

RM4-FX Ratemeter

Process Unit. DIN Rail Mounted

Accepts pulse input from encoder, proximity sensor, NPN, PNP, contact closure, etc.

Functions as:
**Display/Alarm/Controller/
Transmitter/PLC &
Computer Interface**

Description

Model RM4-FX is a DIN rail mounted process unit which can function as an indicator/alarm/controller/transmitter/computer interface. The instrument can function as a frequency meter/ratemeter/tacho.

The RM4-FX accepts its input from a wide variety of pulse sources such as proximity sensors, encoders, flowmeters etc. All function settings and scaling is carried out via the instruments pushbuttons.

Applications include flow rate e.g. litres/hr, RPM, bottles/min, wind speed, etc.

Two alarm relays and a transmitter supply (link selectable 5V or 24VDC unregulated) are provided as standard. Combinations of optional outputs including extra relays, analog retransmission or serial communications 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 digital filter improves stability by smoothing out short term interference. 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 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.

A combined ratemeter/totaliser version of this instrument is also available, model RM4-TR. See separate brochure for details.



Features

- Pushbutton calibration and setup
- Accepts a wide range of input sensor types
- Easy scaling - no test gear needed
- 240V, 110V, 48V, 42V, 32V, 24V AC, 12 to 48V DC or 50 to 110V DC (supply type is factory configured)
- Digital filter, improves stability
- Two alarm/control relay outputs (5A)
- Inbuilt transmitter supply 5V or 24VDC (unregulated, common ground)
- Remote inputs for reset and to perform special functions e.g. display hold, peak hold, high memory, low memory, brightness level switching, setpoint only access or full security lockout of functions
- 5 digit LED display and relay/alarm status LEDs
- Isolation between input signal, output and supply
- 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
- 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.
- Combined analog 4-20mA and RS485 serial outputs

SPECIFICATIONS

Specifications are subject to change without notice

TECHNICAL SPECIFICATIONS

Input Types: Selectable types inc: NPN, PNP, switch contact, magnetic pickup output from TTL or CMOS etc. (input signals min 100mV, max 48VDC or RMS)

Impedance: 10kΩ

Max. Input Rate: 100kHz

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 operation (factory configured)

Power Consumption: AC supply 6 VA max,
DC supply less than 6W (depends on load & options)

Output (standard): 2 x relays, form A rated 5A resistive 240VAC
5V or 24V unregulated transmitter supply (common gnd) **25mA max**
Programmable N.O. or N.C.

Relay Action:

OUTPUT OPTIONS (see order code for valid combinations)

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

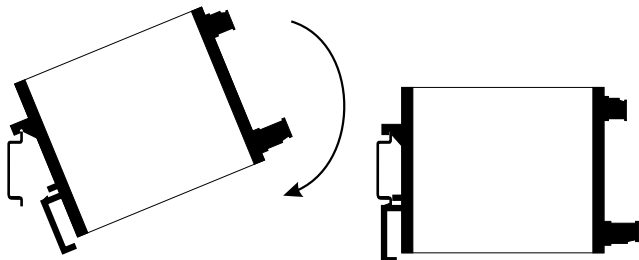
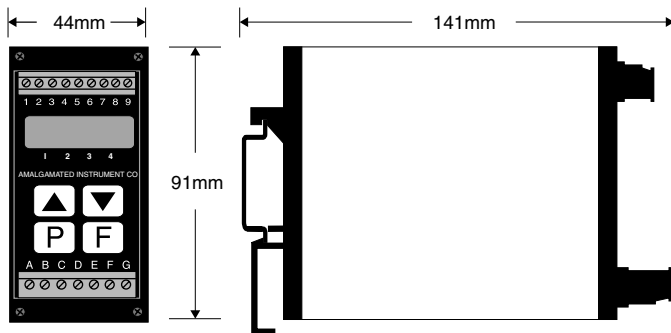
Transmitter supply: Isolated & regulated 12VDC @ 50mA or 24VDC @ 25mA (link selectable)

Switched voltage: 24VDC output (common to input ground but isolated from 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 or 16 bit resolution versions available

