

Power Meter

Centrale de mesure
Central de medida
PM700

Instruction Bulletin
Manuel d'utilisation
Manual de instrucciones

Retain for future use.
À conserver pour une utilisation ultérieure
Consérvese para futuras consultas.



Schneider
 **Electric**

PM700 MODBUS POINT MAP

REGISTER	R/W	NV	Format	Units	Scale Factor/ Mult 'r	Range	Description
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1000/01	R	NV	Float	kWh	-	-	Real Energy Consumption
1002/03	R	NV	Float	kVAh	-	-	Apparent Energy Consumption
1004/05	R	NV	Float	kVARh	-	-	Reactive Energy Consumption
1006/07	R		Float	kW	-	-	Total Real Power
1008/09	R		Float	kVA	-	-	Total Apparent Power
1010/11	R		Float	kVAR	-	-	Total Reactive Power
1012/13	R		Float	-	-	0.0-1.0	Total Power Factor
1014/15	R		Float	Volt	-	-	Voltage, L-L, ave of 3 phases
1016/17	R		Float	Volt	-	-	Voltage, L-N, ave of 3 phases
1018/19	R		Float	Amp	-	-	Current, average of 3 phases
1020/21	R		Float	Hz	-	45.0-65.0	Frequency (derived from Phase A)
1022/23	R		Float	kW	-	-	Total Real Power Present Demand
1024/25	R		Float	kVA	-	-	Total Apparent Power Present Demand
1026/27	R		Float	kVAR	-	-	Total Reactive Power Present Demand
1028/29	R	NV	Float	kW	-	-	Total Real Power Max Demand
1030/31	R	NV	Float	kVA	-	-	Total Apparent Power Max Demand
1032/33	R	NV	Float	kVAR	-	-	Total Reactive Power Max Demand
1034/35	R		Float	Amp	-	-	Current, Instantaneous, Phase A
1036/37	R		Float	Amp	-	-	Current, Instantaneous, Phase B
1038/39	R		Float	Amp	-	-	Current, Instantaneous, Phase C
1040/41	R		Float	Amp	-	-	Current, Instantaneous, Neu. (future use)
1042/43	R		Float	Amp	-	-	Current, Present Demand, Phase A
1044/45	R		Float	Amp	-	-	Current, Present Demand, Phase B
1046/47	R		Float	Amp	-	-	Current, Present Demand, Phase C
1048/49	R	NV	Float	Amp	-	-	Current, Max Demand, Phase A
1050/51	R	NV	Float	Amp	-	-	Current, Max Demand, Phase B
1052/53	R	NV	Float	Amp	-	-	Current, Max Demand, Phase C

REGISTER	R/W	NV	Format	Units	Scale Factor/ Mult'r	Range	Description
1054/55	R		Float	Volt	-	-	Voltage, Phase A-B
1056/57	R		Float	Volt	-	-	Voltage, Phase B-C
1058/59	R		Float	Volt	-	-	Voltage, Phase A-C
1060/61	R		Float	Volt	-	-	Voltage, Phase A-N
1062/63	R		Float	Volt	-	-	Voltage, Phase B-N
1064/65	R		Float	Volt	-	-	Voltage, Phase C-N
1066/67	R		Float	kW	-	-	Real Power, Phase A
1068/69	R		Float	kW	-	-	Real Power, Phase B
1070/71	R		Float	kW	-	-	Real Power, Phase C
1072/73	R		Float	kVA	-	-	Apparent Power, Phase A
1074/75	R		Float	kVA	-	-	Apparent Power, Phase B
1076/77	R		Float	kVA	-	-	Apparent Power, Phase C
1078/79	R		Float	kVAR	-	-	Reactive Power, Phase A
1080/81	R		Float	kVAR	-	-	Reactive Power, Phase B
1082/83	R		Float	kVAR	-	-	Reactive Power, Phase C
1084/85	R		Float	%	-	0.0-1000.0	THD, Current, Phase A
1086/87	R		Float	%	-	0.0-1000.0	THD, Current, Phase B
1088/89	R		Float	%	-	0.0-1000.0	THD, Current, Phase C
1090/91	R		Float	%	-	0.0-1000.0	THD, Current, Neutral (future use)
1092/93	R		Float	%	-	0.0-1000.0	THD, Voltage A-N
1094/95	R		Float	%	-	0.0-1000.0	THD, Voltage B-N
1096/97	R		Float	%	-	0.0-1000.0	THD, Voltage C-N
1098/99	R		Float	%	-	0.0-1000.0	THD, Voltage A-B
1100/01	R		Float	%	-	0.0-1000.0	THD, Voltage B-C
1102/03	R		Float	%	-	0.0-1000.0	THD, Voltage A-C

