos 8 is 1	–
81	–	2253	7,8	Pole Failure Phase C	0 = inactive 1 if Bit pos 7 is 1 AND Bit pos 8 is 1	–
82	–	4735	0	Phase A OC Trip	0 = inactive 1 if Value is 0	–
83	–	4735	1	Phase B OC Trip	0 = inactive 1 if Value is 0	–
84	–	4735	2	Phase C OC Trip	0 = inactive 1 if Value is 0	–
85	–	4377	–	Operation Type A - Recloser Three Phase Ganged	0 = inactive 1 if Value is 0	–
86	–	4377	–	Opertation Type T - Recloser Independent Phase Capable	0 = inactive 1 if Value is 1	–
87	–	4377	–	Operation Type V - Recloser + Switch/Sectionalizer Three Phase Ganged	0 = inactive 1 if Value is 2	–
88	–	4377	–	Operation Type W - Recloser + Switch/Sectionalizer Independent Phase Capable	0 = inactive 1 if Value is 3	–
89	–	30922	–	79 in 3T3L Mode	0 = inactive 1 = active	–
90	–	30922	–	79 in 1T3L Mode	0 = inactive 1 = active	–
91	–	30922	–	79 in 1T1L Mode	0 = inactive 1 = active	–
92	–	30922	–	79 in 3T1L Mode	0 = inactive 1 = active	–
93	–	8564	–	F81#1 Enabled/Disabled	0 = Disabled 1 = Enabled	–
94	–	8573	–	F81#2 Enabled/Disabled	0 = Disabled 1 = Enabled	–
95	–	8582	–	F81#3 Enabled/Disabled	0 = Disabled 1 = Enabled	–
96	–	8591	–	F81#4 Enabled/Disabled	0 = Disabled 1 = Enabled	–
97	–	46712	–	F81#5 Enabled/Disabled	0 = Disabled 1 = Enabled	–
98	–	46721	–	F81#6 Enabled/Disabled	0 = Disabled 1 = Enabled	–
99	–	46730	–	F81#7 Enabled/Disabled	0 = Disabled 1 = Enabled	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
100	–	46739	–	F81#8 Enabled/Disabled	0 = Disabled 1 = Enabled	–
101	–	2263	13	F81#1 pickup status bit	0 = inactive 1 = active	–
102	–	2273	13	F81#1 timeout status bit	0 = inactive 1 = active	–
103	–	3788	13	F81#1 timeout target status bit	0 = inactive 1 = active	–
104	–	2263	14	F81#2 pickup status bit	0 = inactive 1 = active	–
105	–	2273	14	F81#2 timeout status bit	0 = inactive 1 = active	–
106	–	3788	14	F81#2 timeout target status bit	0 = inactive 1 = active	–
107	–	2263	15	F81#3 pickup status bit	0 = inactive 1 = active	–
108	–	2273	15	F81#3 timeout status bit	0 = inactive 1 = active	–
109	–	3788	15	F81#3 timeout target status bit	0 = inactive 1 = active	–
110	–	2264	0	F81#4 pickup status bit	0 = inactive 1 = active	–
111	–	2274	0	F81#4 timeout status bit	0 = inactive 1 = active	–
112	–	3789	0	F81#4 timeout target status bit	0 = inactive 1 = active	–
113	–	4804	15	F81#5 pickup status bit	0 = inactive 1 = active	–
114	–	4806	15	F81#5 timeout status bit	0 = inactive 1 = active	–
115	–	4812	15	F81#5 timeout target status bit	0 = inactive 1 = active	–
116	–	4805	0	F81#6 pickup status bit	0 = inactive 1 = active	–
117	–	4807	0	F81#6 timeout status bit	0 = inactive 1 = active	–
118	–	4813	0	F81#6 timeout target status bit	0 = inactive 1 = active	–
119	–	4805	9	HCL A pickup status bit	0 = inactive 1 = active	–
120	–	4807	9	HCL A timeout status bit	0 = inactive 1 = active	–
121	–	4813	9	HCL A timeout target status bit	0 = inactive 1 = active	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
122	–	4805	10	HCL B pickup status bit	0 = inactive 1 = active	–
123	–	4807	10	HCL B timeout status bit	0 = inactive 1 = active	–
124	–	4813	10	HCL B timeout target status bit	0 = inactive 1 = active	–
125	–	4805	11	HCL C pickup status bit	0 = inactive 1 = active	–
126	–	4807	11	HCL C timeout status bit	0 = inactive 1 = active	–
127	–	4813	11	HCL C timeout target status bit	0 = inactive 1 = active	–
128	–	4805	12	HCL G pickup status bit	0 = inactive 1 = active	–
129	–	4807	12	HCL G timeout status bit	0 = inactive 1 = active	–
130	–	4813	12	HCL G timeout target status bit	0 = inactive 1 = active	–
131	–	4805	13	F81#7 pickup status bit	0 = inactive 1 = active	–
132	–	4807	13	F81#7 timeout status bit	0 = inactive 1 = active	–
133	–	4813	13	F81#7 timeout target status bit	0 = inactive 1 = active	–
134	–	4805	14	F81#8 pickup status bit	0 = inactive 1 = active	–
135	–	4807	14	F81#8 timeout status bit	0 = inactive 1 = active	–
136	–	4813	14	F81#8 timeout target status bit	0 = inactive 1 = active	–
137	–	8674	–	F81R#1 Enabled/Disabled	0 = Disabled 1 = Enabled	–
138	–	8683	–	F81R#2 Enabled/Disabled	0 = Disabled 1 = Enabled	–
139	–	46748	–	F81R#3 Enabled/Disabled	0 = Disabled 1 = Enabled	–
140	–	46758	–	F81R#4 Enabled/Disabled	0 = Disabled 1 = Enabled	–
141	–	46768	–	F81R#5 Enabled/Disabled	0 = Disabled 1 = Enabled	–
142	–	46778	–	F81R#6 Enabled/Disabled	0 = Disabled 1 = Enabled	–
143	–	46788	–	F81R#7 Enabled/Disabled	0 = Disabled 1 = Enabled	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
144	–	46798	–	F81R#8 Enabled/Disabled	0 = Disabled 1 = Enabled	–
145	–	2264	1	F81R#1 pickup status bit	0 = inactive 1 = active	–
146	–	2274	1	F81R#1 timeout status bit	0 = inactive 1 = active	–
147	–	3789	1	F81R#1 timeout target status bit	0 = inactive 1 = active	–
148	–	2264	2	F81R#2 pickup status bit	0 = inactive 1 = active	–
149	–	2274	2	F81R#2 timeout status bit	0 = inactive 1 = active	–
150	–	3789	2	F81R#2 timeout target status bit	0 = inactive 1 = active	–
151	–	4805	15	F81R#3 pickup status bit	0 = inactive 1 = active	–
152	–	4807	15	F81R#3 timeout status bit	0 = inactive 1 = active	–
153	–	4813	15	F81R#3 timeout target status bit	0 = inactive 1 = active	–
154	–	4847	0	F81R#4 pickup status bit	0 = inactive 1 = active	–
155	–	4849	0	F81R#4 timeout status bit	0 = inactive 1 = active	–
156	–	4855	0	F81R#4 timeout target status bit	0 = inactive 1 = active	–
157	–	4847	1	F81R#5 pickup status bit	0 = inactive 1 = active	–
158	–	4849	1	F81R#5 timeout status bit	0 = inactive 1 = active	–
159	–	4855	1	F81R#5 timeout target status bit	0 = inactive 1 = active	–
160	–	4847	2	F81R#6 pickup status bit	0 = inactive 1 = active	–
161	–	4849	2	F81R#6 timeout status bit	0 = inactive 1 = active	–
162	–	4855	2	F81R#6 timeout target status bit	0 = inactive 1 = active	–
163	–	4847	3	F81R#7 pickup status bit	0 = inactive 1 = active	–
164	–	4849	3	F81R#7 timeout status bit	0 = inactive 1 = active	–
165	–	4855	3	F81R#7 timeout target status bit	0 = inactive 1 = active	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
166	–	4847	4	F81R#8 pickup status bit	0 = inactive 1 = active	–
167	–	4849	4	F81R#8 timeout status bit	0 = inactive 1 = active	–
168	–	4855	4	F81R#8 timeout target status bit	0 = inactive 1 = active	–
169	–	46808	–	F46BC Enabled/Disabled	0 = Disabled 1 = Enabled	–
170	–	4847	5	F46BC pickup status bit	0 = inactive 1 = active	–
171	–	4849	5	F46BC timeout status bit	0 = inactive 1 = active	–
172	–	4855	5	F46BC timeout target status bit	0 = inactive 1 = active	–
173	–	1935	15	FBM #1 pickup status bit	0 = inactive 1 = active	–
174	–	1936	15	FBM #1 timeout status bit	0 = inactive 1 = active	–
175	–	1939	15	FBM #1 timeout target status bit	0 = inactive 1 = active	–
176	–	4847	6	FBM #2 pickup status bit	0 = inactive 1 = active	–
177	–	4849	6	FBM #2 timeout status bit	0 = inactive 1 = active	–
178	–	4855	6	FBM #2 timeout target status bit	0 = inactive 1 = active	–
179	–	4864	13	Virtual Input 1 Status	0 = inactive 1 = active	–
180	–	4864	14	Virtual Input 2 Status	0 = inactive 1 = active	–
181	–	4864	15	Virtual Input 3 Status	0 = inactive 1 = active	–
182	–	4865	0	Virtual Input 4 Status	0 = inactive 1 = active	–
183	–	4865	1	Virtual Input 5 Status	0 = inactive 1 = active	–
184	–	4865	2	Virtual Input 6 Status	0 = inactive 1 = active	–
185	–	4865	3	Virtual Input 7 Status	0 = inactive 1 = active	–
186	–	4865	4	Virtual Input 8 Status	0 = inactive 1 = active	–
187	–	4865	5	Virtual Input 9 Status	0 = inactive 1 = active	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
188	–	4865	6	Virtual Input 10 Status	0 = inactive 1 = active	–
189	–	4865	7	Virtual Input 11 Status	0 = inactive 1 = active	–
190	–	4865	8	Virtual Input 12 Status	0 = inactive 1 = active	–
191	–	4865	9	Virtual Input 13 Status	0 = inactive 1 = active	–
192	–	4865	10	Virtual Input 14 Status	0 = inactive 1 = active	–
193	–	4865	11	Virtual Input 15 Status	0 = inactive 1 = active	–
194	–	4865	12	Virtual Input 16 Status	0 = inactive 1 = active	–
195	–	4865	13	Virtual Input 17 Status	0 = inactive 1 = active	–
196	–	4865	14	Virtual Input 18 Status	0 = inactive 1 = active	–
197	–	4865	15	Virtual Input 19 Status	0 = inactive 1 = active	–
198	–	4868	0	CLP Enabled/Disabled	0 = inactive 1 = active	–
199	–	4868	1	FCLP Block	0 = inactive 1 = active	–
200	–	4868	2	FCLP Reset	0 = inactive 1 = active	–
201	–	4868	3	FCLP Initiated	0 = inactive 1 = active	–
