Reclosers

COOPER Power Systems

Kyle® Form 5 Microprocessor-based Electronic Recloser Control Serial Communications

Service Information

R280-90-13

Communications Point Data Base

Data 2483

For
Communications Protocol 2179

For Use with Cooper Power Systems
Form 5, Form 5 UDP, Form 5 LS/UDP
Recloser Controls

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F5 2179 Protocol Data Dictionary											
9/8/2005	**v1.18**	**Database v15**									
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	Document	Date	Database	Description							
	v1.18	9/8/2005	v15	Changed wording of TCC number							
	v1.17	4/12/2001	v15	Added missing bits to Basic Scan							
	v1.16	3/22/2001	v15	Added combined trip/close point to CROBs							
				Added Hot Line Tag items to protection profile object							
				Moved triple single mode items to protection profile object							
				Added Primary Voltage present threshold parameter to system info object							
	v1.15	2/4/1999	v13	Added Dynamic Phase Trip Enable parameter to Triple-Single Object							
	v1.14	1/11/1999	v12	Added Source-to-Load Side voltage difference to Metering, Alarms, Profiler, Histograms							
	v1.13	10/15/1999	v11	Fixed offset for TCC Read/Write ID and Switch Characteristics Data objects							
	v1.12	10/14/1999	v11	Added Fault Location and Directional SEF items to protection profile object							
				Added Fault Location event type 12							
	v1.11	6/14/1999	v10	Added Triple single binary input status & SBO definitions							
				Added trip/close safety delay, power factor sign (Ordinal 6, Parameters)							
	v1.10	2/24/1999	v9	Corrected size of triple single configuration object							
	v1.9	1/18/1999	v9	Added triple single configuration object file (Ordinal 6, Parameters)							
	v1.8	10/12/1998	v8	Added additional SGF reclose intervals (File ID, configuration)							
				Added calibration object files (File ID, configuration)							
	v1.7	7/15/1998	v7	Add Frequency to Basic Scan							
				Add Frequency to Alarms, Profiler and Histograms							
				Add Voltage Sensor Correction parameters to System Information							
				Add Voltage / Frequency protection configuration							
				Add Voltage / Frequency event type 11							
				Add Voltage / Frequency Status and SBO definitions							
	v1.6	6/12/1998	v6	Add Phase-Phase and Load Side voltages to Metering, Alarms, Profiler, Histograms							
				Add KW hours to Metering, Alarms, Profiler							
				Add High / Low set Protection Profile parameters							
				Add custom SA definitions for simple status and SBO							
	v1.5	5/27/1998	v4	Corrected scale factors for 16 bit analogs							
	v1.4	9/30/1997	v4	Added LS parameters							
	v1.3	5/15/1997	v3	Added FTD shots to lockout to Protection Profile parameters							
	v1.2	4/24/1997	v2	Updated scale factors in analogs.							
	v1.1	3/6/1997	v2	Added I/O definitions for SGF Block							
	v1.0	2/11/1997	v2	Initial							
	Note: Shaded columns represent additions from previous database version										

INPUT SUBSYSTEM - Sequence Number Assignments for use in Basic Scan, Scan Inclusive, RBX, Scan-by-Table and U-2 Mode						
Sequence	Element Name		Data Type	Usage	Description	
00 - 10	2-Bit Port Logic Output		BITSTRING	Monitor	Port status output from custom logic	
30	Simple Port Logic Output, Part 1		BITSTRING	Monitor	Port status output from custom logic	CL Index
			Bit 0		Frequency/Voltage Auto-Restore blocked	7
			Bit 1		Voltage Trip blocked	6
			Bit 2		Frequency Trip blocked	5
			Bit 3		SGF target	4
			Bit 4		Ground fault target	3
			Bit 5		Phase 5-6 fault target	2
			Bit 6		Phase 3-4 fault target	1
			Bit 7		Phase 1-2 fault target	0
			Bit 8		AC power present	15
			Bit 9		Control OK	14
			Bit 10		Control lockout	13
			Bit 11		Recloser open	12
			Bit 12		Recloser closed	11
			Bit 13		Check Battery	10
			Bit 14		Recloser malfunction	9
			Bit 15		Reverse power flow	8
31	Simple Port Logic Output, Part 2		BITSTRING	Monitor	Port status output from custom logic	CL Index
			Bit 0		Normal profile active	23
			Bit 1		Fast trips disabled	22
			Bit 2		Battery test active	21
			Bit 3		Cold load pickup blocked	20
			Bit 4		Supervisory off	19
			Bit 5		Non reclosing active	18
			Bit 6		Ground trip blocked	17
			Bit 7		Above minimum trip	16
			Bit 8		Not used	31
			Bit 9		Not used	30
			Bit 10		Frequency Trip	29
			Bit 11		Voltage Trip	28
			Bit 12		Hot line tag active	27
			Bit 13		Alternate profile 3 active	26
			Bit 14		Alternate profile 2 active	25
			Bit 15		Alternate profile 1 active	24
32	Simple Port Logic Output, Part 3		BITSTRING	Monitor	Port status output from custom logic	CL Index
			Bit 0		Target counter on	39
			Bit 1		Operation counter on	38
			Bit 2		Duty accumulator on	37
			Bit 3		Event recorder on	36

Sequence	Element Name		Data Type	Usage	Description	
			Bit 4		Data alarms on	35
			Bit 5		Status alarms on	34
			Bit 6		Data profiler on	33
			Bit 7		Histograms on	32
			Bit 8		* Z Phase voltage present	47
			Bit 9		* Y Phase voltage present	46
			Bit 10		* X Phase voltage present	45
			Bit 11		C Phase voltage present	44
			Bit 12		B Phase voltage present	43
			Bit 13		A Phase voltage present	42
			Bit 14		SGF Blocked	41
			Bit 15		Active alarms present	40
33	Simple Port Logic Output, Part 4		BITSTRING	Monitor	Port status output from custom logic	CL Index
			Bit 0		* Time delay 1 voltage transfer	55
			Bit 1		* Source II disabled	54
			Bit 2		* Source I disabled	53
			Bit 3		* LS function disabled	52
			Bit 4		* LS disabled	51
			Bit 5		* LS not reset	50
			Bit 6		* Tie active	49
			Bit 7		* Sectionalizing active	48
			Bit 8		Trip Circuit Disconnected	63
			Bit 9		Control Door Open	62
			Bit 10		Not used	61
			Bit 11		Not used	60
			Bit 12		Not used	59
			Bit 13		OCP lockout	58
			Bit 14		* Time delay 3 LS auto reset	57
			Bit 15		* Time delay 2 momentary function	56
34	Simple Port Logic Input Status, Part 1		BITSTRING	Monitor	Port logic input to custom logic	CL Index
			Bit 0		Normal profile enabled	7
			Bit 1		Test mode off	6
			Bit 2		Event Recorder off	5
			Bit 3		Data alarm recording on	4
			Bit 4		Status alarm recording on	3
			Bit 5		Profiler off	2
			Bit 6		Histogram off	1
			Bit 7		SGF Block	0
			Bit 8		Battery test on	15
			Bit 9		Fast trips disabled	14
			Bit 10		Hot line tag on	13
			Bit 11		Ground trip block on	12

Sequence	Element Name		Data Type	Usage	Description	
			Bit 12		Non reclosing on	11
			Bit 13		Alternate profile 3 enabled	10
			Bit 14		Alternate profile 2 enabled	9
			Bit 15		Alternate profile 1 enabled	8
35	Simple Port Logic Input Status, Part 2		BITSTRING	Monitor	Port logic input to custom logic	CL Index
			Bit 0		* LS Disable	23
			Bit 1		* LS Reset	22
			Bit 2		* Source II Disable	21
			Bit 3		* Source I Disable	20
			Bit 4		SGF block on	19
			Bit 5		Reset targets	18
			Bit 6		Close	17
			Bit 7		Lockout	16
			Bit 8		Not used	31
			Bit 9		Not used	30
			Bit 10		Not used	29
			Bit 11		Frequency/Voltage Auto-Restore block	28
			Bit 12		Voltage Trip block	27
			Bit 13		Frequency Trip block	26
			Bit 14		Not used	25
			Bit 15		Not used	24
36 - 37	Reserved					
					* LS Controls Only	

INPUT SUBSYSTEM - Sequence Number Assignments for use in Basic Scan, Scan Inclusive, RBX, Scan-by-Table and U-2 Mode						
Sequence	Element Name		Data Type	Usage	Description	
00 - 10	2-Bit Port Logic Output		BITSTRING	Monitor	Port status output from custom logic	
30	Simple Port Logic Output, Part 1		BITSTRING	Monitor	Port status output from custom logic	CL Index
			Bit 0		Frequency/Voltage Auto-Restore blocked	7
			Bit 1		Voltage Trip blocked	6
			Bit 2		Frequency Trip blocked	5
			Bit 3		SGF target	4
			Bit 4		Ground fault target	3
			Bit 5		Phase 5-6 fault target	2
			Bit 6		Phase 3-4 fault target	1
			Bit 7		Phase 1-2 fault target	0
			Bit 8		AC power present	15
			Bit 9		Control OK	14
			Bit 10		Control (or A Phase) lockout	13
			Bit 11		Recloser (or A Phase) open	12
			Bit 12		Recloser (or A Phase) closed	11
			Bit 13		Check Battery	10
			Bit 14		Recloser malfunction	9
			Bit 15		Reverse power flow	8
31	Simple Port Logic Output, Part 2		BITSTRING	Monitor	Port status output from custom logic	CL Index
			Bit 0		Normal profile active	23
			Bit 1		Fast trips disabled	22
			Bit 2		Battery test active	21
			Bit 3		Cold load pickup blocked	20
			Bit 4		Supervisory off	19
			Bit 5		Non reclosing active	18
			Bit 6		Ground trip blocked	17
			Bit 7		Above minimum trip	16
			Bit 8		Not used	31
			Bit 9		Not used	30
			Bit 10		Frequency Trip	29
			Bit 11		Voltage Trip	28
			Bit 12		Hot line tag active	27
			Bit 13		Alternate profile 3 active	26
			Bit 14		Alternate profile 2 active	25
			Bit 15		Alternate profile 1 active	24
32	Simple Port Logic Output, Part 3		BITSTRING	Monitor	Port status output from custom logic	CL Index
			Bit 0		Target counter on	39
			Bit 1		Operation counter on	38
			Bit 2		Duty accumulator on	37
			Bit 3		Event recorder on	36

Sequence	Element Name		Data Type	Usage	Description	
			Bit 4		Data alarms on	35
			Bit 5		Status alarms on	34
			Bit 6		Data profiler on	33
			Bit 7		Histograms on	32
			Bit 8		B Phase Lockout	47
			Bit 9		B Phase Open	46
			Bit 10		B Phase Closed	45
			Bit 11		C Phase voltage present	44
			Bit 12		B Phase voltage present	43
			Bit 13		A Phase voltage present	42
			Bit 14		SGF Blocked	41
			Bit 15		Active alarms present	40
33	Simple Port Logic Output, Part 4		BITSTRING	Monitor	Port status output from custom logic	CL Index
			Bit 0		B Phase "Yellow Handle" Active	55
			Bit 1		A Phase "Yellow Handle" Active	54
			Bit 2		Single Phase Trip - Single Phase Lockout mode	53
			Bit 3		Single Phase Trip - Three Phase Lockout mode	52
			Bit 4		Three Phase Trip - Three Phase Lockout mode	51
			Bit 5		C Phase Lockout	50
			Bit 6		C Phase Open	49
			Bit 7		C Phase Closed	48
			Bit 8		Trip Circuit Disconnected	63
			Bit 9		Control Door open	62
			Bit 10		Not used	61
			Bit 11		Not used	60
			Bit 12		C Phase OCP Lockout	59
			Bit 13		B Phase OCP Lockout	58
			Bit 14		A Phase OCP Lockout	57
			Bit 15		C Phase "Yellow Handle" Active	56
34	Simple Port Logic Input Status, Part 1		BITSTRING	Monitor	Port logic input to custom logic	CL Index
			Bit 0		Normal profile enabled	7
			Bit 1		Test mode off	6
			Bit 2		Event Recorder off	5
			Bit 3		Data alarm recording on	4
			Bit 4		Status alarm recording on	3
			Bit 5		Profiler off	2
			Bit 6		Histogram off	1
			Bit 7		SGF Block	0
			Bit 8		Battery test on	15
			Bit 9		Fast trips disabled	14
			Bit 10		Hot line tag on	13
			Bit 11		Ground trip block on	12

Sequence	Element Name		Data Type	Usage	Description	
			Bit 12		Non reclosing on	11
			Bit 13		Alternate profile 3 enabled	10
			Bit 14		Alternate profile 2 enabled	9
			Bit 15		Alternate profile 1 enabled	8
35	Simple Port Logic Input Status, Part 2		BITSTRING	Monitor	Port logic input to custom logic	CL Index
			Bit 0		Phase C Close	23
			Bit 1		Phase C Trip/Lockout	22
			Bit 2		Phase B Close	21
			Bit 3		Phase B Trip/Lockout	20
			Bit 4		SGF block on	19
			Bit 5		Reset targets	18
			Bit 6		Close	17
			Bit 7		Lockout	16
			Bit 8		Not used	31
			Bit 9		Not used	30
			Bit 10		Not used	29
			Bit 11		Frequency/Voltage Auto-Restore block	28
			Bit 12		Voltage Trip block	27
			Bit 13		Frequency Trip block	26
			Bit 14		All Phases Trip/Lockout	25
			Bit 15		All Phases Close	24
36 - 37	Reserved					

INPUT SUBSYSTEM - Sequence Number Assignments for use in Basic Scan, Scan Inclusive, RBX, Scan-by-Table and U-2 Mode					
Sequence	Element Name		Data Type	Usage	Description
	Operation Counters			Monitor	Switch operation counters
40	Phase 1-2 Operation Counter		INTEGER		Number of phase 1-2 Operations
41	Phase 3-4 Operation Counter		INTEGER		Number of phase 3-4 Operations
42	Phase 5-6 Operation Counter		INTEGER		Number of phase 5-6 Operations
	OCP Target Counters			Monitor	Overcurrent protection target counters
43	Phase 1-2 Target Counter		INTEGER		Number of phase 1-2 OCP targets
44	Phase 3-4 Target Counter		INTEGER		Number of phase 3-4 OCP targets
45	Phase 5-6 Target Counter		INTEGER		Number of phase 5-6 OCP targets
46	Ground Target Counter		INTEGER		Number of ground OCP targets
47	SGF Target Counter		INTEGER		Number of SGF OCP targets
48	Adapted Ground Target Counter		INTEGER		Number of adapted ground OCP targets
	Sequence Coordination Counters			Monitor	Sequence coordination operation counters
49	Phase 1-2 Seq Coord Counter		INTEGER		Number of phase 1-2 sequence coordination operations
4A	Phase 3-4 Seq Coord Counter		INTEGER		Number of phase 3-4 sequence coordination operations
4B	Phase 5-6 Seq Coord Counter		INTEGER		Number of phase 5-6 sequence coordination operations
4C	Ground Seq Coord Counter		INTEGER		Number of ground sequence coordination operations
4D	SGF Seq Coord Counter		INTEGER		Number of SGF sequence coordination operations
4E	Adapted Ground Seq Coord Counter		INTEGER		Number of adapted ground sequence coordination operations
	Alarm Recorder Count			Monitor	Number of alarms information
4F	Number Of Inactive, Unsuppressed & Unchanged Alarms		INTEGER		Number of inactive, unsuppressed & unchanged alarms
50	Number Of Inactive, Unsuppressed & Changed Alarms		INTEGER		Number of inactive, unsuppressed & changed alarms
51	Number Of Inactive, Suppressed & Unchanged Alarms		INTEGER		Number of inactive, suppressed & unchanged alarms
52	Number Of Inactive, Suppressed & Changed Alarms		INTEGER		Number of inactive, suppressed & changed alarms
53	Number Of Active, Unsuppressed & Unchanged Alarms		INTEGER		Number of active, unsuppressed & unchanged alarms
54	Number Of Active, Unsuppressed & Changed Alarms		INTEGER		Number of active, unsuppressed & changed alarms
55	Number Of Active, Suppressed & Unchanged Alarms		INTEGER		Number of active, suppressed & unchanged alarms
56	Number Of Active, Suppressed & Changed Alarms		INTEGER		Number of active, suppressed & changed alarms
	Profile Recorder Count			Monitor	Number of profile records information
57	Number Of Masked Profile Records		INTEGER		Number of unmasked profile records
58	Number Of Unmasked Profile Records		INTEGER		Number of masked profile records

Sequence	Element Name		Data Type	Usage	Description
	Event Recorder Count			Monitor	Number of event records information
59	Number Of Masked Event Records		INTEGER		Number of unmasked event records
5A	Number Of Unmasked Event Records		INTEGER		Number of masked event records
	Error Event Recorder Count			Monitor	Number of error event records information
5B	Number Of Masked Error Event Records		INTEGER		Number of unmasked error event records
5C	Number Of Unmasked Error Event Records		INTEGER		Number of masked error event records

INPUT SUBSYSTEM - Sequence Number Assignments for use in Basic Scan, Scan Inclusive, RBX, Scan-by-Table and U-2 Mode					
Sequence	Element Name	Multiplication Scale Factor	Data Type	Usage	Description
	Fixed References			Monitor	Calibration references
80	Reference 90% (Fixed at 7333h)	1	INTEGER		Calibration reference 90% value
81	Reference zero	1	INTEGER		Calibration reference zero value
	Instantaneous Current Metering			Monitor	Instantaneous current values
82	Phase 1-2 Inst Fundamental RMS Current	0.1	INTEGER		Instantaneous current through bushing 1-2
83	Phase 3-4 Inst Fundamental RMS Current	0.1	INTEGER		Instantaneous current through bushing 3-4
84	Phase 5-6 Inst Fundamental RMS Current	0.1	INTEGER		Instantaneous current through bushing 5-6
85	Ground Inst Fundamental RMS Current	0.1	INTEGER		Instantaneous ground current
	Instantaneous Voltage Metering			Monitor	Instantaneous voltage values
86	Phase 1 Inst Fundamental RMS Voltage	2	INTEGER		Instantaneous voltage at bushing 1-2
87	Phase 3 Inst Fundamental RMS Voltage	2	INTEGER		Instantaneous voltage at bushing 3-4
88	Phase 5 Inst Fundamental RMS Voltage	2	INTEGER		Instantaneous voltage at bushing 5-6
	Instantaneous Power Metering			Monitor	Instantaneous power values
89	Phase 1-2 Inst Power Factor	0.0001	INTEGER		Instantaneous power factor for phase 1-2
8A	Phase 1-2 Inst KVA	1	INTEGER		Instantaneous KVA for phase 1-2
8B	Phase 1-2 Inst KW	1	INTEGER		Instantaneous KW for phase 1-2
8C	Phase 1-2 Inst KVAR	1	INTEGER		Instantaneous KVAR for phase 1-2
8D	Phase 3-4 Inst Power Factor	0.0001	INTEGER		Instantaneous power factor for phase 3-4
8E	Phase 3-4 Inst KVA	1	INTEGER		Instantaneous KVA for phase 3-4
8F	Phase 3-4 Inst KW	1	INTEGER		Instantaneous KW for phase 3-4
90	Phase 3-4 Inst KVAR	1	INTEGER		Instantaneous KVAR for phase 3-4
91	Phase 5-6 Inst Power Factor	0.0001	INTEGER		Instantaneous power factor for phase 5-6
92	Phase 5-6 Inst KVA	1	INTEGER		Instantaneous KVA for phase 5-6
93	Phase 5-6 Inst KW	1	INTEGER		Instantaneous KW for phase 5-6
94	Phase 5-6 Inst KVAR	1	INTEGER		Instantaneous KVAR for phase 5-6
95	Total Inst Power Factor	0.0001	INTEGER		Instantaneous total power factor
96	Total Inst KVA	1	INTEGER		Instantaneous total KVA
97	Total Inst KW	1	INTEGER		Instantaneous total KW
98	Total Inst KVAR	1	INTEGER		Instantaneous total KVAR
	Instantaneous THD Current Metering			Monitor	Instantaneous current harmonic values
99	Phase 1-2 THD Current	0.01	INTEGER		Instantaneous THD current through bushing 1-2
9A	Phase 3-4 THD Current	0.01	INTEGER		Instantaneous THD current through bushing 3-4
9B	Phase 5-6 THD Current	0.01	INTEGER		Instantaneous THD current through bushing 5-6
9C	Ground THD Current	0.01	INTEGER		Instantaneous THD ground current

Sequence	Element Name	Multiplication Scale Factor	Data Type	Usage	Description
	Instantaneous THD Voltage Metering			Monitor	Instantaneous voltage harmonic values
9D	Phase 1 THD Voltage	0.01	INTEGER		Instantaneous THD voltage at bushing 1-2
9E	Phase 3 THD Voltage	0.01	INTEGER		Instantaneous THD voltage at bushing 3-4
9F	Phase 5 THD Voltage	0.01	INTEGER		Instantaneous THD voltage at bushing 5-6
	Battery Data			Monitor	Normal battery monitor parameters
A0	Battery Voltage	0.01	INTEGER		Unloaded battery voltage
A1	Battery Current	0.0001	INTEGER		Unloaded battery current
	Demand Current Metering			Monitor	Demand current values
A2	Phase 1-2 Demand Current	0.1	INTEGER		Demand current through bushing 1-2
A3	Phase 3-4 Demand Current	0.1	INTEGER		Demand current through bushing 3-4
A4	Phase 5-6 Demand Current	0.1	INTEGER		Demand current through bushing 5-6
A5	Ground Demand Current	0.1	INTEGER		Demand ground current
	Demand Voltage Metering			Monitor	Demand voltage values
A6	Phase 1 Demand Voltage	2	INTEGER		Demand voltage at bushing 1-2
A7	Phase 3 Demand Voltage	2	INTEGER		Demand voltage at bushing 3-4
A8	Phase 5 Demand Voltage	2	INTEGER		Demand voltage at bushing 5-6
	Power Demand Metering			Monitor	Demand power values
A9	Phase 1-2 Demand Power Factor	0.0001	INTEGER		Demand power factor for phase 1-2
AA	Phase 1-2 Demand KVA	1	INTEGER		Demand KVA for phase 1-2
AB	Phase 1-2 Demand KW	1	INTEGER		Demand KW for phase 1-2
AC	Phase 1-2 Demand KVAR	1	INTEGER		Demand KVAR for phase 1-2
AD	Phase 3-4 Demand Power Factor	0.0001	INTEGER		Demand power factor for phase 3-4
AE	Phase 3-4 Demand KVA	1	INTEGER		Demand KVA for phase 3-4
AF	Phase 3-4 Demand KW	1	INTEGER		Demand KW for phase 3-4
B0	Phase 3-4 Demand KVAR	1	INTEGER		Demand KVAR for phase 3-4
B1	Phase 5-6 Demand Power Factor	0.0001	INTEGER		Demand power factor for phase 5-6
B2	Phase 5-6 Demand KVA	1	INTEGER		Demand KVA for phase 5-6
B3	Phase 5-6 Demand KW	1	INTEGER		Demand KW for phase 5-6
B4	Phase 5-6 Demand KVAR	1	INTEGER		Demand KVAR for phase 5-6
B5	Total Demand Power Factor	0.0001	INTEGER		Total Demand power factor
B6	Total Demand KVA	1	INTEGER		Total Demand KVA
B7	Total Demand KW	1	INTEGER		Total Demand KW
B8	Total Demand KVAR	1	INTEGER		Total Demand KVAR
	Demand THD Current Metering			Monitor	Demand current harmonic values
B9	Phase 1-2 Demand THD Current	0.01	INTEGER		Demand THD current through bushing 1-2

Sequence	Element Name	Multiplication Scale Factor	Data Type	Usage	Description
BA	Phase 3-4 Demand THD Current	0.01	INTEGER		Demand THD current through bushing 3-4
BB	Phase 5-6 Demand THD Current	0.01	INTEGER		Demand THD current through bushing 5-6
BC	Ground Demand THD Current	0.01	INTEGER		Demand THD ground current
	Demand THD Voltage Metering			Monitor	Demand voltage harmonic values
BD	Phase 1 Demand THD Voltage	0.01	INTEGER		Demand THD voltage at bushing 1-2
BE	Phase 3 Demand THD Voltage	0.01	INTEGER		Demand THD voltage at bushing 3-4
BF	Phase 5 Demand THD Voltage	0.01	INTEGER		Demand THD voltage at bushing 5-6
	Duty Accumulators			Monitor	Duty accumulators information
C0	Phase 1-2 % Rated Duty Depleted	0.01	INTEGER		Duty accumulator for phase 1-2 interrupter
C1	Phase 3-4 % Rated Duty Depleted	0.01	INTEGER		Duty accumulator for phase 3-4 interrupter
C2	Phase 5-6 % Rated Duty Depleted	0.01	INTEGER		Duty accumulator for phase 5-6 interrupter
	Instantaneous energy values			Monitor	Instantaneous energy values
C3	Phase 1-2 kWatt-hours	500	INTEGER		Instantaneous energy through bushing 1-2
C4	Phase 3-4 kWatt-hours	500	INTEGER		Instantaneous energy through bushing 3-4
C5	Phase 5-6 kWatt-hours	500	INTEGER		Instantaneous energy through bushing 5-6
C6	Total kWatt-hours	500	INTEGER		Total Instantaneous energy
	Instantaneous source-side phase-to-phase voltage			Monitor	Instantaneous source-side phase-to-phase voltage
C7	Phase 1-3 Inst Fundamental RMS Voltage	2	INTEGER		Instantaneous voltage from bushing 1 to 3
C8	Phase 3-5 Inst Fundamental RMS Voltage	2	INTEGER		Instantaneous voltage from bushing 3 to 5
C9	Phase 5-1 Inst Fundamental RMS Voltage	2	INTEGER		Instantaneous voltage from bushing 5 to 1
	Demand phase-to-phase voltage values			Monitor	Demand phase-to-phase voltage values
CA	Phase 1-3 Demand Fundamental RMS Voltage	2	INTEGER		Demand voltage from bushing 1-2 to 3-4
CB	Phase 3-5 Demand Fundamental RMS Voltage	2	INTEGER		Demand voltage from bushing 3-4 to 5-6
CC	Phase 5-1 Demand Fundamental RMS Voltage	2	INTEGER		Demand voltage from bushing 5-6 to 1-2
	Instantaneous load-side line-to-neutral voltage			Monitor	Instantaneous load-side line-to-neutral voltage
CD	Phase 2 Inst Fundamental RMS Voltage	2	INTEGER		Instantaneous voltage at bushing 2
CE	Phase 4 Inst Fundamental RMS Voltage	2	INTEGER		Instantaneous voltage at bushing 4
CF	Phase 6 Inst Fundamental RMS Voltage	2	INTEGER		Instantaneous voltage at bushing 6
	Instantaneous load-side phase-to-phase voltage			Monitor	Instantaneous load-side phase-to-phase voltage
D0	Phase 2-4 Inst Fundamental RMS Voltage	2	INTEGER		Instantaneous voltage from bushing 2 to 4
D1	Phase 4-6 Inst Fundamental RMS Voltage	2	INTEGER		Instantaneous voltage from bushing 4 to 6
D2	Phase 6-2 Inst Fundamental RMS Voltage	2	INTEGER		Instantaneous voltage from bushing 6 to 2
	Demand load-side line-to-neutral voltage			Monitor	Demand load-side line-to-neutral voltage
D3	Phase 2 Demand Fundamental RMS Voltage	2	INTEGER		Demand voltage at bushing 2
D4	Phase 4 Demand Fundamental RMS Voltage	2	INTEGER		Demand voltage at bushing 4

Sequence	Element Name	Multiplication Scale Factor	Data Type	Usage	Description
D5	Phase 6 Demand Fundamental RMS Voltage	2	INTEGER		Demand voltage at bushing 6
	Demand load-side phase-to-phase voltage			Monitor	Demand load-side phase-to-phase voltage
D6	Phase 2-4 Demand Fundamental RMS Voltage	2	INTEGER		Demand voltage from bushing 2 to 4
D7	Phase 4-6 Demand Fundamental RMS Voltage	2	INTEGER		Demand voltage from bushing 4 to 6
D8	Phase 6-2 Demand Fundamental RMS Voltage	2	INTEGER		Demand voltage from bushing 6 to 2
	Frequency			Monitor	
D9	Phase 3-4 Frequency	0.005	INTEGER		Frequency at bushings 2-4
	Instantaneous source-to-load side voltage difference			Monitor	Instantaneous source-to-load side voltage difference
DA	Phase 1-2 Inst Voltage Difference	2	INTEGER		Instantaneous voltage difference bushing 1 and 2
DB	Phase 3-4 Inst Voltage Difference	2	INTEGER		Instantaneous voltage difference bushing 3 and 4
DC	Phase 5-6 Inst Voltage Difference	2	INTEGER		Instantaneous voltage difference bushing 5 and 6
	Demand source-to-load side voltage difference			Monitor	Demand source-to-load side voltage difference
DD	Phase 1-2 Demand Voltage Difference	2	INTEGER		Demand voltage difference bushing 1 and 2
DE	Phase 3-4 Demand Voltage Difference	2	INTEGER		Demand voltage difference bushing 3 and 4
DF	Phase 5-6 Demand Voltage Difference	2	INTEGER		Demand voltage difference bushing 5 and 6