1104/05	R	NV	Float	kW	-	-	Total Real Power Minimum
1106/07	R	NV	Float	kVA	-	-	Total Apparent Power Minimum
1108/09	R	NV	Float	kVAR	-	-	Total Reactive Power Minimum
1110/11	R	NV	Float	-	-	0.0-1.0	Total PF Minimum

REGISTER	R/W	NV	Format	Units	Scale Factor/ Mult'r	Range	Description
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1112/13	R	NV	Float	-	-	45.0-65.0	Frequency (derived from Phase A) Minimum
1114/15	R	NV	Float	Amp	-	-	Current, Phase A, Minimum
1116/17	R	NV	Float	Amp	-	-	Current, Phase B, Minimum
1118/19	R	NV	Float	Amp	-	-	Current, Phase C, Minimum
1120/21	R	NV	Float	Amp	-	-	Current, Neutral, Minimum (future use)
1122/23	R	NV	Float	Volt	-	-	Voltage, A-N, Minimum
1124/25	R	NV	Float	Volt	-	-	Voltage, B-N, Minimum
1126/27	R	NV	Float	Volt	-	-	Voltage, C-N, Minimum
1128/29	R	NV	Float	Volt	-	-	Voltage, A-B, Minimum
1130/31	R	NV	Float	Volt	-	-	Voltage, B-C, Minimum
1132/33	R	NV	Float	Volt	-	-	Voltage, A-C, Minimum
1134/35	R	NV	Float	%	-	0.0-1000.0	THD, Current, Phase A, Minimum
1136/37	R	NV	Float	%	-	0.0-1000.0	THD, Current, Phase B, Minimum
1138/39	R	NV	Float	%	-	0.0-1000.0	THD, Current, Phase C, Minimum
1140/41	R	NV	Float	%	-	0.0-1000.0	THD, Current, Neutral, Min (future use)
1142/43	R	NV	Float	%	-	0.0-1000.0	THD, Voltage A-N, Minimum
1144/45	R	NV	Float	%	-	0.0-1000.0	THD, Voltage B-N, Minimum
1146/47	R	NV	Float	%	-	0.0-1000.0	THD, Voltage C-N, Minimum
1148/49	R	NV	Float	%	-	0.0-1000.0	THD, Voltage A-B, Minimum
1150/51	R	NV	Float	%	-	0.0-1000.0	THD, Voltage B-C, Minimum
1152/53	R	NV	Float	%	-	0.0-1000.0	THD, Voltage A-C, Minimum

1154/55	R	NV	Float	kW	-	-	Total Real Power Maximum
1156/57	R	NV	Float	kVA	-	-	Total Apparent Power Maximum
1158/59	R	NV	Float	kVAR	-	-	Total Reactive Power Maximum
1160/61	R	NV	Float	-	-	0.0-1.0	Total PF Maximum
1162/63	R	NV	Float	-	-	45.0-65.0	Frequency (derived from Phase A) Maximum
1164/65	R	NV	Float	Amp	-	-	Current, Phase A, Maximum
1166/67	R	NV	Float	Amp	-	-	Current, Phase B, Maximum
1168/69	R	NV	Float	Amp	-	-	Current, Phase C, Maximum
1170/71	R	NV	Float	Amp	-	-	Current, Neutral, Maximum (future use)

