Register List for PM800 Series Power Meters

Firmware Version 12.7xx

2/3/2017

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Model Support
YP Register is supported and published
-- Register is not supported

Register Support
RO Read Only
R/W Read Write
RCW Read Conditional Write (normally a setup register so a setup session must be open to write)
NV = PY When the register is **Non-Volatile**
NV = N When the register is **Volatile**

[620] Ethernet Option Module Configuration

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
620	Duplicate IP Address Check Register	2	Octets	R/W	N	-	-	IP Address Format	Volatile register used for duplicate IP detection. The PM8 writes the requested IP to these registers and signals the ECC to perform a Duplicate IP Check on it.	YP	YP	YP	YP
622	IP Address	2	Octets	R/CW	Y	-	-	IP Address Format	First octet must not be 0x00. Duplicate IP check must be made before writing this value.	YP	YP	YP	YP
624	IP Subnet Mask	2	Octets	R/CW	Y	-	-	IP Address Format	Last octet can not be set to 254. Network part of the mask must be all '1's and device part must be all '0's example: 255.255.255.0 is good 255.253.255.0 is invalid	YP	YP	YP	YP
626	IP Router Address	2	Octets	R/CW	Y	-	-	IP Address Format	No checking is done on the router address	YP	YP	YP	YP
628	Ethernet Physical Connection	1	Integer	R/CW	Y	-	-	0, 3-6	0 = 10T/100TX Auto (Half Duplex) (Default) 3 = 10BaseT (Half Duplex) 4 = 10BaseTX 5 = 100BaseT (Half Duplex) 6 = 100BaseTX	YP	YP	YP	YP
629	Baud Rate	1	Integer	R/CW	Y	-	-	5-11	Currently Supported 5 = 2400 6 = 4800 7 = 9600 8 = 19200 (Default) 9 = 38400	YP	YP	YP	YP

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
630	Parity	1	Integer	R/CW	Y	-	-	0,2	Serial Port Parity 0 = None 2 = Even (Default)	YP	YP	YP	YP
631	Wire Mode	1	Integer	R/CW	Y	-	-	1-2	Serial Port Wire Mode 1 = 2-Wire (Default) 2 = 4-Wire	YP	YP	YP	YP
632	Port Protocol Mode	1	Integer	R/CW	Y	-	-	0-1	0 = Device Selectable (Auto) (Default) 1 = Modbus ASCII	YP	YP	YP	YP
633	PM8ECC Reset Counter	1	Integer	R/W	Y	-	-	0 - 65535	This register is incremented each time the PM8ECC starts up	YP	YP	YP	YP
634	Frame Type	1	Integer	R/CW	Y	-	-	0-1	0 = Ethernet II (Default) 1 = 802.3 SNAP	YP	YP	YP	YP
635	Reserved	5	Integer	-	-	-	-	-		-	-	-	-

IP Address Format

Register Format:

1st Register High byte: IP Address 1st Octet
1st Register Low byte: IP Address 2nd Octet
2nd Register High byte: IP Address 3rd Octet
2nd Register Low byte: IP Address 4th Octet

Range:

00.00.00.0 to 255.255.255.255

[640] Spare (640-1099)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
640	Unused	460								-	-	-	-

[1100] 1s Metering

[1100] 1s Metering – Current

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1100	Current, Phase A	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	RMS	Y P	Y P	Y P	Y P
1101	Current, Phase B	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	RMS	Y P	Y P	Y P	Y P
1102	Current, Phase C	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	RMS	Y P	Y P	Y P	Y P
1103	Current, Neutral	1	Integer	RO	N	B	Amps/Scale	0 – 32,767 (-32,768 if N/A)	RMS (4-wire system and system 12)	Y P	Y P	Y P	Y P
1104	Current, Ground	1	Integer	RO	N	B	Amps/Scale	0 – 32,767 (-32,768 if N/A)	RMS (3-wire system type 31)	Y P	Y P	Y P	Y P
1105	Current, 3-Phase Average	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Calculated mean of Phases A, B & C (A and B for System 12)	Y P	Y P	Y P	Y P
1106	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	-	-	-	-
1107	Current, Unbalance, Phase A	1	Integer	RO	N	xx	0.10%	0 – 1,000		Y P	Y P	Y P	Y P
1108	Current, Unbalance, Phase B	1	Integer	RO	N	xx	0.10%	0 – 1,000		Y P	Y P	Y P	Y P
1109	Current, Unbalance, Phase C	1	Integer	RO	N	xx	0.10%	0 – 1,000		Y P	Y P	Y P	Y P
1110	Current, Unbalance, Max	1	Integer	RO	N	xx	0.10%	0 – 1,000	Percent Unbalance, Worst	Y P	Y P	Y P	Y P
1111	Reserved	9	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	-	-	-	-

[1120] 1s Metering – Voltage

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1120	Voltage, A-B	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	RMS Voltage measured between A & B	Y P	Y P	Y P	Y P
1121	Voltage, B-C	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	RMS Voltage measured between B & C	Y P	Y P	Y P	Y P
1122	Voltage, C-A	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	RMS Voltage measured between C & A	Y P	Y P	Y P	Y P
1123	Voltage, L-L Average	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	RMS 3 Phase Average L-L Voltage	Y P	Y P	Y P	Y P
1124	Voltage, A-N	1	Integer	RO	N	D	Volts/Scale	0 – 32,767 (-32,768 if N/A)	RMS Voltage measured between A & N 4-wire systems and systems 10 and 12	Y P	Y P	Y P	Y P
1125	Voltage, B-N	1	Integer	RO	N	D	Volts/Scale	0 – 32,767 (-32,768 if N/A)	RMS Voltage measured between B & N 4-wire system and system 12	Y P	Y P	Y P	Y P
1126	Voltage, C-N	1	Integer	RO	N	D	Volts/Scale	0 – 32,767 (-32,768 if N/A)	RMS Voltage measured between C & N 4-wire systems only	Y P	Y P	Y P	Y P
1127	Voltage, N-R	1	Integer	RO	N	E	Volts/Scale	0 – 32,767 (-32,768 if N/A)	RMS Voltage measured between N & Meter 4-wire system and system 10 and 12	Y P	Y P	Y P	Y P
1128	Voltage, L-N Average	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	RMS 3-Phase Average L-N Voltage (2 phase Average for system 12)	Y P	Y P	Y P	Y P
1129	Voltage, Unbalance, A-B	1	Integer	RO	N	××	0.10%	0 – 1,000	Percent Voltage Unbalance, Phase A-B (3-wire and 4-wire only)	Y P	Y P	Y P	Y P
1130	Voltage, Unbalance, B-C	1	Integer	RO	N	××	0.10%	0 – 1,000	Percent Voltage Unbalance, Phase B-C (3-wire and 4-wire only)	Y P	Y P	Y P	Y P
1131	Voltage, Unbalance, C-A	1	Integer	RO	N	××	0.10%	0 – 1,000	Percent Voltage Unbalance, Phase C-A (3-wire and 4-wire only)	Y P	Y P	Y P	Y P
1132	Voltage, Unbalance, Max L-L	1	Integer	RO	N	××	0.10%	0 – 1,000	Percent Voltage Unbalance, Worst L-L (3-wire and 4-wire only)	Y P	Y P	Y P	Y P
1133	Voltage, Unbalance, A-N	1	Integer	RO	N	××	0.10%	0 – 1,000 (-32,768 if N/A)	Percent Voltage Unbalance, Phase A-N 4-wire systems and system type 12	Y P	Y P	Y P	Y P
1134	Voltage, Unbalance, B-N	1	Integer	RO	N	××	0.10%	0 – 1,000 (-32,768 if N/A)	Percent Voltage Unbalance, Phase B-N 4-wire systems and system type 12	Y P	Y P	Y P	Y P
1135	Voltage, Unbalance, C-N	1	Integer	RO	N	××	0.10%	0 – 1,000 (-32,768 if N/A)	Percent Voltage Unbalance, Phase C-N 4-wire systems only	Y P	Y P	Y P	Y P
1136	Voltage, Unbalance, Max L-N	1	Integer	RO	N	××	0.10%	0 – 1,000 (-32,768 if N/A)	Percent Voltage Unbalance, Worst L-N 4-wire systems and system type 12	Y P	Y P	Y P	Y P
1137	Reserved	3	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	-	-	-	-

[1140] 1Second Metering – Power

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1140	Real Power, Phase A	1	Integer	RO	N	F	kW/Scale	-32,767 – 32,767 (-32,768 if N/A)	Real Power (PA) 4-wire systems and system types 10, 11, and 12	Y P	Y P	Y P	Y P
1141	Real Power, Phase B	1	Integer	RO	N	F	kW/Scale	-32,767 – 32,767 (-32,768 if N/A)	Real Power (PB) 4-wire systems and system type 12	Y P	Y P	Y P	Y P
1142	Real Power, Phase C	1	Integer	RO	N	F	kW/Scale	-32,767 – 32,767 (-32,768 if N/A)	Real Power (PC) 4-wire systems only	Y P	Y P	Y P	Y P
1143	Real Power, Total	1	Integer	RO	N	F	kW/Scale	-32,767 – 32,767	4-wire system = PA+PB+PC 3-wire system = 3-Phase real power System type 12 = PA + PB System 10, 11 = PA	Y P	Y P	Y P	Y P
1144	Reactive Power, Phase A	1	Integer	RO	N	F	kVAr/Scale	-32,767 – 32,767 (-32,768 if N/A)	Reactive Power (QA) 4-wire systems and system types 10, 11, and 12	Y P	Y P	Y P	Y P
1145	Reactive Power, Phase B	1	Integer	RO	N	F	kVAr/Scale	-32,767 – 32,767 (-32,768 if N/A)	Reactive Power (QB) 4-wire systems and system type 12	Y P	Y P	Y P	Y P
1146	Reactive Power, Phase C	1	Integer	RO	N	F	kVAr/Scale	-32,767 – 32,767 (-32,768 if N/A)	Reactive Power (QC) 4-wire system only	Y P	Y P	Y P	Y P
1147	Reactive Power, Total	1	Integer	RO	N	F	kVAr/Scale	-32,767 – 32,767	4-wire system = QA+QB+QC 3 wire system = 3-Phase reactive power System type 12 = QA + QB System 10, 11 = QA	Y P	Y P	Y P	Y P
1148	Apparent Power, Phase A	1	Integer	RO	N	F	kVA/Scale	-32,767 – 32,767 (-32,768 if N/A)	Apparent Power (SA) 4-wire systems and system types 10, 11, and 12	Y P	Y P	Y P	Y P
1149	Apparent Power, Phase B	1	Integer	RO	N	F	kVA/Scale	-32,767 – 32,767 (-32,768 if N/A)	Apparent Power (SB) 4-wire systems and system type 12 only	Y P	Y P	Y P	Y P
1150	Apparent Power, Phase C	1	Integer	RO	N	F	kVA/Scale	-32,767 – 32,767 (-32,768 if N/A)	Apparent Power (SC) 4-wire system only	Y P	Y P	Y P	Y P
1151	Apparent Power, Total	1	Integer	RO	N	F	kVA/Scale	-32,767 – 32,767	4-wire system = SA+SB+SC 3-wire system = 3-Phase apparent power System type 12 = SA + SB System 10, 11 = SA	Y P	Y P	Y P	Y P
1152	Reserved	8	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	-	-	-	-

[1160] 1Second Metering – Power Factor

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1160	True Power Factor, Phase A	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using the complete harmonic content of real and apparent power. 4-wire systems and system types 10, 11, and 12	Y P	Y P	Y P	Y P
1161	True Power Factor, Phase B	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using the complete harmonic content of real and apparent power. 4-wire systems and system type 12 only	Y P	Y P	Y P	Y P
1162	True Power Factor, Phase C	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using the complete harmonic content of real and apparent power. 4-wire system only	Y P	Y P	Y P	Y P
1163	True Power Factor, Total	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using the complete harmonic content of real and apparent power	Y P	Y P	Y P	Y P
1164	Alternate True Power Factor, Phase A	1	Integer	RO	N	××	0.001	0 – 2,000 (-32,768 if N/A)	Derived using the complete harmonic content of real and apparent power (4-wire systems and system types 10, 11, 12). Reported value is mapped from 0-2000, with 1000 representing unity, values below 1000 representing lagging, and values above 1000 representing leading.	Y P	Y P	Y P	Y P
1165	Alternate True Power Factor, Phase B	1	Integer	RO	N	××	0.001	0 – 2,000 (-32,768 if N/A)	Derived using the complete harmonic content of real and apparent power (4-wire systems and system type 12 only). Reported value is mapped from 0-2000, with 1000 representing unity, values below 1000 representing lagging, and values above 1000 representing leading .	Y P	Y P	Y P	Y P
1166	Alternate True Power Factor, Phase C	1	Integer	RO	N	××	0.001	0 – 2,000 (-32,768 if N/A)	Derived using the complete harmonic content of real and apparent power (4-wire system only). Reported value is mapped from 0-2000, with 1000 representing unity, values below 1000 representing lagging, and values above 1000 representing leading.	Y P	Y P	Y P	Y P
1167	Alternate True Power Factor, Total	1	Integer	RO	N	××	0.001	0 – 2,000 (-32,768 if N/A)	Derived using the complete harmonic content of real and apparent power. Reported value is mapped from 0-2000, with 1000 representing unity, values below 1000 representing lagging, and values above 1000 representing leading.	Y P	Y P	Y P	Y P
1168	Displacement Power Factor, Phase A	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using only fundamental frequency of the real and apparent power. 4-wire systems and system types 10, 11,12	Y P	Y P	Y P	Y P
1169	Displacement Power Factor, Phase B	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using only fundamental frequency of the real and apparent power. 4-wire systems and system type 12 only.	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1170	Displacement Power Factor, Phase C	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using only fundamental frequency of the real and apparent power. 4-wire system only	Y P	Y P	Y P	Y P
1171	Displacement Power Factor, Total	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using only fundamental frequency of the real and apparent power	Y P	Y P	Y P	Y P
1172	Alternate Displacement Power Factor, Phase A	1	Integer	RO	N	××	0.001	0 – 2,000 (-32,768 if N/A)	Derived using only fundamental frequency of the real and apparent power (4-wire systems and system types 10,11, 12). Reported value is mapped from 0-2000, with 1000 representing unity, values below 1000 representing lagging, and values above 1000 representing leading.	Y P	Y P	Y P	Y P
1173	Alternate Displacement Power Factor, Phase B	1	Integer	RO	N	××	0.001	0 – 2,000 (-32,768 if N/A)	Derived using only fundamental frequency of the real and apparent power (4-wire systems and system type 12 only). Reported value is mapped from 0-2000, with 1000 representing unity, values below 1000 representing lagging, and values above 1000 representing leading.	Y P	Y P	Y P	Y P
1174	Alternate Displacement Power Factor, Phase C	1	Integer	RO	N	××	0.001	0 – 2,000 (-32,768 if N/A)	Derived using only fundamental frequency of the real and apparent power (4-wire system only). Reported value is mapped from 0-2000, with 1000 representing unity, values below 1000 representing lagging, and values above 1000 representing leading.	Y P	Y P	Y P	Y P
1175	Alternate Displacement Power Factor, Total	1	Integer	RO	N	××	0.001	0 – 2,000 (-32,768 if N/A)	Derived using only fundamental frequency of the real and apparent power. Reported value is mapped from 0-2000, with 1000 representing unity, values below 1000 representing lagging, and values above 1000 representing leading.	Y P	Y P	Y P	Y P
1176	Reserved	4	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	-	-	-	-

[1180] 1Second Metering – Frequency

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1180	Frequency	1	Integer	RO	N	××	0.01Hz 0.10Hz	(50/60Hz) 2,300 – 6,700 (400Hz) 3,500 – 4,500 (-32,768 if N/A)	Frequency of circuits being monitored. If the frequency is out of range, the register will be -32,768.	Y P	Y P	Y P	Y P
1181	Reserved	9	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	-	-	-	-

[1190] 1Second Metering – 4-Quadrant Power Factor (with load direction)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1190	True Power Factor, Phase A	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using the complete harmonic content of real and apparent power. 4-wire systems and system types 10, 11, and 12 bit 15 – IEC Power Factor Sign (1-negative, 0-positive) bit 14 – PF Load Direction (1-leading, 0-lagging) bits 0-13 – PF Value	Y P	Y P	Y P	Y P
1191	True Power Factor, Phase B	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using the complete harmonic content of real and apparent power. 4-wire systems and system type 12 only bit 15 – IEC Power Factor Sign (1-negative, 0-positive) bit 14 – PF Load Direction (1-leading, 0-lagging) bits 0-13 – PF Value	Y P	Y P	Y P	Y P
1192	True Power Factor, Phase C	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using the complete harmonic content of real and apparent power. 4-wire system only bit 15 – IEC Power Factor Sign (1-negative, 0-positive) bit 14 – PF Load Direction (1-leading, 0-lagging) bits 0-13 – PF Value	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1193	True Power Factor, Total	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using the complete harmonic content of real and apparent power bit 15 – IEC Power Factor Sign (1-negative, 0-positive) bit 14 – PF Load Direction (1-leading, 0-lagging) bits 0-13 – PF Value	Y P	Y P	Y P	Y P
1194	Displacement Power Factor, Phase A	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using only fundamental frequency of the real and apparent power. 4-wire systems and system types 10, 11,12. bit 15 – IEC Power Factor Sign (1-negative, 0-positive) bit 14 – PF Load Direction (1-leading, 0-lagging) bits 0-13 – PF Value	Y P	Y P	Y P	Y P
1195	Displacement Power Factor, Phase B	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using only fundamental frequency of the real and apparent power. 4-wire systems and system type 12 only. bit 15 – IEC Power Factor Sign (1-negative, 0-positive) bit 14 – PF Load Direction (1-leading, 0-lagging) bits 0-13 – PF Value	Y P	Y P	Y P	Y P
1196	Displacement Power Factor, Phase C	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using only fundamental frequency of the real and apparent power. 4-wire system only bit 15 – IEC Power Factor Sign (1-negative, 0-positive) bit 14 – PF Load Direction (1-leading, 0-lagging) bits 0-13 – PF Value	Y P	Y P	Y P	Y P
1197	Displacement Power Factor, Total	1	Integer	RO	N	××	0.001	1,000 -1 to +1 (-32,768 if N/A)	Derived using only fundamental frequency of the real and apparent power bit 15 – IEC Power Factor Sign (1-negative, 0-positive) bit 14 – PF Load Direction (1-leading, 0-lagging) bits 0-13 – PF Value	Y P	Y P	Y P	Y P
1198	Reserved	2	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	-	-	-	-

[1200] Power Quality

[1200] THD

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1200	THD/thd Current, Phase A	1	Integer	RO	N	xx	0.10%	0 – 32,767	Total Harmonic Distortion, Phase A Current See register 3227 for THD/ thd definition	YP	YP	YP	YP
1201	THD/thd Current, Phase B	1	Integer	RO	N	xx	0.10%	0 – 32,767	Total Harmonic Distortion, Phase B Current See register 3227 for THD/ thd definition	YP	YP	YP	YP
1202	THD/thd Current, Phase C	1	Integer	RO	N	xx	0.10%	0 – 32,767	Total Harmonic Distortion, Phase C Current See register 3227 for THD/ thd definition	YP	YP	YP	YP
1203	THD/thd Current, Phase N	1	Integer	RO	N	xx	0.10%	0 – 32,767 (-32,768 if N/A)	Total Harmonic Distortion, Phase N Current (4-wire systems and system type and 12 only) See register 3227 for THD/ thd definition	YP	YP	YP	YP
1204	Reserved	3	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	-	-	-	-
1207	THD/thd Voltage, Phase A-N	1	Integer	RO	N	xx	0.10%	0 – 32,767 (-32,768 if N/A)	Total Harmonic Distortion Phase A-N (4-wire systems and system types 10 and 12) See register 3227 for THD/ thd definition	YP	YP	YP	YP
1208	THD/thd Voltage, Phase B-N	1	Integer	RO	N	xx	0.10%	0 – 32,767 (-32,768 if N/A)	Total Harmonic Distortion Phase B-N (4-wire systems and system type 12 only) See register 3227 for THD/ thd definition	YP	YP	YP	YP
1209	THD/thd Voltage, Phase C-N	1	Integer	RO	N	xx	0.10%	0 – 32,767 (-32,768 if N/A)	Total Harmonic Distortion Phase C-N (4-wire system only) See register 3227 for THD/ thd definition	YP	YP	YP	YP
1210	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	-	-	-	-
1211	THD/thd Voltage, Phase A-B	1	Integer	RO	N	xx	0.10%	0 – 32,767	Total Harmonic Distortion Phase A-B See register 3227 for THD/ thd definition	YP	YP	YP	YP
1212	THD/thd Voltage, Phase B-C	1	Integer	RO	N	xx	0.10%	0 – 32,767	Total Harmonic Distortion Phase B-C See register 3227 for THD/ thd definition	YP	YP	YP	YP
1213	THD/thd Voltage, Phase C-A	1	Integer	RO	N	xx	0.10%	0 – 32,767	Total Harmonic Distortion Phase C-A See register 3227 for THD/ thd definition	YP	YP	YP	YP
1214	Reserved	16	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	-	-	-	-

[1230] Fundamental Magnitudes & Angles – Current

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1230	Current Fundamental RMS Magnitude, Phase A	1	Integer	RO	N	A	Amps/Scale	0 – 32,767		Y P	Y P	Y P	Y P
1231	Current Fundamental Coincident Angle, Phase A	1	Integer	RO	N	××	0.1°	0 – 3,599	Referenced to A-N/A-B Voltage Angle	Y P	Y P	Y P	Y P
1232	Current Fundamental RMS Magnitude, Phase B	1	Integer	RO	N	A	Amps/Scale	0 – 32,767		Y P	Y P	Y P	Y P
1233	Current Fundamental Coincident Angle, Phase B	1	Integer	RO	N	××	0.1°	0 – 3,599	Referenced to A-N/A-B Voltage Angle	Y P	Y P	Y P	Y P
1234	Current Fundamental RMS Magnitude, Phase C	1	Integer	RO	N	A	Amps/Scale	0 – 32,767		Y P	Y P	Y P	Y P
1235	Current Fundamental Coincident Angle, Phase C	1	Integer	RO	N	××	0.1°	0 – 3,599	Referenced to A-N/A-B Voltage Angle	Y P	Y P	Y P	Y P
1236	Current Fundamental RMS Magnitude, Neutral	1	Integer	RO	N	B	Amps/Scale	0 – 32,767 (-32,768 if N/A)	4-wire systems and system type 12	Y P	Y P	Y P	Y P
1237	Current Fundamental Coincident Angle, Neutral	1	Integer	RO	N	××	0.1°	0 – 3,599 (-32,768 if N/A)	Referenced to A-N 4-wire systems and system type 12	Y P	Y P	Y P	Y P
1238	Reserved	6	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	-	-	-	-

[1244] Fundamental Magnitudes & Angles – Voltage

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1244	Voltage Fundamental RMS Magnitude, A-N/A-B	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	Voltage A-N (4-wire systems and system types 10 and 12) Voltage A-B (3-wire systems and system type 11)	Y P	Y P	Y P	Y P
1245	Voltage Fundamental Coincident Angle, A-N/A-B	1	Integer	RO	N	××	0.1°	0 – 3,599	Referenced to A-N (4-wire and system types 10 and 12) or A-B (3-wire and system type 11)	Y P	Y P	Y P	Y P
1246	Voltage Fundamental RMS Magnitude, B-N/B-C	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	Voltage B-N (4-wire systems and system type 12) Voltage B-C (3-wire system)	Y P	Y P	Y P	Y P
1247	Voltage Fundamental Coincident Angle, B-N/B-C	1	Integer	RO	N	××	0.1°	0 – 3,599	Referenced to A-N (4-wire and system type 12) or A-B (3-wire)	Y P	Y P	Y P	Y P
1248	Voltage Fundamental RMS Magnitude, C-N/C-A	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	Voltage C-N (4-wire system) Voltage C-A (3-wire system)	Y P	Y P	Y P	Y P
1249	Voltage Fundamental Coincident Angle, C-N/C-A	1	Integer	RO	N	××	0.1°	0 – 3,599	Referenced to A-N (4-wire) or A-B (3-wire)	Y P	Y P	Y P	Y P
1250	Reserved	34	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	-	-	-	-

[1284] Sequence Components

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1284	Current, Positive Sequence, Magnitude	1	Integer	RO	N	A	Amps/Scale	0 – 32,767		Y P	Y P	Y P	Y P
1285	Current, Positive Sequence, Angle	1	Integer	RO	N	xx	0.1	0 – 3,599		Y P	Y P	Y P	Y P
1286	Current, Negative Sequence, Magnitude	1	Integer	RO	N	A	Amps/Scale	0 – 32,767		Y P	Y P	Y P	Y P
1287	Current, Negative Sequence, Angle	1	Integer	RO	N	xx	0.1	0 – 3,599		Y P	Y P	Y P	Y P
1288	Current, Zero Sequence, Magnitude	1	Integer	RO	N	A	Amps/Scale	0 – 32,767		Y P	Y P	Y P	Y P
1289	Current, Zero Sequence, Angle	1	Integer	RO	N	xx	0.1	0 – 3,599		Y P	Y P	Y P	Y P
1290	Voltage, Positive Sequence, Magnitude	1	Integer	RO	N	D	Volts/Scale	0 – 32,767		Y P	Y P	Y P	Y P
1291	Voltage, Positive Sequence, Angle	1	Integer	RO	N	xx	0.1	0 – 3,599		Y P	Y P	Y P	Y P
1292	Voltage, Negative Sequence, Magnitude	1	Integer	RO	N	D	Volts/Scale	0 – 32,767		Y P	Y P	Y P	Y P
1293	Voltage, Negative Sequence, Angle	1	Integer	RO	N	xx	0.1	0 – 3,599		Y P	Y P	Y P	Y P
1294	Voltage, Zero Sequence, Magnitude	1	Integer	RO	N	D	Volts/Scale	0 – 32,767		Y P	Y P	Y P	Y P
1295	Voltage, Zero Sequence, Angle	1	Integer	RO	N	xx	0.1	0 – 3,599		Y P	Y P	Y P	Y P
1296	Current, Sequence, Unbalance	1	Integer	RO	N	xx	0.10%	0 – 10,000		Y P	Y P	Y P	Y P
1297	Voltage, Sequence, Unbalance	1	Integer	RO	N	xx	0.10%	0 – 10,000		Y P	Y P	Y P	Y P
1298	Current, Sequence Unbalance Factor	1	Integer	RO	N	xx	0.10%	0 – 10,000	Negative Sequence / Positive Sequence	Y P	Y P	Y P	Y P
1299	Voltage, Sequence Unbalance Factor	1	Integer	RO	N	xx	0.10%	0 – 10,000	Negative Sequence / Positive Sequence	Y P	Y P	Y P	Y P

[1300] Min/Max

[1300] Present Month Min/Max Group 1

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1300	Min/Max Voltage L-L	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1310	Min/Max Voltage L-N	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1320	Min/Max Current	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1330	Min/Max Voltage L-L, Unbalance	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1340	Min/Max Voltage L-N Unbalance	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1350	Min/Max True Power Factor Total	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1360	Min/Max Displacement Power Factor Total	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1370	Min/Max Real Power Total	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1380	Min/Max Reactive Power Total	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1390	Min/Max Apparent Power Total	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1400	Min/Max THD/thd Voltage L-L	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1410	Min/Max THD/thd Voltage L-N	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1420	Min/Max THD/thd Current	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1430	Min/Max Frequency	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1440	Date/Time of last Present Month Min/Max Update	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of last Present Month Min/Max Update	Y P	Y P	Y P	Y P
1443	Min/Max Configuration	1	Integer	RCW	x	xx	xx	xxxxxxxx	Selections for Min/Max configuration Bit 0 = if '1' the Present Month Min/Max is copied to the Previous Month Min/Max at 12:00:01 AM of the new month Bits 1-15 Unused	Y	Y	Y	Y
1444	Reserved	6	Integer	RO	x	xx	xx	xxxxxxxx	Reserved for future development	--	--	--	--

[1450] Previous Month Min/Max Group 1

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1450	Min/Max Voltage L-L	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1460	Min/Max Voltage L-N	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1470	Min/Max Current	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1480	Min/Max Voltage L-L, Unbalance	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1490	Min/Max Voltage L-N Unbalance	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1500	Min/Max True Power Factor Total	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1510	Min/Max Displacement Power Factor Total	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1520	Min/Max Real Power Total	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1530	Min/Max Reactive Power Total	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1540	Min/Max Apparent Power Total	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1550	Min/Max THD/thd Voltage L-L	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1560	Min/Max THD/thd Voltage L-N	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1570	Min/Max THD/thd Current	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1580	Min/Max Frequency	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1590	Min/Max End Time	3	DateTime	RO	Y	xx	See Template	See Template	See Template	YP	YP	YP	YP
1593	Reserved	7	Integer	RO	x	xx	xx	xxxxxxxx	Reserved for future development	-	-	-	-

[1600] Present Month Min/Max Group 2

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1600	Min/Max Voltage N-R	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	YP	YP	YP	YP
1610	Min/Max Current, Neutral	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	-	-	-	-
1620	Reserved	30	Integer	RO	x	xx	xx	xxxxxxxx	Reserved for future development	YN	YN	YN	YN

[1650] Previous Month Min/Max Group2

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1650	Min/Max Voltage N-R	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1660	Min/Max Current, Neutral	10	xxxxxxx	RO	Y	xx	xxxxxxx	xxxxxxx	See Template	Y P	Y P	Y P	Y P
1670	Reserved	30	Integer	RO	x	xx	xx	xxxxxxxx	Reserved for future development	-	-	-	-

Min/Max Template

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base	Date/Time of Min	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time when Min was recorded	Y P	Y P	Y P	Y P
Base+3	Min Value	1	Integer	RO	Y			0 – 32,767	Min value metered for all phases	Y P	Y P	Y P	Y P
Base+4	*Phase of recorded Min	1	Integer	RO	Y	xx		1 to 3	Phase of Min recorded	Y P	Y P	Y P	Y P
Base+5	Date/Time of Max	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time when Max was recorded	Y P	Y P	Y P	Y P
Base+8	Max Value	1	Integer	RO	Y			0 – 32,767	Max value metered for all phases	Y P	Y P	Y P	Y P
Base+9	*Phase of recorded Max	1	Integer	RO	Y	xx		1 to 3	Phase of Max recorded	Y P	Y P	Y P	Y P

* Only applicable for multi-phase quantities

[1700] Energy

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1700	Energy, Real In	4	Mod10	RO	Y	xx	WH	(1)	3-Phase total real energy into the load	YP	YP	YP	YP
1704	Energy, Reactive In	4	Mod10	RO	Y	xx	VArH	(1)	3-Phase total reactive energy into the load	YP	YP	YP	YP
1708	Energy, Real Out	4	Mod10	RO	Y	xx	WH	(1)	3-Phase total real energy out of the load	YP	YP	YP	YP
1712	Energy, Reactive Out	4	Mod10	RO	Y	xx	VArH	(1)	3-Phase total reactive energy out of the load	YP	YP	YP	YP
1716	Energy, Real Total (signed/absolute)	4	Mod10	RO	Y	xx	WH	(2)	Total Real Energy In, Out or In + Out	YP	YP	YP	YP
1720	Energy, Reactive Total (signed/absolute)	4	Mod10	RO	Y	xx	VArH	(2)	Total Reactive Energy In, Out or In + Out	YP	YP	YP	YP
1724	Energy, Apparent	4	Mod10	RO	Y	xx	VAH	(1)	3-Phase total apparent energy	YP	YP	YP	YP
1728	Energy, Conditional Real In	4	Mod10	RO	Y	xx	WH	(1)	3-Phase total accumulated conditional real energy into the load	YP	YP	YP	YP
1732	Energy, Conditional Reactive In	4	Mod10	RO	Y	xx	VArH	(1)	3-Phase total accumulated conditional reactive energy into the load	YP	YP	YP	YP
1736	Energy, Conditional Real Out	4	Mod10	RO	Y	xx	WH	(1)	3-Phase total accumulated conditional real energy out of the load	YP	YP	YP	YP
1740	Energy, Conditional Reactive Out	4	Mod10	RO	Y	xx	VArH	(1)	3-Phase total accumulated conditional reactive energy out of the load	YP	YP	YP	YP
1744	Energy, Conditional Apparent	4	Mod10	RO	Y	xx	VAH	(1)	3-Phase total accumulated conditional apparent energy	YP	YP	YP	YP
1748	Energy, Incremental Real In, Last Complete Interval	3	Mod10	RO	Y	xx	WH	(3)	3-Phase total accumulated incremental real energy into the load during the last completed incremental energy interval	YP	YP	YP	YP
1751	Energy. Incremental Reactive In, Last Complete Interval	3	Mod10	RO	Y	xx	VArH	(3)	3-Phase total accumulated incremental reactive energy into the load during the last completed incremental energy interval	YP	YP	YP	YP
1754	Energy, Incremental Real Out, Last Complete Interval	3	Mod10	RO	Y	xx	WH	(3)	3-Phase total accumulated incremental real energy out of the load during the last completed incremental energy interval	YP	YP	YP	YP
1757	Energy, Incremental Reactive Out, Last Complete Interval	3	Mod10	RO	Y	xx	VArH	(3)	3-Phase total accumulated incremental reactive energy out of the load during the last completed incremental energy interval	YP	YP	YP	YP
1760	Energy, Incremental Apparent, Last Complete Interval	3	Mod10	RO	Y	xx	VAH	(3)	3-Phase total accumulated incremental apparent energy during the last completed incremental energy interval	YP	YP	YP	YP
1763	Last Complete Interval DateTime	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of last completed incremental energy interval	YP	YP	YP	YP
1766	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		-	-	-	-

