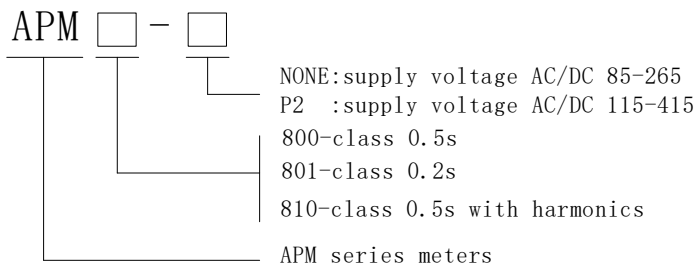# APM series meters

Product description

The APM series meters are suited for measuring and displaying electrical quantities of electricity networks. The accuracy of active energy measurements corresponds to class 0.5S in accordance with the requirements of IEC62053-22. The APM series meters offers many high-performance capabilities needed to meter and monitor an electrical installation in a compact 96 x 96 mm unit. All models include an RS-485 Modbus communication port, two digital input, two digital output, and alarming on critical conditions. The model of APM810 is able to perform current/voltage harmonics for assessment of the power quality. In addition the model of APM801 can offer the active energy accuracy up to class 0.2S. Expand any model with field-installable option modules that offer a choice of additional digital inputs and outputs, analogue inputs and outputs, and Ethernet port.

Product Model

APM □ - □

NONE:supply voltage AC/DC 85-265
P2 :supply voltage AC/DC 115-415
800-class 0.5s
801-class 0.2s
810-class 0.5s with harmonics

APM series meters

Device features

- The universal measuring device for power quality and energy measurement APM was developed in accordance with the following standards: IEC60068-2, IEC 61000-4, IEC 61557-12, IEC 62053-22, etc.
- Over 60 alarm conditions, including over or under conditions, digital input changes, phase unbalance and more.
- Calculation of the total harmonic distortion THDU/THDI.
- Individual current/voltage harmonics, up to the 63rd harmonic. ①

Description of function ■:Function in device. -: Not support. □: Optional

features		APM800	APM801	APM810
Instantaneous rms values	Current, voltage, frequency	■	■	■
	Active, reactive, apparent power Total & per phase	■	■	■
	Power factor Total & per phase	■	■	■
Energy values	Active, reactive, apparent energy	■	■	■
Pulse	Pulse outputs for active and reactive energy	■	■	■
Demand values	Current Present & max Active, reactive, apparent power Present & max	■	■	■
Power quality measurements	Voltage/current unbalance	■	■	■
	Harmonic distortion Current & voltage	-	-	■
	Individual harmonics Current & voltage	-	-	■

	Up to the 63rd harmonics①			■	■	■
Data recording	Min/max of instantaneous values			■	■	■
	alarms			■	■	■
	Sequence of Event			■	■	■
Communication	RS 485 /Modbus-RTU			■	■	■
I/O	2 digital inputs and 2 digital outputs			■	■	■
Optional Features	MD82	8 digital inputs and 2 digital outputs（8DI+2DO）		□	□	□
	MLOG	MicroSD card		□	□	□
	MA84	8 Analogue inputs + 4 Analogue outputs（8AI+4AO）		□	□	□
	MCM	1 RS485/Modbus-RTU		□	□	□
	MCP	1 Profibus-DP		□	□	□
	MCE	1 Ethernet for Modbus-TCP/http/DHCP		□	□	□

Notes①：The accuracy is 1% for 2nd-42nd harmonics in frequency of 45~65Hz range. The accuracy is 2% for 43rd – 63rd harmonics in frequency of 50Hz

Technical data

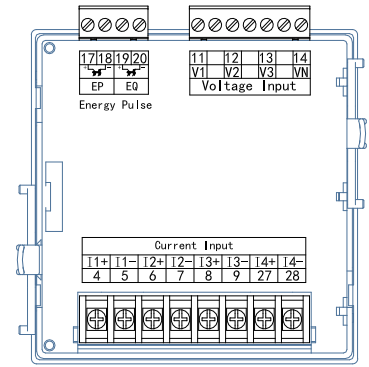|		
Input	Type of measurement	3P3W/3P4W
	Rated frequency	45～65Hz
	Measuring voltage inputs	Rated:AC 100V、110V、400V、690V
		Measuring range:0.1-120%Un；200%Un for 1 second
		Load:＜0.5VA（per phase）
	Measuring current inputs	Rated:AC 1A、5A
		Measuring range:0.1-120%In Permissible overload:1000%In for 1 second
		Load:＜0.5VA（per phase）
Accuracies	Voltage/Current	0.2%
	Active energy	IEC 62053-22 classes 0.5s for APM800 and APM810、classes 0.2s for APM801
	Reactive energy	IEC 62053-23 classes 2
	harmonics	1%（APM810）①
Digital input	electrically separated digital inputs（Dry contact only）U_{DI} :DC12V	
Digital output	AC 250V/3A DC 30V/3A	
Analog output	DC 0mA～20mA、4mA～20mA、0V～5V、1V～5V Accuracies:0.5% Load resistance:≤500Ω	
Analog input	DC 0mA～20mA、4mA～20mA、0V～5V、1V～5V Accuracies:0.5%	
Memory	MicroSD(TF) Up to 32G	

