

# DIN Rail Mount Indicators

## RM4-IVH High Speed/High Accuracy Analog Input Monitor

### Description

Model RM4-IVH is a DIN rail mounted process unit which can function as an indicator/ alarm/ controller/ transmitter/ computer interface. The RM4-IVH accepts its input from  $\pm 20\text{mA}$ ,  $4\text{-}20\text{mA}$ ,  $\pm 2\text{VDC}$  or  $\pm 20\text{VDC}$ . The RM4-IVH is designed as a high speed, high accuracy monitor for analog input with sample rates up to 100 samples/second. All function settings and calibration scaling is carried out via the instrument's pushbuttons.

Two alarm relays and an unregulated 24VDC transmitter supply are provided as standard. Combinations of optional outputs including extra relays, analog retransmission or serial communications (ASCII or Modbus RTU protocol) can also be provided.

An external input is configurable to perform one of various functions e.g. two level brightness switching, peak hold, display hold, max/min memory, scale switching, setpoint only access, security lockout, pushbutton tare and zero. A "zero limit" can be set on the zero operation to help ensure that the instrument is not inadvertently zeroed. Two separate calibration memories are provided allowing simple remote input switching of scaling values. This allows a single input to be switched between two different scale values e.g. "% & "metres". Alternatively if a different sensor is connected then the second calibration memory can be selected for this sensor via the remote input.

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. The programmable digital filter improves stability by smoothing out short term interference.

An auto dimming timer will dim the display to conserve power. The display returns to its bright level when a pushbutton is pressed or an alarm condition occurs.

Electrical isolation between power supply, input signals 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

- Pushbutton calibration and setup
- 5 digit LED display and relay/ alarm status indication
- Programmable **P** button function e.g. max/min display, zero or tare
- Isolation between input, output and supply
- Powered by 240V, 110V, 48V, 42V, 32V, 24VAC, or 12 to 48V DC (factory configured)
- 24VDC unregulated transmitter supply
- Thermal fuse protection for mA inputs
- Digital filter for improved stability
- Two alarm/control relay outputs (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, tare/gross/net, peak hold, display hold, max/min, scale switching or security lock out
- 2 year guarantee

### Options

- Isolated 12 bit analog output (configurable as retransmission or PI control) Single or two independent outputs 4-20mA, 0-1V or 0-10V (link selectable)
- 16 bit analog retransmission + 3rd setpoint relay
- Isolated & regulated 12VDC @ 50mA or 24VDC @ 25mA (link selectable)
- Isolated RS232, RS422 or RS485 serial comms. with a choice of ASCII or Modbus RTU protocol
- Combined analog 4-20mA and RS485 serial outputs



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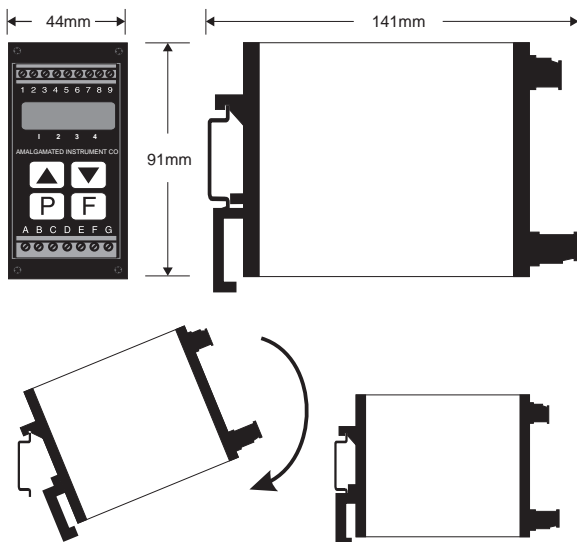
# Specifications

