APM Series Multifunction Meter

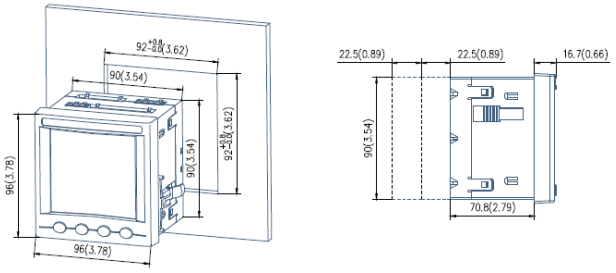


Model Description

APM □ - □

- Functional modules of the product
- Models (800,801,810,830)

Dimension drawings (Unit: mm)



General

APM series power meters of ACREL are power meters that are designed according to IEC standards and synchronized with international advanced technology.

APM series meters have full power measurement, energy statistics, analysis of power quality and network communications and other functions, are mainly used for comprehensive monitoring of the quality of power supply network.

Product Functions

Function	Function description	APM800 (class 0.5s)	APM801 (class 0.2s)	APM810 (class 0.5s)	APM830 (class 0.2s)
Parameters	All parameters	■	■	■	■
	Four-quadrant energy	■	■	■	■
	Multi-rate energy	□	□	□	■
Pulse output of energy	Active/reactive	■	■	■	■
Demand	Real-time and maximum demand of I, P, Q,S (with time)	■	■	■	■
Extreme value statistics	Extremum of I, UL-L, UL-N, P, Q, S, PF, F, THDi, THDu in this month and last month (with time)	■	■	■	■
Power quality	Unbalance of I,UL-L,UL-N	■	■	■	■
	Voltage phase angle,current phase angle	■	■	■	■
	Total and 2nd-63rd harmonic content of voltage and current	-	-	■	■
	Voltage crest factor	-	-	■	■
	Telephone waveform factor	-	-	■	■
	Current K-factor	-	-	■	■
	Positive sequence, negative sequence, zero sequence voltage and current	-	-	-	■
	Fundamental voltage and current	-	-	-	■
Waveform	Waveform trace display	-	-	-	■
	Fault waveform record	-	-	-	■
Alarm	A total of 66 kinds of alarm types, each type can record the most recent 16 alarm records, support extended records by TF card	■	■	■	■
Event	Record the most recent 128 event records, support extended records by TF card	■	■	■	■
Communication	RS485(Modbus-RTU)	■	■	■	■
I/O	2DI+2DO	■	■	■	■

Function	Function description		APM800 (class 0.5s)	APM801 (class 0.2s)	APM810 (class 0.5s)	APM830 (class 0.2s)
Optional functions	MD82	8DI+2DO	■	■	■	■
	MLOG	TF card	■	■	■	■
	MA84	8AI+4AO	■	■	■	■
	MCM	1 RS485(Modbus-RTU),support master mode or slave mode	■	■	■	■
	MCP	1 Profibus(Profibus-DP)	■	■	■	■
	MCE	1 Ethernet(Modbus-TCP,HTTP,DHCP)	■	■	■	■

Note ① Accuracy of 2-42nd harmonic measurement in the frequency range of 45~65Hz is 1%, accuracy of 43-63rd harmonic measurement in frequency range of 50Hz is 2%.
② "■":standard "-":No "□":Optional

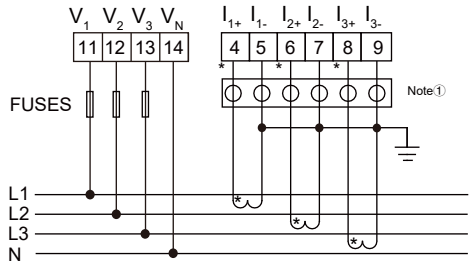
Technical Parameter

Technical Parameter		Value
Signal	Connection	3 phase 3 wire, 3 phase 4 wire
	Frequency	45~65Hz
	Voltage	Rated value: AC 100V,110V,400V,690V
		Overload: 1.2 times rated value(continuous); 2 times rated value(1 second)
		Power consumption: < 0.5VA (per channel)
	Current	Rated value: AC 1A, 5A
		Overload: 1.2 times rated value(continuous); 10 times rated value(1 second)
		Power consumption: < 0.5VA (per channel)
Measurement accuracy	Voltage,current and power	Class 0.5S (APM800,APM810)
	Active power	Class 0.2S (APM801,APM830)
	Reactive power	Class 2(APM800, APM810), Class 0.5(APM801,830)
	Harmonic	1%(2~42nd),2%(43~63rd)
Switch inputs		Passive contact inputs, built-in power supply
Relay outputs		Contact type: open contact in main part, changeover contact in module Contact capacity：3A/AC 250V 3A/DC 30V
Pulse output of energy		Output mode: Optocoupler pulse with open collector Pulse constant:4000(5A),8000(1A) imp/kWh
Analog outputs		DC 0~20mA,4~20mA,0~5V,1~5V output, accuracy class 0.5%, load resistance ≤ 500Ω
Analog inputs		DC 0~20mA,4~20mA,0~5V,1~5V input, accuracy class 0.5%
Storage card		Standard capacity:4G,TF card up to 32G capacity
Communication		RS485(Modbus-RTU)
		Profibus(Profibus-DP)
		Ethernet(Modbus-TCP,HTTP,DHCP)
Auxiliary power supply		Operating range: AC/DC 85V~265V or AC/DC 115~415V(P2)
		Power consumption: Power consumption of the main part ≤ 15VA
Safety	Insulation resistance	>100MΩ
Electromagnetic compatibility		IEC 61000 standard (Level 4)
Protection level		IP54(Front)