INPUT SUBSYSTEM - Sequence Number Assignments for use in Special Applications					
Sequence	Element Name		Data Type	Usage	Description
	Inst Harmonic Current Metering		OBJECT	Monitor	Instantaneous current harmonic values
00	Phase 1-2 THD Current		FLOAT		Harmonic current through bushing 1-2
01	Phase 3-4 THD Current		FLOAT		Harmonic current through bushing 3-4
02	Phase 5-6 THD Current		FLOAT		Harmonic current through bushing 5-6
03	Ground THD Current		FLOAT		Harmonic ground current
04	Phase 1-2 2nd Harmonic Current		FLOAT		2nd Harmonic current through bushing 1-2
05	Phase 3-4 2nd Harmonic Current		FLOAT		2nd Harmonic current through bushing 3-4
06	Phase 5-6 2nd Harmonic Current		FLOAT		2nd Harmonic current through bushing 5-6
07	Ground 2nd Harmonic Current		FLOAT		2nd Harmonic ground current
08	Phase 1-2 3rd Harmonic Current		FLOAT		3rd Harmonic current through bushing 1-2
09	Phase 3-4 3rd Harmonic Current		FLOAT		3rd Harmonic current through bushing 3-4
0A	Phase 5-6 3rd Harmonic Current		FLOAT		3rd Harmonic current through bushing 5-6
0B	Ground 3rd Harmonic Current		FLOAT		3rd Harmonic ground current
0C	Phase 1-2 4th Harmonic Current		FLOAT		4th Harmonic current through bushing 1-2
0D	Phase 3-4 4th Harmonic Current		FLOAT		4th Harmonic current through bushing 3-4
0E	Phase 5-6 4th Harmonic Current		FLOAT		4th Harmonic current through bushing 5-6
0F	Ground 4th Harmonic Current		FLOAT		4th Harmonic ground current
10	Phase 1-2 5th Harmonic Current		FLOAT		5th Harmonic current through bushing 1-2
11	Phase 3-4 5th Harmonic Current		FLOAT		5th Harmonic current through bushing 3-4
12	Phase 5-6 5th Harmonic Current		FLOAT		5th Harmonic current through bushing 5-6
13	Ground 5th Harmonic Current		FLOAT		5th Harmonic ground current
14	Phase 1-2 6th Harmonic Current		FLOAT		6th Harmonic current through bushing 1-2
15	Phase 3-4 6th Harmonic Current		FLOAT		6th Harmonic current through bushing 3-4
16	Phase 5-6 6th Harmonic Current		FLOAT		6th Harmonic current through bushing 5-6
17	Ground 6th Harmonic Current		FLOAT		6th Harmonic ground current
18	Phase 1-2 7th Harmonic Current		FLOAT		7th Harmonic current through bushing 1-2
19	Phase 3-4 7th Harmonic Current		FLOAT		7th Harmonic current through bushing 3-4
1A	Phase 5-6 7th Harmonic Current		FLOAT		7th Harmonic current through bushing 5-6
1B	Ground 7th Harmonic Current		FLOAT		7th Harmonic ground current
1C	Phase 1-2 8th Harmonic Current		FLOAT		8th Harmonic current through bushing 1-2
1D	Phase 3-4 8th Harmonic Current		FLOAT		8th Harmonic current through bushing 3-4
1E	Phase 5-6 8th Harmonic Current		FLOAT		8th Harmonic current through bushing 5-6
1F	Ground 8th Harmonic Current		FLOAT		8th Harmonic ground current
20	Phase 1-2 9th Harmonic Current		FLOAT		9th Harmonic current through bushing 1-2
21	Phase 3-4 9th Harmonic Current		FLOAT		9th Harmonic current through bushing 3-4

Sequence	Element Name		Data Type	Usage	Description
22	Phase 5-6 9th Harmonic Current		FLOAT		9th Harmonic current through bushing 5-6
23	Ground 9th Harmonic Current		FLOAT		9th Harmonic ground current
24	Phase 1-2 10th Harmonic Current		FLOAT		10th Harmonic current through bushing 1-2
25	Phase 3-4 10th Harmonic Current		FLOAT		10th Harmonic current through bushing 3-4
26	Phase 5-6 10th Harmonic Current		FLOAT		10th Harmonic current through bushing 5-6
27	Ground 10th Harmonic Current		FLOAT		10th Harmonic ground current
28	Phase 1-2 11th Harmonic Current		FLOAT		11th Harmonic current through bushing 1-2
29	Phase 3-4 11th Harmonic Current		FLOAT		11th Harmonic current through bushing 3-4
2A	Phase 5-6 11th Harmonic Current		FLOAT		11th Harmonic current through bushing 5-6
2B	Ground 11th Harmonic Current		FLOAT		11th Harmonic ground current
2C	Phase 1-2 12th Harmonic Current		FLOAT		12th Harmonic current through bushing 1-2
2D	Phase 3-4 12th Harmonic Current		FLOAT		12th Harmonic current through bushing 3-4
2E	Phase 5-6 12th Harmonic Current		FLOAT		12th Harmonic current through bushing 5-6
2F	Ground 12th Harmonic Current		FLOAT		12th Harmonic ground current
30	Phase 1-2 13th Harmonic Current		FLOAT		13th Harmonic current through bushing 1-2
31	Phase 3-4 13th Harmonic Current		FLOAT		13th Harmonic current through bushing 3-4
32	Phase 5-6 13th Harmonic Current		FLOAT		13th Harmonic current through bushing 5-6
33	Ground 13th Harmonic Current		FLOAT		13th Harmonic ground current
34	Phase 1-2 14th Harmonic Current		FLOAT		14th Harmonic current through bushing 1-2
35	Phase 3-4 14th Harmonic Current		FLOAT		14th Harmonic current through bushing 3-4
36	Phase 5-6 14th Harmonic Current		FLOAT		14th Harmonic current through bushing 5-6
37	Ground 14th Harmonic Current		FLOAT		14th Harmonic ground current
38	Phase 1-2 15th Harmonic Current		FLOAT		15th Harmonic current through bushing 1-2
39	Phase 3-4 15th Harmonic Current		FLOAT		15th Harmonic current through bushing 3-4
3A	Phase 5-6 15th Harmonic Current		FLOAT		15th Harmonic current through bushing 5-6
3B	Ground 15th Harmonic Current		FLOAT		15th Harmonic ground current
	Inst Harmonic Voltage Metering		OBJECT	Monitor	Instantaneous voltage harmonic values
3C	Phase 1 THD Voltage		FLOAT		Harmonic voltage at bushing 1-2
3D	Phase 3 THD Voltage		FLOAT		Harmonic voltage at bushing 3-4
3E	Phase 5 THD Voltage		FLOAT		Harmonic voltage at bushing 5-6
3F	Phase 1 2nd Harmonic Voltage		FLOAT		2nd Harmonic voltage at bushing 1-2
40	Phase 3 2nd Harmonic Voltage		FLOAT		2nd Harmonic voltage at bushing 3-4
41	Phase 5 2nd Harmonic Voltage		FLOAT		2nd Harmonic voltage at bushing 5-6
42	Phase 1 3rd Harmonic Voltage		FLOAT		3rd Harmonic voltage at bushing 1-2
43	Phase 3 3rd Harmonic Voltage		FLOAT		3rd Harmonic voltage at bushing 3-4

Sequence	Element Name		Data Type	Usage	Description
44	Phase 5 3rd Harmonic Voltage		FLOAT		3rd Harmonic voltage at bushing 5-6
45	Phase 1 4th Harmonic Voltage		FLOAT		4th Harmonic voltage at bushing 1-2
46	Phase 3 4th Harmonic Voltage		FLOAT		4th Harmonic voltage at bushing 3-4
47	Phase 5 4th Harmonic Voltage		FLOAT		4th Harmonic voltage at bushing 5-6
48	Phase 1 5th Harmonic Voltage		FLOAT		5th Harmonic voltage at bushing 1-2
49	Phase 3 5th Harmonic Voltage		FLOAT		5th Harmonic voltage at bushing 3-4
4A	Phase 5 5th Harmonic Voltage		FLOAT		5th Harmonic voltage at bushing 5-6
4B	Phase 1 6th Harmonic Voltage		FLOAT		6th Harmonic voltage at bushing 1-2
4C	Phase 3 6th Harmonic Voltage		FLOAT		6th Harmonic voltage at bushing 3-4
4D	Phase 5 6th Harmonic Voltage		FLOAT		6th Harmonic voltage at bushing 5-6
4E	Phase 1 7th Harmonic Voltage		FLOAT		7th Harmonic voltage at bushing 1-2
4F	Phase 3 7th Harmonic Voltage		FLOAT		7th Harmonic voltage at bushing 3-4
50	Phase 5 7th Harmonic Voltage		FLOAT		7th Harmonic voltage at bushing 5-6
51	Phase 1 8th Harmonic Voltage		FLOAT		8th Harmonic voltage at bushing 1-2
52	Phase 3 8th Harmonic Voltage		FLOAT		8th Harmonic voltage at bushing 3-4
53	Phase 5 8th Harmonic Voltage		FLOAT		8th Harmonic voltage at bushing 5-6
54	Phase 1 9th Harmonic Voltage		FLOAT		9th Harmonic voltage at bushing 1-2
55	Phase 3 9th Harmonic Voltage		FLOAT		9th Harmonic voltage at bushing 3-4
56	Phase 5 9th Harmonic Voltage		FLOAT		9th Harmonic voltage at bushing 5-6
57	Phase 1 10th Harmonic Voltage		FLOAT		10th Harmonic voltage at bushing 1-2
58	Phase 3 10th Harmonic Voltage		FLOAT		10th Harmonic voltage at bushing 3-4
59	Phase 5 10th Harmonic Voltage		FLOAT		10th Harmonic voltage at bushing 5-6
5A	Phase 1 11th Harmonic Voltage		FLOAT		11th Harmonic voltage at bushing 1-2
5B	Phase 3 11th Harmonic Voltage		FLOAT		11th Harmonic voltage at bushing 3-4
5C	Phase 5 11th Harmonic Voltage		FLOAT		11th Harmonic voltage at bushing 5-6
5D	Phase 1 12th Harmonic Voltage		FLOAT		12th Harmonic voltage at bushing 1-2
5E	Phase 3 12th Harmonic Voltage		FLOAT		12th Harmonic voltage at bushing 3-4
5F	Phase 5 12th Harmonic Voltage		FLOAT		12th Harmonic voltage at bushing 5-6
60	Phase 1 13th Harmonic Voltage		FLOAT		13th Harmonic voltage at bushing 1-2
61	Phase 3 13th Harmonic Voltage		FLOAT		13th Harmonic voltage at bushing 3-4
62	Phase 5 13th Harmonic Voltage		FLOAT		13th Harmonic voltage at bushing 5-6
63	Phase 1 14th Harmonic Voltage		FLOAT		14th Harmonic voltage at bushing 1-2
64	Phase 3 14th Harmonic Voltage		FLOAT		14th Harmonic voltage at bushing 3-4

Sequence	Element Name		Data Type	Usage	Description
65	Phase 5 14th Harmonic Voltage		FLOAT		14th Harmonic voltage at bushing 5-6
66	Phase 1 15th Harmonic Voltage		FLOAT		15th Harmonic voltage at bushing 1-2
67	Phase 3 15th Harmonic Voltage		FLOAT		15th Harmonic voltage at bushing 3-4
68	Phase 5 15th Harmonic Voltage		FLOAT		15th Harmonic voltage at bushing 5-6
	Sequence Component Current Metering			Monitor	Instantaneous current sequence component values
69	Positive Sequence Current Mag		FLOAT		Positive sequence current magnitude
6A	Positive Sequence Current Angle		FLOAT		Positive sequence current angle
6B	Negative Sequence Current Mag		FLOAT		Negative sequence current magnitude
6C	Negative Sequence Current Angle		FLOAT		Negative sequence current angle
6D	Zero Sequence Current Mag		FLOAT		Zero sequence current magnitude
6E	Zero Sequence Current Angle		FLOAT		Zero sequence current angle
	Sequence Component Voltage Metering			Monitor	Instantaneous voltage sequence component values
6F	Positive Sequence Voltage Mag		FLOAT		Positive sequence voltage magnitude
70	Positive Sequence Voltage Angle		FLOAT		Positive sequence voltage angle
71	Negative Sequence Voltage Mag		FLOAT		Negative sequence voltage magnitude
72	Negative Sequence Voltage Angle		FLOAT		Negative sequence voltage angle
	Sequence Component Demand Current Metering			Monitor	Demand current sequence component values
73	Positive Sequence Demand Current Mag		FLOAT		Positive sequence current magnitude
74	Positive Sequence Demand Current Angle		FLOAT		Positive sequence current angle
75	Negative Sequence Demand Current Mag		FLOAT		Negative sequence current magnitude
76	Negative Sequence Demand Current Angle		FLOAT		Negative sequence current angle
77	Zero Sequence Demand Current Mag		FLOAT		Zero sequence current magnitude
78	Zero Sequence Demand Current Angle		FLOAT		Zero sequence current angle
	Sequence Component Demand Voltage Metering			Monitor	Demand voltage sequence component values
79	Positive Sequence Demand Voltage Mag		FLOAT		Positive sequence voltage magnitude
7A	Positive Sequence Demand Voltage Angle		FLOAT		Positive sequence voltage angle
7B	Negative Sequence Demand Voltage Mag		FLOAT		Negative sequence voltage magnitude
7C	Negative Sequence Demand Voltage Angle		FLOAT		Negative sequence voltage angle

OUTPUT SUBSYSTEM - Sequence Number Assignments for use in Select-Before-Operate (SBO) Operations					
00-3F	Port Logic Input			Command	Port command input to custom logic
00	Cold load pickup block				
01	Histogram off				
02	Profiler off				
03	Status alarm recording on				
04	Data alarm recording on				
05	Event Recorder off				
06	Test mode off				
07	Normal profile enabled				
08	Alternate profile 1 enabled				
09	Alternate profile 2 enabled				
0A	Alternate profile 3 enabled				
0B	Non reclosing on				
0C	Ground trip block on				
0D	Hot line tag on				
0E	Fast trips disabled				
0F	Battery test on				
10	Lockout				
11	Close				
12	Reset targets				
13	SGF block on				
14	* Source I Disable				
15	* Source II Disable				
16	* LS Reset				
17	* LS Disable				
18	Reserved				
19	Reserved				
1A	Frequency Trip block				
1B	Voltage Trip block				
1C	Frequency/Voltage Auto-Restore block				
1D	Combined Trip/Close				
1E - 3F	Reserved				
40 - 64	Assorted Histogram Resets			Command	Reset ALL histograms or the specified histogram
40	Reset ALL histograms				
41	Reset Phase 1-2 current histogram				
42	Reset Phase 3-4 current histogram				
43	Reset Phase 5-6 current histogram				
44	Reset Ground current histogram				
45	Reset Phase 1 Voltage histogram				
46	Reset Phase 3 Voltage histogram				
47	Reset Phase 5 Voltage histogram				
48	Reset Phase 1-2 power factor histogram				
49	Reset Phase 1-2 KVA histogram				

4A	Reset Phase 1-2 KW histogram				
4B	Reset Phase 1-2 KVAR histogram				
4C	Reset Phase 3-4 power factor histogram				
4D	Reset Phase 3-4 KVA histogram				
4E	Reset Phase 3-4 KW histogram				
4F	Reset Phase 3-4 KVAR histogram				
50	Reset Phase 5-6 power factor histogram				
51	Reset Phase 5-6 KVA histogram				
52	Reset Phase 5-6 KW histogram				
53	Reset Phase 5-6 KVAR histogram				
54	Reset Phase Total power factor histogram				
55	Reset Phase Total KVA histogram				
56	Reset Phase Total KW histogram				
57	Reset Phase Total KVAR histogram				
58	Reset Positive sequence current magnitude				
59	Reset Positive sequence current angle				
5A	Reset Negative sequence current magnitude				
5B	Reset Negative sequence current angle				
5C	Reset Zero sequence current magnitude				
5D	Reset Zero sequence current angle				
5E	Reset Positive sequence Voltage magnitude				
5F	Reset Positive sequence Voltage angle				
60	Reset Negative sequence Voltage magnitude				
61	Reset Negative sequence Voltage angle				
62	Reset Phase 1-2 current THD histogram				
63	Reset Phase 3-4 current THD histogram				
64	Reset Phase 5-6 current THD histogram				
65	Reset Ground current THD histogram				
66	Reset Phase 1 Voltage THD histogram				
67	Reset Phase 3 Voltage THD histogram				
68	Reset Phase 5 Voltage THD histogram				
69	Calibration Reset			Command	Calibration reset request
6A	OCP Target Reset			Command	OCP Target reset request
6B	Alarm suppression on			Command	Alarm suppression on/off
6C	Unmask all system event recorder entries			Command	Unmask all events request
6D	Mask all system event recorder entries			Command	Mask all events request
6E	Unmask all error event recorder entries			Command	Unmask all events request
6F	Mask all error event recorder entries			Command	Mask all events request
70	Unmask all profile recorder entries			Command	Unmask all events request
71	Mask all profile recorder entries			Command	Mask all events request
72	Reset KWh			Command	Resets kWh accumulation
73	Reset Phase 1-3 Voltage histogram			Command	Resets specified histogram
74	Reset Phase 3-5 Voltage histogram				
75	Reset Phase 5-1 Voltage histogram				

76	Reset Phase 2 Voltage histogram				
77	Reset Phase 4 Voltage histogram				
78	Reset Phase 6 Voltage histogram				
79	Reset Phase 2-4 Voltage histogram				
7A	Reset Phase 4-6 Voltage histogram				
7B	Reset Phase 6-2 Voltage histogram				
7C	Reset Phase 3-4 Frequency				
7D	Reset Phase 1-2 Voltage Difference histogram				
7E	Reset Phase 3-4 Voltage Difference histogram				
7F	Reset Phase 5-6 Voltage Difference histogram				
	* LS Controls Only				

OUTPUT SUBSYSTEM - Sequence Number Assignments for use in Select-Before-Operate (SBO) Operations					
00-3F	Port Logic Input			Command	Port command input to custom logic
00	Cold load pickup block				
01	Histogram off				
02	Profiler off				
03	Status alarm recording on				
04	Data alarm recording on				
05	Event Recorder off				
06	Test mode off				
07	Normal profile enabled				
08	Alternate profile 1 enabled				
09	Alternate profile 2 enabled				
0A	Alternate profile 3 enabled				
0B	Non reclosing on				
0C	Ground trip block on				
0D	Hot line tag on				Control (or A Phase) lockout
0E	Fast trips disabled				Recloser (or A Phase) open
0F	Battery test on				Recloser (or A Phase) closed
10	Phase A Trip/Lockout				
11	Phase A Close				
12	Reset targets				
13	SGF Block on				
14	Phase B Trip/Lockout				
15	Phase B Close				
16	Phase C Trip/Lockout				
17	Phase C Close				
18	All Phases Trip/Lockout				
19	All Phases Close				
1A	Frequency Trip block				
1B	Voltage Trip block				
1C	Frequency/Voltage Auto-Restore block				
1D	A Phase Combined Trip/Close				
1E	B Phase Combined Trip/Close				
1F	C Phase Combined Trip/Close				
20 - 3F	Reserved				
40 - 64	Assorted Histogram Resets			Command	Reset ALL histograms or the specified histogram
40	Reset ALL histograms				
41	Reset Phase 1-2 current histogram				
42	Reset Phase 3-4 current histogram				
43	Reset Phase 5-6 current histogram				
44	Reset Ground current histogram				
45	Reset Phase 1 Voltage histogram				
46	Reset Phase 3 Voltage histogram				
47	Reset Phase 5 Voltage histogram				

48	Reset Phase 1-2 power factor histogram				
49	Reset Phase 1-2 KVA histogram				
4A	Reset Phase 1-2 KW histogram				
4B	Reset Phase 1-2 KVAR histogram				
4C	Reset Phase 3-4 power factor histogram				
4D	Reset Phase 3-4 KVA histogram				
4E	Reset Phase 3-4 KW histogram				
4F	Reset Phase 3-4 KVAR histogram				
50	Reset Phase 5-6 power factor histogram				
51	Reset Phase 5-6 KVA histogram				
52	Reset Phase 5-6 KW histogram				
53	Reset Phase 5-6 KVAR histogram				
54	Reset Phase Total power factor histogram				
55	Reset Phase Total KVA histogram				
56	Reset Phase Total KW histogram				
57	Reset Phase Total KVAR histogram				
58	Reset Positive sequence current magnitude				
59	Reset Positive sequence current angle				
5A	Reset Negative sequence current magnitude				
5B	Reset Negative sequence current angle				
5C	Reset Zero sequence current magnitude				
5D	Reset Zero sequence current angle				
5E	Reset Positive sequence Voltage magnitude				
5F	Reset Positive sequence Voltage angle				
60	Reset Negative sequence Voltage magnitude				
61	Reset Negative sequence Voltage angle				
62	Reset Phase 1-2 current THD histogram				
63	Reset Phase 3-4 current THD histogram				
64	Reset Phase 5-6 current THD histogram				
65	Reset Ground current THD histogram				
66	Reset Phase 1 Voltage THD histogram				
67	Reset Phase 3 Voltage THD histogram				
68	Reset Phase 5 Voltage THD histogram				
69	Calibration Reset			Command	Calibration reset request
6A	OCP Target Reset			Command	OCP Target reset request
6B	Alarm suppression on			Command	Alarm suppression on/off
6C	Unmask all system event recorder entries			Command	Unmask all events request
6D	Mask all system event recorder entries			Command	Mask all events request
6E	Unmask all error event recorder entries			Command	Unmask all events request
6F	Mask all error event recorder entries			Command	Mask all events request
70	Unmask all profile recorder entries			Command	Unmask all events request
71	Mask all profile recorder entries			Command	Mask all events request
72	Reset KWh			Command	Resets kWh accumulation
73	Reset Phase 1-3 Voltage histogram			Command	Resets specified histogram

74	Reset Phase 3-5 Voltage histogram				
75	Reset Phase 5-1 Voltage histogram				
76	Reset Phase 2 Voltage histogram				
77	Reset Phase 4 Voltage histogram				
78	Reset Phase 6 Voltage histogram				
79	Reset Phase 2-4 Voltage histogram				
7A	Reset Phase 4-6 Voltage histogram				
7B	Reset Phase 6-2 Voltage histogram				
7C	Reset Phase 3-4 Frequency				
7D	Reset Phase 1-3 Voltage Difference histogram				
7E	Reset Phase 3-4 Voltage Difference histogram				
7F	Reset Phase 5-6 Voltage Difference histogram				

CONFIGURATION Ordinal Block 0 (Error File)												
Offset	Element Name	Data Size (in Bytes)	Data Type		Description							
0000	Error Code	1	BYTE		Error code as described below							
0001	Function Code	1	BYTE		2179 Function Code							
0002	Command Code	1	BYTE		2179 Command Code							
0003	Reserved	5	BYTE		Reserved							
0008	Dynamic Data	1	BYTE		As defined below							
0009	Dynamic Data	1	BYTE		As defined below							
000A	Dynamic Data	1	BYTE		As defined below							
000B	Dynamic Data	1	BYTE		As defined below							
000C	Dynamic Data	1	BYTE		As defined below							
000D	Dynamic Data	1	BYTE		As defined below							
000E	Dynamic Data	1	BYTE		As defined below							
000F	Dynamic Data	1	BYTE		As defined below							
Error Code	Description				Dynamic Data Location							
					8	9	A	B	C	D	E	F
0x01	Illegal command code				Code							
0x02	Illegal sequence number				Seq#							
0x03	Illegal scan table number				Table#							
0x09	SBO operate warm				Seq#							
0x0A	SBO operate with pending arm				Seq#							
0x0C	Other request with SBO pending											
0x0D	Other request with write pending											
0x0E	Ordinal write not allowed				Ord#							
0x10	Previous SBO function not performed satisfactorily				Seq#							
0x11	Illegal function code											
0x12	Illegal ordinal number				Ord#							
0x13	Bias number is illegalof range or total will be out of range				Ord#	OffsetLo	OffsetHi					
0x14	Improper data read/written				DataLo	DataHi				AckLo	AckHi	
0x15	Illegal time-tagged history table number				Table#							
0x20	RTC data is default, clock isn't set											
0x21	RTC julian day data is out of range				DayHi	DayLo	Hours	Minutes	Seconds			
0x22	RTC HH:MM:SS data is out of range				DayHi	DayLo	Hours	Minutes	Seconds			
0x2D	The calculated # of events is out of range				Event#							
0x30	Cannot perform SBO or WRITE function, port is in local mode, or port is tagged											

Definitions used for error code 0x14 Ack Codes	
Index	Description
0	ACK, function was successful
1	NAK, Generic unsuccessful indication
2	Reserved
3	NAK, Parameter value too high
4	NAK, Parameter value too low
5	NAK, Parameter enum type illegal
6	NAK, Alarm recorder full
7	NAK, Status alarm recorder full
8	NAK, Data alarm recorder full
9	NAK, Supervisory operation not allowed
10	NAK, Parameter is too low relative to another parameter
11	NAK, Parameter is too high relative to another parameter
12	NAK, Requested TCC name not found
13	Reserved
14	Reserved
15	Reserved
16	Reserved
17	Reserved
18	Reserved
19	Reserved
20	Reserved
21	Reserved
22	Reserved
23	NAK, Parameter conflicts with another parameter

CONFIGURATION Ordinal Block 2 (ROM)					
Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
	Control Information		OBJECT	Constant	Control manufacturing information
0000	Control Type Class	4	INTEGER		Control type identifier
0004	Software Version Revision Number	4	INTEGER		Software version
0008	Database Version Number	4	INTEGER		Data dictionary version
000C	Control Part Number	21	STRING		Catalog part number of control
0021	Control Serial Number	21	STRING		Serial number of control
0036	Customization Reference Number	21	STRING		Customization (custom logic) identifier
004B	Reserved	1	PAD		Pad
004C	Date of Final Test	2	INTEGER		Date of final test
004E	Time of Final Test	4	LONG		Time of final test
0052	Copyright	81	STRING		Obligatory copyright
00A3	Reserved	1	PAD		Pad
	Currently Connected Comm Port Protocol ID		OBJECT	Constant	Presently connected comm port and protocol information
00A4	Port Handle	2	INTEGER		Comm port ID
00A6	Protocol ID	22	STRING		Protocol ID
00BC	Protocol Version	4	LONG		Protocol version
00C0	Protocol Revision	4	LONG		Protocol revision
	Port 1 Protocol ID		OBJECT	Constant	Comm port 1 port and protocol information
00C4	Port Handle	2	INTEGER		Comm port ID
00C6	Protocol ID	22	STRING		Protocol ID
00DC	Protocol Version	4	LONG		Protocol version
00E0	Protocol Revision	4	LONG		Protocol revision
	Port 2 Protocol ID		OBJECT	Constant	Comm port 2 port and protocol information
00E4	Port Handle	2	INTEGER		Comm port ID
00E6	Protocol ID	22	STRING		Protocol ID
00FC	Protocol Version	4	LONG		Protocol version
0100	Protocol Revision	4	LONG		Protocol revision
	Port 3 Protocol ID		OBJECT	Constant	Comm port 3 port and protocol information
0104	Port Handle	2	INTEGER		Comm port ID
0106	Protocol ID	22	STRING		Protocol ID
011C	Protocol Version	4	LONG		Protocol version
0120	Protocol Revision	4	LONG		Protocol revision
0124	Readme Information	200	STRING	Constant	Interesting information about control

CONFIGURATION Ordinal Block 5 (RAM)					
Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
	Current Fundamental Histogram		OBJECT	Monitor	Histograms for current values
0000	Phase 1-2 Demand Current Under Band Bin	2	INTEGER		Under range bin
0002	Phase 1-2 Current Bin 1	2	INTEGER		Bin 1
0004	Phase 1-2 Current Bin 2	2	INTEGER		Bin 2
0006	Phase 1-2 Current Bin 3	2	INTEGER		Bin 3
0008	Phase 1-2 Current Bin 4	2	INTEGER		Bin 4
000A	Phase 1-2 Current Bin 5	2	INTEGER		Bin 5
000C	Phase 1-2 Current Bin 6	2	INTEGER		Bin 6
000E	Phase 1-2 Current Bin 7	2	INTEGER		Bin 7
0010	Phase 1-2 Current Bin 8	2	INTEGER		Bin 8
0012	Phase 1-2 Current Bin 9	2	INTEGER		Bin 9
0014	Phase 1-2 Current Bin 10	2	INTEGER		Bin 10
0016	Phase 1-2 Current Over Band Bin	2	INTEGER		Over range bin
0018	Max Phase 1-2 Demand Sample	4	FLOAT		Maximum value
001C	Date of Max Phase 1-2 Demand Sample	2	INTEGER		Date that maximum value occurred
001E	Time of Max Phase 1-2 Demand Sample	4	LONG		Time that maximum value occurred
0022	Min Phase 1-2 Demand Sample	4	FLOAT		Time that minimum value occurred
0026	Date of Min Phase 1-2 Demand Sample	2	INTEGER		Date that minimum value occurred
0028	Time of Min Phase 1-2 Demand Sample	4	LONG		Time that maximum value occurred
002C	Date of Phase 1-2 Demand Record Clear	2	INTEGER		Date that histogram was reset
002E	Time of Phase 1-2 Demand Record Clear	4	LONG		Time that histogram was reset
0032	Phase 3-4 Current Under Band Bin	2	INTEGER		Under range bin
0034	Phase 3-4 Current Bin 1	2	INTEGER		Bin 1
0036	Phase 3-4 Current Bin 2	2	INTEGER		Bin 2
0038	Phase 3-4 Current Bin 3	2	INTEGER		Bin 3
003A	Phase 3-4 Current Bin 4	2	INTEGER		Bin 4
003C	Phase 3-4 Current Bin 5	2	INTEGER		Bin 5
003E	Phase 3-4 Current Bin 6	2	INTEGER		Bin 6
0040	Phase 3-4 Current Bin 7	2	INTEGER		Bin 7
0042	Phase 3-4 Current Bin 8	2	INTEGER		Bin 8
0044	Phase 3-4 Current Bin 9	2	INTEGER		Bin 9
0046	Phase 3-4 Current Bin 10	2	INTEGER		Bin 10
0048	Phase 3-4 Current Over Band Bin	2	INTEGER		Over range bin
004A	Max Phase 3-4 Demand Sample	4	FLOAT		Maximum value
004E	Date of Max Phase 3-4 Demand Sample	2	INTEGER		Date that maximum value occurred
0050	Time of Max Phase 3-4 Demand Sample	4	LONG		Time that maximum value occurred
0054	Min Phase 3-4 Demand Sample	4	FLOAT		Time that minimum value occurred
0058	Date of Min Phase 3-4 Demand Sample	2	INTEGER		Date that minimum value occurred
005A	Time of Min Phase 3-4 Demand Sample	4	LONG		Time that maximum value occurred