REGISTER	R/W	NV	Format	Units	Scale Factor/ Mult'r	Range	Description
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1172/73	R	NV	Float	Volt	-	-	Voltage, A-N, Maximum
1174/75	R	NV	Float	Volt	-	-	Voltage, B-N, Maximum
1176/77	R	NV	Float	Volt	-	-	Voltage, C-N, Maximum
1178/79	R	NV	Float	Volt	-	-	Voltage, A-B, Maximum
1180/81	R	NV	Float	Volt	-	-	Voltage, B-C, Maximum
1182/83	R	NV	Float	Volt	-	-	Voltage, A-C, Maximum
1184/85	R	NV	Float	%	-	0.0-1000.0	THD, Current, Phase A, Maximum
1186/87	R	NV	Float	%	-	0.0-1000.0	THD, Current, Phase B, Maximum
1188/89	R	NV	Float	%	-	0.0-1000.0	THD, Current, Phase C, Maximum
1190/91	R	NV	Float	%	-	0.0-1000.0	THD, Current, Neutral, Max (future use)
1192/93	R	NV	Float	%	-	0.0-1000.0	THD, Voltage A-N, Maximum
1194/95	R	NV	Float	%	-	0.0-1000.0	THD, Voltage B-N, Maximum
1196/97	R	NV	Float	%	-	0.0-1000.0	THD, Voltage C-N, Maximum
1198/99	R	NV	Float	%	-	0.0-1000.0	THD, Voltage A-B, Maximum
1200/01	R	NV	Float	%	-	0.0-1000.0	THD, Voltage B-C, Maximum
1202/03	R	NV	Float	%	-	0.0-1000.0	THD, Voltage A-C, Maximum
1204/05	R	NV	Float	Hours	-	>= 0.0	Usage Hours
1206/07	R	NV	Float	Minutes	-	0.0-59.0	Usage Minutes
							This combination timer counts the total time for which the absolute current on at least one phase is > 0.1Amp.

REGISTER	R/W	NV	Format	Units	Scale Factor/ Mult'r	Range	Description
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4000/01	R	NV	ULong	kWh	E	0-0xFFFFFFFF	Real Energy Consumption
4002/03	R	NV	ULong	kVAh	E	0-0xFFFFFFFF	Apparent Energy Consumption
4004/05	R	NV	ULong	kVARh	E	0-0xFFFFFFFF	Reactive Energy Consumption
4006	R		UInt	kW	W	0-32767	Total Real Power
4007	R		UInt	kVA	W	0-32767	Total Apparent Power
4008	R		UInt	kVAR	W	0-32767	Total Reactive Power
4009	R		UInt	-	0.0001	0-10000	Total Power Factor
4010	R		UInt	Volt	V	0-32767	Voltage, L-L, ave of 3 phases
4011	R		UInt	Volt	V	0-32767	Voltage, L-N, ave of 3 phases
4012	R		UInt	Amp	I	0-32767	Current, average of 3 phases
4013	R		UInt	Hz	0.01	4500-6500	Frequency (derived from Phase A)
4014	R		UInt	kW	W	0-32767	Total Real Power Present Demand
4015	R		UInt	kVA	W	0-32767	Total Apparent Power Present Demand
4016	R		UInt	kVAR	W	0-32767	Total Reactive Power Present Demand
4017	R	NV	UInt	kW	W	0-32767	Total Real Power Max Demand
4018	R	NV	UInt	kVA	W	0-32767	Total Apparent Power Max Demand
4019	R	NV	UInt	kVAR	W	0-32767	Total Reactive Power Max Demand
4020	R		UInt	Amp	I	0-32767	Current, Instantaneous, Phase A
4021	R		UInt	Amp	I	0-32767	Current, Instantaneous, Phase B
4022	R		UInt	Amp	I	0-32767	Current, Instantaneous, Phase C
4023	R		UInt	Amp	I	0-32767	Current, Instant., Neutral (future use)
4024	R		UInt	Amp	I	0-32767	Current, Present Demand, Phase A
4025	R		UInt	Amp	I	0-32767	Current, Present Demand, Phase B
4026	R		UInt	Amp	I	0-32767	Current, Present Demand, Phase C
4027	R	NV	UInt	Amp	I	0-32767	Current, Max Demand, Phase A
4028	R	NV	UInt	Amp	I	0-32767	Current, Max Demand, Phase B
4029	R	NV	UInt	Amp	I	0-32767	Current, Max Demand, Phase C

