DIN Rail Mount Indicators
RM4-SSI Synchronous Serial Interface (SSI) data input

Description

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

SSI communication is typically used in high accuracy non contact measurement applications. Long transmission distances (up to 1.2km) are possible when connecting to SSI devices. Devices available with SSI output include position encoders and laser distance measuring equipment. The data transmitted is in the form of a binary or Gray code (up to 31 bits). The serial communications is externally activated via clock pulses generated from the RM4-SSI . Shielded twisted pair wire should be used for the clock and data lines.

The RM4-SSI meter can be programmed to scale the input signal to give a display in engineering units e.g. Metres. All function settings and scaling is accomplished via the instrument's pushbuttons.

When used with AIC model RM-BC or RM4-BC converters the RM4-SSI may be used as a Binary/BCD/Gray Code display/converter.

Two alarm relays 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.

The RM4-SSI 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.

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

- SSI input in binary or Gray Code form
- Scalable to display in engineering units
- Pushbutton scaling and setup
- 240V, 110V, 48V, 42V, 32V, 24VAC, or 12 to 48VDC (factory configured)
- Digital filter, improves stability
- Two alarm/control relay outputs (5A)
- Can be used via models RM-BC or RM4-BC to display from Binary/BCD/Grey Code sources
- 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

- 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

Specifications

Technical Specifications

Input types:	Synchronous Serial Interface (SSI) Binary or Gray Code - up to 31 bits
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
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
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^2 wire)
Weight:	500g basic model, 550g with option card
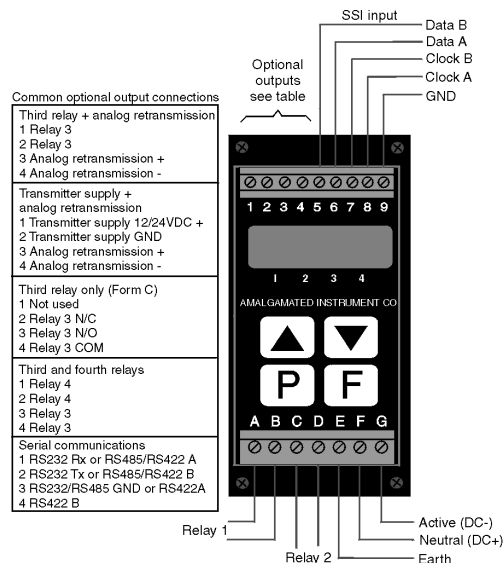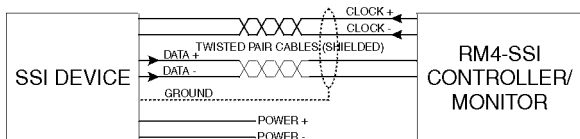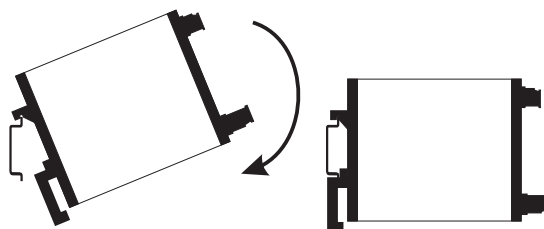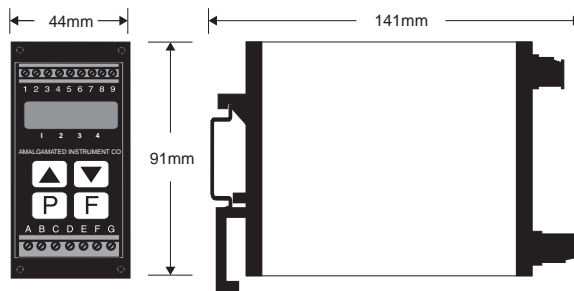
RM4-SSI Order codes
The last section is for optional outputs, if required. (Note: only one of the optional outputs below can be fitted).

RM4-SSI- [____] - [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