

RM4-AV Process Unit DIN Rail Mounted

True RMS measurement from
AC volts input

Functions as:

Display/Alarm/Controller/

Transmitter/PLC & Computer Interface



Description

Model RM4-AV is a DIN rail mounted process unit which can function as an indicator/alarm/controller/transmitter/computer interface.

The RM4-AV accepts an AC volts signal input. Measurement is in true RMS and the display can be scaled as required.

Ranges are 0 to 1.5V, 0 to 15V, 0 to 150V and 0 to 300V. A special "DC" link setting allows DC components in the AC waveform to be taken into account or ignored when calculating the displayed value. All function settings and calibration scaling is carried out via the instruments pushbuttons.

One alarm relay is provided as standard with programmable trip time and reset time delay functions. The trip time delay is particularly useful in AC voltage measurement to ensure that short term voltage surges do not trip the alarm relays. Combinations of optional outputs including extra relays, analog retransmission or serial communications (ASCII or Modbus RTU protocol) can also be provided.

The RM4 has a programmable display brightness function, this allows the unit to be operated with low display brightness to reduce the instrument power consumption and to improve readability in darker areas. To reduce power consumption in normal use the display can be programmed to automatically dim or blank after a set time. The display brightness will be restored if an alarm relay is activated or any of the front buttons is pushed.

The programmable eight level digital filter improves stability by smoothing out short term interference using weighted averaging of the input sample. An external input is configurable to perform one of various functions e.g. Two level brightness switching, peak hold, display hold, max/min memory, setpoint only access or security lockout.

Electrical isolation between power supply, input signal and retransmission eliminates grounding and common mode voltage problems. This isolation feature makes the RM4 ideal for interfacing to PLCs, computers and other data acquisition equipment.

Features

- Measures in true RMS, ranges 0 to 1.5, 0 to 15, 0 to 150 or 0 to 300VAC
- Pushbutton calibration and setup
- 5 digit LED display and relay/alarm status indication
- Programmable **P** button e.g. max/min display
- Isolation between input signal, output and supply
- Powered by 240V, 110V, 48V, 42V, 32V, 24V AC, 12 to 48V DC or 50 to 110V DC (factory configured)
- Digital filter, improves stability
- One alarm/control relay output (5A) standard
- Programmable display brightness reduces power consumption and controls glare in low brightness areas
- Auto dim feature conserves power
- Rugged aluminium DIN rail mount housing
- Remote input to perform special functions e.g. zero, brightness switching, peak hold, display hold, max/min, setpoint only access or security lockout
- 2 year guarantee

Options

- Isolated analog output single or two independent outputs 4-20mA, 0-1V or 0-10V
- Additional relays
- Isolated RS232, RS422 or RS485 serial comms. with choice of ASCII or Modbus RTU protocol.
- Combined analog 4-20mA and RS485 serial outputs

SPECIFICATIONS

Specifications are subject to change without notice

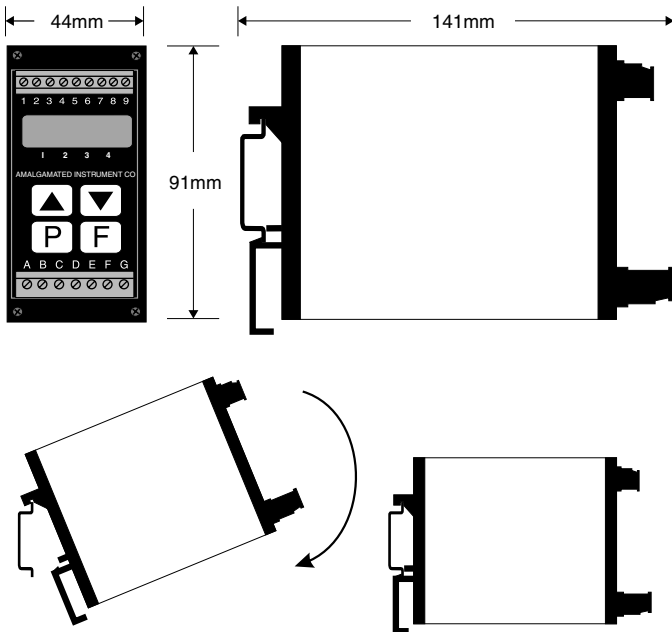
TECHNICAL SPECIFICATIONS

Input: AC Volts 0-1.5, 0-15, 0-150 or 0-300V RMS
Impedance: > 2MΩ
ADC Resolution: 1 in 20,000
Accuracy: 0.5% when calibrated
Isolation: Between input & power supply or output 2kV DC for 30 seconds

Sample Rate: 7.5 per sec.
Conversion: Dual Slope ADC
Microprocessor: MC68HC11 HCMOS
Ambient Temp: -10 to 60°C
Humidity: 5 to 95% non condensing

Display: LED 5 digit 7.6mm + alarm annunciator LEDs
Power Supply: 240V, 110V, 48V, 42V, 32V, 24VAC
 12 to 48V DC or 50 to 110V DC (factory configured)
Power Consumption: AC supply 6VA max, DC supply, less than 6W (depends on load & options)
Output (standard): 1 x relay, form A rated 5A resistive 240VAC
Relay Action: Programmable N.O. or N.C.