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
005E	Date of Phase 3-4 Demand Record Clear	2	INTEGER		Date that histogram was reset
0060	Time of Phase 3-4 Demand Record Clear	4	LONG		Time that histogram was reset
0064	Phase 5-6 Current Under Band Bin	2	INTEGER		Under range bin
0066	Phase 5-6 Current Bin 1	2	INTEGER		Bin 1
0068	Phase 5-6 Current Bin 2	2	INTEGER		Bin 2
006A	Phase 5-6 Current Bin 3	2	INTEGER		Bin 3
006C	Phase 5-6 Current Bin 4	2	INTEGER		Bin 4
006E	Phase 5-6 Current Bin 5	2	INTEGER		Bin 5
0070	Phase 5-6 Current Bin 6	2	INTEGER		Bin 6
0072	Phase 5-6 Current Bin 7	2	INTEGER		Bin 7
0074	Phase 5-6 Current Bin 8	2	INTEGER		Bin 8
0076	Phase 5-6 Current Bin 9	2	INTEGER		Bin 9
0078	Phase 5-6 Current Bin 10	2	INTEGER		Bin 10
007A	Phase 5-6 Current Over Band Bin	2	INTEGER		Over range bin
007C	Max Phase 5-6 Demand Sample	4	FLOAT		Maximum value
0080	Date of Max Phase 5-6 Demand Sample	2	INTEGER		Date that maximum value occurred
0082	Time of Max Phase 5-6 Demand Sample	4	LONG		Time that maximum value occurred
0086	Min Phase 5-6 Demand Sample	4	FLOAT		Time that minimum value occurred
008A	Date of Min Phase 5-6 Demand Sample	2	INTEGER		Date that minimum value occurred
008C	Time of Min Phase 5-6 Demand Sample	4	LONG		Time that maximum value occurred
0090	Date of Phase 5-6 Demand Record Clear	2	INTEGER		Date that histogram was reset
0092	Time of Phase 5-6 Demand Record Clear	4	LONG		Time that histogram was reset
0096	Ground Current Under Band Bin	2	INTEGER		Under range bin
0098	Ground Demand Current Bin 1	2	INTEGER		Bin 1
009A	Ground Demand Current Bin 2	2	INTEGER		Bin 2
009C	Ground Demand Current Bin 3	2	INTEGER		Bin 3
009E	Ground Demand Current Bin 4	2	INTEGER		Bin 4
00A0	Ground Demand Current Bin 5	2	INTEGER		Bin 5
00A2	Ground Demand Current Bin 6	2	INTEGER		Bin 6
00A4	Ground Demand Current Bin 7	2	INTEGER		Bin 7
00A6	Ground Demand Current Bin 8	2	INTEGER		Bin 8
00A8	Ground Demand Current Bin 9	2	INTEGER		Bin 9
00AA	Ground Demand Current Bin 10	2	INTEGER		Bin 10
00AC	Ground Demand Current Over Band Bin	2	INTEGER		Over range bin
00AE	Max Ground Demand Sample	4	FLOAT		Maximum value
00B2	Date of Max Ground Demand Sample	2	INTEGER		Date that maximum value occurred
00B4	Time of Max Ground Demand Sample	4	LONG		Time that maximum value occurred
00B8	Min Ground Demand Sample	4	FLOAT		Time that minimum value occurred
00BC	Date of Min Ground Demand Sample	2	INTEGER		Date that minimum value occurred

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
00BE	Time of Min Ground Demand Sample	4	LONG		Time that maximum value occurred
00C2	Date of Ground Demand Record Clear	2	INTEGER		Date that histogram was reset
00C4	Time of Ground Demand Record Clear	4	LONG		Time that histogram was reset
	Voltage Fundamental Histogram phase-neutral		OBJECT	Monitor	Histograms for source-side phase-neutral voltage values
00C8	Phase 1 Voltage Under Band Bin	2	INTEGER		Under range bin
00CA	Phase 1 Voltage Bin 1	2	INTEGER		Bin 1
00CC	Phase 1 Voltage Bin 2	2	INTEGER		Bin 2
00CE	Phase 1 Voltage Bin 3	2	INTEGER		Bin 3
00D0	Phase 1 Voltage Bin 4	2	INTEGER		Bin 4
00D2	Phase 1 Voltage Bin 5	2	INTEGER		Bin 5
00D4	Phase 1 Voltage Bin 6	2	INTEGER		Bin 6
00D6	Phase 1 Voltage Bin 7	2	INTEGER		Bin 7
00D8	Phase 1 Voltage Bin 8	2	INTEGER		Bin 8
00DA	Phase 1 Voltage Bin 9	2	INTEGER		Bin 9
00DC	Phase 1 Voltage Bin 10	2	INTEGER		Bin 10
00DE	Phase 1 Voltage Over Band Bin	2	INTEGER		Over range bin
00E0	Max Phase 1 Voltage Sample	4	FLOAT		Maximum value
00E4	Date of Max Phase 1 Voltage Sample	2	INTEGER		Date that maximum value occurred
00E6	Time of Max Phase 1 Voltage Sample	4	LONG		Time that maximum value occurred
00EA	Min Phase 1 Voltage Sample	4	FLOAT		Time that minimum value occurred
00EE	Date of Min Phase 1 Voltage Sample	2	INTEGER		Date that minimum value occurred
00F0	Time of Min Phase 1 Voltage Sample	4	LONG		Time that maximum value occurred
00F4	Date of Phase 1 Voltage Record Clear	2	INTEGER		Date that histogram was reset
00F6	Time of Phase 1 Voltage Record Clear	4	LONG		Time that histogram was reset
00FA	Phase 3 Voltage Under Band Bin	2	INTEGER		Under range bin
00FC	Phase 3 Voltage Bin 1	2	INTEGER		Bin 1
00FE	Phase 3 Voltage Bin 2	2	INTEGER		Bin 2
0100	Phase 3 Voltage Bin 3	2	INTEGER		Bin 3
0102	Phase 3 Voltage Bin 4	2	INTEGER		Bin 4
0104	Phase 3 Voltage Bin 5	2	INTEGER		Bin 5
0106	Phase 3 Voltage Bin 6	2	INTEGER		Bin 6
0108	Phase 3 Voltage Bin 7	2	INTEGER		Bin 7
010A	Phase 3 Voltage Bin 8	2	INTEGER		Bin 8
010C	Phase 3 Voltage Bin 9	2	INTEGER		Bin 9
010E	Phase 3 Voltage Bin 10	2	INTEGER		Bin 10
0110	Phase 3 Voltage Over Band Bin	2	INTEGER		Over range bin
0112	Max Phase 3 Voltage Sample	4	FLOAT		Maximum value
0116	Date of Max Phase 3 Voltage Sample	2	INTEGER		Date that maximum value occurred
0118	Time of Max Phase 3 Voltage Sample	4	LONG		Time that maximum value occurred

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
011C	Min Phase 3 Voltage Sample	4	FLOAT		Time that minimum value occurred
0120	Date of Min Phase 3 Voltage Sample	2	INTEGER		Date that minimum value occurred
0122	Time of Min Phase 3 Voltage Sample	4	LONG		Time that maximum value occurred
0126	Date of Phase 3 Voltage Record Clear	2	INTEGER		Date that histogram was reset
0128	Time of Phase 3 Voltage Record Clear	4	LONG		Time that histogram was reset
012C	Phase 5 Voltage Under Band Bin	2	INTEGER		Under range bin
012E	Phase 5 Voltage Bin 1	2	INTEGER		Bin 1
0130	Phase 5 Voltage Bin 2	2	INTEGER		Bin 2
0132	Phase 5 Voltage Bin 3	2	INTEGER		Bin 3
0134	Phase 5 Voltage Bin 4	2	INTEGER		Bin 4
0136	Phase 5 Voltage Bin 5	2	INTEGER		Bin 5
0138	Phase 5 Voltage Bin 6	2	INTEGER		Bin 6
013A	Phase 5 Voltage Bin 7	2	INTEGER		Bin 7
013C	Phase 5 Voltage Bin 8	2	INTEGER		Bin 8
013E	Phase 5 Voltage Bin 9	2	INTEGER		Bin 9
0140	Phase 5 Voltage Bin 10	2	INTEGER		Bin 10
0142	Phase 5 Voltage Over Band Bin	2	INTEGER		Over range bin
0144	Max Phase 5 Voltage Sample	4	FLOAT		Maximum value
0148	Date of Max Phase 5 Voltage Sample	2	INTEGER		Date that maximum value occurred
014A	Time of Max Phase 5 Voltage Sample	4	LONG		Time that maximum value occurred
014E	Min Phase 5 Voltage Sample	4	FLOAT		Time that minimum value occurred
0152	Date of Min Phase 5 Voltage Sample	2	INTEGER		Date that minimum value occurred
0154	Time of Min Phase 5 Voltage Sample	4	LONG		Time that maximum value occurred
0158	Date of Phase 5 Voltage Record Clear	2	INTEGER		Date that histogram was reset
015A	Time of Phase 5 Voltage Record Clear	4	LONG		Time that histogram was reset
	Power Histogram		OBJECT	Monitor	Histograms for power values
015E	Phase 1-2 Power Factor Under Band Bin	2	INTEGER		Under range bin
0160	Phase 1-2 Power Factor Bin 1	2	INTEGER		Bin 1
0162	Phase 1-2 Power Factor Bin 2	2	INTEGER		Bin 2
0164	Phase 1-2 Power Factor Bin 3	2	INTEGER		Bin 3
0166	Phase 1-2 Power Factor Bin 4	2	INTEGER		Bin 4
0168	Phase 1-2 Power Factor Bin 5	2	INTEGER		Bin 5
016A	Phase 1-2 Power Factor Bin 6	2	INTEGER		Bin 6
016C	Phase 1-2 Power Factor Bin 7	2	INTEGER		Bin 7
016E	Phase 1-2 Power Factor Bin 8	2	INTEGER		Bin 8
0170	Phase 1-2 Power Factor Bin 9	2	INTEGER		Bin 9
0172	Phase 1-2 Power Factor Bin 10	2	INTEGER		Bin 10
0174	Phase 1-2 Power Factor Over Band Bin	2	INTEGER		Over range bin
0176	Max Phase 1-2 Power Factor Sample	4	FLOAT		Maximum value

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
017A	Date of Max Phase 1-2 Power Factor Sample	2	INTEGER		Date that maximum value occurred
017C	Time of Max Phase 1-2 Power Factor Sample	4	LONG		Time that maximum value occurred
0180	Min Phase 1-2 Power Factor Sample	4	FLOAT		Time that minimum value occurred
0184	Date of Min Phase 1-2 Power Factor Sample	2	INTEGER		Date that minimum value occurred
0186	Time of Min Phase 1-2 Power Factor Sample	4	LONG		Time that maximum value occurred
018A	Date of Phase 1-2 Power Factor Record Clear	2	INTEGER		Date that histogram was reset
018C	Time of Phase 1-2 Power Factor Record Clear	4	LONG		Time that histogram was reset
0190	Phase 1-2 KVA Under Band Bin	2	INTEGER		Under range bin
0192	Phase 1-2 KVA Bin 1	2	INTEGER		Bin 1
0194	Phase 1-2 KVA Bin 2	2	INTEGER		Bin 2
0196	Phase 1-2 KVA Bin 3	2	INTEGER		Bin 3
0198	Phase 1-2 KVA Bin 4	2	INTEGER		Bin 4
019A	Phase 1-2 KVA Bin 5	2	INTEGER		Bin 5
019C	Phase 1-2 KVA Bin 6	2	INTEGER		Bin 6
019E	Phase 1-2 KVA Bin 7	2	INTEGER		Bin 7
01A0	Phase 1-2 KVA Bin 8	2	INTEGER		Bin 8
01A2	Phase 1-2 KVA Bin 9	2	INTEGER		Bin 9
01A4	Phase 1-2 KVA Bin 10	2	INTEGER		Bin 10
01A6	Phase 1-2 KVA Over Band Bin	2	INTEGER		Over range bin
01A8	Max Phase 1-2 KVA Sample	4	FLOAT		Maximum value
01AC	Date of Max Phase 1-2 KVA Sample	2	INTEGER		Date that maximum value occurred
01AE	Time of Max Phase 1-2 KVA Sample	4	LONG		Time that maximum value occurred
01B2	Min Phase 1-2 KVA Sample	4	FLOAT		Time that minimum value occurred
01B6	Date of Min Phase 1-2 KVA Sample	2	INTEGER		Date that minimum value occurred
01B8	Time of Min Phase 1-2 KVA Sample	4	LONG		Time that maximum value occurred
01BC	Date of Phase 1-2 KVA Record Clear	2	INTEGER		Date that histogram was reset
01BE	Time of Phase 1-2 KVA Record Clear	4	LONG		Time that histogram was reset
01C2	Phase 1-2 KW Under Band Bin	2	INTEGER		Under range bin
01C4	Phase 1-2 KW Bin 1	2	INTEGER		Bin 1
01C6	Phase 1-2 KW Bin 2	2	INTEGER		Bin 2
01C8	Phase 1-2 KW Bin 3	2	INTEGER		Bin 3
01CA	Phase 1-2 KW Bin 4	2	INTEGER		Bin 4
01CC	Phase 1-2 KW Bin 5	2	INTEGER		Bin 5
01CE	Phase 1-2 KW Bin 6	2	INTEGER		Bin 6
01D0	Phase 1-2 KW Bin 7	2	INTEGER		Bin 7
01D2	Phase 1-2 KW Bin 8	2	INTEGER		Bin 8
01D4	Phase 1-2 KW Bin 9	2	INTEGER		Bin 9
01D6	Phase 1-2 KW Bin 10	2	INTEGER		Bin 10
01D8	Phase 1-2 KW Over Band Bin	2	INTEGER		Over range bin

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
01DA	Max Phase 1-2 KW Sample	4	FLOAT		Maximum value
01DE	Date of Max Phase 1-2 KW Sample	2	INTEGER		Date that maximum value occurred
01E0	Time of Max Phase 1-2 KW Sample	4	LONG		Time that maximum value occurred
01E4	Min Phase 1-2 KW Sample	4	FLOAT		Time that minimum value occurred
01E8	Date of Min Phase 1-2 KW Sample	2	INTEGER		Date that minimum value occurred
01EA	Time of Min Phase 1-2 KW Sample	4	LONG		Time that maximum value occurred
01EE	Date of Phase 1-2 KW Record Clear	2	INTEGER		Date that histogram was reset
01F0	Time of Phase 1-2 KW Record Clear	4	LONG		Time that histogram was reset
01F4	Phase 1-2 KVAR Under Band Bin	2	INTEGER		Under range bin
01F6	Phase 1-2 KVAR Bin 1	2	INTEGER		Bin 1
01F8	Phase 1-2 KVAR Bin 2	2	INTEGER		Bin 2
01FA	Phase 1-2 KVAR Bin 3	2	INTEGER		Bin 3
01FC	Phase 1-2 KVAR Bin 4	2	INTEGER		Bin 4
01FE	Phase 1-2 KVAR Bin 5	2	INTEGER		Bin 5
0200	Phase 1-2 KVAR Bin 6	2	INTEGER		Bin 6
0202	Phase 1-2 KVAR Bin 7	2	INTEGER		Bin 7
0204	Phase 1-2 KVAR Bin 8	2	INTEGER		Bin 8
0206	Phase 1-2 KVAR Bin 9	2	INTEGER		Bin 9
0208	Phase 1-2 KVAR Bin 10	2	INTEGER		Bin 10
020A	Phase 1-2 KVAR Over Band Bin	2	INTEGER		Over range bin
020C	Max Phase 1-2 KVAR Sample	4	FLOAT		Maximum value
0210	Date of Max Phase 1-2 KVAR Sample	2	INTEGER		Date that maximum value occurred
0212	Time of Max Phase 1-2 KVAR Sample	4	LONG		Time that maximum value occurred
0216	Min Phase 1-2 KVAR Sample	4	FLOAT		Time that minimum value occurred
021A	Date of Min Phase 1-2 KVAR Sample	2	INTEGER		Date that minimum value occurred
021C	Time of Min Phase 1-2 KVAR Sample	4	LONG		Time that maximum value occurred
0220	Date of Phase 1-2 KVAR Record Clear	2	INTEGER		Date that histogram was reset
0222	Time of Phase 1-2 KVAR Record Clear	4	LONG		Time that histogram was reset
0226	Phase 3-4 Power Factor Under Band Bin	2	INTEGER		Under range bin
0228	Phase 3-4 Power Factor Bin 1	2	INTEGER		Bin 1
022A	Phase 3-4 Power Factor Bin 2	2	INTEGER		Bin 2
022C	Phase 3-4 Power Factor Bin 3	2	INTEGER		Bin 3
022E	Phase 3-4 Power Factor Bin 4	2	INTEGER		Bin 4
0230	Phase 3-4 Power Factor Bin 5	2	INTEGER		Bin 5
0232	Phase 3-4 Power Factor Bin 6	2	INTEGER		Bin 6
0234	Phase 3-4 Power Factor Bin 7	2	INTEGER		Bin 7
0236	Phase 3-4 Power Factor Bin 8	2	INTEGER		Bin 8
0238	Phase 3-4 Power Factor Bin 9	2	INTEGER		Bin 9
023A	Phase 3-4 Power Factor Bin 10	2	INTEGER		Bin 10
023C	Phase 3-4 Power Factor Over Band Bin	2	INTEGER		Over range bin

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
023E	Max Phase 3-4 Power Factor Sample	4	FLOAT		Maximum value
0242	Date of Max Phase 3-4 Power Factor Sample	2	INTEGER		Date that maximum value occurred
0244	Time of Max Phase 3-4 Power Factor Sample	4	LONG		Time that maximum value occurred
0248	Min Phase 3-4 Power Factor Sample	4	FLOAT		Time that minimum value occurred
024C	Date of Min Phase 3-4 Power Factor Sample	2	INTEGER		Date that minimum value occurred
024E	Time of Min Phase 3-4 Power Factor Sample	4	LONG		Time that maximum value occurred
0252	Date of Phase 3-4 Power Factor Record Clear	2	INTEGER		Date that histogram was reset
0254	Time of Phase 3-4 Power Factor Record Clear	4	LONG		Time that histogram was reset
0258	Phase 3-4 KVA Under Band Bin	2	INTEGER		Under range bin
025A	Phase 3-4 KVA Bin 1	2	INTEGER		Bin 1
025C	Phase 3-4 KVA Bin 2	2	INTEGER		Bin 2
025E	Phase 3-4 KVA Bin 3	2	INTEGER		Bin 3
0260	Phase 3-4 KVA Bin 4	2	INTEGER		Bin 4
0262	Phase 3-4 KVA Bin 5	2	INTEGER		Bin 5
0264	Phase 3-4 KVA Bin 6	2	INTEGER		Bin 6
0266	Phase 3-4 KVA Bin 7	2	INTEGER		Bin 7
0268	Phase 3-4 KVA Bin 8	2	INTEGER		Bin 8
026A	Phase 3-4 KVA Bin 9	2	INTEGER		Bin 9
026C	Phase 3-4 KVA Bin 10	2	INTEGER		Bin 10
026E	Phase 3-4 KVA Over Band Bin	2	INTEGER		Over range bin
0270	Max Phase 3-4 KVA Sample	4	FLOAT		Maximum value
0274	Date of Max Phase 3-4 KVA Sample	2	INTEGER		Date that maximum value occurred
0276	Time of Max Phase 3-4 KVA Sample	4	LONG		Time that maximum value occurred
027A	Min Phase 3-4 KVA Sample	4	FLOAT		Time that minimum value occurred
027E	Date of Min Phase 3-4 KVA Sample	2	INTEGER		Date that minimum value occurred
0280	Time of Min Phase 3-4 KVA Sample	4	LONG		Time that maximum value occurred
0284	Date of Phase 3-4 KVA Record Clear	2	INTEGER		Date that histogram was reset
0286	Time of Phase 3-4 KVA Record Clear	4	LONG		Time that histogram was reset
028A	Phase 3-4 KW Under Band Bin	2	INTEGER		Under range bin
028C	Phase 3-4 KW Bin 1	2	INTEGER		Bin 1
028E	Phase 3-4 KW Bin 2	2	INTEGER		Bin 2
0290	Phase 3-4 KW Bin 3	2	INTEGER		Bin 3
0292	Phase 3-4 KW Bin 4	2	INTEGER		Bin 4
0294	Phase 3-4 KW Bin 5	2	INTEGER		Bin 5
0296	Phase 3-4 KW Bin 6	2	INTEGER		Bin 6
0298	Phase 3-4 KW Bin 7	2	INTEGER		Bin 7
029A	Phase 3-4 KW Bin 8	2	INTEGER		Bin 8
029C	Phase 3-4 KW Bin 9	2	INTEGER		Bin 9
029E	Phase 3-4 KW Bin 10	2	INTEGER		Bin 10

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
02A0	Phase 3-4 KW Over Band Bin	2	INTEGER		Over range bin
02A2	Max Phase 3-4 KW Sample	4	FLOAT		Maximum value
02A6	Date of Max Phase 3-4 KW Sample	2	INTEGER		Date that maximum value occurred
02A8	Time of Max Phase 3-4 KW Sample	4	LONG		Time that maximum value occurred
02AC	Min Phase 3-4 KW Sample	4	FLOAT		Time that minimum value occurred
02B0	Date of Min Phase 3-4 KW Sample	2	INTEGER		Date that minimum value occurred
02B2	Time of Min Phase 3-4 KW Sample	4	LONG		Time that maximum value occurred
02B6	Date of Phase 3-4 KW Record Clear	2	INTEGER		Date that histogram was reset
02B8	Time of Phase 3-4 KW Record Clear	4	LONG		Time that histogram was reset
02BC	Phase 3-4 KVAR Under Band Bin	2	INTEGER		Under range bin
02BE	Phase 3-4 KVAR Bin 1	2	INTEGER		Bin 1
02C0	Phase 3-4 KVAR Bin 2	2	INTEGER		Bin 2
02C2	Phase 3-4 KVAR Bin 3	2	INTEGER		Bin 3
02C4	Phase 3-4 KVAR Bin 4	2	INTEGER		Bin 4
02C6	Phase 3-4 KVAR Bin 5	2	INTEGER		Bin 5
02C8	Phase 3-4 KVAR Bin 6	2	INTEGER		Bin 6
02CA	Phase 3-4 KVAR Bin 7	2	INTEGER		Bin 7
02CC	Phase 3-4 KVAR Bin 8	2	INTEGER		Bin 8
02CE	Phase 3-4 KVAR Bin 9	2	INTEGER		Bin 9
02D0	Phase 3-4 KVAR Bin 10	2	INTEGER		Bin 10
02D2	Phase 3-4 KVAR Over Band Bin	2	INTEGER		Over range bin
02D4	Max Phase 3-4 KVAR Sample	4	FLOAT		Maximum value
02D8	Date of Max Phase 3-4 KVAR Sample	2	INTEGER		Date that maximum value occurred
02DA	Time of Max Phase 3-4 KVAR Sample	4	LONG		Time that maximum value occurred
02DE	Min Phase 3-4 KVAR Sample	4	FLOAT		Time that minimum value occurred
02E2	Date of Min Phase 3-4 KVAR Sample	2	INTEGER		Date that minimum value occurred
02E4	Time of Min Phase 3-4 KVAR Sample	4	LONG		Time that maximum value occurred
02E8	Date of Phase 3-4 KVAR Record Clear	2	INTEGER		Date that histogram was reset
02EA	Time of Phase 3-4 KVAR Record Clear	4	LONG		Time that histogram was reset
02EE	Phase 5-6 Power Factor Under Band Bin	2	INTEGER		Under range bin
02F0	Phase 5-6 Power Factor Bin 1	2	INTEGER		Bin 1
02F2	Phase 5-6 Power Factor Bin 2	2	INTEGER		Bin 2
02F4	Phase 5-6 Power Factor Bin 3	2	INTEGER		Bin 3
02F6	Phase 5-6 Power Factor Bin 4	2	INTEGER		Bin 4
02F8	Phase 5-6 Power Factor Bin 5	2	INTEGER		Bin 5
02FA	Phase 5-6 Power Factor Bin 6	2	INTEGER		Bin 6
02FC	Phase 5-6 Power Factor Bin 7	2	INTEGER		Bin 7
02FE	Phase 5-6 Power Factor Bin 8	2	INTEGER		Bin 8
0300	Phase 5-6 Power Factor Bin 9	2	INTEGER		Bin 9

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0302	Phase 5-6 Power Factor Bin 10	2	INTEGER		Bin 10
0304	Phase 5-6 Power Factor Over Band Bin	2	INTEGER		Over range bin
0306	Max Phase 5-6 Power Factor Sample	4	FLOAT		Maximum value
030A	Date of Max Phase 5-6 Power Factor Sample	2	INTEGER		Date that maximum value occurred
030C	Time of Max Phase 5-6 Power Factor Sample	4	LONG		Time that maximum value occurred
0310	Min Phase 5-6 Power Factor Sample	4	FLOAT		Time that minimum value occurred
0314	Date of Min Phase 5-6 Power Factor Sample	2	INTEGER		Date that minimum value occurred
0316	Time of Min Phase 5-6 Power Factor Sample	4	LONG		Time that maximum value occurred
031A	Date of Phase 5-6 Power Factor Record Clear	2	INTEGER		Date that histogram was reset
031C	Time of Phase 5-6 Power Factor Record Clear	4	LONG		Time that histogram was reset
0320	Phase 5-6 KVA Under Band Bin	2	INTEGER		Under range bin
0322	Phase 5-6 KVA Bin 1	2	INTEGER		Bin 1
0324	Phase 5-6 KVA Bin 2	2	INTEGER		Bin 2
0326	Phase 5-6 KVA Bin 3	2	INTEGER		Bin 3
0328	Phase 5-6 KVA Bin 4	2	INTEGER		Bin 4
032A	Phase 5-6 KVA Bin 5	2	INTEGER		Bin 5
032C	Phase 5-6 KVA Bin 6	2	INTEGER		Bin 6
032E	Phase 5-6 KVA Bin 7	2	INTEGER		Bin 7
0330	Phase 5-6 KVA Bin 8	2	INTEGER		Bin 8
0332	Phase 5-6 KVA Bin 9	2	INTEGER		Bin 9
0334	Phase 5-6 KVA Bin 10	2	INTEGER		Bin 10
0336	Phase 5-6 KVA Over Band Bin	2	INTEGER		Over range bin
0338	Max Phase 5-6 KVA Sample	4	FLOAT		Maximum value
033C	Date of Max Phase 5-6 KVA Sample	2	INTEGER		Date that maximum value occurred
033E	Time of Max Phase 5-6 KVA Sample	4	LONG		Time that maximum value occurred
0342	Min Phase 5-6 KVA Sample	4	FLOAT		Time that minimum value occurred
0346	Date of Min Phase 5-6 KVA Sample	2	INTEGER		Date that minimum value occurred
0348	Time of Min Phase 5-6 KVA Sample	4	LONG		Time that maximum value occurred
034C	Date of Phase 5-6 KVA Record Clear	2	INTEGER		Date that histogram was reset
034E	Time of Phase 5-6 KVA Record Clear	4	LONG		Time that histogram was reset
0352	Phase 5-6 KW Under Band Bin	2	INTEGER		Under range bin
0354	Phase 5-6 KW Bin 1	2	INTEGER		Bin 1
0356	Phase 5-6 KW Bin 2	2	INTEGER		Bin 2
0358	Phase 5-6 KW Bin 3	2	INTEGER		Bin 3
035A	Phase 5-6 KW Bin 4	2	INTEGER		Bin 4
035C	Phase 5-6 KW Bin 5	2	INTEGER		Bin 5
035E	Phase 5-6 KW Bin 6	2	INTEGER		Bin 6
0360	Phase 5-6 KW Bin 7	2	INTEGER		Bin 7
0362	Phase 5-6 KW Bin 8	2	INTEGER		Bin 8

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0364	Phase 5-6 KW Bin 9	2	INTEGER		Bin 9
0366	Phase 5-6 KW Bin 10	2	INTEGER		Bin 10
0368	Phase 5-6 KW Over Band Bin	2	INTEGER		Over range bin
036A	Max Phase 5-6 KW Sample	4	FLOAT		Maximum value
036E	Date of Max Phase 5-6 KW Sample	2	INTEGER		Date that maximum value occurred
0370	Time of Max Phase 5-6 KW Sample	4	LONG		Time that maximum value occurred
0374	Min Phase 5-6 KW Sample	4	FLOAT		Time that minimum value occurred
0378	Date of Min Phase 5-6 KW Sample	2	INTEGER		Date that minimum value occurred
037A	Time of Min Phase 5-6 KW Sample	4	LONG		Time that maximum value occurred
037E	Date of Phase 5-6 KW Record Clear	2	INTEGER		Date that histogram was reset
0380	Time of Phase 5-6 KW Record Clear	4	LONG		Time that histogram was reset
0384	Phase 5-6 KVAR Under Band Bin	2	INTEGER		Under range bin
0386	Phase 5-6 KVAR Bin 1	2	INTEGER		Bin 1
0388	Phase 5-6 KVAR Bin 2	2	INTEGER		Bin 2
038A	Phase 5-6 KVAR Bin 3	2	INTEGER		Bin 3
038C	Phase 5-6 KVAR Bin 4	2	INTEGER		Bin 4
038E	Phase 5-6 KVAR Bin 5	2	INTEGER		Bin 5
0390	Phase 5-6 KVAR Bin 6	2	INTEGER		Bin 6
0392	Phase 5-6 KVAR Bin 7	2	INTEGER		Bin 7
0394	Phase 5-6 KVAR Bin 8	2	INTEGER		Bin 8
0396	Phase 5-6 KVAR Bin 9	2	INTEGER		Bin 9
0398	Phase 5-6 KVAR Bin 10	2	INTEGER		Bin 10
039A	Phase 5-6 KVAR Over Band Bin	2	INTEGER		Over range bin
039C	Max Phase 5-6 KVAR Sample	4	FLOAT		Maximum value
03A0	Date of Max Phase 5-6 KVAR Sample	2	INTEGER		Date that maximum value occurred
03A2	Time of Max Phase 5-6 KVAR Sample	4	LONG		Time that maximum value occurred
03A6	Min Phase 5-6 KVAR Sample	4	FLOAT		Time that minimum value occurred
03AA	Date of Min Phase 5-6 KVAR Sample	2	INTEGER		Date that minimum value occurred
03AC	Time of Min Phase 5-6 KVAR Sample	4	LONG		Time that maximum value occurred
03B0	Date of Phase 5-6 KVAR Record Clear	2	INTEGER		Date that histogram was reset
03B2	Time of Phase 5-6 KVAR Record Clear	4	LONG		Time that histogram was reset
03B6	Total Power Factor Under Band Bin	2	INTEGER		Under range bin
03B8	Total Power Factor Bin 1	2	INTEGER		Bin 1
03BA	Total Power Factor Bin 2	2	INTEGER		Bin 2
03BC	Total Power Factor Bin 3	2	INTEGER		Bin 3
03BE	Total Power Factor Bin 4	2	INTEGER		Bin 4
03C0	Total Power Factor Bin 5	2	INTEGER		Bin 5
03C2	Total Power Factor Bin 6	2	INTEGER		Bin 6
03C4	Total Power Factor Bin 7	2	INTEGER		Bin 7

