

RM3-AI

AC or DC Current Transmitter
Operation and
Instruction Manual

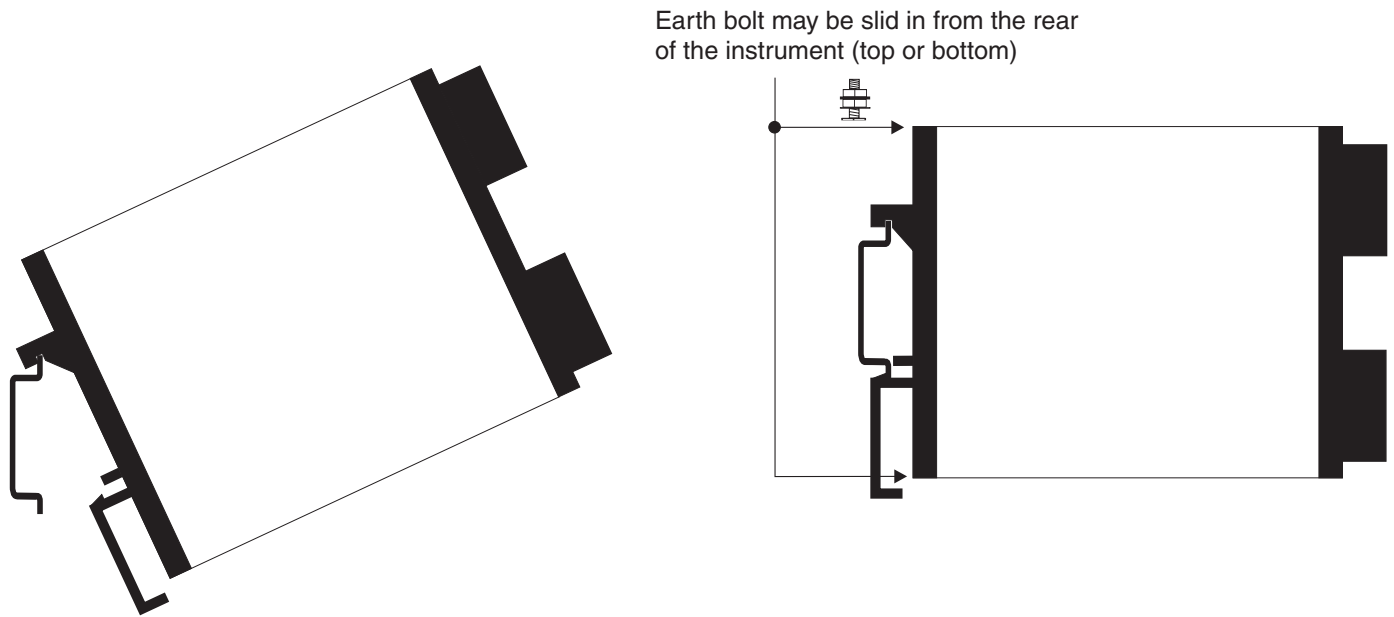


Introduction

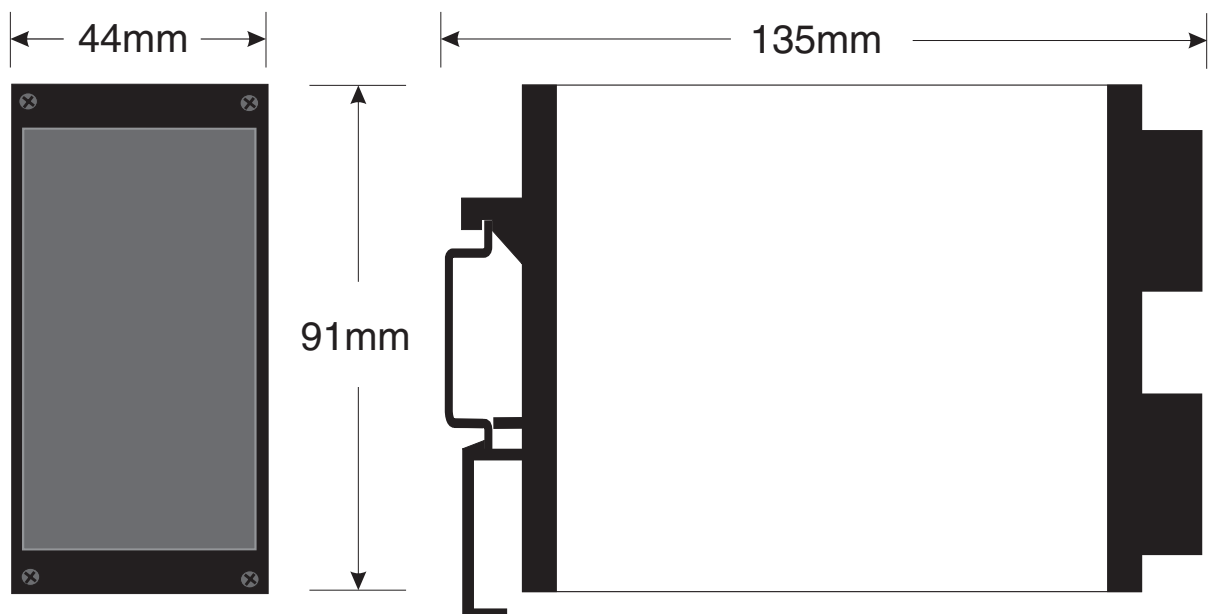
This manual covers the installation and operation of the RM3-AI AC or DC current transmitter . The RM3 accepts input of up to 5A AC or DC (link selectable) and produces a loop powered 4-20mA output which is zero and span adjustable. The RM3-AI is available in one, two, three or four channel versions. An optional inbuilt loop supply board is available for use with one or two channel models.

Mechanical Installation

The RM3 clips onto a standard 35mm DIN rail as shown below.

