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Operating Instructions

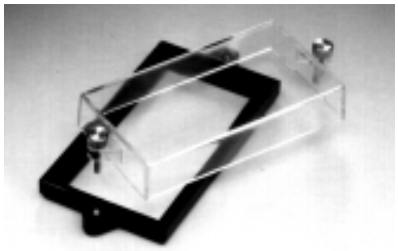
Model TIM-018

Triple output 4-20mA transmitter
4-20mA input

Some additional products from London Electronics Ltd.....

PROCESS CALIBRATORS

IP65 SPLASHPROOF COVERS



LARGE DISPLAYS

PANEL METERS & CONTROLLERS

SIGNAL TRANSMITTERS

IEC 1010

CE

89/336/EEC

Document Ref:pm5\manual\TIM018 Revision:4 Dated:20 March 2006

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IMPORTANT INTRODUCTORY NOTES

Thank you for choosing to use a London Electronics Ltd. product. We hope that you will be entirely satisfied with your purchase, and welcome any comments you may have which will help us to improve the ease of use, clarity of this manual, etc. for future shipments.

We invite you to write to us, free of charge, if posted in the United Kingdom, to:-

London Electronics Ltd.
Customer Services Department
FREEPOST SG334
SHEFFORD
Bedfordshire SG17 5BR

Alternatively you may send us a fax on **01462-850968** (international code +44)
Or, telephone us on **01462-850967** (international code +44)

Or, send us an E-Mail to **sales@london-electronics.com**

To enable us to provide a swift and accurate service, please be sure to provide the following information :-

1) Full Model Number , including all options fitted.
2) Serial Number
3) DETAILED description of your difficulties, suggestions etc.
4) Input Range and Display range

This product is covered by a 2 year warranty, during which period we will put right or replace any meter found to be faulty through bad workmanship or materials. This warranty does not cover damage caused by misuse or accident.

IMPORTANT If the meter is a vital component in your process, you may wish to consider the purchase of a spare to cover the possible eventuality of a failure or accident, as we cannot guarantee instant repair or replacement.

We are constantly striving to improve our products and services, and as a result, changes to instruments do occur. Please ensure that this manual is kept safely for future reference, as future manuals, covering revised designs may no longer describe your product accurately.

We believe these instructions to be accurate, and the product to be competently designed and manufactured. We do not make any claims as to the suitability of this product for any particular application. The choice of product and responsibility for the choice lies with the User.

VERY IMPORTANT WARNINGS

You should carefully read all warnings and commence installation ONLY when you are satisfied that all warnings are adequately covered.

} Connections to this equipment shall be carried out in accordance with current IEE regulations, and all wiring shall be separated in accordance with IEC1010

Notes:

} Power supplies to this equipment must be anti-surge fused at 125mA for 230V supply, 250mA for 110V supply or 630mA for DC supplies in the range 12-30VDC

Notes:

} Before installation, check that model number and supply voltage suit your application

Notes:

} Lethal voltages may be present on the circuit board. Do not touch any circuitry when power is applied.

Notes:

} This product is designed for Installation class II service

Notes:

} This product is designed for use in Pollution-Degree 2 environments

Notes:

} Use an insulated screwdriver when adjusting potentiometers and do not touch any circuitry

Notes:

} Replace front cover when meter is unattended

Notes:

} All adjustments to jumper settings or terminations must be made with power removed

Notes:

} Ensure all screw terminals are tight before applying power.

Notes:

Safety First .....Don't make assumptions..... Always double check. If in doubt, ask someone who is QUALIFIED to assist you in the subject.

EQUIPMENT SPECIFICATIONS

Input Signal	4-20mA
Input Resistance	50 Ohms
Resolution	infinite
CMRR	70 dB DC to 450 Hz.
NMRR	56 dB 45 to 10000 Hz.
Open Circuit Input Response	Downscale Drive
Speed of Response	< 100 mS
Accuracy	+/- 0.1% of span
Temperature stability	100 ppm of range/C span and zero

Outputs

Number of output channels	3
Loop drive capacity	600 Ohms per loop
Span adjustability	+/- 9 mA at 20 mA input
Zero adjustability	+/- 1 mA at 4 mA input
Influence between outputs	Minimal. Any load conditions on one O/P has negligible effect on others
Ajustment location	On top surface of transmitter, via access slot
Isolation	Isolated from ground, but not from input

Excitation Supply	20 VDC nominal
Accuracy	Unregulated, depends on power input and loading
Current Capacity	28mA max. permissible load

Power Supply

AC Supply	115 or 230 VAC 50 or 60Hz. as standard. Select using internal links
Current Consumption	Allow 3VA if excitation supply fully loaded.

