Smart Demand Controller – EM72XX

PowerLogic range – Optimum offer
EM72xx, Power & Energy Meters
and Smart Demand Controller series

Quick and easy installation
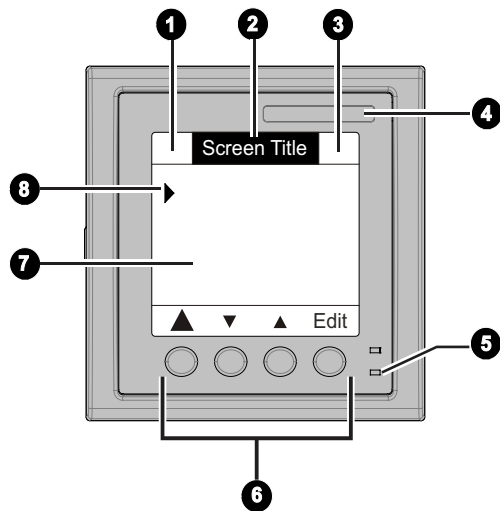
Meter for all electrical panels

Power energy monitoring

Schneider Electric

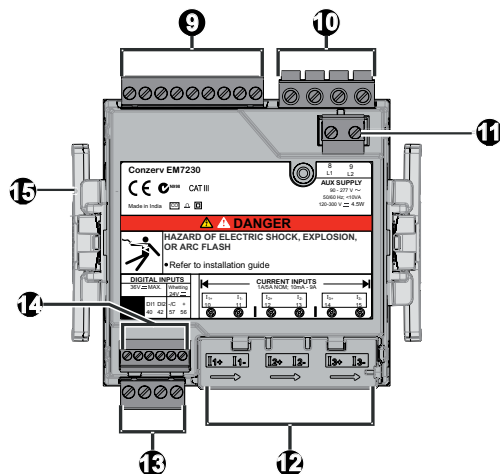# Power Logic PM72XX - Smart Demand Controller
Functions and characteristics

Front View

1. Icon 1-MT (Meter Test Mode), Wrench Icon (Maintenance) or Heartbeat Icon
2. Screen
3. Icon 2 - Alarm Icon
4. Product Model Number
5. Comms LED (Green)
6. Buttons
7. Data Area
8. Cursor

Rear View

9. Control Outputs
10. Voltage Inputs
11. Auxiliary Power Supply
12. Current Inputs
13. RS-485 Port (COM 1)
14. Digital Inputs
15. Retainer Clips

EM7230 / EM7280 is a smart demand controller. It replaces over 20 individual transducers and meters for comprehensive load management in 3-phase commercial and industrial applications.

Model	Class	Communication
EM7230	1.0	RS-485
EM7280	0.5	RS-485

Typical Applications
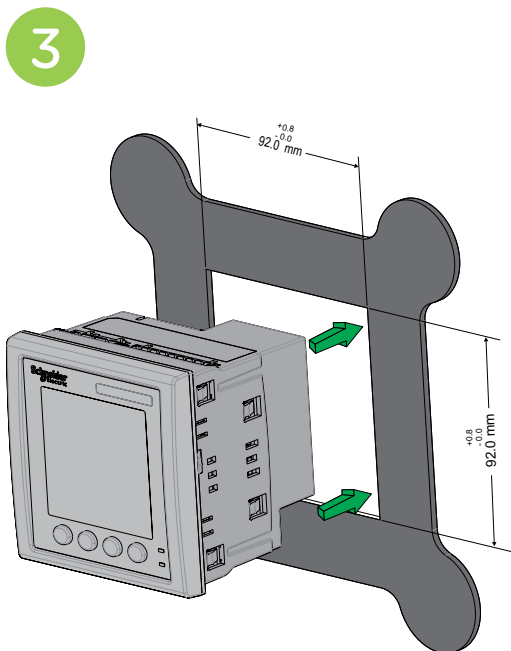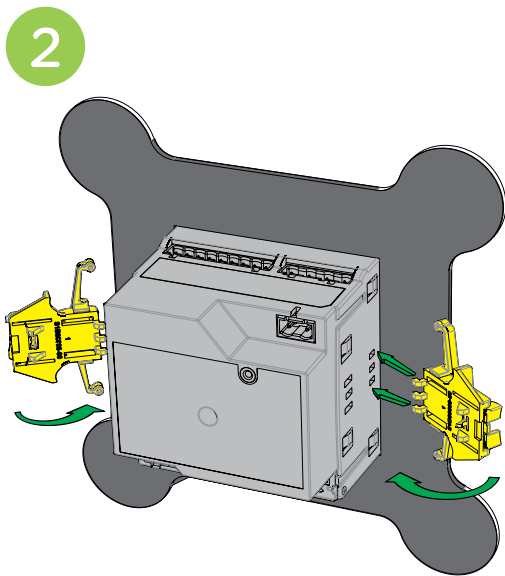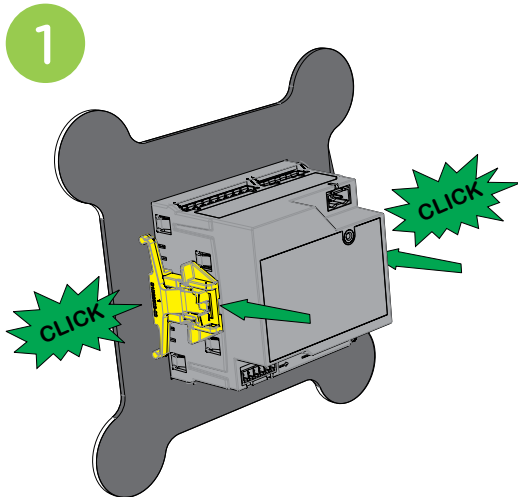> Maximum demand control and management
> Network management
  > Power quality
  > Communication
  > Healthiness
  > Digital Inputs
  > Status/ condition monitoring
> Cost management
  > Energy accounting & balancing
  > Cost allocation
  > Specific energy consumption
  > Tenant billing
  > Process management
> Preventive maintenance studying
> Can be used for either LV or MV circuits
> EB meter cross check