202	–	4868	4	FCLP 79 Lockout	0 = inactive 1 = active	–
203	–	4869	0	FCLP Arm Pickup	0 = inactive 1 = active	–
204	–	4869	1	FCLP Arm Timeout	0 = inactive 1 = active	–
205	–	4869	2	FCLP Initiate Action Pickup	0 = inactive 1 = active	–
206	–	4869	3	FCLP Initiate Action Timeout	0 = inactive 1 = active	–
207	–	4869	4	FCLP Low current Phase Pickup	0 = inactive 1 = active	–
208	–	4869	5	FCLP Low current Phase Timeout	0 = inactive 1 = active	–
209	–	4869	6	FCLP Low current Ground Pickup	0 = inactive 1 = active	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
210	–	4869	7	FCLP Low current Ground Timeout	0 = inactive 1 = active	–
211	–	4869	8	FCLP Override Active Pickup	0 = inactive 1 = active	–
212	–	4869	9	FCLP Override Active Timeout	0 = inactive 1 = active	–
213	–	4869	10	FCLP BMT Pickup	0 = inactive 1 = active	–
214	–	4869	11	FCLP BMT Timeout	0 = inactive 1 = active	–
215	–	4869	12	FCLP Low current Residual Pickup	0 = inactive 1 = active	–
216	–	4869	13	FCLP Low current Residual Timeout	0 = inactive 1 = active	–
217	–	47375	–	FCLP PhOverride Set	0 = inactive 1 = active	–
218	–	47393	–	FCLP GndOverride Set	0 = inactive 1 = active	–
219	–	47393	–	FCLP NeuOverride Set	0 = inactive 1 = active	–
220	–	4891	0	FBM #1 percent pickup	0 = inactive 1 = active	–
221	–	4891	3	FBM #1 percent timeout	0 = inactive 1 = active	–
222	–	4892	0	FBM #2 percent pickup	0 = inactive 1 = active	–
223	–	4892	3	FBM #2 percent timeout	0 = inactive 1 = active	–
224	–	2050/ 2051	22	Recloser Deactivate G/N Functions	0 = inactive 1 = active	–
225	–	3798	0	Battery Discharge test Fail	0 = inactive 1 = active	–
226	–	3798	1	Main Power is ON	0 = inactive 1 = active	–
227	–	3798	2	Battery Charging Active	0 = inactive 1 = active	–
228	–	3798	3	Battery Charging Board Condition(BCB)	0 = inactive 1 = active	–
229	–	3798	4	Charging Mode (boost or float,trickle)	0 = inactive 1 = active	–
230	–	3798	5	Battery Present (No batt)	0 = inactive 1 = active	–
231	–	3798	6	Battery Charger Test in Progress	0 = inactive 1 = active	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
232	–	3798	7	Battery Charger Mode Absorb	0 = inactive 1 = active	–
233	–	3798	8	Battery Charger Cap Charged	0 = inactive 1 = active	–
234	–	3798	9	Battery Charger Mode Bulk	0 = inactive 1 = active	–
235	–	3798	10	Battery Charger Mode Float	0 = inactive 1 = active	–
236	–	4470	6	32H Battery Charger ON/OFF	0 = inactive 1 = active	–
237	–	4901	0	32H Internal Door Status	0 = inactive 1 = active	–
238	–	4901	1	32H External Door Status	0 = inactive 1 = active	–
239	–	4901	2	32H Low Capacitor Voltage	0 = inactive 1 = active	–
240	–	4901	3	32H High Temperature Alarm	0 = inactive 1 = active	–
241	–	4901	4	32H Low Battery Alarm	0 = inactive 1 = active	–
242	–	4990	0	Power Target #1	0 = inactive 1 = active	–
243	–	4990	1	Power Target #2	0 = inactive 1 = active	–
244	–	4990	2	Power Target #3	0 = inactive 1 = active	–
245	–	4990	3	Power Target #4	0 = inactive 1 = active	–
246	–	4990	4	Power Target #5	0 = inactive 1 = active	–
247	–	4990	5	Power Target #6	0 = inactive 1 = active	–
248	–	4990	6	Power Target #7	0 = inactive 1 = active	–
249	–	4990	7	Power Target #8	0 = inactive 1 = active	–
250	–	4990	8	Power Target #9	0 = inactive 1 = active	–
251	–	4990	9	Power Target #10	0 = inactive 1 = active	–
252	–	4990	10	Power Target #11	0 = inactive 1 = active	–
253	–	4990	11	Power Target #12	0 = inactive 1 = active	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
254	–	1501	0	VLogic Output 1 Active Profile	0 = inactive 1 = active	–
255	–	1501	1	VLogic Output 2 Active Profile	0 = inactive 1 = active	–
256	–	1501	2	VLogic Output 3 Active Profile	0 = inactive 1 = active	–
257	–	1501	3	VLogic Output 4 Active Profile	0 = inactive 1 = active	–
258	–	1501	4	VLogic Output 5 Active Profile	0 = inactive 1 = active	–
259	–	1501	5	VLogic Output 6 Active Profile	0 = inactive 1 = active	–
260	–	1501	6	VLogic Output 7 Active Profile	0 = inactive 1 = active	–
261	–	1501	7	VLogic Output 8 Active Profile	0 = inactive 1 = active	–
262	–	1501	8	VLogic Output 9 Active Profile	0 = inactive 1 = active	–
263	–	1501	9	VLogic Output 10 Active Profile	0 = inactive 1 = active	–
264	–	1501	10	VLogic Output 11 Active Profile	0 = inactive 1 = active	–
265	–	1501	11	VLogic Output 12 Active Profile	0 = inactive 1 = active	–
266	–	1501	12	VLogic Output 13 Active Profile	0 = inactive 1 = active	–
267	–	1501	13	VLogic Output 14 Active Profile	0 = inactive 1 = active	–
268	–	1501	14	VLogic Output 15 Active Profile	0 = inactive 1 = active	–
269	–	1501	15	VLogic Output 16 Active Profile	0 = inactive 1 = active	–
270	–	1502	0	VLogic Output 17 Active Profile	0 = inactive 1 = active	–
271	–	1502	1	VLogic Output 18 Active Profile	0 = inactive 1 = active	–
272	–	1502	2	VLogic Output 19 Active Profile	0 = inactive 1 = active	–
273	–	1502	3	VLogic Output 20 Active Profile	0 = inactive 1 = active	–
274	–	1502	4	VLogic Output 21 Active Profile	0 = inactive 1 = active	–
275	–	1502	5	VLogic Output 22 Active Profile	0 = inactive 1 = active	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
276	–	1502	6	VLogic Output 23 Active Profile	0 = inactive 1 = active	–
277	–	1502	7	VLogic Output 24 Active Profile	0 = inactive 1 = active	–
278	–	1502	8	VLogic Output 25 Active Profile	0 = inactive 1 = active	–
279	–	1502	9	VLogic Output 26 Active Profile	0 = inactive 1 = active	–
280	–	1502	10	VLogic Output 27 Active Profile	0 = inactive 1 = active	–
281	–	1502	11	VLogic Output 28 Active Profile	0 = inactive 1 = active	–
282	–	1502	12	VLogic Output 29 Active Profile	0 = inactive 1 = active	–
283	–	1502	13	VLogic Output 30 Active Profile	0 = inactive 1 = active	–
284	–	1502	14	VLogic Output 31 Active Profile	0 = inactive 1 = active	–
285	–	1502	15	VLogic Output 32 Active Profile	0 = inactive 1 = active	–
286	–	1503	0	VLogic Output 1 Common Profile	0 = inactive 1 = active	–
287	–	1503	1	VLogic Output 2 Common Profile	0 = inactive 1 = active	–
288	–	1503	2	VLogic Output 3 Common Profile	0 = inactive 1 = active	–
289	–	1503	3	VLogic Output 4 Common Profile	0 = inactive 1 = active	–
290	–	1503	4	VLogic Output 5 Common Profile	0 = inactive 1 = active	–
291	–	1503	5	VLogic Output 6 Common Profile	0 = inactive 1 = active	–
292	–	1503	6	VLogic Output 7 Common Profile	0 = inactive 1 = active	–
293	–	1503	7	VLogic Output 8 Common Profile	0 = inactive 1 = active	–
294	–	1503	8	VLogic Output 9 Common Profile	0 = inactive 1 = active	–
295	–	1503	9	VLogic Output 10 Common Profile	0 = inactive 1 = active	–
296	–	1503	10	VLogic Output 11 Common Profile	0 = inactive 1 = active	–
297	–	1503	11	VLogic Output 12 Common Profile	0 = inactive 1 = active	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
298	–	1503	12	VLogic Output 13 Common Profile	0 = inactive 1 = active	–
299	–	1503	13	VLogic Output 14 Common Profile	0 = inactive 1 = active	–
300	–	1503	14	VLogic Output 15 Common Profile	0 = inactive 1 = active	–
301	–	1503	15	VLogic Output 16 Common Profile	0 = inactive 1 = active	–
302	–	1504	0	VLogic Output 17 Common Profile	0 = inactive 1 = active	–
303	–	1504	1	VLogic Output 18 Common Profile	0 = inactive 1 = active	–
304	–	1504	2	VLogic Output 19 Common Profile	0 = inactive 1 = active	–
305	–	1504	3	VLogic Output 20 Common Profile	0 = inactive 1 = active	–
306	–	1504	4	VLogic Output 21 Common Profile	0 = inactive 1 = active	–
307	–	1504	5	VLogic Output 22 Common Profile	0 = inactive 1 = active	–
308	–	1504	6	VLogic Output 23 Common Profile	0 = inactive 1 = active	–
309	–	1504	7	VLogic Output 24 Common Profile	0 = inactive 1 = active	–
310	–	1504	8	VLogic Output 25 Common Profile	0 = inactive 1 = active	–
311	–	1504	9	VLogic Output 26 Common Profile	0 = inactive 1 = active	–
312	–	1504	10	VLogic Output 27 Common Profile	0 = inactive 1 = active	–
313	–	1504	11	VLogic Output 28 Common Profile	0 = inactive 1 = active	–
314	–	1504	12	VLogic Output 29 Common Profile	0 = inactive 1 = active	–
315	–	1504	13	VLogic Output 30 Common Profile	0 = inactive 1 = active	–
316	–	1504	14	VLogic Output 31 Common Profile	0 = inactive 1 = active	–
317	–	1504	15	VLogic Output 32 Common Profile	0 = inactive 1 = active	–
318	–	46150	–	One Shot Sectionalizing 3-Ph Enabled/Disabled	0 = inactive 1 = active	–
319	–	46166	–	One Shot Sectionalizing Ph-A Enabled/Disabled	0 = inactive 1 = active	–