Mechanical

Base size	50 mm wide by 70 mm high
Forward projection	110 mm
Weight	270 grammes

Environmental

Operating Temperature	0 to +50 degrees C
Storage Temperature	-40 to +85 degrees C
Humidity	90% rh max. at 40 C, non condensing.

PANEL REQUIREMENTS

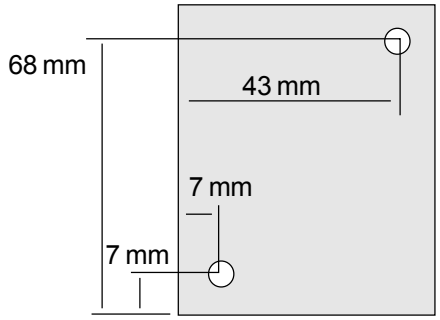
All wiring to this device must be carried out in accordance with current IEC regulations
Separation of all power carrying cables must be ensured in accordance with IEC 1010

Installation Class II
Pollution degree 2

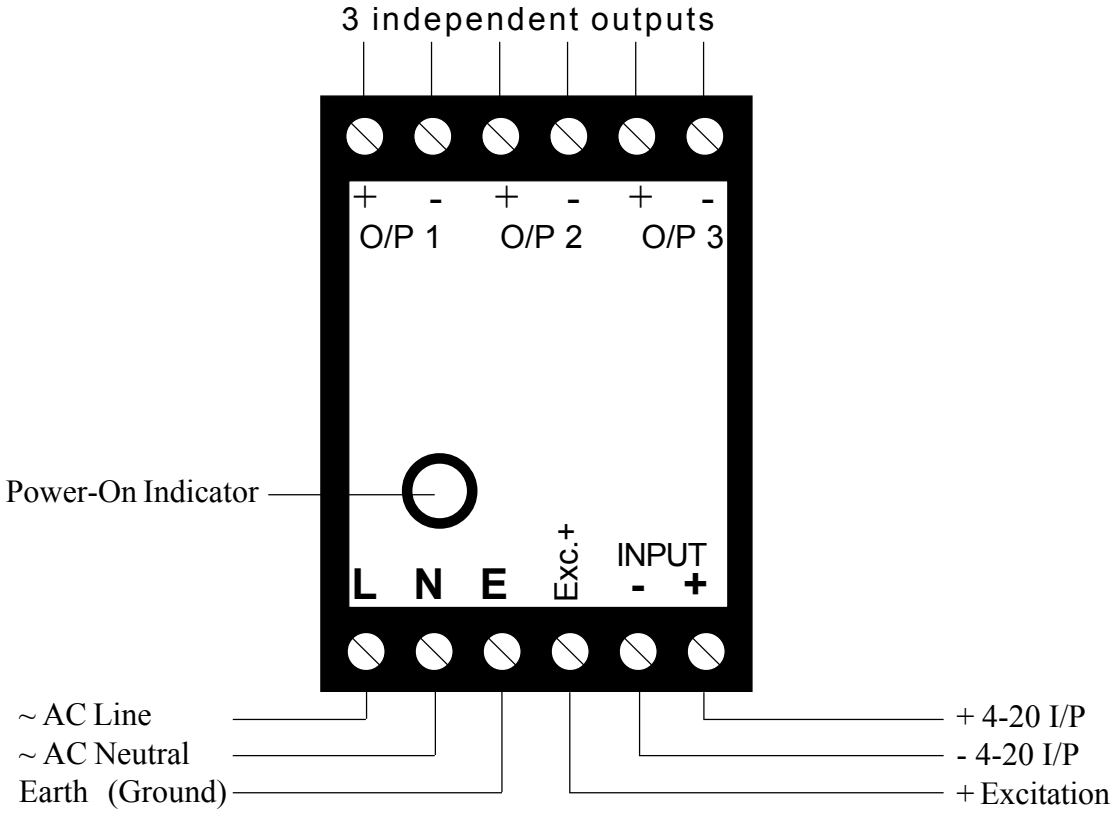
This device is to be installed within a secure enclosure, to prevent accidental access by persons to the powered connections present on the terminals.

For Base mounting, drill 2 holes of 4mm dia. in the base plate as shown.

Or, you may fit the transmitters directly onto DIN46277-3 or CENELEC EN 50 022



Connections



IMPORTANT: Do not run signal wires near any power-carrying cables. Power-carrying cables will almost certainly radiate appreciable amounts of electro-magnetic energy, which could interfere with the small signals you are trying to measure. Use screened cable , in its own separate conduit or tray. Connect the screen at one end only, to a clean earth point as near to the meter as possible.

ADJUSTMENTS & CALIBRATION

1) Ensure that the transmitter's power voltage settings are correct.

2) If the unit was ordered from us and calibration details were given at the time of ordering, you should not need to make any alterations to the transmitter's settings apart from applying input signals and checking the calibration.