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1767	Energy, Incremental Real In, Present Interval	3	Mod10	RO	Y	××	WH	(3)	Instantaneous 3-Phase total accumulated incremental real energy into the load during the presently accumulating incremental energy interval up to the end of interval. *(Value will be transferred to last completed interval and restarted at the end of the incremental energy interval)*	Y P	Y P	Y P	Y P
1770	Energy. Incremental Reactive In, Present Interval	3	Mod10	RO	Y	××	VArH	(3)	Instantaneous 3-Phase total accumulated incremental reactive energy into the load during the presently accumulating incremental energy interval up to the end of interval. *(Value will be transferred to last completed interval and restarted at the end of the incremental energy interval)*	Y P	Y P	Y P	Y P
1773	Energy, Incremental Real Out, Present Interval	3	Mod10	RO	Y	××	WH	(3)	Instantaneous 3-Phase total accumulated incremental real energy out of the load during the presently accumulating incremental energy interval up to the end of interval. *(Value will be transferred to last completed interval and restarted at the end of the incremental energy interval)*	Y P	Y P	Y P	Y P
1776	Energy, Incremental Reactive Out, Present Interval	3	Mod10	RO	Y	××	VArH	(3)	Instantaneous 3-Phase total accumulated incremental reactive energy out of the load during the presently accumulating incremental energy interval up to the end of interval. *(Value will be transferred to last completed interval and restarted at the end of the incremental energy interval)*	Y P	Y P	Y P	Y P
1779	Energy, Incremental Apparent, Present Interval	3	Mod10	RO	Y	××	VAH	(3)	Instantaneous 3-Phase total accumulated incremental apparent energy during the presently accumulating incremental energy interval up to the end of interval. *(Value will be transferred to last completed interval and restarted at the end of the incremental energy interval)*	Y P	Y P	Y P	Y P
1782	Energy, Reactive, Quadrant 1	3	Mod10	RO	Y	××	VArH	(3)	3-Phase total accumulated incremental reactive energy – quadrant 1	Y P	Y P	Y P	Y P
1785	Energy, Reactive, Quadrant 2	3	Mod10	RO	Y	××	VArH	(3)	3-Phase total accumulated incremental reactive energy – quadrant 2	Y P	Y P	Y P	Y P
1788	Energy, Reactive, Quadrant 3	3	Mod10	RO	Y	××	VArH	(3)	3-Phase total accumulated incremental reactive energy – quadrant 3	Y P	Y P	Y P	Y P
1791	Energy, Reactive, Quadrant 4	3	Mod10	RO	Y	××	VArH	(3)	3-Phase total accumulated incremental reactive energy – quadrant 4	Y P	Y P	Y P	Y P
1794	Conditional Energy Control Status	1	Integer	RO	Y	××	××	0 – 1	0 = Off (default) 1 = On	Y P	Y P	Y P	Y P
1795	Reserved	5	Integer	RO	×	××	××	××××××××	Reserved for future development	-	-	-	-

(1) 0 – 9,999,999,999,999,999
(2) -9,999,999,999,999,999 – 9,999,999,999,999,999
(3) 0 – 999,999,999,999

[1800] Demand

[1800] Demand – Current Demand System Configuration and Data

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1800	Demand Calculation Mode Current	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 1024	0 = Thermal Demand (default) 1 = Timed Interval Sliding Block 2 = Timed Interval Block 4 = Timed Interval Rolling Block 8 = Input Synchronized Block 16 = Input Synchronized Rolling Block 32 = Command Synchronized Block 64 = Command Synchronized Rolling Block *128 = Clock Synchronized Block *256 = Clock Synchronized Rolling Block 512 = Slave to Power Demand Interval 1024 = Slave to Incremental Energy Interval *Not supported in the PM810	Y P	Y P	Y P	Y P
1801	Demand Interval Current	1	Integer	R/CW	Y	xx	Minutes	1 – 60	Default = 15	Y P	Y P	Y P	Y P
1802	Demand Subinterval Current	1	Integer	R/CW	Y	xx	Minutes	1 – 60	Default = 1	Y P	Y P	Y P	Y P
1803	Demand Sensitivity Current	1	Integer	R/CW	Y	xx	1%	1 – 99	Adjusts the sensitivity of the thermal demand calculation. Default = 90	Y P	Y P	Y P	Y P
1804	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	-	-	-	-
1805	Short Demand Interval Current	1	Integer	R/CW	Y	xx	Seconds	0 – 60	Sets the interval for a running average demand calculation of short duration. Default = 15	Y P	Y P	Y P	Y P
1806	Time Elapsed in Interval Current	1	Integer	RO	Y	xx	Seconds	0 – 3,600	Time elapsed in the present demand interval.	Y P	Y P	Y P	Y P
1807	Time Elapsed in Subinterval Current	1	Integer	RO	Y	xx	Seconds	0 – 3,600	Time elapsed in the present demand subinterval.	Y P	Y P	Y P	Y P
1808	Interval Count Current	1	Integer	RO	Y	xx	1.0	0 – 32,767	Count of demand intervals. Rolls over at 32, 767.	Y P	Y P	Y P	Y P
1809	Subinterval Count Current	1	Integer	RO	Y	xx	1.0	0 – 60	Count of demand subintervals. Rolls over at interval.	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1810	Min/Max Reset DateTime Current	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of last reset of Current Demand Min/Max demands	Y P	Y P	Y P	Y P
1813	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		-	-	-	-
1814	Min/Max Reset Count Curren t	1	Integer	RO	Y	xx	1.0	0 – 32,767	Count of Min/Max demand resets. Rolls over at 32,767.	Y P	Y P	Y P	Y P
1815	Demand System Status Current	1	Bitmap	RO	Y	xx	xxxxxxx	0x0000 – 0x000F	Bit 00 = end of demand subinterval Bit 01 = end of demand interval Bit 02 = start of first complete interval Bit 03 = end of first complete interval	Y P	Y P	Y P	Y P
1816	Reserved	24	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	-	-	-	-

[1840] Demand – Power Demand System Configuration and Data

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1840	Demand Calculation Mode Power	1	Integer	R/CW	Y	××	×××××××	0 – 1024	0 = Thermal Demand 1 = Timed Interval Sliding Block (default) 2 = Timed Interval Block 4 = Timed Interval Rolling Block 8 = Input Synchronized Block 16 = Input Synchronized Rolling Block 32 = Command Synchronized Block 64 = Command Synchronized Rolling Block *128 = Clock Synchronized Block *256 = Clock Synchronized Rolling Block 1024 = Slave to Incremental Energy Interval *Not supported in the PM810	Y P	Y P	Y P	Y P
1841	Demand Interval Power	1	Integer	R/CW	Y	××	Minutes	1 – 60	Default = 15	Y P	Y P	Y P	Y P
1842	Demand Subinterval Power	1	Integer	R/CW	Y	××	Minutes	1 – 60	Default = 1	Y P	Y P	Y P	Y P
1843	Demand Sensitivity Power	1	Integer	R/CW	Y	××	1%	1 – 99	Adjusts the sensitivity of the thermal demand calculation. Default = 90	Y P	Y P	Y P	Y P
1844	Predicted Demand Sensitivity Power	1	Integer	R/CW	Y	××	1.0	1 – 10	Adjusts sensitivity of predicted demand calculation to recent changes in power consumption. Default = 5.	Y P	Y P	Y P	Y P
1845	Short Demand Interval Power	1	Integer	R/CW	Y	××	Seconds	0 – 60	Sets the interval for a running average demand calculation of short duration. Default = 15	Y P	Y P	Y P	Y P
1846	Time Elapsed in Interval Power	1	Integer	RO	Y	××	Seconds	0 – 3,600	Time elapsed in the present demand interval.	Y P	Y P	Y P	Y P
1847	Time Elapsed in Subinterval Power	1	Integer	RO	Y	××	Seconds	0 – 3,600	Time elapsed in the present demand subinterval.	Y P	Y P	Y P	Y P
1848	Interval Count Power	1	Integer	RO	Y	××	1.0	0 – 32,767	Count of demand intervals. Rolls over at 32, 767.	Y P	Y P	Y P	Y P
1849	Subinterval Count Power	1	Integer	RO	Y	××	1.0	0 – 60	Count of demand subintervals. Rolls over at interval.	Y P	Y P	Y P	Y P
1850	Min/Max Reset DateTime Power	3	DateTime	RO	Y	××	See Template	See Template	Date/Time of last reset of Power Demand Min/Max demands	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1853	Reserved	1	Integer	RO	×	××	××	××××××××		-	-	-	-
1854	Min/Max Reset Count Power	1	Integer	RO	Y	××	1.0	0 – 32,767	Count of Min/Max demand resets. Rolls over at 32,767.	Y P	Y P	Y P	Y P
1855	Demand System Status Power	1	Bitmap	RO	Y	××	×××××××	0x0000 – 0x000F	Bit 00 = end of demand subinterval Bit 01 = end of demand interval Bit 02 = start of first complete interval Bit 03 = end of first complete interval	Y P	Y P	Y P	Y P
1856	Reserved	4	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	-	-	-	-

[1860] Demand – Input Metering Demand System Configuration and Data

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1860	Demand Calculation Mode Input Pulse Metering	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 1024	0 = Thermal Demand 1 = Timed Interval Sliding Block 2 = Timed Interval Block (default) 4 = Timed Interval Rolling Block 8 = Input Synchronized Block 16 = Input Synchronized Rolling Block 32 = Command Synchronized Block 64 = Command Synchronized Rolling Block *128 = Clock Synchronized Block *256 = Clock Synchronized Rolling Block 512 = Slave to Power Demand Interval 1024 = Slave to Incremental Energy Interval *Not supported in the PM810	Y P	Y P	Y P	Y P
1861	Demand Interval Input Pulse Metering	1	Integer	R/CW	Y	xx	Minutes	1 – 60	Default = 15	Y P	Y P	Y P	Y P
1862	Demand Subinterval Input Pulse Metering	1	Integer	R/CW	Y	xx	Minutes	1 – 60	Default = 1	Y P	Y P	Y P	Y P
1863	Demand Sensitivity Input Pulse Metering	1	Integer	R/CW	Y	xx	1%	1 – 99	Adjusts the sensitivity of the thermal demand calculation. Default = 90	Y P	Y P	Y P	Y P
1864	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	-	-	-	-
1865	Short Demand Interval Input Pulse Metering	1	Integer	R/CW	Y	xx	Seconds	0 – 60	Sets the interval for a running average demand calculation of short duration. Default = 15	Y P	Y P	Y P	Y P
1866	Time Elapsed in Interval Input Pulse Metering	1	Integer	RO	Y	xx	Seconds	0 – 3,600		Y P	Y P	Y P	Y P
1867	Time Elapsed in Subinterval Input Pulse Metering	1	Integer	RO	Y	xx	Seconds	0 – 3,600		Y P	Y P	Y P	Y P
1868	Interval Count Input Pulse Metering	1	Integer	RO	Y	xx	1.0	0 – 32,767	Rolls over at 32, 767.	Y P	Y P	Y P	Y P
1869	Subinterval Count Input Pulse Metering	1	Integer	RO	Y	xx	1.0	0 – 60	Rolls over at interval.	Y P	Y P	Y P	Y P
1870	Min/Max Reset DateTime Input Pulse Metering	3	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
1873	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		-	-	-	-

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1874	Min/Max Reset Count Input Pulse Metering	1	Integer	RO	Y	××	1.0	0 – 32,767	Rolls over at 32,767.	Y P	Y P	Y P	Y P
1875	Demand System Status Input Pulse Metering	1	Bitmap	RO	Y	××	×××××××	0x0000 – 0x000F	Bit 00 = end of demand subinterval Bit 01 = end of demand interval Bit 02 = start of first complete interval Bit 03 = end of first complete interval	Y P	Y P	Y P	Y P
1876	Reserved	4	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	-	-	-	-

[1880] Demand – Generic Demand System Configuration and Data

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1880	Demand Calculation Mode Generic Group 1	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 1024	0 = Thermal Demand (default) 1 = Timed Interval Sliding Block 2 = Timed Interval Block 4 = Timed Interval Rolling Block 8 = Input Synchronized Block 16 = Input Synchronized Rolling Block 32 = Command Synchronized Block 64 = Command Synchronized Rolling Block *128 = Clock Synchronized Block *256 = Clock Synchronized Rolling Block 512 = Slave to Power Demand Interval 1024 = Slave to Incremental Energy Interval *Not supported in the PM810	Y P	Y P	Y P	Y P
1881	Demand Interval Generic	1	Integer	R/CW	Y	xx	Minutes	1 – 60	Default = 15	Y P	Y P	Y P	Y P
1882	Demand Subinterval Generic	1	Integer	R/CW	Y	xx	Minutes	1 – 60	Default = 1	Y P	Y P	Y P	Y P
1883	Demand Sensitivity Generic	1	Integer	R/CW	Y	xx	1%	1 – 99	Adjusts the sensitivity of the thermal demand calculation. Default = 90	Y P	Y P	Y P	Y P
1884	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	-	-	-	-
1885	Short Demand Interval Generic	1	Integer	R/CW	Y	xx	Seconds	0 – 60	Sets the interval for a running average demand calculation of short duration. Default = 15	Y P	Y P	Y P	Y P
1886	Time Elapsed in Interval Generic	1	Integer	RO	Y	xx	Seconds	0 – 3,600	Time elapsed in the present demand interval.	Y P	Y P	Y P	Y P
1887	Time Elapsed in Subinterval Generic	1	Integer	RO	Y	xx	Seconds	0 – 3,600	Time elapsed in the present demand subinterval.	Y P	Y P	Y P	Y P
1888	Interval Count Generic	1	Integer	RO	Y	xx	1.0	0 – 32,767	Count of demand intervals. Rolls over at 32, 767.	Y P	Y P	Y P	Y P
1889	Subinterval Count Generic	1	Integer	RO	Y	xx	1.0	0 – 60	Count of demand subintervals. Rolls over at interval.	Y P	Y P	Y P	Y P
1890	Min/Max Reset DateTime Generic	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of last reset of Generic Group 1 Demand Min/Max demands	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1893	Reserved	1	Integer	RO	×	××	××	××××××××		-	-	-	-
1894	Min/Max Reset Count Generic	1	Integer	RO	Y	××	1.0	0 – 32,767	Count of Min/Max demand resets. Rolls over at 32,767.	Y P	Y P	Y P	Y P
1895	Demand System Status Generic	1	Bitmap	RO	Y	××	×××××××	0x0000 – 0x000F	Bit 00 = end of demand subinterval Bit 01 = end of demand interval Bit 02 = start of first complete interval Bit 03 = end of first complete interval	Y P	Y P	Y P	Y P
1896	Reserved	24	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	-	-	-	-

[1920] Demand – Miscellaneous Configuration and Data

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1920	Demand Forgiveness Duration	1	Integer	R/CW	Y	xx	Seconds	0 – 3,600	Duration of time after a power outage, during which power demand is not calculated	Y P	Y P	Y P	Y P
1921	Demand Forgiveness Outage Definition	1	Integer	R/CW	Y	xx	Seconds	0 – 3,600	Duration of time that metered voltage must be lost to be considered a power outage for demand forgiveness	Y P	Y P	Y P	Y P
1922	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	-	-	-	-
1923	Clock Sync Time of Day	1	Integer	R/CW	Y	xx	Minutes	0 – 1,440	Time of day, in minutes from midnight, to which the demand interval is to be synchronized. Applies to demand intervals configured as Clock Synchronized.	Y --	Y P	Y P	Y P
1924	Power Factor Average Over Last Power Demand Interval	1	Integer	RO	Y	xx	0.001	1,000 -100 – 100 (-32,768 if N/A)		Y P	Y P	Y P	Y P
1925	Cumulative Demand Reset DateTime	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of the last reset of cumulative demand	Y P	Y P	Y P	Y P
1928	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		--	--	--	--
1929	Cumulative Input Pulse Metering Reset DateTime	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of last reset of input pulse metering accumulation	Y P	Y P	Y P	Y P
1932	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		--	--	--	--
1933	Reserved	7	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
1940	Last Incremental Interval, Real Demand Peak	1	Integer	RO	Y	F	kW/Scale	-32,767 – 32,767	Maximum real 3-phase power demand over the last incremental energy interval	Y P	Y P	Y P	Y P
1941	Last Incremental Interval, Real Demand Peak DateTime	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of the Real Power Demand peak during the last completed incremental energy interval	Y P	Y P	Y P	Y P
1944	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		--	--	--	--
1945	Last Incremental Interval, Reactive Demand Peak	1	Integer	RO	Y	F	kVAr/Scale	-32,767 – 32,767	Maximum reactive 3-phase power demand over the last incremental energy interval	Y P	Y P	Y P	Y P
1946	Last Incremental Interval, Reactive Demand Peak DateTime	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of the Reactive Power Demand peak during the last completed incremental energy interval	Y P	Y P	Y P	Y P
1949	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		--	--	--	--
1950	Last Incremental Interval, Apparent Demand Peak	1	Integer	RO	Y	F	kVA/Scale	0 – 32,767	Maximum apparent 3-phase power demand over the last incremental energy interval	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1951	Last Incremental Interval, Apparent Demand Peak DateTime	3	Date	RO	Y	xx	See Template	See Template	Date/Time of the Apparent Power Demand peak during the last completed incremental energy interval	Y P	Y P	Y P	Y P
1954	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		--	--	--	--
1955	Reserved	5	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

[1960] Demand – Current Demand Channels

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1960	Last Demand Current, Phase A	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Phase A current demand, last complete interval	Y P	Y P	Y P	Y P
1961	Present Demand Current, Phase A	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Phase A current demand, present interval	Y P	Y P	Y P	Y P
1962	Running Average Demand Current, Phase A	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Phase A current demand, running average demand calculation of short duration	Y P	Y P	Y P	Y P
1963	Peak Demand Current, Phase A	1	Integer	RO	Y	A	Amps/Scale	0 – 32,767	Phase A peak current demand	Y P	Y P	Y P	Y P
1964	Peak Demand DateTime Current, Phase A	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of Peak Current Demand, Phase A	Y P	Y P	Y P	Y P
1967	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		--	--	--	--
1968	Reserved	2	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
1970	Last Demand Current, Phase B	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Phase B current demand, last complete interval	Y P	Y P	Y P	Y P
1971	Present Demand Current, Phase B	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Phase B current demand, present interval	Y P	Y P	Y P	Y P
1972	Running Average Demand Current, Phase B	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Phase B current demand, running average demand calculation of short duration	Y P	Y P	Y P	Y P
1973	Peak Demand Current Phase B	1	Integer	RO	Y	A	Amps/Scale	0 – 32,767	Phase B peak current demand	Y P	Y P	Y P	Y P
1974	Peak Demand DateTime Current Phase B	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of Peak Current Demand, Phase B	Y P	Y P	Y P	Y P
1977	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		--	--	--	--
1978	Reserved	2	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
1980	Last Demand Current, Phase C	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Phase C current demand, last complete interval	Y P	Y P	Y P	Y P
1981	Present Demand Current, Phase C	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Phase C current demand, present interval	Y P	Y P	Y P	Y P
1982	Running Average Demand Current, Phase C	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Phase C current demand, running average demand calculation of short duration	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
1983	Peak Demand Current Phase C	1	Integer	RO	Y	A	Amps/Scale	0 – 32,767	Phase C peak current demand	Y P	Y P	Y P	Y P
1984	Peak Demand DateTime Current Phase C	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of Peak Current Demand, Phase C	Y P	Y P	Y P	Y P
1987	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		--	--	--	--
1988	Reserved	2	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
1990	Last Demand Current, Neutral	1	Integer	RO	N	B	Amps/Scale	0 – 32,767 (-32,768 if N/A)	Neutral current demand, last complete interval 4-wire system only	Y P	Y P	Y P	Y P
1991	Present Demand Current, Neutral	1	Integer	RO	N	B	Amps/Scale	0 – 32,767 (-32,768 if N/A)	Neutral current demand, present interval 4-wire system only	Y P	Y P	Y P	Y P
1992	Running Average Demand Current, Neutral	1	Integer	RO	N	B	Amps/Scale	0 – 32,767 (-32,768 if N/A)	Neutral current demand, running average demand calculation of short duration 4-wire system only	Y P	Y P	Y P	Y P
1993	Peak Demand Current, Neutral	1	Integer	RO	Y	B	Amps/Scale	0 – 32,767 (-32,768 if N/A)	Neutral peak current demand 4-wire system only	Y P	Y P	Y P	Y P
1994	Peak Demand DateTime Current, Neutral	3	DateTime	RO	Y	xx	See Template	See Template (-32,768 if N/A)	Date/Time of Peak Current Demand, Neutral 4-wire system only	Y P	Y P	Y P	Y P
1997	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		--	--	--	--
1998	Reserved	2	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
2000	Last Demand Current, 3-Phase Average	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	3-Phase Average current demand, last complete interval	Y P	Y P	Y P	Y P
2001	Present Demand Current, 3-Phase Average	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	3-Phase Average current demand, present interval	Y P	Y P	Y P	Y P
2002	Running Average Demand Current, 3-Phase Average	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	3-Phase Average current demand, short sliding block	Y P	Y P	Y P	Y P
2003	Peak Demand Current, 3-Phase Average	1	Integer	RO	Y	A	Amps/Scale	0 – 32,767	3-Phase Average peak current demand	Y P	Y P	Y P	Y P
2004	Peak Demand DateTime Current, 3-Phase Average	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of Peak Current Demand, 3-Phase Average	Y P	Y P	Y P	Y P
2007	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		--	--	--	--
2008	Reserved	2	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

[2010] Spare (2010-2149)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
2010	Reserved	140	Integer	RO	Y	xx	xxxxxx	xxxxxx	Reserved for future development	--	--	--	--

[2150] Demand – Power Demand Channels

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
2150	Last Demand Real Power, 3-Phase Total	1	Integer	RO	N	F	kW/Scale	-32,767 – 32,767	3-Phase total present real power demand for last completed demand interval – updated every sub-interval	Y P	Y P	Y P	Y P
2151	Present Demand Real Power, 3-Phase Total	1	Integer	RO	N	F	kW/Scale	-32,767 – 32,767	3-Phase total present real power demand for present demand interval	Y P	Y P	Y P	Y P
2152	Running Average Demand Real Power, 3-Phase Total	1	Integer	RO	N	F	kW/Scale	-32,767 – 32,767	Updated every second	Y P	Y P	Y P	Y P
2153	Predicted Demand Real Power, 3-Phase Total	1	Integer	RO	N	F	kW/Scale	-32,767 – 32,767	Predicted real power demand at the end of the present interval	Y P	Y P	Y P	Y P
2154	Peak Demand Real Power, 3-Phase Total	1	Integer	RO	Y	F	kW/Scale	-32,767 – 32,767		Y P	Y P	Y P	Y P
2155	Peak Demand DateTime Real Power, 3-Phase Total	3	DateTime	RO	Y	××	See Template	See Template		Y P	Y P	Y P	Y P
2158	Reserved	1	Integer	RO	×	××	××	×××××××		--	--	--	--
2159	Cumulative Demand Real Power, 3-Phase Total	2	Long	RO	Y	F	kW/Scale	-2147483648 – 2147483647		Y P	Y P	Y P	Y P
2161	Power Factor, Average @ Peak Demand, Real Power	1	Integer	RO	Y	××	0.001	1,000 -100 to 100 (-32,768 if N/A)	Average True Power Factor at the time of the Peak Real Demand	Y P	Y P	Y P	Y P
2162	Power Demand, Reactive @ Peak Demand, Real Power	1	Integer	RO	Y	F	kVAr/Scale	-32,767 – 32,767	Reactive Power Demand at the time of the Peak Real Demand	Y P	Y P	Y P	Y P
2163	Power Demand, Apparent @ Peak Demand, Real Power	1	Integer	RO	Y	F	kVA/Scale	0 – 32,767	Apparent Power Demand at the time of the Peak Real Demand	Y P	Y P	Y P	Y P
2164	Reserved	1	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	--	--	--	--
2165	Last Demand Reactive Power, 3-Phase Total	1	Integer	RO	N	F	kVAr /Scale	-32,767 – 32,767	3-Phase total present reactive power demand for last completed demand interval – updated every sub-interval	Y P	Y P	Y P	Y P
2166	Present Demand Reactive Power, 3-Phase Total	1	Integer	RO	N	F	kVAr /Scale	-32,767 – 32,767	3-Phase total present real power demand for present demand interval	Y P	Y P	Y P	Y P
2167	Running Average Demand Reactive Power, 3-Phase Total	1	Integer	RO	N	F	kVAr /Scale	-32,767 – 32,767	3-Phase total present reactive power demand, running average demand calculation of short duration – updated every second	Y P	Y P	Y P	Y P
2168	Predicted Demand Reactive Power, 3-Phase Total	1	Integer	RO	N	F	kVAr /Scale	-32,767 – 32,767	Predicted reactive power demand at the end of the present interval	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
2169	Peak Demand Reactive Power, 3-Phase Total	1	Integer	RO	Y	F	kVAr /Scale	-32,767 – 32,767		Y P	Y P	Y P	Y P
2170	Peak Demand DateTime Reactive Power, 3-Phase Total	3	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
2173	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		--	--	--	--
2174	Cumulative Demand Reactive Power, 3-Phase Total	2	Long	RO	Y	F	kVAr /Scale	-2147483648 – 2147483647		Y P	Y P	Y P	Y P
2176	Power Factor, Average @ Peak Demand, Reactive Power	1	Integer	RO	Y	xx	0.001	1,000 -100 to 100 (-32,768 if N/A)	Average True Power Factor at the time of the Peak Reactive Demand	Y P	Y P	Y P	Y P
2177	Power Demand, Real @ Peak Demand, Reactive Power	1	Integer	RO	Y	F	kW/Scale	-32,767 – 32,767	Real Power Demand at the time of the Peak Reactive Demand	Y P	Y P	Y P	Y P
2178	Power Demand, Apparent @ Peak Demand, Reactive Power	1	Integer	RO	Y	F	kVA/Scale	0 – 32,767	Apparent Power Demand at the time of the Peak Reactive Demand	Y P	Y P	Y P	Y P
2179	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
2180	Last Demand Apparent Power 3-Phase Total	1	Integer	RO	N	F	kVA /Scale	-32,767 – 32,767	3-Phase total present apparent power demand for last completed demand interval – updated every sub-interval	Y P	Y P	Y P	Y P
2181	Present Demand Apparent Power, 3-Phase Total	1	Integer	RO	N	F	kVA /Scale	-32,767 – 32,767	3-Phase total present apparent power demand for present demand interval	Y P	Y P	Y P	Y P
2182	Running Average Demand Apparent Power, 3-Phase Total	1	Integer	RO	N	F	kVA /Scale	-32,767 – 32,767	3-Phase total present apparent power demand, running average demand calculation of short duration – updated every second	Y P	Y P	Y P	Y P
2183	Predicted Demand Apparent Power, 3-Phase Total	1	Integer	RO	N	F	kVA /Scale	-32,767 – 32,767	Predicted apparent power demand at the end of the present interval	Y P	Y P	Y P	Y P
2184	Peak Demand Apparent Power, 3-Phase Total	1	Integer	RO	Y	F	kVA /Scale	-32,767 – 32,767	3-Phase total peak apparent power demand peak	Y P	Y P	Y P	Y P
2185	Peak Demand DateTime Apparent Power, 3-Phase Total	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of 3-Phase peak apparent power demand	Y P	Y P	Y P	Y P
2188	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		--	--	--	--
2189	Cumulative Demand Apparent Power, 3-Phase Total	2	Long	RO	Y	F	kVA /Scale	-2,147,483,648 – 2,147,483,647	Cumulative Demand, Apparent Power	Y P	Y P	Y P	Y P
2191	Power Factor, Average @ Peak Demand, Apparent Power	1	Integer	RO	Y	xx	0.001	1,000 -100 to 100 (-32,768 if N/A)	Average True Power Factor at the time of the Peak Apparent Demand	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
2192	Power Demand, Real @ Peak Demand, Apparent Power	1	Integer	RO	Y	F	kW/Scale	-32,767 – 32,767	Real Power Demand at the time of the Peak Apparent Demand	Y P	Y P	Y P	Y P
2193	Power Demand, Reactive @ Peak Demand, Apparent Power	1	Integer	RO	Y	F	kVAr/Scale	0 – 32,767	Reactive Power Demand at the time of the Peak Apparent Demand	Y P	Y P	Y P	Y P
2194	Reserved	6	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

[2200] Demand – Input Metering Demand Channels

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
2200	Consumption Units Code Input Channel #1	1	Integer	R/CW	Y	xx	xxxxxx	See Unit Codes	Units in which consumption is to be accumulated Default = 0	Y P	Y P	Y P	Y P
2201	Demand Units Code Input Channel #1	1	Integer	R/CW	Y	xx	xxxxxx	See Unit Codes	Units in which demand (rate) is to be expressed Default = 0	Y P	Y P	Y P	Y P
2202	Last Demand Input Channel #1	1	Integer	RO	Y	xx	xxxxxx	0 – 32,767	Last complete interval, updated every sub-interval	Y P	Y P	Y P	Y P
2203	Present Demand Input Channel #1	1	Integer	RO	Y	xx	xxxxxx	0 – 32,767	Present interval	Y P	Y P	Y P	Y P
2204	Running Average Demand Input Channel #1	1	Integer	RO	Y	xx	xxxxxx	0 – 32,767	Running average demand calculation of short duration, updated every second	Y P	Y P	Y P	Y P
2205	Peak Demand Input Channel #1	1	Integer	RO	Y	xx	xxxxxx	0 – 32,767		Y P	Y P	Y P	Y P
2206	Peak Demand Date/Time Input Channel #1	4	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
2210	Minimum Demand Input Channel #1	1	Integer	RO	Y	xx	xxxxxx	0 – 32,767		Y P	Y P	Y P	Y P
2211	Minimum Demand Date/Time Input Channel #1	4	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
2215	Cumulative Usage Input Channel #1	4	Mod10	RO	Y	xx	(2)	(1)	The user must identify the units to be used in the accumulation.	Y P	Y P	Y P	Y P
2219	Reserved	1	Integer	RO	Y	xx	xxxxxx	xxxxxx	Reserved for future development	--	--	--	--
2220	Input Channel #2	20							Same as registers 2200 – 2219 except for Channel #2	Y P	Y P	Y P	Y P
2240	Input Channel #3	20							Same as registers 2200 – 2219 except for Channel #3	Y P	Y P	Y P	Y P
2260	Input Channel #4	20							Same as registers 2200 – 2219 except for Channel #4	Y P	Y P	Y P	Y P
2280	Input Channel #5	20							Same as registers 2200 – 2219 except for Channel #5	Y P	Y P	Y P	Y P

(1) 0 – 9,999,999,999,999,999
(2) -9,999,999,999,999,999 – 9,999,999,999,999,999
(3) 0 – 999,999,999,999

[2300] Spare (2300-2399)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
2300	Reserved	100	Integer	RO	Y	xx	xxxxxx	xxxxxx	Reserved for future development	--	--	--	--

[2400] Demand – Generic Group 1 Demand Channels

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
2400	Input Register Generic Channel #1	1	Integer	R/CW	Y	xx	xxxxxx	xxxxxx	Register selected for generic demand calculation	Y P	Y P	Y P	Y P
2401	Unit Code Generic Channel #1	1	Integer	R/CW	Y	xx	xxxxxx	-32,767 – 32,767	Used by software	Y P	Y P	Y P	Y P
2402	Scale Code Generic Channel #1	1	Integer	R/CW	Y	xx	xxxxxx	-3 – 3		Y P	Y P	Y P	Y P
2403	Last Demand Generic Channel #1	1	Integer	RO	Y	xx	xxxxxx	0 – 32,767		Y P	Y P	Y P	Y P
2404	Present Demand Generic Channel #1	1	Integer	RO	Y	xx	xxxxxx	0 – 32,767		Y P	Y P	Y P	Y P
2405	Running Average Demand Generic Channel #1	1	Integer	RO	Y	xx	xxxxxx	0 – 32,767	Updated every second	Y P	Y P	Y P	Y P
2406	Peak Demand Generic Channel #1	1	Integer	RO	Y	xx	xxxxxx	0 – 32,767		Y P	Y P	Y P	Y P
2407	Peak Demand Date/Time Generic Channel #1	3	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
2410	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		Y P	Y P	Y P	Y P
2411	Minimum Demand Generic Channel #1	1	Integer	RO	Y	xx	xxxxxx	0 – 32,767		Y P	Y P	Y P	Y P
2412	Minimum Demand Date/Time Generic Channel #1	3	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
2415	Reserved	1	Integer	RO	x	xx	xx	xxxxxxxx		--	--	--	--
2416	Reserved	4	Integer	RO	Y	xx	xxxxxx	xxxxxx	Reserved for future development	--	--	--	--
2420	Generic Channel #2	20							Same as registers 2400 – 2419 except for Channel #2	Y P	Y P	Y P	Y P
2440	Generic Channel #3	20							Same as registers 2400 – 2419 except for Channel #3	Y P	Y P	Y P	Y P
2460	Generic Channel #4	20							Same as registers 2400 – 2419 except for Channel #4	Y P	Y P	Y P	Y P
2480	Generic Channel #5	20							Same as registers 2400 – 2419 except for Channel #5	Y P	Y P	Y P	Y P
2500	Generic Channel #6	20							Same as registers 2400 – 2419 except for Channel #6	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
2520	Generic Channel #7	20							Same as registers 2400 – 2419 except for Channel #7	YP	YP	YP	YP
2540	Generic Channel #8	20							Same as registers 2400 – 2419 except for Channel #8	YP	YP	YP	YP
2560	Generic Channel #9	20							Same as registers 2400 – 2419 except for Channel #9	YP	YP	YP	YP
2580	Generic Channel #10	20							Same as registers 2400 – 2419 except for Channel #10	YP	YP	YP	YP

[2600] Duplicate Floating Point 1s Metering Registers (2600-2607)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
2600	Energy, Real Total (signed/absolute)	2	Float	RO	N	-	WH		Total Real Energy In, Out or In + Out	Y	Y	Y	Y
2602	Energy, Reactive Total (signed/absolute)	2	Float	RO	N	-	VArH		Total Reactive Energy In, Out or In + Out	Y	Y	Y	Y
2604	Energy, Apparent	2	Float	RO	N	-	VAH		3-Phase total apparent energy	Y	Y	Y	Y
2606	True Power Factor, Total	2	Float	RO	N	-			Derived using the complete harmonic content of real and apparent power	Y	Y	Y	Y

[2608] Spare (2608-2799)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
2608	Reserved	192	Integer	RO	Y	xx	xxxxxx	xxxxxx	Reserved for future development	--	--	--	--

[2800] Phase Extremes

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
2800	Current, Highest Phase Value	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Highest value of Phases A, B, C or N	Y P	Y P	Y P	Y P
2801	Current, Lowest Phase Value	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Lowest value of Phases A, B, C or N	Y P	Y P	Y P	Y P
2802	Voltage, L-L, Highest Value	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	Highest value of Phases A-B, B-C or C-A	Y P	Y P	Y P	Y P
2803	Voltage, L-L, Lowest Value	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	Lowest value of Phases A-B, B-C or C-A	Y P	Y P	Y P	Y P
2804	Voltage, L-N, Highest Value	1	Integer	RO	N	D	Volts/Scale	0 – 32,767 (-32,768 if N/A)	Highest value of Phases A-N, B-N or C-N 4-wire system only	Y P	Y P	Y P	Y P
2805	Voltage, L-N, Lowest Value	1	Integer	RO	N	D	Volts/Scale	0 – 32,767 (-32,768 if N/A)	Lowest value of Phases A-N, B-N or C-N 4-wire system only	Y P	Y P	Y P	Y P
2806	Reserved	4	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

