

APM489-5 AC/DC Current Process Meter

■ DESCRIPTION

- 5 Digit Red LED high-brightness Display.
- Standard input 5A to 100A. Other ranges on request.
- Non-Intrusive AC/DC Current monitoring.
- 4 relays can be programmed individually to be Hi / Lo / Hi Latch / Lo Latch / Go energised with Start Delay / Hysteresis / Energised & De-energised Delay functions, or to be remote control.
- Analogue or RS485 Output available. (Modbus RTU Mode) interface with versatile functions such as control, alarm, re-transmission and communication for a wide range of industrial applications.
- 3 external control inputs can be programmed individually to be Relative PV (Tare) / PV Hold / Maximum or Minimum Hold / DI (remote monitoring) / Reset for Relay Energised Latch....
- Standard 115 / 230Vac supply (24Vdc supply option available).



■ TECHNICAL SPECIFICATION

Input

Current Input Range (AC/DC)

0 - 15A / 0 - 50A / 0 - 100A / 0 - 200A 50/60Hz ac

➤ Other intermediate ranges also available on request.

Calibration:	Digital calibration by front key
A/D converter:	16 bits resolution
Accuracy:	±0.04% of FS ± 1C;
Sampling rate:	15 cycles/sec
Response time:	≤100 msec.(when the AvG = "1") in standard
Input type:	5A to 100A
	Input range High and Low programmable
	Ai.Hi: Settable range: 0.00~100.00% of input range
	Ai.Lo: Settable range: 0.00~100.00% of input range

Display & Functions

LED:	Numeric: 5 digits, 0.8"(20.0mm)H red high-brightness LED
	Relay output indication: 4 square red LED
	RS 485 communication: 1 square orange LED
	E.C.I. function indication: 3 square green LED
	Max/Mini Hold indication: 2 square orange LED
	-19999~29999;

Display range:	Lo.SC: Low Scale; Settable range: -19999~+29999
Scaling function:	Hi.SC: High Scale; Settable range: -19999~+29999
	Programmable from 0 / 0.0 / 0.00 / 0.000 / 0.0000
Decimal point:	Selectable for differential pressure transducers
Square root function:	ovFL, when input is over 120% of input range Hi
Over range indication:	-ovFL, when input is under -20% of input range Lo
Under range indication:	Maximum and Minimum value storage during power on.
Max / Mini recording:	PV / Max(Mini) Hold / RS 485 Programmable
Display functions:	Up and down key can be set to be a function as ECI.
Front key functions:	Settable range: -19999~29999 counts
Low cut:	Pv.Zro: Settable range: -19999~+29999
Digital fine adjust:	Pv.SPn: Settable range: -19999~+29999

Reading Stable Function

Average:	Settable range: 1~99 times
Moving average:	Settable range: None / 1~10 times
Digital filter:	Settable range: None / 1~99 times

Control Functions(option)

Set-points:	Four set-points
Control relay:	Four relays Relay 2 & Relay 3: SPCO, 5A/230Vac, 10A/115V Relay 1 & Relay 4: SPST, 1A/230Vac, 3A/115V
Relay energised mode:	Energised levels compare with set-points: Hi / Lo / Go.12 / Go.23 / Hi.HLd / Lo.HLd; programmable DO function: Energised by RS485 command of master.
Energising functions:	Start delay / Energised & De-energised delay / Hysteresis / Energised Latch Start band (Minimum level for Energising): 0~9999counts Start delay time: 0:00.0~9(Minutes):59.9(Second) Energised delay time: 0:00.0~9(Minutes):59.9(Second) De-energised delay time: 0:00.0~9(Minutes):59.9(Second) Hysteresis: 0~5000 counts

External Control Inputs(ECI)

Input mode:	3 ECI points, Contact or open collect input, Level trigger
Functions:	Relative PV(Tare) / PV Hold / Reset for Max or Mini. Hold / DI / Reset for Relay Energised latch
Debouncing time:	Settable range 5 ~255 x (8m seconds)

Analogue output(option)

Accuracy:	±0.1% of F.S.; 16 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 output
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 programmable
Output capability:	Voltage: 0~10V: ≥ 1000Ω; Current: 4(0)~20mA: ≤ 600Ω max

Functions:

Ao.HS(output range high): Settable range: -19999~29999

Ao.LS(output range Low): Settable range: -19999~29999

Ao.LMt(output High Limit): 0.00~110.00% of output High

Ao.Zro: Settable range: -38011~+27524

Ao.SPn: Settable range: -38011~+27524

Digital fine adjust:

RS 485 Communication(option)

Protocol: Modbus RTU mode
Baud rate: 1200/2400/4800/9600/19200/38400 programmable
Data bits: 8 bits
Parity: Even, odd or none (with 1 or 2 stop bit) programmable
Address: 1 ~ 255 programmable
Remote display: to show the value from RS485 command of master
Distance: 1200M
Terminate resistor: 150Ω at last unit.

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 / RS485 / E.C.I.

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 (IP54); Housing: IP20

Mechanical

Dimensions: 96mm(W) x 48mm(H) x 120mm(D)

Panel cutout: 92mm(W) x 44mm(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, 1.3~2.0mm²(16~12AWG)

550g / 350g(Aux. Power Code: ADH or ADL)

Weight:

Power

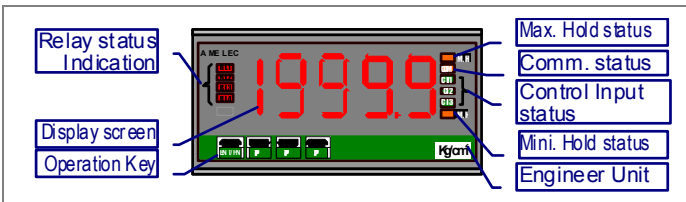
Power supply: AC115/230V,50/60Hz;
 Optional: AC/DC 85~264V or 20~90V(RoHS version)

Excitation supply: DC24V/30mA maximum in standard

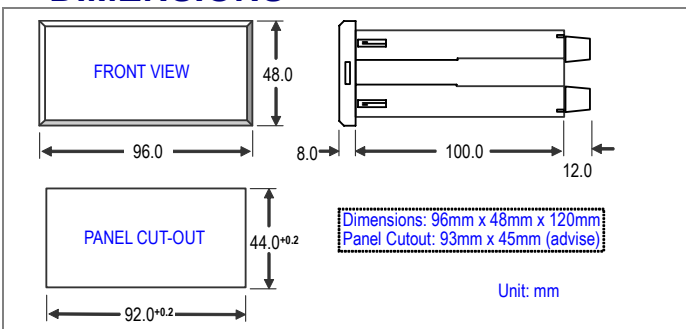
Power consumption: 5.0VA maximum

Back up memory: By EEPROM

FRONT PANEL

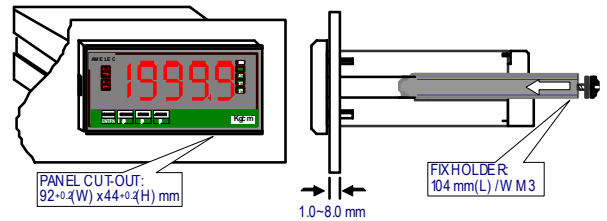


DIMENSIONS

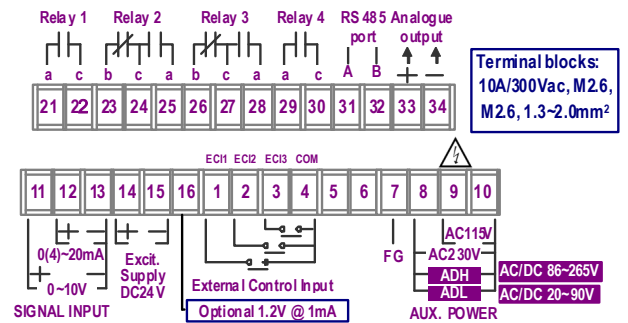


INSTALLATION

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

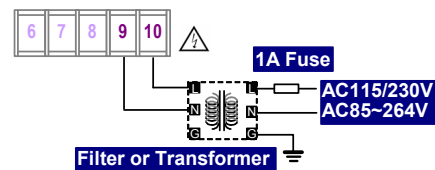


CONNECTION DIAGRAM



Please check the power supply voltage 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.

Power Supply



RS485 Communication Port High DC Current Input