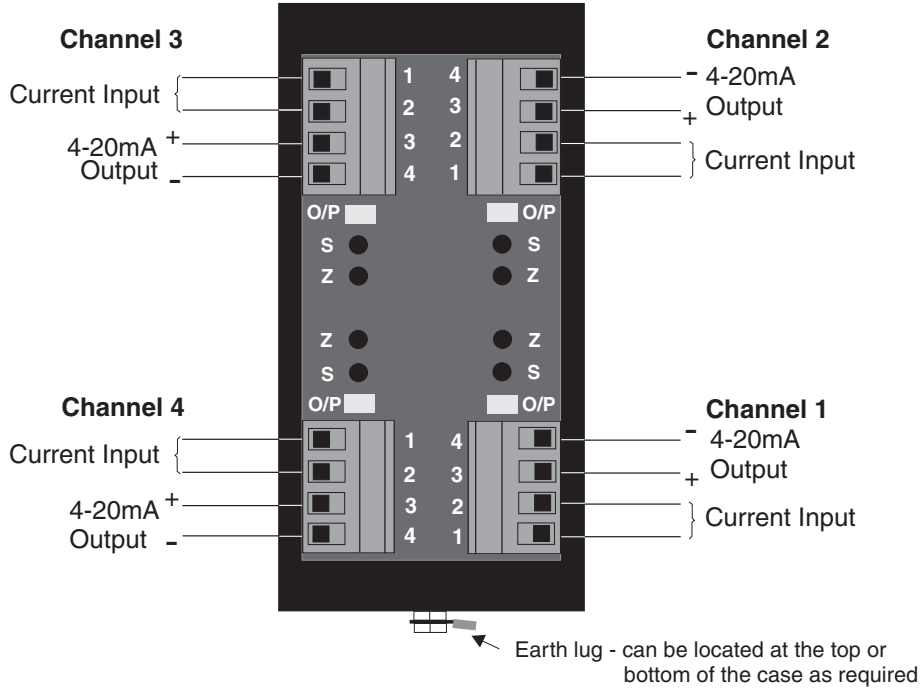


Dimensions



Electrical Installation

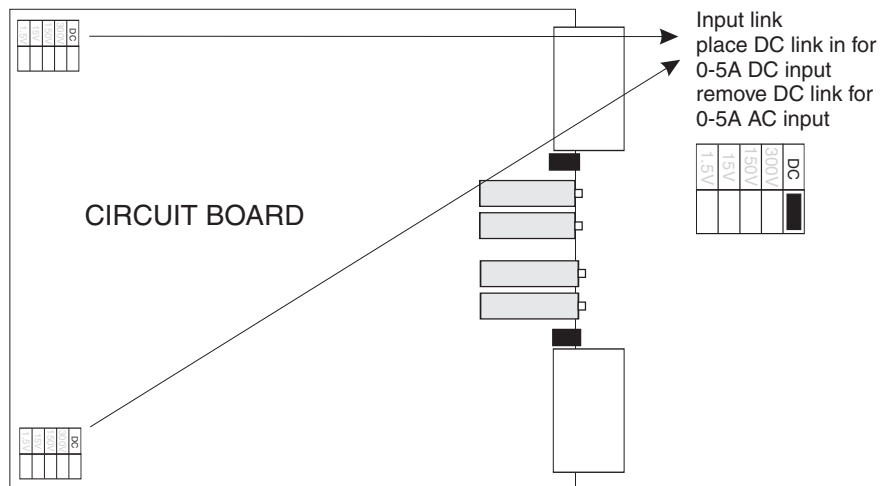
Plug in type screw connector terminal blocks are provided for ease of installation. The terminal blocks allow for wires of up to 2.5mm² to be fitted. Connect the wires to the appropriate terminals as indicated in the