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
03C6	Total Power Factor Bin 8	2	INTEGER		Bin 8
03C8	Total Power Factor Bin 9	2	INTEGER		Bin 9
03CA	Total Power Factor Bin 10	2	INTEGER		Bin 10
03CC	Total Power Factor Over Band Bin	2	INTEGER		Over range bin
03CE	Max Total Power Factor Sample	4	FLOAT		Maximum value
03D2	Date of Max Total Power Factor Sample	2	INTEGER		Date that maximum value occurred
03D4	Time of Max Total Power Factor Sample	4	LONG		Time that maximum value occurred
03D8	Min Total Power Factor Sample	4	FLOAT		Time that minimum value occurred
03DC	Date of Min Total Power Factor Sample	2	INTEGER		Date that minimum value occurred
03DE	Time of Min Total Power Factor Sample	4	LONG		Time that maximum value occurred
03E2	Date of Total Power Factor Record Clear	2	INTEGER		Date that histogram was reset
03E4	Time of Total Power Factor Record Clear	4	LONG		Time that histogram was reset
03E8	Total KVA Under Band Bin	2	INTEGER		Under range bin
03EA	Total KVA Bin 1	2	INTEGER		Bin 1
03EC	Total KVA Bin 2	2	INTEGER		Bin 2
03EE	Total KVA Bin 3	2	INTEGER		Bin 3
03F0	Total KVA Bin 4	2	INTEGER		Bin 4
03F2	Total KVA Bin 5	2	INTEGER		Bin 5
03F4	Total KVA Bin 6	2	INTEGER		Bin 6
03F6	Total KVA Bin 7	2	INTEGER		Bin 7
03F8	Total KVA Bin 8	2	INTEGER		Bin 8
03FA	Total KVA Bin 9	2	INTEGER		Bin 9
03FC	Total KVA Bin 10	2	INTEGER		Bin 10
03FE	Total KVA Over Band Bin	2	INTEGER		Over range bin
0400	Max Total KVA Sample	4	FLOAT		Maximum value
0404	Date of Max Total KVA Sample	2	INTEGER		Date that maximum value occurred
0406	Time of Max Total KVA Sample	4	LONG		Time that maximum value occurred
040A	Min Total KVA Sample	4	FLOAT		Time that minimum value occurred
040E	Date of Min Total KVA Sample	2	INTEGER		Date that minimum value occurred
0410	Time of Min Total KVA Sample	4	LONG		Time that maximum value occurred
0414	Date of Total KVA Record Clear	2	INTEGER		Date that histogram was reset
0416	Time of Total KVA Record Clear	4	LONG		Time that histogram was reset
041A	Total KW Under Band Bin	2	INTEGER		Under range bin
041C	Total KW Bin 1	2	INTEGER		Bin 1
041E	Total KW Bin 2	2	INTEGER		Bin 2
0420	Total KW Bin 3	2	INTEGER		Bin 3
0422	Total KW Bin 4	2	INTEGER		Bin 4
0424	Total KW Bin 5	2	INTEGER		Bin 5
0426	Total KW Bin 6	2	INTEGER		Bin 6

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0428	Total KW Bin 7	2	INTEGER		Bin 7
042A	Total KW Bin 8	2	INTEGER		Bin 8
042C	Total KW Bin 9	2	INTEGER		Bin 9
042E	Total KW Bin 10	2	INTEGER		Bin 10
0430	Total KW Over Band Bin	2	INTEGER		Over range bin
0432	Max Total KW Sample	4	FLOAT		Maximum value
0436	Date of Max Total KW Sample	2	INTEGER		Date that maximum value occurred
0438	Time of Max Total KW Sample	4	LONG		Time that maximum value occurred
043C	Min Total KW Sample	4	FLOAT		Time that minimum value occurred
0440	Date of Min Total KW Sample	2	INTEGER		Date that minimum value occurred
0442	Time of Min Total KW Sample	4	LONG		Time that maximum value occurred
0446	Date of Total KW Record Clear	2	INTEGER		Date that histogram was reset
0448	Time of Total KW Record Clear	4	LONG		Time that histogram was reset
044C	Total KVAR Under Band Bin	2	INTEGER		Under range bin
044E	Total KVAR Bin 1	2	INTEGER		Bin 1
0450	Total KVAR Bin 2	2	INTEGER		Bin 2
0452	Total KVAR Bin 3	2	INTEGER		Bin 3
0454	Total KVAR Bin 4	2	INTEGER		Bin 4
0456	Total KVAR Bin 5	2	INTEGER		Bin 5
0458	Total KVAR Bin 6	2	INTEGER		Bin 6
045A	Total KVAR Bin 7	2	INTEGER		Bin 7
045C	Total KVAR Bin 8	2	INTEGER		Bin 8
045E	Total KVAR Bin 9	2	INTEGER		Bin 9
0460	Total KVAR Bin 10	2	INTEGER		Bin 10
0462	Total KVAR Over Band Bin	2	INTEGER		Over range bin
0464	Max Total KVAR Sample	4	FLOAT		Maximum value
0468	Date of Max Total KVAR Sample	2	INTEGER		Date that maximum value occurred
046A	Time of Max Total KVAR Sample	4	LONG		Time that maximum value occurred
046E	Min Total KVAR Sample	4	FLOAT		Time that minimum value occurred
0472	Date of Min Total KVAR Sample	2	INTEGER		Date that minimum value occurred
0474	Time of Min Total KVAR Sample	4	LONG		Time that maximum value occurred
0478	Date of Total KVAR Record Clear	2	INTEGER		Date that histogram was reset
047A	Time of Total KVAR Record Clear	4	LONG		Time that histogram was reset
	Sequence Component Current Histogram		OBJECT	Monitor	Histograms for current sequence component values
047E	Positive Seq Current Mag Under Band Bin	2	INTEGER		Under range bin
0480	Positive Seq Current Magnitude Bin 1	2	INTEGER		Bin 1
0482	Positive Seq Current Magnitude Bin 2	2	INTEGER		Bin 2
0484	Positive Seq Current Magnitude Bin 3	2	INTEGER		Bin 3
0486	Positive Seq Current Magnitude Bin 4	2	INTEGER		Bin 4

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0488	Positive Seq Current Magnitude Bin 5	2	INTEGER		Bin 5
048A	Positive Seq Current Magnitude Bin 6	2	INTEGER		Bin 6
048C	Positive Seq Current Magnitude Bin 7	2	INTEGER		Bin 7
048E	Positive Seq Current Magnitude Bin 8	2	INTEGER		Bin 8
0490	Positive Seq Current Magnitude Bin 9	2	INTEGER		Bin 9
0492	Positive Seq Current Magnitude Bin 10	2	INTEGER		Bin 10
0494	Positive Seq Current Magnitude Over Band Bin	2	INTEGER		Over range bin
0496	Max Positive Seq Mag Sample	4	FLOAT		Maximum value
049A	Date of Max Positive Seq Mag Sample	2	INTEGER		Date that maximum value occurred
049C	Time of Max Positive Seq Mag Sample	4	LONG		Time that maximum value occurred
04A0	Min Positive Seq Mag Sample	4	FLOAT		Time that minimum value occurred
04A4	Date of Min Positive Seq Mag Sample	2	INTEGER		Date that minimum value occurred
04A6	Time of Min Positive Seq Mag Sample	4	LONG		Time that maximum value occurred
04AA	Date of Positive Seq Mag Record Clear	2	INTEGER		Date that histogram was reset
04AC	Time of Positive Seq Mag Record Clear	4	LONG		Time that histogram was reset
04B0	Positive Seq Current Angle Under Band Bin	2	INTEGER		Under range bin
04B2	Positive Seq Current Angle Bin 1	2	INTEGER		Bin 1
04B4	Positive Seq Current Angle Bin 2	2	INTEGER		Bin 2
04B6	Positive Seq Current Angle Bin 3	2	INTEGER		Bin 3
04B8	Positive Seq Current Angle Bin 4	2	INTEGER		Bin 4
04BA	Positive Seq Current Angle Bin 5	2	INTEGER		Bin 5
04BC	Positive Seq Current Angle Bin 6	2	INTEGER		Bin 6
04BE	Positive Seq Current Angle Bin 7	2	INTEGER		Bin 7
04C0	Positive Seq Current Angle Bin 8	2	INTEGER		Bin 8
04C2	Positive Seq Current Angle Bin 9	2	INTEGER		Bin 9
04C4	Positive Seq Current Angle Bin 10	2	INTEGER		Bin 10
04C6	Positive Seq Current Angle Over Band Bin	2	INTEGER		Over range bin
04C8	Max Positive Seq Angle Sample	4	FLOAT		Maximum value
04CC	Date of Max Positive Seq Angle Sample	2	INTEGER		Date that maximum value occurred
04CE	Time of Max Positive Seq Angle Sample	4	LONG		Time that maximum value occurred
04D2	Min Positive Seq Angle Sample	4	FLOAT		Time that minimum value occurred
04D6	Date of Min Positive Seq Angle Sample	2	INTEGER		Date that minimum value occurred
04D8	Time of Min Positive Seq Angle Sample	4	LONG		Time that maximum value occurred
04DC	Date of Positive Seq Angle Record Clear	2	INTEGER		Date that histogram was reset
04DE	Time of Positive Seq Angle Record Clear	4	LONG		Time that histogram was reset
04E2	Negative Seq Current Mag Under Band Bin	2	INTEGER		Under range bin
04E4	Negative Seq Current Magnitude Bin 1	2	INTEGER		Bin 1
04E6	Negative Seq Current Magnitude Bin 2	2	INTEGER		Bin 2

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
04E8	Negative Seq Current Magnitude Bin 3	2	INTEGER		Bin 3
04EA	Negative Seq Current Magnitude Bin 4	2	INTEGER		Bin 4
04EC	Negative Seq Current Magnitude Bin 5	2	INTEGER		Bin 5
04EE	Negative Seq Current Magnitude Bin 6	2	INTEGER		Bin 6
04F0	Negative Seq Current Magnitude Bin 7	2	INTEGER		Bin 7
04F2	Negative Seq Current Magnitude Bin 8	2	INTEGER		Bin 8
04F4	Negative Seq Current Magnitude Bin 9	2	INTEGER		Bin 9
04F6	Negative Seq Current Magnitude Bin 10	2	INTEGER		Bin 10
04F8	Negative Seq Current Magnitude Over Band Bin	2	INTEGER		Over range bin
04FA	Max Negative Seq Mag Sample	4	FLOAT		Maximum value
04FE	Date of Max Negative Seq Mag Sample	2	INTEGER		Date that maximum value occurred
0500	Time of Max Negative Seq Mag Sample	4	LONG		Time that maximum value occurred
0504	Min Negative Seq Mag Sample	4	FLOAT		Time that minimum value occurred
0508	Date of Min Negative Seq Mag Sample	2	INTEGER		Date that minimum value occurred
050A	Time of Min Negative Seq Mag Sample	4	LONG		Time that maximum value occurred
050E	Date of Negative Seq Mag Record Clear	2	INTEGER		Date that histogram was reset
0510	Time of Negative Seq Mag Record Clear	4	LONG		Time that histogram was reset
0514	Negative Seq Current Angle Under Band Bin	2	INTEGER		Under range bin
0516	Negative Seq Current Angle Bin 1	2	INTEGER		Bin 1
0518	Negative Seq Current Angle Bin 2	2	INTEGER		Bin 2
051A	Negative Seq Current Angle Bin 3	2	INTEGER		Bin 3
051C	Negative Seq Current Angle Bin 4	2	INTEGER		Bin 4
051E	Negative Seq Current Angle Bin 5	2	INTEGER		Bin 5
0520	Negative Seq Current Angle Bin 6	2	INTEGER		Bin 6
0522	Negative Seq Current Angle Bin 7	2	INTEGER		Bin 7
0524	Negative Seq Current Angle Bin 8	2	INTEGER		Bin 8
0526	Negative Seq Current Angle Bin 9	2	INTEGER		Bin 9
0528	Negative Seq Current Angle Bin 10	2	INTEGER		Bin 10
052A	Negative Seq Current Angle Over Band Bin	2	INTEGER		Over range bin
052C	Max Negative Seq Angle Sample	4	FLOAT		Maximum value
0530	Date of Max Negative Seq Angle Sample	2	INTEGER		Date that maximum value occurred
0532	Time of Max Negative Seq Angle Sample	4	LONG		Time that maximum value occurred
0536	Min Negative Seq Angle Sample	4	FLOAT		Time that minimum value occurred
053A	Date of Min Negative Seq Angle Sample	2	INTEGER		Date that minimum value occurred
053C	Time of Min Negative Seq Angle Sample	4	LONG		Time that maximum value occurred
0540	Date of Negative Seq Angle Record Clear	2	INTEGER		Date that histogram was reset
0542	Time of Negative Seq Angle Record Clear	4	LONG		Time that histogram was reset
0546	Zero Seq Current Mag Under Band Bin	2	INTEGER		Under range bin

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0548	Zero Seq Current Magnitude Bin 1	2	INTEGER		Bin 1
054A	Zero Seq Current Magnitude Bin 2	2	INTEGER		Bin 2
054C	Zero Seq Current Magnitude Bin 3	2	INTEGER		Bin 3
054E	Zero Seq Current Magnitude Bin 4	2	INTEGER		Bin 4
0550	Zero Seq Current Magnitude Bin 5	2	INTEGER		Bin 5
0552	Zero Seq Current Magnitude Bin 6	2	INTEGER		Bin 6
0554	Zero Seq Current Magnitude Bin 7	2	INTEGER		Bin 7
0556	Zero Seq Current Magnitude Bin 8	2	INTEGER		Bin 8
0558	Zero Seq Current Magnitude Bin 9	2	INTEGER		Bin 9
055A	Zero Seq Current Magnitude Bin 10	2	INTEGER		Bin 10
055C	Zero Seq Current Magnitude Over Band Bin	2	INTEGER		Over range bin
055E	Max Zero Seq Mag Sample	4	FLOAT		Maximum value
0562	Date of Max Zero Seq Mag Sample	2	INTEGER		Date that maximum value occurred
0564	Time of Max Zero Seq Mag Sample	4	LONG		Time that maximum value occurred
0568	Min Zero Seq Mag Sample	4	FLOAT		Time that minimum value occurred
056C	Date of Min Zero Seq Mag Sample	2	INTEGER		Date that minimum value occurred
056E	Time of Min Zero Seq Mag Sample	4	LONG		Time that maximum value occurred
0572	Date of Zero Seq Mag Record Clear	2	INTEGER		Date that histogram was reset
0574	Time of Zero Seq Mag Record Clear	4	LONG		Time that histogram was reset
0578	Zero Seq Current Angle Under Band Bin	2	INTEGER		Under range bin
057A	Zero Seq Current Angle Bin 1	2	INTEGER		Bin 1
057C	Zero Seq Current Angle Bin 2	2	INTEGER		Bin 2
057E	Zero Seq Current Angle Bin 3	2	INTEGER		Bin 3
0580	Zero Seq Current Angle Bin 4	2	INTEGER		Bin 4
0582	Zero Seq Current Angle Bin 5	2	INTEGER		Bin 5
0584	Zero Seq Current Angle Bin 6	2	INTEGER		Bin 6
0586	Zero Seq Current Angle Bin 7	2	INTEGER		Bin 7
0588	Zero Seq Current Angle Bin 8	2	INTEGER		Bin 8
058A	Zero Seq Current Angle Bin 9	2	INTEGER		Bin 9
058C	Zero Seq Current Angle Bin 10	2	INTEGER		Bin 10
058E	Zero Seq Current Angle Over Band Bin	2	INTEGER		Over range bin
0590	Max Zero Seq Angle Sample	4	FLOAT		Maximum value
0594	Date of Max Zero Seq Angle Sample	2	INTEGER		Date that maximum value occurred
0596	Time of Max Zero Seq Angle Sample	4	LONG		Time that maximum value occurred
059A	Min Zero Seq Angle Sample	4	FLOAT		Time that minimum value occurred
059E	Date of Min Zero Seq Angle Sample	2	INTEGER		Date that minimum value occurred
05A0	Time of Min Zero Seq Angle Sample	4	LONG		Time that maximum value occurred
05A4	Date of Zero Seq Angle Record Clear	2	INTEGER		Date that histogram was reset
05A6	Time of Zero Seq Angle Record Clear	4	LONG		Time that histogram was reset

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
	Sequence Component Voltage Histogram		OBJECT	Monitor	Histograms for voltage sequence component values
05AA	Positive Seq Voltage Mag Under Band Bin	2	INTEGER		Under range bin
05AC	Positive Seq Voltage Magnitude Bin 1	2	INTEGER		Bin 1
05AE	Positive Seq Voltage Magnitude Bin 2	2	INTEGER		Bin 2
05B0	Positive Seq Voltage Magnitude Bin 3	2	INTEGER		Bin 3
05B2	Positive Seq Voltage Magnitude Bin 4	2	INTEGER		Bin 4
05B4	Positive Seq Voltage Magnitude Bin 5	2	INTEGER		Bin 5
05B6	Positive Seq Voltage Magnitude Bin 6	2	INTEGER		Bin 6
05B8	Positive Seq Voltage Magnitude Bin 7	2	INTEGER		Bin 7
05BA	Positive Seq Voltage Magnitude Bin 8	2	INTEGER		Bin 8
05BC	Positive Seq Voltage Magnitude Bin 9	2	INTEGER		Bin 9
05BE	Positive Seq Voltage Magnitude Bin 10	2	INTEGER		Bin 10
05C0	Positive Seq Voltage Magnitude Over Band Bin	2	INTEGER		Over range bin
05C2	Max Positive Seq Mag Sample	4	FLOAT		Maximum value
05C6	Date of Max Positive Seq Mag Sample	2	INTEGER		Date that maximum value occurred
05C8	Time of Max Positive Seq Mag Sample	4	LONG		Time that maximum value occurred
05CC	Min Positive Seq Mag Sample	4	FLOAT		Time that minimum value occurred
05D0	Date of Min Positive Seq Mag Sample	2	INTEGER		Date that minimum value occurred
05D2	Time of Min Positive Seq Mag Sample	4	LONG		Time that maximum value occurred
05D6	Date of Positive Seq Mag Record Clear	2	INTEGER		Date that histogram was reset
05D8	Time of Positive Seq Mag Record Clear	4	LONG		Time that histogram was reset
05DC	Positive Seq Voltage Angle Under Band Bin	2	INTEGER		Under range bin
05DE	Positive Seq Voltage Angle Bin 1	2	INTEGER		Bin 1
05E0	Positive Seq Voltage Angle Bin 2	2	INTEGER		Bin 2
05E2	Positive Seq Voltage Angle Bin 3	2	INTEGER		Bin 3
05E4	Positive Seq Voltage Angle Bin 4	2	INTEGER		Bin 4
05E6	Positive Seq Voltage Angle Bin 5	2	INTEGER		Bin 5
05E8	Positive Seq Voltage Angle Bin 6	2	INTEGER		Bin 6
05EA	Positive Seq Voltage Angle Bin 7	2	INTEGER		Bin 7
05EC	Positive Seq Voltage Angle Bin 8	2	INTEGER		Bin 8
05EE	Positive Seq Voltage Angle Bin 9	2	INTEGER		Bin 9
05F0	Positive Seq Voltage Angle Bin 10	2	INTEGER		Bin 10
05F2	Positive Seq Voltage Angle Over Band Bin	2	INTEGER		Over range bin
05F4	Max Positive Seq Angle Sample	4	FLOAT		Maximum value
05F8	Date of Max Positive Seq Angle Sample	2	INTEGER		Date that maximum value occurred
05FA	Time of Max Positive Seq Angle Sample	4	LONG		Time that maximum value occurred
05FE	Min Positive Seq Angle Sample	4	FLOAT		Time that minimum value occurred
0602	Date of Min Positive Seq Angle Sample	2	INTEGER		Date that minimum value occurred
0604	Time of Min Positive Seq Angle Sample	4	LONG		Time that maximum value occurred

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0608	Date of Positive Seq Angle Record Clear	2	INTEGER		Date that histogram was reset
060A	Time of Positive Seq Angle Record Clear	4	LONG		Time that histogram was reset
060E	Negative Seq Voltage Mag Under Band Bin	2	INTEGER		Under range bin
0610	Negative Seq Voltage Magnitude Bin 1	2	INTEGER		Bin 1
0612	Negative Seq Voltage Magnitude Bin 2	2	INTEGER		Bin 2
0614	Negative Seq Voltage Magnitude Bin 3	2	INTEGER		Bin 3
0616	Negative Seq Voltage Magnitude Bin 4	2	INTEGER		Bin 4
0618	Negative Seq Voltage Magnitude Bin 5	2	INTEGER		Bin 5
061A	Negative Seq Voltage Magnitude Bin 6	2	INTEGER		Bin 6
061C	Negative Seq Voltage Magnitude Bin 7	2	INTEGER		Bin 7
061E	Negative Seq Voltage Magnitude Bin 8	2	INTEGER		Bin 8
0620	Negative Seq Voltage Magnitude Bin 9	2	INTEGER		Bin 9
0622	Negative Seq Voltage Magnitude Bin 10	2	INTEGER		Bin 10
0624	Negative Seq Voltage Magnitude Over Band Bin	2	INTEGER		Over range bin
0626	Max Negative Seq Mag Sample	4	FLOAT		Maximum value
062A	Date of Max Negative Seq Mag Sample	2	INTEGER		Date that maximum value occurred
062C	Time of Max Negative Seq Mag Sample	4	LONG		Time that maximum value occurred
0630	Min Negative Seq Mag Sample	4	FLOAT		Time that minimum value occurred
0634	Date of Min Negative Seq Mag Sample	2	INTEGER		Date that minimum value occurred
0636	Time of Min Negative Seq Mag Sample	4	LONG		Time that maximum value occurred
063A	Date of Negative Seq Mag Record Clear	2	INTEGER		Date that histogram was reset
063C	Time of Negative Seq Mag Record Clear	4	LONG		Time that histogram was reset
0640	Negative Seq Voltage Angle Under Band Bin	2	INTEGER		Under range bin
0642	Negative Seq Voltage Angle Bin 1	2	INTEGER		Bin 1
0644	Negative Seq Voltage Angle Bin 2	2	INTEGER		Bin 2
0646	Negative Seq Voltage Angle Bin 3	2	INTEGER		Bin 3
0648	Negative Seq Voltage Angle Bin 4	2	INTEGER		Bin 4
064A	Negative Seq Voltage Angle Bin 5	2	INTEGER		Bin 5
064C	Negative Seq Voltage Angle Bin 6	2	INTEGER		Bin 6
064E	Negative Seq Voltage Angle Bin 7	2	INTEGER		Bin 7
0650	Negative Seq Voltage Angle Bin 8	2	INTEGER		Bin 8
0652	Negative Seq Voltage Angle Bin 9	2	INTEGER		Bin 9
0654	Negative Seq Voltage Angle Bin 10	2	INTEGER		Bin 10
0656	Negative Seq Voltage Angle Over Band Bin	2	INTEGER		Over range bin
0658	Max Negative Seq Angle Sample	4	FLOAT		Maximum value
065C	Date of Max Negative Seq Angle Sample	2	INTEGER		Date that maximum value occurred
065E	Time of Max Negative Seq Angle Sample	4	LONG		Time that maximum value occurred
0662	Min Negative Seq Angle Sample	4	FLOAT		Time that minimum value occurred

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0666	Date of Min Negative Seq Angle Sample	2	INTEGER		Date that minimum value occurred
0668	Time of Min Negative Seq Angle Sample	4	LONG		Time that maximum value occurred
066C	Date of Negative Seq Angle Record Clear	2	INTEGER		Date that histogram was reset
066E	Time of Negative Seq Angle Record Clear	4	LONG		Time that histogram was reset
	Current Harmonic Histogram		OBJECT	Monitor	Histograms for current harmonic values
0672	Phase 1-2 Current THD Under Band Bin	2	INTEGER		Under range bin
0674	Phase 1-2 Current THD Bin 1	2	INTEGER		Bin 1
0676	Phase 1-2 Current THD Bin 2	2	INTEGER		Bin 2
0678	Phase 1-2 Current THD Bin 3	2	INTEGER		Bin 3
067A	Phase 1-2 Current THD Bin 4	2	INTEGER		Bin 4
067C	Phase 1-2 Current THD Bin 5	2	INTEGER		Bin 5
067E	Phase 1-2 Current THD Bin 6	2	INTEGER		Bin 6
0680	Phase 1-2 Current THD Bin 7	2	INTEGER		Bin 7
0682	Phase 1-2 Current THD Bin 8	2	INTEGER		Bin 8
0684	Phase 1-2 Current THD Bin 9	2	INTEGER		Bin 9
0686	Phase 1-2 Current THD Bin 10	2	INTEGER		Bin 10
0688	Phase 1-2 Current THD Over Band Bin	2	INTEGER		Over range bin
068A	Max Phase 1-2 Current THD Sample	4	FLOAT		Maximum value
068E	Date of Max Phase 1-2 Current THD Sample	2	INTEGER		Date that maximum value occurred
0690	Time of Max Phase 1-2 Current THD Sample	4	LONG		Time that maximum value occurred
0694	Min Phase 1-2 Current THD Sample	4	FLOAT		Time that minimum value occurred
0698	Date of Min Phase 1-2 Current THD Sample	2	INTEGER		Date that minimum value occurred
069A	Time of Min Phase 1-2 Current THD Sample	4	LONG		Time that maximum value occurred
069E	Date of Phase 1-2 Current THD Record Clear	2	INTEGER		Date that histogram was reset
06A0	Time of Phase 1-2 Current THD Record Clear	4	LONG		Time that histogram was reset
06A4	Phase 3-4 Current THD Under Band Bin	2	INTEGER		Under range bin
06A6	Phase 3-4 Current THD Bin 1	2	INTEGER		Bin 1
06A8	Phase 3-4 Current THD Bin 2	2	INTEGER		Bin 2
06AA	Phase 3-4 Current THD Bin 3	2	INTEGER		Bin 3
06AC	Phase 3-4 Current THD Bin 4	2	INTEGER		Bin 4
06AE	Phase 3-4 Current THD Bin 5	2	INTEGER		Bin 5
06B0	Phase 3-4 Current THD Bin 6	2	INTEGER		Bin 6
06B2	Phase 3-4 Current THD Bin 7	2	INTEGER		Bin 7
06B4	Phase 3-4 Current THD Bin 8	2	INTEGER		Bin 8
06B6	Phase 3-4 Current THD Bin 9	2	INTEGER		Bin 9
06B8	Phase 3-4 Current THD Bin 10	2	INTEGER		Bin 10
06BA	Phase 3-4 Current THD Over Band Bin	2	INTEGER		Over range bin
06BC	Max Phase 3-4 Current THD Sample	4	FLOAT		Maximum value
06C0	Date of Max Phase 3-4 Current THD Sample	2	INTEGER		Date that maximum value occurred

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
06C2	Time of Max Phase 3-4 Current THD Sample	4	LONG		Time that maximum value occurred
06C6	Min Phase 3-4 Current THD Sample	4	FLOAT		Time that minimum value occurred
06CA	Date of Min Phase 3-4 Current THD Sample	2	INTEGER		Date that minimum value occurred
06CC	Time of Min Phase 3-4 Current THD Sample	4	LONG		Time that maximum value occurred
06D0	Date of Phase 3-4 Current THD Record Clear	2	INTEGER		Date that histogram was reset
06D2	Time of Phase 3-4 Current THD Record Clear	4	LONG		Time that histogram was reset
06D6	Phase 5-6 Current THD Under Band Bin	2	INTEGER		Under range bin
06D8	Phase 5-6 Current THD Bin 1	2	INTEGER		Bin 1
06DA	Phase 5-6 Current THD Bin 2	2	INTEGER		Bin 2
06DC	Phase 5-6 Current THD Bin 3	2	INTEGER		Bin 3
06DE	Phase 5-6 Current THD Bin 4	2	INTEGER		Bin 4
06E0	Phase 5-6 Current THD Bin 5	2	INTEGER		Bin 5
06E2	Phase 5-6 Current THD Bin 6	2	INTEGER		Bin 6
06E4	Phase 5-6 Current THD Bin 7	2	INTEGER		Bin 7
06E6	Phase 5-6 Current THD Bin 8	2	INTEGER		Bin 8
06E8	Phase 5-6 Current THD Bin 9	2	INTEGER		Bin 9
06EA	Phase 5-6 Current THD Bin 10	2	INTEGER		Bin 10
06EC	Phase 5-6 Current THD Over Band Bin	2	INTEGER		Over range bin
06EE	Max Phase 5-6 Current THD Sample	4	FLOAT		Maximum value
06F2	Date of Max Phase 5-6 Current THD Sample	2	INTEGER		Date that maximum value occurred
06F4	Time of Max Phase 5-6 Current THD Sample	4	LONG		Time that maximum value occurred
06F8	Min Phase 5-6 Current THD Sample	4	FLOAT		Time that minimum value occurred
06FC	Date of Min Phase 5-6 Current THD Sample	2	INTEGER		Date that minimum value occurred
06FE	Time of Min Phase 5-6 Current THD Sample	4	LONG		Time that maximum value occurred
0702	Date of Phase 5-6 Current THD Record Clear	2	INTEGER		Date that histogram was reset
0704	Time of Phase 5-6 Current THD Record Clear	4	LONG		Time that histogram was reset
0708	Ground Demand Current THD Under Band Bin	2	INTEGER		Under range bin
070A	Ground Demand Current THD Bin 1	2	INTEGER		Bin 1
070C	Ground Demand Current THD Bin 2	2	INTEGER		Bin 2
070E	Ground Demand Current THD Bin 3	2	INTEGER		Bin 3
0710	Ground Demand Current THD Bin 4	2	INTEGER		Bin 4
0712	Ground Demand Current THD Bin 5	2	INTEGER		Bin 5
0714	Ground Demand Current THD Bin 6	2	INTEGER		Bin 6
0716	Ground Demand Current THD Bin 7	2	INTEGER		Bin 7
0718	Ground Demand Current THD Bin 8	2	INTEGER		Bin 8
071A	Ground Demand Current THD Bin 9	2	INTEGER		Bin 9
071C	Ground Demand Current THD Bin 10	2	INTEGER		Bin 10
071E	Ground Demand Current THD Over Band Bin	2	INTEGER		Over range bin
0720	Max Ground Current THD Sample	4	FLOAT		Maximum value