[2810] Spare (2810-2999)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
2810	Reserved	190	Integer	RO	Y	xx	xxxxxx	xxxxxx	Reserved for future development	--	--	--	--

[3000] System Configuration

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3000	Power Meter Label	2	Character	R/CW	Y	xx	xxxxxxx	xxxxxxx		Y	Y	Y	Y
3002	Power Meter Nameplate	8	Character	R/CW	Y	xx	xxxxxxx	xxxxxxx		Y P	Y P	Y P	Y P
3010	Power Meter Feature Revision Level	1	Integer	RO	N	xx	xxxxxxx	0 – 32,767		Y	Y	Y	Y
3011	Power Meter Product ID Number	1	Integer	RO	N	xx	1.0	15,210 – 15,212	PM810 = 15210 PM820 = 15211 Siemens 9340 = 15214 PM850 = 15212 PM870 = 15213 Siemens 9360 = 15215	Y	Y	Y	Y
3012	Power Meter Hardware Revision	2	Long	RO	N	xx	xxxxxxx	0x0 – 0xFFFFFFFF		Y	Y	Y	Y
3014	Power Meter Present Operating System Firmware Revision Level	1	Integer	RO	N	xx	xxxxxxx	0x0000 – 0xFFFF		Y P	Y P	Y P	Y P
3015	Power Meter Present Reset System Firmware Revision Level	1	Integer	RO	N	xx	xxxxxxx	0x0000 – 0xFFFF		Y P	Y P	Y P	Y P
3016	Power Meter Present Download System Firmware Revision Level	1	Integer	RO	N	xx	xxxxxxx	0x0000 – 0xFFFF		Y P	Y P	Y P	Y P
3017	Power Meter Serial Number	2	Long	RO	N	xx	1.0	0 – 2,147,352,577		Y	Y	Y	Y
3019	Power Meter Manufacture Date/Time	3	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
3022	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for manufacturing use	--	--	--	--
3023	Power Meter Production History	10	Integer	RO	N	xx	1.0	0x0000 – 0xFFFF	Production/Calibration history registers	Y	Y	Y	Y
3033	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3034	Present Date/Time	3	DateTime	RO	N	xx	See Template	See Template		Y P	Y P	Y P	Y P
3037	Present Millisecond	1	Integer	RO	x	xx	xxxxxxx	0 - 999	Millisecond	--	--	--	--
3038	Power Meter Firmware Bridge Code Version Number	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Used for Power Meter internal record keeping	Y	Y	Y	Y
3039	Last Unit Restart	3	DateTime	RO	Y	xx	See Template	See Template	Last unit restart time	Y P	Y P	Y P	Y P
3042	Power Fail Override	1	Integer	R/W	x	xx	xxxxxxx	xxxxxxx	1 = Power Fail override 2 = Init Metering on Power Fail detection	--	--	--	--
3043	Number of Metering System Restarts	1	Integer	RO	Y	xx	1.0	0 – 32,767		Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3044	Number of Control Power Failures	1	Integer	RO	Y	xx	1.0	0 – 32,767		Y P	Y P	Y P	Y P
3045	Control Power Failure Date/Time	3	DateTime	RO	Y	xx	See Template	See Template	Date/Time of last control power failure	Y P	Y P	Y P	Y P
3048	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3049	Cause of Last Meter Reset	1	Integer	RO	N	xx	xxxxxxx	1 – 20	1 = shutdown & soft reset (restart F/W) 2 = shutdown & hard reset (load from flash and run) 3 = shutdown & hard reset and set memory to default 10 = shutdown with no reset (used by DLF) 12 = already shutdown, hard reset only (used by DLF) 20 = Power failure *the value of NV register 11 is placed in here at reset.	Y P	Y P	Y P	Y P
3050	Self-Test Results	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0xFFFF	0 = Normal; 1 = Error Bit 00 = Is set to "1" if any failure occurs Bit 01 = RTC failure Bit 02 = Reserved Bit 03 = Reserved Bit 04 = Reserved Bit 05 = Metering Collection overrun failure Bit 06 = Reserved Bit 07 = Metering Process 1.0 overrun failure Bit 08 = Reserved Bit 09 = Reserved Bit 10 = Duplicate IP detected Bit 11 = Reserved Bit 12 = Reserved Bit 13 = Reserved Bit 14 = NVRAM Failure Bit 15 = Reserved	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3051	Self Test Results	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0xFFFF	0 = Normal; 1 = Error Bit 00 = tbd Aux IO failure Bit 01 = tbd Option Slot A module failure Bit 02 = tbd Option Slot B module failure Bit 03 = Bit 04 = Bit 05 = Bit 06 = Bit 07 = Bit 08 = OS Create failure Bit 09 = OS Queue overrun failure Bit 10 = Bit 11 = Bit 12 = Bit 13 = Systems shut down due to continuous reset Bit 14 = Unit in Download, Condition A Bit 15 = Unit in Download, Condition B	Y P	Y P	Y P	Y P
3052	Configuration Modified	1	Integer	RO	Y	xx	xxxxxxx	0x0000 – 0xFFFF	Used by sub-systems to indicate that a value used within that system has been internally modified 0 = No modifications; 1 = Modifications Bit 00 = Summary bit Bit 01 = Metering System Bit 02 = Communications System Bit 03 = Alarm System Bit 04 = File System Bit 05 = Auxiliary IO System Bit 06 = Display System	Y P	Y P	Y P	Y P
3053	FLASH MFG ID	1	Integer	RO	Y	xx	xxxxxxx	0 – 65,535	1 = AMD, 4 = FUJITSU	Y	Y	Y	Y
3054	FLASH DEVICE ID	1	Integer	RO	Y	xx	xxxxxxx	0 – 65,535	0x225B = 8mBit, 0x2249 = 16mBit, 0x22f9 = 32mBit	Y	Y	Y	Y

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3055	Supported Feature Bitmap	1	Bitmap	RO	x	xx	xxxxxxx	xxxxxxx	Bitmap of supported features '1' (TRUE) = Bit 0 = Logging supported Bit 1 = FLASH Data-logs 2 & 3 Supported Bit 2 = WFC Supported Bit 3 = Disturbance Alarms Supported Bit 4 = Harmonics through the 31st Supported Bit 5 = Harmonics through the 63rd Supported Bit 6 = Real Time Clock Support Bit 7 = Boolean Alarms Supported Bit 8 = Configurable Alarms Supported Bit 9 = All Demand Models Supported Bit 10 = Trending & Forecasting Supported Bit 11 = EN50160 Supported Bit 12 = Alarm Summary Supported Bit 13 = Nominal Voltage & Current Bit 14 = Energy Per Shift Bit 15 = Single Phase System Types	YP	YP	YP	YP
3056	Hardware Detected	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Detected Hardware Bit 0 = 32Mbit Flash Bit 1 = 16Mbit Flash Bit 2 = 8Mbit Flash Bit 3 = Memory at 0x50000000 (FRAM 2) Bit 4 = RTC detected Bit 5 = Remote RTC detected (Logging Module) Bit 6 = Remote Display Bit 7 = ECC detected Bit 8-15 not used	Y	Y	Y	Y
3057	Last Power-Fail Duration	2	Integer	RO	Y	xx	xxxxxxx	xxxxxxx	The amount of time in elapsed seconds control power was absent during the last power-fail event.	YP	YP	YP	YP
3059	Present FW module	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	This register indicates which module is presently being executed. (Should always be 1)	YP	YP	YP	YP
3060	Processor Idle Time	1	Integer	RO	N	xx	0.1%	0 – 10,000	Updated every 100ms	Y	Y	Y	Y
3061	Present Watchdog Counter	1	Integer	RO	N	xx	xxxxxxx	0 – register 3062	Present value of am_watchdog_sensor. Updated in 200ms Task	--	--	--	--
3062	Processor Watchdog	1	Integer	R/CW	Y	xx	msec	30 – 100		Y	Y	Y	Y
3063	Active load timer set-point	1	Integer	R/CW	Y	xx	xxxxxxx	0x0000 – 0xFFFF	This register contains the set-point for the active load timer. While the 3-phase average current is => this value the timer will increment once a second .	--	--	--	--
3064	Active Load Timer MSB	1	Integer	RO	Y	xx	xxxxxxx	0x0000 – 0xFFFF	MSB of the active load timer	--	--	--	--
3065	Active Load Timer LSB	1	Integer	RO	Y	xx	xxxxxxx	0x0000 – 0xFFFF	MSB of the active load timer	--	--	--	--

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3066	GMT Management (Future)	7	Integer	RO	Y	xx	xxxxxxx	0x0000 – 0xFFFF	Used by software to evaluate local time to GMT	--	--	--	--
3073	Installed Option 1 (Input/Output)	1	Integer	RO	N	xx	xxxxxxx	0 – 7	0 = Not Installed 1 = Unused 2 = IO22 3 = IO26 4 = IO 2222	Y	Y	Y	Y
3074	Installed Option 2 (TBD)	1	Integer	RO	N	xx	xxxxxxx	0 – 7	0 = Not Installed 1 = Unused 2 = IO22 3 = IO26 4 = IO 2222	Y	Y	Y	Y
3075	Installed Option 3 (TBD)	1	Integer	RO	N	xx	xxxxxxx	0 – 7	0 = Not Installed 1 = TBD	Y	Y	Y	Y
3076	Installed Option 4 (TBD)	1	Integer	RO	N	xx	xxxxxxx	0 – 7	0 = Not Installed 1 = TBD	Y	Y	Y	Y
3077	Supported Feature Bitmap (copy of 3055)	1	Bitmap	RO	x	xx	xxxxxxx	xxxxxxx	Bitmap of supported features '1' (TRUE) = Bit 0 = Logging supported Bit 1 = FLASH Data-logs 2 & 3 Supported Bit 2 = WFC Supported Bit 3 = Disturbance Alarms Supported Bit 4 = Harmonics through the 31st Supported Bit 5 = Harmonics through the 63rd Supported Bit 6 = Real Time Clock Support Bit 7 = Boolean Alarms Supported Bit 8 = Configurable Alarms Supported Bit 9 = All Demand Models Supported Bit 10 = Trending & Forecasting Supported Bit 11 = EN50160 Supported Bit 12 = Alarm Summary Supported Bit 13 = Nominal Voltage & Current Bit 14 = Energy Per Shift (release Sept 04) Bit 15 = Not to be used	YP	YP	YP	YP
3078	Supported Feature Bitmap	1	Bitmap	RO	x	xx	xxxxxxx	xxxxxxx	Bitmap of supported features '1' (TRUE) = Bit 0 = Single Phase System Types Bit 1 = Input Metering Bit 2 = Configurable Billing Log Bit 3 = Datalog 4 Bit 4 = ITI/SEMI Supported	YP	YP	YP	YP
3079	Supported Feature Bitmap (Future)	2											

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3081	Systems Disabled Due to Continuous Reset	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0x003F	Bit 00 = Summary bit Bit 01 = Alarms Bit 02 = Auxiliary I/O Bit 03 = Files/Logs Bit 04 = Waveform Capture	Y	Y	Y	Y
3082	Subsystem Configuration Changes	1	Bitmap	RO	Y	xx	xxxxxxx	0x0000 – 0x0FFF	0 = No changes, 1 = Changes Bit 00 = Reserved Bit 01 = Demand Bit 02 = System Bit 03 = Reserved Bit 04 = Metering Bit 05 = Communications Bit 06 = Display Bit 07 = future (Auxiliary IO) Bit 08 = Security Bit 09 = Files Bit 10 = Alarms Bit 11 = PM8 Feature Upgrade Bit 12 = Reserved Bit 13 = Reserved Bit 14 = Reserved Bit 15 = Reserved	Y	Y	Y	Y
3083	Meter Demo Mode Enable	1	Integer	R/W	Y	xx	xxxxxxx	0x0000 – 0xFFFF	Writing a 46 (0x002e) in this register will allow the meter to resume operation in meter test mode after a reset.	--	--	--	--
3084	Demo Mode Metering Input Override Select.	1	Integer	R/W	Y	xx	xxxxxxx	0x0000 – 0xFFFF	Overrides the metering inputs with data input by the user. 0 = Clear Meter Test Mode 1 = Set Meter Test Mode with values entered by user 2 = Set Meter Test Mode with nominal values calculated by meter	--	--	--	--
3085	Billing Log Interval	1	Integer	R/CW	Y	xx	Minutes	10 - 1440	Configurable Billing Log Interval (In Increments of 5) Default = 60	YP	YP	YP	YP
3086	Model ID	1	Integer	RO	Y	xx	xxxxxx	xxxxxx	Model ID used by ECC 810 820 850 870 9340 9360	YP	YP	YP	YP
3087	Reserved	3	Integer	RO	Y	xx	xxxxxx	xxxxxx	xxxxxx	--	--	--	--
3090	Branding	1	Interger	RO	Y	xx	xxxxxx	xxxxxxx	Present Branding of Meter 0 – Square D Company 1 – Merlin Gerin 3 – Siemens 4 – Schneider Electric	Y	Y	Y	Y

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3091	NVRAM Status	1	Integer	RO	Y	xx	xxxxxx	0x0000 – 0xFFFF	Bit Pattern to indicate status of NVRAM memory: 0xAAAA - Indicates NVRAM memory check passed	Y	Y	Y	Y
3092	NVRAM Bad Locations Count	1	Integer	RO	Y	xx	xxxxxx	xxxxxx	Indicates the number of 16-bit NVRAM locations that failed the NVRAM memory test.	Y	Y	Y	Y
3093	Present Month	1	Integer	RO	N	xx	Months	1 – 12		YP	YP	YP	YP
3094	Present Day	1	Integer	RO	N	xx	Days	1 – 31		YP	YP	YP	YP
3095	Present Year	1	Integer	RO	N	xx	Years	2,000 – 2,043		YP	YP	YP	YP
3096	Present Hour	1	Integer	RO	N	xx	Hours	0 – 23		YP	YP	YP	YP
3097	Present Minute	1	Integer	RO	N	xx	Minutes	0 – 59		YP	YP	YP	YP
3098	Present Second	1	Integer	RO	N	xx	Seconds	0 – 59		YP	YP	YP	YP
3099	Day of Week	1	Integer	RO	N	xx	1.0	1 – 7	Sunday = 1	YP	YP	YP	YP

[3100] Current/Voltage Configuration

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3100	Reserved	12	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	--	--	--	--
3112	Current-Voltage Production History	10	Integer	RO	Y	××	1.0	0x0 – 0xFFFF	Production/Calibration history registers	Y	Y	Y	Y
3122	Current Gain, Phase A	1	Integer	RO	Y	××	0.00001	-20,000 – 20,000	Factory Calibration Coefficients Default = 0	Y	Y	Y	Y
3123	Current Gain, Phase B	1	Integer	RO	Y	××	0.00001	-20,000 – 20,000	Factory Calibration Coefficients Default = 0	Y	Y	Y	Y
3124	Current Gain, Phase C	1	Integer	RO	Y	××	0.00001	-20,000 – 20,000	Factory Calibration Coefficients Default = 0	Y	Y	Y	Y
3125	Reserved	1	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	Y	Y	Y	Y
3126	Voltage Gain A-N	1	Integer	RO	Y	××	0.00001	-20,000 – 20,000	Factory Calibration Coefficients Default = 0	Y	Y	Y	Y
3127	Voltage Gain B-N	1	Integer	RO	Y	××	0.00001	-20,000 – 20,000	Factory Calibration Coefficients Default = 0	Y	Y	Y	Y
3128	Voltage Gain C-N	1	Integer	RO	Y	××	0.00001	-20,000 – 20,000	Factory Calibration Coefficients Default = 0	Y	Y	Y	Y
3129	Voltage Gain N-G	1	Integer	RO	Y	××	0.00001	-20,000 – 20,000	Factory Calibration Coefficients Default = 0	Y	Y	Y	Y
3130	CT Phase Shift Offset Adjust Phase A	1	Integer	R/CW	Y	××	0.01°	-1,000 – 1,000	Factory Calibration Coefficients Default = 0	Y	Y	Y	Y
3131	CT Phase Shift Offset Adjust Phase B	1	Integer	R/CW	Y	××	0.01°	-1,000 – 1,000	Factory Calibration Coefficients Default = 0	Y	Y	Y	Y
3132	CT Phase Shift Offset Adjust Phase C	1	Integer	R/CW	Y	××	0.01°	-1,000 – 1,000	Factory Calibration Coefficients Default = 0	Y	Y	Y	Y
3133	Reserved	5	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	--	--	--	--
3138	CT Ratio, Phase A Correction Factor	1	Integer	R/CW	Y	××	0.00001	-20,000 – 20,000	Default = 0	Y P	Y P	Y P	Y P
3139	CT Ratio, Phase B Correction Factor	1	Integer	R/CW	Y	××	0.00001	-20,000 – 20,000	Default = 0	Y P	Y P	Y P	Y P
3140	CT Ratio, Phase C Correction Factor	1	Integer	R/CW	Y	××	0.00001	-20,000 – 20,000	Default = 0	Y P	Y P	Y P	Y P
3141	Reserved	1	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	--	--	--	--
3142	PT Ratio, Phase A Correction Factor	1	Integer	R/CW	Y	××	0.00001	-20,000 – 20,000	Default = 0	Y P	Y P	Y P	Y P
3143	PT Ratio, Phase B Correction Factor	1	Integer	R/CW	Y	××	0.00001	-20,000 – 20,000	Default = 0	Y P	Y P	Y P	Y P
3144	PT Ratio, Phase C Correction Factor	1	Integer	R/CW	Y	××	0.00001	-20,000 – 20,000	Default = 0	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3145	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3146	Low Current Gain Adjust Phase A	1	Integer	R/CW	Y	xx	xxxxxxx	500 - 2000	Default = 1000	Y	Y	Y	Y
3147	Low Current Gain Adjust Phase B	1	Integer	R/CW	Y	xx	xxxxxxx	500 - 2000	Default = 1000	Y	Y	Y	Y
3148	Low Current Gain Adjust Phase C	1	Integer	R/CW	Y	xx	xxxxxxx	500 - 2000	Default = 1000	Y	Y	Y	Y
3149	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3150	Field Calibration Date/Time	3	DateTime	R/CW	Y	xx	See Template	See Template		YP	YP	YP	YP
3153	Reserved	1	----	--	-	-	-	-					
3154	Phase A Current Field Calibration Coefficient	1	Integer	R/CW	Y	xx	0.00001	-20,000 – 20,000	Default = 0	YP	YP	YP	YP
3155	Phase B Current Field Calibration Coefficient	1	Integer	R/CW	Y	xx	0.00001	-20,000 – 20,000	Default = 0	YP	YP	YP	YP
3156	Phase C Current Field Calibration Coefficient	1	Integer	R/CW	Y	xx	0.00001	-20,000 – 20,000	Default = 0	YP	YP	YP	YP
3157	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3158	Phase A Voltage Field Calibration Coefficient	1	Integer	R/CW	Y	xx	0.00001	-20,000 – 20,000	Default = 0	YP	YP	YP	YP
3159	Phase B Voltage Field Calibration Coefficient	1	Integer	R/CW	Y	xx	0.00001	-20,000 – 20,000	Default = 0	YP	YP	YP	YP
3160	Phase C Voltage Field Calibration Coefficient	1	Integer	R/CW	Y	xx	0.00001	-20,000 – 20,000	Default = 0	YP	YP	YP	YP
3161	Neutral-Ground Voltage Field Calibration Coefficient	1	Integer	R/CW	Y	xx	0.00001	-20,000 – 20,000	Default = 0	YP	YP	YP	YP
3162	Reserved	2	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3164	Input Voltage Deadband Enable	1	Integer	R/CW	Y	-	-	-	0 = Disabled 1 = Enabled (default) Minimum Deadband Threshold = 10 * ((PT_Primary * PT_Pri_Scale) / PT_Secondary)	Y	Y	Y	Y
3165	Input Current Deadband Enable	1	Integer	R/CW	Y	-	-	-	0 = Disabled 1 = Enabled (default) **Both minimum thresholds below must be met for Current deadband to be applied on RMS or Fundamental current values:** Minimum RMS Deadband Threshold = 0.02 * (CT_Primary / CT_Secondary) Minimum Fundamental Deadband Threshold = 0.0035 * (CT_Primary / CT_Secondary)	Y	Y	Y	Y

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3166	Power Factor Deadband Enable	1	Integer	R/CW	Y	-	-	-	0 = Disabled 1 = Enabled (default) Deadband is -0.9995 – 0.9995	Y	Y	Y	Y
3167	Reserved	3	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	--	--	--	--
3170	CT Phase Shift Correction @ 1 amp	1	Integer	R/CW	Y	××	×××××××	-1,000 – 1,000	Phase Shift Correction in the range of –10º to +10º. A negative shifts in the lag direction. Default = 0	Y P	Y P	Y P	Y P
3171	CT Phase Shift Correction @ 5 amps	1	Integer	R/CW	Y	××	×××××××	-1,000 – 1,000	Phase Shift Correction in the range of –10º to +10º. A negative shifts in the lag direction. Default = 0	Y P	Y P	Y P	Y P
3172	Reserved	27	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	--	--	--	--
3199	Manufacturing Data CRC	1	Integer	RO	N	××	×××××××	×××××××		Y	Y	Y	Y

[3200] Metering Configuration & Status

[3200] Metering Configuration & Status – Basic

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3200	Metering System Type	1	Integer	R/CW	Y	xx	1.0	10, 11, 12, 30, 31, 40, 42	10 = 1PH2W1CT (L-N) 11 = 1PH2W1CT (L-L) 12 = 1PH3W2CT 30 = 3PH3W2CT 31 = 3PH3W3CT 32 = 3PH3W1CT 40 = 3PH4W3CT (default) 42 = 3PH4W3CT2PT 44 = 3PH4W1CT3PT	YP	YP	YP	YP
3201	CT Ratio, 3-Phase Primary	1	Integer	R/CW	Y	xx	1.0	1 – 32,767	Default = 5	YP	YP	YP	YP
3202	CT Ratio, 3-Phase Secondary	1	Integer	R/CW	Y	xx	1.0	1, 5	Default = 5	YP	YP	YP	YP
3203	CT Phase Selection	1	Integer	R/CW	Y	xx	1.0	1 - 3	Phase selection for 1CT system types (32/44) 1 – Phase A 2 – Phase B 3 – Phase C	--	--	--	--
3204	Reserved	1	xx	xx	xx	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3205	PT Ratio, 3-Phase Primary	1	Integer	R/CW	Y	xx	1.0	1 – 32,767	Default = 120	YP	YP	YP	YP
3206	PT Ratio, 3-Phase Primary Scale Factor	1	Integer	R/CW	Y	xx	1.0	-1 – 2	Default = 0 -1 = Direct Connect	YP	YP	YP	YP
3207	PT Ratio, 3-Phase Secondary	1	Integer	R/CW	Y	xx	1.0	100, 110, 115, 120	Default = 120	YP	YP	YP	YP
3208	Nominal System Frequency	1	Integer	R/CW	Y	xx	Hz	50, 60, 400	Default = 60	YP	YP	YP	YP
3209	Scale A – 3 Phase Amps	1	Integer	R/CW	Y	xx	1.0	-2 – 1	Power of 10 Default = 0	YP	YP	YP	YP
3210	Scale B – Neutral Amps	1	Integer	R/CW	Y	xx	1.0	-2 – 1	Power of 10 Default = 0	YP	YP	YP	YP
3211	Reserved	2	xx	xx	xx	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3212	Scale D – 3 Phase Volts	1	Integer	R/CW	Y	xx	1.0	-2 – 2	Power of 10 Default = 0	YP	YP	YP	YP
3213	Scale E – Neutral Volts	1	Integer	R/CW	Y	xx	1.0	-2 – 2	Power of 10 Default = -1	YP	YP	YP	YP
3214	Scale F – Power	1	Integer	R/CW	Y	xx	1.0	-3 – 3	Power of 10 Default = 0	YP	YP	YP	YP

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3215	Energy Display Precision	1	Integer	R/CW	Y	xx	1.0	0 – 23	0 = Auto range (default) 10 = 000000 kilo 11 = 00000.0 kilo 12 = 0000.00 kilo 13 = 000.000 kilo 20 = 000000 mega 21 = 00000.0 mega 22 = 0000.00 mega 23 = 000.000 mega All other values will default to auto range.	Y P	Y P	Y P	Y P
3216	Reserved	4	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3220	Logical Phase A Voltage	1	Integer	R/CW	Y	xx	1.0	10 – 31	Logical Phase association Default = 10 (add 1 if reversed)	Y	Y	Y	Y
3221	Logical Phase B Voltage	1	Integer	R/CW	Y	xx	1.0	10 – 31	Logical Phase association Default = 20 (add 1 if reversed)	Y	Y	Y	Y
3222	Logical Phase C Voltage	1	Integer	R/CW	Y	xx	1.0	10 – 31	Logical Phase association Default = 30 (add 1 if reversed)	Y	Y	Y	Y
3223	Logical Phase A Current	1	Integer	R/CW	Y	xx	1.0	10 – 41	Logical Phase association Default = 10 (add 1 if reversed)	Y	Y	Y	Y
3224	Logical Phase B Current	1	Integer	R/CW	Y	xx	1.0	10 – 41	Logical Phase association Default = 20 (add 1 if reversed)	Y	Y	Y	Y
3225	Logical Phase C Current	1	Integer	R/CW	Y	xx	1.0	10 – 41	Logical Phase association Default = 30 (add 1 if reversed)	Y	Y	Y	Y
3226	Logical Phase N Voltage	1	Integer	R/CW	Y	xx	1.0	10 – 41	Logical Phase association Default = 40 (add 1 if reversed)	Y	Y	Y	Y

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3227	Operating Mode Parameters	1	Bitmap	R/CW	Y	xx	Binary	0x0000 – 0x0FFF	Default = 0 Bit 00 = Reserved Bit 01 = Reactive Energy & Demand Accumulation 0 = Fund. Only ; 1 = Harmonics Included Bit 02 = PF Sign Convention 0 = IEEE Convention 1 = IEC Convention Bit 03 = Reserved Bit 04 = Reserved Bit 05 = Reserved Bit 06 = Conditional Energy Accumulation Control 0 = Inputs; 1 = Command Bit 07 = Reserved Bit 08 = Display Setup 0 = Enabled; 1 = Disabled Bit 09 = Normal Phase Rotation 0 = ABC; 1 = CBA Bit 10 = Total Harmonic Distortion Calculation 0 = THD (% Fundamental) 1 = thd (% Total RMS) Bit 11 = Reserved	Y P	Y P	Y P	Y P
3228	Phase Rotation Direction	1	Integer	RO	N	xx	1.0	0 – 1	0 = ABC; 1 = CBA	Y P	Y P	Y P	Y P
3229	Incremental Energy Interval	1	Integer	R/CW	Y	xx	Minutes	0 – 1440	Default = 60 0 = Continuous Accumulation	Y P	Y P	Y P	Y P
3230	Incremental Energy Interval Start Time	1	Integer	R/CW	Y	xx	Minutes	0 – 1440	Minutes from midnight Default = 0	Y P	Y P	Y P	Y P
3231	Incremental Energy Interval End Time	1	Integer	R/CW	Y	xx	Minutes	0 – 1440	Minutes from midnight Default = 1440	Y P	Y P	Y P	Y P
3232	Energy Accumulation Mode	1	Integer	R/CW	Y	xx	1.0	0 – 1	0 = Absolute (default) 1 = Signed	Y P	Y P	Y P	Y P
3233	Peak Current Demand Over Last Year (currently not calculated)	12	Integer	R/W	Y	xx	Amps	0 – 32,767	Entered by the user for use in calculation of Total Demand Distortion. 0 = Calculation not performed (default)	Y P	Y P	Y P	Y P
3234	Feature Upgrade A	1	Integer	R/CW	Y	xx	xxxxxxx	-32767 - 32767	Numerical Soft-key for feature upgrade within a model	Y	Y	Y	Y
3235	Feature Upgrade B	1	Integer	R/CW	Y	xx	xxxxxxx	-32767 - 32767	Numerical Soft-key for feature upgrade within a model	Y	Y	Y	Y
3236	Feature Upgrade C	1	Integer	R/CW	Y	xx	xxxxxxx	-32767 - 32767	Numerical Soft-key for feature upgrade within a model	Y	Y	Y	Y
3237	Frequency Sync Error Limit	1	Integer	R/CW	Y	-	-	1 - 10	Default = 1	--	--	--	--

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3238	Nominal System Voltage, L-L	1	Integer	R/CW	Y	D	1	0 – 32767	Used for diagnostics and alarms	--	--	Y P	Y P
3239	Nominal Circuit Current	1	Integer	R/CW	Y	A	1	0 – 32767	Used for diagnostics and alarms	--	--	Y P	Y P

[3240] Metering Configuration & Status – Harmonics

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3240	Harmonic Quantity Selection	1	Integer	R/W	Y	xx	1.0	0 – 3	0 = Disabled 1 = Harmonic magnitudes only (default) 2 = Harmonic magnitudes and angles	Y P	Y P	Y P	Y P
3241	Voltage Harmonic Magnitude Format	1	Integer	R/CW	Y	xx	1.0	0 - 2	0 = % of Fundamental (default) 1 = % of RMS 2 = RMS	Y P	Y P	Y P	Y P
3242	Current Harmonic Magnitude Format	1	Integer	R/CW	Y	xx	1.0	0 - 2	0 = % of Fundamental (default) 1 = % of RMS 2 = RMS	Y P	Y P	Y P	Y P
3243	Harmonic Refresh Interval	1	Integer	R/CW	Y	xx	Seconds	10 – 60	Default = 30	Y P	Y P	Y P	Y P
3244	Time Remaining Until Harmonic Refresh	1	Integer	R/W	N	xx	Seconds	10 – 60	The user may write to this register to stretch the hold time.	Y P	Y P	Y P	Y P
3245	Harmonic Channel Map	1	Bitmap	RO	N	xx	Binary	0x0000 – 0x7FFF	Bitmap indicating active Harmonic Channels 0 = Inactive; 1 = Active Bit 00 = Vab Bit 01 = Vbc Bit 02 = Vca Bit 03 = Van Bit 04 = Vbn Bit 05 = Vcn Bit 06 = Reserved (Neutral to Ref) Bit 07 = Ia Bit 08 = Ib Bit 09 = Ic Bit 10 = In Bit 11-15 = Reserved	Y P	Y P	Y P	Y P
3246	Harmonic Report Status	1	Integer	RO	N	xx	1.0	0 – 1	0 = Processing (default) 1 = Holding	Y P	Y P	Y P	Y P
3247	Reserved	1	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3248	Display 1 Second Metering Floating Point Values	1	Integer	R/CW	N	-	-	0 – 1	0x8000 = (default) – Disabled with any value other than 1 1 = Enabled Values begin at register 11700	Y P	Y P	Y P	Y P
3249	Reserved	1	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

[3250] Metering Configuration & Status – Updates

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3251	Reserved	2	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	Y

[3254] Metering Configuration & Status – Diagnostics

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3254	Metering System Diagnostic Summary	1	Bitmap	RO	N	××	Binary	0x0000 – 0xFFFF	0 = Normal; 1 = Error Bit 00 = Summary Bit (On if any other bit is on) Bit 01 = Configuration Error Bit 02 = Scaling Error Bit 03 = Phase Loss Bit 04 = Wiring Error Bit 05 = Incremental Energy may be incorrect due to meter reset Bit 06 = External Demand Sync Timeout	Y P	Y P	Y P	Y P
3255	Metering System Configuration Error Summary	1	Bitmap	RO	N	××	Binary	0x0000 – 0xFFFF	0 = Normal; 1 = Error Bit 00 = Summary Bit (On if any other bit is on) Bit 01 = Logical Configuration Error Bit 02 = Demand System Configuration Error Bit 03 = Energy System Configuration Error Bit 04 = Reserved Bit 05 = Metering Configuration Error	Y P	Y P	Y P	Y P
3256	Logical Configuration Error	1	Bitmap	RO	N	××	Binary	0x0 – 0x03	0 = Normal; 1 = Error Bit 00 = Voltage Configuration Error Bit 01 = Current Configuration Error	Y	Y	Y	Y
3257	Wiring Error Detection 1	1	Bitmap	RO	N	××	Binary	0x0000 – 0xFFFF	0 = Normal; 1 = Error Bit 00 = Summary Bit (On if any other bit is on) Bit 01 = Wiring Check Aborted Bit 02 = System type setup error Bit 03 = Frequency out of range Bit 04 = No voltage Bit 05 = Voltage imbalance Bit 06 = Not enough load to check connections Bit 07 = Check meter configured for direct connect Bit 08 = All CT reverse polarity Bit 09 = Reserved Bit 10 = Reserved Bit 11 = Reserved Bit 12 = Reserved Bit 13 = Reserved Bit 14 = Phase rotation not as expected Bit 15 = Negative kW is usually abnormal	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3258	Wiring Error Detection 2	1	Bitmap	RO	N	xx	Binary	0x0000 – 0xFFFF	0 = Normal; 1 = Error Bit 00 = Van magnitude error Bit 01 = Vbn magnitude error Bit 02 = Vcn magnitude error Bit 03 = Vab magnitude error Bit 04 = Vbc magnitude error Bit 05 = Vca magnitude error Bit 06 = Van angle not as expected Bit 07 = Vbn angle not as expected Bit 08 = Vcn angle not as expected Bit 09 = Vab angle not as expected Bit 10 = Vbc angle not as expected Bit 11 = Vca angle not as expected Bit 12 = Vbn is reversed polarity Bit 13 = Vcn is reversed polarity Bit 14 = Vbc is reversed polarity Bit 15 = Vca is reversed polarity	Y P	Y P	Y P	Y P
3259	Wiring Error Detection 3	1	Bitmap	RO	N	xx	Binary	0x0000 – 0xFFFF	0 = Normal; 1 = Error Bit 00 = Move VTa to VTb Bit 01 = Move VTb to VTc Bit 02 = Move VTc to VTa Bit 03 = Move VTa to VTc Bit 04 = Move VTb to VTa Bit 05 = Move VTc to VTb Bit 06 = Reserved Bit 07 = Reserved Bit 08 = Reserved Bit 09 = Reserved Bit 10 = Ia is < 1% of CT Bit 11 = Ib is < 1% of CT Bit 12 = Ic is < 1% of CT Bit 13 = Ia angle not in expected range Bit 14 = Ib angle not in expected range Bit 15 = Ic angle not in expected range	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3260	Wiring Error Detection 4	1	Bitmap	RO	N	xx	Binary	0x0000 – 0xFFFF	0 = Normal; 1 = Error Bit 00 = CTa reversed polarity Bit 01 = CTb reversed polarity Bit 02 = CTc reversed polarity Bit 03 = Reserved Bit 04 = Move CTa to CTb Bit 05 = Move CTb to CTc Bit 06 = Move CTc to Cta Bit 07 = Move CTa to CTc Bit 08 = Move CTb to Cta Bit 09 = Move CTc to CTb Bit 10 = Move CTa to CTb & reverse polarity Bit 11 = Move CTb to CTc & reverse polarity Bit 12 = Move CTc to CTa & reverse polarity Bit 13 = Move CTa to CTc & reverse polarity Bit 14 = Move CTb to CTa & reverse polarity Bit 15 = Move CTc to CTb & reverse polarity	Y P	Y P	Y P	Y P
3261	Scaling Error	1	Bitmap	RO	N	xx	Binary	0x0000 – 0x003F	Indicates potential over range due to scaling error 0 = Normal; 1 = Error Bit 00 = Summary Bit (On if any other bit is on) Bit 01 = Scale A – Phase Current Error Bit 02 = Scale B – Neutral Current Error Bit 03 = Unused Bit 04 = Scale D – Phase Voltage Error Bit 05 = Scale E – Neutral Voltage Error Bit 06 = Scale F – Power Error	Y P	Y P	Y P	Y P
3262	Phase Loss Bitmap	1	Bitmap	RO	N	xx	Binary	0x0000 – 0x007F (-32,768 if N/A)	0 = OK; 1 = Phase Loss Bit 00 = Summary Bit (On if any other bit is on) Bit 01 = Voltage Phase A Bit 02 = Voltage Phase B Bit 03 = Voltage Phase C Bit 04 = Current Phase A Bit 05 = Current Phase B Bit 06 = Current Phase C This register is controlled by the voltage and current phase loss alarms. These alarms must be configured and enabled for this register to be populated.	Y P	Y P	Y P	Y P
3263	Active Load Configuration	1	Integer	R/CW	N	xx	xxxxxxx	xxxxxxx	The amount of current needed in any one phase to increment the active load elapsed counter.	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3264	Active Load Elapsed Time	2	Integer	RO	N	xx	xxxxxxx	xxxxxxx	32-bit counter of elapsed seconds an active current, as defined in register 3063, has been active. Register 3264 = MSW, 3265 = LSW	Y P	Y P	Y P	Y P