diagram below. For EMC compliance the case of the instrument should be earthed via the case earth lug. The diagram below shows a 4 channel version,.



1 AC AMPS INPUT	4 CHANNELS
2 AC AMPS INPUT	
3 4-20mA OUTPUT +VE	
4 4-20mA OUTPUT -VE	
RM3-AI-LPI-4	SERIAL No :

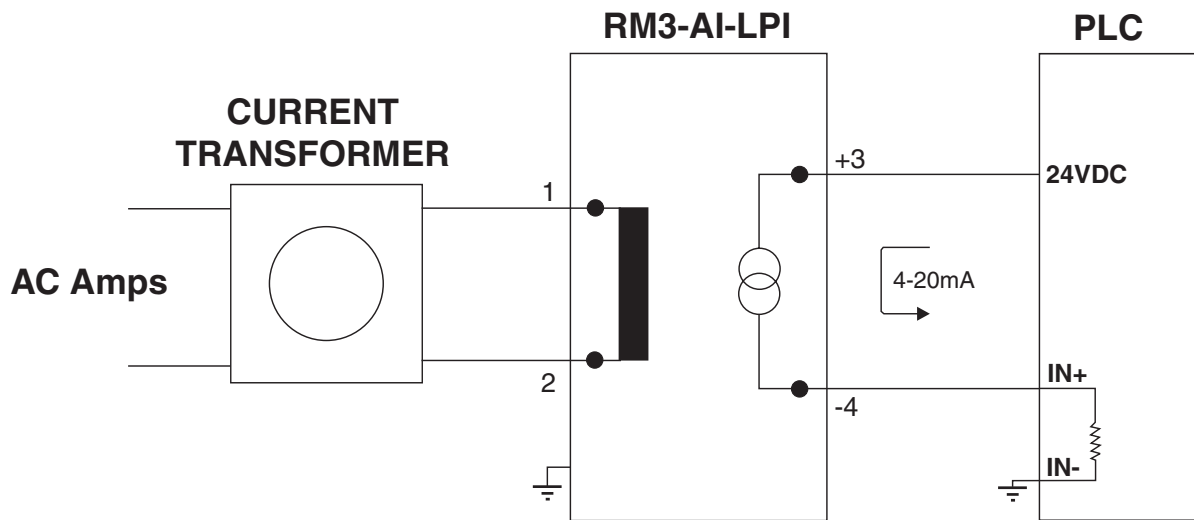
Instrument data label - 4 channel example