Key Feactures
> True RMS measurement
> 4Q measurement
> Real time measurement of
  > V A F PF W VA VAR Wh VAh VARh Ah parameters
  > Load duration, Run Hours, On Hours, Interruption
  > Import, Export & Net values
  > Harmonics
  > THD per phase for V & A
  > Individual harmonics up to 15th for V & A, per phase
> Demand measurement
  > W, VA, A parameter, 1 to 30 minutes, Prediction, Spare load, Essential load, Demand profile, Demand control through UL & LL settings, 3 Form C relays
> TOU Settings
  > 6 seasons, 8 slots, Wk Days, Wk ends, Holidays
  > Separate Integrators for Demand & Energy values and Total
> 2 Digital Inputs for status indication
  > ON: 18.5 to 36V DC, OFF: 0 to 4V DC
> Whetting voltage
  > 24V DC nominal, 8mA max
> Modbus RS485 com port
> 3 Relays for Demand control and management
> 4 Hi & Lows for Instantaneous and Demand parameters with time stamp
> Old registers for last cleared Integrators and Demand values
> Password protected
> % load
> % unbalance in A & V
> Phase angle
> Monochrome LCD full scap display, white background, black digit, 4+1 rows, parameters names displayed against each row, 4 digits for instantaneous parameters and 6 digits for Energy & 3 digits for Harmonics

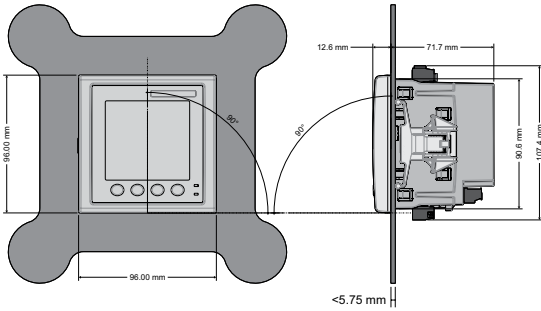# Power Logic PM72XX - Smart Demand Controller
Functions and characteristics

1

2

3

Technical Characteristics	
Accuracy	**For EM7230** Class 1.0 as per IEC62052-11 & IEC62053-21 > 1% of reading for voltage, current , active/ apparent power > 2% of reading for reactive power **For EM7280** > 0.5S as per IEC 62052-11 & IEC 62053-22 > 0.5% reading for voltage, current, active/ apparent power > 1% of reading for reactive power
Display	Graphical LCD Display, 128*128 pixels Monochrome LCD, full scape display, white background, black digits, 4 + 1 row display, with parameter names displayed against each row 4 digit RMS parameters and 6 digits resolution for Energy Fast in line view - 3 Parameters name and Value
Demand measurement	Parameter: W, VA, A Demand method: Auto, RTC, User Demand period: 1 to 30 minutes
Communication	Modbus RTU, RS485,
Size	96*96mm, 72mm behind the bezel, panel mounting
Data update rate	1 Sec for Instantaneous 5 Sec for Harmonics 15 Sec for Demand parameters
Input-Voltage characteristics	V1,V2,V3, VN : Four voltage inputs Voltage input: 110V or 415V LL nominal (range 90 to 480V ac LL without PT's) Permissible overload of 600V LL Burden of 0.2VA max per phase Frequency of 50/60Hz +/-5%
Input – Current characteristics	I1, I2, I3 (+S1, -S2) Current input: A nominal (10mA to 1.2A, 1mA is starting current) 5A nominal (50mA to 6A, 5mA is starting current) 10A max overload Burden of 0.2VA
Auxiliary Supply	AC: 90 to 277V, Burden of <10VA @240V ac DC: 120 to 300V