3) Apply power, and leave the transmitter running for a few minutes before commencing calibration.

4) Apply 4 mA to the input, and measure O/P 1. Adjust its zero pot to obtain 4mA output.

5) Apply 20 mA to the input and measure O/P 1. Adjust its span pot to obtain 20 mA output.

6) Repeat steps 4) & 5) until no further adjustment is needed.

7) Apply 12mA and check that the output is 12mA also.

8) Repeat steps 5 to 7 until no further adjustment is necessary, and repeat the same procedure for outputs 2 and 3.

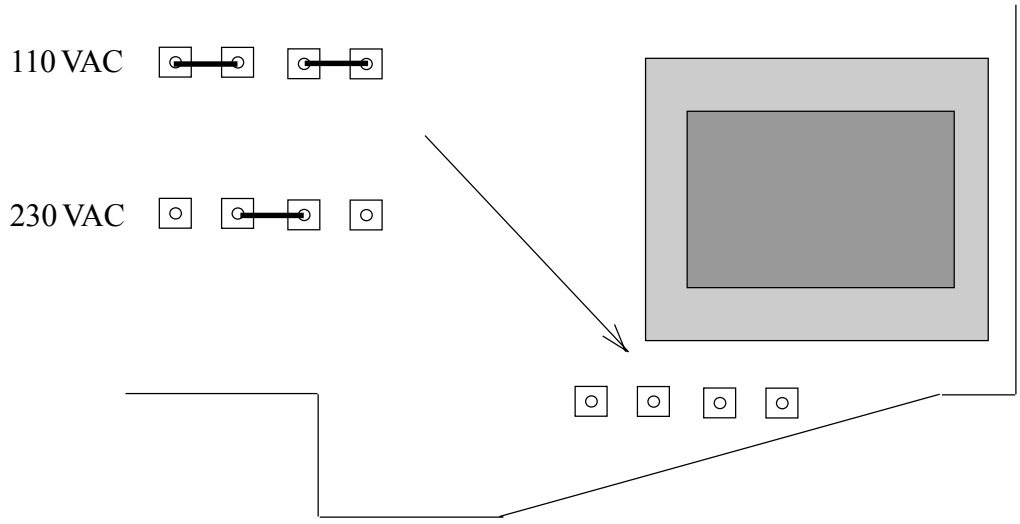
Changing Supply Voltage Settings

The TIM018 may be powered from 110 or 230 VAC, and the choice is made by appropriate selection of solder-in links adjacent to the transformer.

To gain access to these links, firstly ensure that power has been removed from the transmitter, and that there is no chance of it being accidentally re-applied whilst you are working on the board.

You will notice two indents on either side of the black connector block. Using a terminal screwdriver, carefully ease the grey plastic case away from the black front by sliding the screwdriver down and into the indents. When both sides of the front have been released, you may extract the board from the case, which will reveal the power selection jumpers, as shown below.

Select appropriate jumper positions and re-assemble the transmitter.



Declaration of Conformity

Declaration Number : TIM018 Iss. 2
Issue Date : 21 April 1997
Products Covered : TIM-018
Title : Triple Loop transmitter

This is to confirm that the Products covered by this declaration have been designed and manufactured to meet the following specifications :

EN55022:1987 Conducted Emissions: Class B
EN55022:1987 Radiated Emissions : Class B
IEC801-2:1984 Electro-Static Discharge Immunity: 8kV Air
IEC801-3:1984 Radiated ElectroMagnetic field Immunity: 3V/m
IEC801-4:1988 Fast Transient Immunity : AC 1kV, cable 0.5kV

Thus the products conform with the applicable sections of the following standards:

EN50081-1:1992 (normative)
EN50082-1:1992 (normative)

and comply with the requirements of Council Directive 89/336/EEC relating to Electro-Magnetic Compatibility, & are designed to meet 72/23/EEC safety directive.

To confirm EMC compliance, representative models within the range have been independently tested and certified by MARCONI INSTRUMENTS EMC Department.

MARCONI CERTIFICATE # : TC96/0042A
MARCONI CERTIFICATE Issue # : 1
MARCONI Certificate Issue Date :14 February 1996

Conditions

The meters are permitted a worst case error of 1% of A/D range during electro-magnetic disturbance, and must recover automatically when disturbance ceases without the need for human intervention, such as resetting, power-down etc.

The meters covered by this certificate must be installed in adherence to the following conditions :-

Signal cabling shall be routed separately to power carrying cabling (includes relay output wiring)
All signal cabling shall be screened. The screen shall only be terminated to the power earth terminal

This certificate applies only to meters carrying Serial Numbers 701001 or higher.

Signed as true and correct, for and on behalf of London Electronics Ltd.

Warren Court, Beds. J.R. Lees Director