Table 7 Single Points Information (Status) (Pole Mode)

Single Points Information (Status) (Pole mode) ASDU: M_SP_NA_1 Single-point information without time tag						
Data Point	**Scale N/A = Not Used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
320	–	46182	–	One Shot Sectionalizing Ph-B Enabled/Disabled	0 = inactive 1 = active	–
321	–	46198	–	One Shot Sectionalizing Ph-C Enabled/Disabled	0 = inactive 1 = active	–

Table 7 Single Points Information (Status) (Pole Mode)

■**NOTE:** WDouble Point Info Qualifier is given below.

Double Point Info Qualifier (DPI)	Digital Input Status	
	Data Point 1	Data Point 2
0 (Intermediate State)	OFF (Open)	OFF (Open)
1 (OFF)	ON (Closed)	OFF (Open)
2 (ON)	OFF (Open)	ON (Closed)
3 (Indeterminate State)	ON (Closed)	ON (Closed)

–

Double Points Information (Status) (Pole mode) ASDU: M_DP_NA_1 Double point information without time tag					
Data Point	**Register Number**	**Bit Position**	**Description**	**Double Point Info Qualifier**	**Request Function**
1	1906	6, 7, 8	Recloser Closed Phases ABC	0 -3	–
2	1906	3, 4, 5	Recloser Open Phases ABC	0 -3	–
3	1906	6	Recloser Closed Phase A	0 -3	–
4	1906	3	Recloser Open Phase A	0 -3	–
5	1906	7	Recloser Closed Phase B	0 -3	–
6	1906	4	Recloser Open Phase B	0 -3	–
7	1906	8	Recloser Closed Phase C	0 -3	–
8	1906	5	Recloser Open Phase C	0 -3	–
9	4864	0	Input 1 Active	0 -3	–
10	4864	1	Input 2 Active	0 -3	–
11	4864	5	Input 6 Active	0 -3	–
12	4864	6	Input 7 Active	0 -3	–
13	4864	7	Input 8 Active	0 -3	–
14	4864	8	Input 9 Active	0 -3	–
15	2254	0	Output 1 Active	0 -3	–
16	2254	1	Output 2 Active	0 -3	–
17	2254	4	Output 5 Active	0 -3	–
18	2254	5	Output 6 Active	0 -3	–
19	2254	6	Output 7 Active	0 -3	–
20	2254	7	Output 8 Active	0 -3	–

Table 8 Double Points Information (Status) (Pole Mode)