REGISTER	R/W	NV	Format	Units	Scale Factor/ Mult'r	Range	Description
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4030	R		UInt	Volt	V	0-32767	Voltage, Phase A-B
4031	R		UInt	Volt	V	0-32767	Voltage, Phase B-C
4032	R		UInt	Volt	V	0-32767	Voltage, Phase A-C
4033	R		UInt	Volt	V	0-32767	Voltage, Phase A-N
4034	R		UInt	Volt	V	0-32767	Voltage, Phase B-N
4035	R		UInt	Volt	V	0-32767	Voltage, Phase C-N
4036	R		UInt	kW	W	0-32767	Real Power, Phase A
4037	R		UInt	kW	W	0-32767	Real Power, Phase B
4038	R		UInt	kW	W	0-32767	Real Power, Phase C
4039	R		UInt	kVA	W	0-32767	Apparent Power, Phase A
4040	R		UInt	kVA	W	0-32767	Apparent Power, Phase B
4041	R		UInt	kVA	W	0-32767	Apparent Power, Phase C
4042	R		UInt	kVAR	W	0-32767	Reactive Power, Phase A
4043	R		UInt	kVAR	W	0-32767	Reactive Power, Phase B
4044	R		UInt	kVAR	W	0-32767	Reactive Power, Phase C
4045	R		UInt	%	0.1	0-10000	THD, Current, Phase A
4046	R		UInt	%	0.1	0-10000	THD, Current, Phase B
4047	R		UInt	%	0.1	0-10000	THD, Current, Phase C
4048	R		UInt	%	0.1	0-10000	THD, Current, Neutral (future use)
4049	R		UInt	%	0.1	0-10000	THD, Voltage A-N
4050	R		UInt	%	0.1	0-10000	THD, Voltage B-N
4051	R		UInt	%	0.1	0-10000	THD, Voltage C-N
4052	R		UInt	%	0.1	0-10000	THD, Voltage A-B
4053	R		UInt	%	0.1	0-10000	THD, Voltage B-C
4054	R		UInt	%	0.1	0-10000	THD, Voltage A-C

REGISTER	R/W	NV	Format	Units	Scale Factor/ Mult'r	Range	Description
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4055	R	NV	UInt	kW	W	0-32767	Total Real Power Minimum
4056	R	NV	UInt	kVA	W	0-32767	Total Apparent Power Minimum
4057	R	NV	UInt	kVAR	W	0-32767	Total Reactive Power Minimum
4058	R	NV	UInt	-	0.0001	0-10000	Total PF Minimum
4059	R	NV	UInt	-	0.01	4500-6500	Frequency (derived from Phase A) Minimum
4060	R	NV	UInt	Amp	I	0-32767	Current, Phase A, Minimum
4061	R	NV	UInt	Amp	I	0-32767	Current, Phase B, Minimum
4062	R	NV	UInt	Amp	I	0-32767	Current, Phase C, Minimum
4063	R	NV	UInt	Amp	I	0-32767	Current, Neutral, Minimum (future use)
4064	R	NV	UInt	Volt	V	0-32767	Voltage, A-N, Minimum
4065	R	NV	UInt	Volt	V	0-32767	Voltage, B-N, Minimum
4066	R	NV	UInt	Volt	V	0-32767	Voltage, C-N, Minimum
4067	R	NV	UInt	Volt	V	0-32767	Voltage, A-B, Minimum
4068	R	NV	UInt	Volt	V	0-32767	Voltage, B-C, Minimum
4069	R	NV	UInt	Volt	V	0-32767	Voltage, A-C, Minimum
4070	R	NV	UInt	%	0.1	0-10000	THD, Current, Phase A, Minimum
4071	R	NV	UInt	%	0.1	0-10000	THD, Current, Phase B, Minimum
4072	R	NV	UInt	%	0.1	0-10000	THD, Current, Phase C, Minimum
4073	R	NV	UInt	%	0.1	0-10000	THD, Current, Neutral, Minimum (future use)
4074	R	NV	UInt	%	0.1	0-10000	THD, Voltage A-N, Minimum
4075	R	NV	UInt	%	0.1	0-10000	THD, Voltage B-N, Minimum
4076	R	NV	UInt	%	0.1	0-10000	THD, Voltage C-N, Minimum
4077	R	NV	UInt	%	0.1	0-10000	THD, Voltage A-B, Minimum
4078	R	NV	UInt	%	0.1	0-10000	THD, Voltage B-C, Minimum
4079	R	NV	UInt	%	0.1	0-10000	THD, Voltage A-C, Minimum
4080	R	NV	UInt	kW	W	0-32767	Total Real Power Maximum
4081	R	NV	UInt	kVA	W	0-32767	Total Apparent Power Maximum
4082	R	NV	UInt	kVAR	W	0-32767	Total Reactive Power Maximum

