

# DIN Rail Mount Indicators

## RM4-CO Conductivity and temperature sensor inputs

### Description

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

Flexible calibration and programming functions allow easy setup and calibration. All function settings and calibration scaling are carried out via the instruments pushbuttons.

Cell constants are programmable, allowing the instrument to be used with a wide range of cells.

The display may be programmed to indicate conductivity in  $\mu\text{S}/\text{cm}$ ,  $\mu\text{S}/\text{m}$ ,  $\text{mS}/\text{cm}$ ,  $\text{mS}/\text{m}$ , resistivity in  $\text{M}\Omega$  or ppm. For ppm measurement a known conductivity to ppm conversion factor for the solution must be entered.

A temperature sensor input is provided for automatic temperature compensation. The temperature may also be viewed on the display (display toggle is via the front  or  pushbuttons).

Two alarm relays are provided as standard. Each alarm can be configured to operate from the main measurement (conductivity, resistivity or ppm) or temperature when a temperature sensor is used.

Combinations of optional outputs including extra relays, analog retransmission (including dual analog to allow temperature retransmission in addition to the main reading) or serial communications (ASCII or Modbus RTU protocol) can also be provided. The optional analog output can be configured for retransmission or PI control. The RM4-CO has a programmable display brightness function. To reduce power consumption in normal use the display can be programmed to automatically dim or blank after a set time.

A hydrogen ion compensation function is provided to allow accurate measurement of low conductivity, high resistance solutions such as ultra pure water and boiler water.

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



### Features

- Conductivity, Resistivity or ppm display
- Pushbutton calibration and setup
- 5 digit LED display and relay/ alarm status indication
- Programmable **P** button for max/min display toggle
- Isolation between input signal, output and supply
- Powered by 240V, 110V, 48V, 42V, 32V, 24VAC, or 12 to 48VDC (factory configured)
- Digital filter, improves 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
- 2 year guarantee

### Options

- Isolated analog output single or two independent outputs 4-20mA, 0-1V or 0-10V
- 16 bit analog retransmission + 3rd setpoint relay
- Additional relays in combination with analog or transmitter supply outputs
- Isolated & regulated 12VDC @ 50mA or 24VDC @ 25mA (link selectable)
- Isolated RS232, RS422 or RS485 serial comms. with choice of ASCII or Modbus RTU protocol
- Combined analog 4-20mA and RS485 serial outputs



RM4CO-3.2-0

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# Specifications

## Technical Specifications

Input types: Conductivity cell (K=0.01, 0.05, 0.1, 1.0, 2, 5, 10, 20, 50 or 100 selectable)

Temperature input: Pt100, Pt1000, LM335 or UUB25J1 thermistor or manual compensation

Measuring Range: 0.00 to full display range,  $\mu\text{S}/\text{cm}$ ,  $\mu\text{S}/\text{m}$ ,  $\text{mS}/\text{cm}$ ,  $\text{mS}/\text{m}$  or ppm or

Accuracy: 1% of full scale

Sample rate: 1 sample per second

A/D converter: 20,000 count Dual Slope integrating

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 6 VA max, DC supply, <6W (depends on load & options)

Output (standard): 2 x relays, form A Rated 5A resistive 240VAC

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, RS485 or RS422 choice of ASCII or Modbus RTU protocols (factory configured)

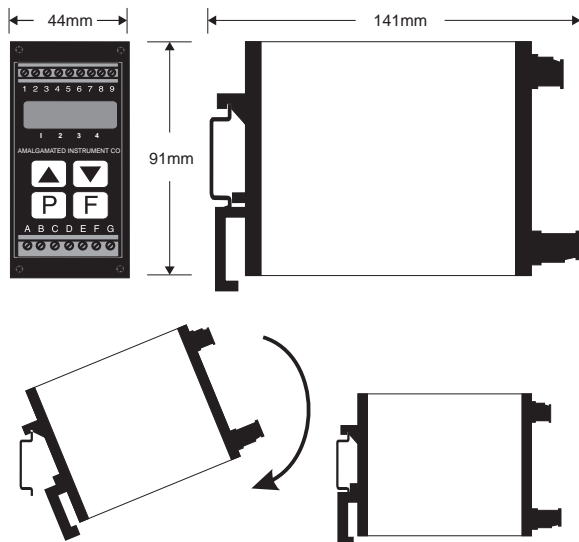
DC voltage out: Isolated 24V at 25mA or 12VDC at 50mA (link selectable)

## 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-CO Order Codes

**RM4-CO** - [ ] - [ ] - [ ]

## Power Supplies

**RM4-CO** - [XXX] - [ ] - [ ]

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

## Display Type

**RM4-CO** - [ ] - [5E] - [ ]

## Options

**RM4-CO** - [ ] - [ ] - [XXX]

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

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