[3270] Metering Configuration & Status – Resets

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3266	Previous Month Minimum/Maximum Start Date/Time	3	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
3269	Reserved	1	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3270	Present Month Minimum/Maximum Reset Date/Time	3	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
3273	Reserved	1	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3274	Accumulated Energy Reset Date/Time	3	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
3277	Reserved	1	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3278	Conditional Energy Reset Date/Time	3	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
3281	Reserved	1	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3282	Incremental Energy Reset Date/Time	3	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
3285	Reserved	1	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3286	Input Metering Accumulation Reset Date/Time	3	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
3289	Reserved	1	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3290	Accumulated Energy Preset Date/Time	3	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
3293	Reserved	1	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3294	Reset Energy Registers Date/Time	3	DateTime	RO	Y	xx	See Template	See Template					
3297	Reserved	43	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for future development				

[3340] Metering Configuration & Status – Waveform Capture Status

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3340	**Reserved** For Future State Waveform Capture Percent Complete	1	Integer	RO	N	××	Percent	0 – 100		--	--	--	--
3341	Fixed Length Waveform Capture A Percent Complete	1	Integer	RO	N	××	Percent	0 – 100		YP	YP	YP	YP
3342	Reserved	2	Integer	RO	×	××	×××××××	×××××××	Reserved for future development	--	--	--	--

[3345] Metering Configuration & Status – Residual Channels

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3346	Reserved	54	xx	xx	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

[3400] Communications

[3400] Communications – RS485

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3400	RS-485 Comm Port , Protocol	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 3	0 = Modbus (default) 1 = Jbus 2 = Modbus ASCII 8 3 = Modbus ASCII 7	Y P	Y P	Y P	Y P
3401	RS-485 Comm Port, Address	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 255	Valid Addresses: (Default = 1) Modbus: 0 – 247 Jbus: 0 – 255	Y P	Y P	Y P	Y P
3402	RS-485 Comm Port, Baud Rate	1	Integer	R/CW	Y	xx	xxxxxxx	3 – 5	3 = 9600 (default) 4 = 19200 5 = 38400	Y P	Y P	Y P	Y P
3403	RS-485 Comm Port, Parity	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 2	0 = Even (default) 1 = Odd 2 = None	Y P	Y P	Y P	Y P
3404	Reserved	3	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3407	RS-485 Comm Port, Modbus ASCII Time Between Chars	1	Integer	R/CW	x	xx	xxxxxxx	xxxxxxx	Maximum time allowed to elapse between characters Min 50 mS, Max 5000 mS, Default 1000 mS	Y P	Y P	Y P	Y P
3408	Reserved	2	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development				
3410	Rs-485 Comm Port, Packets To This Unit	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of valid messages addressed to this unit	Y P	Y P	Y P	Y P
3411	Rs-485 Comm Port, Packets To Other Units	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of valid messages addressed to other units	Y P	Y P	Y P	Y P
3412	Rs-485 Comm Port, Packets With Invalid Address	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with invalid address	Y P	Y P	Y P	Y P
3413	Rs-485 Comm Port, Packets With Bad CRC	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with bad CRC	Y P	Y P	Y P	Y P
3414	Rs-485 Comm Port, Packets With Error	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with errors	Y P	Y P	Y P	Y P
3415	Rs-485 Comm Port, Packets With Illegal Opcode	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with an illegal opcode	Y P	Y P	Y P	Y P
3416	Rs-485 Comm Port, Packets With Illegal Register	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with an illegal register	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3417	Rs-485 Comm Port, Invalid Write Responses	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of invalid write responses	Y P	Y P	Y P	Y P
3418	Rs-485 Comm Port, Packets With Illegal Counts	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with an illegal count	Y P	Y P	Y P	Y P
3419	Rs-485 Comm Port, Packets With Frame Error	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with a frame error	Y P	Y P	Y P	Y P
3420	Rs-485 Comm Port, Broadcast Messages	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of broadcast messages received	Y P	Y P	Y P	Y P
3421	Rs-485 Comm Port, Number Of Exceptions	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of exception replies	Y P	Y P	Y P	Y P
3422	Rs-485 Comm Port , Messages With Good CRC	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with a good CRC	Y P	Y P	Y P	Y P
3423	Rs-485 Comm Port, Modbus Event Counter	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Modbus Event Counter	Y P	Y P	Y P	Y P
3424	Reserved	6	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

[3430] Communications –AUX Comms (Remote)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3430	AUX Comm Port , Protocol	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 3	0 = Modbus (default) 1 = Jbus 2 = Modbus ASCII 8 3 = Modbus ASCII 7	Y P	Y P	Y P	Y P
3431	AUX Comm Port, Address	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 255	Valid Addresses: (Default = 1) Modbus: 0 – 247 Jbus: 0 – 255	Y P	Y P	Y P	Y P
3432	AUX Comm Port, Baud Rate	1	Integer	R/CW	Y	xx	xxxxxxx	3 – 5	3 = 9600 (default) 4 = 19200 5 = 38400	Y P	Y P	Y P	Y P
3433	AUX Comm Port, Parity	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 2	0 = Even (default) 1 = Odd 2 = None	Y P	Y P	Y P	Y P
3434	Reserved	3	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
3437	AUX Comm Port, Modbus ASCII Time Between Chars	1	Integer	R/CW	x	xx	xxxxxxx	xxxxxxx	Maximum time allowed to elapse between characters Min 50 mS, Max 5000 mS, Default 1000 mS	Y P	Y P	Y P	Y P
3438	EIA port	1	Integer	R/CW	x	xx	xxxxxxx	0 - 1	0 = RS 485 (default) 1 = RS 232	--	--	--	--
3439	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development				
3440	AUX Comm Port, Packets To This Unit	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of valid messages addressed to this unit	Y P	Y P	Y P	Y P
3441	AUX Comm Port, Packets To Other Units	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of valid messages addressed to other units	Y P	Y P	Y P	Y P
3442	AUX Comm Port, Packets With Invalid Address	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with invalid address	Y P	Y P	Y P	Y P
3443	AUX Comm Port, Packets With Bad CRC	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with bad CRC	Y P	Y P	Y P	Y P
3444	AUX Comm Port, Packets With Error	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with errors	Y P	Y P	Y P	Y P
3445	AUX Comm Port, Packets With Illegal Op-code	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with an illegal op-code	Y P	Y P	Y P	Y P
3446	AUX Comm Port, Packets With Illegal Register	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with an illegal register	Y P	Y P	Y P	Y P
3447	AUX Comm Port, Invalid Write Responses	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of invalid write responses	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3448	AUX Comm Port, Packets With Illegal Counts	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with an illegal count	Y P	Y P	Y P	Y P
3449	AUX Comm Port, Packets With Frame Error	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with a frame error	Y P	Y P	Y P	Y P
3450	AUX Comm Port, Broadcast Messages	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of broadcast messages received	Y P	Y P	Y P	Y P
3451	AUX Comm Port, Number Of Exceptions	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of exception replies	Y P	Y P	Y P	Y P
3452	AUX Comm Port , Messages With Good CRC	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Number of messages received with a good CRC	Y P	Y P	Y P	Y P
3453	AUX Comm Port, Modbus Event Counter	1	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Modbus Event Counter	Y P	Y P	Y P	Y P
3454	Reserved	36	Integer	RO	Y	xx	xxxxxxx	0 – 32,767	Reserved for future development	--	--	--	--

[3650] Spare – (3650 – 3749) Possible User Qtys

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3650	Reserved	100	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

[3750] ITIC/SEMI Evaluation – (3750-3899)

ITI(CBEMA) Voltage Sags

3750	Duration: <20ms Magnitude: 80-90% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3751	Duration: 20ms-0.5s Magnitude: 80-90% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3752	Duration: 0.5-10s Magnitude: 80-90% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P

3753	Duration: >10s Magnitude: 80-90% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3754	Total Voltage Sags Magnitude: 80-90% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3755	Duration: <20ms Magnitude: 70-80% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3756	Duration: 20ms-0.5s Magnitude: 70-80% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3757	Duration: 0.5-10s Magnitude: 70-80% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3758	Duration: >10s Magnitude: 70-80% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3759	Total Voltage Sags Magnitude: 70-80% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3760	Duration: <20ms Magnitude: 40-70% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3761	Duration: 20ms-0.5s Magnitude: 40-70% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3762	Duration: 0.5-10s Magnitude: 40-70% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3763	Duration: >10s Magnitude: 40-70% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3764	Total Voltage Sags Magnitude: 40-70% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3765	Duration: <20ms Magnitude: 0-40% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3766	Duration: 20ms-0.5s Magnitude: 0-40% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3767	Duration: 0.5-10s Magnitude: 0-40% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3768	Duration: >10s Magnitude: 0-40% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3769	Total Voltage Sags Magnitude: 0-40% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3770	Total Voltage Sags Duration: <20ms	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3771	Total Voltage Sags Duration: 20ms-0.5s	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3772	Total Voltage Sags Duration: 0.5-10s	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3773	Total Voltage Sags Duration: >10s	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3774	Total ITI(CBEMA) Voltage Sags	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3775	Date/Time of Last Event	4	Date Time	RO	Y	-	-	-		N	N	N	Y P
3779	Date/Time of Last Reset	4	Date Time	RO	Y	-	-	-		N	N	N	Y P

ITI(CBEMA) Voltage Swells

3783	Duration: <20ms Magnitude: 110-120% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3784	Duration: 20ms-0.5s Magnitude: 110-120% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3785	Duration: 0.5-10s Magnitude: 110-120% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3786	Duration: >10s Magnitude: 110-120% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3787	Total Voltage Swells Magnitude: 110-120% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3788	Duration: <20ms Magnitude: 120-140% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3789	Duration: 20ms-0.5s Magnitude: 120-140% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3790	Duration: 0.5-10s Magnitude: 120-140% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3791	Duration: >10s Magnitude: 120-140% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3792	Total Voltage Swells Magnitude: 120-140% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3793	Duration: <20ms Magnitude: 140-200% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3794	Duration: 20ms-0.5s Magnitude: 140-200% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3795	Duration: 0.5-10s Magnitude: 140-200% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3796	Duration: >10s Magnitude: 140-200% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3797	Total Voltage Swells Magnitude: 140-200% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3798	Duration: <20ms Magnitude: 200-500% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3799	Duration: 20ms-0.5s Magnitude: 200-500% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3800	Duration: 0.5-10s Magnitude: 200-500% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3801	Duration: >10s Magnitude: 200-500% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3802	Total Voltage Swells Magnitude: 200-500% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3803	Duration: <20ms Magnitude: >500% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3804	Duration: 20ms-0.5s Magnitude: >500% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3805	Duration: 0.5-10s Magnitude: >500% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3806	Duration: >10s Magnitude: >500% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3807	Total Voltage Swells Magnitude: >500% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P

3808	Total Voltage Swells Duration: <20ms	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3809	Total Voltage Swells Duration: 20ms-0.5s	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3810	Total Voltage Swells Duration: 0.5-10s	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3811	Total Voltage Swells Duration: >10s	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3812	Total ITI(CBEMA) Voltage Swells	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3813	Date/Time of Last Event	4	Date Time	RO	Y	-	-	-		N	N	N	Y P
3817	Date/Time of Last Reset	4	Date Time	RO	Y	-	-	-		N	N	N	Y P

SEMI F47 Voltage Sags

3821	Duration: <50ms Magnitude: 80-90% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3822	Duration: 50-200ms Magnitude: 80-90% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3823	Duration: 200-500ms Magnitude: 80-90% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3824	Duration: 500-1000ms Magnitude: 80-90% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3825	Duration: >1000ms Magnitude: 80-90% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3826	Total Voltage Sags Magnitude: 80-90% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3827	Duration: <50ms Magnitude: 70-80% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3828	Duration: 50-200ms Magnitude: 70-80% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3829	Duration: 200-500ms Magnitude: 70-80% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3830	Duration: 500-1000ms Magnitude: 70-80% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3831	Duration: >1000ms Magnitude: 70-80% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3832	Total Voltage Sags Magnitude: 70-80% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3833	Duration: <50ms Magnitude: 50-70% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3834	Duration: 50-200ms Magnitude: 50-70% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3835	Duration: 200-500ms Magnitude: 50-70% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3836	Duration: 500-1000ms Magnitude: 50-70% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P

3837	Duration: >1000ms Magnitude: 50-70% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3838	Total Voltage Sags Magnitude: 50-70% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3839	Duration: <50ms Magnitude: 0-50% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3840	Duration: 50-200ms Magnitude: 0-50% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3841	Duration: 200-500ms Magnitude: 0-50% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3842	Duration: 500-1000ms Magnitude: 0-50% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3843	Duration: >1000ms Magnitude: 0-50% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3844	Total Voltage Sags Magnitude: 0-50% nominal V	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3845	Total Voltage Sags Duration: <50ms	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3846	Total Voltage Sags Duration: 50-200ms	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3847	Total Voltage Sags Duration: 200-500ms	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3848	Total Voltage Sags Duration: 500-1000ms	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3849	Total Voltage Sags Duration: >1000ms	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3850	Total SEMI F47 Voltage Sags	1	Integer	RO	Y	x	xx	0 – 32,767 (-32,768 if N/A)		N	N	N	Y P
3851	Date/Time of Last Event	4	Date Time	RO	Y	-	-	-		N	N	N	Y P
3855	Date/Time of Last Reset	4	Date Time	RO	Y	-	-	-		N	N	N	Y P

[3900] Advanced PQ Configuration & Status – (3900 – 3950) (EN50160 and ITIC/SEMI Evaluation)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3900	PQ Advanced Enable/Disable	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 1	0 = disabled (default) 1 = enabled	Y P	Y P	Y P	Y P
3901	PQ Advanced Nominal Voltage	1	Integer	RO	Y	D	Volts/Scale	0 – 32767	Copied from register 3238 for use by EN50160 Evaluation	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3902	PQ Advanced Voltage Selection for 4-Wire Systems	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 1	0 = Line-to-Neutral (default) 1 = Line-to-Line	Y P	Y P	Y P	Y P
3903	PQ Advanced Nominal Frequency	1	Integer	R/CW	Y	xx	Hz	50, 60, 400	Copied from register 3208 for use by EN50160 Evaluation	Y P	Y P	Y P	Y P
3904	PQ Advanced Frequency Configuration	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 1	0 = system with synchronous connection to interconnected system (default) 1 = system without synchronous connection to interconnected system	Y P	Y P	Y P	Y P
3905	EN50160 & Trending Configuration First Day of Week	1	Integer	R/CW	Y	xx	xxxxxxx	1 – 7	1 = Sunday 2 = Monday (default)	Y P	Y P	Y P	Y P
3906	EN50160 Definition of Interruption	1	Integer	R/CW	Y	1	%	0 – 10	% of Nominal Voltage considered to be an interruption Default = 1	Y P	Y P	Y P	Y P
3907	EN50160 Definition of Allowable Range of Slow Voltage Changes	1	Integer	R/CW	Y	1	%	1 – 20	Default = 10	Y P	Y P	Y P	Y P
3908	EN50160 Definition of Short Interruption	1	Integer	R/CW	Y	1	Seconds	2 – 600	Default =180	Y P	Y P	Y P	Y P
3909	PQ Advanced Last Enable Status	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx		Y P	Y P	Y P	Y P
3910	EN50160 Available Evaluations	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0xFFFF	Bitmap of available evaluations Bit 00 – Summary bit – at least one EN50160 evaluation is active Bit 01 – Frequency Bit 02 – Supply voltage variations Bit 03 – Magnitude of rapid voltage changes Bit 04 – Flicker Bit 05 – Supply voltage dips Bit 06 – Short interruptions of the supply voltage Bit 07 – Long interruptions of the supply voltage Bit 08 – Temporary power frequency overvoltages Bit 09 – Transient overvoltages Bit 10 – Supply voltage unbalance Bit 11 – Harmonic voltage Bit 12 – THD Bit 13 – Not used Bit 14 – Not used Bit 15 – Not used	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3911	EN50160 Evaluation Status Summary	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0xFFFF	Bitmap of evaluation status summary Bit 00 – Summary bit – at least one EN50160 evaluation has failed Bit 01 – Frequency Bit 02 – Supply voltage variations Bit 03 – Magnitude of rapid voltage changes Bit 04 – Flicker Bit 05 – Supply voltage dips Bit 06 – Short interruptions of the supply voltage Bit 07 – Long interruptions of the supply voltage Bit 08 – Temporary power frequency overvoltages Bit 09 – Transient overvoltages Bit 10 – Supply voltage unbalance Bit 11 – Harmonic voltage Bit 12 – THD Bit 13 – Not used Bit 14 – Not used Bit 15 – Not used	Y P	Y P	Y P	Y P
3912	EN50160 Count of 10-second Intervals For Present Year	2	Mod10	RO	Y	1	xxxxxxx	0 – 3,162,240		Y P	Y P	Y P	Y P
3914	EN50160 Count of 10-second Intervals For Present Week	2	Mod10	RO	Y	1	xxxxxxx	0 – 60,480		Y P	Y P	Y P	Y P
3916	EN50160 Count of 10-minute Intervals For Present Week	1	Integer	RO	Y	1	xxxxxxx	0 – 32,767		Y P	Y P	Y P	Y P
3917	EN50160 Allowable Rapid Voltage Changes Per Week	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3918	EN50160 Allowable Short Interruptions Per Year	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3919	EN50160 Allowable Long Interruptions Per Year	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3920	EN50160 Allowable Voltage Dips Per Week With 10% <= Depth < 15% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3921	EN50160 Allowable Voltage Dips Per Week With 15% <= Depth < 30% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3922	EN50160 Allowable Voltage Dips Per Week With 30% <= Depth < 45% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3923	EN50160 Allowable Voltage Dips Per Week With 45% <= Depth < 60% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3924	EN50160 Allowable Voltage Dips Per Week With 60% <= Depth < 75% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3925	EN50160 Allowable Voltage Dips Per Week With 75% <= Depth < 90% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3926	EN50160 Allowable Voltage Dips Per Week With 90% <= Depth < 99% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3927	EN50160 Allowable Voltage Dips Per Week With 10% <= Depth < 99% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3928	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development				
3929	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development				
3930	EN50160 Allowable Over Voltages Per Week With 110% < Magnitude <= 115% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3931	EN50160 Allowable Over Voltages Per Week With 115% < Magnitude <= 130% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3932	EN50160 Allowable Over Voltages Per Week With 130% < Magnitude <= 145% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3933	EN50160 Allowable Over Voltages Per Week With 145% < Magnitude <= 160% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3934	EN50160 Allowable Over Voltages Per Week With 160% < Magnitude <= 175% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3935	EN50160 Allowable Over Voltages Per Week With 175% < Magnitude <= 200% Nominal	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3936	EN50160 Allowable Over Voltages Per Week With 200% < Magnitude	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3937	EN50160 Allowable Over Voltages Per Week With 110% < Magnitude	1	Integer	R/CW	Y	1	xxxxxxx	0 – 32,767 (-32,768 if N/A)	Default = -32,768	Y P	Y P	Y P	Y P
3938	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development				
3939	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development				
3940	Reserved	10											

[3950] Spare – (3950 – 3999) PQ Summary - Deferred

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
3950	Reserved	50	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

[4000] Auxiliary Inputs & Outputs

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
4000	Discrete Input Status Standard Discrete Input	1	Integer	RO	N	xx	xxxxxxx	xxxxxxx	0 = Off, 1 = On Bit 00 = Not Used Bit 01 = Standard discrete input (S02 “SI”) Remaining bits unused	Y P	Y P	Y P	Y P
4001	Discrete Input Status Option 1	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0xFFFF	0 = Off, 1 = On Bit 00 = On/Off Status of IO Point 3 (A01) Bit 01 = On/Off Status of IO Point 4 (A02) Bit 02 = On/Off Status of IO Point 5 (A03) Bit 03 = On/Off Status of IO Point 6 (A04) Bit 04 = On/Off Status of IO Point 7 (A05) Bit 05 = On/Off Status of IO Point 8 (A06) Bit 06 = On/Off Status of IO Point 9 (A07) Bit 07 = On/Off Status of IO Point 10 (A08) Remaining bits unused	Y	Y	Y	Y
4002	Discrete Input Status Option 2	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0xFFFF	0 = Off, 1 = On Bit 00 = On/Off Status of IO Point 11 (B01) Bit 01 = On/Off Status of IO Point 12 (B02) Bit 02 = On/Off Status of IO Point 13 (B03) Bit 03 = On/Off Status of IO Point 14 (B04) Bit 04 = On/Off Status of IO Point 15 (B05) Bit 05 = On/Off Status of IO Point 16 (B06) Bit 06 = On/Off Status of IO Point 17 (B07) Bit 07 = On/Off Status of IO Point 18 (B08) Remaining bits unused	Y	Y	Y	Y
4003	Reserved	2	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
4005	Discrete Output Status Standard Discrete Output	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0x0001	0 = Off, 1 = On Bit 00 = Standard discrete output (S01) Remaining bits unused	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
4006	Discrete Output Status Option 1	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0xFFFF	0 = Off, 1 = On Bit 00 = On/Off Status of IO Point 3 (A01) Bit 01 = On/Off Status of IO Point 4 (A02) Bit 02 = On/Off Status of IO Point 5 (A03) Bit 03 = On/Off Status of IO Point 6 (A04) Bit 04 = On/Off Status of IO Point 7 (A05) Bit 05 = On/Off Status of IO Point 8 (A06) Bit 06 = On/Off Status of IO Point 9 (A07) Bit 07 = On/Off Status of IO Point 10 (A08) Remaining bits unused	Y	Y	Y	Y
4007	Discrete Output Status Option 2	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0xFFFF	0 = Off, 1 = On Bit 00 = On/Off Status of IO Point 11 (B01) Bit 01 = On/Off Status of IO Point 12 (B02) Bit 02 = On/Off Status of IO Point 13 (B03) Bit 03 = On/Off Status of IO Point 14 (B04) Bit 04 = On/Off Status of IO Point 15 (B05) Bit 05 = On/Off Status of IO Point 16 (B06) Bit 06 = On/Off Status of IO Point 17 (B07) Bit 07 = On/Off Status of IO Point 18 (B08) Remaining bits unused	Y	Y	Y	Y
4008	KYZ mode	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	0 = KYZ Square Wave Mode 1 = KYZ Pulse Mode	Y	Y	Y	Y
4009	KYZ Pulse Width	1	Integer	R/CW	Y	xx	mSeconds	10-1000	10, 25, 50, 100, 150, 200, 300, 500, 1000	Y	Y	Y	Y
4010	IO System Diagnostic Summary	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0x007F	0 = OK, 1 = Error Bit 00 = Summary bit Bit 01 = IO Error – Standard Bit 02 = IO Error – IO Option 1 Bit 03 = IO Error – IO Option 2 Remaining bits unused	Y P	Y P	Y P	Y P
4011	IO Module Health Status Standard IO	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0x000F	0 = OK, 1 = Error Bit 00 = Module error summary Bit 01 = Point error summary Bit Bit 02 = Module removed while meter running Bit 03 = Module change failed validation Remaining bits unused	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
4012	IO Module Health Status Option 1	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0x000F	0 = OK, 1 = Error Bit 00 = Module error summary Bit 01 = Point error summary Bit Bit 02 = Module removed while meter running Bit 03 = Module change failed validation Remaining bits unused	Y	Y	Y	Y
4013	IO Module Health Status Option 2	1	Bitmap	RO	N	xx	xxxxxxx	0x0000 – 0x000F	0 = OK, 1 = Error Bit 00 = Module error summary Bit 01 = Point error summary Bit Bit 02 = Module removed while meter running Bit 03 = Module change failed validation Remaining bits unused	Y	Y	Y	Y
4014	Reserved	6	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
4016	Time Sync Signal Health Status	1	Bitmap	RO	N	-	-	0x0000 – 0xFFFF	0 = OK, 1 = Error Bit 00 = Summary Bit, time sync signal fatal error Bit 01 = Lost time sync signal Bit 02 = Summary Bit, invalid data Bit 03 = Data value out of range Bit 04 = Parity error for minute Bit 05 = Parity error for hour Bit 06 = Parity error for month/day/year Bit 07 = Bit 20 not = 1 Bit 08 = Framing error occurred in last minute Bit 09 = Reserved Bit 10 = Reserved Bit 11 = Reserved Bit 12 = Good time sync signal received Bit 13 = Reserve antenna in use Bit 14 = DST warning Bit 15 = DST in effect	--	Y	Y	Y
4017	GPS Time Sync Accuracy	1	Integer	RO	N	-	millisecond	0 – 1,000	GPS Time Sync Accuracy	--	Y	Y	Y
4018	Reserved	2	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
4020	Present Module Type Standard IO	1	Integer	RO	N	xx	xxxxxxx	255	Should always be 255	YP	YP	YP	YP
4021	Present Module Type Option 1	1	Integer	RO	N	xx	xxxxxxx	0 – 7	0 = Not Installed 1 = Reserved 2 = IO-22 3 = IO-26 4 = IO-2222	Y	Y	Y	Y

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
4022	Present Module Type Option 2	1	Integer	RO	N	xx	xxxxxxx	0 – 7	0 = Not Installed 1 = Reserved 2 = IO-22 3 = IO-26 4 = IO-2222	Y	Y	Y	Y
4023	Extended MBUS Device	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	0xC8 = Logging Module	YP	--	--	--
4024	Extended MBUS Device	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	0x7a = ECC	YP	YP	YP	YP
4025	Previous Module Type Standard IO	1	Integer	RO	Y	xx	xxxxxxx	255	Should always be 255	YP	YP	YP	YP
4026	Previous Module Type Option 1	1	Integer	RO	Y	xx	xxxxxxx	0 – 7	Indicates the IO option module present the last time the meter was reset. 0 = Not Installed 1 = Reserved 2 = IO-22 3 = IO-26 4 = IO-2222	Y	Y	Y	Y
4027	Previous Module Type Option 2	1	Integer	RO	Y	xx	xxxxxxx	0 – 7	Indicates the IO option module present the last time the meter was reset. 0 = Not Installed 1 = Reserved 2 = IO-22 3 = IO-26 4 = IO-2222	Y	Y	Y	Y
4028	Reserved	2	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
4030	Last Module Type Standard IO	1	Integer	RO	Y	xx	xxxxxxx	255	Should always be 255	YP	YP	YP	YP
4120	Reserved	80	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
4200	Discrete Output/Alarm Table	100	Integer	R/CW	Y	xx	xxxxxxx	0 – 4682	Table of discrete output/alarm associations. Upper byte is IO Point Number (1 – 18). Lower byte is Alarm Index Number (1 – 74).	YP	YP	YP	YP

[4300] Auxiliary Inputs & Outputs – Standard & Option Module

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
4300	IO Point Number 1 Standard Discrete Output (S01)	30							Refer to Discrete Output template below.	YP	YP	YP	YP
4330	IO Point Number 2 Standard Discrete Input (S02)	30							Refer to Discrete Input template below.	YP	YP	YP	YP

Auxiliary Inputs & Outputs – Discrete Input Template

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base	IO Point Type	1	Integer	R/CW	Y	xx	xxxxxxx	100 – 199	First digit (1) indicates point is discrete input Second digit indicates module type 0 = Generic discrete input Third digit indicates input type 1 = Unused 2 = AC/DC	Y P	Y P	Y P	Y P
Base +1	IO Point Label	8	Character	R/W	Y	xx	xxxxxxx	ASCII	16 Characters	Y P	Y P	Y P	Y P
Base +9	Discrete Input Operating Mode	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 3	0 = Normal (default) 1 = Demand Interval Sync Pulse 2 = Time Sync 3 = Conditional Energy Control 4 = Input Metering, used only with external option modules Only one Time Sync input and one Conditional Energy Control are allowed. If the user attempts to configure more than one of each of these modes, the lowest IO Point Number will take precedence. The modes of the other points will be set to default. Time sync input signal must be pulse duration method (PDM) as from the Modicon GPS Receiver (470 GPS 001 00).	Y P	Y P	Y P	Y P
Base +10	Demand Interval Sync System Assignments	1	Bitmap	R/CW	Y	xx	xxxxxxx	0x0000 – 0x001F	Bitmap indicating Demand System(s) to which input is assigned. (Default = 0) Bit 00 = Power Demand Bit 01 = Current Demand Bit 02 = Input Metering Demand Bit 03 = Generic Demand 1 Only one Demand Sync Pulse per Demand System is allowed. If the user attempts to configure more than one input for each system, the lowest IO Point Number will take precedence. The corresponding bits of the other points will be set to 0.	Y P	Y P	Y P	Y P
Base +11	Reserved	3	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base +14	Metering Pulse Channel Assignments	1	Bitmap	R/CW	Y	xx	xxxxxxx	0x0000 – 0x001F	Up to 5 channels are supported Default = 0 Bit 00 = Channel 1 Bit 01 = Channel 2 Bit 02 = Channel 3 Bit 03 = Channel 4 Bit 04 = Channel 5 Bit 05 – 15 Unused	Y P	Y P	Y P	Y P
Base +15	Metering Pulse Weight Demand	1	Integer	R/CW	Y	xx	1.0	1– 32,767	Pulse weight associated with the change of state of the input. Used for demand metering. (Default = 1)	Y P	Y P	Y P	Y P
Base +16	Metering Pulse Scale Factor Demand	1	Integer	R/CW	Y	xx	1.0	-3 – 3	Pulse weight scale factor (power of 10) to apply to metering pulse weight. Used for demand metering. (Default = 0)	Y P	Y P	Y P	Y P
Base +17	Metering Pulse Weight Consumption	1	Integer	R/CW	Y	xx	1.0	1– 32,767	Pulse weight associated with the change of state of the input. Used for consumption metering. (Default = 1)	Y P	Y P	Y P	Y P
Base +18	Metering Pulse Scale Factor Consumption	1	Integer	R/CW	Y	xx	1.0	-3 – 3	Pulse weight scale factor (power of 10) to apply to metering pulse weight. Used for consumption metering. (Default = 0)	Y P	Y P	Y P	Y P
Base +19	Consumption Units Code	1	Integer	R/CW	Y	xx	See Template	0 - 100	Defines the units associated with the Consumption Pulse Weight/Scale (Default = 0)	Y P	Y P	Y P	Y P
Base +20	Reserved	2	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
Base +22	IO Point Diagnostic Bitmap	1	Bitmap	RO	Y	xx	xxxxxxx	0x0000 – 0xFFFF	0 = OK, 1 = Error Bit 00 = IO Point diagnostic summary Bit 01 = Configuration invalid – default value used	Y P	Y P	Y P	Y P
Base +23	Reserved	2	Integer	RO	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	Y P	Y P	Y P	Y P
Base +25	Discrete Input On/Off Status	1	Integer	RO	Y	xx	xxxxxxx	0 – 1	0 = Off 1 = On	Y P	Y P	Y P	Y P
Base +26	Count	2	Mod10	RO	Y	xx	xxxxxxx	0 – 99,999,999	Number of times input has transitioned from Off to On	Y P	Y P	Y P	Y P
Base +28	On Time	2	Mod10	RO	Y	xx	Seconds	0 – 99,999,999	Duration that discrete input has been On	Y P	Y P	Y P	Y P