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0724	Date of Max Ground Current THD Sample	2	INTEGER		Date that maximum value occurred
0726	Time of Max Ground Current THD Sample	4	LONG		Time that maximum value occurred
072A	Min Ground Current THD Sample	4	FLOAT		Time that minimum value occurred
072E	Date of Min Ground Current THD Sample	2	INTEGER		Date that minimum value occurred
0730	Time of Min Ground Current THD Sample	4	LONG		Time that maximum value occurred
0734	Date of Ground Current THD Record Clear	2	INTEGER		Date that histogram was reset
0736	Time of Ground Current THD Record Clear	4	LONG		Time that histogram was reset
	Voltage Harmonic Histogram		OBJECT	Monitor	Histograms for voltage harmonic values
073A	Phase 1 Voltage THD Under Band Bin	2	INTEGER		Under range bin
073C	Phase 1 Voltage THD Bin 1	2	INTEGER		Bin 1
073E	Phase 1 Voltage THD Bin 2	2	INTEGER		Bin 2
0740	Phase 1 Voltage THD Bin 3	2	INTEGER		Bin 3
0742	Phase 1 Voltage THD Bin 4	2	INTEGER		Bin 4
0744	Phase 1 Voltage THD Bin 5	2	INTEGER		Bin 5
0746	Phase 1 Voltage THD Bin 6	2	INTEGER		Bin 6
0748	Phase 1 Voltage THD Bin 7	2	INTEGER		Bin 7
074A	Phase 1 Voltage THD Bin 8	2	INTEGER		Bin 8
074C	Phase 1 Voltage THD Bin 9	2	INTEGER		Bin 9
074E	Phase 1 Voltage THD Bin 10	2	INTEGER		Bin 10
0750	Phase 1 Voltage THD Over Band Bin	2	INTEGER		Over range bin
0752	Max Phase 1 Voltage THD Sample	4	FLOAT		Maximum value
0756	Date of Max Phase 1 Voltage THD Sample	2	INTEGER		Date that maximum value occurred
0758	Time of Max Phase 1 Voltage THD Sample	4	LONG		Time that maximum value occurred
075C	Min Phase 1 Voltage THD Sample	4	FLOAT		Time that minimum value occurred
0760	Date of Min Phase 1 Voltage THD Sample	2	INTEGER		Date that minimum value occurred
0762	Time of Min Phase 1 Voltage THD Sample	4	LONG		Time that maximum value occurred
0766	Date of Phase 1 Voltage THD Record Clear	2	INTEGER		Date that histogram was reset
0768	Time of Phase 1 Voltage THD Record Clear	4	LONG		Time that histogram was reset
076C	Phase 3 Voltage THD Under Band Bin	2	INTEGER		Under range bin
076E	Phase 3 Voltage THD Bin 1	2	INTEGER		Bin 1
0770	Phase 3 Voltage THD Bin 2	2	INTEGER		Bin 2
0772	Phase 3 Voltage THD Bin 3	2	INTEGER		Bin 3
0774	Phase 3 Voltage THD Bin 4	2	INTEGER		Bin 4
0776	Phase 3 Voltage THD Bin 5	2	INTEGER		Bin 5
0778	Phase 3 Voltage THD Bin 6	2	INTEGER		Bin 6
077A	Phase 3 Voltage THD Bin 7	2	INTEGER		Bin 7
077C	Phase 3 Voltage THD Bin 8	2	INTEGER		Bin 8
077E	Phase 3 Voltage THD Bin 9	2	INTEGER		Bin 9
0780	Phase 3 Voltage THD Bin 10	2	INTEGER		Bin 10
0782	Phase 3 Voltage THD Over Band Bin	2	INTEGER		Over range bin

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0784	Max Phase 3 Voltage THD Sample	4	FLOAT		Maximum value
0788	Date of Max Phase 3 Voltage THD Sample	2	INTEGER		Date that maximum value occurred
078A	Time of Max Phase 3 Voltage THD Sample	4	LONG		Time that maximum value occurred
078E	Min Phase 3 Voltage THD Sample	4	FLOAT		Time that minimum value occurred
0792	Date of Min Phase 3 Voltage THD Sample	2	INTEGER		Date that minimum value occurred
0794	Time of Min Phase 3 Voltage THD Sample	4	LONG		Time that maximum value occurred
0798	Date of Phase 3 Voltage THD Record Clear	2	INTEGER		Date that histogram was reset
079A	Time of Phase 3 Voltage THD Record Clear	4	LONG		Time that histogram was reset
079E	Phase 5 Voltage THD Under Band Bin	2	INTEGER		Under range bin
07A0	Phase 5 Voltage THD Bin 1	2	INTEGER		Bin 1
07A2	Phase 5 Voltage THD Bin 2	2	INTEGER		Bin 2
07A4	Phase 5 Voltage THD Bin 3	2	INTEGER		Bin 3
07A6	Phase 5 Voltage THD Bin 4	2	INTEGER		Bin 4
07A8	Phase 5 Voltage THD Bin 5	2	INTEGER		Bin 5
07AA	Phase 5 Voltage THD Bin 6	2	INTEGER		Bin 6
07AC	Phase 5 Voltage THD Bin 7	2	INTEGER		Bin 7
07AE	Phase 5 Voltage THD Bin 8	2	INTEGER		Bin 8
07B0	Phase 5 Voltage THD Bin 9	2	INTEGER		Bin 9
07B2	Phase 5 Voltage THD Bin 10	2	INTEGER		Bin 10
07B4	Phase 5 Voltage THD Over Band Bin	2	INTEGER		Over range bin
07B6	Max Phase 5 Voltage THD Sample	4	FLOAT		Maximum value
07BA	Date of Max Phase 5 Voltage THD Sample	2	INTEGER		Date that maximum value occurred
07BC	Time of Max Phase 5 Voltage THD Sample	4	LONG		Time that maximum value occurred
07C0	Min Phase 5 Voltage THD Sample	4	FLOAT		Time that minimum value occurred
07C4	Date of Min Phase 5 Voltage THD Sample	2	INTEGER		Date that minimum value occurred
07C6	Time of Min Phase 5 Voltage THD Sample	4	LONG		Time that maximum value occurred
07CA	Date of Phase 5 Voltage THD Record Clear	2	INTEGER		Date that histogram was reset
07CC	Time of Phase 5 Voltage THD Record Clear	4	LONG		Time that histogram was reset
	Voltage Fundamental Histogram source-side phase-phase		OBJECT	Monitor	Histograms for source-side phase-phase voltage values
07D0	Phase 1-3 Voltage Under Band Bin	2	INTEGER		Under range bin
07D2	Phase 1-3 Voltage Bin 1	2	INTEGER		Bin 1
07D4	Phase 1-3 Voltage Bin 2	2	INTEGER		Bin 2
07D6	Phase 1-3 Voltage Bin 3	2	INTEGER		Bin 3
07D8	Phase 1-3 Voltage Bin 4	2	INTEGER		Bin 4
07DA	Phase 1-3 Voltage Bin 5	2	INTEGER		Bin 5
07DC	Phase 1-3 Voltage Bin 6	2	INTEGER		Bin 6
07DE	Phase 1-3 Voltage Bin 7	2	INTEGER		Bin 7
07E0	Phase 1-3 Voltage Bin 8	2	INTEGER		Bin 8

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
07E2	Phase 1-3 Voltage Bin 9	2	INTEGER		Bin 9
07E4	Phase 1-3 Voltage Bin 10	2	INTEGER		Bin 10
07E6	Phase 1-3 Voltage Over Band Bin	2	INTEGER		Over range bin
07E8	Max Phase 1-3 Voltage Sample	4	FLOAT		Maximum value
07EC	Date of Max Phase 1-3 Voltage Sample	2	INTEGER		Date that maximum value occurred
07EE	Time of Max Phase 1-3 Voltage Sample	4	LONG		Time that maximum value occurred
07F2	Min Phase 1-3 Voltage Sample	4	FLOAT		Time that minimum value occurred
07F6	Date of Min Phase 1-3 Voltage Sample	2	INTEGER		Date that minimum value occurred
07F8	Time of Min Phase 1-3 Voltage Sample	4	LONG		Time that maximum value occurred
07FC	Date of Phase 1-3 Voltage Record Clear	2	INTEGER		Date that histogram was reset
07FE	Time of Phase 1-3 Voltage Record Clear	4	LONG		Time that histogram was reset
0802	Phase 3-5 Voltage Under Band Bin	2	INTEGER		Under range bin
0804	Phase 3-5 Voltage Bin 1	2	INTEGER		Bin 1
0806	Phase 3-5 Voltage Bin 2	2	INTEGER		Bin 2
0808	Phase 3-5 Voltage Bin 3	2	INTEGER		Bin 3
080A	Phase 3-5 Voltage Bin 4	2	INTEGER		Bin 4
080C	Phase 3-5 Voltage Bin 5	2	INTEGER		Bin 5
080E	Phase 3-5 Voltage Bin 6	2	INTEGER		Bin 6
0810	Phase 3-5 Voltage Bin 7	2	INTEGER		Bin 7
0812	Phase 3-5 Voltage Bin 8	2	INTEGER		Bin 8
0814	Phase 3-5 Voltage Bin 9	2	INTEGER		Bin 9
0816	Phase 3-5 Voltage Bin 10	2	INTEGER		Bin 10
0818	Phase 3-5 Voltage Over Band Bin	2	INTEGER		Over range bin
081A	Max Phase 3-5 Voltage Sample	4	FLOAT		Maximum value
081E	Date of Max Phase 3-5 Voltage Sample	2	INTEGER		Date that maximum value occurred
0820	Time of Max Phase 3-5 Voltage Sample	4	LONG		Time that maximum value occurred
0824	Min Phase 3-5 Voltage Sample	4	FLOAT		Time that minimum value occurred
0828	Date of Min Phase 3-5 Voltage Sample	2	INTEGER		Date that minimum value occurred
082A	Time of Min Phase 3-5 Voltage Sample	4	LONG		Time that maximum value occurred
082E	Date of Phase 3-5 Voltage Record Clear	2	INTEGER		Date that histogram was reset
0830	Time of Phase 3-5 Voltage Record Clear	4	LONG		Time that histogram was reset
0834	Phase 5-1 Voltage Under Band Bin	2	INTEGER		Under range bin
0836	Phase 5-1 Voltage Bin 1	2	INTEGER		Bin 1
0838	Phase 5-1 Voltage Bin 2	2	INTEGER		Bin 2
083A	Phase 5-1 Voltage Bin 3	2	INTEGER		Bin 3
083C	Phase 5-1 Voltage Bin 4	2	INTEGER		Bin 4
083E	Phase 5-1 Voltage Bin 5	2	INTEGER		Bin 5
0840	Phase 5-1 Voltage Bin 6	2	INTEGER		Bin 6
0842	Phase 5-1 Voltage Bin 7	2	INTEGER		Bin 7

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0844	Phase 5-1 Voltage Bin 8	2	INTEGER		Bin 8
0846	Phase 5-1 Voltage Bin 9	2	INTEGER		Bin 9
0848	Phase 5-1 Voltage Bin 10	2	INTEGER		Bin 10
084A	Phase 5-1 Voltage Over Band Bin	2	INTEGER		Over range bin
084C	Max Phase 5-1 Voltage Sample	4	FLOAT		Maximum value
0850	Date of Max Phase 5-1 Voltage Sample	2	INTEGER		Date that maximum value occurred
0852	Time of Max Phase 5-1 Voltage Sample	4	LONG		Time that maximum value occurred
0856	Min Phase 5-1 Voltage Sample	4	FLOAT		Time that minimum value occurred
085A	Date of Min Phase 5-1 Voltage Sample	2	INTEGER		Date that minimum value occurred
085C	Time of Min Phase 5-1 Voltage Sample	4	LONG		Time that maximum value occurred
0860	Date of Phase 5-1 Voltage Record Clear	2	INTEGER		Date that histogram was reset
0862	Time of Phase 5-1 Voltage Record Clear	4	LONG		Time that histogram was reset
	Voltage Fundamental Histogram load-side phase-neutral		OBJECT	Monitor	Histograms for load-side phase-neutral voltage values
0866	Phase 2 Voltage Under Band Bin	2	INTEGER		Under range bin
0868	Phase 2 Voltage Bin 1	2	INTEGER		Bin 1
086A	Phase 2 Voltage Bin 2	2	INTEGER		Bin 2
086C	Phase 2 Voltage Bin 3	2	INTEGER		Bin 3
086E	Phase 2 Voltage Bin 4	2	INTEGER		Bin 4
0870	Phase 2 Voltage Bin 5	2	INTEGER		Bin 5
0872	Phase 2 Voltage Bin 6	2	INTEGER		Bin 6
0874	Phase 2 Voltage Bin 7	2	INTEGER		Bin 7
0876	Phase 2 Voltage Bin 8	2	INTEGER		Bin 8
0878	Phase 2 Voltage Bin 9	2	INTEGER		Bin 9
087A	Phase 2 Voltage Bin 10	2	INTEGER		Bin 10
087C	Phase 2 Voltage Over Band Bin	2	INTEGER		Over range bin
087E	Max Phase 2 Voltage Sample	4	FLOAT		Maximum value
0882	Date of Max Phase 2 Voltage Sample	2	INTEGER		Date that maximum value occurred
0884	Time of Max Phase 2 Voltage Sample	4	LONG		Time that maximum value occurred
0888	Min Phase 2 Voltage Sample	4	FLOAT		Time that minimum value occurred
088C	Date of Min Phase 2 Voltage Sample	2	INTEGER		Date that minimum value occurred
088E	Time of Min Phase 2 Voltage Sample	4	LONG		Time that maximum value occurred
0892	Date of Phase 2 Voltage Record Clear	2	INTEGER		Date that histogram was reset
0894	Time of Phase 2 Voltage Record Clear	4	LONG		Time that histogram was reset
0898	Phase 4 Voltage Under Band Bin	2	INTEGER		Under range bin
089A	Phase 4 Voltage Bin 1	2	INTEGER		Bin 1
089C	Phase 4 Voltage Bin 2	2	INTEGER		Bin 2
089E	Phase 4 Voltage Bin 3	2	INTEGER		Bin 3
08A0	Phase 4 Voltage Bin 4	2	INTEGER		Bin 4

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
08A2	Phase 4 Voltage Bin 5	2	INTEGER		Bin 5
08A4	Phase 4 Voltage Bin 6	2	INTEGER		Bin 6
08A6	Phase 4 Voltage Bin 7	2	INTEGER		Bin 7
08A8	Phase 4 Voltage Bin 8	2	INTEGER		Bin 8
08AA	Phase 4 Voltage Bin 9	2	INTEGER		Bin 9
08AC	Phase 4 Voltage Bin 10	2	INTEGER		Bin 10
08AE	Phase 4 Voltage Over Band Bin	2	INTEGER		Over range bin
08B0	Max Phase 4 Voltage Sample	4	FLOAT		Maximum value
08B4	Date of Max Phase 4 Voltage Sample	2	INTEGER		Date that maximum value occurred
08B6	Time of Max Phase 4 Voltage Sample	4	LONG		Time that maximum value occurred
08BA	Min Phase 4 Voltage Sample	4	FLOAT		Time that minimum value occurred
08BE	Date of Min Phase 4 Voltage Sample	2	INTEGER		Date that minimum value occurred
08C0	Time of Min Phase 4 Voltage Sample	4	LONG		Time that maximum value occurred
08C4	Date of Phase 4 Voltage Record Clear	2	INTEGER		Date that histogram was reset
08C6	Time of Phase 4 Voltage Record Clear	4	LONG		Time that histogram was reset
08CA	Phase 6 Voltage Under Band Bin	2	INTEGER		Under range bin
08CC	Phase 6 Voltage Bin 1	2	INTEGER		Bin 1
08CE	Phase 6 Voltage Bin 2	2	INTEGER		Bin 2
08D0	Phase 6 Voltage Bin 3	2	INTEGER		Bin 3
08D2	Phase 6 Voltage Bin 4	2	INTEGER		Bin 4
08D4	Phase 6 Voltage Bin 5	2	INTEGER		Bin 5
08D6	Phase 6 Voltage Bin 6	2	INTEGER		Bin 6
08D8	Phase 6 Voltage Bin 7	2	INTEGER		Bin 7
08DA	Phase 6 Voltage Bin 8	2	INTEGER		Bin 8
08DC	Phase 6 Voltage Bin 9	2	INTEGER		Bin 9
08DE	Phase 6 Voltage Bin 10	2	INTEGER		Bin 10
08E0	Phase 6 Voltage Over Band Bin	2	INTEGER		Over range bin
08E2	Max Phase 6 Voltage Sample	4	FLOAT		Maximum value
08E6	Date of Max Phase 6 Voltage Sample	2	INTEGER		Date that maximum value occurred
08E8	Time of Max Phase 6 Voltage Sample	4	LONG		Time that maximum value occurred
08EC	Min Phase 6 Voltage Sample	4	FLOAT		Time that minimum value occurred
08F0	Date of Min Phase 6 Voltage Sample	2	INTEGER		Date that minimum value occurred
08F2	Time of Min Phase 6 Voltage Sample	4	LONG		Time that maximum value occurred
08F6	Date of Phase 6 Voltage Record Clear	2	INTEGER		Date that histogram was reset
08F8	Time of Phase 6 Voltage Record Clear	4	LONG		Time that histogram was reset
	Voltage Fundamental Histogram load-side phase-phase		OBJECT	Monitor	Histograms for load-side phase-phase voltage values
08FC	Phase 2-4 Voltage Under Band Bin	2	INTEGER		Under range bin
08FE	Phase 2-4 Voltage Bin 1	2	INTEGER		Bin 1

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0900	Phase 2-4 Voltage Bin 2	2	INTEGER		Bin 2
0902	Phase 2-4 Voltage Bin 3	2	INTEGER		Bin 3
0904	Phase 2-4 Voltage Bin 4	2	INTEGER		Bin 4
0906	Phase 2-4 Voltage Bin 5	2	INTEGER		Bin 5
0908	Phase 2-4 Voltage Bin 6	2	INTEGER		Bin 6
090A	Phase 2-4 Voltage Bin 7	2	INTEGER		Bin 7
090C	Phase 2-4 Voltage Bin 8	2	INTEGER		Bin 8
090E	Phase 2-4 Voltage Bin 9	2	INTEGER		Bin 9
0910	Phase 2-4 Voltage Bin 10	2	INTEGER		Bin 10
0912	Phase 2-4 Voltage Over Band Bin	2	INTEGER		Over range bin
0914	Max Phase 2-4 Voltage Sample	4	FLOAT		Maximum value
0918	Date of Max Phase 2-4 Voltage Sample	2	INTEGER		Date that maximum value occurred
091A	Time of Max Phase 2-4 Voltage Sample	4	LONG		Time that maximum value occurred
091E	Min Phase 2-4 Voltage Sample	4	FLOAT		Time that minimum value occurred
0922	Date of Min Phase 2-4 Voltage Sample	2	INTEGER		Date that minimum value occurred
0924	Time of Min Phase 2-4 Voltage Sample	4	LONG		Time that maximum value occurred
0928	Date of Phase 2-4 Voltage Record Clear	2	INTEGER		Date that histogram was reset
092A	Time of Phase 2-4 Voltage Record Clear	4	LONG		Time that histogram was reset
092E	Phase 4-6 Voltage Under Band Bin	2	INTEGER		Under range bin
0930	Phase 4-6 Voltage Bin 1	2	INTEGER		Bin 1
0932	Phase 4-6 Voltage Bin 2	2	INTEGER		Bin 2
0934	Phase 4-6 Voltage Bin 3	2	INTEGER		Bin 3
0936	Phase 4-6 Voltage Bin 4	2	INTEGER		Bin 4
0938	Phase 4-6 Voltage Bin 5	2	INTEGER		Bin 5
093A	Phase 4-6 Voltage Bin 6	2	INTEGER		Bin 6
093C	Phase 4-6 Voltage Bin 7	2	INTEGER		Bin 7
093E	Phase 4-6 Voltage Bin 8	2	INTEGER		Bin 8
0940	Phase 4-6 Voltage Bin 9	2	INTEGER		Bin 9
0942	Phase 4-6 Voltage Bin 10	2	INTEGER		Bin 10
0944	Phase 4-6 Voltage Over Band Bin	2	INTEGER		Over range bin
0946	Max Phase 4-6 Voltage Sample	4	FLOAT		Maximum value
094A	Date of Max Phase 4-6 Voltage Sample	2	INTEGER		Date that maximum value occurred
094C	Time of Max Phase 4-6 Voltage Sample	4	LONG		Time that maximum value occurred
0950	Min Phase 4-6 Voltage Sample	4	FLOAT		Time that minimum value occurred
0954	Date of Min Phase 4-6 Voltage Sample	2	INTEGER		Date that minimum value occurred
0956	Time of Min Phase 4-6 Voltage Sample	4	LONG		Time that maximum value occurred
095A	Date of Phase 4-6 Voltage Record Clear	2	INTEGER		Date that histogram was reset
095C	Time of Phase 4-6 Voltage Record Clear	4	LONG		Time that histogram was reset
0960	Phase 6-2 Voltage Under Band Bin	2	INTEGER		Under range bin

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0962	Phase 6-2 Voltage Bin 1	2	INTEGER		Bin 1
0964	Phase 6-2 Voltage Bin 2	2	INTEGER		Bin 2
0966	Phase 6-2 Voltage Bin 3	2	INTEGER		Bin 3
0968	Phase 6-2 Voltage Bin 4	2	INTEGER		Bin 4
096A	Phase 6-2 Voltage Bin 5	2	INTEGER		Bin 5
096C	Phase 6-2 Voltage Bin 6	2	INTEGER		Bin 6
096E	Phase 6-2 Voltage Bin 7	2	INTEGER		Bin 7
0970	Phase 6-2 Voltage Bin 8	2	INTEGER		Bin 8
0972	Phase 6-2 Voltage Bin 9	2	INTEGER		Bin 9
0974	Phase 6-2 Voltage Bin 10	2	INTEGER		Bin 10
0976	Phase 6-2 Voltage Over Band Bin	2	INTEGER		Over range bin
0978	Max Phase 6-2 Voltage Sample	4	FLOAT		Maximum value
097C	Date of Max Phase 6-2 Voltage Sample	2	INTEGER		Date that maximum value occurred
097E	Time of Max Phase 6-2 Voltage Sample	4	LONG		Time that maximum value occurred
0982	Min Phase 6-2 Voltage Sample	4	FLOAT		Time that minimum value occurred
0986	Date of Min Phase 6-2 Voltage Sample	2	INTEGER		Date that minimum value occurred
0988	Time of Min Phase 6-2 Voltage Sample	4	LONG		Time that maximum value occurred
098C	Date of Phase 6-2 Voltage Record Clear	2	INTEGER		Date that histogram was reset
098E	Time of Phase 6-2 Voltage Record Clear	4	LONG		Time that histogram was reset
0992	Phase 3-4 Frequency Under Band Bin	2	INTEGER		Under range bin
0994	Phase 3-4 Frequency Bin 1	2	INTEGER		Bin 1
0996	Phase 3-4 Frequency Bin 2	2	INTEGER		Bin 2
0998	Phase 3-4 Frequency Bin 3	2	INTEGER		Bin 3
099A	Phase 3-4 Frequency Bin 4	2	INTEGER		Bin 4
099C	Phase 3-4 Frequency Bin 5	2	INTEGER		Bin 5
099E	Phase 3-4 Frequency Bin 6	2	INTEGER		Bin 6
09A0	Phase 3-4 Frequency Bin 7	2	INTEGER		Bin 7
09A2	Phase 3-4 Frequency Bin 8	2	INTEGER		Bin 8
09A4	Phase 3-4 Frequency Bin 9	2	INTEGER		Bin 9
09A6	Phase 3-4 Frequency Bin 10	2	INTEGER		Bin 10
09A8	Phase 3-4 Frequency Over Band Bin	2	INTEGER		Over range bin
09AA	Max Phase 3-4 Frequency Sample	4	FLOAT		Maximum value
09AE	Date of Max Phase 3-4 Frequency Sample	2	INTEGER		Date that maximum value occurred
09B0	Time of Max Phase 3-4 Frequency Sample	4	LONG		Time that maximum value occurred
09B4	Min Phase 3-4 Frequency Sample	4	FLOAT		Time that minimum value occurred
09B8	Date of Min Phase 3-4 Frequency Sample	2	INTEGER		Date that minimum value occurred
09BA	Time of Min Phase 3-4 Frequency Sample	4	LONG		Time that maximum value occurred
09BE	Date of Phase 3-4 Frequency Record Clear	2	INTEGER		Date that histogram was reset
09C0	Time of Phase 3-4 Frequency Record Clear	4	LONG		Time that histogram was reset

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
09C4	Phase 1-2 Voltage Diff Under Band Bin	2	INTEGER		Under range bin
09C6	Phase 1-2 Voltage Diff Bin 1	2	INTEGER		Bin 1
09C8	Phase 1-2 Voltage Diff Bin 2	2	INTEGER		Bin 2
09CA	Phase 1-2 Voltage Diff Bin 3	2	INTEGER		Bin 3
09CC	Phase 1-2 Voltage Diff Bin 4	2	INTEGER		Bin 4
09CE	Phase 1-2 Voltage Diff Bin 5	2	INTEGER		Bin 5
09D0	Phase 1-2 Voltage Diff Bin 6	2	INTEGER		Bin 6
09D2	Phase 1-2 Voltage Diff Bin 7	2	INTEGER		Bin 7
09D4	Phase 1-2 Voltage Diff Bin 8	2	INTEGER		Bin 8
09D6	Phase 1-2 Voltage Diff Bin 9	2	INTEGER		Bin 9
09D8	Phase 1-2 Voltage Diff Bin 10	2	INTEGER		Bin 10
09DA	Phase 1-2 Voltage Diff Over Band Bin	2	INTEGER		Over range bin
09DC	Max Phase 1-2 Voltage Diff Sample	4	FLOAT		Maximum value
09E0	Date of Max Phase 1-2 Voltage Diff Sample	2	INTEGER		Date that maximum value occurred
09E2	Time of Max Phase 1-2 Voltage Diff Sample	4	LONG		Time that maximum value occurred
09E6	Min Phase 1-2 Voltage Diff Sample	4	FLOAT		Time that minimum value occurred
09EA	Date of Min Phase 1-2 Voltage Diff Sample	2	INTEGER		Date that minimum value occurred
09EC	Time of Min Phase 1-2 Voltage Diff Sample	4	LONG		Time that maximum value occurred
09F0	Date of Phase 1-2 Voltage Diff Record Clear	2	INTEGER		Date that histogram was reset
09F2	Time of Phase 1-2 Voltage Diff Record Clear	4	LONG		Time that histogram was reset
09F6	Phase 3-4 Voltage Diff Under Band Bin	2	INTEGER		Under range bin
09F8	Phase 3-4 Voltage Diff Bin 1	2	INTEGER		Bin 1
09FA	Phase 3-4 Voltage Diff Bin 2	2	INTEGER		Bin 2
09FC	Phase 3-4 Voltage Diff Bin 3	2	INTEGER		Bin 3
09FE	Phase 3-4 Voltage Diff Bin 4	2	INTEGER		Bin 4
0A00	Phase 3-4 Voltage Diff Bin 5	2	INTEGER		Bin 5
0A02	Phase 3-4 Voltage Diff Bin 6	2	INTEGER		Bin 6
0A04	Phase 3-4 Voltage Diff Bin 7	2	INTEGER		Bin 7
0A06	Phase 3-4 Voltage Diff Bin 8	2	INTEGER		Bin 8
0A08	Phase 3-4 Voltage Diff Bin 9	2	INTEGER		Bin 9
0A0A	Phase 3-4 Voltage Diff Bin 10	2	INTEGER		Bin 10
0A0C	Phase 3-4 Voltage Diff Over Band Bin	2	INTEGER		Over range bin
0A0E	Max Phase 3-4 Voltage Diff Sample	4	FLOAT		Maximum value
0A12	Date of Max Phase 3-4 Voltage Diff Sample	2	INTEGER		Date that maximum value occurred
0A14	Time of Max Phase 3-4 Voltage Diff Sample	4	LONG		Time that maximum value occurred
0A18	Min Phase 3-4 Voltage Diff Sample	4	FLOAT		Time that minimum value occurred
0A1C	Date of Min Phase 3-4 Voltage Diff Sample	2	INTEGER		Date that minimum value occurred
0A1E	Time of Min Phase 3-4 Voltage Diff Sample	4	LONG		Time that maximum value occurred
0A22	Date of Phase 3-4 Voltage Diff Record Clear	2	INTEGER		Date that histogram was reset
0A24	Time of Phase 3-4 Voltage Diff Record Clear	4	LONG		Time that histogram was reset

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0A28	Phase 5-6 Voltage Diff Under Band Bin	2	INTEGER		Under range bin
0A2A	Phase 5-6 Voltage Diff Bin 1	2	INTEGER		Bin 1
0A2C	Phase 5-6 Voltage Diff Bin 2	2	INTEGER		Bin 2
0A2E	Phase 5-6 Voltage Diff Bin 3	2	INTEGER		Bin 3
0A30	Phase 5-6 Voltage Diff Bin 4	2	INTEGER		Bin 4
0A32	Phase 5-6 Voltage Diff Bin 5	2	INTEGER		Bin 5
0A34	Phase 5-6 Voltage Diff Bin 6	2	INTEGER		Bin 6
0A36	Phase 5-6 Voltage Diff Bin 7	2	INTEGER		Bin 7
0A38	Phase 5-6 Voltage Diff Bin 8	2	INTEGER		Bin 8
0A3A	Phase 5-6 Voltage Diff Bin 9	2	INTEGER		Bin 9
0A3C	Phase 5-6 Voltage Diff Bin 10	2	INTEGER		Bin 10
0A3E	Phase 5-6 Voltage Diff Over Band Bin	2	INTEGER		Over range bin
0A40	Max Phase 5-6 Voltage Diff Sample	4	FLOAT		Maximum value
0A44	Date of Max Phase 5-6 Voltage Diff Sample	2	INTEGER		Date that maximum value occurred
0A46	Time of Max Phase 5-6 Voltage Diff Sample	4	LONG		Time that maximum value occurred
0A4A	Min Phase 5-6 Voltage Diff Sample	4	FLOAT		Time that minimum value occurred
0A4E	Date of Min Phase 5-6 Voltage Diff Sample	2	INTEGER		Date that minimum value occurred
0A50	Time of Min Phase 5-6 Voltage Diff Sample	4	LONG		Time that maximum value occurred
0A54	Date of Phase 5-6 Voltage Diff Record Clear	2	INTEGER		Date that histogram was reset
0A56	Time of Phase 5-6 Voltage Diff Record Clear	4	LONG		Time that histogram was reset
	Available TCC Names, Part 1		OBJECT	Configuration	Names of available TCC's, 1st part
0A5A	Available TCC 1 ID	18	STRING		1st available TCC ID (name)
0A6C	Available TCC 2 ID	18	STRING		2nd available TCC ID (name)
0A7E	Available TCC 3 ID	18	STRING		3rd available TCC ID (name)
0A90	Available TCC 4 ID	18	STRING		
0AA2	Available TCC 5 ID	18	STRING		
0AB4	Available TCC 6 ID	18	STRING		
0AC6	Available TCC 7 ID	18	STRING		
0AD8	Available TCC 8 ID	18	STRING		
0AEA	Available TCC 9 ID	18	STRING		
0AFC	Available TCC 10 ID	18	STRING		
	Available TCC Names, Part 2		OBJECT	Configuration	Names of available TCC's, 2nd part
0B0E	Available TCC 11 ID	18	STRING		
0B20	Available TCC 12 ID	18	STRING		
0B32	Available TCC 13 ID	18	STRING		
0B44	Available TCC 14 ID	18	STRING		
0B56	Available TCC 15 ID	18	STRING		
0B68	Available TCC 16 ID	18	STRING		