Input link setting - used to select AC or DC amps input

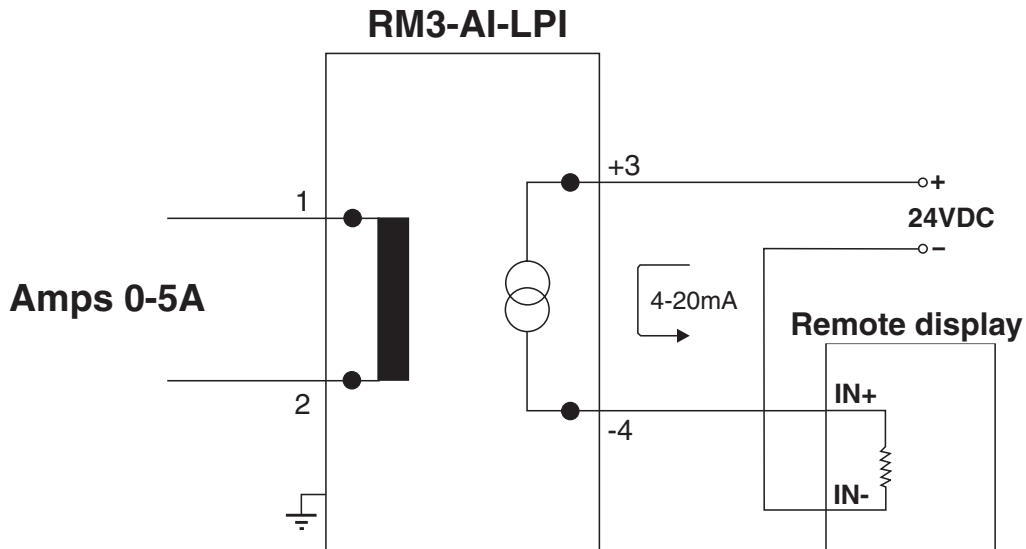


Typical interconnection diagram

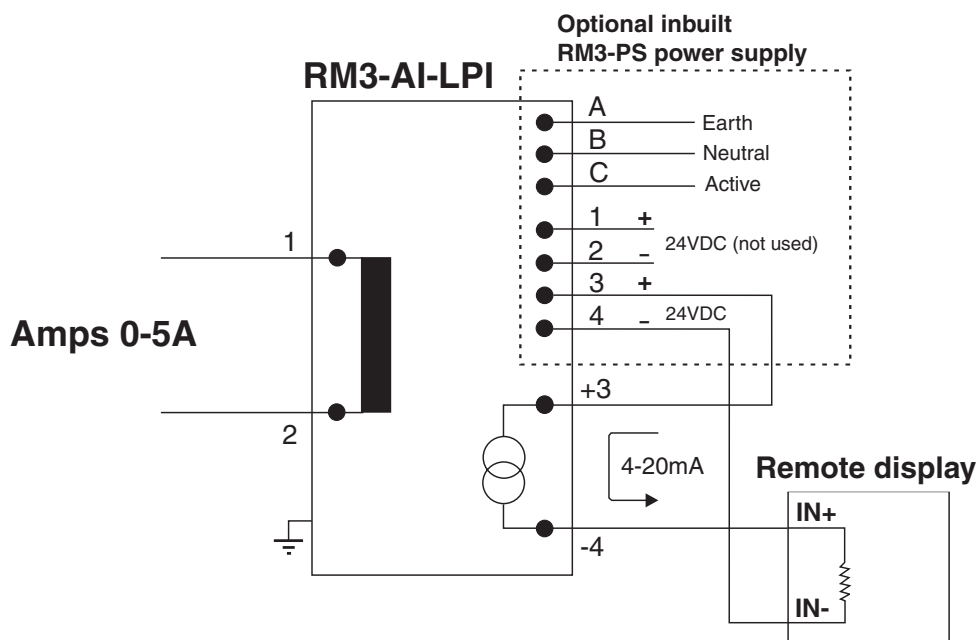
Example 1 - connection to PLC using PLC supplied 24VDC to power the output loop. External current transformer used to step down AC input current.



Example 2 - connection to a remote display using external 24VDC supply to power the output loop.



Example 3 - connection to a remote display using the optional internal RM3-PS dual 24VDC output power supply to power the output loop.