Auxiliary Inputs & Outputs – Discrete Output Template

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base	IO Point Type	1	Integer	R/CW	Y	xx	xxxxxxx	200 – 299	First digit (2) indicates point is discrete output Second digit indicates module type 0 = Generic discrete output Third digit indicates output type 1 = solid state relay 2 = electromechanical relay	Y P	Y P	Y P	Y P
Base +1	IO Point Label	8	Character	R/W	Y	xx	xxxxxxx	ASCII	16 Characters	Y P	Y P	Y P	Y P
Base +9	Discrete Output Operating Mode	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 11	0 = Normal (default) 1 = Latched 2 = Timed 11 = End of power demand interval The following modes are supported by the standard output (KY) only in firmware revisions prior to v10.820. (No support is provided for the IO option modules in firmware revision prior to v10.820): 3 = Absolute kWh pulse 4 = Absolute kVARh pulse 5 = kVAh pulse 6 = kWh In pulse 7 = kVArh In pulse 8 = kWh out pulse 9 = kVARh out pulse 10 = Register-based pulse (future)	Y P	Y P	Y P	Y P
Base +10	On Time For Timed Mode	1	Integer	R/CW	Y	xx	Seconds	1 – 32,767	The time for the output to remain energized when the output is in timed mode or end of power demand interval. (Default = 1)	Y P	Y P	Y P	Y P
Base +11	Pulse Weight	1	Integer	R/CW	Y	.01	kWh/Pulse kVArH/Pulse kVAH/Pulse in 100ths	1 – 32,767	Specifies the kWh, kVARh and kVAh per pulse for output when in these modes. (Default = 1)	Y P	Y P	Y P	Y P
Base +12	Internal/External Control	1	Integer	R/W	Y	xx	xxxxxxx	0 – 1	0 = Internal Control 1 = External Control (default)	Y P	Y P	Y P	Y P
Base +13	Normal/Override Control	1	Integer	R/W	Y	xx	xxxxxxx	0 – 1	0 = Normal Control (default) 1 = Override Control	Y P	Y P	Y P	Y P
Base +14	Reference Register	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
Base +15	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
Base +16	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base +17	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
Base +18	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
Base +19	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
Base +20	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
Base +21	State of Discrete Output at Reset	1	Integer	RO	Y	xx	xxxxxxx	0 – 1	Indicates On/Off state of the discrete output when meter reset/shutdown occurs	Y P	Y P	Y P	Y P
Base +22	IO Point Diagnostic Bitmap	1	Bitmap	RO	Y	xx	xxxxxxx	0x0000 – 0x000F	0 = OK, 1 = Error Bit 00 = IO Point diagnostic summary Bit 01 = Configuration invalid – default value used Bit 02 = Discrete output energy pulse – time between transitions exceeds 30 seconds Bit 03 = Discrete output energy pulse – time between transitions limited to 20 milliseconds	Y P	Y P	Y P	Y P
Base +23	Reserved	1	Integer	RO	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
Base +24	Reserved	1	Integer	RO	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
Base +25	Discrete Output On/Off Status	1	Integer	RO	Y	xx	xxxxxxx	0 – 1	0 = Off 1 = On	Y P	Y P	Y P	Y P
Base +26	Count	2	Mod10	RO	Y	xx	xxxxxxx	0 – 99,999,999	Number of times output has transitioned from OFF to ON	Y P	Y P	Y P	Y P
Base +28	On Time	2	Mod10	RO	Y	xx	Seconds	0 – 99,999,999	Duration that discrete output has been ON	Y P	Y P	Y P	Y P

Auxiliary Inputs & Outputs – Analog Input Template

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base	IO Point Type	1	Integer	R/CW	Y	xx	xxxxxxx	300 – 399	First digit (3) indicates point is analog input Second digit indicates the range of analog I/O values (used without units) 0 = 0 – 1 1 = 0 – 5 2 = 0 – 10 3 = 0 – 20 4 = 1 – 5 5 = 4 – 20 6 = -5 – 5 7 = -10 – 10 8 = -100 – 100 9 = User defined (values default to 0) Third digit indicates the digital resolution of the I/O hardware. The user must select from one of these standard ranges. 0 = 8-Bit, unipolar 1 = 10-Bit, unipolar 2 = 12-Bit, unipolar 3 = 14-Bit, unipolar 4 = 16-Bit, unipolar 5 = 16-Bit, bipolar with sign 6 = reserved 7 = reserved 8 = Resolution for IO2222 Voltage range 0 - 4000 9 = Resolution for IO2222 Current range 800 - 4000	Y P	Y P	Y P	Y P
Base +1	IO Point Label	8	Character	R/W	Y	xx	xxxxxxx	ASCII	16 Characters	Y P	Y P	Y P	Y P
Base +9	Units Code	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 99	Placeholder for a code used by software to identify the SI units of the analog input being metered, i.e. kW, V, etc.	Y P	Y P	Y P	Y P
Base +10	Scale Code	1	Integer	R/CW	Y	xx	xxxxxxx	-3 – 3	Placeholder for the scale code (power of 10) used by software to place the decimal point.	Y P	Y P	Y P	Y P
Base +11	Range Select	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 1	Analog input gain select. Applies only to Option Module 2222. 1 = Use calibration constants associated with current (Default) 0 = Use calibration constants associated with voltage	Y P	Y P	Y P	Y P
Base +12	Analog Input Minimum	1	Integer	R/CW	Y	xx	xxxxxxx	0 – ±32,767	Minimum value of the scaled register value for the analog input. (Only if Metering Register Number is not 0.)	Y P	Y P	Y P	Y P
Base +13	Analog Input Maximum	1	Integer	R/CW	Y	xx	xxxxxxx	0 – ±32,767	Maximum value of the scaled register value for the analog input. (Only if Metering Register Number is not 0.)	Y P	Y P	Y P	Y P
Base +14	Lower Limit Analog Value	1	Integer	R/CW	Y	xx	xxxxxxx	0 – ±327	Lower limit of the analog input value. Default value based on IO Point Type.	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base +15	Upper Limit Analog Value	1	Integer	R/CW	Y	xx	xxxxxxx	0 – ±327	Upper limit of the analog input value. Default value based on IO Point Type.	Y P	Y P	Y P	Y P
Base +16	Lower Limit Register Value	1	Integer	R/CW	Y	xx	xxxxxxx	0 – ±32,767	Lower limit of the register value associated with the lower limit of the analog input value.	Y P	Y P	Y P	Y P
Base +17	Upper Limit Register Value	1	Integer	R/CW	Y	xx	xxxxxxx	0 – ±32,767	Upper limit of the register value associated with the upper limit of the analog input value.	Y P	Y P	Y P	Y P
Base +18	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	Y P	Y P	Y P	Y P
Base +19	User Gain Adjustment	1	Integer	R/CW	Y	xx	0.0001	8,000 – 12,000	Analog input user gain adjustment in 100ths of a percent. Default = 10,000.	Y P	Y P	Y P	Y P
Base +20	User Offset Adjustment	1	Integer	R/CW	Y	xx	xxxxxxx	0 – ±30,000	Analog input user offset adjustment in Bits of digital resolution. Default = 0.	Y P	Y P	Y P	Y P
Base +21	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
Base +22	IO Point Diagnostic Bitmap	1	Bitmap	RO	Y	xx	xxxxxxx	0x0000 – 0x0007	0 = OK, 1 = Error Bit 00 = IO Point diagnostic summary Bit 01 = Configuration invalid – default value used	Y P	Y P	Y P	Y P
Base +23	Lower Limit Digital Value	1	Integer	RO	Y	xx	xxxxxxx	0 – ±32,767	Lower limit of the digital value associated with the lower limit of the analog input value. Value based on IO Point Type.	Y P	Y P	Y P	Y P
Base +24	Upper Limit Digital Value	1	Integer	RO	Y	xx	xxxxxxx	0 – ±32,767	Upper limit of the digital value associated with the upper limit of the analog input value. Value based on IO Point Type.	Y P	Y P	Y P	Y P
Base +25	Present Raw Value	1	Integer	RO	Y	xx	xxxxxxx	0 – ±32,767	Raw digital value read from analog input.	Y P	Y P	Y P	Y P
Base +26	Present Scaled Value	1	Integer	RO	Y	xx	xxxxxxx	0 – ±32,767	Raw value corrected by calibration gain and offset adjustments and scaled based on range of register values.	Y P	Y P	Y P	Y P
Base +27	Calibration Offset	1	Integer	RO	Y	xx	xxxxxxx	0 – ±32,767	Analog input offset adjustment	Y P	Y P	Y P	Y P
Base +28	Calibration Gain (Voltage)	1	Integer	RO	Y	xx	0.0001	8,000 – 12,000	Analog input gain adjustment	Y P	Y P	Y P	Y P
Base +29	Calibration Gain (Current)	1	Integer	RO	Y	xx	0.0001	8,000 – 12,000	Analog input gain adjustment	Y P	Y P	Y P	Y P

Auxiliary Inputs & Outputs – Analog Output Template

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base	IO Point Type	1	Integer	R/CW	Y	xx	xxxxxxx	400 – 499	First digit (4) indicates point is analog output Second digit indicates the range of analog I/O values (used without units) 0 = 0 – 1 1 = 0 – 5 2 = 0 – 10 3 = 0 – 20 4 = 1 – 5 5 = 4 – 20 6 = -5 – 5 7 = -10 – 10 8 = -100 – 100 9 = User defined (values default to 0) Third digit indicates the digital resolution of the I/O hardware. The user must select from one of these standard ranges. 0 = 8-Bit, unipolar 1 = 10-Bit, unipolar 2 = 12-Bit, unipolar 3 = 14-Bit, unipolar 4 = 16-Bit, unipolar 5 = 16-Bit, bipolar with sign 6 = reserved 7 = reserved 8 = Resolution for IO2222 Voltage range 0 - 4000 9 = Resolution for IO2222 Current range 800 - 4000	Y P	Y P	Y P	Y P
Base +1	IO Point Label	8	Character	R/W	Y	xx	xxxxxxx	ASCII	16 Characters	Y P	Y P	Y P	Y P
Base +9	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	Y	Y	Y	Y
Base +10	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	Y	Y	Y	Y
Base +11	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	Y	Y	Y	Y
Base +12	Output Enable	1	Integer	R/W	Y	xx	xxxxxxx	0 – 1	0 = Enable (default) 1 = Disable	Y P	Y P	Y P	Y P
Base +13	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	Y	Y	Y	Y
Base +14	Lower Limit Analog Value	1	Integer	R/CW	Y	xx	xxxxxxx	0 – ±327	Lower limit of the analog output value. Default value based on IO Point Type.	Y P	Y P	Y P	Y P
Base +15	Upper Limit Analog Value	1	Integer	R/CW	Y	xx	xxxxxxx	0 – ±327	Upper limit of the analog output value. Default value based on IO Point Type.	Y P	Y P	Y P	Y P
Base +16	Lower Limit Register Value	1	Integer	R/CW	Y	xx	xxxxxxx	0 – ±32,767	Lower limit of the register value associated with the lower limit of the analog output value.	Y P	Y P	Y P	Y P
Base +17	Upper Limit Register Value	1	Integer	R/CW	Y	xx	xxxxxxx	0 – ±32,767	Upper limit of the register value associated with the upper limit of the analog output value.	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base +18	Reference Register Number	1	Integer	R/CW	Y	xx	xxxxxxx	1000 – 32000	Register location of value upon which to base the analog output.	Y P	Y P	Y P	Y P
Base +19	User Gain Adjustment	1	Integer	R/CW	Y	xx	0.0001	8000 – 12,000	Analog output user gain adjustment in 100ths of a percent. Default = 10,000.	Y P	Y P	Y P	Y P
Base +20	User Offset Adjustment	1	Integer	R/CW	Y	xx	xxxxxxx	0 – ±30000	Analog output user offset adjustment in Bit s of digital resolution. Default = 0.	Y P	Y P	Y P	Y P
Base +21	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
Base +22	IO Point Diagnostic Bitmap	1	Bitmap	RO	Y	xx	xxxxxxx	0x0000 – 0xFFFF	0 = OK, 1 = Error Bit 00 = IO Point diagnostic summary Bit 01 = Configuration invalid – default value used	Y P	Y P	Y P	Y P
Base +23	Lower Limit Digital Value	1	Integer	RO	Y	xx	xxxxxxx	0 – ±32,767	Lower limit of the digital value associated with the lower limit of the analog output value. Value based on IO Point Type.	Y P	Y P	Y P	Y P
Base +24	Upper Limit Digital Value	1	Integer	RO	Y	xx	xxxxxxx	0 – ±32,767	Upper limit of the digital value associated with the upper limit of the analog output value. Value based on IO Point Type.	Y P	Y P	Y P	Y P
Base +25	Present Analog Value	1	Integer	RO	Y	xx	0.01	0 – ±32,767	Analog value expected to be present at the output terminals of the analog output module.	Y P	Y P	Y P	Y P
Base +26	Present Raw (Register) Value	1	Integer	RO	Y	xx	xxxxxxx	0 – ±32,767	Value in Reference Register.	Y P	Y P	Y P	Y P
Base +27	Calibration Offset	1	Integer	RO	Y	xx	xxxxxxx	0 – ±32,767	Analog output offset adjustment in Bit s of digital resolution.	Y P	Y P	Y P	Y P
Base +28	Calibration Gain (Voltage)	1	Integer	RO	Y	xx	0.0001	8000 – 12,000	Analog output gain adjustment in 100ths of a percent.	Y P	Y P	Y P	Y P
Base +29	Present Digital Value	1	Integer	RO	Y	xx	xxxxxxx	xxxxxxx		Y P	Y P	Y P	Y P

[5129] Spare (5129-5279)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
5129	Unused	380	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for Future Development	--	--	--	--

[5280] Input Metering Channel Labels (5280-5319)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
5280	Input Metering Channel 1 Label	8	Char	R/CW	Y	-	-	ASCII Codes	16 Characters Default = Channel 1	Y P	Y P	Y P	Y P
5288	Input Metering Channel 2 Label	8	Char	R/CW	Y	-	-	ASCII Codes	16 Characters Default = Channel 2	Y P	Y P	Y P	Y P
5296	Input Metering Channel 3 Label	8	Char	R/CW	Y	-	-	ASCII Codes	16 Characters Default = Channel 3	Y P	Y P	Y P	Y P

[5320] Trending & Forecasting Configuration (5320 - 5369)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
5320	Trending & Forecasting Control	1	Integer	R/W	Y	xx	xxxxxxx	0 – 1	0 = Disabled (Default) 1 = Enabled	--	--	Y P	Y P
5321	Trend Item To Post In Registers	1	Integer	R/W	Y	xx	xxxxxxx	1 – 7	See List of Standard Quantities - Default = 1 (Iavg)	--	--	Y P	Y P
5322	Reserved	8								--	--	--	--
5330	Trend Quantity 7 - Register Number	1	Integer	R/CW	Y	xx	xxxxxxx	00000 – 65535	Default = 0	--	--	Y P	Y P
5331	Trend Quantity 7 - Scale Factor	1	Integer	R/CW	Y	xx	xxxxxxx	-3 – 3	Power of 10 Default = 0	--	--	Y P	Y P
5332	Trend Quantity 7 - Label	8	Char	R/CW	Y	xx	xxxxxxx	ASCII Codes	16 Characters	--	--	Y P	Y P
5340	Reserved	10								--	--	--	--
5350	Reserved	10								--	--	--	--
5360	Reserved	10								--	--	--	--

Trending & Forecasting Standard Quantities

Trend Item	Quantity (Label)	Register
1	I avg	1105
2	Vll avg	1123
3	Vln avg	1128
4	kW (total)	1143
5	kVAR (total)	1147
6	kVA (total)	1151
7	User-defined	0

[5370] Alarm Summary Configuration (5370-5474)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
5370	Alarm Summary Group Assignments	75	Bitmap	R/CW	Y	xx	xxxxxxx	0x0000 - 0xFFFF	Each register is corresponds to specific alarm. Bitmap is used to configure which alarm group the alarm belongs. Bit 0 = Alarm Group 1 Bit 1 = Alarm Group 2 … Bit 10 = Alarm Group 11 Bit 11 = Alarm Group 12	--	Y P	Y P	Y P
5445	Alarm Summary Group 11 Configuration	15		R/CW	Y	xx	xxxxxxx		See Template	--	Y P	Y P	Y P
5460	Alarm Summary Group 12 Configuration	15		R/CW	Y	xx	xxxxxxx		See Template	--	Y P	Y P	Y P

Alarm Summary Configuration Template

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base	Alarm Summary Group Label	10	Char	R/CW	Y	xx	xxxxxxx	ASCII Codes	20 characters	--	Y P	Y P	Y P
Base +10	Alarm Summary Group Scale Factor Register Number	1	Integer	R/CW	Y	xx	xxxxxxx			--	Y P	Y P	Y P
Base +11	Alarm Summary Group Units for Magnitude	1	Integer	R/CW	Y	xx	xxxxxxx			--	Y P	Y P	Y P
Base +12	Alarm Summary Group Units for Duration	1	Integer	R/CW	Y	xx	xxxxxxx			--	Y P	Y P	Y P
Base +13	Reserved	2	Integer	R/CW	Y	xx	xxxxxxx			--	Y P	Y P	Y P

[5475] Alarm Summary (5475 - 5849)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
5475	Over Current Alarm Count Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5485	Over Current Alarm Magnitude Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5495	Over Current Alarm Duration Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5505	Over Voltage Alarm Count Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5515	Over Voltage Alarm Magnitude Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5525	Over Voltage Alarm Duration Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5535	Under Voltage Alarm Count Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5545	Under Voltage Alarm Magnitude Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5555	Under Voltage Alarm Duration Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5565	Voltage Unbalance Alarm Count Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5575	Voltage Unbalance Alarm Magnitude Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5585	Voltage Unbalance Alarm Duration Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5595	Over Voltage THD Alarm Count Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5605	Over Voltage THD Alarm Magnitude Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5615	Over Voltage THD Alarm Duration Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5625	Under Power Factor Alarm Count Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5635	Under Power Factor Alarm Magnitude Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5645	Under Power Factor Alarm Duration Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5655	Over KVA Demand Alarm Count Summary	10							See Alarm Summary Template		Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
5665	Over KVA Demand Alarm Magnitude Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5675	Over KVA Demand Alarm Duration Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5685	Over KW Demand Alarm Count Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5695	Over KW Demand Alarm Magnitude Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5705	Over KW Demand Alarm Duration Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5715	Voltage Sag Alarm Count Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5725	Voltage Sag Alarm Magnitude Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5735	Voltage Sag Alarm Duration Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5745	Voltage Swell Alarm Count Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5755	Voltage Swell Alarm Magnitude Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5765	Voltage Swell Alarm Duration Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5775	Alarm Summary Group 11 Count Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5785	Alarm Summary Group 11 Magnitude Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5795	Alarm Summary Group 11 Duration Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5805	Alarm Summary Group 12 Count Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5815	Alarm Summary Group 12 Magnitude Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5825	Alarm Summary Group 12 Duration Summary	10							See Alarm Summary Template		Y P	Y P	Y P
5835	Alarm Summary Number of Alarms in Each Group	15	Integer	RO	Y	xx	xxxxxxx	xxxxxxx			Y P	Y P	Y P

[Alarm Summary Template]

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base	Today	1	Integer	RO	Y	xx	xxxxxxx	xxxxxxx		Y P	Y P	Y P	Y P
Base +1	Yesterday	1	Integer	RO	Y	xx	xxxxxxx	xxxxxxx		Y P	Y P	Y P	Y P
Base +2	This Week	1	Integer	RO	Y	xx	xxxxxxx	xxxxxxx		Y P	Y P	Y P	Y P
Base +3	Last Week	1	Integer	RO	Y	xx	xxxxxxx	xxxxxxx		Y P	Y P	Y P	Y P
Base +4	This Month	1	Integer	RO	Y	xx	xxxxxxx	xxxxxxx		Y P	Y P	Y P	Y P
Base +5	Last Month	1	Integer	RO	Y	xx	xxxxxxx	xxxxxxx		Y P	Y P	Y P	Y P
Base +6	This Year	1	Integer	RO	Y	xx	xxxxxxx	xxxxxxx		Y P	Y P	Y P	Y P
Base +7	Last Year	1	Integer	RO	Y	xx	xxxxxxx	xxxxxxx		Y P	Y P	Y P	Y P
Base +8	Trend (30 days)	1	Integer	RO	Y	xx	0.01%	-10000 - 10000		Y P	Y P	Y P	Y P
Base +9	Trend (52 weeks)	1	Integer	RO	Y	xx	0.01%	-10000 - 10000		Y P	Y P	Y P	Y P

[5850] Active Alarm Log (5850-6299)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
5850	Acknowledge/Relay/Priority Entry 1	1	Integer	RO	Y	xx	xxxxxxx		Bits 0 -7 = Alarm Number Bits 8 = Active/Inactive 0=active 1=inactive Bit 9 = Relative(1), Absolute(0) Bits 10-11 = Unused Bits 12-13 = Priority Bit 14 = relay (1 = association) Bit 15 = Alarm Acknowledge (1 = acknowledged)	Y P	Y P	Y P	Y P
5851	Unique Identifier	2	Long	RO	Y	xx	xxxxxxx	0 – 0xFFFFFFFF	Bits 00 – 07 = Level (0 – 9) Bits 08 – 15 = Alarm Type Bits 16 – 31 = Test Register	Y P	Y P	Y P	Y P
5853	Label	8	Character	RO	N	xx	xxxxxxx	ASCII	16 Characters	Y P	Y P	Y P	Y P
5861	Pickup Value for Entry 1	1	Integer	RO	Y	A-F	Units/Scale	0 – 32,767	Does not apply to digital or unary alarms	Y P	Y P	Y P	Y P
5862	Pickup Date/Time Entry 1	3	DateTime	RO	Y	xx	See Template	See Template		Y P	Y P	Y P	Y P
5865	Active Alarm Log Entry 2	15							Same as 5850 – 5864 except for entry 2	Y P	Y P	Y P	Y P
5880	Active Alarm Log Entry 3	15							Same as 5850 – 5864 except for entry 3	Y P	Y P	Y P	Y P
5895	Active Alarm Log Entry 4	15							Same as 5850 – 5864 except for entry 4	Y P	Y P	Y P	Y P
5910	Active Alarm Log Entry 5	15							Same as 5850 – 5864 except for entry 5	Y P	Y P	Y P	Y P
5925	Active Alarm Log Entry 6	15							Same as 5850 – 5864 except for entry 6	Y P	Y P	Y P	Y P
5940	Active Alarm Log Entry 7	15							Same as 5850 – 5864 except for entry 7	Y P	Y P	Y P	Y P
5955	Active Alarm Log Entry 8	15							Same as 5850 – 5864 except for entry 8	Y P	Y P	Y P	Y P
5970	Active Alarm Log Entry 9	15							Same as 5850 – 5864 except for entry 9	Y P	Y P	Y P	Y P
5985	Active Alarm Log Entry 10	15							Same as 5850 – 5864 except for entry 10	Y P	Y P	Y P	Y P
6000	Active Alarm Log Entry 11	15							Same as 5850 – 5864 except for entry 11	Y P	Y P	Y P	Y P
6015	Active Alarm Log Entry 12	15							Same as 5850 – 5864 except for entry 12	Y P	Y P	Y P	Y P
6030	Active Alarm Log Entry 13	15							Same as 5850 – 5864 except for entry 13	Y P	Y P	Y P	Y P
6045	Active Alarm Log Entry 14	15							Same as 5850 – 5864 except for entry 14	Y P	Y P	Y P	Y P
6060	Active Alarm Log Entry 15	15							Same as 5850 – 5864 except for entry 15	Y P	Y P	Y P	Y P
6075	Active Alarm Log Entry 16	15							Same as 5850 – 5864 except for entry 16	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
6090	Active Alarm Log Entry 17	15							Same as 5850 – 5864 except for entry 17	YP	YP	YP	YP
6105	Active Alarm Log Entry 18	15							Same as 5850 – 5864 except for entry 18	YP	YP	YP	YP
6120	Active Alarm Log Entry 19	15							Same as 5850 – 5864 except for entry 19	YP	YP	YP	YP
6135	Active Alarm Log Entry 20	15							Same as 5850 – 5864 except for entry 20	YP	YP	YP	YP
6150	Active Alarm Log Entry 21	15							Same as 5850 – 5864 except for entry 21	YP	YP	YP	YP
6165	Active Alarm Log Entry 22	15							Same as 5850 – 5864 except for entry 22	YP	YP	YP	YP
6180	Active Alarm Log Entry 23	15							Same as 5850 – 5864 except for entry 23	YP	YP	YP	YP
6195	Active Alarm Log Entry 24	15							Same as 5850 – 5864 except for entry 24	YP	YP	YP	YP
6210	Active Alarm Log Entry 25	15							Same as 5850 – 5864 except for entry 25	YP	YP	YP	YP
6225	Number of unacknowledged alarms in active alarm log	1	Integer	RO	N	xx	1.0	0 – 50	The number of active alarms added to the active alarm log since reset that have not been acknowledged	YP	YP	YP	YP
6226	Number of unacknowledged alarms in active alarm list	1	Integer	RO	N	xx	1.0	0 – 50	Number of the last 50 alarms since reset that have not been acknowledged	YP	YP	YP	YP
6227	Reserved	23	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for Future Development	--	--	--	--

[6250] Alarm History Log (6250-6699)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
6250	Acknowledge/Relay/Priority Entry 1	1	Integer	RO	Y	xx	xxxxxxx		Bits 0 -7 = Alarm Number Bits 8 = Unused Bit 9 = Relative(1), Absolute(0 Bits 10-11 = Unused Bits 12-13 = Priority Bit 14 = relay (1 = association) Bit 15 = Alarm Acknowledged	Y P	Y P	Y P	Y P
6251	Unique Identifier	2	Long	RO	Y	xx	xxxxxxx	0 – 0xFFFFFFFF	Bits 00 – 07 = Level (0 – 9) Bits 08 – 15 = Alarm Type Bits 16 – 31 = Test Register	Y P	Y P	Y P	Y P
6253	Label	8	Character	RO	N	xx	xxxxxxx	ASCII	16 Characters	Y P	Y P	Y P	Y P
6261	Extreme Value for History Log Entry 1	1	Integer	RO	Y	A-F	Units/Scale	0 – 32,767	Does not apply to digital or unary alarms	Y P	Y P	Y P	Y P
6262	Dropout Date/Time Entry 1	3	DateTime	RO	Y	xx	Template	Template		Y P	Y P	Y P	Y P
6265	Elapsed Seconds for History Log Entry 1	2	Long	RO	Y	xx	Seconds	0 – 2147483647		Y P	Y P	Y P	Y P
6267	Alarm History Log Entry 2	17							Same as 6250 – 6266 except for entry 2	Y P	Y P	Y P	Y P
6284	Alarm History Log Entry 3	17							Same as 6250 – 6266 except for entry 3	Y P	Y P	Y P	Y P
6301	Alarm History Log Entry 4	17							Same as 6250 – 6266 except for entry 4	Y P	Y P	Y P	Y P
6318	Alarm History Log Entry 5	17							Same as 6250 – 6266 except for entry 5	Y P	Y P	Y P	Y P
6335	Alarm History Log Entry 6	17							Same as 6250 – 6266 except for entry 6	Y P	Y P	Y P	Y P
6352	Alarm History Log Entry 7	17							Same as 6250 – 6266 except for entry 7	Y P	Y P	Y P	Y P
6369	Alarm History Log Entry 8	17							Same as 6250 – 6266 except for entry 8	Y P	Y P	Y P	Y P
6386	Alarm History Log Entry 9	17							Same as 6250 – 6266 except for entry 9	Y P	Y P	Y P	Y P
6403	Alarm History Log Entry 10	17							Same as 6250 – 6266 except for entry 10	Y P	Y P	Y P	Y P
6420	Alarm History Log Entry 11	17							Same as 6250 – 6266 except for entry 11	Y P	Y P	Y P	Y P
6437	Alarm History Log Entry 12	17							Same as 6250 – 6266 except for entry 12	Y P	Y P	Y P	Y P
6454	Alarm History Log Entry 13	17							Same as 6250 – 6266 except for entry 13	Y P	Y P	Y P	Y P
6471	Alarm History Log Entry 14	17							Same as 6250 – 6266 except for entry 14	Y P	Y P	Y P	Y P
6488	Alarm History Log Entry 15	17							Same as 6250 – 6266 except for entry 15	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
6505	Alarm History Log Entry 16	17							Same as 6250 – 6266 except for entry 16	YP	YP	YP	YP
6522	Alarm History Log Entry 17	17							Same as 6250 – 6266 except for entry 17	YP	YP	YP	YP
6539	Alarm History Log Entry 18	17							Same as 6250 – 6266 except for entry 18	YP	YP	YP	YP
6556	Alarm History Log Entry 19	17							Same as 6250 – 6266 except for entry 19	YP	YP	YP	YP
6573	Alarm History Log Entry 20	17							Same as 6250 – 6266 except for entry 20	YP	YP	YP	YP
6590	Alarm History Log Entry 21	17							Same as 6250 – 6266 except for entry 21	YP	YP	YP	YP
6607	Alarm History Log Entry 22	17							Same as 6250 – 6266 except for entry 22	YP	YP	YP	YP
6624	Alarm History Log Entry 23	17							Same as 6250 – 6266 except for entry 23	YP	YP	YP	YP
6641	Alarm History Log Entry 24	17							Same as 6250 – 6266 except for entry 24	YP	YP	YP	YP
6658	Alarm History Log Entry 25	17							Same as 6250 – 6266 except for entry 25	YP	YP	YP	YP
6675	Number of unacknowledged alarms in alarm history log	1	Integer	RO	N	xx	1.0	0 – 50	The number of unacknowledged alarms added to the alarm history log since reset	YP	YP	YP	YP
6676	Lost Alarms	1	Integer	RO	N	xx	1.0	0 – 32767	Number of alarm pickups FIFO'd from the internal active alarm list before a correlating pickup deceived	YP	YP	YP	YP
6675	Reserved	23	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Reserved for Future Development	--	--	--	--

[8000] Command Interface

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
8000	Requested Command	1	Integer	R/W	N	xx	xxxxxxx	xxxxxxx	See Commands	YP	YP	YP	YP
8001	Command Parameters	15	Integer	R/W	N	xx	xxxxxxx	xxxxxxx		YP	YP	YP	YP
8016	Comms Channel	1	Integer	RO	N	xx	xxxxxxx	xxxxxxx	Comms Channel over which the command request was made	YP	YP	YP	YP
8017	Status Pointer	1	Integer	R/W	N	xx	xxxxxxx	xxxxxxx	Register number where status will be placed 0 = no status returned	YP	YP	YP	YP
8018	Result Pointer	1	Integer	R/W	N	xx	xxxxxxx	xxxxxxx	Register number where result will be placed 0 = no result returned 81 Invalid Command Function 82 Invalid Parameters 91 Setup Mode Session Open 92 Setup Mode Session Not Open 99 Command Failed Security Check 201 Operation Not Performed/Timeout 230 Alarm Does Not Exist 301 File System Error	YP	YP	YP	YP
8019	Data Pointer	1	Integer	R/W	N	xx	xxxxxxx	xxxxxxx	Register number where data will be placed 0 = no data returned	YP	YP	YP	YP
8020	Data Buffer Area	130	Integer	R/W	N	xx	xxxxxxx	xxxxxxx	Requested Command data buffer area	YP	YP	YP	YP

[8150] Spare (8150-8799)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
8150	Unused	650	Integer	xx	x	xx	xxxxxxx	xxxxxxx		--	--	--	--

[9000] EN50160 Summary (9000-9359)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9000	Frequency 10s Average	1	Integer	RO	N	xx	0.01Hz	(50/60Hz) 4,500 – 6,700	Metering register 1180. Portal 53313.	--	--	YP	YP
9001	Frequency 10s Minimum	1	Integer	RO	N	xx	0.01Hz	(50/60Hz) 4,500 – 6,700		--	--	YP	YP
9002	Frequency 10s Maximum	1	Integer	RO	N	xx	0.01Hz	(50/60Hz) 4,500 – 6,700		--	--	YP	YP
9003	Va 10m Average	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	Metering register 1120 or 1124. Line-to-line voltages are used for 3-wire systems. By default, line-to-neutral voltages are used for 4-wire systems. However, the user can choose to use 3-wire voltages in 4-wire systems by entering a 1 in register 3902. Portal 53314.	--	--	YP	YP
9004	Va 10m Minimum	1	Integer	RO	N	D	Volts/Scale	0 – 32,767		--	--	YP	YP
9005	Va 10m Maximum	1	Integer	RO	N	D	Volts/Scale	0 – 32,767		--	--	YP	YP
9006	Vb 10m Average	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	Metering register 1121 or 1125. Line-to-line voltages are used for 3-wire systems. By default, line-to-neutral voltages are used for 4-wire systems. However, the user can choose to use 3-wire voltages in 4-wire systems by entering a 1 in register 3902. Portal 53315.	--	--	YP	YP
9007	Vb 10m Minimum	1	Integer	RO	N	D	Volts/Scale	0 – 32,767		--	--	YP	YP
9008	Vb 10m Maximum	1	Integer	RO	N	D	Volts/Scale	0 – 32,767		--	--	YP	YP
9009	Vc 10m Average	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	Metering register 1122 or 1126. Line-to-line voltages are used for 3-wire systems. By default, line-to-neutral voltages are used for 4-wire systems. However, the user can choose to use 3-wire voltages in 4-wire systems by entering a 1 in register 3902. Portal 53316.	--	--	YP	YP
9010	Vc 10m Minimum	1	Integer	RO	N	D	Volts/Scale	0 – 32,767		--	--	YP	YP
9011	Vc 10m Maximum	1	Integer	RO	N	D	Volts/Scale	0 – 32,767		--	--	YP	YP
9012	Flicker Va 10m Average	1	Integer	RO	N	J	xxxxxxx	0 – 32,767	N/A for PM8xx Family	--	--	--	--
9013	Flicker Va 10m Minimum	1	Integer	RO	N	J	xxxxxxx	0 – 32,767		--	--	--	--
9014	Flicker Va 10m Maximum	1	Integer	RO	N	J	xxxxxxx	0 – 32,767		--	--	--	--
9015	Flicker Vb 10m Average	1	Integer	RO	N	J	xxxxxxx	0 – 32,767	N/A for PM8xx Family	--	--	--	--