Part Numbers	
Description/ Specification	Mater Data reference number
PowerLogic LCD Power & Energy Meter and Smart Demand Controller Model ref No. EM7230, RS485, Class 1.0 Accuracy	METSEEM7230
PowerLogic LCD Power & Energy Meter and Smart Demand Controller Model ref No. EM7280, RS485, Class 0.5 Accuracy	METSEEM7280

Technical Specifications	
Specification	Description
Sensing/Measurement	True RMS, one second update time, four quadrant power and energy
Accuracy	For EM7230 : Class 1.0 as per IEC 62052-11 and IEC 62053-21; 1.0 % of reading for voltage and current; 1.0 % of reading for active/apparent power; 2.0 % of reading for reactive power; For EM7280: Class 0.5 as per IEC 62052-11 and IEC 62053-22; 0.5 % of reading for voltage, current, and active/apparent power; 1.0 % of reading for reactive power;
Auxiliary supply (control power)	90-277 Vac / 120-300 Vdc
Burden	Voltage and current input < 0.2 VA per phase; Auxiliary supply (control power) < 10 VA at 240 V
Display	Graphical LCD
Resolution	128x128 pixels
Input Voltage	Four voltage inputs (V1, V2, V3, VN) 110 or 415 Vac LL nominal (range 90 to 480 Vac LL)
Input current (energy measurement)	Current inputs (I1, I2, I3); Class 1.0 50 mA to 6 A (5 mA is the starting) 10 mA to 1.2 A (1 mA is the starting)
Frequency	50 /60 Hz ± 5%
Overload	10 A max continuous
Environmental	Operating temp: 10 C to 60 C (14 F to 140 F) Storage temp: 25 C to 70 C (13 F to 158 F) Humidity 5 % to 95 % non-condensing
Safety	CAT III Measurement category III Pollution Degree 2 Double insulation at user-accessible area
Communication	RS 485 serial channel connection. Industry standard Modbus RTU protocol.
IP Degree of Protection	Front - IP 51; Rear - IP 30;
Standards	
Status Digital Inputs	Voltage Ratings: ON 18.5 to 36 Vdc ; OFF 0 to 4 Vdc
Whetting Output	Nominal Voltage: 24 Vdc Allowable Load: 8 mA

Time of Use or Time of Day Features

By using advanced TOU structure, energy and demand parameters can be measured and controlled at different user programmable time intervals at various seasons/ week days, weekends & holidays. Measured values get stored in separate registers that can be seen through the meter display or retrieved through communication. EM72x does have the intelligence to control & optimize your loads in most advanced TOU settings sought by utility companies. Maximum demand charges can be optimized in each and every tariff slots falls under various seasons

Sl No	Description of the set up configuration availability	Count
1	Max number of seasons	6
2	Max number of Tariff slots	8
3	Days in a week for configuring Week days, Weekends	7
4	Max number of sub integrators	8
5	Max number of Holidays	16

Power Logic PM72XX – Smart Demand Controller
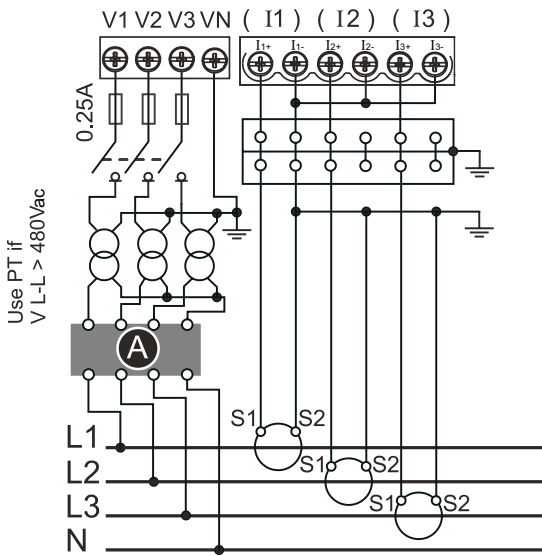Functions and characteristics

Figure 1: 3-Ph 4-W (WYE) 3 CT 3 PT

V1 V2 V3 VN (I1) (I2) (I3)

I1+ I1- I2+ I2- I3+ I3-

0.25A

Use PT if
V L-L > 480Vac

A

S1 S2

L1
L2   S1   S2
L3   S1   S2
N

Figure 2: 3-Ph 3-W (Delta) 2 CT 3 PT

V1 V2 V3 VN (I1) (I2) (I3)