Measured Values Points List (Pole mode) ASDU: P_ME_NB_1 Parameter of measured values, scaled value						
Data Point	Scale	Register Number	Unit	Description	Range Value	Low Word/ High Word
1	1	1800	A	A Phase Primary Current Magnitude	–	Low
2	1	1801	A	A Phase Primary Current Magnitude	–	High
3	1	1802	A	B Phase Primary Current Magnitude	–	Low
4	1	1803	A	B Phase Primary Current Magnitude	–	High
5	1	1804	A	C Phase Primary Current Magnitude	–	Low
6	1	1805	A	C Phase Primary Current Magnitude	–	High
7	1	2012	A	N (3I0) Primary Current Magnitude	–	Low
8	1	2013	A	N (3I0) Primary Current Magnitude	–	High
9	1	1806	A	G/GS Primary Current Magnitude	–	Low
10	1	1807	A	G/GS Primary Current Magnitude	–	High
11	1	1808	V	A Phase Primary Source Voltage Magnitude	–	Low
12	1	1809	V	A Phase Primary Source Voltage Magnitude	–	High
13	1	1810	V	B Phase Primary Source Voltage Magnitude	–	Low
14	1	1811	V	B Phase Primary Source Voltage Magnitude	–	High
15	1	1812	V	C Phase Primary Source Voltage Magnitude	–	Low
16	1	1813	V	C Phase Primary Source Voltage Magnitude	–	High
17	1	1814	V	A Phase Primary Load Voltage Magnitude	–	Low
18	1	1815	V	A Phase Primary Load Voltage Magnitude	–	High
19	1	1950	V	B Phase Primary Load Voltage Magnitude	–	Low
20	1	1951	V	B Phase Primary Load Voltage Magnitude	–	High
21	1	1966	V	C Phase Primary Load Voltage Magnitude	–	Low
22	1	1967	V	C Phase Primary Load Voltage Magnitude	–	High
23	0.01	2279	V	A Phase Secondary Source Voltage Magnitude	–	Low
24	0.01	2280	V	B Phase Secondary Source Voltage Magnitude	–	Low
25	0.01	2281	V	C Phase Secondary Source Voltage Magnitude	–	Low
26	0.01	2282	V	A Phase Secondary Load Voltage Magnitude	–	Low
27	0.01	1942	V	B Phase Secondary Load Voltage Magnitude	–	Low
28	0.01	1958	V	C Phase Secondary Load Voltage Magnitude	–	Low
29	0.001	2249	N/A	A Phase Power Factor	–	Low
30	0.001	2250	N/A	B Phase Power Factor	–	Low

Table 9 Measured Values Points List (Pole Mode)

Measured Values Points List (Pole mode) ASDU: P_ME_NB_1 Parameter of measured values, scaled value						
Data Point	Scale	Register Number	Unit	Description	Range Value	Low Word/ High Word
31	0.001	2251	N/A	C Phase Power Factor	–	Low
32	0.01	1530	kVa	A Phase Primary Apparent Power	–	Low
33	0.01	1531	kVa	A Phase Primary Apparent Power	–	High
34	0.01	1532	kVa	B Phase Primary Apparent Power	–	Low
35	0.01	1533	kVa	B Phase Primary Apparent Power	–	High
36	0.01	1534	kVa	C Phase Primary Apparent Power	–	Low
37	0.01	1535	kVa	C Phase Primary Apparent Power	–	High
38	0.01	1514	kW	A Phase Primary Real Power	–	Low
39	0.01	1515	kW	A Phase Primary Real Power	–	High
40	0.01	1518	kW	B Phase Primary Real Power	–	Low
41	0.01	1519	kW	B Phase Primary Real Power	–	High
42	0.01	1522	kW	C Phase Primary Real Power	–	Low
43	0.01	1523	kW	C Phase Primary Real Power	–	High
44	0.01	1516	kvar	A Phase Primary Reactive Power	–	Low
45	0.01	1517	kvar	A Phase Primary Reactive Power	–	High
46	0.01	1520	kvar	B Phase Primary Reactive Power	–	Low
47	0.01	1521	kvar	B Phase Primary Reactive Power	–	High
48	0.01	1524	kvar	C Phase Primary Reactive Power	–	Low
49	0.01	1525	kvar	C Phase Primary Reactive Power	–	High
50	0.01	2222	Hz	Line Frequency	–	Low
51	0.001	2283	A	A Phase Primary Demand Currents	–	Low
52	0.001	2284	A	B Phase Primary Demand Currents	–	Low
53	0.001	2285	A	C Phase Primary Demand Currents	–	Low
54	0.01	3796	V	Battery Voltage	–	Low
55	0.001	3797	A	Battery Current	–	Low
56	0.01	2287	V	Demand Primary VyA	–	Low
57	0.01	2288	V	Demand Primary VyB	–	Low
58	0.01	2289	V	Demand Primary VyC	–	Low
59	0.01	2290	V	Demand Primary VzA	–	Low
60	0.01	8565	Hz	F81#1 Pickup	–	Low
61	0.01	8566	Sec	F81#1 Def Time	–	Low
62	0.1	8567	Hz	F81#1 Hysteresis	–	Low

Table 9 Measured Values Points List (Pole Mode)

Measured Values Points List (Pole mode) ASDU: P_ME_NB_1 Parameter of measured values, scaled value						
Data Point	Scale	Register Number	Unit	Description	Range Value	Low Word/ High Word
63	0.01	8568	V	F81#1 Min Voltage	–	Low
64	0.01	8569	A	F81#1 Min Load	–	Low
65	1	8570	–	F81#1 Block Options	–	Low
66	0.01	8574	Hz	F81#2 Pickup	–	Low
67	0.01	8575	Sec	F81#2 Def Time	–	Low
68	0.1	8576	Hz	F81#2 Hysteresis	–	Low
69	0.01	8577	V	F81#2 Min Voltage	–	Low
70	0.01	8578	A	F81#2 Min Load	–	Low
71	1	8579	–	F81#2 Block Options	–	Low
72	0.01	8583	Hz	F81#3 Pickup	–	Low
73	0.01	8584	Sec	F81#3 Def Time	–	Low
74	0.1	8585	Hz	F81#3 Hysteresis	–	Low
75	0.01	8586	V	F81#3 Min Voltage	–	Low
76	0.01	8587	A	F81#3 Min Load	–	Low
77	1	8588	–	F81#3 Block Options	–	Low
78	0.01	8592	Hz	F81#4 Pickup	–	Low
79	0.01	8593	Sec	F81#4 Def Time	–	Low
80	0.1	8594	Hz	F81#4 Hysteresis	–	Low
81	0.01	8595	V	F81#4 Min Voltage	–	Low
82	0.01	8596	A	F81#4 Min Load	–	Low
83	1	8597	–	F81#4 Block Options	–	Low
84	0.01	46713	Hz	F81#5 Pickup	–	Low
85	0.01	46714	Sec	F81#5 Def Time	–	Low
86	0.1	46715	Hz	F81#5 Hysteresis	–	Low
87	0.01	46716	V	F81#5 Min Voltage	–	Low
88	0.01	46717	A	F81#5 Min Load	–	Low
89	1	46718	–	F81#5 Block Options	–	Low
90	0.01	46722	Hz	F81#6 Pickup	–	Low
91	0.01	46723	Sec	F81#6 Def Time	–	Low
92	0.1	46724	Hz	F81#6 Hysteresis	–	Low
93	0.01	46725	V	F81#6 Min Voltage	–	Low
94	0.01	46726	A	F81#6 Min Load	–	Low

Table 9 Measured Values Points List (Pole Mode)

Measured Values Points List (Pole mode) ASDU: P_ME_NB_1 Parameter of measured values, scaled value						
Data Point	Scale	Register Number	Unit	Description	Range Value	Low Word/ High Word
95	1	46727	–	F81#6 Block Options	–	Low
96	0.01	46731	Hz	F81#7 Pickup	–	Low
97	0.01	46732	Sec	F81#7 Def Time	–	Low
98	0.1	46733	Hz	F81#7 Hysteresis	–	Low
99	0.01	46734	V	F81#7 Min Voltage	–	Low
100	0.01	46735	A	F81#7 Min Load	–	Low
101	1	46736	–	F81#7 Block Options	–	Low
102	0.01	46740	Hz	F81#8 Pickup	–	Low
103	0.01	46741	Sec	F81#8 Def Time	–	Low
104	0.1	46742	Hz	F81#8 Hysteresis	–	Low
105	0.01	46743	V	F81#8 Min Voltage	–	Low
106	0.01	46744	A	F81#8 Min Load	–	Low
107	1	46745	–	F81#8 Block Options	–	Low
108	0.01	8675	Hz/s	F81R#1 Pickup	–	Low
109	0.01	8676	Sec	F81R#1 Def Time	–	Low
110	0.01	8677	Hz	F81R#1 Max Frequency	–	Low
111	0.01	8678	A	F81R#1 Min Current	–	Low
112	0.01	8679	V	F81R#1 Min Voltage	–	Low
113	1	8680	–	F81R#1 Pickup Cycle Number	–	Low
114	1	8690	–	F81R#1 Operating Voltage	–	Low
115	0.01	8684	Hz/s	F81R#2 Pickup	–	Low
116	0.01	8685	Sec	F81R#2 Def Time	–	Low
117	0.01	8686	Hz	F81R#2 Max Frequency	–	Low
118	0.01	8687	A	F81R#2 Min Current	–	Low
119	0.01	8688	V	F81R#2 Min Voltage	–	Low
120	1	8689	–	F81R#2 Pickup Cycle Number	–	Low
121	1	8691	–	F81R#2 Operating Voltage	–	Low
122	0.01	46749	Hz/s	F81R#3 Pickup	–	Low
123	0.01	46750	Sec	F81R#3 Def Time	–	Low
124	0.01	46751	Hz	F81R#3 Max Frequency	–	Low
125	0.01	46752	A	F81R#3 Min Current	–	Low
126	0.01	46753	V	F81R#3 Min Voltage	–	Low

