CM3-VA9 3-Phase Voltage/Current meter (4-digit)

■ DESCRIPTION

CM3-VA9 is a multifunctional 3-phase voltage/ current meter. With 3 phase voltage or current display at the same, configurable display range via front buttons, anti-inference design, reliable quality and easy to use and install, CM3-VA9 also has multiple I/O functions including 6relay outputs, 3 analogue output and a RS485 communication port running the Modbus RTU Protocol

■ FEATURE

- Measuring AC Voltage 0~19.99V/~600.0V, AC Current 0~1A/~5A
- Front buttons to configure display range and alarm mode
- Terminal implant design
- 96x96 panel size, installation depth only 78.2mm

■ APPLICATIONS

- **MCC panel, Machinery, Switch gear, Testing Equipment**
- **Motor control panel, mechanical equipment, voltage switch box**

■ ORDERING INFORMATION

CM3-VA- 9 - [AC | RANGE] - [Relay output] - [Analog Output] - [Communication output] - [Aux. Powered]

OPTION 1 / OPTION 2 / OPTION 3

CODE	VOLT INPUT
A	AC
V3	0 ~ 19.99 V
V6	0 ~ 600.0 V

CODE	CURRENT INPUT
A	AC measuring
A6	0 ~ 1.000 A
A7	0 ~ 5.000 A

CODE	Relay output
ON	None
OR3	3 Relay
OR6	6 Relay

CODE	Analog Output
AN	None
AI 1	1 set: (0)4~20mA
AV1	1 set: 0~10V /
AI 3	3 set: (0)4~20mA
AV3	3 set: 0~10V /

CODE	Communication output
UN	None
U8	RS485 (Modbus RTU)

CODE	Aux. Powered
ADH	AC 85~264V DC 100~300V

■ TECHNICAL SPECIFICATION

Input Range

Measuring Range AC		Input Impedance	Measuring Range AC		Input Impedance
Voltage	0~19.99 V	≥1M ohm	Current	0~1.000 A	0.02 ohm
	0~600.0 V	≥2M ohm		0~5.000 A	0.02 ohm

Input Frequency: 45 ~ 65Hz (RMS)

Calibration: Digital calibration by front key
A/D converter: 12 bits resolution
Accuracy: ≤± 0.2% of FS ± 1C
Sampling rate: 15 cycles/sec
Response time: ≤ 100 msec.(when the AvG = "1", nAvAG="1", dF it="1") in standard

Display & Functions

LED: 4 digits, 0.56"(14.2mm) ,high-brightness LED
Display range: -1999~9999
Scaling function: LoSC: Low Scale; Settable range -1999~9999
HiSC: High Scale; Settable range -1999~9999
Decimal point: Programmable from 0 / 0.0 / 0.00 / 0.000
Over range Indication:
Low cut: LoCUt: Settable range -1999~9999
Frequency display: In General Settings classes can view the frequency

Reading Stable Function

Average: AvG: Settable range: 1~99 times
Moving average: nAvG: Settable range: 1~20 times
Digital filter: dF iLt: Settable range: 1~99 times

Control Functions(option)

Relay: Maximum of 6 groups optional relay
6 set Form-A, 5A/120Vac, 5A/30Vdc
Relay energized mode:
Energized levels compare with set-points: OFF / Hi / Lo / Hi.HLd / Lo.HLd / do programmable
Energizing functions: Start delay / Energized & De-energized delay / Energized Latch
Start band(Minimum level for Energizing): 0~9999counts
Start delay time: 0:00.0~9(Minutes):59.9(Second)
Energized delay time: 0.00.0~9(Minutes):59.9(Second)
De-energized delay time: 0.00.0~9(Minutes):59.9(Second)
Hysteresis: 0~5000 counts

Analogue output(option)

Analogue output: Maximum of 3 analog outputs optional
Accuracy: **≤ ± 0.2% of F.S.; 12 bits DA converter**
Ripple: ≤± 0.1% of F.S.
Response time: ≤100 msec. (10~90% of input)
Isolation: AC 2.0 KV between input and power
Analog output no isolation
Output range: Specify either Voltage or Current output in ordering
Voltage: 0~5V / 0~10V / 1~5V programmable
Current: 0~10mA / 0~20mA / 4~20mA
Output capability: Voltage: **0~10V: ≥ 1000Ω;**
Current: **4(0)~20mA: ≤ 600Ω max**
Functions: [AoLS] (output range Low): Settable range
Settable range: -1999~9999
[AoHS] (output range high): Settable range:
Settable range: -1999~9999
Digital fine adjust: [AoPro] Settable range : -1999~1999
[AoSPn] Settable range : -1999~1999

RS 485 Communication(option)

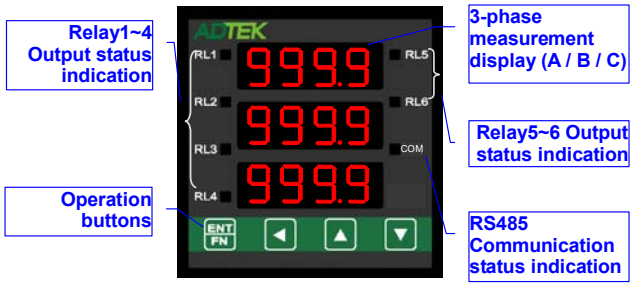
Protocol: Modbus RTU mode
Baud rate: 1200/2400/4800/9600/19200/38400 programmable
Data bits: 8 bits
Parity: **Data bits:** Even, odd or none (with 1 or 2 stop bit) programmable
Address: 1 ~ 255 programmable
Distance: 1200M max
Terminate resistor: 150Ω.

