Table of Contents	200	700	750
Setup & Status	YP	YP	YP
Metering	YP	YP	YP
Demand	YP	YP	YP
Reset Commands	YP	YP	YP
DL System	YP	YP	YP
Notes	YP	YP	YP

Setup & Status

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	200	200P	210
4105	Scale Factor I (current)	1	Integer	RO	N	-	-	-	Power of 10 See notes for calculations	Y	Y	YP
4106	Scale Factor V (voltage)	1	Integer	RO	N	-	-	-	Power of 10 See notes for calculations	Y	Y	YP
4107	Scale Factor W (power)	1	Integer	RO	N	-	-	-	Power of 10 See notes for calculations	Y	Y	YP
4108	Scale Factor E (energy)	1	Integer	RO	N	-	-	-	Power of 10 See notes for calculations	Y	Y	YP
4112	Error Bitmap	1	Integer	RO	N	-	-	-	bit0: VA Clipping bit1: VB Clipping bit2: VC Clipping bit3: IA Clipping bit4: IB Clipping bit5: IC Clipping bit6: Freq Invalid reserved: bit 7: IA would clip if changed to high gain reserved: bit 8: IB would clip if changed to high gain reserved: bit 9: IC would clip if changed to high gain	Y	Y	YP
4117	Thermal Demand Interval	1	Integer	R/W	Y	-	Minutes	1-60	Current Demand Only	Y	Y	YP
4118	Power Block Demand Interval	1	Integer	R/W	Y	-	Minutes	1-60	Duration in minutes	Y	Y	YP
4119	Power Block Demand Number of Sub-Intervals	1	Integer	R/W	Y	-	Seconds	1-60	0: Sliding Block Calculation If Reg[4118 <= 15 Minutes the Sub-interval is 15 Seconds if Reg[4118 > 15 Minutes the Sub-interval is 60 Seconds 1: Fixed Block Else: Rolling Block (Must be evenly divided into 4188 to the second)	Y	Y	YP
4120	CT Ratio - Primary	1	Integer	R/W	Y	-	-	1-32767		Y	Y	YP
4121	CT Ratio - Secondary	1	Integer	R/W	Y	-	-	1 or 5		Y	Y	YP
4122	PT Ratio - Primary	1	Integer	R/W	Y	-	-	1-32767		Y	Y	YP
4123	PT Ratio - Scale (0 = No PT)	1	Integer	R/W	Y	-	-	0, 1, 10, 100		Y	Y	YP
4124	PT Ratio - Secondary	1	Integer	R/W	Y	-	-	100, 110, 115, 120		Y	Y	YP
4125	Service Frequency	1	Integer	R/W	Y	-	Hz	50 or 60		Y	Y	YP
4126	Reset Commands	1	Integer	R/W	N	-	-	N/A	Always return a 0. A listing of commands is on sheet Reset Commands	N	N	YP
4127	System Type	1	Integer	R/W	Y	-	-	10,11,12,30,31,32,40,42,44		Y	Y	YP
4128	Display Mode	1	Integer	R/W	Y	-	-	0,1	0 = IEC Units 1 = IEEE Units	Y	Y	YP

Metered Data (updated every 12 cycles)