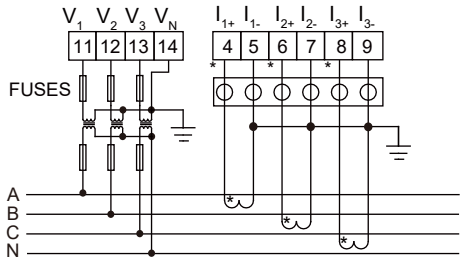
Technical Parameter	Value
Environment	Operating temperature: -20 °C ~ +65 °C
	Storage temperature: -20°C~+70°C
	Relative humidity: ≤95%(no condensation)
	Altitude: ≤2500m

Wiring

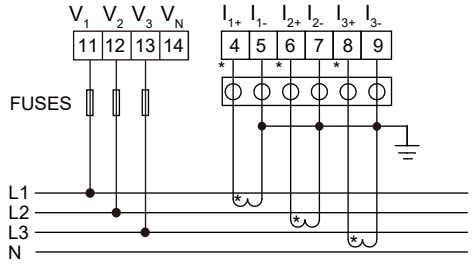
■ Wiring sample of voltage and current



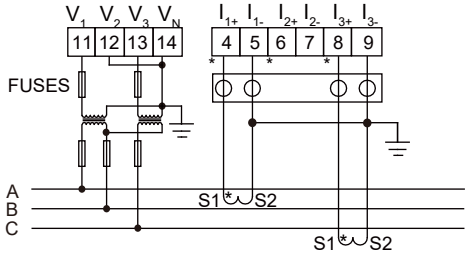
3P4W/3CT(Meter is set to 3P4W)



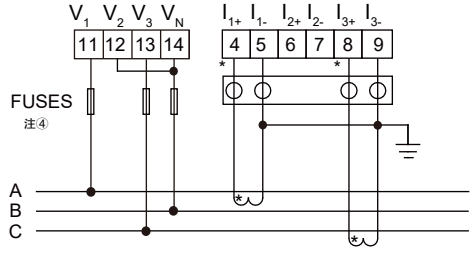
3P4W/3PT+3CT(Meter is set to 3P4W)



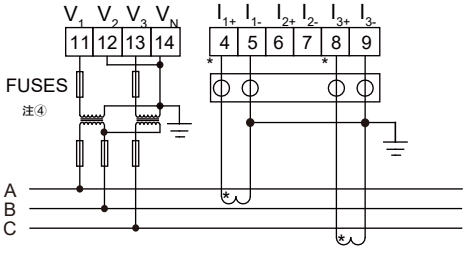
3P3W/3CT(Meter is set to 3P4W) Note②



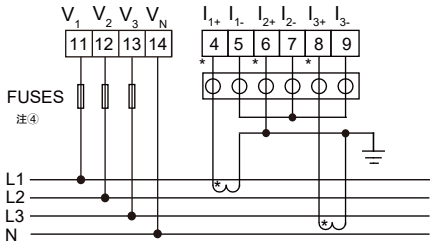
3P3W/2PT+3CT(Meter is set to 3P3W-3CT) Note③



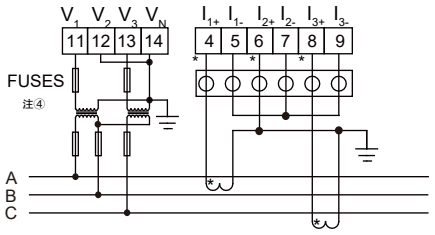
3P3W/2CT(Meter is set to 3P3W-2CT)



3P3W/2PT+2CT-1(Meter is set to 3P3W-2CT)



3P4W/2CT(Meter is set to 3P4W) Note②



3P3W/2PT+2CT-2(Meter is set to 3P3W-3CT) Note③

Note ①：○○○○○○ This is a test terminal for shorting the secondary side of the CT.

Note ②：Only for balanced three-phase loads.

Note ③：Phase B current is only displayed and does not participate in other calculations.

Module parts

Switch module

70	77	71	72	78	73	30	31	32	33	34	35	36	37	39
	R1			R2		DI1	DI2	DI3	DI4	DI5	DI6	DI7	DI8	COM4
Relay Output						Digital Input								

Analog input and output module

60	61	62	63	64	65	66	67	69	50	51	52	53	59
AI1	AI2	AI3	AI4	AI5	AI6	AI7	AI8	COM2	A01	A02	A03	A04	COM3
Analog Input						Analog Output							

Ethernet module

24	25	26
A2	B2	
RS485		

LAN

PROFIBUS DP

Operation and Display

■ Key function description

Key icon	Key name	Key function
SET	Menu	Return to previous menu
◀	Left	Decrease parameter or switch navigation interface
▶	Right	Increase parameter or switch navigation interface
↵	Enter	Modify and confirm the parameters or enter the next menu

■ Key function description

Measurement Parameters

The power parameter overview: After the meter is powered on, the current is displayed. Press the left and right keys to switch the display to the following interface (some parameters need to press the enter key to enter the next level):