Table 9 Measured Values Points List (Pole Mode)

Measured Values Points List (Pole mode) ASDU: P_ME_NB_1 Parameter of measured values, scaled value						
Data Point	Scale	Register Number	Unit	Description	Range Value	Low Word/ High Word
127	1	46754	–	F81R#3 Pickup Cycle Number	–	Low
128	1	46755	–	F81R#3 Operating Voltage	–	Low
129	0.01	46750	Hz/s	F81R#4 Pickup	–	Low
130	0.01	46960	Sec	F81R#4 Def Time	–	Low
131	0.01	46961	Hz	F81R#4 Max Frequency	–	Low
132	0.01	46962	A	F81R#4 Min Current	–	Low
133	0.01	46963	V	F81R#4 Min Voltage	–	Low
134	1	46964	–	F81R#4 Pickup Cycle Number	–	Low
135	1	46965	–	F81R#4 Operating Voltage	–	Low
136	0.01	46769	Hz/s	F81R#5 Pickup	–	Low
137	0.01	46770	Sec	F81R#5 Def Time	–	Low
138	0.01	46771	Hz	F81R#5 Max Frequency	–	Low
139	0.01	46772	A	F81R#5 Min Current	–	Low
140	0.01	46773	V	F81R#5 Min Voltage	–	Low
141	1	46774	–	F81R#5 Pickup Cycle Number	–	Low
142	1	46775	–	F81R#5 Operating Voltage	–	Low
143	0.01	46779	Hz/s	F81R#6 Pickup	–	Low
144	0.01	46780	Sec	F81R#6 Def Time	–	Low
145	0.01	46781	Hz	F81R#6 Max Frequency	–	Low
146	0.01	46782	A	F81R#6 Min Current	–	Low
147	0.01	46783	V	F81R#6 Min Voltage	–	Low
148	1	46784	–	F81R#6 Pickup Cycle Number	–	Low
149	1	46785	–	F81R#6 Operating Voltage	–	Low
150	0.01	46789	Hz/s	F81R#7 Pickup	–	Low
151	0.01	46790	Sec	F81R#7 Def Time	–	Low
152	0.01	46791	Hz	F81R#7 Max Frequency	–	Low
153	0.01	46792	A	F81R#7 Min Current	–	Low
154	0.01	46793	V	F81R#7 Min Voltage	–	Low
155	1	46794	–	F81R#7 Pickup Cycle Number	–	Low
156	1	46795	–	F81R#7 Operating Voltage	–	Low
157	0.01	46799	Hz/s	F81R#8 Pickup	–	Low
158	0.01	46800	Sec	F81R#8 Def Time	–	Low

Table 9 Measured Values Points List (Pole Mode)

Measured Values Points List (Pole mode) ASDU: P_ME_NB_1 Parameter of measured values, scaled value						
Data Point	Scale	Register Number	Unit	Description	Range Value	Low Word/ High Word
159	0.01	46801	Hz	F81R#8 Max Frequency	–	Low
160	0.01	46802	A	F81R#8 Min Current	–	Low
161	0.01	46803	V	F81R#8 Min Voltage	–	Low
162	1	46804	–	F81R#8 Pickup Cycle Number	–	Low
163	1	46805	–	F81R#8 Operating Voltage	–	Low
164	0.1	4861	–	F46BC I2/I1 Ratio Secondary	–	Low
165	0.1	4862, 4863	–	F46BC I2/I1 Ratio Primary	–	Low
166	1	46809	%	F46BC I2/I1 Ratio Setting	–	Low
167	0.01	46810	Sec	F46BC Time Delay Setting	–	Low
168	0.01	46811	A	F46BC Min I2 Level Setting	–	Low
169	1	4871	Sec	FCLP Open To Arm Timer	–	Low
170	1	4872	Sec	FCLP Override Active Timer	–	Low
171	1	4873	Sec	FCLP Initiate Active Timer	–	Low
172	0.01	4874	Sec	FCLP BMT Phase Timer	–	Low
173	0.01	4875	Sec	FCLP BMT Ground Timer	–	Low
174	0.01	4896	Sec	FCLP BMT Residual Timer	–	Low
175	0.01	4876	A	FCLP Min Phase Pickup	–	Low
176	0.01 (Gnd) or 0.001 (Gnd Sens)	4877	A	FCLP Min Ground Pickup	–	Low
177	0.01	4895	A	FCLP Min Residual Pickup	–	Low
178	0.1	4885	%	FBM percent life used Ph-A	–	Low
179	0.1	4886	%	FBM percent life used Ph-B	–	Low
180	0.1	4887	%	FBM percent life used Ph-C	–	Low
181	0.1	4888	%	FBM percent life Remaining Ph-A	–	Low
182	0.1	4889	%	FBM percent life Remaining Ph-B	–	Low
183	0.1	4890	%	FBM percent life Remaining Ph-C	–	Low

Table 9 Measured Values Points List (Pole Mode)

■**NOTE:** The below table is common for Measured Normalized values, Measured Scaled values and Measured Float values.

Measured Normalized Values Points List
ASDU: M_ME_NA_1 Measured value, Normalized value

Measured Scaled Values Points List
ASDU: M_ME_NB_1 Measured value, Scaled value

Measured Float Values Points List
ASDU: M_ME_NC_1 Measured value, Float value

Data Point	Scale	Register Number	Unit	Description	Min	Max
1	1	1800, 1801	A	A Phase Primary Current Magnitude	0	1A_5A_PRI.ISIZE. RANGE
2	1	1802, 1803	A	B Phase Primary Current Magnitude	0	1A_5A_PRI.ISIZE. RANGE
3	1	1804, 1805	A	C Phase Primary Current Magnitude	0	1A_5A_PRI.ISIZE. RANGE
4	1	2012, 2013	A	N (3I0) Primary Current Magnitude	0	1A_5A_PRI.ISIZE. RANGE
5	1	1806, 1807	A	G/GS Primary Current Magnitude	0	1A_5A_PRI.IGNDSIZE. RANGE
6	1	1808, 1809	V	A Phase Primary Source Voltage Magnitude	0	600
7	1	1810, 1811	V	B Phase Primary Source Voltage Magnitude	0	600
8	1	1812, 1813	V	C Phase Primary Source Voltage Magnitude	0	600
9	1	1814, 1815	V	A Phase Primary Load Voltage Magnitude	0	600
10	1	1950, 1951	V	B Phase Primary Load Voltage Magnitude	0	600
11	1	1966, 1967	V	C Phase Primary Load Voltage Magnitude	0	600
12	0.01	2279	V	A Phase Secondary Source Voltage Magnitude	0	600
13	0.01	2280	V	B Phase Secondary Source Voltage Magnitude	0	600
14	0.01	2281	V	C Phase Secondary Source Voltage Magnitude	0	600
15	0.01	2282	V	A Phase Secondary Load Voltage Magnitude	0	600
16	0.01	1942	V	B Phase Secondary Load Voltage Magnitude	0	600
17	0.01	1958	V	C Phase Secondary Load Voltage Magnitude	0	600
18	0.001	2249	N/A	A Phase Power Factor	0	1
19	0.001	2250	N/A	B Phase Power Factor	0	1

Table 9 Measured Values Points List (Pole Mode)