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0B7A	Available TCC 17 ID	18	STRING		
0B8C	Available TCC 18 ID	18	STRING		
0B9E	Available TCC 19 ID	18	STRING		
0BB0	Available TCC 20 ID	18	STRING		20th (last) available TCC ID (name)
	Battery Test Data			Monitor	Battery test parameters
0BC2	Battery Test Voltage	4	FLOAT		Loaded battery voltage
0BC6	Battery Test Current	4	FLOAT		Loaded battery current
	Critical error event		OBJECT	Monitor	Critical error event information
0BCA	Event type ID code	2	BYTE		Event type ID code
0BCC	Time that event occurred	4	INTEGER		Time that event occurred
0BD0	Date that event occurred	2	BYTE		Date that event occurred
0BD2	Size of data	2	BYTE		Size of data (in bytes)
0BD4	Type of data	2	BYTE		Type of data
0BD6	Event data	20			Event data
	Control powerdown event		OBJECT	Monitor	Control powerdown event information
0BEA	Event type ID code	2	BYTE		Event type ID code
0BEC	Time that event occurred	4	INTEGER		Time that event occurred
0BF0	Date that event occurred	2	BYTE		Date that event occurred
0BF2	Size of data	2	BYTE		Size of data (in bytes)
0BF4	Type of data	2	BYTE		Type of data
0BF6	Event data	20			Event data
	Present Read Values		OBJECT	Configuration	Measured baseline values using present calibration
0C0A	Phase 1 Voltage	4	FLOAT		Voltage at bushing 1
0C0E	Phase 3 Voltage	4	FLOAT		Voltage at bushing 3
0C12	Phase 5 Voltage	4	FLOAT		Voltage at bushing 5
0C16	Phase 1-2 Low Range Current	4	FLOAT		Current through bushing 1-2, low range channel
0C1A	Phase 3-4 Low Range Current	4	FLOAT		Current through bushing 3-4, low range channel
0C1E	Phase 5-6 Low Range Current	4	FLOAT		Current through bushing 5-6, low range channel
0C22	Phase 1-2 High Range Current	4	FLOAT		Current through bushing 1-2, high range channel
0C26	Phase 3-4 High Range Current	4	FLOAT		Current through bushing 3-4, high range channel
0C2A	Phase 5-6 High Range Current	4	FLOAT		Current through bushing 5-6, high range channel
0C2E	Ground High Range Current	4	FLOAT		Ground imbalance current, high range channel
0C32	Ground Low Range Current	4	FLOAT		Ground imbalance current, low range channel
0C36	SGF Current	4	FLOAT		Ground imbalance current, sensitive fault channel
0C3A	Phase 3-4 Mid Range Current	4	FLOAT		Current through bushing 3-4, mid range channel
0C3E	Phase 1-2 Mid Range Current	4	FLOAT		Current through bushing 1-2, mid range channel
0C42	Ground Mid Range Current	4	FLOAT		Ground imbalance current, mid range channel
0C46	Phase 5-6 Mid Range Current	4	FLOAT		Current through bushing 5-6, mid range channel

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0C4A	Phase 1-2 Power Factor	4	FLOAT		Power factor for bushing 1-2
0C4E	Phase 3-4 Power Factor	4	FLOAT		Power factor for bushing 3-4
0C52	Phase 5-6 Power Factor	4	FLOAT		Power factor for bushing 5-6
0C56	Battery Voltage	4	FLOAT		Unloaded battery voltage
0C5A	Battery Current	4	FLOAT		Battery current
0C5E	Phase 2 Voltage	4	FLOAT		Voltage at bushing 2
0C62	Phase 4 Voltage	4	FLOAT		Voltage at bushing 4
0C66	Phase 6 Voltage	4	FLOAT		Voltage at bushing 6
	Measured Calibration Value results		OBJECT	Configuration	Results of latest calibration attempt
0C6A	Calibration Results	2	BITFIELD		Bitmap of Calibration results
	Phase Voltage calibrated		BIT		Bit 0
	Phase Fault Current Low calibrated		BIT		Bit 1
	Phase Fault Current High calibrated		BIT		Bit 2
	Phase Metering Current calibrated		BIT		Bit 3
	Phase Power Factor calibrated		BIT		Bit 4
	Battery Voltage calibrated		BIT		Bit 5
	Battery Current calibrated		BIT		Bit 6
	Phase Voltage out of range		BIT		Bit 7
	Phase Current out of range		BIT		Bit 8
	Phase Power Factor out of range		BIT		Bit 9
	Battery Voltage out of range		BIT		Bit 10
	Battery Current out of range		BIT		Bit 11
	Voltage Tweaks out of range		BIT		Bit 12
	Current Tweaks out of range		BIT		Bit 13
	Power Factor Tweaks out of range		BIT		Bit 14
	Battery Tweaks out of range		BIT		Bit 15

CONFIGURATION Ordinal Block 6 (Parameters)					
Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
	Protection profile read/write ID		OBJECT	Configuration	ID for request protection profile data
0000	Protection profile Identifier	2	INTEGER		ID of desired protection profile data {1, 2, 3, 4}
	Protection Profile Data		OBJECT	Configuration	Overcurrent protection parameters
0002	Phase Min Trip For Normal Sequence	2	INTEGER		Normal pick up level for phase trips
0004	Ground Min Trip For Normal Sequence	2	INTEGER		Normal pick up level for ground trips
0006	Phase Shots To Lockout	2	INTEGER		Number of phase operations to lockout
0008	Ground Shots To Lockout	2	INTEGER		Number of ground operations to lockout
000A	Fast Trips Disabled Shots To Lockout	2	INTEGER		Number of operations to lockout when fast trips are disabled
000C	Phase High Current Lockout Enable - Shot 1	1	BOOLEAN		Enable for HCLO is active on 1st operation - phase
000D	Phase High Current Lockout Enable - Shot 2	1	BOOLEAN		Enable for HCLO is active on 2nd operation - phase
000E	Phase High Current Lockout Enable - Shot 3	1	BOOLEAN		Enable for HCLO is active on 3rd operation - phase
000F	Reserved	1	PAD		Pad
0010	Phase High Current Lockout Threshold - 1	4	FLOAT		Threshold level for HCLO on 1st operation - phase
0014	Phase High Current Lockout Threshold - 2	4	FLOAT		Threshold level for HCLO on 2nd operation - phase
0018	Phase High Current Lockout Threshold - 3	4	FLOAT		Threshold level for HCLO on 3rd operation - phase
001C	Ground High Current Lockout Enable - Shot 1	1	BOOLEAN		Enable for HCLO is active on 1st operation - ground
001D	Ground High Current Lockout Enable - Shot 2	1	BOOLEAN		Enable for HCLO is active on 2nd operation - ground
001E	Ground High Current Lockout Enable - Shot 3	1	BOOLEAN		Enable for HCLO is active on 3rd operation - ground
001F	Reserved	1	PAD		Pad
0020	Ground High Current Lockout Threshold - 1	4	FLOAT		Threshold level for HCLO on 1st operation - ground
0024	Ground High Current Lockout Threshold - 2	4	FLOAT		Threshold level for HCLO on 2nd operation - ground
0028	Ground High Current Lockout Threshold - 3	4	FLOAT		Threshold level for HCLO on 3rd operation - ground
002C	Phase Reclose Interval 1	4	FLOAT		Time to wait to reclose between 1st-2nd phase trip
0030	Phase Reclose Interval 2	4	FLOAT		Time to wait to reclose between 2nd-3rd phase trip
0034	Phase Reclose Interval 3	4	FLOAT		Time to wait to reclose between 3rd-4th phase trip
0038	Ground Reclose Interval 1	4	FLOAT		Time to wait to reclose between 1st-2nd ground trip
003C	Ground Reclose Interval 2	4	FLOAT		Time to wait to reclose between 2nd-3rd ground trip
0040	Ground Reclose Interval 3	4	FLOAT		Time to wait to reclose between 3rd-4th ground trip
0044	Sequence Reset Time	4	FLOAT		Time to wait after successful reclose to reset sequence counter to zero
0048	Trip Precedence	1	(GROUND, PHASE)		Whether ground or phase parameters have precedence for sequencing
0049	Close Retry Enable	1	BOOLEAN		Attempt to close after unsuccessful attempt enable
004A	Target Reset Mode	1	(AUTO, MANUAL)		Target reset on successful reclose or only manually
004B	Reserved	1	PAD		Pad
004C	Maximum Sequence Coordination Shots	2	INTEGER		Number of shots to advance sequence counter for sequence coordination
004E	Sequence Coordination Enable	1	BOOLEAN		Enable for sequence coordination
004F	Reserved	1	PAD		Pad

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0050	Disc Reset Time	4	FLOAT		Disc Reset Time in milliseconds
0054	Phase Min Trip For Hot Line Tag	2	INTEGER		Hot Line tag pick up level for phase trips
0056	Ground Min Trip For Hot Line Tag	2	INTEGER		Hot Line tag pick up level for ground trips
0058	Hot Line tag Mode (AUTO, MANUAL)	1	(AUTO, MANUAL)		Hot Line tag Mode
0059	Reserved	1	PAD		Pad
005A	SGF Enable	1	BOOLEAN		Whether SGF is enabled
005B	Reserved	1	PAD		Pad
005C	SGF Min Trip	2	INTEGER		SGF pick up level
005E	SGF Definite Trip Time	4	FLOAT		Time to wait while above SGF min trip before tripping
0062	SGF Shots To Lockout	2	INTEGER		Number of SGF operations to lockout
0064	SGF Reclose Interval 1	4	FLOAT		Time to wait to reclose after 1st SGF trip
0068	SGF Reclose Interval 2	4	FLOAT		Time to wait to reclose after 2nd SGF trip
006C	SGF Reclose Interval 3	4	FLOAT		Time to wait to reclose after 3rd SGF trip
0070	SGF Reset Time	4	FLOAT		SGF Reset Time in milliseconds
0074	SGF Directional Enable	1	BOOLEAN		Whether Directional SGF is enabled
0075	Reserved	1	PAD		Pad
0076	Max Torque Angle	2	INTEGER		Displacement from polarizing vector for fastest trip
0078	Voltage Threshold	2	INTEGER		Minimum magnitude of polarizing vector
007A	Torque Angle Width	2	INTEGER		Trips are inhibited outside of torque angle width
007C	CLP Enable	1	BOOLEAN		Enable for CLP
007D	Reserved	1	PAD		Pad
007E	Phase Min Trip For CLP	2	INTEGER		CLP pick up level for phase trips
0080	Ground Min Trip For CLP	2	INTEGER		CLP pick up level for ground trips
0082	External CLP Activation Time	4	FLOAT		Externally commanded CLP active period
0086	Auto CLP Activation Time	4	FLOAT		Auto CLP active period
008A	Auto CLP Arming Time Delay	4	FLOAT		Delay before activating CLP
008E	CLP Reclose Interval	4	FLOAT		Time to wait to reclose between CLP trips
0092	CLP Shots To Lockout	2	INTEGER		Number of CLP operations to lockout
0094	Auto CLP Mode	1	(OFF, CURRENT, VOLTAGE)		Whether auto CLP is activated from current or voltage
0095	Phase CLP HCLO Enable	1	BOOLEAN		Enable for phase HCLO active during CLP
0096	Phase CLP HCLO Threshold	4	FLOAT		Phase threshold level for HCLO during CLP
009A	Ground CLP HCLO Enable	1	BOOLEAN		Enable for Ground HCLO active during CLP
009B	Reserved	1	PAD		Pad
009C	Ground CLP HCLO Threshold	4	FLOAT		Ground threshold level for HCLO during CLP
00A0	Auto Momentary Non Reclose Enable	1	BOOLEAN		Enable for auto non reclose active
00A1	Reserved	1	PAD		Pad
00A2	Auto NRC Arming Time Delay	4	FLOAT		Delay before activating auto non reclose

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
00A6	Auto NRC Activation Time	4	FLOAT		Auto non reclose active period
00AA	Phase TCC 1 ID	18	STRING		TCC ID (name) used during first phase operation
00BC	Phase TCC 2 ID	18	STRING		TCC ID (name) used during second phase operation
00CE	Phase TCC 3 ID	18	STRING		TCC ID (name) used during third phase operation
00E0	Phase TCC 4 ID	18	STRING		TCC ID (name) used during fourth phase operation
00F2	Ground TCC 1 ID	18	STRING		TCC ID (name) used during first ground operation
0104	Ground TCC 2 ID	18	STRING		TCC ID (name) used during second ground operation
0116	Ground TCC 3 ID	18	STRING		TCC ID (name) used during third ground operation
0128	Ground TCC 4 ID	18	STRING		TCC ID (name) used during fourth ground operation
013A	Phase CLP TCC ID	18	STRING		TCC ID (name) used during phase cold load pickup
014C	Ground CLP TCC ID	18	STRING		TCC ID (name) used during ground cold load pickup
015E	Phase HLT TCC ID	18	STRING		TCC ID (name) used during phase hot line tag
0170	Ground HLT TCC ID	18	STRING		TCC ID (name) used during ground hot line tag
0182	Phase FTD TCC ID	18	STRING		TCC ID (name) used during phase fast trips disabled
0194	Ground FTD TCC ID	18	STRING		TCC ID (name) used during ground fast trips disabled
01A6	Adaptive Extended Ground Min Trip Enable	1	BOOLEAN		Enable for Adapted Ground Trip (AGMT)
01A7	Reserved	1	PAD		Pad
01A8	Extended Ground Min Trip Min Trip %	4	FLOAT		% of phase current to determine AGMT
01AC	Extended Ground Min Trip Lower Limit	4	FLOAT		Minimum for AGMT
01B0	Extended GMT Filter Time Constant	4	FLOAT		Delay filter for AGMT
01B4	Phase Low Set Enable - Shot 1	1	BOOLEAN		Enable for Low Set is active on 1st operation - phase
01B5	Phase Low Set Enable - Shot 2	1	BOOLEAN		Enable for Low Set is active on 2nd operation - phase
01B6	Phase Low Set Enable - Shot 3	1	BOOLEAN		Enable for Low Set is active on 3rd operation - phase
01B7	Phase Low Set Enable - Shot 4	1	BOOLEAN		Enable for Low Set is active on 4th operation - phase
01B8	Phase Low Set Time	4	FLOAT		Time before Low Set Trip
01BC	Phase High Set Enable - Shot 1	1	BOOLEAN		Enable for High Set is active on 1st operation - phase
01BD	Phase High Set Enable - Shot 2	1	BOOLEAN		Enable for High Set is active on 2nd operation - phase
01BE	Phase High Set Enable - Shot 3	1	BOOLEAN		Enable for High Set is active on 3rd operation - phase
01BF	Phase High Set Enable - Shot 4	1	BOOLEAN		Enable for High Set is active on 4th operation - phase
01C0	Phase High Set Time	4	FLOAT		Time before High Set Trip
01C4	Phase High Set Amps	4	FLOAT		Current level for High Set
01C8	Ground High Set Enable - Shot 1	1	BOOLEAN		Enable for High Set is active on 1st operation - Ground
01C9	Ground High Set Enable - Shot 2	1	BOOLEAN		Enable for High Set is active on 2nd operation - Ground
01CA	Ground High Set Enable - Shot 3	1	BOOLEAN		Enable for High Set is active on 3rd operation - Ground
01CB	Ground High Set Enable - Shot 4	1	BOOLEAN		Enable for High Set is active on 4th operation - Ground
01CC	Ground High Set Time	4	FLOAT		Time before High Set Trip
01D0	Ground High Set Amps	4	FLOAT		Current level for High Set

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
01D4	Nominal Line-to-Line Voltage	4	LONG		Nominal Line-to-Line Voltage
01D8	Source Positive Seq Impedance Real	2	INTEGER		Source Positive Sequence Impedance - Real
01DA	Source Positive Seq Impedance Imag	2	INTEGER		Source Positive Sequence Impedance - Imaginary
01DC	Source Zero Seq Impedance Real	2	INTEGER		Source Zero Sequence Impedance - Real
01DE	Source Zero Seq Impedance Imag	2	INTEGER		Source Zero Sequence Impedance - Imaginary
01E0	Line Zero Seq Impedance / Dist Units Real	2	INTEGER		Line Zero Sequence Impedance Per Distance Units - Real
01E2	Line Zero Seq Impedance / Dist Units Imag	2	INTEGER		Line Zero Sequence Impedance Per Distance Units - Imag
01E4	Line Positive Seq Impedance / Dist Units Real	2	INTEGER		Line Positive Sequence Impedance Per Distance Units - Real
01E6	Line Positive Seq Impedance / Dist Units Imag	2	INTEGER		Line Positive Sequence Impedance Per Distance Units - Imag
01E8	Distance Units	2	ENUMERATION		0 = Miles, 1 = Km
01EA	Triple - Single mode	1	ENUM		(Ganged = 0; 1-phase trip, 3 phase lockout = 1;1-phase trip, 1-phase lockout = 2)
01EB	Dynamic Phase Trip Enable	1	BOOLEAN		Dynamic Phase Trip Enable
	TCC read/write ID		OBJECT	Configuration	ID for request TCC data
01EC	TCC Identifier	18	STRING		TCC name of desired TCC data
	TCC Data		OBJECT	Configuration	Requested TCC data
01FE	Magic Number	4	LONG		
0202	ARRAY TCC Point Information	512	UNSIGNED WORD[256]		Array of values that describe curve
0402	TCC Identifier	18	STRING		TCC name
0414	Nominal Frequency	1	(50, 60)		Nominal frequency for operation
0415	Reserved	1	PAD		Pad
0416	TCC Editor Control	2	INTEGER		TCC editor control filed
0418	Time Multiplier	8	DOUBLE		TCC time multiplier
0420	Time Adder	8	DOUBLE		TCC time adder
0428	Minimum Response Time	8	DOUBLE		TCC minimum response time
0430	High Trip Time	8	DOUBLE		TCC high current trip time
0438	High Trip Current Ratio	8	DOUBLE		TCC high current trip % of min trip ratio
	Current Fundamental Histogram Config		OBJECT	Configuration	Histogram configurations for current values
0440	Phase 1-2 Current Histogram Lower Limit	4	FLOAT		Lower limit
0444	Phase 1-2 Current Histogram Upper Limit	4	FLOAT		Upper limit
0448	Phase 3-4 Current Histogram Lower Limit	4	FLOAT		Lower limit
044C	Phase 3-4 Current Histogram Upper Limit	4	FLOAT		Upper limit
0450	Phase 5-6 Current Histogram Lower Limit	4	FLOAT		Lower limit

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0454	Phase 5-6 Current Histogram Upper Limit	4	FLOAT		Upper limit
0458	Ground Current Histogram Lower Limit	4	FLOAT		Lower limit
045C	Ground Current Histogram Upper Limit	4	FLOAT		Upper limit
	Voltage Fundamental source-side phase-neutral Histogram Config		OBJECT	Configuration	Histogram configurations for phase-neutral source-side voltage values
0460	Phase 1 Voltage Histogram Lower Limit	4	FLOAT		Lower limit
0464	Phase 1 Voltage Histogram Upper Limit	4	FLOAT		Upper limit
0468	Phase 3 Voltage Histogram Lower Limit	4	FLOAT		Lower limit
046C	Phase 3 Voltage Histogram Upper Limit	4	FLOAT		Upper limit
0470	Phase 5 Voltage Histogram Lower Limit	4	FLOAT		Lower limit
0474	Phase 5 Voltage Histogram Upper Limit	4	FLOAT		Upper limit
	Power Histogram Config		OBJECT	Configuration	Histogram configurations for power values
0478	Phase 1-2 Power Factor Histogram Lower Limit	4	FLOAT		Lower limit
047C	Phase 1-2 Power Factor Histogram Upper Limit	4	FLOAT		Upper limit
0480	Phase 1-2 KVA Histogram Lower Limit	4	FLOAT		Lower limit
0484	Phase 1-2 KVA Histogram Upper Limit	4	FLOAT		Upper limit
0488	Phase 1-2 KW Histogram Lower Limit	4	FLOAT		Lower limit
048C	Phase 1-2 KW Histogram Upper Limit	4	FLOAT		Upper limit
0490	Phase 1-2 KVAR Histogram Lower Limit	4	FLOAT		Lower limit
0494	Phase 1-2 KVAR Histogram Upper Limit	4	FLOAT		Upper limit
0498	Phase 3-4 Power Factor Histogram Lower Limit	4	FLOAT		Lower limit
049C	Phase 3-4 Power Factor Histogram Upper Limit	4	FLOAT		Upper limit
04A0	Phase 3-4 KVA Histogram Lower Limit	4	FLOAT		Lower limit
04A4	Phase 3-4 KVA Histogram Upper Limit	4	FLOAT		Upper limit
04A8	Phase 3-4 KW Histogram Lower Limit	4	FLOAT		Lower limit
04AC	Phase 3-4 KW Histogram Upper Limit	4	FLOAT		Upper limit
04B0	Phase 3-4 KVAR Histogram Lower Limit	4	FLOAT		Lower limit
04B4	Phase 3-4 KVAR Histogram Upper Limit	4	FLOAT		Upper limit
04B8	Phase 5-6 Power Factor Histogram Lower Limit	4	FLOAT		Lower limit
04BC	Phase 5-6 Power Factor Histogram Upper Limit	4	FLOAT		Upper limit
04C0	Phase 5-6 KVA Histogram Lower Limit	4	FLOAT		Lower limit
04C4	Phase 5-6 KVA Histogram Upper Limit	4	FLOAT		Upper limit
04C8	Phase 5-6 KW Histogram Lower Limit	4	FLOAT		Lower limit
04CC	Phase 5-6 KW Histogram Upper Limit	4	FLOAT		Upper limit
04D0	Phase 5-6 KVAR Histogram Lower Limit	4	FLOAT		Lower limit

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
04D4	Phase 5-6 KVAR Histogram Upper Limit	4	FLOAT		Upper limit
04D8	Total Power Factor Histogram Lower Limit	4	FLOAT		Lower limit
04DC	Total Power Factor Histogram Upper Limit	4	FLOAT		Upper limit
04E0	Total KVA Histogram Lower Limit	4	FLOAT		Lower limit
04E4	Total KVA Histogram Upper Limit	4	FLOAT		Upper limit
04E8	Total KW Histogram Lower Limit	4	FLOAT		Lower limit
04EC	Total KW Histogram Upper Limit	4	FLOAT		Upper limit
04F0	Total KVAR Histogram Lower Limit	4	FLOAT		Lower limit
04F4	Total KVAR Histogram Upper Limit	4	FLOAT		Upper limit
	Sequence Component Current Histogram Config		OBJECT	Configuration	Histogram configurations for current sequence component values
04F8	Pos Seq Current Mag Histogram Lower Limit	4	FLOAT		Lower limit
04FC	Pos Seq Current Mag Histogram Upper Limit	4	FLOAT		Upper limit
0500	Pos Seq Current Angle Histogram Lower Limit	4	FLOAT		Lower limit
0504	Pos Seq Current Angle Histogram Upper Limit	4	FLOAT		Upper limit
0508	Neg Seq Current Mag Histogram Lower Limit	4	FLOAT		Lower limit
050C	Neg Seq Current Mag Histogram Upper Limit	4	FLOAT		Upper limit
0510	Neg Seq Current Angle Histogram Lower Limit	4	FLOAT		Lower limit
0514	Neg Seq Current Angle Histogram Upper Limit	4	FLOAT		Upper limit
0518	Zero Seq Current Mag Histogram Lower Limit	4	FLOAT		Lower limit
051C	Zero Seq Current Mag Histogram Upper Limit	4	FLOAT		Upper limit
0520	Zero Seq Current Angle Histogram Lower Limit	4	FLOAT		Lower limit
0524	Zero Seq Current Angle Histogram Upper Limit	4	FLOAT		Upper limit
	Sequence Component Voltage Histogram Config		OBJECT	Configuration	Histogram configurations for voltage sequence component values
0528	Pos Seq Voltage Mag Histogram Lower Limit	4	FLOAT		Lower limit
052C	Pos Seq Voltage Mag Histogram Upper Limit	4	FLOAT		Upper limit
0530	Pos Seq Voltage Angle Histogram Lower Limit	4	FLOAT		Lower limit
0534	Pos Seq Voltage Angle Histogram Upper Limit	4	FLOAT		Upper limit
0538	Neg Seq Voltage Mag Histogram Lower Limit	4	FLOAT		Lower limit
053C	Neg Seq Voltage Mag Histogram Upper Limit	4	FLOAT		Upper limit
0540	Neg Seq Voltage Angle Histogram Lower Limit	4	FLOAT		Lower limit
0544	Neg Seq Voltage Angle Histogram Upper Limit	4	FLOAT		Upper limit
	Harmonic Current Histogram Config		OBJECT	Configuration	Histogram configurations for current harmonic values
0548	Phase 1-2 Current THD Histogram Lower Limit	4	FLOAT		Lower limit
054C	Phase 1-2 Current THD Histogram Upper Limit	4	FLOAT		Upper limit
0550	Phase 3-4 Current THD Histogram Lower Limit	4	FLOAT		Lower limit
0554	Phase 3-4 Current THD Histogram Upper Limit	4	FLOAT		Upper limit
0558	Phase 5-6 Current THD Histogram Lower Limit	4	FLOAT		Lower limit
055C	Phase 5-6 Current THD Histogram Upper Limit	4	FLOAT		Upper limit

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0560	Ground Current THD Histogram Lower Limit	4	FLOAT		Lower limit
0564	Ground Current THD Histogram Upper Limit	4	FLOAT		Upper limit
	Harmonic Voltage Histogram Config		OBJECT	Configuration	Histogram configurations for voltage harmonic values
0568	Phase 1 Voltage THD Histogram Lower Limit	4	FLOAT		Lower limit
056C	Phase 1 Voltage THD Histogram Upper Limit	4	FLOAT		Upper limit
0570	Phase 3 Voltage THD Histogram Lower Limit	4	FLOAT		Lower limit
0574	Phase 3 Voltage THD Histogram Upper Limit	4	FLOAT		Upper limit
0578	Phase 5 Voltage THD Histogram Lower Limit	4	FLOAT		Lower limit
057C	Phase 5 Voltage THD Histogram Upper Limit	4	FLOAT		Upper limit
	Voltage Fundamental source-side phase-phase Histogram Config		OBJECT	Configuration	Histogram configurations for source-side phase-phase voltage values
0580	Phase 1-3 Voltage Histogram Lower Limit	4	FLOAT		Lower limit
0584	Phase 1-3 Voltage Histogram Upper Limit	4	FLOAT		Upper limit
0588	Phase 3-5 Voltage Histogram Lower Limit	4	FLOAT		Lower limit
058C	Phase 3-5 Voltage Histogram Upper Limit	4	FLOAT		Upper limit
0590	Phase 5-1 Voltage Histogram Lower Limit	4	FLOAT		Lower limit
0594	Phase 5-1 Voltage Histogram Upper Limit	4	FLOAT		Upper limit
	Voltage Fundamental load-side phase-neutral Histogram Config		OBJECT	Configuration	Histogram configurations for load-side phase-neutral voltage values
0598	Phase 2 Voltage Histogram Lower Limit	4	FLOAT		Lower limit
059C	Phase 2 Voltage Histogram Upper Limit	4	FLOAT		Upper limit
05A0	Phase 4 Voltage Histogram Lower Limit	4	FLOAT		Lower limit
05A4	Phase 4 Voltage Histogram Upper Limit	4	FLOAT		Upper limit
05A8	Phase 6 Voltage Histogram Lower Limit	4	FLOAT		Lower limit
05AC	Phase 6 Voltage Histogram Upper Limit	4	FLOAT		Upper limit
	Voltage Fundamental load-side phase-phase Histogram Config		OBJECT	Configuration	Histogram configurations for load-side phase-phase voltage values
05B0	Phase 2-4 Voltage Histogram Lower Limit	4	FLOAT		Lower limit
05B4	Phase 2-4 Voltage Histogram Upper Limit	4	FLOAT		Upper limit
05B8	Phase 4-6 Voltage Histogram Lower Limit	4	FLOAT		Lower limit
05BC	Phase 4-6 Voltage Histogram Upper Limit	4	FLOAT		Upper limit
05C0	Phase 6-2 Voltage Histogram Lower Limit	4	FLOAT		Lower limit
05C4	Phase 6-2 Voltage Histogram Upper Limit	4	FLOAT		Upper limit
	Frequency Histogram Config		OBJECT	Configuration	Histogram configurations for frequency values
05C8	Phase 3-4 Frequency Histogram Lower Limit	4	FLOAT		Lower limit
05CC	Phase 3-4 Frequency Histogram Upper Limit	4	FLOAT		Upper limit

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
	Voltage Difference source-to-load side Histogram Config		OBJECT	Configuration	Histogram configurations for source-to-load voltage difference values
05D0	Phase 1-2 Voltage Diff Histogram Lower Limit	4	FLOAT		Lower limit
05D4	Phase 1-2 Voltage Diff Histogram Upper Limit	4	FLOAT		Upper limit
05D8	Phase 3-4 Voltage Diff Histogram Lower Limit	4	FLOAT		Lower limit
05DC	Phase 3-4 Voltage Diff Histogram Upper Limit	4	FLOAT		Upper limit
05E0	Phase 5-6 Voltage Diff Histogram Lower Limit	4	FLOAT		Lower limit
05E4	Phase 5-6 Voltage Diff Histogram Upper Limit	4	FLOAT		Upper limit
	Profile Recorder Control		OBJECT	Configuration	Profile recorder configuration parameters
05E8	Profile Recorder Time Interval	2	INTEGER		Period between samples
05EA	Profile Recorder Start Time	2	INTEGER		Time to begin sampling
05EC	Profile Recorder Duration Time	2	INTEGER		Amount of time to sample
05EE	Profile Recorder Start Day	2	INTEGER		Day to begin sampling
05F0	Profile Recorder End Day	2	INTEGER		Day to complete sampling
05F2	Phase 1-2 Current Profile Enable	1	BOOLEAN		Profiler enable for current through bushing 1-2
05F3	Phase 3-4 Current Profile Enable	1	BOOLEAN		Profiler enable for current through bushing 3-4
05F4	Phase 5-6 Current Profile Enable	1	BOOLEAN		Profiler enable for current through bushing 5-6
05F5	Ground Current Profile Enable	1	BOOLEAN		Profiler enable for ground current
05F6	Phase 1 Voltage Profile Enable	1	BOOLEAN		Profiler enable for voltage at bushing 1
05F7	Phase 3 Voltage Profile Enable	1	BOOLEAN		Profiler enable for voltage at bushing 3
05F8	Phase 5 Voltage Profile Enable	1	BOOLEAN		Profiler enable for voltage at bushing 5
05F9	Phase 1-2 Current THD Profile Enable	1	BOOLEAN		Profiler enable for current THD through bushing 1-2
05FA	Phase 3-4 Current THD Profile Enable	1	BOOLEAN		Profiler enable for current THD through bushing 3-4
05FB	Phase 5-6 Current THD Profile Enable	1	BOOLEAN		Profiler enable for current THD through bushing 5-6
05FC	Ground Current THD Profile Enable	1	BOOLEAN		Profiler enable for ground current THD
05FD	Phase 1-2 Current 2nd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 2nd harmonic through bushing 1-2
05FE	Phase 3-4 Current 2nd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 2nd harmonic through bushing 3-4
05FF	Phase 5-6 Current 2nd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 2nd harmonic through bushing 5-6
0600	Ground Current 2nd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 2nd harmonic
0601	Phase 1-2 Current 3rd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 3rd harmonic through bushing 1-2
0602	Phase 3-4 Current 3rd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 3rd harmonic through bushing 3-4