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	200	200P	210
1000	Signed Real Energy, Consumption	2	Float	RO	Y	-	kWh	-	Signed in all PM2s, PM7s and PM750	Y	Y	YP
1002	Apparent Energy, Consumption	2	Float	RO	Y	-	kVAh	-		Y	Y	YP
1004	Signed Reactive Energy, Consumption	2	Float	RO	Y	-	kVARh	-	Signed in all PM2s, PM7s and PM750	Y	Y	YP
1006	Real Power, Total	2	Float	RO	N	-	kW	-	Signed in all PM2s, PM7s and PM750	Y	Y	YP
1008	Apparent Power, Total	2	Float	RO	N	-	kVA	-		Y	Y	YP
1010	Reactive Power, Total	2	Float	RO	N	-	kVAR	-	Signed in all PM2s, PM7s and PM750	Y	Y	YP
1012	Power Factor, Total	2	Float	RO	N	-	-	0.0 - 1.0		Y	Y	YP
1020	Frequency	2	Float	RO	N	-	Hz	45.0 - 65.0	Derived from Phase A	Y	Y	YP
1034	Current, A	2	Float	RO	N	-	Amp	-		Y	Y	YP
1036	Current, B	2	Float	RO	N	-	Amp	-		Y	Y	yP
1038	Current, C	2	Float	RO	N	-	Amp	-		Y	Y	YP
1054	Voltage, A-B	2	Float	RO	N	-	Volt	-		Y	Y	YP
1056	Voltage, B-C	2	Float	RO	N	-	Volt	-		Y	Y	YP
1058	Voltage, C-A	2	Float	RO	N	-	Volt	-		Y	Y	YP
1060	Voltage, A-N	2	Float	RO	N	-	Volt	-		Y	Y	YP
1062	Voltage, B-N	2	Float	RO	N	-	Volt	-		Y	Y	YP
1064	Voltage, C-N	2	Float	RO	N	-	Volt	-		Y	Y	YP
4000	Real Energy, Consumption	2	Long	RO	Y	E	kWh/Scale	0-0xFFFFFFFF	Signed in all PM2's, PM7s and PM750	Y	Y	YP
4002	Apparent Energy, Consumption	2	Long	RO	Y	E	kVAh/Scale	0-0xFFFFFFFF		Y	Y	YP
4004	Reactive Energy, Consumption	2	Long	RO	Y	E	kVARh/Scale	0-0xFFFFFFFF	Signed in all PM2's, PM7s and PM750	Y	Y	YP
4006	Real Power, Total	1	Integer	RO	N	W	kW/Scale	0-32767	Signed in all PM2's, PM7s and PM750	Y	Y	YP
4007	Apparent Power, Total	1	Integer	RO	N	W	kVA/Scale	0-32767		Y	Y	YP
4008	Reactive Power, Total	1	Integer	RO	N	W	kVAR/Scale	0-32767	Signed in all PM2's, PM7s and PM750	Y	Y	YP
4009	Power Factor, Total	1	Integer	RO	N	0.0001	-	0-1		Y	Y	YP
4013	Frequency	1	Integer	RO	N	0.01	Hz	4500-6500	Derived from Phase A	Y	Y	YP
4020	Current, A	1	Integer	RO	N	I	Amp/Scale	0-32767		Y	Y	YP
4021	Current, B	1	Integer	RO	N	I	Amp/Scale	0-32767		Y	Y	YP
4022	Current, C	1	Integer	RO	N	I	Amp/Scale	0-32767		Y	Y	YP
4030	Voltage, A-B	1	Integer	RO	N	V	Volt/Scale	0-32767		Y	Y	YP
4031	Voltage, B-C	1	Integer	RO	N	V	Volt/Scale	0-32767		Y	Y	YP
4032	Voltage, C-A	1	Integer	RO	N	V	Volt/Scale	0-32767		Y	Y	YP
4033	Voltage, A-N	1	Integer	RO	N	V	Volt/Scale	0-32767		Y	Y	YP
4034	Voltage, B-N	1	Integer	RO	N	V	Volt/Scale	0-32767		Y	Y	YP
4035	Voltage, C-N	1	Integer	RO	N	V	Volt/Scale	0-32767		Y	Y	YP
4048	Power Factor, Total Signed	1	Integer	RO	N	0.001	-	-1.000 to 1.000	"-" sign indicates lag. If a negative value is reported, add 32768 then divide by 1000 to find the lagging PF reported.	y	y	yp

Demand Values

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	200	200 P	210
1022	Real Power, Total Demand Present	2	Float	RO	N	-	kW	-		Y	Y	YP
1024	Apparent Power, Total Demand Present	2	Float	RO	N	-	kVA	-		Y	Y	YP
1026	Reactive Power, Total Demand Present	2	Float	RO	N	-	kVAR	-		Y	Y	YP
1028	Real Power, Total Demand Peak	2	Float	RO	Y	-	kW	-		Y	Y	YP
1030	Apparent Power, Total Demand Peak	2	Float	RO	Y	-	kVA	-		Y	Y	YP
1032	Reactive Power, Total Demand Peak	2	Float	RO	Y	-	kVAR	-		Y	Y	YP
1042	Current, A, Demand Present	2	Float	RO	N	-	Amp	-		Y	Y	YP
1044	Current, B, Demand Present	2	Float	RO	N	-	Amp	-		Y	Y	YP
1046	Current, C, Demand Present	2	Float	RO	N	-	Amp	-		Y	Y	YP
1048	Current, A, Demand Peak	2	Float	RO	Y	-	Amp	-		Y	Y	YP
1050	Current, B, Demand Peak	2	Float	RO	Y	-	Amp	-		Y	Y	YP
1052	Current, C, Demand Peak	2	Float	RO	Y	-	Amp	-		Y	Y	YP
4014	Real Power, Total Demand Present	1	Integer	RO	N	W	kW/Scale	0-32767		Y	Y	YP
4015	Apparent Power, Total Demand Present	1	Integer	RO	N	W	kVA/Scale	0-32767		Y	Y	YP
4016	Reactive Power, Total Demand Present	1	Integer	RO	N	W	kVAR/Scale	0-32767		Y	Y	YP
4017	Real Power, Total Demand Peak	1	Integer	RO	Y	W	kW/Scale	0-32767		Y	Y	YP
4018	Apparent Power, Total Demand Peak	1	Integer	RO	Y	W	kVA/Scale	0-32767		Y	Y	YP
4019	Reactive Power, Total Demand Peak	1	Integer	RO	Y	W	kVAR/Scale	0-32767		Y	Y	YP
4024	Current, A, Demand Present	1	Integer	RO	N	I	Amp/Scale	0-32767		Y	Y	YP
4025	Current, B, Demand Present	1	Integer	RO	N	I	Amp/Scale	0-32767		Y	Y	YP
4026	Current, C, Demand Present	1	Integer	RO	N	I	Amp/Scale	0-32767		Y	Y	YP
4027	Current, A, Demand Peak	1	Integer	RO	Y	I	Amp/Scale	0-32767		Y	Y	YP
4028	Current, B, Demand Peak	1	Integer	RO	Y	I	Amp/Scale	0-32767		Y	Y	YP
4029	Current, C, Demand Peak	1	Integer	RO	Y	I	Amp/Scale	0-32767		Y	Y	YP