Measured Normalized Values Points List ASDU: M_ME_NA_1 Measured value, Normalized value Measured Scaled Values Points List ASDU: M_ME_NB_1 Measured value, Scaled value Measured Float Values Points List ASDU: M_ME_NC_1 Measured value, Float value						
Data Point	**Scale**	**Register Number**	**Unit**	**Description**	**Min**	**Max**
20	0.001	2251	N/A	C Phase Power Factor	0	1
21	0.01	1530, 1531	kVa	A Phase Primary Apparent Power	0	1A_5A.PRIAPPRTPWR. RANGE
22	0.01	1532, 1533	kVa	B Phase Primary Apparent Power	0	1A_5A.PRIAPPRTPWR. RANGE
23	0.01	1534, 1535	kVa	C Phase Primary Apparent Power	0	1A_5A.PRIAPPRTPWR. RANGE
24	0.01	1514, 1515	kW	A Phase Primary Real Power	0	1A_5A.PRIREALPWR. RANGE
25	0.01	1518, 1519	kW	B Phase Primary Real Power	0	1A_5A.PRIREALPWR. RANGE
26	0.01	1522, 1523	kW	C Phase Primary Real Power	0	1A_5A.PRIREALPWR. RANGE
27	0.01	1516, 1517	kvar	A Phase Primary Reactive Power	0	1A_5A.PRIRECTPWR. RANGE
28	0.01	1520, 1521	kvar	B Phase Primary Reactive Power	0	1A_5A.PRIRECTPWR. RANGE
29	0.01	1524, 1525	kvar	C Phase Primary Reactive Power	0	1A_5A.PRIRECTPWR. RANGE
30	0.01	2222	Hz	Line Frequency	0	60
31	0.001	2283	A	A Phase Primary Demand Currents	0	1A_5A.I.RANGE
32	0.001	2284	A	B Phase Primary Demand Currents	0	1A_5A.I.RANGE
33	0.001	2285	A	C Phase Primary Demand Currents	0	1A_5A.I.RANGE
34	0.01	3796	V	Battery Voltage	0	30
35	0.001	3797	A	Battery Current	0	10
36	0.01	2287	V	Demand Primary VyA	0	600
37	0.01	2288	V	Demand Primary VyB	0	600
38	0.01	2289	V	Demand Primary VyC	0	600
39	0.01	2290	V	Demand Primary VzA	0	600
40	0.01	8565	Hz	F81#1 Pickup	40	65
41	0.01	8566	Sec	F81#1 Def Time	0	600
42	0.1	8567	Hz	F81#1 Hysteresis	0	1

Table 9 Measured Values Points List (Pole Mode)

Measured Normalized Values Points List ASDU: M_ME_NA_1 Measured value, Normalized value Measured Scaled Values Points List ASDU: M_ME_NB_1 Measured value, Scaled value Measured Float Values Points List ASDU: M_ME_NC_1 Measured value, Float value						
Data Point	**Scale**	**Register Number**	**Unit**	**Description**	**Min**	**Max**
43	0.01	8568	V	F81#1 Min Voltage	1	180
44	0.01	8569	A	F81#1 Min Load	0	40
45	1	8570	–	F81#1 Block Options	0	7
46	0.01	8574	Hz	F81#2 Pickup	40	65
47	0.01	8575	Sec	F81#2 Def Time	0	600
48	0.1	8576	Hz	F81#2 Hysteresis	0	1
49	0.01	8577	V	F81#2 Min Voltage	1	180
50	0.01	8578	A	F81#2 Min Load	0	40
51	1	8579	–	F81#2 Block Options	0	7
52	0.01	8583	Hz	F81#3 Pickup	40	65
53	0.01	8584	Sec	F81#3 Def Time	0	600
54	0.1	8585	Hz	F81#3 Hysteresis	0	1
55	0.01	8586	V	F81#3 Min Voltage	1	180
56	0.01	8587	A	F81#3 Min Load	0	40
57	1	8588	–	F81#3 Block Options	0	7
58	0.01	8592	Hz	F81#4 Pickup	40	65
59	0.01	8593	Sec	F81#4 Def Time	0	600
60	0.1	8594	Hz	F81#4 Hysteresis	0	1
61	0.01	8595	V	F81#4 Min Voltage	1	180
62	0.01	8596	A	F81#4 Min Load	0	40
63	1	8597	–	F81#4 Block Options	0	7
64	0.01	46713	Hz	F81#5 Pickup	40	65
65	0.01	46714	Sec	F81#5 Def Time	0	600
66	0.1	46715	Hz	F81#5 Hysteresis	0	1
67	0.01	46716	V	F81#5 Min Voltage	1	180
68	0.01	46717	A	F81#5 Min Load	0	40
69	1	46718	–	F81#5 Block Options	0	7
70	0.01	46722	Hz	F81#6 Pickup	40	65
71	0.01	46723	Sec	F81#6 Def Time	0	600

Table 9 Measured Values Points List (Pole Mode)

Measured Normalized Values Points List ASDU: M_ME_NA_1 Measured value, Normalized value Measured Scaled Values Points List ASDU: M_ME_NB_1 Measured value, Scaled value Measured Float Values Points List ASDU: M_ME_NC_1 Measured value, Float value						
Data Point	**Scale**	**Register Number**	**Unit**	**Description**	**Min**	**Max**
72	0.1	46724	Hz	F81#6 Hysteresis	0	1
73	0.01	46725	V	F81#6 Min Voltage	1	180
74	0.01	46726	A	F81#6 Min Load	0	40
75	1	46727	–	F81#6 Block Options	0	7
76	0.01	46731	Hz	F81#7 Pickup	40	65
77	0.01	46732	Sec	F81#7 Def Time	0	600
78	0.1	46733	Hz	F81#7 Hysteresis	0	1
79	0.01	46734	V	F81#7 Min Voltage	1	180
80	0.01	46735	A	F81#7 Min Load	0	40
81	1	46736	–	F81#7 Block Options	0	7
82	0.01	46740	Hz	F81#8 Pickup	40	65
83	0.01	46741	Sec	F81#8 Def Time	0	600
84	0.1	46742	Hz	F81#8 Hysteresis	0	1
85	0.01	46743	V	F81#8 Min Voltage	1	180
86	0.01	46744	A	F81#8 Min Load	0	40
87	1	46745	–	F81#8 Block Options	0	7
88	0.01	8675	Hz/s	F81R#1 Pickup	0.2	5
89	0.01	8676	Sec	F81R#1 Def Time	0	2
90	0.01	8677	Hz	F81R#1 Max Frequency	40	70
91	0.01	8678	A	F81R#1 Min Current	0	20
92	0.01	8679	V	F81R#1 Min Voltage	0	300
93	1	8680	–	F81R#1 Pickup Cycle Number	3	15
94	1	8690	–	F81R#1 Operating Voltage	0	1
95	0.01	8684	Hz/s	F81R#2 Pickup	0.2	5
96	0.01	8685	Sec	F81R#2 Def Time	0	2
97	0.01	8686	Hz	F81R#2 Max Frequency	40	70
98	0.01	8687	A	F81R#2 Min Current	0	20
99	0.01	8688	V	F81R#2 Min Voltage	0	300
100	1	8689	–	F81R#2 Pickup Cycle Number	3	15

Table 9 Measured Values Points List (Pole Mode)

Measured Normalized Values Points List ASDU: M_ME_NA_1 Measured value, Normalized value Measured Scaled Values Points List ASDU: M_ME_NB_1 Measured value, Scaled value Measured Float Values Points List ASDU: M_ME_NC_1 Measured value, Float value						
Data Point	**Scale**	**Register Number**	**Unit**	**Description**	**Min**	**Max**
101	1	8691	–	F81R#2 Operating Voltage	0	1
102	0.01	46749	Hz/s	F81R#3 Pickup	0.2	5
103	0.01	46750	Sec	F81R#3 Def Time	0	2
104	0.01	46751	Hz	F81R#3 Max Frequency	40	70
105	0.01	46752	A	F81R#3 Min Current	0	20
106	0.01	46753	V	F81R#3 Min Voltage	0	300
107	1	46754	–	F81R#3 Pickup Cycle Number	3	15
108	1	46755	–	F81R#3 Operating Voltage	0	1
109	0.01	46750	Hz/s	F81R#4 Pickup	0.2	5
110	0.01	46960	Sec	F81R#4 Def Time	0	2
111	0.01	46961	Hz	F81R#4 Max Frequency	40	70
112	0.01	46962	A	F81R#4 Min Current	0	20
113	0.01	46963	V	F81R#4 Min Voltage	0	300
114	1	46964	–	F81R#4 Pickup Cycle Number	3	15
115	1	46965	–	F81R#4 Operating Voltage	0	1
116	0.01	46769	Hz/s	F81R#5 Pickup	0.2	5
117	0.01	46770	Sec	F81R#5 Def Time	0	2
118	0.01	46771	Hz	F81R#5 Max Frequency	40	70
119	0.01	46772	A	F81R#5 Min Current	0	20
120	0.01	46773	V	F81R#5 Min Voltage	0	300
121	1	46774	–	F81R#5 Pickup Cycle Number	3	15
122	1	46775	–	F81R#5 Operating Voltage	0	1
123	0.01	46779	Hz/s	F81R#6 Pickup	0.2	5
124	0.01	46780	Sec	F81R#6 Def Time	0	2
125	0.01	46781	Hz	F81R#6 Max Frequency	40	70
126	0.01	46782	A	F81R#6 Min Current	0	20
127	0.01	46783	V	F81R#6 Min Voltage	0	300
128	1	46784	–	F81R#6 Pickup Cycle Number	3	15
129	1	46785	–	F81R#6 Operating Voltage	0	1

