DIN Rail Mount Indicators
RM4-RTC Real Time Clock

Description

The RM4-RTC is a DIN rail mounted process unit which can function as a Display/Alarm/Time Switch/Master Clock

The instrument features flexible pushbutton calibration and programming. All settings and calibration scaling is carried out via pushbuttons.

The real time clock monitor has a selection of display options. The clock may be set to display in 24 or 12 hour format.
User selectable display formats are:
Hours.Mins e.g. *14.22*
Days e.g. *364*
Day.Month e.g. *07.11*
Month.Day e.g. *11.07*

Clock synchronisation may be via internal clock chip, 50Hz or 60Hz mains synchronisation or optional GPS satellite transmission. The clock circuitry is backed up by battery which means that, in the case of power failure, the time does not need to be reset when power is re-applied to the display.

Two alarm relays are provided as standard. Optional outputs include extra relays or serial communications.

In "hours.minutes" mode up to 32 alarm times can be set. The user selects which alarm relay will operate for each setpoint, which days of the week the setpoint will be valid and the duration of the alarm activation i.e. the length of time (must be less than one day) for which the relay will activate when it sees a valid alarm time.

The RM4-RTC can be set up with other RM4-RTC instruments or their panel meter (PM4-RTC) or large digit display (LD-RTC) equivalents to be a master or slave clock when used with the serial communications option. For example the RM4-RTC could be housed in a convenient site for adjustment and used as a master clock controlling large digit displays mounted high on a wall.
An external input is configurable to perform one of various functions e.g. Two level brightness switching, setpoint only access or security lockout.

Electrical isolation between power supply and retransmission eliminates grounding and common mode voltage problems.

Features

- Battery backed clock circuit
- Versatile display modes
- Can be used as a master or slave clock when optional serial communications installed
- 240V, 110V, 48V, 42V, 32V, 24VAC, or 12 to 48VDC (factory configured)
- Two alarm/control relay outputs (5A)with visual indication of relay state via annunciator LEDs
- Up to 32 setpoint times can be programmed in "hours.minutes" display mode.
- Remote inputs for reset and to perform special functions including display hold, peak hold, high memory, low memory, brightness level switching, reset (zero), grand total reset or rate/total display toggle
- 5 digit LED display and relay/alarm status LEDs
- Isolation between input signal, output and supply
- Programmable display brightness
- Auto dim feature conserves power
- Rugged aluminium DIN rail mount housing
- 2 year guarantee

Options

- GPS synchronisation
- Isolated RS232, RS422 or RS485 serial communications with choice of ASCII or Modbus RTU protocol
- Extra relay ouptuts

Specifications

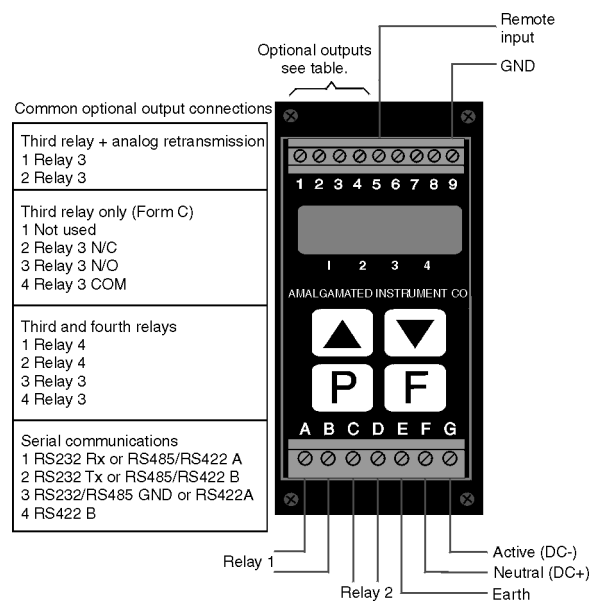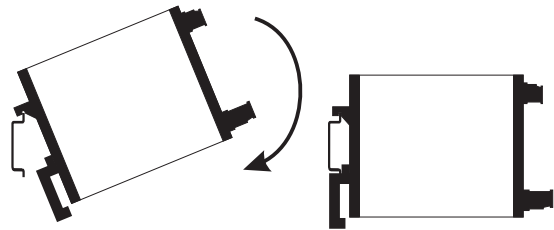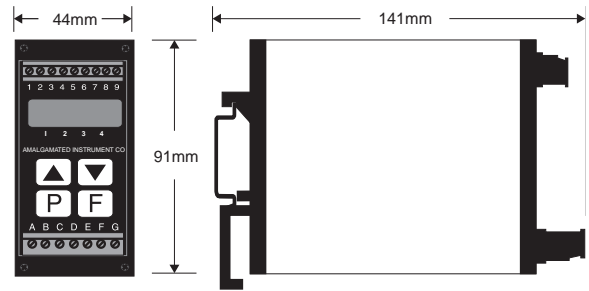## Technical Specifications

Accuracy:	Internal oscillator: ± 30 sec/month GPS sync: Accurate to GPS system ± 0.1 sec Mains sync: Accurate to mains frequency. Where frequency is controlled this gives a typical accuracy of ± 1 second
Microprocessor:	MC68HC11 CMOS
Ambient temp:	-10°C to 60°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 - see below for full list

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
Serial Comms:	Serial RS232, RS485 or RS422 choice of ASCII or Modbus RTU protocols (factory configured)

Physical Characteristics

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

Common optional output connections

Third relay + analog retransmission
1 Relay 3
2 Relay 3

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

RM4-RTC Order codes
The last section is for optional outputs, if required. (Note: only one of the optional outputs below can be fitted).

RM4-RTC- [ ] - [5E] - [ ]

Power supply
240	240VAC
110	110VAC
48	48VAC
42	42VAC
32	32VAC
24	24VAC
DC	12-48VDC isolated

Display type
5E - 5 digit 7.6mm red led with front pushbuttons & annunciators

Optional outputs
R	3rd setpoint relay (form C) - rated 0.5A/32VAC or DC
RR	3rd & 4th setpoint relays (form A) - rated 0.5A/32VAC or DC
RE	3rd setpoint relay (form C) - rated 0.5A/32VAC or DC and 12 or 24V isolated regulated transmitter supply
E	12 or 24V isolated regulated transmitter supply
SS	3rd and 4th setpoints, transistor 24VDC output or open collector NPN
A	Analog retransmission (12 bit 4-20mA, 0-1V or 0-10V) isolated
AA	Dual analog retransmission (12 bit 4-20mA, 0-1V or 0-10V individually isolated)
AE	Analog retransmission (12 bit 4-20mA, 0-1 or 0-10V) plus 12 or 24V regulated transmitter supply
AR	Analog retransmission (12 bit 4-20mA, 0-1 or 0-10V) plus 3rd setpoint relay (form A)
AHR	Analog retransmission (16 bit 4-20mA, 0-1 or 0-10V) plus 3rd setpoint relay (form A)
232	RS232 serial communications output - isolated
422	RS422 serial communications output - isolated full duplex (4 wire)
485	RS485 serial communications output - isolated half duplex (2 wire)
A485	Analog retransmission (12 bit 4-20mA, 0-1 or 0-10V) plus RS485 serial communications