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0603	Phase 5-6 Current 3rd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 3rd harmonic through bushing 5-6
0604	Ground Current 3rd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 3rd harmonic
0605	Phase 1-2 Current 4th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 4th harmonic through bushing 1-2
0606	Phase 3-4 Current 4th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 4th harmonic through bushing 3-4
0607	Phase 5-6 Current 4th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 4th harmonic through bushing 5-6
0608	Ground Current 4th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 4th harmonic
0609	Phase 1-2 Current 5th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 5th harmonic through bushing 1-2
060A	Phase 3-4 Current 5th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 5th harmonic through bushing 3-4
060B	Phase 5-6 Current 5th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 5th harmonic through bushing 5-6
060C	Ground Current 5th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 5th harmonic
060D	Phase 1-2 Current 6th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 6th harmonic through bushing 1-2
060E	Phase 3-4 Current 6th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 6th harmonic through bushing 3-4
060F	Phase 5-6 Current 6th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 6th harmonic through bushing 5-6
0610	Ground Current 6th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 6th harmonic
0611	Phase 1-2 Current 7th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 7th harmonic through bushing 1-2
0612	Phase 3-4 Current 7th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 7th harmonic through bushing 3-4
0613	Phase 5-6 Current 7th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 7th harmonic through bushing 5-6
0614	Ground Current 7th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 7th harmonic
0615	Phase 1-2 Current 8th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 8th harmonic through bushing 1-2
0616	Phase 3-4 Current 8th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 8th harmonic through bushing 3-4
0617	Phase 5-6 Current 8th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 8th harmonic through bushing 5-6
0618	Ground Current 8th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 8th harmonic

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0619	Phase 1-2 Current 9th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 9th harmonic through bushing 1-2
061A	Phase 3-4 Current 9th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 9th harmonic through bushing 3-4
061B	Phase 5-6 Current 9th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 9th harmonic through bushing 5-6
061C	Ground Current 9th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 9th harmonic
061D	Phase 1-2 Current 10th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 10th harmonic through bushing 1-2
061E	Phase 3-4 Current 10th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 10th harmonic through bushing 3-4
061F	Phase 5-6 Current 10th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 10th harmonic through bushing 5-6
0620	Ground Current 10th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 10th harmonic
0621	Phase 1-2 Current 11th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 11th harmonic through bushing 1-2
0622	Phase 3-4 Current 11th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 11th harmonic through bushing 3-4
0623	Phase 5-6 Current 11th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 11th harmonic through bushing 5-6
0624	Ground Current 11th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 11th harmonic
0625	Phase 1-2 Current 12th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 12th harmonic through bushing 1-2
0626	Phase 3-4 Current 12th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 12th harmonic through bushing 3-4
0627	Phase 5-6 Current 12th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 12th harmonic through bushing 5-6
0628	Ground Current 12th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 12th harmonic
0629	Phase 1-2 Current 13th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 13th harmonic through bushing 1-2
062A	Phase 3-4 Current 13th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 13th harmonic through bushing 3-4
062B	Phase 5-6 Current 13th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 13th harmonic through bushing 5-6
062C	Ground Current 13th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 13th harmonic
062D	Phase 1-2 Current 14th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 14th harmonic through bushing 1-2
062E	Phase 3-4 Current 14th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 14th harmonic through bushing 3-4

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
062F	Phase 5-6 Current 14th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 14th harmonic through bushing 5-6
0630	Ground Current 14th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 14th harmonic
0631	Phase 1-2 Current 15th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 15th harmonic through bushing 1-2
0632	Phase 3-4 Current 15th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 15th harmonic through bushing 3-4
0633	Phase 5-6 Current 15th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for current 15th harmonic through bushing 5-6
0634	Ground Current 15th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for ground current 15th harmonic
0635	Phase 1 Voltage THD Profile Enable	1	BOOLEAN		Profiler enable for Voltage THD through bushing 1-2
0636	Phase 3 Voltage THD Profile Enable	1	BOOLEAN		Profiler enable for Voltage THD through bushing 3-4
0637	Phase 5 Voltage THD Profile Enable	1	BOOLEAN		Profiler enable for Voltage THD through bushing 5-6
0638	Phase 1 Voltage 2nd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 2nd harmonic through bushing 1-2
0639	Phase 3 Voltage 2nd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 2nd harmonic through bushing 3-4
063A	Phase 5 Voltage 2nd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 2nd harmonic through bushing 5-6
063B	Phase 1 Voltage 3rd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 3rd harmonic through bushing 1-2
063C	Phase 3 Voltage 3rd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 3rd harmonic through bushing 3-4
063D	Phase 5 Voltage 3rd Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 3rd harmonic through bushing 5-6
063E	Phase 1 Voltage 4th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 4th harmonic through bushing 1-2
063F	Phase 3 Voltage 4th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 4th harmonic through bushing 3-4
0640	Phase 5 Voltage 4th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 4th harmonic through bushing 5-6
0641	Phase 1 Voltage 5th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 5th harmonic through bushing 1-2
0642	Phase 3 Voltage 5th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 5th harmonic through bushing 3-4
0643	Phase 5 Voltage 5th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 5th harmonic through bushing 5-6

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0644	Phase 1 Voltage 6th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 6th harmonic through bushing 1-2
0645	Phase 3 Voltage 6th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 6th harmonic through bushing 3-4
0646	Phase 5 Voltage 6th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 6th harmonic through bushing 5-6
0647	Phase 1 Voltage 7th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 7th harmonic through bushing 1-2
0648	Phase 3 Voltage 7th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 7th harmonic through bushing 3-4
0649	Phase 5 Voltage 7th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 7th harmonic through bushing 5-6
064A	Phase 1 Voltage 8th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 8th harmonic through bushing 1-2
064B	Phase 3 Voltage 8th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 8th harmonic through bushing 3-4
064C	Phase 5 Voltage 8th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 8th harmonic through bushing 5-6
064D	Phase 1 Voltage 9th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 9th harmonic through bushing 1-2
064E	Phase 3 Voltage 9th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 9th harmonic through bushing 3-4
064F	Phase 5 Voltage 9th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 9th harmonic through bushing 5-6
0650	Phase 1 Voltage 10th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 10th harmonic through bushing 1-2
0651	Phase 3 Voltage 10th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 10th harmonic through bushing 3-4
0652	Phase 5 Voltage 10th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 10th harmonic through bushing 5-6
0653	Phase 1 Voltage 11th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 11th harmonic through bushing 1-2
0654	Phase 3 Voltage 11th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 11th harmonic through bushing 3-4
0655	Phase 5 Voltage 11th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 11th harmonic through bushing 5-6
0656	Phase 1 Voltage 12th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 12th harmonic through bushing 1-2

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0657	Phase 3 Voltage 12th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 12th harmonic through bushing 3-4
0658	Phase 5 Voltage 12th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 12th harmonic through bushing 5-6
0659	Phase 1 Voltage 13th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 13th harmonic through bushing 1-2
065A	Phase 3 Voltage 13th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 13th harmonic through bushing 3-4
065B	Phase 5 Voltage 13th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 13th harmonic through bushing 5-6
065C	Phase 1 Voltage 14th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 14th harmonic through bushing 1-2
065D	Phase 3 Voltage 14th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 14th harmonic through bushing 3-4
065E	Phase 5 Voltage 14th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 14th harmonic through bushing 5-6
065F	Phase 1 Voltage 15th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 15th harmonic through bushing 1-2
0660	Phase 3 Voltage 15th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 15th harmonic through bushing 3-4
0661	Phase 5 Voltage 15th Harmonic Profile Enable	1	BOOLEAN		Profiler enable for Voltage 15th harmonic through bushing 5-6
0662	Phase 1-2 Power Factor Profile Enable	1	BOOLEAN		Profiler enable for power factor at bushing 1-2
0663	Phase 3-4 Power Factor Profile Enable	1	BOOLEAN		Profiler enable for power factor at bushing 3-4
0664	Phase 5-6 Power Factor Profile Enable	1	BOOLEAN		Profiler enable for power factor at bushing 5-6
0665	Total Power Factor Profile Enable	1	BOOLEAN		Profiler enable for total power factor
0666	Phase 1-2 KVA Profile Enable	1	BOOLEAN		Profiler enable for KVA at bushing 1-2
0667	Phase 3-4 KVA Profile Enable	1	BOOLEAN		Profiler enable for KVA at bushing 3-4
0668	Phase 5-6 KVA Profile Enable	1	BOOLEAN		Profiler enable for KVA at bushing 5-6
0669	Total KVA Profile Enable	1	BOOLEAN		Profiler enable for total KVA
066A	Phase 1-2 KW Profile Enable	1	BOOLEAN		Profiler enable for KW at bushing 1-2
066B	Phase 3-4 KW Profile Enable	1	BOOLEAN		Profiler enable for KW at bushing 3-4
066C	Phase 5-6 KW Profile Enable	1	BOOLEAN		Profiler enable for KW at bushing 5-6
066D	Total KW Profile Enable	1	BOOLEAN		Profiler enable for total KW
066E	Phase 1-2 KVAR Profile Enable	1	BOOLEAN		Profiler enable for KVAR at bushing 1-2
066F	Phase 3-4 KVAR Profile Enable	1	BOOLEAN		Profiler enable for KVAR at bushing 3-4
0670	Phase 5-6 KVAR Profile Enable	1	BOOLEAN		Profiler enable for KVAR at bushing 5-6

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0671	Total KVAR Profile Enable	1	BOOLEAN		Profiler enable for total KVAR
0672	Phase 1-3 Voltage Profile Enable	1	BOOLEAN		Profiler enable for voltage at bushing 1-3
0673	Phase 3-5 Voltage Profile Enable	1	BOOLEAN		Profiler enable for voltage at bushing 3-5
0674	Phase 5-1 Voltage Profile Enable	1	BOOLEAN		Profiler enable for voltage at bushing 5-1
0675	Phase 1-2 KWh Profile Enable	1	BOOLEAN		Profiler enable for KWh at bushing 1-2
0676	Phase 3-4 KWh Profile Enable	1	BOOLEAN		Profiler enable for KWh at bushing 3-4
0677	Phase 5-6 KWh Profile Enable	1	BOOLEAN		Profiler enable for KWh at bushing 5-6
0678	Total KWh Profile Enable	1	BOOLEAN		Profiler enable for total KWh
0679	Phase 2 Voltage Profile Enable	1	BOOLEAN		Profiler enable for voltage at bushing 2
067A	Phase 4 Voltage Profile Enable	1	BOOLEAN		Profiler enable for voltage at bushing 4
067B	Phase 6 Voltage Profile Enable	1	BOOLEAN		Profiler enable for voltage at bushing 6
067C	Phase 2-4 Voltage Profile Enable	1	BOOLEAN		Profiler enable for voltage at bushing 2-4
067D	Phase 4-6 Voltage Profile Enable	1	BOOLEAN		Profiler enable for voltage at bushing 4-6
067E	Phase 6-2 Voltage Profile Enable	1	BOOLEAN		Profiler enable for voltage at bushing 6-2
067F	Phase 3-4 Frequency Profile Enable	1	BOOLEAN		Profiler enable for frequency at bushing 3-4
0680	Phase 1-2 Voltage Diff Profile Enable	1	BOOLEAN		Profiler enable for voltage difference bushing 1-2
0681	Phase 3-4 Voltage Diff Profile Enable	1	BOOLEAN		Profiler enable for voltage difference bushing 3-4
0682	Phase 5-6 Voltage Diff Profile Enable	1	BOOLEAN		Profiler enable for voltage difference bushing 5-6
	Alarm Configuration		OBJECT	Configuration	Alarm enables and configuration parameters
	Data alarm read/write ID		OBJECT	Configuration	ID for request data alarm data
0683	Data alarm Identifier	2	INTEGER		ID of desired data alarm data
	Data Alarm Cfg				
0685	Data alarm Identifier	2	INTEGER		ID of reported data alarm data
0687	Alarm Enable	1	BOOLEAN		Alarm enable
0688		1	PAD		
0689	Alarm Limit	4	FLOAT		Alarm activation limit
068D	Record As Event Enable	1	(OFF, ACTIVE, INACTIVE, BOTH)		When to record event
068E	Profile Snapshot Trigger Enable	1	(OFF, ACTIVE, INACTIVE, BOTH)		When to trigger a profile recording
068F	Priority Level	1	(0...127)		Alarm priority

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0690		1	PAD		
0691	Alarm Trigger Delay	4	LONG		Alarm activation delay filter
	Status alarm read/write ID		OBJECT	Configuration	ID for request status alarm data
0695	Status alarm Identifier	2	INTEGER		ID of desired status alarm data
	Status Alarm Cfg				
0697	Status alarm Identifier	2	INTEGER		ID of reported status alarm data
0699	Alarm Enable	1	OFF, TRUE, FALSE		Alarm enable
069A	Reserved	1	PAD		
069B	Record As Event Enable	1	(OFF, ACTIVE, INACTIVE, BOTH)		When to record event
069C	Profile Snapshot Trigger Enable	1	(OFF, ACTIVE, INACTIVE, BOTH)		When to trigger a profile recording
069D	Priority Level	1	(0...127)		Alarm priority
069E	Reserved	1	PAD		
069F	Alarm Trigger Delay	4	LONG		Alarm activation delay filter
	Demand Metering Programming data		OBJECT	Configuration	Demand Metering Setup
06A3	Demand voltage and current filter tau	4	LONG		Demand metering filter tau for voltage and current
06A7	Demand power values filter tau	4	LONG		Demand metering filter tau for power values
06AB	Demand harmonics filter tau	4	LONG		Demand metering filter harmonics
06AF	Demand sequence components filter tau	4	LONG		Demand metering filter tau for vsequence components
	Operation Counter Preset		OBJECT	Configuration	Operation Counters preset information
06B3	Preset Phase 1-2 Operation Counter	4	LONG		Operation counter preset for phase 1-2 interrupter
06B7	Preset Phase 3-4 Operation Counter	4	LONG		Operation counter preset for phase 3-4 interrupter
06BB	Preset Phase 5-6 Operation Counter	4	LONG		Operation counter preset for phase 5-6 interrupter
06BF	Date Of Last Preset	2	INTEGER		Date of last preset
06C1	Time Of Last Preset	4	LONG		Time of last preset
	Duty Accumulator Preset		OBJECT	Configuration	Duty accumulators preset information
06C5	Preset Phase 1-2 % Rated Duty Depleted	4	FLOAT		Duty accumulator preset for phase 1-2 interrupter
06C9	Preset Phase 3-4 % Rated Duty Depleted	4	FLOAT		Duty accumulator preset for phase 3-4 interrupter
06CD	Preset Phase 5-6 % Rated Duty Depleted	4	FLOAT		Duty accumulator preset for phase 5-6 interrupter
06D1	Date Of Last Preset	2	INTEGER		Date of last preset
06D3	Time Of Last Preset	4	LONG		Time of last preset

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
	OCP Target Counters Preset		OBJECT	Configuration	Overcurrent protection target counters preset info
06D7	Preset Ground Target Counter	4	LONG		Preset number of ground OCP targets
06DB	Preset Phase 1-2 Target Counter	4	LONG		Preset number of phase 1-2 OCP targets
06DF	Preset Phase 3-4 Target Counter	4	LONG		Preset number of phase 3-4 OCP targets
06E3	Preset Phase 5-6 Target Counter	4	LONG		Preset number of phase 5-6 OCP targets
06E7	Preset SGF Target Counter	4	LONG		Preset number of SGF OCP targets
06EB	Preset Adapted Ground Target Counter	4	LONG		Preset number of adapted ground OCP targets
06EF	Date Of Last Preset	2	INTEGER		Date of last preset
06F1	Time Of Last Preset	4	LONG		Time of last preset
	Sequence Coordination Counters Preset		OBJECT	Configuration	Sequence coordination counters preset info
06F5	Preset Ground Seq Coord Counter	4	LONG		Preset number of ground sequence coordination operations
06F9	Preset Phase 1-2 Seq Coord Counter	4	LONG		Preset number of phase 1-2 sequence coordination operations
06FD	Preset Phase 3-4 Seq Coord Counter	4	LONG		Preset number of phase 3-4 sequence coordination operations
0701	Preset Phase 5-6 Seq Coord Counter	4	LONG		Preset number of phase 5-6 sequence coordination operations
0705	Preset SGF Seq Coord Counter	4	LONG		Preset number of SGF sequence coordination operations
0709	Preset Adapted Ground Seq Coord Counter	4	LONG		Preset number of adapted ground sequence coordination operations
070D	Date Of Last Preset	2	INTEGER		Date of last preset
070F	Time Of Last Preset	4	LONG		Time of last preset
	Realtime clock information		OBJECT	Configuration	Realtime clock info that is not Julian time
0713	Realtime clock year	2	INTEGER		Realtime clock year
	System Information		OBJECT	Configuration	System related control setup information
0715	Nominal Line Frequency	1	(50,60)		Nominal system line frequency
0716	Voltage Sensor Configuration	1	BYTE		Delta-Wye etc. sensor installation
0717	Phantom Phase Enable	1	BOOLEAN		Derived phase voltages from single sensor enable
0718	Bushing Voltage Phase Rotation	1	BYTE		A-B-C, C-B-A, etc. bushing connection
0719	Voltage Sensor Quality	1	BYTE		Type of voltage sensor used
071A	RIF Type	21	STRING		Type of interface to recloser
072F	Reclose Time Adjuster	4	FLOAT		Correction factor for reclose timing
0733	Phase 1-2 Duty Figure of Merit	4	FLOAT		Bushing 1-2 interrupter duty 100% value
0737	Phase 3-4 Duty Figure Of Merit	4	FLOAT		Bushing 3-4 interrupter duty 100% value
073B	Phase 5-6 Duty Figure Of Merit	4	FLOAT		Bushing 5-6 interrupter duty 100% value
073F	Reserved	4	FLOAT		

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0743	CT Ratio	4	FLOAT		CT Ratio
0747	Primary "Voltage Present" threshold	4	FLOAT		Primary "Voltage Present" indication threshold
074B	User ID	82	STRING		User programmable node description, etc.
079D	Bushing 1 Nominal RIF Input Voltage	1	ENUMERATION		{0=12, 1=120, 2=240}
079E	Bushing 2 Nominal RIF Input Voltage	1	ENUMERATION		{0=12, 1=120, 2=240}
079F	Bushing 3 Nominal RIF Input Voltage	1	ENUMERATION		{0=12, 1=120, 2=240}
07A0	Bushing 4 Nominal RIF Input Voltage	1	ENUMERATION		{0=12, 1=120, 2=240}
07A1	Bushing 5 Nominal RIF Input Voltage	1	ENUMERATION		{0=12, 1=120, 2=240}
07A2	Bushing 6 Nominal RIF Input Voltage	1	ENUMERATION		{0=12, 1=120, 2=240}
07A3	Bushing 1 Adjusted Voltage Sensor Ratio	4	FLOAT		Effective PT Ratio
07A7	Bushing 2 Adjusted Voltage Sensor Ratio	4	FLOAT		Effective PT Ratio
07AB	Bushing 3 Adjusted Voltage Sensor Ratio	4	FLOAT		Effective PT Ratio
07AF	Bushing 4 Adjusted Voltage Sensor Ratio	4	FLOAT		Effective PT Ratio
07B3	Bushing 5 Adjusted Voltage Sensor Ratio	4	FLOAT		Effective PT Ratio
07B7	Bushing 6 Adjusted Voltage Sensor Ratio	4	FLOAT		Effective PT Ratio
07BB	Bushing 1 Voltage Sensor Angle Correction	4	FLOAT		Phase Offset in degrees
07BF	Bushing 2 Voltage Sensor Angle Correction	4	FLOAT		Phase Offset in degrees
07C3	Bushing 3 Voltage Sensor Angle Correction	4	FLOAT		Phase Offset in degrees
07C7	Bushing 4 Voltage Sensor Angle Correction	4	FLOAT		Phase Offset in degrees
07CB	Bushing 5 Voltage Sensor Angle Correction	4	FLOAT		Phase Offset in degrees
07CF	Bushing 6 Voltage Sensor Angle Correction	4	FLOAT		Phase Offset in degrees
07D3	Power Factor sign convention	2	ENUMERATION		0 = Cooper, 1 = Classic cosine
	Switch Characteristics Data Configuration		OBJECT	Configuration	Switch driver and control parameters
07D5	Min Trip Pulse	2	INTEGER		Minimum trip pulse time
07D7	Min Close Pulse	2	INTEGER		Minimum close pulse time
07D9	Max Trip Time	2	INTEGER		Maximum trip on time
07DB	Max Close Time	2	INTEGER		Maximum close on time
	Switch Retry Data Configuration		OBJECT	Configuration	Switch retry parameters
07DD	Close Retry Interval	4	LONG		Period to wait between close attempts
07E1	Maximum Number Retry Attempts	2	INTEGER		Maximum number of times to try closing
	Measured Calibration Values		OBJECT	Configuration	Desired values to use for computing new calibration
07E3	Phase 1 Voltage	4	FLOAT		Voltage at bushing 1-2
07E7	Phase 3 Voltage	4	FLOAT		Voltage at bushing 3-4
07EB	Phase 5 Voltage	4	FLOAT		Voltage at bushing 5-6
07EF	Phase 1-2 Current	4	FLOAT		Current through bushing 1-2, low range channel
07F3	Phase 3-4 Current	4	FLOAT		Current through bushing 3-4, low range channel
07F7	Phase 5-6 Current	4	FLOAT		Current through bushing 5-6, low range channel

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
07FB	Phase 1-2 Power Factor	4	FLOAT		Power factor for bushing 1-2
07FF	Phase 3-4 Power Factor	4	FLOAT		Power factor for bushing 3-4
0803	Phase 5-6 Power Factor	4	FLOAT		Power factor for bushing 5-6
0807	Battery Voltage	4	FLOAT		Unloaded battery voltage
080B	Battery Current	4	FLOAT		Battery current
	Scale Factor Data		OBJECT	Configuration	Analog scaling factors
080F	Analog input channel 1 Scale Factor	4	FLOAT		Analog input channel 1 Scale Factor
0813	Analog input channel 2 Scale Factor	4	FLOAT		Analog input channel 2 Scale Factor
0817	Analog input channel 3 Scale Factor	4	FLOAT		Analog input channel 3 Scale Factor
081B	Analog input channel 4 Scale Factor	4	FLOAT		Analog input channel 4 Scale Factor
081F	Analog input channel 5 Scale Factor	4	FLOAT		Analog input channel 5 Scale Factor
0823	Analog input channel 6 Scale Factor	4	FLOAT		Analog input channel 6 Scale Factor
0827	Analog input channel 7 Scale Factor	4	FLOAT		Analog input channel 7 Scale Factor
082B	Analog input channel 8 Scale Factor	4	FLOAT		Analog input channel 8 Scale Factor
082F	Analog input channel 9 Scale Factor	4	FLOAT		Analog input channel 9 Scale Factor
0833	Analog input channel 10 Scale Factor	4	FLOAT		Analog input channel 10 Scale Factor
0837	Analog input channel 11 Scale Factor	4	FLOAT		Analog input channel 11 Scale Factor
083B	Analog input channel 12 Scale Factor	4	FLOAT		Analog input channel 12 Scale Factor
083F	Analog input channel 13 Scale Factor	4	FLOAT		Analog input channel 13 Scale Factor
0843	Analog input channel 14 Scale Factor	4	FLOAT		Analog input channel 14 Scale Factor
0847	Analog input channel 15 Scale Factor	4	FLOAT		Analog input channel 15 Scale Factor
084B	Analog input channel 16 Scale Factor	4	FLOAT		Analog input channel 16 Scale Factor
	Logical channel assignment data		OBJECT	Configuration	Logical channel analog input assignments
084F	Logical channel 1 analog input assignment	2	INTEGER		Logical channel 1 analog input assignment
0851	Logical channel 2 analog input assignment	2	INTEGER		Logical channel 2 analog input assignment
0853	Logical channel 3 analog input assignment	2	INTEGER		Logical channel 3 analog input assignment
0855	Logical channel 4 analog input assignment	2	INTEGER		Logical channel 4 analog input assignment
0857	Logical channel 5 analog input assignment	2	INTEGER		Logical channel 5 analog input assignment
0859	Logical channel 6 analog input assignment	2	INTEGER		Logical channel 6 analog input assignment
085B	Logical channel 7 analog input assignment	2	INTEGER		Logical channel 7 analog input assignment
085D	Logical channel 8 analog input assignment	2	INTEGER		Logical channel 8 analog input assignment
085F	Logical channel 9 analog input assignment	2	INTEGER		Logical channel 9 analog input assignment
0861	Logical channel 10 analog input assignment	2	INTEGER		Logical channel 10 analog input assignment
0863	Logical channel 11 analog input assignment	2	INTEGER		Logical channel 11 analog input assignment
0865	Logical channel 12 analog input assignment	2	INTEGER		Logical channel 12 analog input assignment
0867	Logical channel 13 analog input assignment	2	INTEGER		Logical channel 13 analog input assignment
0869	Logical channel 14 analog input assignment	2	INTEGER		Logical channel 14 analog input assignment
086B	Logical channel 15 analog input assignment	2	INTEGER		Logical channel 15 analog input assignment
086D	Logical channel 16 analog input assignment	2	INTEGER		Logical channel 16 analog input assignment
086F	Logical channel 17 analog input assignment	2	INTEGER		Logical channel 17 analog input assignment

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0871	Logical channel 18 analog input assignment	2	INTEGER		Logical channel 18 analog input assignment
0873	Logical channel 19 analog input assignment	2	INTEGER		Logical channel 19 analog input assignment
0875	Logical channel 20 analog input assignment	2	INTEGER		Logical channel 20 analog input assignment
	Power Monitor Programming Data		OBJECT	Configuration	Power Monitor calibration factors
0877	PM Chan 1 Scale Factor	4	FLOAT		Power monitor channel 1 scale factor
087B	PM Chan 2 Scale Factor	4	FLOAT		Power monitor channel 2 scale factor
087F	PM Chan 3 Scale Factor	4	FLOAT		Power monitor channel 3 scale factor
0883	PM Chan 4 Scale Factor	4	FLOAT		Power monitor channel 4 scale factor
	Currently Connected Comm Port Programming Data		OBJECT	Configuration	Presently connected comm port programming information
0887	Port Handle	2	INTEGER		Comm port ID
0889	Protocol ID	22	STRING		Protocol ID
089F	Protocol Version	4	INTEGER		Protocol version
08A3	Protocol Revision	4	INTEGER		Protocol revision
08A7	Size	2	INTEGER		Size of valid data object including header
08A9	Baud Rate	4	LONG		Port Baud rate
08AD	Sync Time	4	LONG		Dead line sync period
08B1	Remote Address	2	INTEGER		Device remote address
08B3	Master Address	2	INTEGER		Master station address
08B5	Handshake Mode	2	INTEGER		Method for using handshake signals
08B7	Tx Enable Delay	4	LONG		Delay from start of enable to start of data tranmission
08BB	Tx Disable Delay	4	LONG		Delay from end of data tranmission to start of enable
08BF	Remaining Comm Programming values	178			Remaining unknown items for comm programming
	Port 1 Programming Data		OBJECT	Configuration	Comm port 1 programming information
0971	Port Handle	2	INTEGER		Comm port ID
0973	Protocol ID	22	STRING		Protocol ID
0989	Protocol Version	4	INTEGER		Protocol version
098D	Protocol Revision	4	INTEGER		Protocol revision
0991	Size	2	INTEGER		Size of valid data object including header
0993	Baud Rate	4	LONG		Port Baud rate
0997	Sync Time	4	LONG		Dead line sync period
099B	Remote Address	2	INTEGER		Device remote address
099D	Master Address	2	INTEGER		Master station address
099F	Handshake Mode	2	INTEGER		Method for using handshake signals
09A1	Tx Enable Delay	4	LONG		Delay from start of enable to start of data tranmission
09A5	Tx Disable Delay	4	LONG		Delay from end of data tranmission to start of enable
09A9	Remaining Comm Programming values	178			Remaining unknown items for comm programming

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
	Port 2 Programming Data		OBJECT	Configuration	Comm port 2 programming information
0A5B	Port Handle	2	INTEGER		Comm port ID
0A5D	Protocol ID	22	STRING		Protocol ID
0A73	Protocol Version	4	INTEGER		Protocol version
0A77	Protocol Revision	4	INTEGER		Protocol revision
0A7B	Size	2	INTEGER		Size of valid data object including header
0A7D	Baud Rate	4	LONG		Port Baud rate
0A81	Sync Time	4	LONG		Dead line sync period
0A85	Remote Address	2	INTEGER		Device remote address
0A87	Master Address	2	INTEGER		Master station address
0A89	Handshake Mode	2	INTEGER		Method for using handshake signals
0A8B	Tx Enable Delay	4	LONG		Delay from start of enable to start of data tranmission
0A8F	Tx Disable Delay	4	LONG		Delay from end of data tranmission to start of enable
0A93	Remaining Comm Programming values	178			Remaining unknown items for comm programming
	Port 3 Programming Data		OBJECT	Configuration	Comm port 3 programming information
0B45	Port Handle	2	INTEGER		Comm port ID
0B47	Protocol ID	22	STRING		Protocol ID
0B5D	Protocol Version	4	INTEGER		Protocol version
0B61	Protocol Revision	4	INTEGER		Protocol revision
0B65	Size	2	INTEGER		Size of valid data object including header
0B67	Baud Rate	4	LONG		Port Baud rate
0B6B	Sync Time	4	LONG		Dead line sync period
0B6F	Remote Address	2	INTEGER		Device remote address
0B71	Master Address	2	INTEGER		Master station address
0B73	Handshake Mode	2	INTEGER		Method for using handshake signals
0B75	Tx Enable Delay	4	LONG		Delay from start of enable to start of data tranmission
0B79	Tx Disable Delay	4	LONG		Delay from end of data tranmission to start of enable
0B7D	Remaining Comm Programming values	178			Remaining unknown items for comm programming
	LS Configuration		OBJECT	Configuration	LS function programming information
0C2F	Utility Code	2	INTEGER		Utility Code to specifiy special versions
0C31	Feeder ID	2	INTEGER		ID for which feeder this control is on
0C33	LS Function	1	(Tie, sectionalizer)		Type of LS function
0C34	Auto reset	1	BOOLEAN		Auto reset of sectionalizing control
0C35	Auto reset time delay	4	LONG		Auto reset time delay
0C39	Auto close on auto reset	1	BOOLEAN		Auto close on auto reset
0C3A	Auto close on manual reset	1	BOOLEAN		Auto close on manual reset
0C3B	Reset on manual trip	1	BOOLEAN		Reset on manual trip
0C3C	Allow close	1	BOOLEAN		Allow close