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9016	Flicker Vb 10m Minimum	1	Integer	RO	N	J	xxxxxxx	0 – 32,767		--	--	--	--
9017	Flicker Vb 10m Maximum	1	Integer	RO	N	J	xxxxxxx	0 – 32,767		--	--	--	--
9018	Flicker Vc 10m Average	1	Integer	RO	N	J	xxxxxxx	0 – 32,767	N/A for PM8xx Family	--	--	--	--
9019	Flicker Vc 10m Minimum	1	Integer	RO	N	J	xxxxxxx	0 – 32,767		--	--	--	--
9020	Flicker Vc 10m Maximum	1	Integer	RO	N	J	xxxxxxx	0 – 32,767		--	--	--	--
9021	Voltage Unbalance 10m Average	1	Integer	RO	N	xx	0.10%	0 – 10,000	Metering register 1299. Negative phase sequence component / positive phase sequence component. Portal 53320.	--	--	Y P	Y P
9022	Voltage Unbalance 10m Minimum	1	Integer	RO	N	xx	0.10%	0 – 10,000		--	--	Y P	Y P
9023	Voltage Unbalance 10m Maximum	1	Integer	RO	N	xx	0.10%	0 – 10,000		--	--	Y P	Y P
9024	THD Va 10m Average	1	Integer	RO	N	xx	0.10%	0 – 32,767	Metering register 1211 or 1207. THD includes all harmonics up to the 64th. Portal 53321.	--	--	Y P	Y P
9025	THD Va 10m Minimum	1	Integer	RO	N	xx	0.10%	0 – 32,767		--	--	Y P	Y P
9026	THD Va 10m Maximum	1	Integer	RO	N	xx	0.10%	0 – 32,767		--	--	Y P	Y P
9027	THD Vb 10m Average	1	Integer	RO	N	xx	0.10%	0 – 32,767	Metering register 1212 or 1208. THD includes all harmonics up to the 64th. Portal 53322.	--	--	Y P	Y P
9028	THD Vb 10m Minimum	1	Integer	RO	N	xx	0.10%	0 – 32,767		--	--	Y P	Y P
9029	THD Vb 10m Maximum	1	Integer	RO	N	xx	0.10%	0 – 32,767		--	--	Y P	Y P
9030	THD Vc 10m Average	1	Integer	RO	N	xx	0.10%	0 – 32,767	Metering register 1213 or 1209. THD includes all harmonics up to the 64th. Portal 53323.	--	--	Y P	Y P
9031	THD Vc 10m Minimum	1	Integer	RO	N	xx	0.10%	0 – 32,767		--	--	Y P	Y P
9032	THD Vc 10m Maximum	1	Integer	RO	N	xx	0.10%	0 – 32,767		--	--	Y P	Y P
9033	Va H2 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13204 or 13588. Portal 53324.	--	--	Y P	Y P
9034	Va H2 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9035	Va H2 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9036	Va H3 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13206 or 13590. Portal 53325.	--	--	Y P	Y P
9037	Va H3 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9038	Va H3 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9039	Va H4 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13208 or 13592. Portal 53326.	--	--	Y P	Y P
9040	Va H4 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9041	Va H4 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9042	Va H5 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13210 or 13594. Portal 53327.	--	--	Y P	Y P
9043	Va H5 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9044	Va H5 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9045	Va H6 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13212 or 13596. Portal 53328.	--	--	Y P	Y P
9046	Va H6 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9047	Va H6 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9048	Va H7 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13214 or 13598. Portal 53329.	--	--	Y P	Y P
9049	Va H7 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9050	Va H7 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9051	Va H8 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13216 or 13600. Portal 53330.	--	--	Y P	Y P
9052	Va H8 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9053	Va H8 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9054	Va H9 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13218 or 13602. Portal 53331.	--	--	Y P	Y P
9055	Va H9 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9056	Va H9 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9057	Va H10 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13220 or 13604. Portal 53332.	--	--	Y P	Y P
9058	Va H10 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9059	Va H10 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9060	Va H11 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13222 or 13606. Portal 53333.	--	--	Y P	Y P
9061	Va H11 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9062	Va H11 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9063	Va H12 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13224 or 13608. Portal 53334.	--	--	Y P	Y P
9064	Va H12 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9065	Va H12 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9066	Va H13 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13226 or 13610. Portal 53335.	--	--	Y P	Y P
9067	Va H13 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9068	Va H13 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9069	Va H14 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13228 or 13612. Portal 53336.	--	--	Y P	Y P
9070	Va H14 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9071	Va H14 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9072	Va H15 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13230 or 13614. Portal 53337.	--	--	Y P	Y P
9073	Va H15 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9074	Va H15 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9075	Va H16 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13232 or 13616. Portal 53338.	--	--	Y P	Y P
9076	Va H16 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9077	Va H16 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9078	Va H17 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13234 or 13618. Portal 53339.	--	--	Y P	Y P
9079	Va H17 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9080	Va H17 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9081	Va H18 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13236 or 13620. Portal 53340.	--	--	Y P	Y P
9082	Va H18 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9083	Va H18 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9084	Va H19 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13238 or 13622. Portal 53341.	--	--	Y P	Y P
9085	Va H19 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9086	Va H19 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9087	Va H20 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13240 or 13624. Portal 53342.	--	--	Y P	Y P
9088	Va H20 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9089	Va H20 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9090	Va H21 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13242 or 13626. Portal 53343.	--	--	Y P	Y P
9091	Va H21 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9092	Va H21 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9093	Va H22 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13244 or 13628. Portal 53344.	--	--	Y P	Y P
9094	Va H22 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9095	Va H22 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9096	Va H23 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13246 or 13630. Portal 53345.	--	--	Y P	Y P
9097	Va H23 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9098	Va H23 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9099	Va H24 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13248 or 13632. Portal 53346.	--	--	Y P	Y P
9100	Va H24 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9101	Va H24 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9102	Va H25 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13250 or 13634. Portal 53347.	--	--	Y P	Y P
9103	Va H25 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9104	Va H25 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9105	Vb H2 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13332 or 13716. Portal 53348.	--	--	Y P	Y P
9106	Vb H2 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9107	Vb H2 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9108	Vb H3 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13334 or 13718. Portal 53349.	--	--	Y P	Y P
9109	Vb H3 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9110	Vb H3 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9111	Vb H4 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13336 or 13720. Portal 53350.	--	--	Y P	Y P
9112	Vb H4 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9113	Vb H4 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9114	Vb H5 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13338 or 13722. Portal 53351.	--	--	Y P	Y P
9115	Vb H5 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9116	Vb H5 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9117	Vb H6 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13340 or 13724. Portal 53352.	--	--	Y P	Y P
9118	Vb H6 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9119	Vb H6 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9120	Vb H7 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13342 or 13726. Portal 53353.	--	--	Y P	Y P
9121	Vb H7 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9122	Vb H7 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9123	Vb H8 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13344 or 13728. Portal 53354.	--	--	Y P	Y P
9124	Vb H8 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9125	Vb H8 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9126	Vb H9 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13346 or 13730. Portal 53355.	--	--	Y P	Y P
9127	Vb H9 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9128	Vb H9 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9129	Vb H10 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13348 or 13732. Portal 53356.	--	--	Y P	Y P
9130	Vb H10 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9131	Vb H10 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9132	Vb H11 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13350 or 13734. Portal 53357.	--	--	Y P	Y P
9133	Vb H11 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9134	Vb H11 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9135	Vb H12 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13352 or 13736. Portal 53358.	--	--	Y P	Y P
9136	Vb H12 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9137	Vb H12 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9138	Vb H13 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13354 or 13738. Portal 53359.	--	--	Y P	Y P
9139	Vb H13 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9140	Vb H13 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9141	Vb H14 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13356 or 13740. Portal 53360.	--	--	Y P	Y P
9142	Vb H14 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9143	Vb H14 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9144	Vb H15 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13358 or 13742. Portal 53361.	--	--	Y P	Y P
9145	Vb H15 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9146	Vb H15 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9147	Vb H16 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13360 or 13744. Portal 53362.	--	--	Y P	Y P
9148	Vb H16 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9149	Vb H16 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9150	Vb H17 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13362 or 13746. Portal 53363.	--	--	Y P	Y P
9151	Vb H17 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9152	Vb H17 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9153	Vb H18 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13364 or 13748. Portal 53364.	--	--	Y P	Y P
9154	Vb H18 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9155	Vb H18 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9156	Vb H19 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13366 or 13750. Portal 53365.	--	--	Y P	Y P
9157	Vb H19 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9158	Vb H19 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9159	Vb H20 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13368 or 13752. Portal 53366.	--	--	Y P	Y P
9160	Vb H20 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9161	Vb H20 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9162	Vb H21 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13370 or 13754. Portal 53367.	--	--	Y P	Y P
9163	Vb H21 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9164	Vb H21 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9165	Vb H22 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13372 or 13756. Portal 53368.	--	--	Y P	Y P
9166	Vb H22 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9167	Vb H22 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9168	Vb H23 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13374 or 13758. Portal 53369.	--	--	Y P	Y P
9169	Vb H23 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9170	Vb H23 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9171	Vb H24 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13376 or 13760. Portal 53370.	--	--	Y P	Y P
9172	Vb H24 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9173	Vb H24 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9174	Vb H25 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13378 or 13762. Portal 53371.	--	--	Y P	Y P
9175	Vb H25 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9176	Vb H25 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9177	Vc H2 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13460 or 13844. Portal 53372.	--	--	Y P	Y P
9178	Vc H2 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9179	Vc H2 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9180	Vc H3 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13462 or 13846. Portal 53373.	--	--	Y P	Y P
9181	Vc H3 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9182	Vc H3 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9183	Vc H4 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13464 or 13848. Portal 53374.	--	--	Y P	Y P
9184	Vc H4 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9185	Vc H4 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9186	Vc H5 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13466 or 13850. Portal 53375.	--	--	Y P	Y P
9187	Vc H5 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9188	Vc H5 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9189	Vc H6 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13468 or 13852. Portal 53376.	--	--	Y P	Y P
9190	Vc H6 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9191	Vc H6 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9192	Vc H7 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13470 or 13854. Portal 53377.	--	--	Y P	Y P
9193	Vc H7 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9194	Vc H7 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9195	Vc H8 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13472 or 13856. Portal 53378.	--	--	Y P	Y P
9196	Vc H8 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9197	Vc H8 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9198	Vc H9 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13474 or 13858. Portal 53379.	--	--	Y P	Y P
9199	Vc H9 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9200	Vc H9 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9201	Vc H10 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13476 or 13860. Portal 53380.	--	--	Y P	Y P
9202	Vc H10 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9203	Vc H10 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9204	Vc H11 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13478 or 13862. Portal 53381.	--	--	Y P	Y P
9205	Vc H11 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9206	Vc H11 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9207	Vc H12 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13480 or 13864. Portal 53382.	--	--	Y P	Y P
9208	Vc H12 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9209	Vc H12 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9210	Vc H13 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13482 or 13866. Portal 53383.	--	--	Y P	Y P
9211	Vc H13 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9212	Vc H13 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9213	Vc H14 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13484 or 13868. Portal 53384.	--	--	Y P	Y P
9214	Vc H14 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9215	Vc H14 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9216	Vc H15 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13486 or 13870. Portal 53385.	--	--	Y P	Y P
9217	Vc H15 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9218	Vc H15 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9219	Vc H16 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13488 or 13872. Portal 53386.	--	--	Y P	Y P
9220	Vc H16 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9221	Vc H16 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9222	Vc H17 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13490 or 13874. Portal 53387.	--	--	Y P	Y P
9223	Vc H17 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9224	Vc H17 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9225	Vc H18 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13492 or 13876. Portal 53388.	--	--	Y P	Y P
9226	Vc H18 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9227	Vc H18 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9228	Vc H19 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13494 or 13878. Portal 53389.	--	--	Y P	Y P
9229	Vc H19 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9230	Vc H19 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9231	Vc H20 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13496 or 13880. Portal 53390.	--	--	Y P	Y P
9232	Vc H20 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9233	Vc H20 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9234	Vc H21 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13498 or 13882. Portal 53391.	--	--	Y P	Y P
9235	Vc H21 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9236	Vc H21 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9237	Vc H22 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13500 or 13884. Portal 53392.	--	--	Y P	Y P
9238	Vc H22 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9239	Vc H22 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9240	Vc H23 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13502 or 13886. Portal 53393.	--	--	Y P	Y P
9241	Vc H23 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9242	Vc H23 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9243	Vc H24 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13504 or 13888. Portal 53394.	--	--	Y P	Y P
9244	Vc H24 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9245	Vc H24 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9246	Vc H25 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 13506 or 13890. Portal 53395.	--	--	Y P	Y P
9247	Vc H25 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9248	Vc H25 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9249	V 3PH 10m Average	1	Integer	RO	N	D	Volts/Scale	0 – 32,767	Metering register 1123. Portal 53396.	--	--	Y P	Y P
9250	V 3PH 10m Minimum	1	Integer	RO	N	D	Volts/Scale	0 – 32,767		--	--	Y P	Y P
9251	V 3PH 10m Maximum	1	Integer	RO	N	D	Volts/Scale	0 – 32,767		--	--	Y P	Y P
9252	KW 3PH 10m Average	1	Integer	RO	N	F	kW/Scale	-32,767 – 32,767	Metering register 1143. Portal 53397.	--	--	Y P	Y P
9253	KW 3PH 10m Minimum	1	Integer	RO	N	F	kW/Scale	-32,767 – 32,767		--	--	Y P	Y P
9254	KW 3PH 10m Maximum	1	Integer	RO	N	F	kW/Scale	-32,767 – 32,767		--	--	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9255	KVAR 3PH 10m Average	1	Integer	RO	N	F	kVAr/Scale	-32,767 – 32,767	Metering register 1147. Portal 53398.	--	--	Y P	Y P
9256	KVAR 3PH 10m Minimum	1	Integer	RO	N	F	kVAr/Scale	-32,767 – 32,767		--	--	Y P	Y P
9257	KVAR 3PH 10m Maximum	1	Integer	RO	N	F	kVAr/Scale	-32,767 – 32,767		--	--	Y P	Y P
9258	Ia 10m Average	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Metering register 1100. Portal 53399.	--	--	Y P	Y P
9259	Ia 10m Minimum	1	Integer	RO	N	A	Amps/Scale	0 – 32,767		--	--	Y P	Y P
9260	Ia 10m Maximum	1	Integer	RO	N	A	Amps/Scale	0 – 32,767		--	--	Y P	Y P
9261	Ib 10m Average	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Metering register 1101. Portal 53400.	--	--	Y P	Y P
9262	Ib 10m Minimum	1	Integer	RO	N	A	Amps/Scale	0 – 32,767		--	--	Y P	Y P
9263	Ib 10m Maximum	1	Integer	RO	N	A	Amps/Scale	0 – 32,767		--	--	Y P	Y P
9264	Ic 10m Average	1	Integer	RO	N	A	Amps/Scale	0 – 32,767	Metering register 1102. Portal 53401.	--	--	Y P	Y P
9265	Ic 10m Minimum	1	Integer	RO	N	A	Amps/Scale	0 – 32,767		--	--	Y P	Y P
9266	Ic 10m Maximum	1	Integer	RO	N	A	Amps/Scale	0 – 32,767		--	--	Y P	Y P
9267	Ia H3 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14102. Portal 53402.	--	--	Y P	Y P
9268	Ia H3 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9269	Ia H3 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9270	Ib H3 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14230. Portal 53403.	--	--	Y P	Y P
9271	Ib H3 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9272	Ib H3 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9273	Ic H3 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14358. Portal 53404.	--	--	Y P	Y P
9274	Ic H3 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9275	Ic H3 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9276	Ia H5 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14106. Portal 53405.	--	--	Y P	Y P
9277	Ia H5 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9278	Ia H5 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9279	Ib H5 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14234. Portal 53406.	--	--	Y P	Y P
9280	Ib H5 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9281	Ib H5 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9282	Ic H5 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14362. Portal 53407.	--	--	Y P	Y P
9283	Ic H5 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9284	Ic H5 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9285	Ia H7 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14110. Portal 53408.	--	--	Y P	Y P
9286	Ia H7 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9287	Ia H7 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9288	Ib H7 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14238. Portal 53409.	--	--	Y P	Y P
9289	Ib H7 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9290	Ib H7 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9291	Ic H7 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14366. Portal 53410.	--	--	Y P	Y P
9292	Ic H7 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9293	Ic H7 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9294	Ia H9 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14114. Portal 53411.	--	--	Y P	Y P
9295	Ia H9 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9296	Ia H9 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9297	Ib H9 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14242. Portal 53412.	--	--	Y P	Y P
9298	Ib H9 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9299	Ib H9 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9300	Ic H9 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14370. Portal 53413.	--	--	Y P	Y P
9301	Ic H9 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9302	Ic H9 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9303	Ia H11 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14118. Portal 53414.	--	--	Y P	Y P
9304	Ia H11 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9305	Ia H11 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9306	Ib H 11 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14246. Portal 53415.	--	--	Y P	Y P
9307	Ib H 11 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9308	Ib H 11 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9309	Ic H 11 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14374. Portal 53416.	--	--	Y P	Y P
9310	Ic H 11 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9311	Ic H 11 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9312	Ia H13 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14122. Portal 53417.	--	--	Y P	Y P
9313	Ia H13 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9314	Ia H13 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9315	Ib H13 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14250. Portal 53418.	--	--	Y P	Y P
9316	Ib H13 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9317	Ib H13 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9318	Ic H13 10m Average	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)	Metering register 14378. Portal 53419.	--	--	Y P	Y P
9319	Ic H13 10m Minimum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9320	Ic H13 10m Maximum	1	Integer	RO	N	xx	0.01%	0 – 32,767 (-32,768 if N/A)		--	--	Y P	Y P
9321	10m Average	1	Integer	RO	N				Item 108. Portal 53420.	--	--	Y	Y
9322	10m Minimum	1	Integer	RO	N					--	--	Y	Y
9323	10m Maximum	1	Integer	RO	N					--	--	Y	Y
9324	10m Average	1	Integer	RO	N				Item 109. Portal 53421.	--	--	Y	Y
9325	10m Minimum	1	Integer	RO	N					--	--	Y	Y
9326	10m Maximum	1	Integer	RO	N					--	--	Y	Y

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9327	10m Average	1	Integer	RO	N				Item 110. Portal 53422.	--	--	Y	Y
9328	10m Minimum	1	Integer	RO	N					--	--	Y	Y
9329	10m Maximum	1	Integer	RO	N					--	--	Y	Y
9330	10m Average	1	Integer	RO	N				Item 111. Portal 53423.	--	--	Y	Y
9331	10m Minimum	1	Integer	RO	N					--	--	Y	Y
9332	10m Maximum	1	Integer	RO	N					--	--	Y	Y
9333	10m Average	1	Integer	RO	N				Item 112. Portal 53424.	--	--	Y	Y
9334	10m Minimum	1	Integer	RO	N					--	--	Y	Y
9335	10m Maximum	1	Integer	RO	N					--	--	Y	Y
9336	10m Average	1	Integer	RO	N				Item 113. Portal 53425.	--	--	Y	Y
9337	10m Minimum	1	Integer	RO	N					--	--	Y	Y
9338	10m Maximum	1	Integer	RO	N					--	--	Y	Y
9339	10m Average	1	Integer	RO	N				Item 114. Portal 53426.	--	--	Y	Y
9340	10m Minimum	1	Integer	RO	N					--	--	Y	Y
9341	10m Maximum	1	Integer	RO	N					--	--	Y	Y
9342	10m Average	1	Integer	RO	N				Item 115. Portal 53427.	--	--	Y	Y
9343	10m Minimum	1	Integer	RO	N					--	--	Y	Y
9344	10m Maximum	1	Integer	RO	N					--	--	Y	Y
9345	10m Average	1	Integer	RO	N				Item 116. Portal 53428.	--	--	Y	Y
9346	10m Minimum	1	Integer	RO	N					--	--	Y	Y
9347	10m Maximum	1	Integer	RO	N					--	--	Y	Y
9348	10m Average	1	Integer	RO	N				Item 117. Portal 53429.	--	--	Y	Y
9349	10m Minimum	1	Integer	RO	N					--	--	Y	Y
9350	10m Maximum	1	Integer	RO	N					--	--	Y	Y

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9351	10m Average	1	Integer	RO	N				Item 118. Portal 53430.	--	--	Y	Y
9352	10m Minimum	1	Integer	RO	N					--	--	Y	Y
9353	10m Maximum	1	Integer	RO	N					--	--	Y	Y
9354	10m Average	1	Integer	RO	N				Item 119. Portal 53431.	--	--	Y	Y
9355	10m Minimum	1	Integer	RO	N					--	--	Y	Y
9356	10m Maximum	1	Integer	RO	N					--	--	Y	Y
9357	10m Average	1	Integer	RO	N				Item 120. Portal 53432.	--	--	Y	Y
9358	10m Minimum	1	Integer	RO	N					--	--	Y	Y
9359	10m Maximum	1	Integer	RO	N					--	--	Y	Y

[9360] Alarm Summary (9360-9499)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9360	Unused	140	Integer	xx		xx	xxxxxxx	xxxxxxx		--	--	--	--

[9530] Email System Configuration & Status (9530-9549)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9530	Email System Enable/Disable	1	Integer	R/CW	Y	-	-	0 – 1	0 = Disable (default) 1 = Enable	Y P	Y P	Y P	Y P
9531	reserved	1	Integer	R/CW	Y	-	-	-		Y P	Y P	Y P	Y P
9532	Email System Alarm Priority Selection	1	Bitmap	RO	Y	-	-	0x0000 – 0x0007	Alarm priorities which will trigger an Email Bit 00 = Priority 1 (High) Bit 01 = Priority 2 (Medium) (default) Bit 02 = Priority 3 (Low)	Y P	Y P	Y P	Y P
9533	Email System Event Type Selection	1	Bitmap	RO	Y	-	-	0x0000 – 0x0010	Event types to be reported in Email Bit 00 = Pickup (default) Bit 01 = Dropout Bit 02 = Diagnostic (default)	Y P	Y P	Y P	Y P
9534	Email System Number of Events to Buffer	1	Integer	RO	Y	-	-	1 – 30	Number of events to buffer before sending email Default = 30	Y P	Y P	Y P	Y P
9535	Email System Time to Buffer Events	1	Integer	RO	Y	-	Seconds	1 – 60	Time to buffer events before sending email Default = 45	Y P	Y P	Y P	Y P
9536	Email System Timeout	1	Integer	R/CW	Y	-	Seconds	30 – 600	Default = 300	Y P	Y P	Y P	Y P
9537	Email System Maximum Number of Retries	1	Integer	R/CW	Y	-	-	0 – 10000	Default = 864	Y P	Y P	Y P	Y P
9538	Reserved	1	Integer	R/CW	Y	-	-	-		Y P	Y P	Y P	Y P
9539	Email System Configuration Change Flag	1	Integer	R/CW	Y	-	-	0 – 1	Reserved for use by ECC	Y P	Y P	Y P	Y P
9540	Email System Email Outstanding Flag	1	Integer	RO	Y	-	-	0 – 1	0 = No Emails Outstanding (sent to ECC) 1 = Email sent to ECC, Waiting for completion	Y P	Y P	Y P	Y P
9541	Email System Number of Emails Pending	1	Integer	RO	Y	-	-	0 – 5		Y P	Y P	Y P	Y P
9542	Email System Number of Emails Sent to ECC	1	Integer	RO	Y	-	-	0 – 32767		Y P	Y P	Y P	Y P
9543	Email System Number Emails Complete by ECC	1	Integer	RO	Y	-	-	0 – 32767		Y P	Y P	Y P	Y P
9544	Email System Number of Events Buffered	1	Integer	RO	Y	-	-	0 – 100		Y P	Y P	Y P	Y P
9545	Email System Time Events Have Been Buffered	1	Integer	RO	Y	-	Seconds	0 – 60		Y P	Y P	Y P	Y P
9546	Email System Number of ECC Timeouts	1	Integer	RO	Y	-	-	0 – 32767		Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9547	Email System Number of Emails Failed	1	Integer	RO	Y	-	-	0 – 32767		Y P	Y P	Y P	Y P
9548	Email System Diagnostic	1	Bitmap	RO	Y	-	-	0x0000 – 0xFFFF	Bit 00 = Summary Bit Bit 01 = ECC Not Present Bit 02 = ECC Firmware Version Does Not Support Email	Y P	Y P	Y P	Y P
9549	Reserved	1	-	-	-	-	-	-		-	-	-	-

[9550] Register-Based Disturbance Event Log – Voltage Event Configuration (9550-9555)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9550	Voltage Event Log Configuration Bitmap	1	Bitmap	R/CW	Y	-	-	0x0000 – 0x0001	Bit 00 – 0 = FIFO (default) 1 = Fill and Hold	--	--	--	Y P
9551	Count of Voltage Events	1	Integer	RO	Y	-	1	1 – 32,767	Number of voltage events logged since last reset of voltage event log	--	--	--	Y P
9552	DateTime of Last Reset	4	Date Time	RO	Y	-	-	-	DateTime of the last reset of the register-based voltage event log	--	--	--	Y P

[9560] Spare (9560-9599)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9560	Reserved	40	xx	xx	x	xx	xxxxxxx	xxxxxxx	Reserved	--	--	--	--

[9600] Register-Based Disturbance Event Log – Voltage Events (9600-9839)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9600	Voltage Event #1	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9608	Voltage Event #2	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9616	Voltage Event #3	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9624	Voltage Event #4	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9632	Voltage Event #5	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9640	Voltage Event #6	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9648	Voltage Event #7	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9656	Voltage Event #8	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9664	Voltage Event #9	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9672	Voltage Event #10	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9680	Voltage Event #11	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9688	Voltage Event #12	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9696	Voltage Event #13	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9704	Voltage Event #14	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9712	Voltage Event #15	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9720	Voltage Event #16	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
9728	Voltage Event #17	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9736	Voltage Event #18	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9744	Voltage Event #19	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9752	Voltage Event #20	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9760	Voltage Event #21	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9768	Voltage Event #22	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9776	Voltage Event #23	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9784	Voltage Event #24	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9792	Voltage Event #25	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9800	Voltage Event #26	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9808	Voltage Event #27	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9816	Voltage Event #28	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9824	Voltage Event #29	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P
9832	Voltage Event #30	8	-	RO	Y	-	-	-	See Event Template	--	--	--	Y P

Register-Based Disturbance Event Log – Event Template

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base	Date/Time of Pickup	4	DateTime	RO	Y	-	-	-		--	--	--	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base +4	Alarm Unique Identifier	2	Long	RO	Y	-	-	0 – 0xFFFFFFFF	Bits 00 – 07 = Level (0 – 9) Bits 08 – 15 = Alarm Type Bits 16 – 31 = Test Register For Disturbance alarms Test Register is: 1 = Vab 2 = Vbc 3 = Vca 4 = Van 5 = Vbn 6 = Vcn 7 = Vng	--	--	--	Y P
Base +6	Worst Value	1	Integer	RO	Y	A-E	Volts or Amps/ Scale	1 – 32,767		--	--	--	Y P
Base +7	Duration	1	Integer	RO	Y	-	Millisecond	1 – 32,767		--	--	--	Y P

[10000] Alarms

[10000] Alarms – System Status

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
10000	Reserved	11	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
10011	Active Alarm Map	12	Bitmap	RO	Y	xx	Binary	0x0000 – 0xFFFF	0 = Inactive, 1 = Active Bit00 = Alarm #01 Bit01 = Alarm #02 …… etc.	YP	YP	YP	YP
10023	Active Alarm Status	1	Bitmap	RO	Y	xx	Binary	0x0000 – 0x000F	Bit00 = 1 if any priority 1-3 alarm is active Bit01 = 1 if a “High” (1) priority alarm is active Bit02 = 1 if a “Medium” (2) priority alarm is active Bit03 = 1 if a “Low” (3) priority alarm is active	YP	YP	YP	YP
10024	Latched Active Alarm Status	1	Bitmap	R/W	N	xx	Binary	0x0000 – 0x000F	Latched Active Alarms: (from the last time the register was cleared) Bit00 = 1 if any priority 1-3 alarm is active Bit01 = 1 if a “High” (1) priority alarm is active Bit02 = 1 if a “Medium” (2) priority alarm is active Bit03 = 1 if a “Low” (3) priority alarm is active	YP	YP	YP	YP
10025	Total Counter	1	Integer	R/W	Y	xx	1.0	0 – 32,767	Total alarm counter, including all priorities 1, 2 and 3	YP	YP	YP	YP
10026	P3 Counter	1	Integer	R/W	Y	xx	1.0	0 – 32,767	Low alarm counter, all priority 3s	YP	YP	YP	YP
10027	P2 Counter	1	Integer	R/W	Y	xx	1.0	0 – 32,767	Medium alarm counter, all priority 2s	YP	YP	YP	YP
10028	P1 Counter	1	Integer	R/W	Y	xx	1.0	0 – 32,767	High alarm counter, all priority 1s	YP	YP	YP	YP
10029	Pickup Mode Selection	12	Bitmap	R/W	Y	xx	Binary	0x0 – 0xFFFF	Selection of absolute or relative pickup test for each of the alarm positions (if applicable, based on type) Alarm #01 is least significant bit in register 10040 0 = Absolute (default) 1 = Relative Bit00 = Alarm #01 Bit01 = Alarm #02 …… etc.	YP	YP	YP	YP
10041	Number Of Samples In Relative Threshold Average	1	Integer	R/CW	Y	xx	1.0	5 – 30	Number of 1-second update intervals used to compute the RMS average value used in relative pickup alarms (Default = 30)	YP	YP	YP	YP
10042	Reserved	1	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

[10115] Alarms – Counters

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
10115	Alarm Position #001 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #001	Y P	Y P	Y P	Y P
10116	Alarm Position #002 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #002	Y P	Y P	Y P	Y P
10117	Alarm Position #003 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #003	Y P	Y P	Y P	Y P
10118	Alarm Position #004 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #004	Y P	Y P	Y P	Y P
10119	Alarm Position #005 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #005	Y P	Y P	Y P	Y P
10120	Alarm Position #006 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #006	Y P	Y P	Y P	Y P
10121	Alarm Position #007 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #007	Y P	Y P	Y P	Y P
10122	Alarm Position #008 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #008	Y P	Y P	Y P	Y P
10123	Alarm Position #009 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #009	Y P	Y P	Y P	Y P
10124	Alarm Position #010 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #010	Y P	Y P	Y P	Y P
10125	Alarm Position #011 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #011	Y P	Y P	Y P	Y P
10126	Alarm Position #012 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #012	Y P	Y P	Y P	Y P
10127	Alarm Position #013Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #013	Y P	Y P	Y P	Y P
10128	Alarm Position #014 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #014	Y P	Y P	Y P	Y P
10129	Alarm Position #015 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #015	Y P	Y P	Y P	Y P
10130	Alarm Position #016 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #016	Y P	Y P	Y P	Y P
10131	Alarm Position #017 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #017	Y P	Y P	Y P	Y P
10132	Alarm Position #018 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #018	Y P	Y P	Y P	Y P
10133	Alarm Position #019 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #019	Y P	Y P	Y P	Y P
10134	Alarm Position #020 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #020	Y P	Y P	Y P	Y P
10135	Alarm Position #021 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #021	Y P	Y P	Y P	Y P
10136	Alarm Position #022 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #022	Y P	Y P	Y P	Y P
10137	Alarm Position #023 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Standard Speed Alarm Position #023	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
10138	Alarm Position #024 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #024	YP	YP	YP	YP
10139	Alarm Position #025 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #025	YP	YP	YP	YP
10140	Alarm Position #026 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #026	YP	YP	YP	YP
10141	Alarm Position #027 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #027	YP	YP	YP	YP
10142	Alarm Position #028 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #028	YP	YP	YP	YP
10143	Alarm Position #029 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #029	YP	YP	YP	YP
10144	Alarm Position #030 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #030	YP	YP	YP	YP
10145	Alarm Position #031 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #031	YP	YP	YP	YP
10146	Alarm Position #032 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #032	YP	YP	YP	YP
10147	Alarm Position #033 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #033	YP	YP	YP	YP
10148	Alarm Position #034 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #034	YP	YP	YP	YP
10149	Alarm Position #035 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #035	YP	YP	YP	YP
10150	Alarm Position #036 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #036	YP	YP	YP	YP
10151	Alarm Position #037 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #037	YP	YP	YP	YP
10152	Alarm Position #038 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #038	YP	YP	YP	YP
10153	Alarm Position #039 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #039	YP	YP	YP	YP
10154	Alarm Position #040 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Standard Speed Alarm Position #040	YP	YP	YP	YP
10155	Alarm Position #041 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Disturbance Alarm Position #001	--	--	--	YP
10156	Alarm Position #042 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Disturbance Alarm Position #002	--	--	--	YP
10157	Alarm Position #043Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Disturbance Alarm Position #003	--	--	--	YP
10158	Alarm Position #044 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Disturbance Alarm Position #004	--	--	--	YP
10159	Alarm Position #045 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Disturbance Alarm Position #005	--	--	--	YP
10160	Alarm Position #046 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Disturbance Alarm Position #006	--	--	--	YP
10161	Alarm Position #047 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Disturbance Alarm Position #007	--	--	--	YP

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
10162	Alarm Position #048 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Disturbance Alarm Position #008	--	--	--	YP
10163	Alarm Position #049 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Disturbance Alarm Position #009	--	--	--	YP
10164	Alarm Position #050 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Disturbance Alarm Position #010	--	--	--	YP
10165	Alarm Position #051 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Disturbance Alarm Position #011	--	--	--	YP
10166	Alarm Position #052 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Disturbance Alarm Position #012	--	--	--	YP
10167	Alarm Position #053Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Digital Alarm Position #001	YP	YP	YP	YP
10168	Alarm Position #054 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Digital Alarm Position #002	YP	YP	YP	YP
10169	Alarm Position #055 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Digital Alarm Position #003	YP	YP	YP	YP
10170	Alarm Position #056 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Digital Alarm Position #004	YP	YP	YP	YP
10171	Alarm Position #057 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Digital Alarm Position #005	YP	YP	YP	YP
10172	Alarm Position #058 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Digital Alarm Position #006	YP	YP	YP	YP
10173	Alarm Position #059 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Digital Alarm Position #007	YP	YP	YP	YP
10174	Alarm Position #060 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Digital Alarm Position #008	YP	YP	YP	YP
10175	Alarm Position #061 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Digital Alarm Position #009	YP	YP	YP	YP
10176	Alarm Position #062 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Digital Alarm Position #010	YP	YP	YP	YP
10177	Alarm Position #063Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Digital Alarm Position #011	YP	YP	YP	YP
10178	Alarm Position #064Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Digital Alarm Position #012	YP	YP	YP	YP
10179	Alarm Position #065 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Combinatorial Alarm Position #001	--	--	YP	YP
10180	Alarm Position #066 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Combinatorial Alarm Position #002	--	--	YP	YP
10181	Alarm Position #067 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Combinatorial Alarm Position #003	--	--	YP	YP
10182	Alarm Position #068 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Combinatorial Alarm Position #004	--	--	YP	YP
10183	Alarm Position #069 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Combinatorial Alarm Position #005	--	--	YP	YP
10184	Alarm Position #070 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Combinatorial Alarm Position #006	--	--	YP	YP
10185	Alarm Position #071 Counter	1	Integer	RO	Y	xx	1.0	0 – 32,767	Combinatorial Alarm Position #007	--	--	YP	YP

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
10186	Alarm Position #072 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Combinatorial Alarm Position #008	--	--	Y P	Y P
10187	Alarm Position #073Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Combinatorial Alarm Position #009	--	--	Y P	Y P
10188	Alarm Position #074 Counter	1	Integer	RO	Y	××	1.0	0 – 32,767	Combinatorial Alarm Position #010	--	--	Y P	Y P
10189	Reserved	11	**	**	×	××	×××××××	×××××××	Reserved for future development	--	--	--	--