REGISTER	R/W	NV	Format	Units	Scale Factor/ Mult'r	Range	Description
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4083	R	NV	UInt	-	0.0001	0-10000	Total PF Maximum
4084	R	NV	UInt	-	0.01	4500-6500	Frequency (derived from Phase A)Maximum
4085	R	NV	UInt	Amp	I	0-32767	Current, Phase A, Maximum
4086	R	NV	UInt	Amp	I	0-32767	Current, Phase B, Maximum
4087	R	NV	UInt	Amp	I	0-32767	Current, Phase C, Maximum
4088	R	NV	UInt	Amp	I	0-32767	Current, Neutral, Maximum (future use)
4089	R	NV	UInt	Volt	V	0-32767	Voltage, A-N, Maximum
4090	R	NV	UInt	Volt	V	0-32767	Voltage, B-N, Maximum
4091	R	NV	UInt	Volt	V	0-32767	Voltage, C-N, Maximum
4092	R	NV	UInt	Volt	V	0-32767	Voltage, A-B, Maximum
4093	R	NV	UInt	Volt	V	0-32767	Voltage, B-C, Maximum
4094	R	NV	UInt	Volt	V	0-32767	Voltage, A-C, Maximum
4095	R	NV	UInt	%	0.1	0-10000	THD, Current, Phase A, Maximum
4096	R	NV	UInt	%	0.1	0-10000	THD, Current, Phase B, Maximum
4097	R	NV	UInt	%	0.1	0-10000	THD, Current, Phase C, Maximum
4098	R	NV	UInt	%	0.1	0-10000	THD, Current, Neutral, Maximum (future use)

REGISTER	R/W	NV	Format	Units	Scale Factor/ Mult'r	Range	Description
4099	R	NV	UInt	%	0.1	0-10000	THD, Voltage A-N, Maximum
4100	R	NV	UInt	%	0.1	0-10000	THD, Voltage B-N, Maximum
4101	R	NV	UInt	%	0.1	0-10000	THD, Voltage C-N, Maximum
4102	R	NV	UInt	%	0.1	0-10000	THD, Voltage A-B, Maximum
4103	R	NV	UInt	%	0.1	0-10000	THD, Voltage B-C, Maximum
4104	R	NV	UInt	%	0.1	0-10000	THD, Voltage A-C, Maximum
4105	R		SInt	-	-	see below	Scale Factor I (current)
4106	R		SInt	-	-	see below	Scale Factor V (voltage)
4107	R		SInt	-	-	see below	Scale Factor W (power)
4108	R		SInt	-	-	see below	Scale Factor E (energy)

These scale registers contain a signed integer which scales the corresponding parameters as follows:

. . .	
-4	0.0001
-3	0.001
-2	0.01
-1	0.1
0	1.0
1	10.0
2	100.0
3	1000.0
4	10000.0
. . .	

4109	R	NV	UInt	-	-	-	Feature Bitmap (future use, always returns zero presently)
4110	R	NV	UInt	Hours	-	0-32767	Usage Hours
4111	R	NV	UInt	Minutes	-	0-59	Usage Minutes

