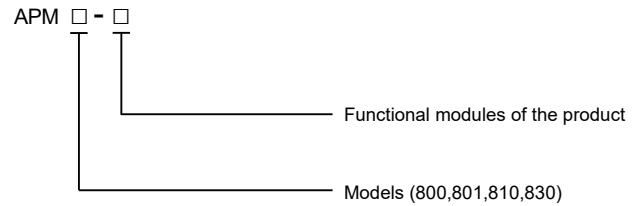


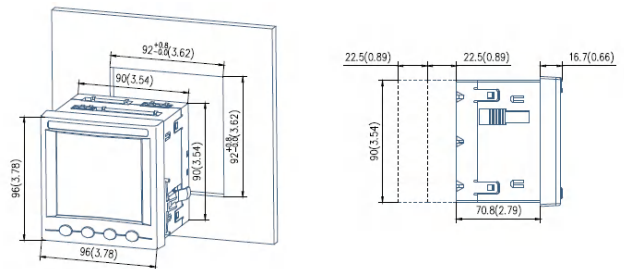
APM Series Multifunction Meter



Model Description



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

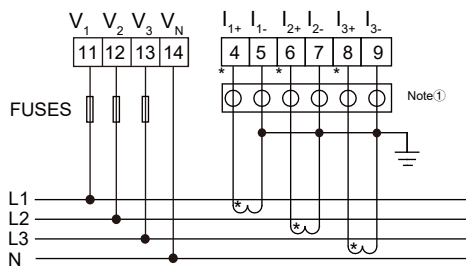
Technical Parameter

| 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) |

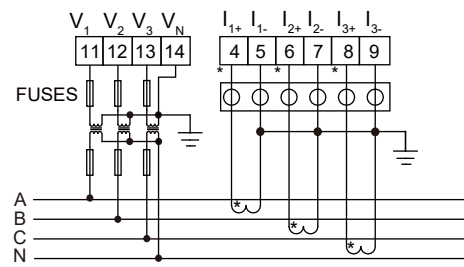
| Technical Parameter | Value |
|---------------------|--|
| Environment | Operating temperature: -20 °C ~ +65 °C |
| | Storage temperature: -20°C~+70°C |
| | Relative humidity: ≤95%(no condensation) |
| | Altitude: ≤2500m |

Wiring

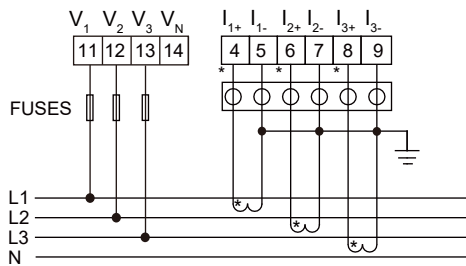
■ Wiring sample of voltage and current



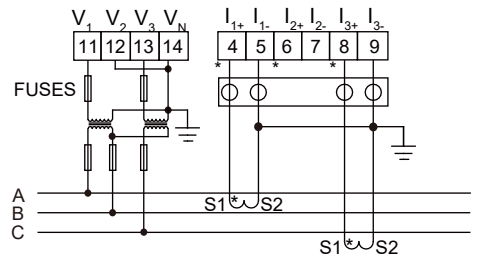
3P4W/3CT(Meter is set to 3P4W)



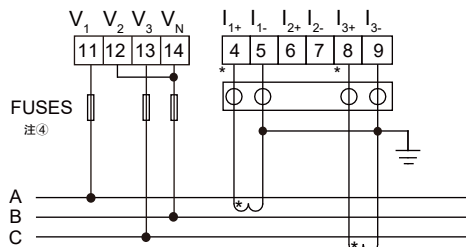
3P4W/3PT+3CT(Meter is set to 3P4W)



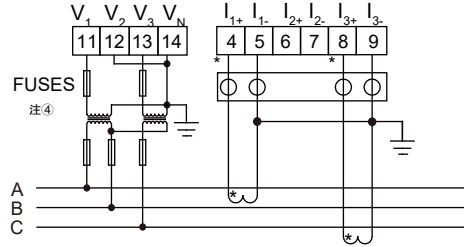
3P3W/3CT(Meter is set to 3P4W) Note 2



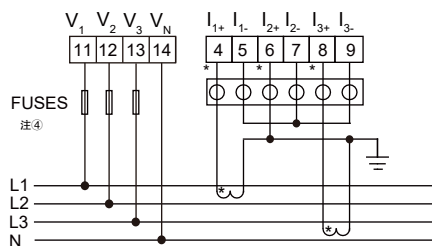
3P3W/2PT+3CT(Meter is set to 3P3W-3CT) Note 3



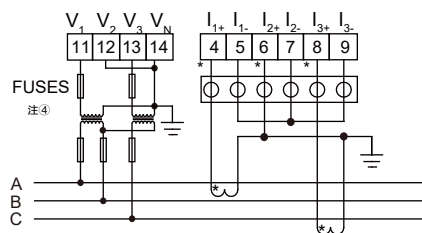
3P3W/2CT(Meter is set to 3P3W-2CT)



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



3P4W/2CT(Meter is set to 3P4W) Note②



3P3W/2PT+2CT(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 | | LAN | | PROFIBUS DP | |
| RS485 | | | | | | |

Operation and Display

■ Key function description

| Key icon | Key name | Key function |
|----------|----------|--|
| | 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):

