

AVM3096

Smart Power and Energy Meter



REVENUE METERING

- IEC 62053-22 0.5S
- 0.2% Accuracy on Voltage and Current
- Four Quadrant Power and Energy

COST-EFFECTIVE

- High Performance, Low Cost
- LCD Display, White Backlight, Easy Reading

METERING

- Basic Measurement: U, I, P, Q, S and PF
- Demand: Present Demand for I, P, Q, S

MULTIPLE I/O FUNCTIONS

- 4 Digital Inputs
- 2 Relay Outputs

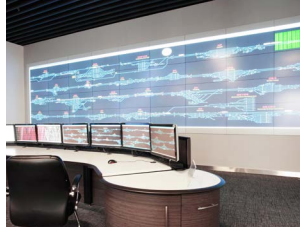


APPLICATIONS

Commercial Metering



Energy Management System



Power Quality Monitoring



Industrial Facility Metering



FEATURES

Metering

- Phase-to-Neutral Voltage, Line-to-Line Voltage, Current
- Active Power, Reactive Power, Apparent Power, Power Factor
- Load Nature
- Four Quadrant Power and Energy
- Demand

Power Quality

- Voltage Unbalance, Current Unbalance
- Crest Factor, K Factor, THFF
- THD and Individual Harmonics to 31st
- Voltage and Current Phase Angles

Energy

- Bi-Directional and Four Quadrant Total Energy
- Single-Phase Energy

Alarms

- Over or Under Setting Limit
- Power Measurement Parameters can be Set
- Alarm can Trigger the Relay Output, Screen Flashing

Communication

- RS485 Port
- Modbus RTU Protocol

Multiple I/O Functions

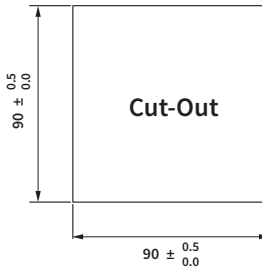
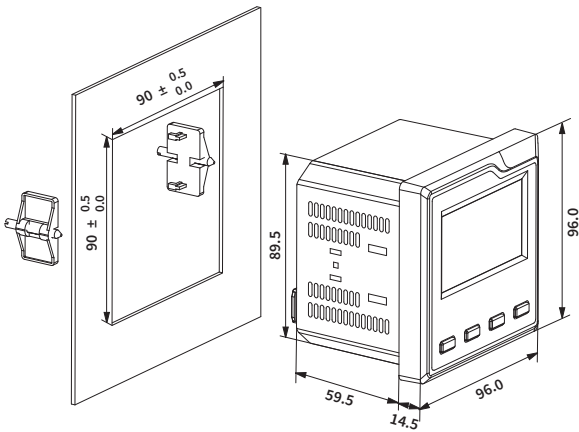
- Digital Input: 4 Channels, Monitor Switch Status or Pulse Count; SOE Record
- Relay Output: 2 Channels, Relay Command Control Output ON/OFF; Limit Alarm Control Output

Display

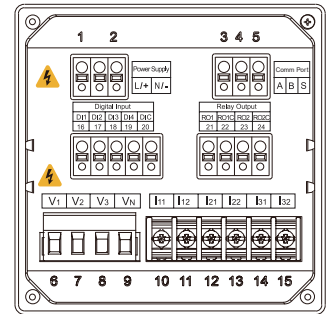
- LCD Display, White Backlight
- View Metering Parameters, Energy, Power Quality and Setting Value