Reset Commands

Command entered to reg [4126	Parameters Entered to reg[7016	Notes	2 0 0 0	2 0 0 P	2 1 0
666		Restart demand metering This does reset Demand Peaks	Y	Y	YP
6209	The contents of registers 4000-4005 . Note that the CT and PT ratios must be set in the new meter before executing this command	Preset Energy Values	Y	Y	YP
10001		Clear the Usage Timers. (Set to 0)	Y	Y	YP
14255		Reset all Min/Max Values. (Sets values to defaults)	Y	Y	YP
21212		Reset Peak Demand values. (Set to 0)	Y	Y	YP
30078		Clear all Energy Accumulators. (Set to 0)	Y	Y	YP

DL System

Reg	Name	Size	Type	Access	NV	Scale	Units	Range	Notes	200	200P	210
7000	Firmware Version, Reset System	1	Integer	RO	Y	-	-	0-32767		Y	Y	YP
7001	Firmware Version, Operating System	1	Integer	RO	Y	-	-	-		Y	Y	YP
7002	Serial Number	2	Long	RO	Y	-	-	-	date/time of mfg in UTC	Y	Y	YP
7004	Device ID	1	Integer	RO	Y	-	-	15165 15201 15202	15165 = PM700, PM700P, PM710 15201 = PM200, PM200P, PM210 15202 = PM750	Y	Y	YP
7005	Modbus Address	1	Integer	RO	Y	-	-	1-247		Y	Y	YP
7006	Baudrate	1	Integer	RO	Y	-	-	2400 4800 9600 19200		Y	Y	YP
7007	Password	1	Integer	R/W	Y	-	-	-	always returns 0	Y	Y	YP
7008	Selftest	1	Integer	RO	N	-	-	-	always returns 0	Y	Y	YP
7009	PLOS	1	Integer	RO	N	-	-	0,65535	0 for OK and 65535 for BAD	Y	Y	YP
7010	Reserved	1	Integer	RO	N	-	-	-	always returns 0	Y	Y	YP
7011	Reserved	1	Integer	RO	N	-	-	-	always returns 0	Y	Y	YP
7012	Reserved	1	Integer	RO	N	-	-	-	always returns 0	Y	Y	YP
7013	Reserved	1	Integer	RO	N	-	-	-	always returns 0	Y	Y	YP
7014	Reserved	1	Integer	RO	N	-	-	-	always returns 0	Y	Y	YP

NV	Value is stored in non-volatile memory
Scale	Scalers keep the range of a variable to 3276 to 32767
NA / NAN	For integers 32768 and for floats 0x7FC00000

Access

R	Read Only
W	Write Only
R/W	Read/Write
CR/CW	Configurable Read / Configurable Write
R/CW	Read / Configurable Write
PW	Password protected

Type

UInt	Unsigned 16-bit integer
Integer	Signed 16-bit integer
Long	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)
Split Floats	Split into 4 UChars Upper 8-bits (MSW) in lowest-numbered register (20000/20003 = MSB / LSB)
Split UInt	Split into 2 UChars Upper 8-bits (MSW) in lowest-numbered register (20000/20001 = MSB / LSB)

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 = "PM450 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: "PM450"
	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".

SPECIAL NOTES REGARDING

When the Operating System is erased, only registers 7000-7162 are available
Register 7001 (Firmware Version, Operating System) will read as 0 in this condition
Additionally, the ID string returned from a "Report ID" query (0x11) will be
'PMXXX Power Meter - RESET SYSTEM RUNNING'.
WARNING - The os is very dependant on the RS version. DLF will do a >= check on the RS for compatability.
This will allow a fw file with newer RS to be saved to a meter with an older version of RS and make the meter
INOPERABLE.

Currently, the PM710 is the only meter that has been produced with different RS code. (vers 2.000 and 2.01

Available characters are in black

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	SOH	STX	ETX	EOT	ENQ	ACK	BEL	BS	HT	LF	VT	FF	CR	SO	SI
1	DLE	DC1	DC2	DC3	DC4	NAK	SYN	ETB	CAN	EM	SUB	ESC	FS	GS	RS	US
2	SP	!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{			}	~	DEL

Customer calculation for Scalers					
	Current	Voltage	Power	Energy	Notes
Scaler PT only	NA	100			Edit values in yellow until Register scaled value is green. I, V, and P are to be scaled between 3276.7 and 32767. E is scaled to be between 1 and 10
Secondary	1	100			
Primary	10	3200			
Calculated Ratio	10	3200			
Max Value Possible	9	576			
Actual max value after ratios	90	1843200	497664	16	
Scaler - edit to make reg value green	-2	2	2	1	
Register scaled value	9000	18432	4976.64	1.6	