DIMENSIONS AND INSTALLATION DETAILS



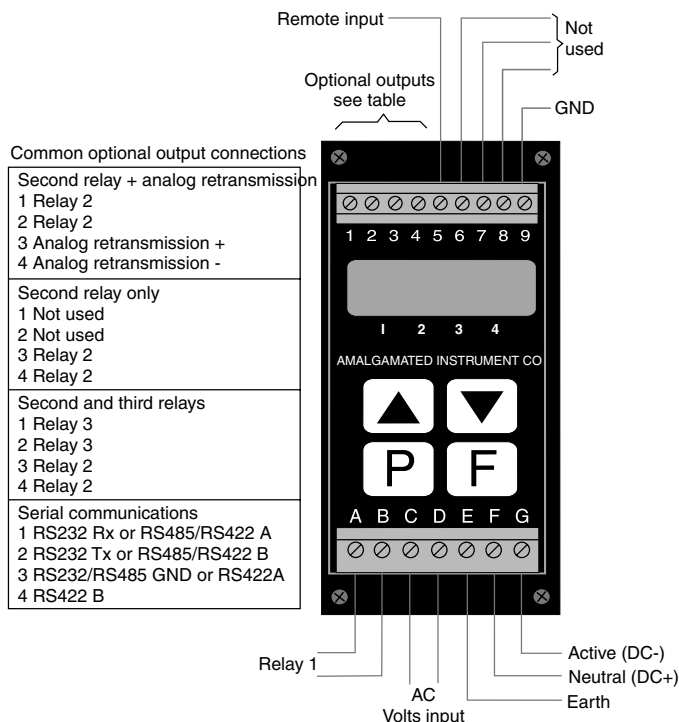
OUTPUT OPTIONS (see order code for valid combinations)

Second relay: Rated 0.5A resistive at 30VAC or DC, form A. If no other options are fitted the third relay can be factory configured as form C
Third relay: Rated 0.5A resistive at 30VAC or DC, form A
Switched voltage: 24VDC output (common to remote input ground but isolated from input and supply) to be used for open collector or solid state relay driver
Analog retransmission: Isolated 4-20mA. 0-1V or 0-10V link selectable (12 bit). Single or dual output versions
Serial communications: Isolated RS232, RS485 or RS422 (factory configured)

PHYSICAL CHARACTERISTICS

Case size: 44mm x 91mm x 141mm
Connections: Plug in screw terminals. Max 2.5mm² wire (input, relays and supply), 1.5mm² wire for options
Weight: 500 gms basic model, 550 gms with option card

ELECTRICAL CONNECTIONS



ORDER CODE

RM4-AV- [] [] [] [] - 5 E - [] [] [] []

POWER SUPPLY

RM4-AV- [] [] [] [] - 5 E [] [] [] []
 240 VAC [2] [4] [0]
 110 VAC [1] [1] [0]
 48 VAC [4] [8]
 42 VAC [4] [2]
 32 VAC [3] [2]
 24 VAC [2] [4]
 12 to 48 VDC [D] [C]
 50 to 110 VDC [D] [C] [H]

DISPLAY TYPE (ALL MODELS ARE TYPE 5E)

RM4-AV- [] [] [] [] - 5 E - [] [] [] []
 5 DIGIT LED + KEYPAD + STATUS LEDs [5] [E]

OUTPUT OPTIONS

SECOND RELAY (FORM A) [R]
 SECOND AND THIRD RELAY [R] [R]
 THIRD AND FOURTH SETPOINTS 24VDC [S] [S]
 ANALOG RETRANSMISSION (12 BIT) [A]
 DUAL ANALOG RETRANSMISSION (12 BIT) [A] [A]
 ANALOG RETRANSMISSION (12 BIT)
 PLUS SECOND RELAY [A] [R]
 RS232 COMMUNICATIONS - ISOLATED [2] [3] [2]
 RS422 COMMUNICATIONS - ISOLATED [4] [2] [2]
 RS485 COMMUNICATIONS - ISOLATED [4] [8] [5]
 ANALOG RETRANSMISSION (12 BIT)
 PLUS RS485 COMMUNICATIONS [A] [4] [8] [5]