Interface/protocol	RS485/Modbus-RTU	
	DB9/Profibus-DP	
	RJ45/Modbus-TCP、TCP/IP、HTTP、DHCP、SMTP	
Supply voltage	Rated supply voltage：AC/DC 85V～265Vor AC/DC 100～415V	
	Frequency range:DC,44～440Hz	
	Power consumption≤15VA	
EMC	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）
IP degree of protection	Degree of protection,front:IP52	
Environment	Operating temperature：-20℃～+65℃	
	Storage temprature：-20℃～+70℃	
	Humidity rating：≤95% non-condensing	
	Height：≤2500m	

Notes:①：The accuracy is 1% for 2nd-42nd harmonics in frequency of 45~65Hz range. The accuracy is 2% for 43rd – 63rd harmonics in frequency of 50Hz.
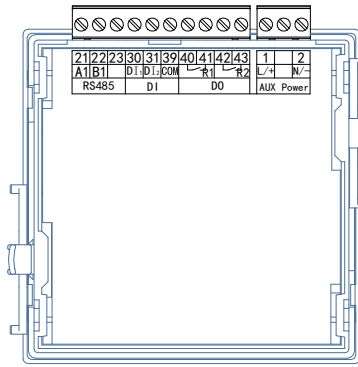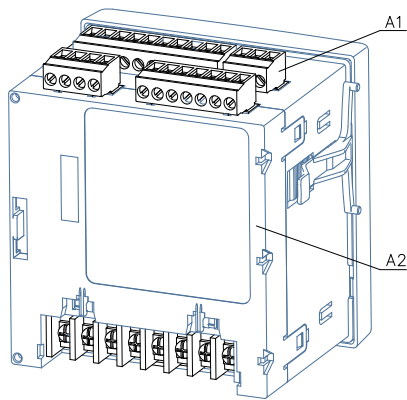
Installing the device

Front-panel mounting(front view,side view,panel cutout)（unit：mm（in））
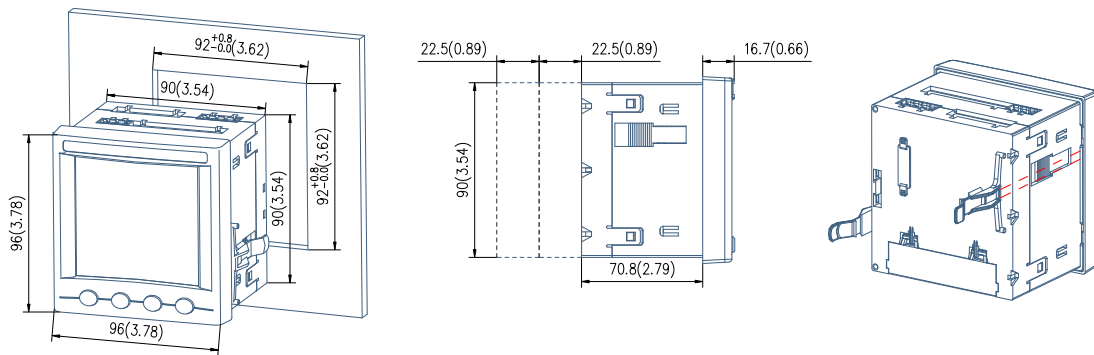
Multiple meters（unit：mm（in））
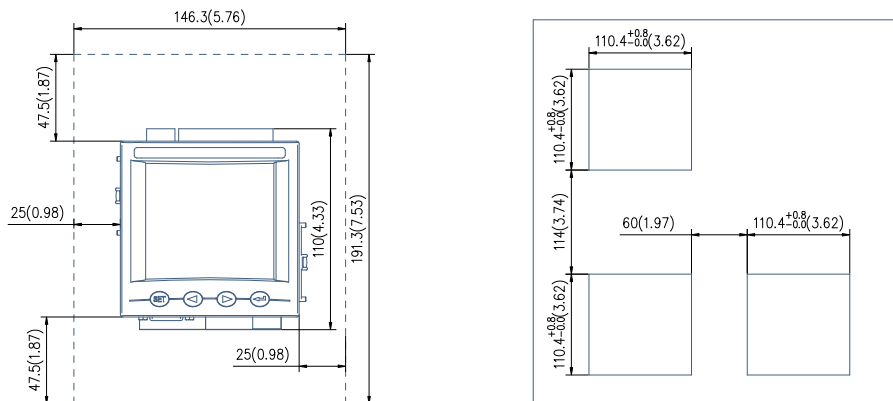
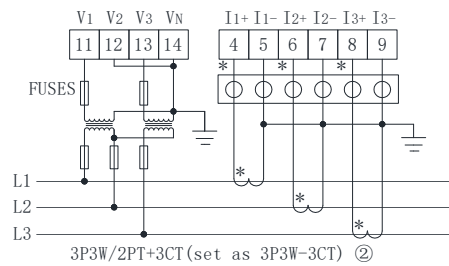## Connection of the device