Serial communications: Isolated RS232, RS485 or RS422 factory configured

DIMENSIONS AND INSTALLATION DETAILS



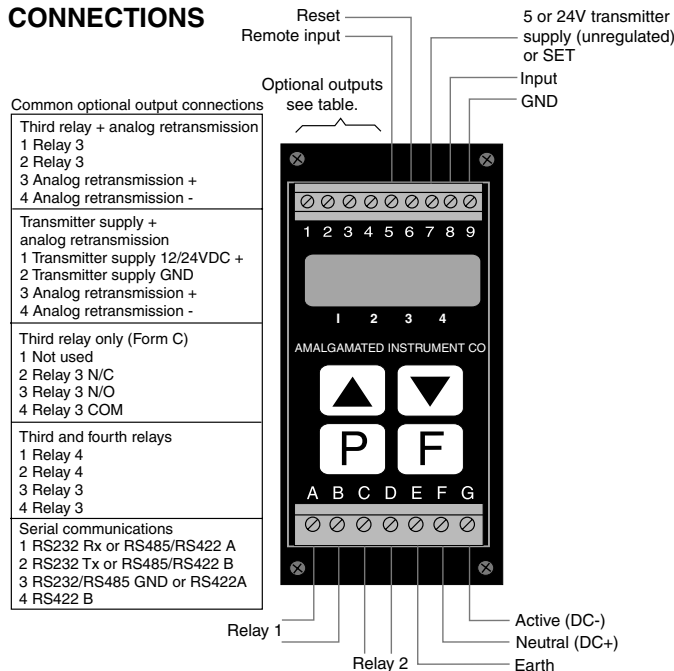
PHYSICAL CHARACTERISTICS

Case size: 44mm x 91mm x 141mm

Connections: Plug in screw terminals. Max 2.5mm² wire (relays and supply), 1.5mm² wire for input and options

Weight: 500 gms basic model, 550 gms with option card

ELECTRICAL CONNECTIONS



ORDER CODE

RM4-FX- - 5 E -

POWER SUPPLY

RM4-FX- - 5 E

240 VAC	<input type="checkbox"/> 2 <input type="checkbox"/> 4 <input type="checkbox"/> 0
110 VAC	<input type="checkbox"/> 1 <input type="checkbox"/> 1 <input type="checkbox"/> 0
48 VAC	<input type="checkbox"/> 4 <input type="checkbox"/> 8
42 VAC	<input type="checkbox"/> 4 <input type="checkbox"/> 2
32 VAC	<input type="checkbox"/> 3 <input type="checkbox"/> 2
24 VAC	<input type="checkbox"/> 2 <input type="checkbox"/> 4
12 to 48 VDC	<input type="checkbox"/> D <input type="checkbox"/> C
50 to 110 VDC	<input type="checkbox"/> D <input type="checkbox"/> C <input type="checkbox"/> H

DISPLAY TYPE (ALL MODELS ARE TYPE 5E)

RM4-FX- - 5 E -

5 DIGIT LED + KEYPAD + STATUS LEDs 5 E

OUTPUT OPTIONS

THIRD RELAY	<input type="checkbox"/> R
THIRD AND FOURTH RELAY	<input type="checkbox"/> R <input type="checkbox"/> R
THIRD RELAY PLUS TRANSMITTER SUPPLY	<input type="checkbox"/> R <input type="checkbox"/> E
TRANSMITTER SUPPLY	<input type="checkbox"/> E
THIRD AND FOURTH SETPOINTS 24VDC	<input type="checkbox"/> S <input type="checkbox"/> S
ANALOG RETRANSMISSION (12 BIT)	<input type="checkbox"/> A
DUAL ANALOG RETRANSMISSION (12 BIT)	<input type="checkbox"/> A <input type="checkbox"/> A
ANALOG (12 BIT) PLUS TRANSMITTER SUPPLY	<input type="checkbox"/> A <input type="checkbox"/> E
ANALOG (12 BIT) PLUS 3RD RELAY	<input type="checkbox"/> A <input type="checkbox"/> R
ANALOG (16 BIT) PLUS 3RD RELAY	<input type="checkbox"/> A <input type="checkbox"/> H <input type="checkbox"/> R
RS232 COMMUNICATIONS - ISOLATED	<input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 2
RS422 COMMUNICATIONS - ISOLATED	<input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 2
RS485 COMMUNICATIONS - ISOLATED	<input type="checkbox"/> 4 <input type="checkbox"/> 8 <input type="checkbox"/> 5
ANALOG (12 BIT) PLUS RS485 COMMUNICATIONS	<input type="checkbox"/> A <input type="checkbox"/> 4 <input type="checkbox"/> 8 <input type="checkbox"/> 5