SHIMPO INSTRUMENTS

Measuring Quality

PM-RM True RMS Meters: AC Input

The Series PM-RM 1/8 DIN True RMS Meters, with Jumper-Selectable AC Signal Input Ranges are designed for process automation applications. The PM-RM Series is a versatile family of controls with a multitude of input and output selections. The PM's are fully scalable for customizing to the exact application requirements allowing the display to read in desired engineering units, ideal when using current and voltage signal transformers. Current input models can be set to one of 4 input ranges from 2.0000 mA with 0.1 μA resolution to 5.000 A with 1 mA resolution. The voltage input models may be set to one of 6 input ranges from 200.00 V with 10 μV resolution to 600.0 V with 0.1 V resolution. Universal AC or DC power options enable flexibility with usage in various power situations. The PM-RM's offer optional 8 A contact or 120 mA solid state relay outputs, plus an analog process signal output with 4 user-selectable current or voltage ranges. To provide a higher level of communication and integration into a system's network, several communication protocols such as RS-232, RS-485 and even USB options are available. These process meters possess exceptionally quick read rates to 60 conversions per second, while integrating the signal over a full power cycle. This fast read rate feature is ideal for peak or valley capture, on/off setpoint alarm or control applications.

The PM-RM True RMS Meters are ideal for AC loads found in applications like electrical motors which will only operate properly if the AC line voltage and frequency are within the motor's specified tolerances. If the thresholds specified by the motor manufacturer are exceeded, permanent damage to the motor as well as plant equipment could occur. Drops in line voltage or frequency may indicate an excessive load and the possibility of equipment malfunction. In these situations, the PM-RM meters are a simple means to monitor AC power lines and provide an alarm of non-compliance.

Features

- *Bright, red 5 digit LED display scalable to 99,999 with adjustable decimal point*
- *Universal power range of 85-264 V ac / 90-300 V dc or 10-48 V dc / 12-32 V ac power eliminates need to purchase country specific models*
- *Programmable scaling permits usage with current or voltage transformers*
- *Variety of output and communication options:*
  - *Choice of 2 relays or 2 solid state relays*
  - *Analog signal option provides: 4-20 mA, 0-20 mA, 0-10 V or -10 V to +10 V outputs*
  - *Serial data communication of either USB, RS485 or RS232*
- *Accuracy of ±0.1% of full scale ±2 counts (LSD)*
- *Digital filtering is menu-selectable for electrically noisy environments*
- *Peak and valley values are automatically captured and may be displayed via a pushbutton, control signal input, or be transmitted as serial data if a communication option was ordered*
- *High read rates at up to 60 or 50 conversions per second*
- *When panel mounted, NEMA 4X (IP65) front cover protection keeps fluids out; enables installation in environments exposed to wash-downs*

CALRIGHT INSTRUMENTS
The Right Source For Your Test & Measurement Needs
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PM-RM Specifications

Input Signal Ranges (Jumper Selectable)	RMA: 2.0000 mA, 20.000 mA, 200.00 mA, 5.000 A; RMV: 200.00 mV, 2.0000 V, 20.000 V, 200.00 V, 300.0 V, 600.0 V
Display Range	0 to 99999
Scaling Function	5 digits with decimal point adjustment
Accuracy @ 77°F (25°C)	±0.1% of FS ±2 Counts; 5 A Range ±10 mA; 300 V & 600 V = ±0.8 V
AC Range (True RMS Volts/Amps)	0.1% to 100% of Full Scale, 10 Hz to 10 kHz, crest factor 3.0
Display Update Time	3.5/s at 60 Hz, 3/s at 50 Hz
Relay Output (Optional)	Mechanical Relays: 8 A @ 250 V ac or 24 V dc; SSR: 120 mA @ 140 V ac or 180 V dc
Analog Signal Output (Optional)	Jumper Selectable: 4-20 mA, 0-20 mA, 0-10 V, -10 V to 10 V
Communication: (Optional)	RS-232, RS-485, USB
Power Requirement	85-264 V ac / 95-300 V dc; Optional 10-48 V dc / 12-34 V ac
Ambient Temperature	32-131°F (0-55°C)
Dimensions	1.89 x 3.78 x 4 in. (48 x 96 x 102 mm) 1/8 DIN. Panel Cutout: 1.77 x 3.62 in. (45 x 92 mm); Max. Panel Thickness: 0.18" (4.5 mm)
Product Weight	7.4 oz (210 g)
Package Weight	15.9 oz (450 g)
Approvals	CE & RoHS
Warranty	1 year

AC Current

AC Current Range	AC Current to Overrange Flash	Resolution	Input Resistance
2.0000 mA	2.6400 mA	0.1 µA	100 Ω
20.000 mA	26.400 mA	1.0 µA	10 Ω
200.00 mA	264.00 mA	10 µA	1 Ω
5.000 A	5.4 A	1 mA	0.01 Ω

AC Voltage

AC Voltage FS Range	AC Current to Overrange Flash	Resolution	Input Resistance
200.00 mV	264.00 mV	10 µV	22 MΩ
2.000 V	2.640 V	100 µV	1 MΩ
20.000 V	26.400 V	1 mV	1 MΩ
200.00 V	264.00 V	10 mV	1 MΩ
600.0 V	650 V	0.1 V	1 MΩ
300.0 V	650 V	0.1 V	1 MΩ

Ordering Details

Series	Signal Input (Jumper Select)	Input Power	Relay Output	Analog Output	Comm.
PM	**-RMX**	**-X**	**X**	**X**	**CX**
	-RMA: 2.0000 mA 20.000 mA 200.00 mA 5.000 A **-RMV:** 200.00 mV 2.0000 V 20.000 V 600.0 V	**0** =85 - 264 V ac or 95 - 300 V dc **1** =12 - 34 V ac or 10 - 48 V dc	**R** = Relay Output Two 8 A Form C contact relays **S** = SSR Output Two 120 mA solid state relays **0** = No Output	**A** = 4-20 mA, 0-20 mA 0-10 V, -10 to +10 V **0** = No Output	**C1** = RS-232 **C2** = RS-485 **C5** = USB **C0** = No Comm. Output

Ex: PM-RMA-0RAC1: AC Amp input with jumper selectable range, standard high voltage power, relay contact outputs, analog output and RS-232 communication.

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