

APM SERIES MULTI-FUNCTION DIGITAL PANEL METER

DIGITAL PANEL METER



Introduction

The APM series advanced multifunction digital panel meter is designed for comprehensive monitoring and control of power distribution systems. It features four direct-access keys and a high-definition LCD display, providing clear visualization of all electrical parameters in 3P3W or 3P4W low-voltage systems.

The meter can be seamlessly integrated into intelligent power distribution or industrial automation systems as a data acquisition unit. It supports remote access to all monitoring data via a standard RS485 communication interface, enabling efficient system supervision and management.

Main Features

- High-precision measurement with accuracy class 0.1 / 0.2 / 0.5 (PMD compliant);
- Configurable current input: .../5 A or .../1 A;
- Wide-range auxiliary power supply: 90-240VAC/DC, with optional 20-60VDC;
- 1.6-inch dot-matrix LCD for clear parameter visualization;
- Backlit LCD display for enhanced visibility in low-light conditions;
- Configurable load alarm functions with time-stamped event recording;
- SOE (Sequence of Events) recording and virtual alarm functionality;
- ITF technology for input/output current isolation protection;
- Optional 128 MB onboard data logging memory;
- Expandable architecture with optional I/O modules and Ethernet interface;
- RS485 communication with Modbus RTU protocol;
- Advanced power quality analysis, including maximum demand, unbalance factor, crest factor, K-factor, etc.;
- 1 kHz waveform capture, enabling 1-second snapshot recording of voltage, current, and power disturbances (e.g., flicker, sag, and transient events) for detailed event analysis;

Measurement Function

| Model | APM-96Z | APM-96Y | APM-96J | APM-4MJ | APM-96Q |
|---------------------------------|---------|---------|---------|---------|---------|
| Parameters | | | | | |
| Basic parameters ⁽¹⁾ | ● | ● | ● | ● | ● |
| Split-phase measures | - | - | ● | ● | ● |
| Harmonic distortion | - | ● | ● | ● | ● |
| Individual harmonic | - | 2~31st | 2-63rd | 2-63rd | 2~127th |
| Time of use (TOU) | - | ● | ● | ● | ● |
| Max demand | - | ● | ● | ● | ● |
| SOE record | - | ● | ● | ● | ● |
| Curr./volt unbalance | - | ● | ● | ● | ● |
| Curr./volt deviation | - | ● | ● | ● | ● |
| Vsag/swell/ flicker/fluc. | - | - | - | - | ● |
| Waveform capture | - | - | - | - | ● |
| 128MB memory | - | - | - | - | ○ |
| I/O module | | | | | |
| AO (0/4~20mA;0~5V) | ○ | ○ | ○ | - | ○ |
| DI/DO | ○ | ○ | ○ | ○ | ○ |
| PO (Pulse output) | ○ | ○ | ○ | ○ | ○ |
| Communication | | | | | |
| RS485 | ● | ● | ● | ● | ● |
| RJ45/ Ethernet | ○ | ○ | ○ | - | ○ |
| Profibus | ○ | ○ | ○ | - | ○ |

●With this function ○Optional function -Without this function

⁽¹⁾ Basic parameters:Voltage,Current,Frequency,Total power factor,Active power, Reactive power,Apparent power,Active energy,Reactive energy.

Ordering Information



| Num. | Code | Description |
|------|-------|--|
| 1 | 96 | 96(W)x96(H)x71(D)mm |
| | 72 | 72(W)x72(H)x71(D)mm |
| | 80 | 80(W)x80(H)x71(D)mm |
| | XM | Module width |
| 2 | Z | Economic power meter |
| | Y | Multifunction power meter |
| | J | Smart power monitor |
| | Q | Intelligent power analyzer |
| 3 | Blank | Default: With RS485 interface, Modbus-RTU |
| | Eth | Ethernet interface, Modbus-TCP & Modbus-RTU |

Technical Characteristics

| Model | APM-96Z | APM-96Y | APM-96J | APM-4MJ | APM-96Q |
|--|---|---------|------------|------------------------|---|
| Working power | | | | | |
| Power supply | 90~240Vac/dc, ± 10 % | | | | |
| Consumption | ≤4VA | | | | |
| Current measurement (TRMS) | | | | | |
| CT secondary | 1 or 5 A | | | | |
| Measurement range | 0...11 KA | | | | |
| Input consumption | <0.4 VA | | | | |
| Voltage measurement (TRMS) | | | | | |
| Measurement range | 18...400 VAC | | | | |
| PT secondary | 100 VAC/400 VAC | | | | |
| Frequency | 50 / 60 Hz | | | | |
| Input consumption | <0.1 VA | | | | |
| Electrical power measurement (IEC 61557-12) | | | | | |
| Accuracy (A, V) | 0.5% | | 0.2% | | 0.1% |
| Accuracy (Power) | 0.5s% | | | | 0.2% |
| Energy accuracy (IEC 62053-23) | | | | | |
| Active energy | Class 1.0 | | Class 0.5s | | Class 0.2 |
| Reactive energy | Class 2.0 | | Class 1.0 | | Class 0.5 |
| Frequency measurement | | | | | |
| Measurement range | 45...65 Hz | | | | |
| Accuracy | ±0.02 Hz | | | | |
| I/O module | | | | | |
| Pulse output (PO) | 2* Pulse, 1600imp/kWh | | | 1* Pulse, 1600imp/kWh | 1* Pulse, 1600imp/kWh |
| Pulse constant | 5000imp/kWh, 20000imp/kVarh | | | | |
| Relay output (DO) | 5A@250Vac / 5A@30Vdc | | | | |
| Digital Input (DI) | Dry contact, Ri<500Ω turn on, Ri>100kΩ turn off | | | | |
| Analog output (AO) | 4~20mA, load <390Ω, or 0~10V, load >100KΩ | | | / | 4~20mA, load <390Ω, or 0~10V, load >100KΩ |
| Communication | | | | | |
| Interface | RS485 (2/3 wires half duplex) | | | | |
| Protocol | Modbus RTU | | | | |
| MODBUS speed | 4800/9600/19200 bauds | | | | |
| Others | | | | | |
| Calibration environment | 27°C ± 5°C | | | | |
| Operation environment | 0 to 50°C, RH < 70% | | | | |
| Storage environment | -10 to 60°C, RH < 70% | | | | |
| Dielectric strength (Voltage sampling) | 2 kV at 50Hz for 1 min | | | | |
| Dielectric strength(AUX terminal) | 2 kV at 50Hz for 1 min | | | 4 kV at 50Hz for 1 min | |