REGISTER	R/W	NV	Format	Units	Scale Factor/ Mult'r	Range	Description
4112	R		UInt	-	-	-	Error Bitmap: bit0: Phase A Voltage out of range bit1: Phase B Voltage out of range bit2: Phase C Voltage out of range bit3: Phase A Current out of range bit4: Phase B Current out of range bit5: Phase C Current out of range bit6: Frequency out of range or insufficient voltage on Phase A to determine frequency bit7-15: Reserved for future use
4113	R		UInt	-	-	-	Reserved, always returns 0
4114	R		UInt	-	-	-	Reserved, always returns 0
4115	R		UInt	-	-	-	Reserved, always returns 0
4116	R		UInt	-	-	-	Reserved, always returns 0
4117	R/W	NV	UInt	Minutes	-	1-60	Thermal Demand Interval
4118	R/W	NV	UInt	Minutes	-	1-60	Power Block Demand Interval
4119	R/W	NV	UInt	-	-	1-60	Power Block Demand Sub-Intervals If this register is set to 0, a subinterval of 15 seconds is used for Demand Intervals <= 15 minutes, or 60 seconds for intervals > 15 minutes.
4120	R/W	NV	UInt	-	-	1-32767	CT Ratio - Primary
4121	R/W	NV	UInt	-	-	1 or 5	CT Ratio - Secondary
4122	R/W	NV	UInt	-	-	1-32767	PT Ratio - Primary
4123	R/W	NV	UInt	-	-	0,1,10,100	PT Ratio - Scale (0 = No PT)
4124	R/W	NV	UInt	-	-	100,110,115,120	PT Ratio - Secondary
4125	R/W	NV	UInt	Hz	-	50 or 60	Service Frequency

REGISTER	R/W	NV	Format	Units	Scale Factor/ Mult'r	Range	Description
4126	R/W		UInt	-	-	N/A	Reset Write 14255 to reset all Min/Max Values. Write 30078 to clear all energy Accumulators. Write 21212 to reset Peak Demand values to Present Demand Values. Write 10001 to clear the Usage Timers. Read always returns 0.
4127	R/W	NV	UInt	-	-	10,11,12,30 31,32,40,42, 44	System Type
4128	R/W	NV	UInt	-	-	0,1	Units: 0 = IEC, 1 = IEEE units

7000	R	NV	UInt	-	-	0-32767	Firmware Version, Reset System
7001	R	NV	UInt	-	-	-	Firmware Version, Operating System
7002/03	R	NV	ULong	-	-	-	Serial Number (date/time of mfg in UTC)
7004	R	NV	UInt	-	-	15165	Device ID = 15615
7005	R	NV	UInt	-	-	1-247	Modbus Address
7006	R	NV	UInt	-	-	2400,4800, 9600,19200	Baudrate
7007	R	NV	UInt	-	-	-	Password (always returns 0)
7008	R		UInt	-	-	-	Selftest (always returns 0)
7009	R		UInt	-	-	0,65535	PLOS
7010	R		UInt	-	-	-	Reserved, always returns 0
7011	R		UInt	-	-	-	Reserved, always returns 0
7012	R		UInt	-	-	-	Reserved, always returns 0
7013	R		UInt	-	-	-	Reserved, always returns 0
7014	R		UInt	-	-	-	Reserved, always returns 0
PMO Command Interface (DLF support only)							

7015	R/W		UInt	-	-	-	Command
7016-031	R/W		UInt	-	-	-	Parameters
7032	R/W		UInt	-	-	-	Status
7033	R/W		UInt	-	-	-	Result
7034	R/W		UInt	-	-	-	I/O Data
7035-162	R/W		UInt	-	-	-	Data Area

LEGEND

R/W: R = Read-Only, R/W = Read/Write
NV: Value is stored in non-volatile memory

Format:

UInt: Unsigned 16-bit integer
SInt: Signed 16-bit integer
ULong: Unsigned 32-bit integer; Upper 16-bits (MSW) in lowest-numbered register (4010/11 = MSW/LSW)
Float: 32-bit floating point; Upper 16-bits (MSW) in lowest-numbered register (4010/11 = MSW/LSW)

MODBUS COMMANDS SUPPORTED

0x03: Read Holding Registers
0x04: Read Input Registers
0x06: Preset Single Register
0x10: Preset Multiple Registers

0x11: Report ID

Return string:
byte0: address
byte1: 0x11
byte2: #bytes following w/out crc
byte3: ID byte = 250
byte4: status = 0xFF
bytes5+: ID string = "PM710 Power Meter"
last 2 bytes: CRC

0x2B: Read Device Identification, BASIC implementation (0x00, 0x01 and 0x02 data), Conformity Level 1.

Object values:

0x01: "Schneider Electric"

0x02: "PM710"

0x03: "Vxx.yyy", where xx.yyy is the OS version number (reformatted version of the Modbus register #7001, (Firmware Version, Operating System). If register #7001 == 12345, then the 0x03 data would be "V12.345").