

ZY-DPM25

Multifunction Power Meter



Description

The ZY-DPM25 Multifunction Power Meter is specifically designed for industrial and commercial power distribution systems. It provides simultaneous measurement of three-phase voltage, current, frequency, power, power factor, and energy, enabling users to monitor power quality and load status effectively.

Featuring RS-485 (Modbus RTU) and Ethernet (Modbus TCP) interfaces, the device supports seamless integration with SCADA, BMS, and EMS platforms. This connectivity facilitates remote data collection, real-time alerts, and trend analysis, making it ideal for sub-metering, power auditing, and energy-saving retrofits.

For enhanced application flexibility, an optional WiFi HaLow module is available for wireless data transmission in challenging wiring environments. The meter is certified by CE and FCC, ensuring long-term stability and reliable performance in demanding professional settings.

Applications

- Main circuit monitoring and branch management for factory distribution boards
- Meter reading and billing for public facilities and sub-tenants in shopping malls
- Energy consumption sub-metering for floors, areas, and HVAC systems in commercial buildings
- Energy efficiency management for chillers and HVAC systems

Selection Table

ZY-DPM25

Current Input

Code	Current Input
A	1A/5A
V	0~333mV

Wireless Communication Options

Code	Communication Function
WHL	WiFi HaLow

Feature List

Measurement Items & Functions	
Voltage	Per-phase voltage, line voltage, and average voltage
Current	Per-phase current, neutral current, and average current
Active Power	4-quadrant / per-phase and total active power
Reactive Power	4-quadrant / per-phase and total reactive power
Apparent Power	Per-phase and total apparent power
Power Factor	Per-phase and average power factor
Frequency	Frequency
Active Energy	Import / export energy
Reactive Energy	Import / export energy
Apparent Energy	Total apparent energy
Voltage THD	Per-phase and average voltage THD
Current THD	Per-phase and average current THD
Individual Harmonics	2nd ~ 31st harmonics for per-phase voltage and current
Communication	RS-485 Modbus RTU 、 Ethernet Modbus TCP 、 WiFi HaLow
Pulse Output	Energy calibration pulse
Time Accumulation	Operating hours

Accuracy & Resolution

Measurement Parameter	Accuracy	Resolution
Voltage	0.2%	0.01V
Current	0.2%	0.001A
Neutral Current	1.0%	0.001A
Active Power	0.5%	0.1W
Reactive Power	0.5%	0.1Var
Apparent Power	0.5%	0.1VA
Power Factor	0.5%	0.001
Frequency	0.05%	0.01Hz
Active Energy	0.5%	0.001kWh
Reactive Energy	0.5%	0.001kVarh
Apparent Energy	0.5%	0.001kVAh
Total Harmonic Distortion (THD)	1.0%	0.1%
Individual Harmonic Distortion	1.0%	0.1%

Specifications

Input

Measurement Method	True RMS	
Sampling Speed	128 point/Cycle	
Display Update Time	0.5 s	
Wiring System	3P3W (2, 3CT), 3P4W (3CT); programmable via front panel buttons	
Input Range	Voltage: 20 ~ 400 VLN ; 35 ~ 600 VLL PT ratio setting range: 1 ~ 2,200	Current: 5 A / 1 A / 333 mV CT ratio setting range: 1 ~ 1,500
Max Current Overload	2x rated (continuous) ; 20x rated (1 s)	
Input Power Consumption	Voltage < 0.2 VA ; Current < 0.1 VA	

Power Quality

Total Harmonic Distortion (THD)	Total harmonic distortion percent for per-phase and average voltage and current
Individual Harmonic Distortion	2nd ~ 31st harmonic distortion percent for per-phase voltage and current

RS-485 Communication

Communication Protocol	Modbus RTU mode
Station ID	1~247
Baud Rate	2400/4800/9600/19200/38400/57600/115200 bps
Port Response Time	<50mS
Parity Check	None / Even / Odd
Data Bits	8 bits
Stop Bits	1 or 2
Wiring Distance	1200M max

Ethernet

Network Interface	10 / 100M BASE-TX, RJ45 connector
Communication Protocol	Modbus TCP
TCP Connections	3 sockets

Wi-Fi HaLow (IEEE 802.11ah)

Wi-Fi Standard	IEEE 802.11ah (US: 915 MHz/EU: 866 MHz/ JP: 920MHz)
Channel Bandwidth	1/2/4/8 MHz (Different by regions)
Date Rate	20 Mbps
Antenna Connector	1x SMA Jack

Pulse Output

Output Specifications	1 set of Open Collector (O.C.) output: 30 Vdc, 30 mA (max)
Calibration Pulse Output	3200 Pulse/1kWh,Duty cycle 50%

Specifications

■ Power Supply

Power Supply	AC 85~264V, 50/60Hz / DC 100~300V
Power Consumption	AC: ≤ 5VA @ 230V / DC: ≤ 2W

■ Operating Environment

Operating Temperature	0~70°C
Operating Humidity	5 ~ 95 %RH, non-condensing
Temperature Coefficient	≤100 PPM/°C
Storage Temperature	-20~80°C
Protection Rating	IP20
Operating Altitude (Max)	2,000 m above sea level

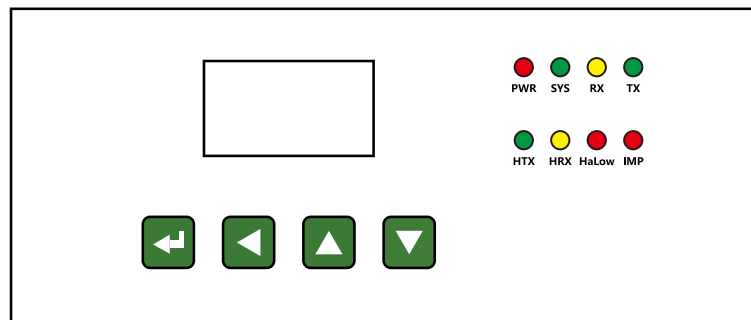
■ Mechanical Dimensions

Dimensions	87.5 (W) x 58.7 (H) x 107 (L) mm
Enclosure Material	Black ABS (flame-retardant)
Mounting	DIN rail mounting
Weight	210g
Terminal Block	PA 66 (UL 94V-0) ; AWG: 28 ~ 12 / 0.2 ~ 2.5 mm ² ; Screw torque: M2.5 / 5.202 kgf.cm (max)

■ Electrical Characteristics & Standards

Dielectric Strength	AC 2.5 kV, 50 / 60 Hz, 1 minute; between input, output, power supply, and enclosure	
Insulation Resistance	≥100MΩ @ 500Vdc	
EMC	EN IEC 61326-1:2021 EN 55011:2016/A2:2021 EN IEC 61000-3-2:2019+A1:2021 EN 61000-3-3:2013+A2:2021 IEC 61000-4-2:2008 IEC 61000-4-3:2020	IEC 61000-4-4:2012 IEC 61000-4-5:2014/A1:2017 IEC 61000-4-6:2013/COR1:2015 IEC 61000-4-8:2009 IEC 61000-4-11:2020/COR1:2020
Safety (LVD)	EN 61010-1:2010/A1:2019/AC:2019-04	
FCC	FCC 47 CFR part 15 subpart B Class A	

Panel Description



Display Window	128 x 64 dot matrix LCD with white backlight
Backlight Duration	Configurable from 0 ~ 60 minutes
LED Indicators	PWR: Power indicator SYS: System status indicator RX 、TX: RS-485 communication indicators HTX 、HRX: WiFi HaLow communication indicators HaLow: WiFi HaLow connection indicator IMP: Pulse output indicator

Dimensions