(A1)supply voltage .etc   (A2)Measuring   voltage   inputs .etc

Connection diagram:

3P4W/3CT(set as 3P4W)

3P4W/3PT+3CT(set as 3P4W)

3P3W/3CT(set as 3P4W) ①

3P3W/2PT+3CT(set as 3P3W-3CT) ②

3P3W/2CT(set as 3P3W-2CT)

3P3W/2PT+2CT-1(set as 3P3W-2CT)

3P4W/2CT(set as 3P4W) ①

3P3W/2PT+2CT-2(set as 3P3W-3CT) ②
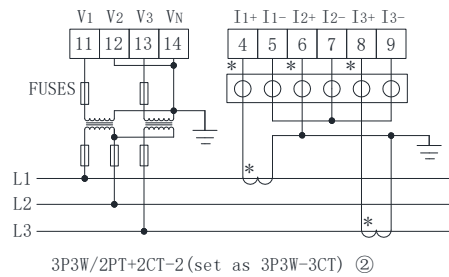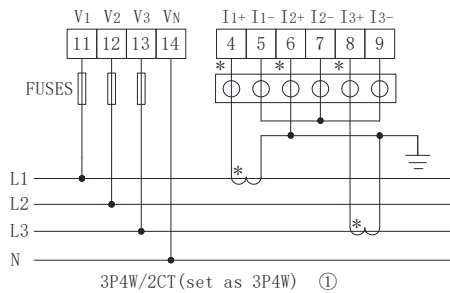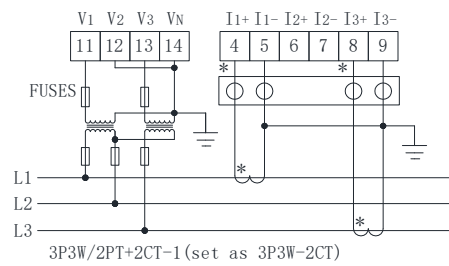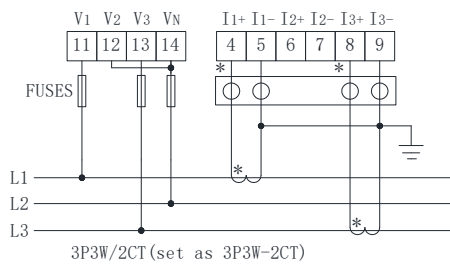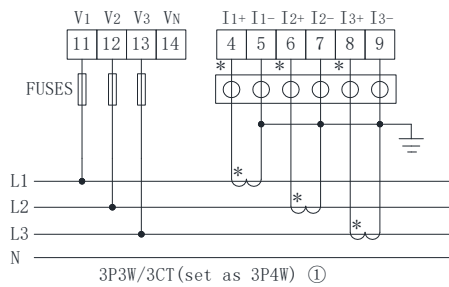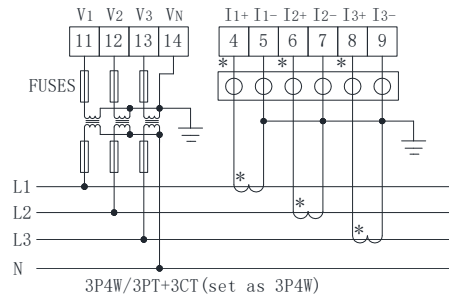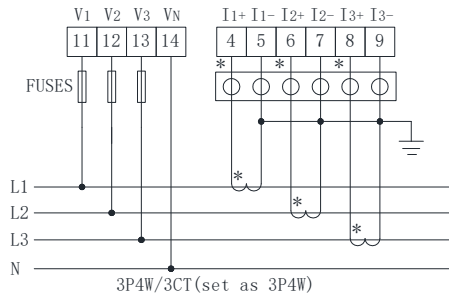
note①:Apply to balanced load

note②:the current of B phase only display.