Power Meter Series 700
Functions and characteristics

The PowerLogic Power Meter Series 700 offers all the measurement capabilities required to monitor an electrical installation in a single 96 x 96 mm unit extending only 50 mm behind the mounting surface.

With its large display, you can monitor all three phases and neutral at the same time. The anti-glare display features large 11 mm high characters and powerful backlighting for easy reading even in extreme lighting conditions and viewing angles.

The Power Meter Series 700 is available in three versions:
■ PM700, basic version with THD and min/max readings
■ PM700P, basic version plus two pulse outputs for energy metering
■ PM710, basic version plus an RS 485 port for Modbus communication.

Applications
Panel instrumentation.
Sub-billing and cost allocation.
Remote monitoring of an electrical installation.
Harmonic monitoring (THD).

Characteristics

Requires only 50 mm behind mounting surface
The Power Meter Series 700 can be mounted on switchboard doors to maximise free space for electrical devices.

Large back lit display with integrated bar charts
Displays 4 measurements at a time for fast readings.

Intuitive use
Easy navigation using context-sensitive menu.

Power and current demand, THD and min/max reading in basic version
A high-performance solution for trouble-free monitoring of your electrical installation.

Energy class 1 as defined by IEC 61036
Suitable for sub-billing and cost-allocation applications.

Part numbers

Merlin Gerin brand	
PM700 Power Meter	**PM700MG**
PM700P Power Meter	**PM700PMG**
PM710 Power Meter	**PM710MG**
Square D brand	
PM700 Power Meter	**PM700**
PM700P Power Meter	**PM700P**
PM710 Power Meter	**PM710**
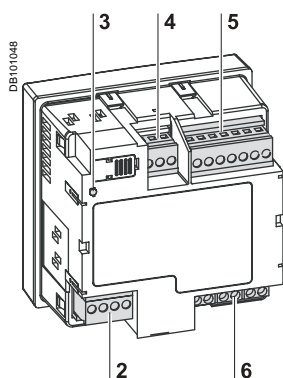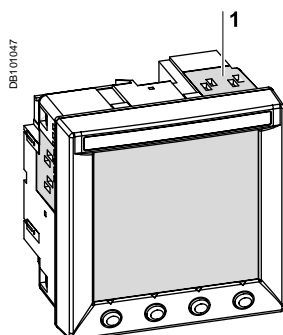
Power Meter Series 700.
1 *Mounting slots.*
2 *RS 485 communications (PM710) or 2 pulse outputs (PM700P).*
3 *Heartbeat LED.*
4 *Power supply.*
5 *Voltage inputs.*
6 *Current inputs.*

Selection guide		PM700	PM700P	PM710
General				
Use on LV and HV systems		■	■	■
Current and voltage accuracy		0.5 %	0.5 %	0.5 %
Energy and power accuracy		1.0 %	1.0 %	1.0 %
Instantaneous rms values				
Current	Phases and neutral	■	■	■
Voltage	Ph-Ph and Ph-N	■	■	■
Frequency		■	■	■
Active, reactive, apparent power	Total and per phase	■	■	■
Power factor	Total	■	■	■
Energy values				
Active, reactive, apparent energy		■	■	■
Demand values				
Current	Present and max.	■	■	■
Active, reactive, apparent power	Present and max.	■	■	■
Setting of calculation mode	Block, sliding	■	■	■
Power quality measurements				
Harmonic distortion	Current and voltage	■	■	■
Data recording				
Min/max of instantaneous values		■	■	■
Display and I/O				
Backlit LCD display		■	■	■
Pulse output		-	2	-
Communication				
RS 485 port		-	-	■
Modbus protocol		-	-	■

Rear view of Power Meter Series 700.

Electrical characteristics

Type of measurement		True rms up to the 15th harmonic On three-phase (3P, 3P + N) two-phase and single-phase AC systems 32 samples per cycle
Measurement accuracy	Current and voltage	0.5 %
	Power	1 %
	Frequency	±0.01 Hz from 45 to 65 Hz
	Active energy	IEC 61036 Class 1
	Reactive energy	IEC 61036 Class 2
Data update rate		1 s
Input-voltage characteristics	Measured voltage	10 to 480 V AC (direct Ph-Ph) 10 to 277 V AC (direct Ph-N) 10 to 1600 kV AC (with external VT)
	Metering over-range	1.2 Un
	Impedance	2 MΩ (Ph-Ph) / 1 MΩ (Ph-N)
	Frequency range	45 to 65 Hz
Input-current characteristics	CT ratings	Primary	Adjustable from 5 A to 32767 A
		Secondary	5 A
	Measurement input range	10 mA to 6 A
	Permissible overload	15 A continuous 50 A for 10 seconds per hour 120 A for 1 second per hour
	Impedance	< 0.1 Ω
	Load	< 0.15 VA
Power supply	AC	110 to 415 ±10 % V AC, 5 VA
	DC	125 to 250 ±20 % V DC, 3 W
	Ride-through time	100 ms at 120 V AC
Output	Pulse output (PM700P)	Static output 240 ±10 % V AC or 300 ±10 % V DC, 100 mA max. at 25 °C, derate 0.56 mA per °C above 25°C, 2.41 kV rms isolation

Mechanical characteristics

Weight	0.37 kg
IP degree of protection (IEC 60529)	IP52 front display, IP30 meter body
Dimensions	96 x 96 x 69 mm (meter with display) 96 x 96 x 50 mm (behind mounting surface)

Environmental conditions

Operating temperature	Meter	0 °C to +60 °C
	Display	0 °C to +50 °C
Storage temp.	Meter + display	-40 °C to +85 °C
Humidity rating		5 to 95 % RH at 50 °C (non-condensing)
Pollution degree		2
Metering category		III, for distribution systems up to 277/480 V AC
Dielectric withstand		As per EN61010, UL508

Electromagnetic compatibility

Electrostatic discharge	Level III (IEC 61000-4-2)
Immunity to radiated fields	Level III (IEC 61000-4-3)
Immunity to fast transients	Level III (IEC 61000-4-4)
Immunity to impulse waves	Level III (IEC 61000-4-5)
Conducted immunity	Level III (IEC 61000-4-6)
Immunity to magnetic fields	Level III (IEC 61000-4-8)
Immunity to voltage dips	Level III (IEC 61000-4-11)
Conducted and radiated emissions	CE commercial environment/FCC part 15 class B EN55011
Harmonics emissions	IEC 61000-3-2
Flicker emissions	IEC 61000-3-3

Safety	
Europe	CE, as per IEC 61010-1
U.S. and Canada	UL508
Communication	
RS 485 port (PM710)	2-wire, up to 19200 bauds, Modbus RTU, SELV circuit, 6 kV impulse (double insulation)
Display characteristics	
Dimensions 73 x 69 mm	Back-lit green LCD (6 lines total, 4 concurrent values)
Firmware characteristics	
Min./max.	Worst min. and max. with phase indication for voltages, currents and THD. Min. and max. values for power factor, power (P, Q, S) and frequency