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0C3D	Reset on manual close	1	BOOLEAN		Reset on manual close
0C3E	Disable source side LS	1	BOOLEAN		Disable source side LS
0C3F	Disable load side LS	1	BOOLEAN		Disable load side LS
0C40	Disable LS	1	BOOLEAN		Disable LS completely
0C41	Source side voltage loss response mode	1	(3 phase, single phase)		Source side voltage loss response mode
0C42	Pad	1	PAD		
0C43	Source side voltage loss transfer time	4	LONG		Source side voltage loss transfer time
0C47	Source side action on loss of voltage loss transfer	1	(None, trip, close)		Source side action on loss of voltage loss transfer
0C48	Source side ground trip block function	1	(None, latched, momemtary)		Source side ground trip block function
0C49	Source side non-reclose function	1	(None, latched, momemtary)		Source side non-reclose function
0C4A	Source side alternate profile function	1	(None, latched, momemtary)		Source side alternate profile function
0C4B	Source side alternate profile number	2	INTEGER		Source side alternate profile number
0C4D	Source side switch mode function	1	BOOLEAN		Source side switch mode function
0C4E	Pad	1	PAD		
0C4F	Source side momentary time	4	LONG		Source side momentary time
0C53	Load side voltage loss response mode	1	(3 phase, single phase)		Load side voltage loss response mode
0C54	Pad	1	PAD		
0C55	Load side voltage loss transfer time	4	LONG		Load side voltage loss transfer time
0C59	Load side action on loss of voltage loss transfer	1	(None, trip, close)		Load side action on loss of voltage loss transfer
0C5A	Load side ground trip block function	1	(None, latched, momemtary)		Load side ground trip block function
0C5B	Load side non-reclose function	1	(None, latched, momemtary)		Load side non-reclose function
0C5C	Load side alternate profile function	1	(None, latched, momemtary)		Load side alternate profile function
0C5D	Load side alternate profile number	2	INTEGER		Load side alternate profile number
0C5F	Load side switch mode function	1	BOOLEAN		Load side switch mode function
0C60	Pad	1	PAD		
0C61	Load side momentary time	4	LONG		Load side momentary time
	Voltage/Frequency Protection Configuration		OBJECT	Configuration	Voltage / Frequency protection programming information
0C65	Load shed voltage sensing mode	1	ENUM		{ThreePhase=0, SinglePhase=1}
0C66	Under frequency load shed trip enable	1	BOOLEAN		{False=0, True=1}
0C67	Over frequency load shed trip enable	1	BOOLEAN		{False=0, True=1}
0C68	Under voltage load shed trip enable	1	BOOLEAN		{False=0, True=1}

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0C69	Over voltage load shed trip enable	1	BOOLEAN		{False=0, True=1}
0C6A	Pad	1	PAD		
0C6B	Load shed under frequency trip point	4	FLOAT		Hertz
0C6F	Load shed over frequency trip point	4	FLOAT		Hertz
0C73	Load shed under voltage trip point	4	FLOAT		Volts
0C77	Load shed over voltage trip point	4	FLOAT		Volts
0C7B	Load shed frequency time	4	INTEGER		Cycles
0C7F	Load shed voltage time	4	INTEGER		Milliseconds
0C83	Restore voltage sensing mode	1	ENUM		{ThreePhase=0, SinglePhase=1, SinglePhaseWithInhibit=2}
0C84	Voltage Restoration enable	1	BOOLEAN		{False=0, True=1}
0C85	Frequency Restoration enable	1	BOOLEAN		{False=0, True=1}
0C86	Pad	1	PAD		
0C87	Frequency Restoration Low limit	4	FLOAT		Hertz
0C8B	Frequency Restoration High limit	4	FLOAT		Hertz
0C8F	Voltage Restoration Low limit	4	FLOAT		Volts
0C93	Voltage Restoration High limit	4	FLOAT		Volts
0C97	Restoration time delay	4	INTEGER		Milliseconds
0C9B	Minimum voltage for frequency measurement	4	FLOAT		Volts
	Calibration Factors **FACTORY USE ONLY**		OBJECT	Configuration	Calibration information
0C9F	Reserved	4			**Note: Calibration Factors are for factory use only.**
0CA3	Reserved	4			Control misoperation may result if modified
0CA7	Reserved	4			without authorization.
0CAB	Reserved	4			
0CAF	Reserved	4			
0CB3	Reserved	4			
0CB7	Reserved	4			
0CBB	Reserved	4			
0CBF	Reserved	4			
0CC3	Reserved	4			
0CC7	Reserved	4			
0CCB	Reserved	4			
0CCF	Reserved	4			
0CD3	Reserved	4			
0CD7	Reserved	4			
0CDB	Reserved	4			
0CDF	Reserved	4			
0CE3	Reserved	4			
0CE7	Reserved	4			
0CEB	Reserved	4			
0CEF	Reserved	4			
0CF3	Reserved	4			

Offset	Element Name	Data Size (in bytes)	Data Type	Usage	Description
0CF7	Reserved	4			
0CFB	Reserved	4			
0CFF	Reserved	4			
0D03	Reserved	4			
0D07	Reserved	4			
0D0B	Reserved	4			
0D0F	Reserved	4			
0D13	Reserved	4			
0D17	Reserved	4			
0D1B	Reserved	4			
0D1F	Reserved	4			
0D23	Reserved	4			
0D27	Reserved	4			
0D2B	Reserved	4			
0D2F	Reserved	4			
0D33	Reserved	4			
0D37	Reserved	4			
0D3B	Reserved	4			
0D3F	Reserved	2			
0D41	Reserved	4			
	Battery Monitor Calibration Factors **FACTORY USE ONLY**		OBJECT	Configuration	Battery Monitor calibration information
0D45	Reserved	4			**Note: Battery Monitor Calibration Factors are for**
0D49	Reserved	4			**factory use only.** Control misoperation may result if
0D4D	Reserved	4			modified without authorization.
0D51	Reserved	4			
0D55	Reserved	2			
0D57	Reserved	4			
	Triple - Single Configuration NOT USED DB 15 and Higher		OBJECT	Configuration	Triple - Single programming information
0D5B	Reserved	1	PAD		
0D5C	Reserved	1	PAD		
	Manual Operations Delays		OBJECT	Configuration	Manual Operation Delay programming information
0D5D	Close delay	2	INTEGER		Close safety delay (in seconds)
0D5F	Trip delay	2	INTEGER		Trip safety delay (in seconds)

INPUT SUBSYSTEM - Assignments for use in Time-tagged Retrieval					
	ARRAY System Event Recorder			Monitor	System event recorder information
	Event Record n				
	Number of records		BYTE		Number of records transfered in this transaction
	Event type		BYTE		Low byte of event type ID code
	Date Of Entry		INTEGER		BCD Julian date that event occurred
	Hours of Entry		BYTE		BCD hour that event occurred
	Minutes of Entry		BYTE		BCD minute that event occurred
	Seconds of Entry		BYTE		BCD second that event occurred
	Year of Entry		INTEGER		Year that event occurred
	Event type		BYTE		High byte of event type ID code
	Data value 1		INTEGER		1st event data value
	Data value 2		INTEGER		2nd event data value
	Data value 3		INTEGER		3rd event data value
	Data value 4		INTEGER		4th event data value
	ARRAY Error Event Recorder			Monitor	Error event recorder information
	Error Event Record n				
	Number of records		BYTE		Number of records transfered in this transaction
	Event type		BYTE		Low byte of event ID code
	Date Of Entry		INTEGER		BCD Julian date that event occurred
	Hours of Entry		BYTE		BCD hour that event occurred
	Minutes of Entry		BYTE		BCD minute that event occurred
	Seconds of Entry		BYTE		BCD second that event occurred
	Year of Entry		INTEGER		Year that event occurred
	Event type		BYTE		Event type code
	Identifier		BYTE		High byte of event ID code
	Data value 1		INTEGER		1st event data value
	Data value 2		INTEGER		2nd event data value
	Data value 3		INTEGER		3rd event data value
	Data value 4		INTEGER		4th event data value
	ARRAY Profile Recorder			Monitor	Profile recorder information
	Profile Record n				
	Number of records		BYTE		Number of records transfered in this transaction
	Event type		BYTE		Low byte of event ID code
	Date Of Entry		INTEGER		BCD Julian date that profile record occurred
	Hours of Entry		BYTE		BCD hour that profile record occurred
	Minutes of Entry		BYTE		BCD minute that profile record occurred
	Seconds of Entry		BYTE		BCD second that profile record occurred
	Year of Entry		INTEGER		Year that profile record occurred
	Event type		BYTE		Event type code
	Identifier		BYTE		High byte of event ID code
	Data value 1		INTEGER		1st profile record data value
	Data value 2		INTEGER		2nd profile record data value

	Data value 3		INTEGER		3rd profile record data value
	Data value 142		INTEGER		141st profile record data value
	ARRAY Active Alarms		OBJECT	Monitor	Alarm recorder - active alarm reports
	Active Alarm Record n				
	Number of records		BYTE		Number of records transfered in this transaction
	Event type		BYTE		Low byte of event ID code
	Date Of Entry		INTEGER		BCD Julian date that alarm went active
	Hours of Entry		BYTE		BCD hour that alarm went active
	Minutes of Entry		BYTE		BCD minute that alarm went active
	Seconds of Entry		BYTE		BCD second that alarm went active
	Year of Entry		INTEGER		Year that alarm went active
	Priority		BYTE		Alarm priority
	Identifier		BYTE		High byte of event ID code
	ARRAY Inactive Alarms		OBJECT	Monitor	Alarm recorder - Inactive alarm reports
	Inactive Alarm Record n				
	Number of records		BYTE		Number of records transfered in this transaction
	Event type		BYTE		Low byte of event ID code
	Date Of Entry		INTEGER		BCD Julian date that alarm went inactive
	Hours of Entry		BYTE		BCD hour that alarm went inactive
	Minutes of Entry		BYTE		BCD minute that alarm went inactive
	Seconds of Entry		BYTE		BCD second that alarm went inactive
	Year of Entry		INTEGER		Year that alarm went inactive
	Priority		BYTE		Alarm priority
	Identifier		BYTE		High byte of event ID code
	ARRAY Active/changed Alarms		OBJECT	Monitor	Alarm recorder - Active/changed alarm reports
	Active/changed Alarm Record n				
	Number of records		BYTE		Number of records transfered in this transaction
	Event type		BYTE		Low byte of event ID code
	Date Of Entry		INTEGER		BCD Julian date that alarm went active/changed
	Hours of Entry		BYTE		BCD hour that alarm went active/changed
	Minutes of Entry		BYTE		BCD minute that alarm went active/changed
	Seconds of Entry		BYTE		BCD second that alarm went active/changed
	Year of Entry		INTEGER		Year that alarm went active/changed
	Priority		BYTE		Alarm priority
	Identifier		BYTE		High byte of event ID code
	ARRAY Inactive/changed Alarms		OBJECT	Monitor	Alarm recorder - Inactive/changed alarm reports
	Inactive/changed Alarm Record n				
	Number of records		BYTE		Number of records transfered in this transaction
	Event type		BYTE		Low byte of event ID code
	Date Of Entry		INTEGER		BCD Julian date that alarm went inactive/changed
	Hours of Entry		BYTE		BCD hour that alarm went inactive/changed

	Minutes of Entry		BYTE		BCD minute that alarm went inactive/changed
	Seconds of Entry		BYTE		BCD second that alarm went inactive/changed
	Year of Entry		INTEGER		Year that alarm went inactive/changed
	Priority		BYTE		Alarm priority
	Identifier		BYTE		High byte of event ID code
	ARRAY Active/changed/suppressed Alarms		OBJECT	Monitor	Alarm recorder - active/changed/suppressed alarm reports
	Active/changed/suppressed Alarm Record n				
	Number of records		BYTE		Number of records transfered in this transaction
	Event type		BYTE		Low byte of event ID code
	Date Of Entry		INTEGER		BCD Julian date that alarm went active/changed/suppressed
	Hours of Entry		BYTE		BCD hour that alarm went active/changed/suppressed
	Minutes of Entry		BYTE		BCD minute that alarm went active/changed/suppressed
	Seconds of Entry		BYTE		BCD second that alarm went active/changed/suppressed
	Year of Entry		INTEGER		Year that alarm went active/changed/suppressed
	Priority		BYTE		Alarm priority
	Identifier		BYTE		High byte of event ID code
	ARRAY Inactive/changed/suppressed Alarms		OBJECT	Monitor	Alarm recorder - Inactive/changed/suppressed alarm reports
	Inactive/changed/suppressed Alarm Record n				
	Number of records		BYTE		Number of records transfered in this transaction
	Event type		BYTE		Low byte of event ID code
	Date Of Entry		INTEGER		BCD Julian date that alarm went inactive/changed/suppressed
	Hours of Entry		BYTE		BCD hour that alarm went inactive/changed/suppressed
	Minutes of Entry		BYTE		BCD minute that alarm went inactive/changed/suppressed
	Seconds of Entry		BYTE		BCD second that alarm went inactive/changed/suppressed
	Year of Entry		INTEGER		Year that alarm went inactive/changed/suppressed
	Priority		BYTE		Alarm priority
	Identifier		BYTE		High byte of event ID code
	ARRAY Active/changed/unsuppressed Alarms		OBJECT	Monitor	Alarm recorder - active/changed/unsuppressed alarm reports
	Active/changed/unsuppressed Alarm Record n				
	Number of records		BYTE		Number of records transfered in this transaction
	Event type		BYTE		Low byte of event ID code
	Date Of Entry		INTEGER		BCD Julian date that alarm went active/changed/unsuppressed
	Hours of Entry		BYTE		BCD hour that alarm went active/changed/unsuppressed
	Minutes of Entry		BYTE		BCD minute that alarm went active/changed/unsuppressed
	Seconds of Entry		BYTE		BCD second that alarm went active/changed/unsuppressed
	Year of Entry		INTEGER		Year that alarm went active/changed/unsuppressed
	Priority		BYTE		Alarm priority
	Identifier		BYTE		High byte of event ID code

	ARRAY Inactive/changed/unsuppressed Alarms		OBJECT	Monitor	Alarm recorder - Inactive/changed/unsuppressed alarm reports
	Inactive/changed/unsuppressed Alarm Record n				
	Number of records		BYTE		Number of records transfered in this transaction
	Event type		BYTE		Low byte of event ID code
	Date Of Entry		INTEGER		BCD Julian date that alarm went inactive/changed/unsuppressed
	Hours of Entry		BYTE		BCD hour that alarm went inactive/changed/unsuppressed
	Minutes of Entry		BYTE		BCD minute that alarm went inactive/changed/unsuppressed
	Seconds of Entry		BYTE		BCD second that alarm went inactive/changed/unsuppressed
	Year of Entry		INTEGER		Year that alarm went inactive/changed/unsuppressed
	Priority		BYTE		Alarm priority
	Identifier		BYTE		High byte of event ID code

Time Tagged formats for the F5 recloser control										
There are 12 different time tagged files which can be retrieved from the F5.										
The predefined Time-Tagged record format contains the lo byte of the event/alarm ID, along with the julian date, and time of day in HH:MM:SS.										
See Product Data #2179 for details on Time Tagged formats.										
The 16-bit value fields contain the rest of the information, including milliseconds, year, hi ID byte, event/alarm type, and other data varying on file.										
History files										
File #	File description									
0	System events									
1	Error events									
2	Profile events									
3	Active alarm records									
4	Inactive alarm records									
5	Active changed alarm records									
6	Inactive changed alarm records									
7	Active alarm records - unsuppressed									
8	Inactive alarm records - unsuppressed									
9	Active changed alarm records - unsuppressed									
10	Inactive changed alarm records - unsuppressed									
Predefined Time Tagged header format										
Byte #	Description									
1	Number Of Sets									
2	Event Type (Event/Alarm Id lo byte)									
3	Julian Date BCD (x100)									
4	Julian Date BCD									
5	Hour BCD									
6	Minutes BCD									
7	Seconds BCD									
System and Error Events										
All system and error events use similar data formats.										
The EventType field represents a System Operation, System Alarm, or Error event.										
The optional data fields contain data which varies based on event ID.										
The event ID has its' lo byte contained in the predefined Event type field, and hi byte contained in value word #3 hi byte.										
System Event data format										
Word #	Description									
1 Lo	Milliseconds lo byte									
1 Hi	Milliseconds hi byte									
2 Lo	Year lo byte									
2 Hi	Year hi byte									
3 Lo	Event Type {SystemOperation=0, SystemAlarm=1, Error=2}									
3 Hi	Event ID hi byte (lo byte of ID is in predefined Event Type field)									
4 Lo	Optional data value 1 lo byte									

4 Hi	Optional data value 1 hi byte									
5 Lo	Optional data value 2 lo byte									
5 Hi	Optional data value 2 hi byte									
6 Lo	Optional data value 3 lo byte									
6 Hi	Optional data value 3 hi byte									
7 Lo	Optional data value 4 lo byte									
7 Hi	Optional data value 4 hi byte									
8 Lo	Optional data value 5 lo byte									
8 Hi	Optional data value 5 hi byte									
Error Event data format										
Word #	Description									
1 Lo	Milliseconds lo byte									
1 Hi	Milliseconds hi byte									
2 Lo	Year lo byte									
2 Hi	Year hi byte									
3 Lo	Event Type (Always Error)									
3 Hi	Event ID hi byte (lo byte of ID is in predefined Event Type field)									
4 Lo	Optional data value 1 lo byte									
4 Hi	Optional data value 1 hi byte									
Profile events										
The size field represents the number of optional data bytes contained in the remainder of the event.										
Data values are 16-bit fixed-point values and use the scale factors as specified for Basic Scan.										
Profile Event data format										
Word #	Description									
1 Lo	Milliseconds lo byte									
1 Hi	Milliseconds hi byte									
2 Lo	Year lo byte									
2 Hi	Year hi byte									
3 Lo	Event Type {Profile=3}									
3 Hi	Event ID hi byte (lo byte of ID in predefined Event Type field)									
4 Lo	Size lo byte									
4 Hi	Size hi byte									
5 Lo	Optional data value 1 lo byte									
5 Hi	Optional data value 1 hi byte									
6 Lo	Optional data value 2 lo byte									
6 Hi	Optional data value 2 hi byte									
...	...									
...	...									
142 Lo	Optional data value 142 lo byte									
142 Hi	Optional data value 142 hi byte									
Alarm Records										

All alarm record files use the same format.										
The main timestamp represents the last time the alarm reached its' current state.										
The alternate timestamp represents the last time the alarm reached its' previous state, and is in the identical format to the main timestamp.										
The various alarm history files are virtual files.										
These are not physically separate files, just different ways of viewing the information within the alarm record file.										
To read out the complete contents of any one of these virtual alarm files, contiguous requests must be made within the same file, until NumberOfSets = 0.										
Alarm Record data format										
Word #	Description									
1 Lo	Milliseconds lo byte									
1 Hi	Milliseconds hi byte									
2 Lo	Year lo byte									
2 Hi	Year hi byte									
3 Lo	Alarm Priority									
3 Hi	Event ID hi byte (lo byte of ID in Event Type field)									
4 Lo	Unused									
4 Hi	Julian Date BCD (x100)									
5 Lo	Julian Date BCD									
5 Hi	Hour BCD									
6 Lo	Minutes BCD									
6 Hi	Seconds BCD									
7 Lo	Milliseconds lo byte									
7 Hi	Milliseconds hi byte									
8 Lo	Year lo byte									
8 Hi	Year hi byte									
Data Value mapping										
The following table shows how the native F5 data types are mapped onto the PG&E Time Tagged 16-bit optional data values.										
All fixed point values use the scale factors as specified for Basic Scan.										
See the F5 Product Data for a list of which events contain which data types.										
Data Value mapping from F5 native format										
F5 Event Type	F5 native data type	Optional data values used	Time Tagged format							
1 (System Operation)	None	None								
2 (System Data Alarm)	Float	Value 1	16-bit fixed point							
3 (Error)	None	None								
4 (Profile)	16-bit fixed point	Value 1..142 (Variable)	16-bit fixed point							
5 (System Op w/Currents)	Float	Value 1..4	16-bit fixed point (Phase Current A,B,C,Gnd)							
6 (System Status Alarm)	Boolean	Value 1	Boolean in Lo byte							
7 (Time)	SystemTime_t	Value 1..5	Same as Alarm Record 4..8							
8 (Error w/Integer)	32-bit Unsigned Integer	Value 1	16-bit unsigned integer							
9 (Error, Direct)	Internal use only	Value 1..5	Internal use only							
10 (LS Voltage Status)	Booleans	Value 1..3	6 Booleans mapped alternating Lo Byte - Hi Byte (Phase Voltage states A,B,C,X,Y,Z)							
11 (Voltage / Frequency)	Float	Value 1..4	16-bit fixed point (Frequency, Phase Voltage A,B,C)							

12 (Fault Location)	FaultLocation_t	Value 1	16-bit unsigned integer (Fault Distance)				
		Value 2	16-bit unsinged integer (SystemTime_t - Date)				
		Value 3	16-bit unsigned integer (SystemTime_t - Time in milliseconds Lo Word)				
		Value 4	16-bit unsigned integer (SystemTime_t - Time in milliseconds Hi Word)				
		Value 5	16-bit unsigned integer (Distance Units - Miles or Km)				

INPUT SUBSYSTEM - Sequence Number Assignments for use in Basic Scan, Scan Inclusive, RBX, Scan-by-Table and U-2 Mode -- ESKOM Version						
Sequence	Element Name		Data Type	Usage	Description	
00 - 10	2-Bit Port Logic Output		BITSTRING	Monitor	Port status output from custom logic	
30	Simple Port Logic Output, Part 1		BITSTRING	Monitor	Port status output from custom logic	CL Index
			Bit 0		Frequency/Voltage Auto-Restore blocked	7
			Bit 1		Voltage Trip blocked	6
			Bit 2		Frequency Trip blocked	5
			Bit 3		SEF target	4
			Bit 4		Ground fault target	3
			Bit 5		Phase 5-6 fault target	2
			Bit 6		Phase 3-4 fault target	1
			Bit 7		Phase 1-2 fault target	0
			Bit 8		AC power present	15
			Bit 9		Control OK	14
			Bit 10		Control lockout	13
			Bit 11		Recloser open	12
			Bit 12		Recloser closed	11
			Bit 13		Check Battery	10
			Bit 14		Recloser malfunction	9
			Bit 15		Reverse power flow	8
31	Simple Port Logic Output, Part 2		BITSTRING	Monitor	Port status output from custom logic	CL Index
			Bit 0		Normal profile active	23
			Bit 1		Fast trips disabled	22
			Bit 2		Battery test active	21
			Bit 3		Cold load pickup blocked	20
			Bit 4		Local	19
			Bit 5		ARC On	18
			Bit 6		Ground trip blocked	17
			Bit 7		Above minimum trip	16
			Bit 8		Not used	31
			Bit 9		Not used	30
			Bit 10		Frequency Trip	29
			Bit 11		Voltage Trip	28
			Bit 12		Hot line tag active	27
			Bit 13		Alternate profile 3 active	26
			Bit 14		Alternate profile 2 active	25
			Bit 15		Alternate profile 1 active	24
32	Simple Port Logic Output, Part 3		BITSTRING	Monitor	Port status output from custom logic	CL Index
			Bit 0		Target counter on	39
			Bit 1		Operation counter on	38
			Bit 2		Duty accumulator on	37
			Bit 3		Event recorder on	36

Sequence	Element Name		Data Type	Usage	Description	
			Bit 4		Data alarms on	35
			Bit 5		Status alarms on	34
			Bit 6		Data profiler on	33
			Bit 7		Histograms on	32
			Bit 8		Not Used	47
			Bit 9		Not Used	46
			Bit 10		Not Used	45
			Bit 11		Bushings 5-6 Voltage Present	44
			Bit 12		Bushings 3-4 Voltage Present	43
			Bit 13		Bushings 1-2 Voltage Present	42
			Bit 14		SEF On	41
			Bit 15		Active alarms present	40
33	Simple Port Logic Output, Part 4		BITSTRING	Monitor	Port status output from custom logic	CL Index
			Bit 0		Not used	55
			Bit 1		Not used	54
			Bit 2		Not used	53
			Bit 3		Not used	52
			Bit 4		Not used	51
			Bit 5		Not used	50
			Bit 6		Not used	49
			Bit 7		Not used	48
			Bit 8		Trip Circuit Disconnected	63
			Bit 9		Control Door Open	62
			Bit 10		SEF Off	61
			Bit 11		ARC Off	60
			Bit 12		Remote	59
			Bit 13		Not used	58
			Bit 14		Not used	57
			Bit 15		Not used	56
34	Simple Port Logic Input Status, Part 1		BITSTRING	Monitor	Port logic input to custom logic	CL Index
			Bit 0		Normal profile enabled	7
			Bit 1		Test mode off	6
			Bit 2		Event Recorder off	5
			Bit 3		Data alarm recording on	4
			Bit 4		Status alarm recording on	3
			Bit 5		Profiler off	2
			Bit 6		Histogram off	1
			Bit 7		Cold load pickup Block	0
			Bit 8		Battery test on	15
			Bit 9		Fast trips disabled	14
			Bit 10		Hot line tag on	13
			Bit 11		Ground trip block on	12

Sequence	Element Name		Data Type	Usage	Description	
			Bit 12		ARC on	11
			Bit 13		Alternate profile 3 enabled	10
			Bit 14		Alternate profile 2 enabled	9
			Bit 15		Alternate profile 1 enabled	8
35	Simple Port Logic Input Status, Part 2		BITSTRING	Monitor	Port logic input to custom logic	CL Index
			Bit 0		Reserved	23
			Bit 1		Reserved	22
			Bit 2		Reserved	21
			Bit 3		Reserved	20
			Bit 4		SEF on	19
			Bit 5		Reset targets	18
			Bit 6		Close	17
			Bit 7		Lockout	16
			Bit 8		Not used	31
			Bit 9		Not used	30
			Bit 10		Not used	29
			Bit 11		Frequency/Voltage Auto-Restore block	28
			Bit 12		Voltage Trip block	27
			Bit 13		Frequency Trip block	26
			Bit 14		SEF off	25
			Bit 15		ARC off	24
36 - 37	Reserved					
					* LS Controls Only	

OUTPUT SUBSYSTEM - Sequence Number Assignments for use in Select-Before-Operate (SBO) Operations -- ESKOM version					
00-3F	Port Logic Input			Command	Port command input to custom logic
00	Cold load pickup block				
01	Histogram off				
02	Profiler off				
03	Status alarm recording on				
04	Data alarm recording on				
05	Event Recorder off				
06	Test mode off				
07	Normal profile enabled				
08	Alternate profile 1 enabled				
09	Alternate profile 2 enabled				
0A	Alternate profile 3 enabled				
0B	ARC on				
0C	Ground trip block on				
0D	Hot line tag on				
0E	Fast trips disabled				
0F	Battery test on				
10	Lockout				
11	Close				
12	Reset targets				
13	SEF on				
14	Reserved				
15	Reserved				
16	Reserved				
17	Reserved				
18	ARC off				
19	SEF off				
1A	Frequency Trip block				
1B	Voltage Trip block				
1C	Frequency/Voltage Auto-Restore block				
1D - 3F	Reserved				
40 - 64	Assorted Histogram Resets			Command	Reset ALL histograms or the specified histogram
40	Reset ALL histograms				
41	Reset Phase 1-2 current histogram				
42	Reset Phase 3-4 current histogram				
43	Reset Phase 5-6 current histogram				
44	Reset Ground current histogram				
45	Reset Phase 1 Voltage histogram				
46	Reset Phase 3 Voltage histogram				
47	Reset Phase 5 Voltage histogram				
48	Reset Phase 1-2 power factor histogram				
49	Reset Phase 1-2 KVA histogram				
4A	Reset Phase 1-2 KW histogram				

4B	Reset Phase 1-2 KVAR histogram				
4C	Reset Phase 3-4 power factor histogram				
4D	Reset Phase 3-4 KVA histogram				
4E	Reset Phase 3-4 KW histogram				
4F	Reset Phase 3-4 KVAR histogram				
50	Reset Phase 5-6 power factor histogram				
51	Reset Phase 5-6 KVA histogram				
52	Reset Phase 5-6 KW histogram				
53	Reset Phase 5-6 KVAR histogram				
54	Reset Phase Total power factor histogram				
55	Reset Phase Total KVA histogram				
56	Reset Phase Total KW histogram				
57	Reset Phase Total KVAR histogram				
58	Reset Positive sequence current magnitude				
59	Reset Positive sequence current angle				
5A	Reset Negative sequence current magnitude				
5B	Reset Negative sequence current angle				
5C	Reset Zero sequence current magnitude				
5D	Reset Zero sequence current angle				
5E	Reset Positive sequence voltage magnitude				
5F	Reset Positive sequence voltage angle				
60	Reset Negative sequence voltage magnitude				
61	Reset Negative sequence voltage angle				
62	Reset Phase 1-2 current THD histogram				
63	Reset Phase 3-4 current THD histogram				
64	Reset Phase 5-6 current THD histogram				
65	Reset Ground current THD histogram				
66	Reset Phase 1 Voltage THD histogram				
67	Reset Phase 3 Voltage THD histogram				
68	Reset Phase 5 Voltage THD histogram				
69	Calibration Reset			Command	Calibration reset request
6A	OCP Target Reset			Command	OCP Target reset request
6B	Alarm suppression on			Command	Alarm suppression on/off
6C	Unmask all system event recorder entries			Command	Unmask all events request
6D	Mask all system event recorder entries			Command	Mask all events request
6E	Unmask all error event recorder entries			Command	Unmask all events request
6F	Mask all error event recorder entries			Command	Mask all events request
70	Unmask all profile recorder entries			Command	Unmask all events request
71	Mask all profile recorder entries			Command	Mask all events request
72	Reset KWh			Command	Resets kWh accumulation
73	Reset Phase 1-3 Voltage histogram			Command	Resets specified histogram
74	Reset Phase 3-5 Voltage histogram				
75	Reset Phase 5-1 Voltage histogram				
76	Reset Phase 2 Voltage histogram				

77	Reset Phase 4 Voltage histogram				
78	Reset Phase 6 Voltage histogram				
79	Reset Phase 2-4 Voltage histogram				
7A	Reset Phase 4-6 Voltage histogram				
7B	Reset Phase 6-2 Voltage histogram				
7C	Reset Phase 3-4 Frequency				

COOPER Power Systems

1045 Hickory Streeet
Pewaukee, WI 53072
www.cooperpower.com

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