Table 9 Measured Values Points List (Pole Mode)

Measured Normalized Values Points List ASDU: M_ME_NA_1 Measured value, Normalized value Measured Scaled Values Points List ASDU: M_ME_NB_1 Measured value, Scaled value Measured Float Values Points List ASDU: M_ME_NC_1 Measured value, Float value						
Data Point	**Scale**	**Register Number**	**Unit**	**Description**	**Min**	**Max**
130	0.01	46789	Hz/s	F81R#7 Pickup	0.2	5
131	0.01	46790	Sec	F81R#7 Def Time	0	2
132	0.01	46791	Hz	F81R#7 Max Frequency	40	70
133	0.01	46792	A	F81R#7 Min Current	0	20
134	0.01	46793	V	F81R#7 Min Voltage	0	300
135	1	46794	–	F81R#7 Pickup Cycle Number	3	15
136	1	46795	–	F81R#7 Operating Voltage	0	1
137	0.01	46799	Hz/s	F81R#8 Pickup	0.2	5
138	0.01	46800	Sec	F81R#8 Def Time	0	2
139	0.01	46801	Hz	F81R#8 Max Frequency	40	70
140	0.01	46802	A	F81R#8 Min Current	0	20
141	0.01	46803	V	F81R#8 Min Voltage	0	300
142	1	46804	–	F81R#8 Pickup Cycle Number	3	15
143	1	46805	–	F81R#8 Operating Voltage	0	1
144	0.1	4861	%	F46BC I2/I1 Ratio Secondary	0	6553.5
145	0.1	4862, 4863	%	F46BC I2/I1 Ratio Primary	0	6553.5
146	1	46809	%	F46BC I2/I1 Ratio Setting	1	100
147	0.01	46810	Sec	F46BC Time Delay Setting	0	600
148	0.01	46811	A	F46BC Min I2 Level Setting	0.02	20
149	1	4871	Sec	FCLP Open To Arm Timer	0	60000
150	1	4872	Sec	FCLP Override Active Timer	0	10000
151	1	4873	Sec	FCLP Initiate Active Timer	0	10000
152	0.01	4874	Sec	FCLP BMT Phase Timer	0	600
153	0.01	4875	Sec	FCLP BMT Ground Timer	0	600
154	0.01	4896	Sec	FCLP BMT Residual Timer	0	600
155	0.01	4876	A	FCLP Min Phase Pickup	–	1A_5A.50.PU.RANGE

Table 9 Measured Values Points List (Pole Mode)

Measured Normalized Values Points List ASDU: M_ME_NA_1 Measured value, Normalized value Measured Scaled Values Points List ASDU: M_ME_NB_1 Measured value, Scaled value Measured Float Values Points List ASDU: M_ME_NC_1 Measured value, Float value						
Data Point	**Scale**	**Register Number**	**Unit**	**Description**	**Min**	**Max**
156	0.01 (Gnd) or 0.001 (Gnd Sens)	4877	A	FCLP Min Ground Pickup	–	1A_5A_MX.IGND.RANGE
157	0.01	4895	A	FCLP Min Residual Pickup	–	1A_5A.50.PU.RANGE
158	0.1	4885	%	FBM percent life used Ph-A	0	100
159	0.1	4886	%	FBM percent life used Ph-B	0	100
160	0.1	4887	%	FBM percent life used Ph-C	0	100
161	0.1	4888	%	BM_CONTACTSLIFEREM_ PHA	0	100
162	0.1	4889	%	BM_CONTACTSLIFEREM_ PHB	0	100
163	0.1	4890	%	BM_CONTACTSLIFEREM_ PHC	0	100
164	0.01	3796	V	Battery Voltage	0	30
165	0.001	3797	A	Battery Amps	-10	10
166	0.01	5028, 5029	–	Power Target #1 Threshold Secondary	-10000	10000
167	0.01	5030, 5031	–	Power Target #2 Threshold Secondary	-10000	10000
168	0.01	5032, 5033	–	Power Target #3 Threshold Secondary	-10000	10000
169	0.01	5034, 5035	–	Power Target #4 Threshold Secondary	-10000	10000
170	0.01	5036, 5037	–	Power Target #5 Threshold Secondary	-10000	10000
171	0.01	5038, 5039	–	Power Target #6 Threshold Secondary	-10000	10000
172	0.01	5040, 5041	–	Power Target #7 Threshold Secondary	-10000	10000
173	0.01	5042, 5043	–	Power Target #8 Threshold Secondary	-10000	10000
174	0.01	5044, 5045	–	Power Target #9 Threshold Secondary	-10000	10000
175	0.01	5046, 5047	–	Power Target #10 Threshold Secondary	-10000	10000

Table 9 Measured Values Points List (Pole Mode)

Measured Normalized Values Points List ASDU: M_ME_NA_1 Measured value, Normalized value Measured Scaled Values Points List ASDU: M_ME_NB_1 Measured value, Scaled value Measured Float Values Points List ASDU: M_ME_NC_1 Measured value, Float value						
Data Point	**Scale**	**Register Number**	**Unit**	**Description**	**Min**	**Max**
176	0.01	5048, 5049	–	Power Target #11 Threshold Secondary	-10000	10000
177	0.01	5050, 5051	–	Power Target #12 Threshold Secondary	-10000	10000

Table 9 Measured Values Points List (Pole Mode)

Single Commands Points List (Status) (Pole mode) ASDU: C_SC_NA_1 Single command						
Data Point	**Scale N/A = Not used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
1	–	1401	–	Close ABC 0 = Disable 1 = Enable	0-1	–
2	–	1407	–	Close A 0 = Disable 1 = Enable	0-1	–
3	–	1408	–	Close B 0 = Disable 1 = Enable	0-1	–
4	–	1409	–	Close C 0 = Disable 1 = Enable	0-1	–
5	–	1400	–	Trip ABC 0 = Disable 1 = Enable	0-1	–
6	–	1404	–	Trip A 0 = Disable 1 = Enable	0-1	–
7	–	1405	–	Trip B 0 = Disable 1 = Enable	0-1	–
8	–	1406	–	Trip C 0 = Disable 1 = Enable	0-1	–
9	–	8469	–	Reclose Disable 3-Ph 0 = Disable 1 = Enable	0-1	–
10	–	30924	–	Reclose Disable Ph-A 0 = Disable 1 = Enable	0-1	–
11	–	30931	–	Reclose Disable Ph-B 0 = Disable 1 = Enable	0-1	–
12	–	30938	–	Reclose Disable Ph-C 0 = Disable 1 = Enable	0-1	–
13	–	3942	11	Ground (N Elements) Disable 0 = Disable 1 = Enable	0-65535	–
14	–	3917	7	G/GS Disable 0 = Disable 1 = Enable	0-65535	–
15	–	8608	–	Cold Load Pickup Disable	0-1	–
16	–	7498	–	Fast Trip 3-Ph (51P#1) Block 0 = Disable 1 = Enable	0-1	–
17	–	7568	–	Fast Trip Ph-A (51P#1) Block 0 = Disable 1 = Enable	0-1	–
18	–	7581	–	Fast Trip Ph-B (51P#1) Block 0 = Disable 1 = Enable	0-1	–
19	–	7594	–	Fast Trip Ph-C (51P#1) Block 0 = Disable 1 = Enable	0-1	–
20	–	20	–	Profile 1 Active 0 = Disable 1 = Set Value to 0	0-7	–
21	–	20	–	Profile 2 Active 0 = Disable 1 = Set Value to 1	0-7	–
22	–	20	–	Profile 3 Active 0 = Disable 1 = Set Value to 2	0-7	–