DIMENSIONS

Unit: mm



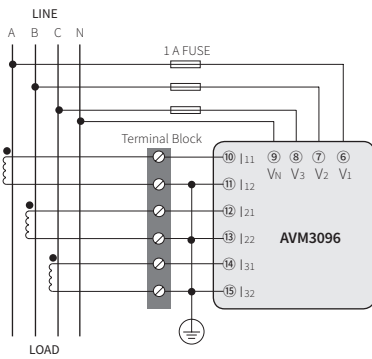
Cut Out



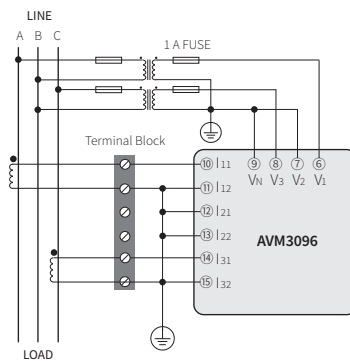
AVM3096-DIO

TYPICAL WIRING

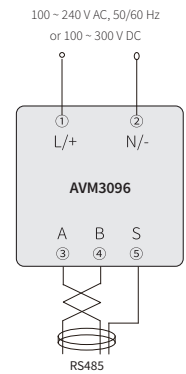
3LN, 3CT



2LL, 2CT

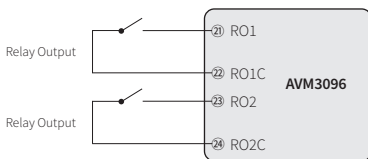


Power Supply+RS485

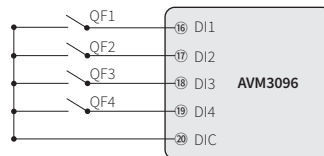


NOTE:
When the RS485 Interface of the station only has A and B, S needn't to connect.

Relay Output (RO)



Digital Input (DI)



SPECIFICATION

Parameters	Accuracy	Resolution	Range
Voltage	0.2%	0.1 V	10 V ~ 1000 kV
Current	0.2%	0.001 A	5 mA ~ 50000 A
Active Power	0.5%	1 W	-9999 ~ 9999 MW
Reactive Power	0.5%	1 var	-9999 ~ 9999 Mvar
Apparent Power	0.5%	1 VA	0 ~ 9999 MVA
Power Factor	0.5%	0.001	-1.000 ~ 1.000
Frequency	±0.05 Hz	0.01 Hz	45 ~ 65 Hz
Active Energy	0.5S	0.1 kWh	0 ~ 99999999.9 kWh
Reactive Energy	1.0S	0.1 kvarh	0 ~ 99999999.9 kvarh
Apparent Energy	0.5%	0.1 kVAh	0 ~ 99999999.9 kVAh
Harmonics	1.0%	0.01%	
Unbalance	2.0%	0.1%	0.0% ~ 100.0%
Phase Angle	1.0%	0.1°	0.0° ~ 359.9°
Running Time	-	0.01 h	0 ~ 9999999.99 h

Voltage Input	
Nominal Voltage	230 V AC L-N , 400 V AC L-L(+20%), CAT III
Accuracy	0.2%
Input Impedance	≥2 MΩ/Phase
Withstand	2 × Un Continuous, 2500 V AC, 50/60 Hz for 1 minute

Current Input	
Nominal Current	5 A/1 A
Accuracy	0.2%
Starting Current	5 mA
Burden	0.05 VA (Typical) @5 A
Withstand	2 × In Continuous, 100 A rms for 1 second, Non-Recurring

Energy Accuracy	
Active Energy	IEC 62053-22 Class 0.5S
Reactive Energy	IEC 62053-24 Class 1.0S

Digital Input (DI)	
Input Voltage Range	10 ~ 30 V DC
Input Type	Dry
Input Impedance	10 kΩ (Typical)
SOE Resolution	1 ms
Isolation Voltage	3500 V AC

ORDERING INFORMATION

Model	Option
AVM3096	- Blank: No Option
	- DIO: 4 Digital Inputs, 2 Relay Outputs
Ordering Example: AVM3096-DIO	

Relay Output (RO)	
Switching Voltage	250 V AC or 30 V DC
Switching Current	5 A (R), 2 A (L)
Set Time	10 ms (Max)
Contact Resistance	100 mΩ (Max)
Isolation Voltage	3500 V AC
Mechanical Life	2 × 10 ⁷

Operating Environment	
Operating Temperature	-25 ~ 70 °C
Storage Temperature	-40 ~ 85 °C
Relative Humidity	5% ~ 95% (Non-Condensing)

Power Supply	
Operating Range	100 ~ 240 V AC, 50/60 Hz 100 ~ 300 V DC
Power Consumption	3 W, 6 VA, Max

Communication	
Type	RS485
Communication Protocol	Modbus RTU
Baud Rate	2400 ~ 19200 bps

Standards Compliance	
Product Standard	
Product Standard	IEC 61557-12
Safety Standard	
Safety Standard	IEC 61010-1 ed.3; IEC 61010-2-30 ed.2; CAT III

Electromagnetic Compatibility	
Electrostatic Discharge Immunity	IEC 61000-4-2
Radiated Field Immunity	IEC 61000-4-3
Fast Transients Immunity	IEC 61000-4-4
Surge Immunity	IEC 61000-4-5
Conducted Disturbances Immunity	IEC 61000-4-6
Power Frequency Magnetic Field Immunity	IEC 61000-4-8
Radio-Frequency and Radio Disturbance	CISPR 11/CISPR 22; EN 55011/EN 55022

Revision Date: Apr., 2024 V1.02