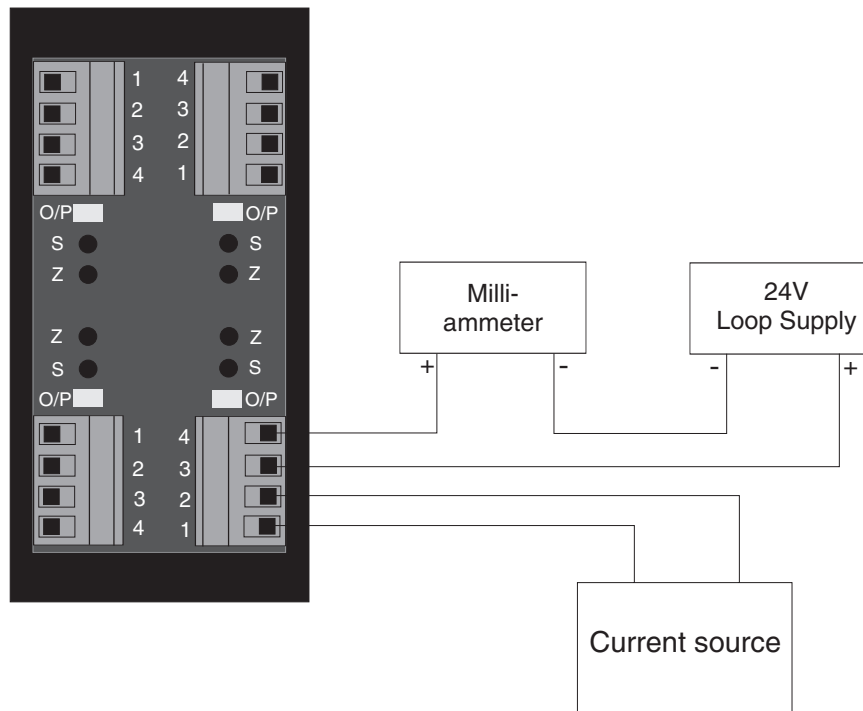
Zero and Span Adjustment

Each channel of the RM3-AI is adjustable for zero and span. Adjustment is via front panel potentiometer. The procedure for zero and span adjustment is given below.

1. Using a live input set the input to the level required for a 4mA output.
2. Measure the output using a milli-ammeter and adjust the zero potentiometer until the output is 4mA.
3. Using a live input set the input to the level required for a 20mA output.
4. Adjust the span potentiometer until the meter reading is 20mA.
5. Repeat steps 2 to 5 until the output at both 4 and 20mA are correct to the required tolerance.

A 4 mA output can be obtained for an input of between 0 and 0.5A (zero range) and an output of 20mA can be obtained for an input of between 4 and 5A (span range)

An example of a typical zero and span adjustment measurement setup is shown below.



Specifications

TECHNICAL SPECIFICATIONS

Input:	0-5 Amps AC or 0-5 Amps DC (link selectable)
Output:	4-20mA
Supply:	Loop powered. Loop supply voltage required 11 to 34VDC
Accuracy:	0.5% of full scale (pure sinewave input)
Linearity:	Better than 0.5%
Response Time:	<0.5 sec to 1% Response time is specified over the stated RMS input level with the input signal increasing from zero. Response time will be greater for decreasing amplitude signals
Protection:	Reverse polarity output protection
Isolation:	2kV between channels and input/output (for 60 seconds).
Loop Supply:	11 to 34VDC
Maximum Load:	$R_L = \frac{\text{Supply (V)} - 11}{0.02}$ Ohms
Load Effects:	Effect on accuracy of changing load resistance is no greater than 0.1% of full scale
Ambient temp:	0 to 60°C
Humidity:	5 to 95% non condensing

PHYSICAL CHARACTERISTICS

Case size:	44mm x 91mm x 120mm
Mounting:	35mm DIN Rail mount (EN50022)
Connections:	Plug in screw terminals (max 2.5mm ² wire)
Weight:	250 gms for one channel 300 gms for two channels 350 gms for three channels 400 gms for four channels

Guarantee & Service

The product supplied with this manual is guaranteed against faulty workmanship for a period of 2 years from the date of dispatch.

Our obligation assumed under this guarantee is limited to the replacement of parts which, by our examination, are proved to be defective and have not been misused, carelessly handled, defaced or damaged due to incorrect installation. This guarantee is VOID where the unit has been opened, tampered with or if repairs have been made or attempted by anyone except an authorised representative of the manufacturing company.

Products for attention under guarantee (unless otherwise agreed) **must be returned to the manufacturer freight paid** and, if accepted for free repair, will be returned to the customer's address in Australia free of charge.

When returning the product for service or repair a full description of the fault and the mode of operation used when the product failed must be given.

In any event the manufacturer has no other obligation or liability beyond replacement or repair of this product.

Modifications may be made to any existing or future models of the unit as it may deem necessary without incurring any obligation to incorporate such modifications in units previously sold or to which this guarantee may relate.

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written consent of the manufacturer.

This product is designed and manufactured in Australia.