[10200] Alarms – Standard Speed

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
10200	Alarm Position #001	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #001 - See Template 1	Y P	Y P	Y P	Y P
10220	Alarm Position #002	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #002 - See Template 1	Y P	Y P	Y P	Y P
10240	Alarm Position #003	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #003 - See Template 1	Y P	Y P	Y P	Y P
10260	Alarm Position #004	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #004 - See Template 1	Y P	Y P	Y P	Y P
10280	Alarm Position #005	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #005 - See Template 1	Y P	Y P	Y P	Y P
10300	Alarm Position #006	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #006 - See Template 1	Y P	Y P	Y P	Y P
10320	Alarm Position #007	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #007 - See Template 1	Y P	Y P	Y P	Y P
10340	Alarm Position #008	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #008 - See Template 1	Y P	Y P	Y P	Y P
10360	Alarm Position #009	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #009 - See Template 1	Y P	Y P	Y P	Y P
10380	Alarm Position #010	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #010 - See Template 1	Y P	Y P	Y P	Y P
10400	Alarm Position #011	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #011 - See Template 1	Y P	Y P	Y P	Y P
10420	Alarm Position #012	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #012 - See Template 1	Y P	Y P	Y P	Y P
10440	Alarm Position #013	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #013 - See Template 1	Y P	Y P	Y P	Y P
10460	Alarm Position #014	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #014 - See Template 1	Y P	Y P	Y P	Y P
10480	Alarm Position #015	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #015 - See Template 1	Y P	Y P	Y P	Y P
10500	Alarm Position #016	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #016 - See Template 1	Y P	Y P	Y P	Y P
10520	Alarm Position #017	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #017 - See Template 1	Y P	Y P	Y P	Y P
10540	Alarm Position #018	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #018 - See Template 1	Y P	Y P	Y P	Y P
10560	Alarm Position #019	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #019 - See Template 1	Y P	Y P	Y P	Y P
10580	Alarm Position #020	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #020 - See Template 1	Y P	Y P	Y P	Y P
10600	Alarm Position #021	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #021 - See Template 1	Y P	Y P	Y P	Y P
10620	Alarm Position #022	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #022 - See Template 1	Y P	Y P	Y P	Y P
10640	Alarm Position #023	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #023 - See Template 1	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
10660	Alarm Position #024	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #024 - See Template 1	Y P	Y P	Y P	Y P
10680	Alarm Position #025	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #025 - See Template 1	Y P	Y P	Y P	Y P
10700	Alarm Position #026	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #026 - See Template 1	Y P	Y P	Y P	Y P
10720	Alarm Position #027	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #027 - See Template 1	Y P	Y P	Y P	Y P
10740	Alarm Position #028	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #028 - See Template 1	Y P	Y P	Y P	Y P
10760	Alarm Position #029	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #029 - See Template 1	Y P	Y P	Y P	Y P
10780	Alarm Position #030	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #030 - See Template 1	Y P	Y P	Y P	Y P
10800	Alarm Position #031	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #031 - See Template 1	Y P	Y P	Y P	Y P
10820	Alarm Position #032	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #032 - See Template 1	Y P	Y P	Y P	Y P
10840	Alarm Position #033	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #033 - See Template 1	Y P	Y P	Y P	Y P
10860	Alarm Position #034	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #034 - See Template 1	Y P	Y P	Y P	Y P
10880	Alarm Position #035	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #035 - See Template 1	Y P	Y P	Y P	Y P
10900	Alarm Position #036	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #036 - See Template 1	Y P	Y P	Y P	Y P
10920	Alarm Position #037	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #037 - See Template 1	Y P	Y P	Y P	Y P
10940	Alarm Position #038	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #038 - See Template 1	Y P	Y P	Y P	Y P
10960	Alarm Position #039	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #039 - See Template 1	Y P	Y P	Y P	Y P
10980	Alarm Position #040	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Standard Speed Alarm Position #040 - See Template 1	Y P	Y P	Y P	Y P

[11000] Alarms – Disturbance

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11000	Alarm Position #041	20	××	R/CW	Y	××	See Template 1	See Template 1	Disturbance Alarm Position #001 - See Template 1	Y --	Y --	Y --	Y P
11020	Alarm Position #042	20	××	R/CW	Y	××	See Template 1	See Template 1	Disturbance Alarm Position #002 - See Template 1	Y --	Y --	Y --	Y P
11040	Alarm Position #043	20	××	R/CW	Y	××	See Template 1	See Template 1	Disturbance Alarm Position #003 - See Template 1	Y --	Y --	Y --	Y P
11060	Alarm Position #044	20	××	R/CW	Y	××	See Template 1	See Template 1	Disturbance Alarm Position #004 - See Template 1	Y --	Y --	Y --	Y P
11080	Alarm Position #045	20	××	R/CW	Y	××	See Template 1	See Template 1	Disturbance Alarm Position #005 - See Template 1	Y --	Y --	Y --	Y P
11100	Alarm Position #046	20	××	R/CW	Y	××	See Template 1	See Template 1	Disturbance Alarm Position #006 - See Template 1	Y --	Y --	Y --	Y P
11120	Alarm Position #047	20	××	R/CW	Y	××	See Template 1	See Template 1	Disturbance Alarm Position #007 - See Template 1	Y --	Y --	Y --	Y P
11140	Alarm Position #048	20	××	R/CW	Y	××	See Template 1	See Template 1	Disturbance Alarm Position #008 - See Template 1	Y --	Y --	Y --	Y P
11160	Alarm Position #049	20	××	R/CW	Y	××	See Template 1	See Template 1	Disturbance Alarm Position #009 - See Template 1	Y --	Y --	Y --	Y P
11180	Alarm Position #050	20	××	R/CW	Y	××	See Template 1	See Template 1	Disturbance Alarm Position #010 - See Template 1	Y --	Y --	Y --	Y P
11200	Alarm Position #051	20	××	R/CW	Y	××	See Template 1	See Template 1	Disturbance Alarm Position #011 - See Template 1	Y --	Y --	Y --	Y P
11220	Alarm Position #052	20	××	R/CW	Y	××	See Template 1	See Template 1	Disturbance Alarm Position #012 - See Template 1	Y --	Y --	Y --	Y P

[11240] Alarms – Digital

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11240	Alarm Position #053	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Digital Alarm Position #001 - See Template 1	Y P	Y P	Y P	Y P
11260	Alarm Position #054	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Digital Alarm Position #002 - See Template 1	Y P	Y P	Y P	Y P
11280	Alarm Position #055	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Digital Alarm Position #003 - See Template 1	Y P	Y P	Y P	Y P
11300	Alarm Position #056	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Digital Alarm Position #004 - See Template 1	Y P	Y P	Y P	Y P
11320	Alarm Position #057	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Digital Alarm Position #005 - See Template 1	Y P	Y P	Y P	Y P
11340	Alarm Position #058	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Digital Alarm Position #006 - See Template 1	Y P	Y P	Y P	Y P
11360	Alarm Position #059	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Digital Alarm Position #007 - See Template 1	Y P	Y P	Y P	Y P
11380	Alarm Position #060	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Digital Alarm Position #008 - See Template 1	Y P	Y P	Y P	Y P
11400	Alarm Position #061	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Digital Alarm Position #009 - See Template 1	Y P	Y P	Y P	Y P
11420	Alarm Position #062	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Digital Alarm Position #010 - See Template 1	Y P	Y P	Y P	Y P
11440	Alarm Position #063	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Digital Alarm Position #011 - See Template 1	Y P	Y P	Y P	Y P
11460	Alarm Position #064	20	xx	R/CW	Y	xx	See Template 1	See Template 1	Digital Alarm Position #012 - See Template 1	Y P	Y P	Y P	Y P

[11480] Alarms – Boolean

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11480	Alarm Position #065	20	××	R/CW	Y	××	See Template 2	See Template 2	Combinatorial Alarm Position #001 - See Template 2	--	--	Y P	Y P
11500	Alarm Position #066	20	××	R/CW	Y	××	See Template 2	See Template 2	Combinatorial Alarm Position #002 - See Template 2	--	--	Y P	Y P
11520	Alarm Position #067	20	××	R/CW	Y	××	See Template 2	See Template 2	Combinatorial Alarm Position #003 - See Template 2	--	--	Y P	Y P
11540	Alarm Position #068	20	××	R/CW	Y	××	See Template 2	See Template 2	Combinatorial Alarm Position #004 - See Template 2	--	--	Y P	Y P
11560	Alarm Position #069	20	××	R/CW	Y	××	See Template 2	See Template 2	Combinatorial Alarm Position #005 - See Template 2	--	--	Y P	Y P
11580	Alarm Position #070	20	××	R/CW	Y	××	See Template 2	See Template 2	Combinatorial Alarm Position #006 - See Template 2	--	--	Y P	Y P
11600	Alarm Position #071	20	××	R/CW	Y	××	See Template 2	See Template 2	Combinatorial Alarm Position #007 - See Template 2	--	--	Y P	Y P
11620	Alarm Position #072	20	××	R/CW	Y	××	See Template 2	See Template 2	Combinatorial Alarm Position #008 - See Template 2	--	--	Y P	Y P
11640	Alarm Position #073	20	××	R/CW	Y	××	See Template 2	See Template 2	Combinatorial Alarm Position #009 - See Template 2	--	--	Y P	Y P
11660	Alarm Position #074	20	××	R/CW	Y	××	See Template 2	See Template 2	Combinatorial Alarm Position #010 - See Template 2	--	--	Y P	Y P
11680	Reserved	20	**	**	**	**	**	**	Reserved For Future Development	--	--	--	--

Alarms – Template 1

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base	Unique Identifier	2	Long	R/CW	Y	xx	xxxxxxx	0 – 0xFFFFFFFF	Bits 00 – 07 = Level (0 – 9) Bits 08 – 15 = Alarm Type Bits 16 – 31 = Test Register For Disturbance alarms Test Register is: 1 = Vab 2 = Vbc 3 = Vca 4 = Van 5 = Vbn 6 = Vcn 7 = Vng 8 = Ia 9 = Ib 10 = Ic 11 = In For Unary Alarms, Test Register is: 1 = End of Incremental Energy Interval 2 = End of Power Demand Interval 3 = End of 1s Meter Update Cycle 4 = Reserved 5 = Power up/ Reset	Y P	Y P	Y P	Y P
Base +2	Enable/Disable, Priority	1	Integer	R/W	Y	xx	xxxxxxx	MSB: 0 – FF LSB: 0 – 3	MSB: 0x00 = Disabled (Default) 0xFF = Enabled LSB: Specifies the priority level 0 – 3	Y P	Y P	Y P	Y P
Base +3	Label	8	Character	R/W	Y	xx	xxxxxxx	ASCII	16 Characters	Y P	Y P	Y P	Y P
Base +11	Pickup Value	1	Integer	R/CW	Y	A-F	Units/Scale	0 – 32,767	Does not apply to digital or unary alarms	Y P	Y P	Y P	Y P
Base +12	Pickup Delay	1	Integer	R/CW	Y	xx	1s 100ms Cycle	0 – 32,767 0 – 999 0 – 999	Standard Speed Alarms *High Speed Alarms* *Disturbance Alarms* *Does not apply to digital or unary alarms.*	Y P	Y P	Y P	Y P
Base +13	Dropout Value	1	Integer	R/CW	Y Y	A-F xx	Units/Scale	0 – 32,767	Does not apply to digital or unary alarms.	Y P	Y P	Y P	Y P
Base +14	Dropout Delay	1	Integer	R/CW	Y	xx	1s 100ms Cycle	0 – 32,767 0 – 999 0 – 999	Standard Speed Alarms *High Speed Alarms* *Disturbance Alarms* Does not apply to digital or unary alarms.	Y P	Y P	Y P	Y P
Base +15	Reserved	1	xx	xx	xx	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base +16	Datalog Specifier	2	Bitmap	R/CW	Y	xx	xxxxxxx	0 – 0xFFFFFFFF	Bit 00 = Datalog #1 Bit 01 = Datalog #2 Bit 02 = Datalog #3 Bit 08 = Datalog #4	Y P	Y P	Y P	Y P
Base +18	WFC Mode	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 0xFFFF	Bits 00 – 03 = Channel Format (0 – 10) Bits 04 – 07 = Decimation (0 – 6) Bits 08 – 11 = History Cycles (0 – 10) *Bit 12 – Steady State Waveform Capture* Bit 13 – Fixed Waveform Capture	Y P	Y P	Y P	Y P
Base +19	WFC Cycles	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 0xFFFF	Number of Cycles	Y P	Y P	Y P	Y P

Alarms – Template 2

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base	Unique Identifier	2	Long	R/CW	Y	xx	xxxxxxx	0 – 0xFFFFFFFF	Bits 00 – 07 = Level (0 – 9) Bits 08 – 15 = Alarm Type Bits 16 – 31 = Test Register	Y P	Y P	Y P	Y P
Base +2	Enable/Disable, Priority	1	Integer	R/W	Y	xx	xxxxxxx	MSB: 0 – FF LSB: 0 – 3	MSB: 0x00 = Disable; 0xFF = Enable LSB: Specifies the priority level 0 – 3	Y P	Y P	Y P	Y P
Base +3	Label	8	Character	R/W	Y	xx	xxxxxxx	ASCII	16 Characters	Y P	Y P	Y P	Y P
Base +11	Alarm test list	4	Long	R/CW	Y	xx	xxxxxxx	0 – 74	Alarm test list (position # in the normal alarm list)	Y P	Y P	Y P	Y P
Base +15	Reserved	1	xx	xx	xx	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--
Base +16	Datalog Specifier	2	Bitmap	R/CW	Y	xx	xxxxxxx	0 – 0xFFFFFFFF	Bit 00 = Datalog #1 Bit 01 = Datalog #2 Bit 02 = Datalog #3 Bit 08 = Datalog #4	Y P	Y P	Y P	Y P
Base +18	WFC Mode	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 0xFFFF	Bits 00 – 03 = Channel Format (0 – 10) Bits 04 – 07 = Decimation (0 – 6) Bits 08 – 11 = History Cycles (0 – 10) *Bit 12 – Steady State Waveform Capture* Bit 13 – Fixed Waveform Capture	Y P	Y P	Y P	Y P
Base +19	WFC Cycles	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 0xFFFF	Number of Cycles	Y P	Y P	Y P	Y P

[11700] Floating Point Metering Registers

[11700] 1s Metering – Current

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11700	Current, Phase A	2	Float	RO	N	-	Amps		RMS	YP	YP	YP	YP
11702	Current, Phase B	2	Float	RO	N	-	Amps		RMS	YP	YP	YP	YP
11704	Current, Phase C	2	Float	RO	N	-	Amps		RMS	YP	YP	YP	YP
11706	Current, Neutral	2	Float	RO	N	-	Amps		RMS 4-wire system only	YP	YP	YP	YP
11708	Current, Ground	2	Float	RO	N	-	Amps		RMS 4-wire system only	YP	YP	YP	YP
11710	Current, 3-Phase Average	2	Float	RO	N	-	Amps		Calculated mean of Phases A, B & C	YP	YP	YP	YP

[11712] 1s Metering – Voltage

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11712	Voltage, A-B	2	Float	RO	N	-	Volts		RMS Voltage measured between A & B	YP	YP	YP	YP
11714	Voltage, B-C	2	Float	RO	N	-	Volts		RMS Voltage measured between B & C	YP	YP	YP	YP
11716	Voltage, C-A	2	Float	RO	N	-	Volts		RMS Voltage measured between C & A	YP	YP	YP	YP
11718	Voltage, L-L Average	2	Float	RO	N	-	Volts		RMS 3 Phase Average L-L Voltage	YP	YP	YP	YP
11720	Voltage, A-N	2	Float	RO	N	-	Volts		RMS Voltage measured between A & N 4-wire system only	YP	YP	YP	YP
11722	Voltage, B-N	2	Float	RO	N	-	Volts		RMS Voltage measured between B & N 4-wire system only	YP	YP	YP	YP
11724	Voltage, C-N	2	Float	RO	N	-	Volts		RMS Voltage measured between C & N 4-wire system only	YP	YP	YP	YP
11726	Voltage, N-G	2	Float	RO	N	-	Volts		RMS Voltage measured between N & G 4-wire system with 4 element metering only	YP	YP	YP	YP
11728	Voltage, L-N Average	2	Float	RO	N	-	Volts		RMS 3-Phase Average L-N Voltage	YP	YP	YP	YP

[11730] 1s Metering – Power

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11730	Real Power, Phase A	2	Float	RO	N	-	W		Real Power (PA) 4-wire system only	Y P	Y P	Y P	Y P
11732	Real Power, Phase B	2	Float	RO	N	-	W		Real Power (PB) 4-wire system only	Y P	Y P	Y P	Y P
11734	Real Power, Phase C	2	Float	RO	N	-	W		Real Power (PC) 4-wire system only	Y P	Y P	Y P	Y P
11736	Real Power, Total	2	Float	RO	N	-	W		4-wire system = PA+PB+PC 3-wire system = 3-Phase real power	Y P	Y P	Y P	Y P
11738	Reactive Power, Phase A	2	Float	RO	N	-	VAr		Reactive Power (QA) 4-wire system only	Y P	Y P	Y P	Y P
11740	Reactive Power, Phase B	2	Float	RO	N	-	VAr		Reactive Power (QB) 4-wire system only	Y P	Y P	Y P	Y P
11742	Reactive Power, Phase C	2	Float	RO	N	-	VAr		Reactive Power (QC) 4-wire system only	Y P	Y P	Y P	Y P
11744	Reactive Power, Total	2	Float	RO	N	-	VAr		4-wire system = QA+QB+QC 3 wire system = 3-Phase reactive power	Y P	Y P	Y P	Y P
11746	Apparent Power, Phase A	2	Float	RO	N	-	VA		Apparent Power (SA) 4-wire system only	Y P	Y P	Y P	Y P
11748	Apparent Power, Phase B	2	Float	RO	N	-	VA		Apparent Power (SB) 4-wire system only	Y P	Y P	Y P	Y P
11750	Apparent Power, Phase C	2	Float	RO	N	-	VA		Apparent Power (SC) 4-wire system only	Y P	Y P	Y P	Y P
11752	Apparent Power, Total	2	Float	RO	N	-	VA		4-wire system = SA+SB+SC 3-wire system = 3-Phase apparent power	Y P	Y P	Y P	Y P

[11754] 1s Metering – Power Factor

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11754	True Power Factor, Phase A	2	Float	RO	N	-			Derived using the complete harmonic content of real and apparent power. 4-wire system only	Y P	Y P	Y P	Y P
11756	True Power Factor, Phase B	2	Float	RO	N	-			Derived using the complete harmonic content of real and apparent power. 4-wire system only	Y P	Y P	Y P	Y P
11758	True Power Factor, Phase C	2	Float	RO	N	-			Derived using the complete harmonic content of real and apparent power. 4-wire system only	Y P	Y P	Y P	Y P
11760	True Power Factor, Total	2	Float	RO	N	-			Derived using the complete harmonic content of real and apparent power	Y P	Y P	Y P	Y P

[11762] 1s Metering – Frequency

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11762	Frequency	2	Float	RO	N	-	Hz		Frequency of circuits being monitored. If the frequency is out of range, the register will be -32,768.	Y P	Y P	Y P	Y P
11764	Reserved	36	Float	RO	N					Y P	Y P	Y P	Y P

[11800] 1s Metering - Energy

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11800	Energy, Real In	2	Float	RO	N	-	WH		3-Phase total real energy into the load	Y P	Y P	Y P	Y P
11802	Energy, Reactive In	2	Float	RO	N	-	VArH		3-Phase total reactive energy into the load	Y P	Y P	Y P	Y P
11804	Energy, Real Out	2	Float	RO	N	-	WH		3-Phase total real energy out of the load	Y P	Y P	Y P	Y P
11806	Energy, Reactive Out	2	Float	RO	N	-	VArH		3-Phase total reactive energy out of the load	Y P	Y P	Y P	Y P
11808	Energy, Real Total (signed/absolute)	2	Float	RO	N	-	WH		Total Real Energy In, Out or In + Out	Y P	Y P	Y P	Y P
11810	Energy, Reactive Total (signed/absolute)	2	Float	RO	N	-	VArH		Total Reactive Energy In, Out or In + Out	Y P	Y P	Y P	Y P
11812	Energy, Apparent	2	Float	RO	N	-	VAH		3-Phase total apparent energy	Y P	Y P	Y P	Y P
11814	Energy, Conditional Real In	2	Float	RO	N	-	WH		3-Phase total accumulated conditional real energy into the load	Y P	Y P	Y P	Y P
11816	Energy, Conditional Reactive In	2	Float	RO	N	-	VArH		3-Phase total accumulated conditional reactive energy into the load	Y P	Y P	Y P	Y P
11818	Energy, Conditional Real Out	2	Float	RO	N	-	WH		3-Phase total accumulated conditional real energy out of the load	Y P	Y P	Y P	Y P
11820	Energy, Conditional Reactive Out	2	Float	RO	N	-	VArH		3-Phase total accumulated conditional reactive energy out of the load	Y P	Y P	Y P	Y P
11822	Energy, Conditional Apparent	2	Float	RO	N	-	VAH		3-Phase total accumulated conditional apparent energy	Y P	Y P	Y P	Y P
11824	Energy, Incremental Real In, Last Complete Interval	2	Float	RO	N	-	WH		3-Phase total accumulated incremental real energy into the load	Y P	Y P	Y P	Y P
11826	Energy. Incremental Reactive In, Last Complete Interval	2	Float	RO	N	-	VArH		3-Phase total accumulated incremental reactive energy into the load	Y P	Y P	Y P	Y P
11828	Energy, Incremental Real Out, Last Complete Interval	2	Float	RO	N	-	WH		3-Phase total accumulated incremental real energy out of the load	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11830	Energy, Incremental Reactive Out, Last Complete Interval	2	Float	RO	N	-	VArH		3-Phase total accumulated incremental reactive energy out of the load	Y P	Y P	Y P	Y P
11832	Energy, Incremental Apparent, Last Complete Interval	2	Float	RO	N	-	VAH		3-Phase total accumulated incremental apparent energy	Y P	Y P	Y P	Y P
11834	Reserved	2	Float	RO	N	-	-			Y P	Y P	Y P	Y P
11836	Energy, Incremental Real In, Present Interval	2	Float	RO	N	-	WH		3-Phase total accumulated incremental real energy into the load	Y P	Y P	Y P	Y P
11838	Energy. Incremental Reactive In, Present Interval	2	Float	RO	N	-	VArH		3-Phase total accumulated incremental reactive energy into the load	Y P	Y P	Y P	Y P
11840	Energy, Incremental Real Out, Present Interval	2	Float	RO	N	-	WH		3-Phase total accumulated incremental real energy out of the load	Y P	Y P	Y P	Y P
11842	Energy, Incremental Reactive Out, Present Interval	2	Float	RO	N	-	VArH		3-Phase total accumulated incremental reactive energy out of the load	Y P	Y P	Y P	Y P
11844	Energy, Incremental Apparent, Present Interval	2	Float	RO	N	-	VAH		3-Phase total accumulated incremental apparent energy	Y P	Y P	Y P	Y P
11846	Energy, Reactive, Quadrant 1	2	Float	RO	N	-	VArH		3-Phase total accumulated incremental reactive energy – quadrant 1	Y P	Y P	Y P	Y P
11848	Energy, Reactive, Quadrant 2	2	Float	RO	N	-	VArH		3-Phase total accumulated incremental reactive energy – quadrant 2	Y P	Y P	Y P	Y P
11850	Energy, Reactive, Quadrant 3	2	Float	RO	N	-	VArH		3-Phase total accumulated incremental reactive energy – quadrant 3	Y P	Y P	Y P	Y P
11852	Energy, Reactive, Quadrant 4	2	Float	RO	N	-	VArH		3-Phase total accumulated incremental reactive energy – quadrant 4	Y P	Y P	Y P	Y P
11854	Cumulative Usage Input Channel #1	2	Float	RO	N	-	(2)		The user must identify the units to be used in the accumulation.	Y P	Y P	Y P	Y P
11856	Cumulative Usage Input Channel #2	2	Float	RO	N	-	(2)		The user must identify the units to be used in the accumulation.	Y P	Y P	Y P	Y P
11858	Cumulative Usage Input Channel #3	2	Float	RO	N	-	(2)		The user must identify the units to be used in the accumulation.	Y P	Y P	Y P	Y P
11860	Cumulative Usage Input Channel #4	2	Float	RO	N	-	(2)		The user must identify the units to be used in the accumulation.	Y P	Y P	Y P	Y P
11862	Cumulative Usage Input Channel #5	2	Float	RO	N	-	(2)		The user must identify the units to be used in the accumulation.	Y P	Y P	Y P	Y P
11864	Energy, Real 3-Phase Total Usage Today	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11866	Energy, Real 3-Phase Total Usage Yesterday	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11868	Energy, Real 3-Phase Total Usage This Week	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11870	Energy, Real 3-Phase Total Usage Last Week	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11872	Energy, Real 3-Phase Total Usage This Month	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11874	Energy, Real 3-Phase Total Usage Last Month	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11876	Energy, Apparent 3-Phase Total Usage Today	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11878	Energy, Apparent 3-Phase Total Usage Yesterday	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11880	Energy, Apparent 3-Phase Total Usage This Week	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11882	Energy, Apparent 3-Phase Total Usage Last Week	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11884	Energy, Apparent 3-Phase Total Usage This Month	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11886	Energy, Apparent 3-Phase Total Usage Last Month	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11888	Energy, Real 3-Phase Total Usage – First Shift – Today	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11890	Energy, Real 3-Phase Total Usage – Second Shift – Today	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11892	Energy, Real 3-Phase Total Usage – Third Shift – Today	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11894	Energy, Real 3-Phase Total Usage – First Shift – Yesterday	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11896	Energy, Real 3-Phase Total Usage – Second Shift – Yesterday	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11898	Energy, Real 3-Phase Total Usage – Third Shift – Yesterday	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11900	Energy, Real 3-Phase Total Usage – First Shift – This Week	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11902	Energy, Real 3-Phase Total Usage – Second Shift – This Week	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11904	Energy, Real 3-Phase Total Usage – Third Shift – This Week	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11906	Energy, Real 3-Phase Total Usage – First Shift – Last Week	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11908	Energy, Real 3-Phase Total Usage – Second Shift – Last Week	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11910	Energy, Real 3-Phase Total Usage – Third Shift – Last Week	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11912	Energy, Real 3-Phase Total Usage – First Shift – This Month	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11914	Energy, Real 3-Phase Total Usage – Second Shift – This Month	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11916	Energy, Real 3-Phase Total Usage – Third Shift – This Month	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11918	Energy, Real 3-Phase Total Usage – First Shift – Last Month	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11920	Energy, Real 3-Phase Total Usage – Second Shift – Last Month	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11922	Energy, Real 3-Phase Total Usage – Third Shift – Last Month	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11924	Energy, Apparent 3-Phase Total Usage – First Shift – Today	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11926	Energy, Apparent 3-Phase Total Usage – Second Shift – Today	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11928	Energy, Apparent 3-Phase Total Usage – Third Shift – Today	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11930	Energy, Apparent 3-Phase Total Usage – First Shift – Yesterday	2	Float	RO	N	-	WH			Y P	Y P	Y P	Y P
11932	Energy, Apparent 3-Phase Total Usage – Second Shift – Yesterday	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11934	Energy, Apparent 3-Phase Total Usage – Third Shift – Yesterday	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11936	Energy, Apparent 3-Phase Total Usage – First Shift – This Week	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11938	Energy, Apparent 3-Phase Total Usage – Second Shift – This Week	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11940	Energy, Apparent 3-Phase Total Usage – Third Shift – This Week	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11942	Energy, Apparent 3-Phase Total Usage – First Shift – Last Week	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11944	Energy, Apparent 3-Phase Total Usage – Second Shift – Last Week	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11946	Energy, Apparent 3-Phase Total Usage – Third Shift – Last Week	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11948	Energy, Apparent 3-Phase Total Usage – First Shift – This Month	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11950	Energy, Apparent 3-Phase Total Usage – Second Shift – This Month	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11952	Energy, Apparent 3-Phase Total Usage – Third Shift – This Month	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11954	Energy, Apparent 3-Phase Total Usage – First Shift – Last Month	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11956	Energy, Apparent 3-Phase Total Usage – Second Shift – Last Month	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P
11958	Energy, Apparent 3-Phase Total Usage – Third Shift – Last Month	2	Float	RO	N	-	VAH			Y P	Y P	Y P	Y P

[11960] THD

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11960	THD/thd Current, Phase A	2	Float	RO	N	-	-		Total Harmonic Distortion, Phase A Current See register 3227 for THD/ thd definition	Y P	Y P	Y P	Y P
11962	THD/thd Current, Phase B	2	Float	RO	N	-	-		Total Harmonic Distortion, Phase B Current See register 3227 for THD/ thd definition	Y P	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
11964	THD/thd Current, Phase C	2	Float	RO	N	-	-		Total Harmonic Distortion, Phase C Current See register 3227 for THD/ thd definition	Y P	Y P	Y P	Y P
11966	THD/thd Current, Phase N	2	Float	RO	N	-	-		Total Harmonic Distortion, Phase N Current (4-wire systems and system type and 12 only) See register 3227 for THD/ thd definition	Y P	Y P	Y P	Y P
11968	THD/thd Voltage, Phase A-N	2	Float	RO	N	-	-		Total Harmonic Distortion Phase A-N (4-wire systems and system types 10 and 12) See register 3227 for THD/ thd definition	Y P	Y P	Y P	Y P
11970	THD/thd Voltage, Phase B-N	2	Float	RO	N	-	-		Total Harmonic Distortion Phase B-N (4-wire systems and system type 12 only) See register 3227 for THD/ thd definition	Y P	Y P	Y P	Y P
11972	THD/thd Voltage, Phase C-N	2	Float	RO	N	-	-		Total Harmonic Distortion Phase C-N (4-wire system only) See register 3227 for THD/ thd definition	Y P	Y P	Y P	Y P
11974	THD/thd Voltage, Phase A-B	2	Float	RO	N	-	-		Total Harmonic Distortion Phase A-B See register 3227 for THD/ thd definition	Y P	Y P	Y P	Y P
11976	THD/thd Voltage, Phase B-C	2	Float	RO	N	-	-		Total Harmonic Distortion Phase B-C See register 3227 for THD/ thd definition	Y P	Y P	Y P	Y P
11978	THD/thd Voltage, Phase C-A	2	Float	RO	N	-	-		Total Harmonic Distortion Phase C-A See register 3227 for THD/ thd definition	Y P	Y P	Y P	Y P

[12000] Utility Registers

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
12000	Utility Registers	200	Integer	R/W	Y	xx	xxxxxxx	0x0000 – 0xFFFF	Mailbox registers for customer use.	Y P	Y P	Y P	Y P

[13200] Spectral Components

[13200] Spectral Components – Harmonic Magnitudes and Angles

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
13200	Harmonic Magnitudes and Angles, Voltage A-B	128	Integer	RO	N	xx	See Template	See Template	See Template	YP	YP	YP	YP
13328	Harmonic Magnitudes and Angles, Voltage B-C	128	Integer	RO	N	xx	See Template	See Template	See Template	YP	YP	YP	YP
13456	Harmonic Magnitudes and Angles, Voltage C-A	128	Integer	RO	N	xx	See Template	See Template	See Template	YP	YP	YP	YP
13584	Harmonic Magnitudes and Angles, Voltage A-N	128	Integer	RO	N	xx	See Template	See Template	See Template	YP	YP	YP	YP
13712	Harmonic Magnitudes and Angles, Voltage B-N	128	Integer	RO	N	xx	See Template	See Template	See Template	YP	YP	YP	YP
13840	Harmonic Magnitudes and Angles, Voltage C-N	128	Integer	RO	N	xx	See Template	See Template	See Template	YP	YP	YP	YP
13968	Harmonic Magnitudes and Angles, Voltage N-G	128	Integer	RO	N	xx	See Template	See Template	See Template	YP	YP	YP	YP
14096	Harmonic Magnitudes and Angles, Current, Phase A	128	Integer	RO	N	xx	See Template	See Template	See Template	YP	YP	YP	YP
14224	Harmonic Magnitudes and Angles, Current, Phase B	128	Integer	RO	N	xx	See Template	See Template	See Template	YP	YP	YP	YP
14352	Harmonic Magnitudes and Angles, Current, Phase C	128	Integer	RO	N	xx	See Template	See Template	See Template	YP	YP	YP	YP
14480	Harmonic Magnitudes and Angles, Current, Neutral	128	Integer	RO	N	xx	See Template	See Template	See Template	YP	YP	YP	YP
14608	Reserved	512	xx	xx	xx	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	--	--	--

Spectral Components – Data Template

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base	Reference Magnitude	1	Integer	RO	N	××	Volts/Scale Amps/Scale	0 – 32,767 (-32,768 if N/A)	Magnitude of fundamental or of overall RMS value upon which harmonic percentages are based. Selection of format based on value in register 3241 or 3242. A selection of 2 (RMS) will cause a value of -32768 to be Entered.	Y	Y P	Y P	Y P
Base +1	Scale Factor	1	Integer	RO	N	××	1.0	-3 – 3 (-32,768 if N/A)	Power of 10	Y	Y P	Y P	Y P
Base +2	H1 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base +3	H1 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 1st harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base +4	H2 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base +5	H2 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 2nd harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base +6	H3 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base +7	H3 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 3rd harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base +8	H4 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base +9	H4 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 4th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base +10	H5 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base +11	H5 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 5th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base +12	H6 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base +13	H6 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 6th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base +14	H7 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base +15	H7 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 7th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base +16	H8 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base +17	H8 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 8th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 18	H9 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 19	H9 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 9th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 20	H10 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 21	H10 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 10th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 22	H11 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 23	H11 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 11th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 24	H12 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 25	H12 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 12th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 26	H13 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 27	H13 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 13th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 28	H14 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 29	H14 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 14th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 30	H15 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 31	H15 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 15th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 32	H16 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 33	H16 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 16th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 34	H17 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 35	H17 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 17th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base + 36	H18 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 37	H18 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 18th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 38	H19 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 39	H19 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 19th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 40	H20 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 41	H20 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 20th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 42	H21 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 43	H21 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 21st harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 44	H22 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 45	H22 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 22nd harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 46	H23 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 47	H23 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 23rd harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 48	H24 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 49	H24 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 24th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 50	H25 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 51	H25 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 25th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 52	H26 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 53	H26 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 26th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 54	H27 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base + 55	H27 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 27th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 56	H28 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 57	H28 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 28th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 58	H29 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 59	H29 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 29th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 60	H30 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 61	H30 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 30th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 62	H31 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 63	H31 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 31st harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 64	H32 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y P	Y P	Y P
Base + 65	H32 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 32nd harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y P	Y P	Y P
Base + 66	H33 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 67	H33 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 33rd harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 68	H34 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 69	H34 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 34th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 70	H35 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 71	H35 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 35th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 72	H36 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 73	H36 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 36th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base + 74	H37 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 75	H37 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 37th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 76	H38 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 77	H38 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 38th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 78	H39 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 79	H39 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 39th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 80	H40 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 81	H40 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 40th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 82	H41 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 83	H41 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 41st harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 84	H42 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 85	H42 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 42nd harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 86	H43 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 87	H43 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 43rd harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 88	H44 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 89	H44 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 44th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 90	H45 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 91	H45 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 45th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 92	H46 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base + 93	H46 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 46th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 94	H47 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 95	H47 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 47th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 96	H48 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 97	H48 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 48th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 98	H49 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 99	H49 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 49th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 100	H50 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 101	H50 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 50th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 102	H51 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 103	H51 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 51st harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 104	H52 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 105	H52 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 52nd harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 106	H53 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 107	H53 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 53rd harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 108	H54 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 109	H54 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 54th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 110	H55 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 111	H55 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 55th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
Base + 112	H56 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 113	H56 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 56th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 114	H57 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 115	H57 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 57th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 116	H58 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 117	H58 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 58th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 118	H59 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 119	H59 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 59th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 120	H60 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 121	H60 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 60th harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 122	H61 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 123	H61 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 61st harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 124	H62 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 125	H62 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 62nd harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P
Base + 126	H63 Magnitude	1	Integer	RO	N	% D,E A,B	.01 Volts/Scale Amps/Scale	0 – 10000 0 – 32,767 0 – 32,767	Magnitude of harmonic expressed as a percentage of the reference value, or as an absolute value.	Y	Y	Y P	Y P
Base + 127	H63 Angle	1	Integer	RO	N	××	0.1 °	0 – 3,599 (-32,678 if N/A)	Angle of 63rd harmonic referenced to fundamental Voltage A-N (4-wire) or Voltage A-B (3-wire).	Y	Y	Y P	Y P