I1+ I1- I2+ I2- I3+ I3-

0.25A

Use PT if
V L-L > 480Vac

A

S1 S2

L1
L2
L3   S1   S2
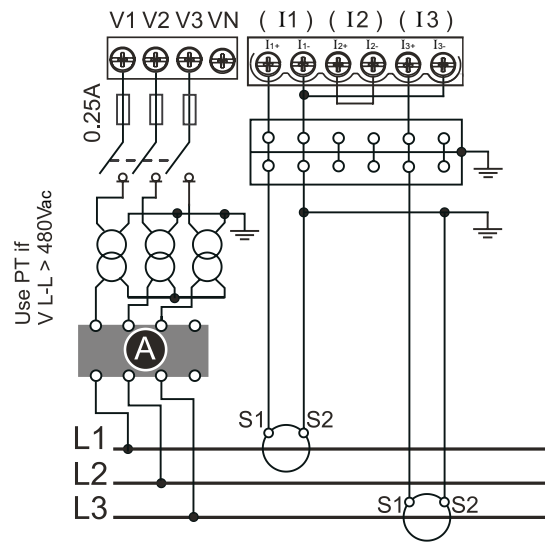
Figure 3: 3-Ph 3-W (Open Delta) 2 CT 2 PT

V1 V2 V3 VN (I1) (I2) (I3)

I1+ I1- I2+ I2- I3+ I3-

0.25A

Use PT if
V L-L > 480 Vac / V L-N >277 Vac

A

S1 S2

L1
L2
L3   S1   S2

Figure 4: 2-Ph 3-W 2 CT 2 PT

V1 V2 V3 VN (I1) (I2) (I3)

I1+ I1- I2+ I2- I3+ I3-

0.25A

Use PT if
V L-L > 480 Vac

A

S1 S2

L1
L2   S1   S2
N

Figure 5: Ph 1-W 1-CT

V1 V2 V3 VN (I1) (I2) (I3)

I1+ I1- I2+ I2- I3+ I3-

0.25A

S1 S2

L1
N
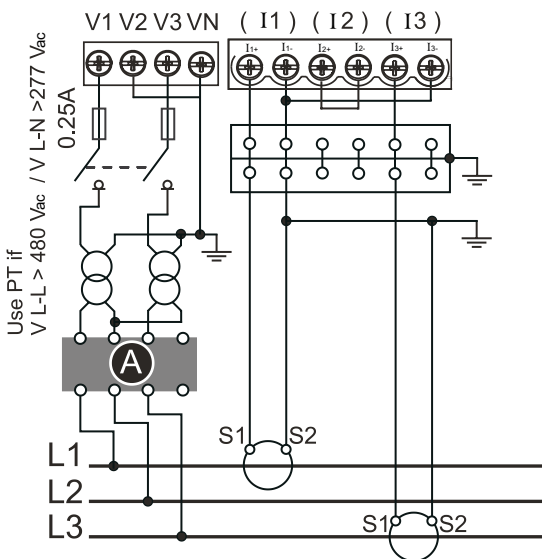
Notice:

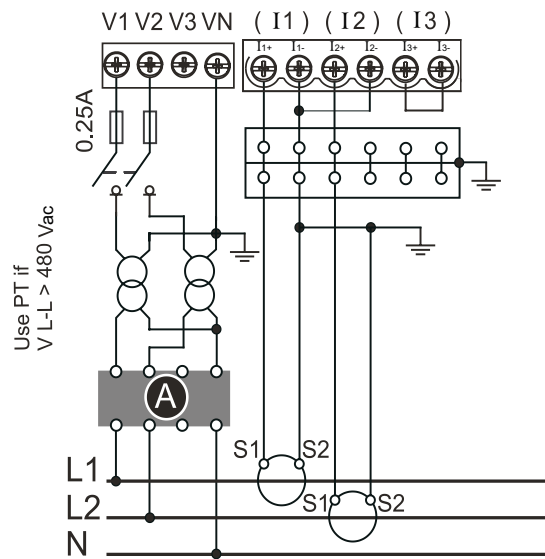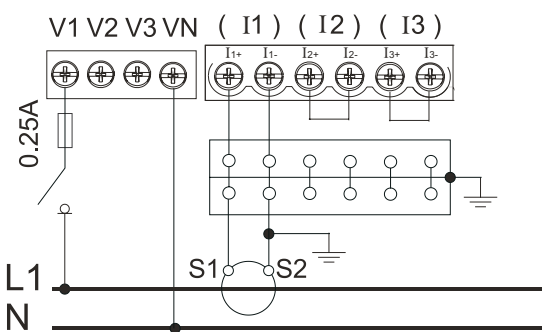(A) - Protection (to be adapted to suit the short-circuit current at the connection point)

Make the most of your energy ^{SM}

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