Table 10 Single Commands Points List (Pole Mode)

Single Commands Points List (Status) (Pole mode) ASDU: C_SC_NA_1 Single command						
Data Point	**Scale N/A = Not used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
23	–	20	–	Profile 4 Active 0 = Disable 1 = Set Value to 3	0-7	–
24	–	20	–	Profile 5 Active 0 = Disable 1 = Set Value to 4	0-7	–
25	–	20	–	Profile 6 Active 0 = Disable 1 = Set Value to 5	0-7	–
26	–	20	–	Profile 7 Active 0 = Disable 1 = Set Value to 6	0-7	–
27	–	20	–	Profile 8 Active 0 = Disable 1 = Set Value to 7	0-7	–
28	–	1403	–	Reset Targets 0 = Disable 1 = Enable	0-1	–
29	–	2001	–	Reset Demands 0 = Disable 1 = Enable	0-1	–
30	–	1403	–	Reset Alarms 0 = Disable 1 = Enable	0-1	–
31	–	6508	–	Test Battery 0 = Disable 1 = Enable	0-1	–
32	–	1402	–	Hot Line Tag Enabled 0 = Disable 1 = Enable	0-1	–
33	–	7022	–	Enable Sync Check 0 = Disable 1 = Enable	0-1	–
34	–	30922	0,1	Enable 79 in 3T3L Mode 1 = Set bits 0 and 1to value 0	0-3	–
35	–	30922	0,1	Enable 79 in 1T3L Mode 1 = Set bits 0 and 1to value 1	0-3	–
36	–	30922	0,1	Enable 79 in 1T1L Mode 1 = Set bits 0 and 1to value 2	0-3	–
37	–	30922	0,1	Enable 79 in 3T1L Mode 1 = Set bits 0 and 1to value 3	0-3	–
38	–	1150	–	Reset Total OC Pickup Phase A 0 = Disable 1 = Set Value to 0	0-1	–
39	–	1154	–	Reset Total OC Pickup Phase B 0 = Disable 1 = Set Value to 0	0-1	–
40	–	1158	–	Reset Total OC Pickup Phase C 0 = Disable 1 = Set Value to 0	0-1	–
41	–	1152	–	Reset Total OC Trip Phase A 0 = Disable 1 = Set Value to 0	0-1	–
42	–	1156	–	Reset Total OC Trip Phase B 0 = Disable 1 = Set Value to 0	0-1	–
43	–	1160	–	Reset Total OC Trip Phase C 0 = Disable 1 = Set Value to 0	0-1	–
44	–	1166	–	Reset Operations Counter Phase A 0 = Disable 1 = Set Value to 0	0-1	–

Table 10 Single Commands Points List (Pole Mode)

Single Commands Points List (Status) (Pole mode) ASDU: C_SC_NA_1 Single command						
Data Point	**Scale N/A = Not used**	**Register Number**	**Bit Position**	**Description**	**Range Value**	**Request Function**
45	–	1168	–	Reset Operations Counter Phase B 0 = Disable 1 = Set Value to 0	0-1	–
46	–	1170	–	Reset Operations Counter Phase C 0 = Disable 1 = Set Value to 0	0-1	–
47	–	1174	–	Reset IPSlogic Counter 1 0 = Disable 1 = Set Value to 0	0-1	–
48	–	1175	–	Reset IPSlogic Counter 2 0 = Disable 1 = Set Value to 0	0-1	–
49	–	1176	–	Reset IPSlogic Counter 3 0 = Disable 1 = Set Value to 0	0-1	–
50	–	1177	–	Reset IPSlogic Counter 4 0 = Disable 1 = Set Value to 0	0-1	–
51	–	1178	–	Reset IPSlogic Counter 5 0 = Disable 1 = Set Value to 0	0-1	–
52	–	1179	–	Reset IPSlogic Counter 6 0 = Disable 1 = Set Value to 0	0-1	–
53	–	1180	–	Reset IPSlogic Counter 7 0 = Disable 1 = Set Value to 0	0-1	–
54	–	1181	–	Reset IPSlogic Counter 8 0 = Disable 1 = Set Value to 0	0-1	–
55	–	4464	–	FCLP Initiate 0 = Disable, 1 = Enable	0-65535	–
56	–	8608	–	FCLP Enable/Disable 0 = Disable, 1 = Enable	0-1	–
57	–	3969	3	FCLP Pickup Block 0 = Disable, 1 = Enable	0-1	–
58	–	6820	–	Battery Test Schedule Enable/Disable 0 = Disable, 1 = Enable	0-1	–
59	–	6508	–	Start Battery Test Enable/Disable 0 = Disable, 1 = Enable	0-1	–
60	–	46150	–	One Shot Sectionalizing 3-Ph Enable/Disable 0 = Disable, 1 = Enable	0-1	–
61	–	46166	–	One Shot Sectionalizing Ph-A Enable/Disable 0 = Disable, 1 = Enable	0-1	–
62	–	46182	–	One Shot Sectionalizing Ph-B Enable/Disable 0 = Disable, 1 = Enable	0-1	–
63	–	46198	–	One Shot Sectionalizing Ph-C Enable/Disable 0 = Disable, 1 = Enable	0-1	–
64	–	29127	–	SGI enable Target Reset Enable/Disable 0 = Disable, 1 = Enable	0-1	–

Table 10 Single Commands Points List (Pole Mode)

■**NOTE:** Relay Output operation for Double command is given below.

Double Command State (DCS)	Qualifier of Command (QU)	Relay Output Operation	
		Data Point 1	Data Point 2
0 (Not permitted)	Any	No Action	No Action
1 (OFF)	0 (No Additional Definition)	Latch On	Latch Off
	1 (Short Pulse)	Short Pulse On	No Action
	2 (Long Pulse)	Long Pulse On	No Action
	3 (Persistent)	Latch On	Latch Off
2 (ON)	0 (No Additional Definition)	Latch Off	Latch On
	1 (Short Pulse)	No Action	Short Pulse On
	2 (Long Pulse)	No Action	Long Pulse On
	3 (Persistent)	Latch Off	Latch On
3 (Not permitted)	Any	No Action	No Action

Double Commands Points List (Pole mode) ASDU: C_DC_NA_1 Double command				
Data Point	Register Number	Bit Position	Description	Output
1	1401	–	Close breaker 3-Ph	Relay Output Operation
2	1400	–	Trip breaker 3-Ph	No action
3	1407	–	Close A	Relay Output Operation
4	1404	–	Trip A	No action
5	1408	–	Close B	Relay Output Operation
6	1405	–	Trip B	No action
7	1409	–	Close C	Relay Output Operation
8	1406	–	Trip C	No action

Table 11 Double Commands Points List Pole mode

Integrated Totals List (Pole mode) ASDU: C_SC_NA_1 Single command						
Data Point	**Scale N/A = Not used**	**Register Number**	**Unit**	**Description**	**Range Value**	**Request Function**
1	–	1150	N/A	Total OC Pickup Phase A	0-99999999	–
2	–	1154	N/A	Total OC Pickup Phase B	0-99999999	–
3	–	1158	N/A	Total OC Pickup Phase C	0-99999999	–
4	–	1152	N/A	Total OC Trip Phase A	0-99999999	–
5	–	1156	N/A	Total OC Trip Phase B	0-99999999	–
6	–	1160	N/A	Total OC Trip Phase C	0-99999999	–
7	–	1166	N/A	Operations Counter Phase A	0-99999999	–
8	–	1168	N/A	Operations Counter Phase B	0-99999999	–
9	–	1170	N/A	Operations Counter Phase C	0-99999999	–
10	–	1174	N/A	IPSlogic Counter 1	0-65000	–
11	–	1175	N/A	IPSlogic Counter 2	0-65000	–
12	–	1176	N/A	IPSlogic Counter 3	0-65000	–
13	–	1177	N/A	IPSlogic Counter 4	0-65000	–
14	–	1178	N/A	IPSlogic Counter 5	0-65000	–
15	–	1179	N/A	IPSlogic Counter 6	0-65000	–
16	–	1180	N/A	IPSlogic Counter 7	0-65000	–
17	–	1181	N/A	IPSlogic Counter 8	0-65000	–

Table 12 Integrated Totals List (Pole Mode)

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