[16144] Energy Per Shift Configuration (16144-16237)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
16144	Energy Summary Meter Reading Months	12	Integer	R/CW	Y	xx	xxxxxxx	1 – 12		--	Y P	Y P	Y P
16156	Energy Summary Meter Reading Days	12	Integer	R/CW	Y	xx	xxxxxxx	1 – 31		--	Y P	Y P	Y P
16168	Energy Summary Metering Reading Time of Day	1	Integer	R/CW	Y	xx	xxxxxxx	0 – 23	Hour of day. Default = 0 (midnight)	--	Y P	Y P	Y P
16169	Reserved	1	Integer	R/CW	Y	xx	xxxxxxx	0 - 1	0 = Disable (Month starting on 1st) 1 = Enable (Based on user configuration [16144 – 67])	--	Y P	Y P	Y P
16170	Reserved	1			Y	xx	xxxxxxx			--	Y P	Y P	Y P
16171	Shift Start Time - First Shift	1	Integer	R/CW	Y	xx	Minutes	0 – 1439	Minutes from midnight. Default = 420 (7AM). *Note: For 2 shifts set First Shift Start Time equal to Second Shift Start Time (16171 = 16172)	--	Y P	Y P	Y P
16172	Shift Start Time - Second Shift	1	Integer	R/CW	Y	xx	Minutes	0 – 1439	Minutes from midnight. Default = 900 (3PM). *Note: For 2 shifts set First Shift Start Time equal to Second Shift Start Time (16171 = 16172)	--	Y P	Y P	Y P
16173	Shift Start Time - Third Shift	1	Integer	R/CW	Y	xx	Minutes	0 – 1439	Minutes from midnight. Default = 1380 (11PM).	--	Y P	Y P	Y P
16174	Cost Per kWh - First Shift	1	Integer	R/CW	Y	See Reg 16177	See Register 16178	0 – 32,767		--	Y P	Y P	Y P
16175	Cost Per kWh - Second Shift	1	Integer	R/CW	Y	See Reg 16177	See Register 16178	0 – 32,767		--	Y P	Y P	Y P
16176	Cost Per kWh - Third Shift	1	Integer	R/CW	Y	See Reg 16177	See Register 16178	0 – 32,767		--	Y P	Y P	Y P
16177	Monetary Scale Factor	1	Integer	R/CW	Y	xx	xxxxxxx	-3 – 3		--	Y P	Y P	Y P
16178	Monetary Units Code	1	Integer	R/CW	Y	xx	Unit Code	0 – 100	Units associated with the Cost Per kWh.	--	Y P	Y P	Y P
16179	Reserved	2	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	Y P	Y P	Y P
16181	Shift Active	1	Integer	RO	Y	xx	xxxxxxx	1 – 3		--	Y P	Y P	Y P
16182	Reserved	8	Integer	RO	x	xx	xxxxxxx	xxxxxxx	Reserved for future development	--	Y	Y	Y
16190	Energy Cost - Total Today	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16192	Energy Cost - Total Yesterday	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
16194	Energy Cost - Total This Week	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16196	Energy Cost - Total Last Week	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16198	Energy Cost - Total This Month	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16200	Energy Cost - Total Last Month	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P

[16202] Energy Summary Usage (16202-16237)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
16202	Energy, Real 3-Phase Total Usage Today	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16205	Energy, Real 3-Phase Total Usage Yesterday	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16208	Energy, Real 3-Phase Total Usage This Week	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16211	Energy, Real 3-Phase Total Usage Last Week	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16214	Energy, Real 3-Phase Total Usage This Month	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16217	Energy, Real 3-Phase Total Usage Last Month	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16220	Energy, Apparent 3-Phase Total Usage Today	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16223	Energy, Apparent 3-Phase Total Usage Yesterday	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16226	Energy, Apparent 3-Phase Total Usage This Week	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16229	Energy, Apparent 3-Phase Total Usage Last Week	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16232	Energy, Apparent 3-Phase Total Usage This Month	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16235	Energy, Apparent 3-Phase Total Usage Last Month	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P

(1) 0 – 999,999,999,999

[16238] Energy Per Shift Usage (16238-16347)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
16238	Energy, Real 3-Phase Total Usage – First Shift - Today	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16241	Energy, Real 3-Phase Total Usage - Second Shift - Today	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16244	Energy, Real 3-Phase Total Usage - Third Shift - Today	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16247	Energy, Real 3-Phase Total Usage - First Shift - Yesterday	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16250	Energy, Real 3-Phase Total Usage - Second Shift - Yesterday	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16253	Energy, Real 3-Phase Total Usage - Third Shift - Yesterday	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16256	Energy, Real 3-Phase Total Usage - First Shift - This Week	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16259	Energy, Real 3-Phase Total Usage - Second Shift - This Week	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16262	Energy, Real 3-Phase Total Usage - Third Shift - This Week	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16265	Energy, Real 3-Phase Total Usage - First Shift - Last Week	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16268	Energy, Real 3-Phase Total Usage - Second Shift - Last Week	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16271	Energy, Real 3-Phase Total Usage - Third Shift - Last Week	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16274	Energy, Real 3-Phase Total Usage - First Shift - This Month	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16277	Energy, Real 3-Phase Total Usage - Second Shift - This Month	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16280	Energy, Real 3-Phase Total Usage - Third Shift - This Month	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16283	Energy, Real 3-Phase Total Usage - First Shift - Last Month	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16286	Energy, Real 3-Phase Total Usage - Second Shift - Last Month	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16289	Energy, Real 3-Phase Total Usage - Third Shift - Last Month	3	Mod10	RO	Y	xx	WH	(1)		--	Y P	Y P	Y P
16292	Energy, Apparent 3-Phase TotalUsage - First Shift - Today	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16295	Energy, Apparent 3-Phase Total Usage - Second Shift - Today	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16298	Energy, Apparent 3-Phase Total Usage - Third Shift - Today	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16301	Energy, Apparent 3-Phase Total Usage - First Shift - Yesterday	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16304	Energy, Apparent 3-Phase Total Usage - Second Shift - Yesterday	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16307	Energy, Apparent 3-Phase Total Usage - Third Shift - Yesterday	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
16310	Energy, Apparent 3-Phase Total Usage - First Shift - This Week	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16313	Energy, Apparent 3-Phase Total Usage - Second Shift - This Week	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16316	Energy, Apparent 3-Phase Total Usage - Third Shift - This Week	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16319	Energy, Apparent 3-Phase Total Usage - First Shift - Last Week	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16322	Energy, Apparent 3-Phase Total Usage - Second Shift - Last Week	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16325	Energy, Apparent 3-Phase Total Usage - Third Shift - Last Week	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16328	Energy, Apparent 3-Phase Total Usage - First Shift - This Month	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16331	Energy, Apparent 3-Phase Total Usage - Second Shift - This Month	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16334	Energy, Apparent 3-Phase Total Usage - Third Shift - This Month	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16337	Energy, Apparent 3-Phase Total Usage - First Shift - Last Month	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16340	Energy, Apparent 3-Phase Total Usage - Second Shift - Last Month	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16343	Energy, Apparent 3-Phase Total Usage - Third Shift - Last Month	3	Mod10	RO	Y	xx	VAH	(1)		--	Y P	Y P	Y P
16346	Reserved	2	xx	xx	Y	xx	xxxxxxx	xxxxxxx		--	Y P	Y P	Y P

(1) 0 – 999,999,999,999

[16348] Energy Per Shift Cost (16348-16383)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
16348	Energy Cost - First Shift Today	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16350	Energy Cost - Second Shift Today	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16352	Energy Cost - Third Shift Today	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
16354	Energy Cost - First Shift Yesterday	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16356	Energy Cost - Second Shift Yesterday	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16358	Energy Cost - Third Shift Yesterday	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16360	Energy Cost - First Shift This Week	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16362	Energy Cost - Second Shift This Week	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16364	Energy Cost - Third Shift This Week	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16366	Energy Cost - First Shift Last Week	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16368	Energy Cost - Second Shift Last Week	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16370	Energy Cost - Third Shift Last Week	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16372	Energy Cost - First Shift This Month	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16374	Energy Cost - Second Shift This Month	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16376	Energy Cost - Third Shift This Month	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16378	Energy Cost - First Shift Last Month	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16380	Energy Cost - Second Shift Last Month	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P
16382	Energy Cost - Third Shift Last Month	2	Long	RO	Y	xx	See Register 16178			--	Y P	Y P	Y P

[16384] Trending & Forecasting Summary (16384 - 16883)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
16384	Trending & Forecasting User-Defined Quantity	500	Integer	RO	Y	-	-	Trending & Forecasting Data Template	Controlled by Trending Item number in register 5321	--	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
0	Metered Register Number	1	Integer	RO	Y	-	1	1000 – 65536	Register number of data item being trended.	--	Y P	Y P	Y P
1	Scale Factor	1	Integer	RO	Y	-	1	-3 – 3	Power of 10	--	Y P	Y P	Y P
2	Label	8	Char	RO	Y	-	-	ASCII Codes	16 Characters	--	Y P	Y P	Y P
10	Second Last Update	1	Integer	RO	Y	-	Second	0 – 59	Meter clock, seconds at last update	--	Y P	Y P	Y P
11	1-Second Readings	60	Integer	RO	Y	-1	Value/Scale	-32767 – 32,767 (-32,768 if N/A)	A FIFO (First-In-First-Out) list of 1-second meter readings with the newest reading in register offset 11.	--	Y P	Y P	Y P
71	1-Minute Statistics, Date/Time of Last Update	6	Integer	RO	Y	-	1	0 – 2042 (-32,768 if N/A)	Date/Time of last update of 1-minute statistics; year, month, day, hour, minute, second.	--	Y P	Y P	Y P
77	1-Minute Statistics	180	Integer	RO	Y	-1	Value/Scale	-32767 – 32,767 (-32,768 if N/A)	A FIFO list of 60 1-minute statistics with the newest reading in register offset 77. Statistics are: average of previous 60 1-second readings, minimum of previous 60 1-second readings, maximum of previous 60 1-second readings.	--	Y P	Y P	Y P
257	1-Hour Statistics, Date/Time of Last Update	6	Integer	RO	Y	-	1	0 – 2042 (-32,768 if N/A)	Date/Time of last update of 1-hour statistics; year, month, day, hour, minute, second.	--	Y P	Y P	Y P
263	1-Hour Statistics	72	Integer	RO	Y	-1	Value/Scale	-32767 – 32,767 (-32,768 if N/A)	A FIFO list of 24 1-hour statistics with the newest reading in register offset 263. Statistics are: average of previous 60 1-minute averages, minimum of previous 60 1-minute averages, maximum of previous 60 1-minute averages.	--	Y P	Y P	Y P
335	1-Day Statistics, Date/Time of Last Update	6	Integer	RO	Y	-	1	0 – 2042 (-32,768 if N/A)	Date/Time of last update of 1-day statistics; year, month, day, hour, minute, second.	--	Y P	Y P	Y P
341	1-Day Statistics	93	Integer	RO	Y	-1	Value/Scale	-32767 – 32,767 (-32,768 if N/A)	A FIFO list of 31 1-day statistics with the newest reading in register offset 341. Statistics are: average of previous 24 1-hour averages, minimum of previous 24 1-hour averages, maximum of previous 24 1-hour averages.	--	Y P	Y P	Y P
434	1-Month Statistics, Date/Time of Last Update	6	Integer	RO	Y	-	1	0 – 2042 (-32,768 if N/A)	Date/Time of last update of 1-month statistics; year, month, day, hour, minute, second.	--	Y P	Y P	Y P

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	PM	PM	PM	PM
440	1-Month Statistics	36	Integer	RO	Y	-1	Value/Scale	-32767 – 32,767 (-32,768 if N/A)	A FIFO list of 12 1-month statistics with the newest reading in register offset 440. Statistics are: average of previous month of 1-day averages, minimum of previous month of 1-day averages, maximum of previous month of 1-day averages.	--	Y P	Y P	Y P
476	Hourly Forecast	8	Integer	RO	Y	-1	Value/Scale	-32767 – 32,767 (-32,768 if N/A)	Forecast of the metered value for the next 4 hours. Values posted are average and standard deviation.	--	Y P	Y P	Y P
484	Daily Forecast	8	Integer	RO	Y	-1	Value/Scale	-32767 – 32,767 (-32,768 if N/A)	Forecast of the metered value for the next 4 days. Values posted are average and standard deviation.	--	Y P	Y P	Y P
492	Summary of Hourly Statistics	4	Integer	RO	Y	-1	Value/Scale	-32767 – 32,767 (-32,768 if N/A)	Accumulated hourly values for this hour of the week. Values are average, minimum, maximum, and standard deviation.	--	Y P	Y P	Y P
496	Summary of Weekly Statistics	4	Integer	RO	Y	-1	Value/Scale	-32767 – 32,767 (-32,768 if N/A)	Accumulated weekly values for this week of the year. Values are average, minimum, maximum, and standard deviation.	--	Y P	Y P	Y P

(1) Scale factor in register offset 1 applies to all meter values for this data item.

Templates

Date/Time

*Note: Date format is a 3 (6-byte) register compressed format. (Year 2001 is represented as 101 in the year byte.)

Register 0:Hi Byte = Month (1 – 12) ; Register 0:Lo Byte = Day (1 – 31)

Register 1:Hi Byte = Year (0 – 199) ; Register 1:Lo Byte = Hour (0 – 23)

Register 2:Hi Byte = Minute (0 – 59) ; Register 2:Lo Byte = Second (0 –59)

Register 3: = Millisecond (0 – 999)

Units Codes

Code	Abbreviation	Description	Code	Abbreviation	Description	Code	Abbreviation	Description
0		No Units	32	Bytes (RAM)	Bytes	65	lb/hr	pound/hour
1	%	Percentage	33	kBytes (RAM)	Kilobytes	66	ton/hr	ton/hour
2	°C	Degrees Celsius	34	$	Dollars	67	kg/hr	Kilogram/hour
3	°F	Degrees Fahrenheit	35	gal	gallons	68	in. Hg	inch of Mercury
4	Deg	Degrees Angular	36	gal/hr	gallons/hour	69	kPa	kiloPascals
5	Hz	Hertz	37	gal/min	gallons/minute	70	%RH	percentage of relative humidity
6	A	amperes	38	cfm	cubic feet/min	71	MPH	miles per hour
7	kA	Kilo Amperes	39	PSI	PSI	72	m/sec	meters/sec
8	V	Volts	40	BTU	BTU	73	mV/cal/(cm²/min)	milliVolts/calorie/(square centimeters/min)
9	kV	Kilo Volts	41	L	liters	74	in	inches
10	MV	Mega Volts	42	ton-hours	ton-hours	75	mm	millimeter
11	W	Watts	43	l/hr	liters/hour	76	GWH	GigaWatt-Hour
12	kW	Kilowatts	44	l/min	liters/min	77	GVARH	Reactive Giga Volt-Ampere Hour
13	MW	Megawatts	45	€	Euros	78	GVAH	Giga Volt-Ampere Hours
14	VAR	Volt-Ampere Reactive	46	ms	Milliseconds	79	AH	Ampere-Hours
15	kVAR	Kilo Volt-Ampere Reactive	47	m³	cubic-meters	80	kAH	Kiloamp-Hours
16	MVAR	Mega Volt-Ampere Reactive	48	m³/sec	cubic-meters/sec	81	Therm/hr	Therm/hour
17	VA	Volt-Amperes	49	m³/min	cubic-meters/min	82	CF	cubic foot
18	kVA	Kilo Volt-Amperes	50	m³/hr	cubic-meters/hour	83	CCF	100 cubic feet
19	MVA	Mega Volt-Amperes	51	Pa	pascals			
20	WH	Watt-Hour	52	Bars	bar			
21	kWH	Kilowatt-Hour	53	RPM	Revolutions/min			

22	MWH	Megawatt-Hour	55	BTU/hr	BTU/hour			
23	VARH	Reactive Volt-Ampere Hour	56	PSIG	Pound/square inch gauge			
24	kVARH	Reactive Kilo Volt-Ampere Hour	57	SCFM	Standard cubic feet/min			

Code	Abbreviation	Description	Code	Abbreviation	Description	Code	Abbreviation	Description
25	MVARH	Reactive Mega Volt-Ampere Hour	58	MCF	Thousand cubic feet			
26	VAH	Volt-Ampere Hours	59	Therm	Therm			
27	kVAH	Kilo Volt-Ampere Hours	60	SCFH	Standard cubic feet/hour			
28	MVAH	Mega Volt-Ampere Hours	61	PSIA	pound/square inch absolute			
29	Seconds	Seconds	62	lbs	pounds			
30	Minutes	Minutes	63	kg	Kilogram			
31	Hours	Hours	64	klbs	Kilopounds			

Data Types

Bit Numbering - 16-bit register
MSB 15 14 13 12 11 10 09 08 | 07 06 05 04 03 02 01 00 LSB

Integer	Standard 16-bit integer representation
Char	8-bit data format, data value starts with LSB (data value 1 -> bits 0-7, data value 2 -> bits 8-15)
Bitmap	Each bit represents a data value, starts with least significant bit (bit 0)
Long	32-bit integer representation. Uses 2 registers, first register is least significant. Must combine the 16-bit hex (or binary) values of the registers then convert to a 32-bit integer value (eg. *16-bit hex value -> Register1 = 0x0A56, Register2 = 0x0010; 32-bit integer value = 0x00100A56 = 1,051,222*)
Mod10	Each register represents a value from 0-9999, these register values are then appended to one another (number of registers is dependent on size of the Mod10 value) to form a data value (first register is least significant). Mod10_Value = (Register4 * 1000000000000) + (Register3 * 100000000) + (Register2 * 10000) + (Register1)
size 2	Range from -99,999,999 - 99,999,999 -> (eg. *Register 1 = 2842, Register 2 = 826; Mod10 value = 8,262,842*)
size 3	Range from -999,999,999,999 - 999,999,999,999 -> (eg. *Register 1 = 2842, Register 2 = 826, Register 3 = 5341; Mod10 value = 534,108,262,842*)

size 4	Range from -9,999,999,999,999,999 - 9,999999,999,999,999 -> (eg. *Register 1 = 2842, Register 2 = 826, Register 3 = 5341, Register 4 = 7621; Mod10 value = 7,621,534,108,262,842*)
Float	32-bit floating point representation. Uses 2 registers, first register is least significant. Must combine the 16-bit hex (or binary) values of the registers then convert to a 32-bit floating point value (easiest to use a floating point converter utility) (eg. *16-bit hex value -> Register1 = 0x4374 (hex), Register2 = 0xA419 (hex); 32-bit integer value = 0x4374A419 (hex) = 244.641 (float)*)

Commands

Command	Parameters	Notes	PM	PM	PM	PM
1110	None	Restart System - Soft	YP	YP	YP	YP
1115	None	Restart System – Hard Reset	Y	Y	Y	Y
1120	(8001) Bitmap of systems to reset	Restart System – Hard Reset with Memory Clear Bitmap of systems to reset: Bit 00 – Utility Registers Bit 01 - Reserved Bit 02 - Reserved Bit 03 - Config Display Bit 04 - Commands Bit 05 - Files Bit 06 - Alarms Bit 07 - I/O Points Bit 08 - Config Meter Bit 09 - Administrative Ctl Parameter value of 9999 causes meter to reset all registers to meter defaults and format the disk-on-chip.	Y	Y	Y	Y
1130	None	Set factory default configuration for logs and alarms	YP	YP	YP	YP
1210	None	Reset Communication Channel Counters	YP	YP	YP	YP
1211	None	Display Remote Display Counters This function will display the counters from the remote display comm port Values returned are: Register 8020: RDA FW version Register 8021: RDIF FW Version Register 8022: Serial Mode 0 = 485 1 = 232 Register 8023: Baud Rate 1 = 9600 2 = 19200 3 = 38400 Register 8024: RDA Reset Counter Register 8025: RDIF Reset Counter Register 8026: Remote ID 0x58 = GoldenTek 0x5a = GoWorld 0x50 - Varitronix	Y	Y	Y	Y

Command	Parameters	Notes	PM	PM	PM	PM
1212	None	Reset Remote Display Counters	Y	Y	Y	Y
1213	None	Reset Email status counters	Y	Y	Y	Y
1310	8001 - Month 8002 - Day 8003 - Year 8004 - Hour 8005 - Minute 8006 - Second	Set System Time and Date, 6 Register format	Y P	Y P	Y P	Y P
1311	(8001) Month (Upper)/Day(Lower) (8002) Year (Upper)/Hour(Lower) (8003) Minute (Upper)/Sec(Lower)	Set System Time and Date, 3 Register format (milliseconds = 0)	Y P	Y P	Y P	Y P
1410	None	Disable revenue security switch	Y	Y	Y	Y
1411	None	Enable revenue security switch	Y	Y	Y	Y
1515	None	Clear all Alarm Counters	Y P	Y P	Y P	Y P
1520	None	Acknowledge All Active Alarms In Active Alarm Log	Y P	Y P	Y P	Y P
1521	None	Acknowledge All Historical Alarms in Alarm History Log	Y P	Y P	Y P	Y P
1522	None	Reset Alarm History Log	Y P	Y P	Y P	Y P
1610	(8000) Key Code	Inputs depressed key code	Y	Y	Y	Y
1710	Reset the power-fail counter	Resets the power-fail counter	Y P	Y P	Y P	Y P
1711	Reset the Active Load Counter	Resets the Active Load Counter	Y P	Y P	Y P	Y P
2801	None	Check Wiring Connection	Y P	Y P	Y P	Y P
3210	None	Disable All Alarms	Y P	Y P	Y P	Y P
3220	(8001 – 8012) Bitmap of Alarm Positions	Disable Specified Alarms Alarm 1 is least significant bit in 12th register.	Y	Y	Y	Y
3230	(8001) Test Register (8002) Type/Level (8019) Data Buffer Location	Return Alarm Configuration Data Template In Registers Returns alarm position number followed by 20-register template data.	Y	Y	Y	Y
3231	(8001) Test Register (8002) Type/Level (8019) Data Buffer Location	Return Alarm Configuration Data Template In Use Returns alarm position number followed by 20-register template data.	Y	Y	Y	Y
3240	(8001) IO Point Number (8019) Data Pointer	Display IO Point Configuration	Y	Y	Y	Y
3310	(8001) Discrete Output Point	Configure Relay for External Control	Y P	Y P	Y P	Y P
3311	(8001) Discrete Output Point	Configure Relay for Internal Control	Y P	Y P	Y P	Y P

Command	Parameters	Notes	PM	PM	PM	PM
3320	(8001) Discrete Output Point	De-Energize Designated Relay	YP	YP	YP	YP
3321	(8001) Discrete Output Point	Energize Designated Relay	YP	YP	YP	YP
3330	(8001) Discrete Output Point	Release Specified Relay from Latched Condition	YP	YP	YP	YP
3331	(8001) 9999	Release All Relays from Latched Condition	Y	Y	Y	Y
3332	(8001) bitmap of relays 17-18 (8002) bitmap of relays 1-16	Release Relays from Latched Condition per bitmap	Y	Y	Y	Y
3340	(8001) Discrete Output Point	Release Specified Relay from Override Control	YP	YP	YP	YP
3341	(8001) Discrete Output Point	Place Specified Relay under Override Control	YP	YP	YP	YP
3350	(8001) 9999	De-Energize All Relays	YP	YP	YP	YP
3351	(8001) 9999	Energize All Relays	YP	YP	YP	YP
3361	(8001) Discrete Output Point	Reset Operation Counter for Specified Relay	YP	YP	YP	YP
3362	(8001) Discrete Output Point	Reset On-Time for Specified Relay	YP	YP	YP	YP
3363	None	Reset Operation Counter For All Relays	YP	YP	YP	YP
3364	None	Reset On-Time For All Relays	YP	YP	YP	YP
3365	(8001) Discrete Input Point	Reset Operation Counter for Specified Input	YP	YP	YP	YP
3366	(8001) Discrete Input Point	Reset On-Time for Specified Input	YP	YP	YP	YP
3367	None	Reset Operation Counter for All Inputs	YP	YP	YP	YP
3368	None	Reset On-Time for All Inputs	YP	YP	YP	YP
3369	None	Reset All Counters and On-Time for All I/O	YP	YP	YP	YP
3370	(8001) Analog Output Point	Disable Specified Analog Output	YP	YP	YP	YP
3371	(8001) Analog Output Point	Enable Specified Analog Output	YP	YP	YP	YP
3380	(8001) 9999	Disable All Analog Output	YP	YP	YP	YP
3381	(8001) 9999	Enable All Analog Output	YP	YP	YP	YP

Command	Parameters	Notes	PM	PM	PM	PM
4110	(8001) 0 = Both Present and Previous months Min/Max reset 1 = Present month Min/Max reset 2 = Previous month Min/Max reset	Reset Min/Max Metered Values	Y P	Y P	Y P	Y P
4210	(8001) Log to reset 1 = Voltage	Reset Register-Based Disturbance Event Logs	Y P	Y P	Y P	Y P
4940	None	Trigger WFC Requests (All Types)	--	--	Y	Y
5110	None	Reset All Demands	Y P	Y P	Y P	Y P
5111	None	Reset Current Demand	Y P	Y P	Y P	Y P
5113	None	Reset Power Demand	Y P	Y P	Y P	Y P
5114	None	Reset Input Demand	Y P	Y P	Y P	Y P
5115	None	Reset Generic1 Demand	Y P	Y P	Y P	Y P
5210	None	Reset All Min/Max Demand	Y P	Y P	Y P	Y P
5211	None	Reset Current Min/Max Demand	Y P	Y P	Y P	Y P
5213	None	Reset Power Min/Max Demand	Y P	Y P	Y P	Y P
5214	None	Reset Input Min/Max Demand	Y P	Y P	Y P	Y P
5215	None	Reset Generic1 Min/Max Demand	Y P	Y P	Y P	Y P
5217	None	Reset Cumulative Power Demand	Y	Y	Y	Y
5910	(8001) Bitmap of demand systems	Start New Demand Interval Bit 0 = Power Demand System Bit 1 = Current Demand System Bit 2 = Input Demand System Bit 3 = Generic Demand System Bits 4 -15 = Unused	Y P	Y P	Y P	Y P
6209	(8019) IO Data Pointer	Preset Accumulated Energies Command requires the IO Data Pointer to point to registers where energy preset values are entered. All Accumulated energy values must be entered in the order in which they occur in registers 1700 – 1727.	Y P	Y P	Y P	Y P
6210	None	Clear All Energies	Y P	Y P	Y P	Y P
6211	None	Clear Accumulated Energies	Y P	Y P	Y P	Y P

Command	Parameters	Notes	PM	PM	PM	PM
6212	None	Clear Conditional Energies	Y P	Y P	Y P	Y P
6213	None	Clear Incremental Energies	Y P	Y P	Y P	Y P
6214	None	Clear Input Metering Accumulation	Y P	Y P	Y P	Y P
6215	(8000) Convention	This function will reset the following parameters to IEEE or IEC defaults: Phase labels Menu labels Harmonics units PF sign THD denominator Date Format 1 = IEEE, 2 = IEC	Y P	Y P	Y P	Y P
6216	None	Clear Shift Energy registers Usage Registers [16238 – 16347] Cost Registers [16348 – 16383] Energy Cost [16190 – 16201]	-	Y P	Y P	Y P
6217	(8001) Bitmap of channels	Clear Energy Summary registers [16202 – 16237] Channel Bitmap: Bit 0 = Real Energy Bit 1 = Apparent Energy	Y P	Y P	Y P	Y P
6320	None	Disable Conditional Energy Accumulation	Y P	Y P	Y P	Y P
6321	None	Enable Conditional Energy Accumulation	Y P	Y P	Y P	Y P
6910	None	Start New Incremental Energy Interval	Y P	Y P	Y P	Y P
7060	None	Report Disk Setup	Y	Y	Y	Y
7110	(8001) File Number (8002) Record Length (8003) Record Count (8019) Data Buffer Location	Setup File Command 9020 must be issued first to enter setup mode Data Buffer Location - Pointer to information containing enable/disable, fill and hold flag, start and stop times, logging intervals, and the register list. The 8020 to 8149 user area, 12200 to 13199 SMS area may be used	Y	Y	Y	Y
7120	(8001) File Number (8019) Data Buffer Location	Report File Setup Data Buffer Location - Pointer to first register that information will be stored. By default, return data will begin at register 8020, although any portion of the user, SMS, or CUL area may be used.	Y	Y	Y	Y
7211	(8001) File Number	Delete Single File Command 9020 must be issued first File(s) must first be disabled	Y	Y	Y	Y

Command	Parameters	Notes	PM	PM	PM	PM
7220	(8001) File Bit Map # 1-9	Clear Multiple Files per bitmap File(s) must first be disabled	Y	Y	Y	Y
7221	(8001) File Number	Clear Single File File must first be disabled	Y	Y	Y	Y
7310	(8001) File Bit Map # 1-9	Enable Files per bitmap	Y	Y	Y	Y
7311	(8001) File Bit Map # 1-9	Disable Files per bitmap	Y	Y	Y	Y
7410	(8001) File Number (8002) Record Number (8019) Data Buffer Location	Read File Record Data Buffer Location - Pointer to first register that information will be stored. By default, return data will begin at register 8020, although any portion of the user, SMS, or CUL area may be used.	Y	Y	Y	Y
7510	(8001) File Bit Map # 1-3	Trigger Data Log Entry per bitmap	YP	YP	YP	YP
7511	(8001) File Number	Trigger Single Data Log Entry	YP	YP	YP	YP
9010	(8001) Enable/Disable (8002) Password LSW (8003) Password MSW	Temporary User Channel Assignment	Y	Y	Y	Y
9020	None	Open Setup Session	YP	YP	YP	YP
9021	(8001) Save/Discard (1 = save)	Close Setup Session	YP	YP	YP	YP
9030	(8001) Email Buffer Number (8002) Email Status	Sent by ECC to report email status 8001 - email buffer number 8002 - 0 / OK 1 / Error	YP	YP	YP	YP
9031	None	Send Test Email	YP	YP	YP	YP
9032	(8001) Number of events to buffer; (Register 9534) (8002) Time to buffer events (Register 9535) (8003) Type of event to enable (Register 9533) (8004) Enable/Disable (Register 9530) (8005) Alarm Priority (Register 9532)	Sent by ECC to configure Email parameters	YP	YP	YP	YP

Command	Parameters	Notes	PM	PM	PM	PM
9040	(8001) IP Address Octets 1 and 2 (8002) IP Address Octets 3 and 4 (8003) IP Subnet Mask Octets 1 and 2 (8004) IP Subnet Mask Octets 3 and 4 (8005) IP Default Gateway Address Octets 1 and 2 (8006) IP Default Gateway Address Octets 3 and 4 (8007) Media Type (8008) Gateway Port Baud Rate (8009) Gateway Port Parity (8010) Gateway Port Wire Mode (8011) Gateway Port Protocol Mode	Save Entire ECC Configuration When received, this command will store the included parameters to their proper position in the PM8 register list then save them to the LVC.	Y	Y	Y	Y
9041	(8001) IP Address Octets 1 and 2 (8002) IP Address Octets 3 and 4 (8003) IP Subnet Mask Octets 1 and 2 (8004) IP Subnet Mask Octets 3 and 4 (8005) IP Default Gateway Address Octets 1 and 2 (8006) IP Default Gateway Address Octets 3 and 4 (8007) Media Type	Save ECC Ethernet Configuration When received, this command will store the included parameters to their proper position in the PM8 register list then save them to the LVC.	Y	Y	Y	Y
9042	(8001) Gateway Port Baud Rate (8002) Gateway Port Parity (8003) Gateway Port Wire Mode (8004) Gateway Port Protocol Mode	Save ECC Gateway Port Configuration When received, this command will store the included parameters to their proper position in the PM8 register list then save them to the LVC.	Y	Y	Y	Y
9043	None	Set Advanced Email Parameters Set Buffer Hold Time and Event Buffer Size to default	Y	Y	Y	Y
9046	(8001) Command Number (8002) Time in ticks	Internal Diagnostic Cmd 8001 - Command Number 8002 - Time in ticks the meter will wait for a reply	Y	Y	Y	Y
9049	(8001) = Ethernet Link Status (8002) = Duplicate IP Detect	Save Link Status from ECC Ethernet Status 0 = Link Down, 1 = Link Up Duplicate IP Detect 0 = No Duplicate, 1 = Duplicated	Y	Y	Y	Y
10000	(8001) Trending channel to reset	Reset Trending Data Parameter of 9999 resets all trending channels.	Y P	Y P	Y P	Y P
10010	(8001) Trending channel to display (8002) Scale (1=hour of week, 2=week of year, 3=both)	Post Trending Profile Posts the trending profile beginning at register 36768.	Y P	Y P	Y P	Y P
10020	(8001) Trending channel to display (8002) Scale 1-7	Post Trending FIFO Posts the trending FIFO beginning at register 36768.	Y P	Y P	Y P	Y P
10030	(8001) 9999	Master Meter Initialization Resets all energy, demand, min/max, average/min/max, data logs, waveform capture files, alarms, trending & forecasting.	Y P	Y P	Y P	Y P
10200	(8001) Bitmap of channels to reset	Reset Alarm Trending Data	--	--	Y P	Y P
10201	None	Reset Alarm Trending Configuration to Default	--	--	Y P	Y P

Command	Parameters	Notes	PM	PM	PM	PM
11100	(8001) 9999	Reset EN50160 Evaluation	--	--	YP	YP
11200	(8001) 9999	Reset ITI/SEMI Evaluation	--	--	YP	YP