Power

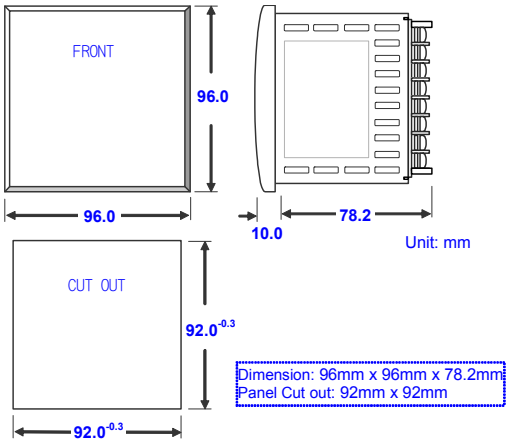
Power supply: AC 85~264V / DC 100~300V;
Power consumption: Display only: 6 VA(AC) , 3W(DC)
Plus 3 relay and 1 analog transmission output: 14VA(AC), 4W(DC)
Back up memory: EEPROM

Electrical Safety	
Dielectric strength:	AC 2.0 KV for 1 min, Between Power / Input / Output / Case
Insulation resistance:	≥100M ohm at 500Vdc, Between Power / Input / Output
Isolation:	Between Power / Input / Relay, Analogue or RS485
EMC:	EN 55011:2002; EN 61326:2003
Safety(LVD):	EN 61010-1:2001
Environmental	
Operating temp.:	0~60 ˚C
Operating humidity:	20~95 %RH, Non-condensing
Temp. coefficient:	≤ 100 PPM/˚C
Storage temp.:	-10~70 ˚C
Enclosure:	Front panel: IEC 549 (IP52); Housing: IP20
Vibration test:	1~800Hz, 3.175g2/Hz
Mechanical	
Dimensions:	96mm(W) x 96mm(H) x 78.2mm(D)
Panel cutout:	92mm(W) x 92mm(H)
Case material:	ABS fire-resistance (UL 94V-0)
Mounting:	Panel flush mounting
Terminal block:	Plastic NYLON 66 (UL 94V-0); 10A/300Vac, M2.6, 1.3mm²~2.0mm² (22~16AWG)
Weight:	Max. 345g
Maximum torque of terminal screws:	10kg-cm(MAX)

■ Front Panel

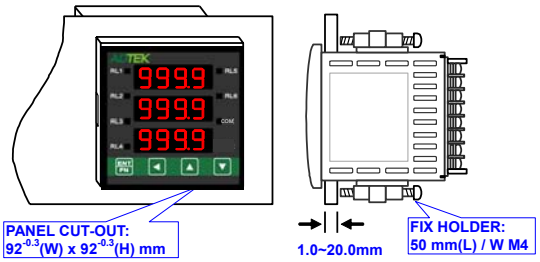


■ DIMENSIONS

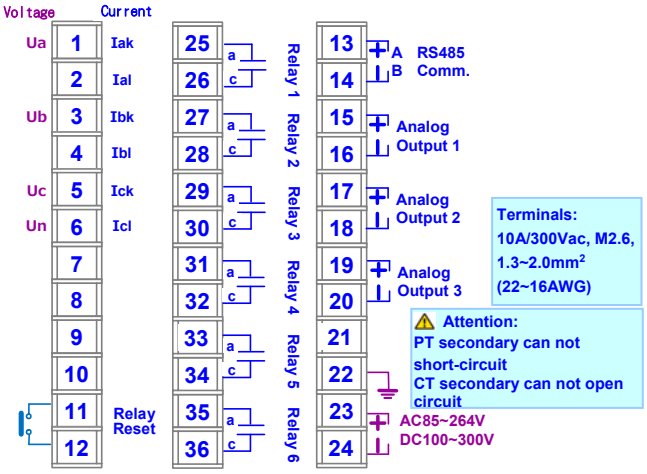


■ INSTALLATION

The meter should be installed in a location that does not exceed the maximum operating temperature and provides good air circulation.

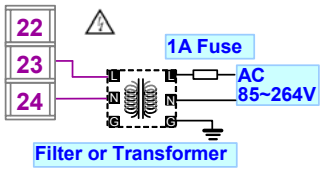


■ CONNECTION DIAGRAM

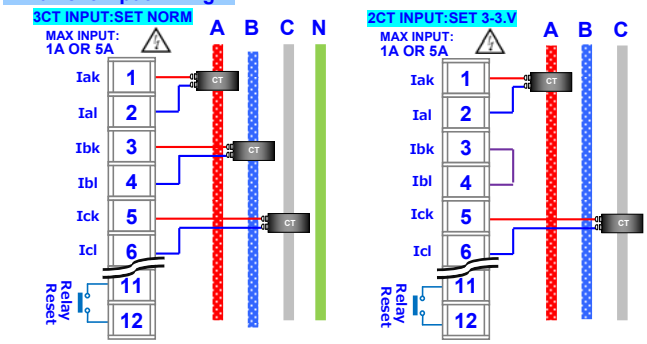


⚠Please check the voltage of power supplied first, and then connect to the specified terminals. It is recommended that power supplied to the meter be protected by a fuse or circuit breaker. Wiring subject to change, please follow the wiring diagram on the meter wiring。

Power Supply



Current input wiring



Voltage input wiring