## Technical Specifications

- Input types: Link selectable  $\pm 20\text{mA}$ , 4-20mA,  $\pm 2\text{VDC}$ ,  $\pm 20\text{VDC}$
- ADC resolution: Up to 22 bits depending on sample rate
- Accuracy: 0.01% to 0.05% of full scale (alarms & display) dependant on sample rate  
Serial comms  $\pm 1$  display digit accuracy
- Sample Rate: 5 to 100 samples per second selectable
- Conversion: Sigma Delta
- Microprocessor: MC68HC11 CMOS
- Ambient temp:  $-10^\circ\text{C}$  to  $60^\circ\text{C}$
- Humidity: 5% to 95% non condensing
- Display: LED 5 digit 7.6mm and alarm annunciator LEDs
- Power supply: 240V, 110V, 48V, 42V, 32V, 24VAC  
50/60Hz,  
or 12 to 48VDC (factory configured)
- Power usage: AC supply 4 VA max,  
DC supply,  $<6\text{W}$  (depends on load & options)
- Output (standard): 2 x relays, form A  
Rated 5A resistive 240VAC  
24VDC unregulated transmitter supply  
**25mA max**
- Relay action: Programmable N.O. or N.C.
- Output Options**
- Third relay : Rated 0.5A resistive at 30VAC or DC, form C if no other options fitted (otherwise form A)
- Fourth relay: Rated 0.5A resistive at 30VAC or DC, form A
- Retransmission: Analog 4 to 20mA, 0 to 1V or 0 to 10V link selectable  
(single or dual channel versions)  
16 bit single channel available  
Serial RS232 or RS485, choice of ASCII or Modbus RTU protocols  
(factory configured)
- DC voltage out: Isolated 24V at 25mA or 12VDC at 50mA (link selectable)

## Physical Characteristics

- Case size: 44mm x 91mm x 141mm
- Connections: Plug in screw terminals  
2.5mm<sup>2</sup> wire)
- Weight: 500g basic model,  
550g with option card



# RM4-IVH Order Codes

**RM4-IVH** -  -  -

## Power Supplies

**RM4-IVH** -  -  -

240VAC .....	240
110VAC .....	110
48VAC .....	48
42VAC .....	42
32VAC .....	32
24VAC .....	24
12 to 48VDC .....	DC

## Display Type

**RM4-IVH** -  - 5E -

## Options

**RM4-IVH** -  -  -

ANALOG (4-20mA, 0-1V or 0-10V selectable) .....	A
DUAL ANALOG (4-20mA, 0-1V or 0-10V selectable) .....	AA
RS232 .....	232
RS485 .....	485
RS422 .....	422
DC VOLTAGE OUTPUT 24V ( $\pm 12\text{V}$ ) .....	E
THIRD RELAY .....	R
THIRD & FOURTH RELAYS .....	RR
ANALOG (16 BIT) PLUS 3RD RELAY .....	AHR
3RD RELAY PLUS 24V ( $\pm 12\text{VDC}$ ) OUTPUT .....	RE
3RD RELAY PLUS ANALOG (12 BIT) .....	AR
ANALOG (12 BIT) PLUS 24V ( $\pm 12\text{VDC}$ ) OUTPUT .....	AE
ANALOG (12 BIT) PLUS RS485 .....	A485

## Common optional output connections

<b>Third relay + analog retransmission</b>
1 Relay 3
2 Relay 3
3 Analog retransmission +
4 Analog retransmission -
<b>Transmitter supply + analog retransmission</b>
1 Transmitter supply 12/24VDC +
2 Transmitter supply GND
3 Analog retransmission +
4 Analog retransmission -
<b>Third relay only (Form C)</b>
1 Not used
2 Relay 3 N/C
3 Relay 3 N/O
4 Relay 3 COM
<b>Third and fourth relays</b>
1 Relay 4
2 Relay 4
3 Relay 3
4 Relay 3
<b>Serial communications</b>
1 RS232 Rx or RS485/RS422 A
2 RS232 Tx or RS485/RS422 B
3 RS232/RS485 GND or RS422A
4 RS422 B

