

# *London Electronics Limited*

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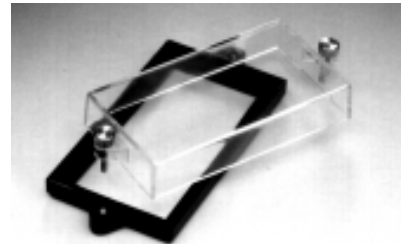
## Operating Instructions

### **Model MINI-COUNT** **5 / 8 digit pulse totaliser** **Fully Scaleable** **Dual alarms**

PROCESS CALIBRATORS



IP65 SPLASHPROOF COVERS



LARGE DISPLAYS



PANEL METERS & CONTROLLERS



SIGNAL TRANSMITTERS




These instructions cover product with serial numbers from 701001

Document Ref:MiniCount

Revision: 3

Dated: 30 Mar.. 98

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# 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.***

# ***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 **meters@dial.pipex.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.

# EQUIPMENT SPECIFICATIONS

Input Signal.....Contact closure/3-30V DC pulses/30mV-30V AC, by appropriate jumper choice  
Resolution.....1 input Count  
Input Resistance.....22000 Ohms  
CMRR.....70 dB  
NMRR.....not specified  
Open Circuit Input Response.....No count  
Speed of Response.....Accepts pulses up to 10 KHz for AC or DC, up to 20 Hz. for contact closure  
Decimal Point Selection.....Via menu  
Accuracy.....Arithmetically precise, no error  
Temperature stability.....No temperature effect on accuracy  
A/D Technique.....No analogue I/P  
Conversion Rate.....3 per second display update  
Integration Time.....No integration employed  
Scale factor.....Denominator. Settable in the range 0.0001 to 32767

Display Type.....LED 5 or 8 digit options  
Digit Height.....14.2 mm for 5 digit versions, 10mm for 7 digit versions  
Digit Colour.....Red standard, Green optional

Excitation Supply.....24 VDC.  
Accuracy.....+/- 10% of nominal, regulated 0.1%  
Current Capacity.....30 mA maximum

Power Supply.....  
AC Supply.....110/115 , 220/230 , 240 VAC selection by internal jumper  
DC Supply.....5VDC or 10-30 VDC by appropriate option  
Power Consumption.....5 VA maximum

Mechanical.....  
Bezel Size.....48 mm high x 96 mm wide  
Cutout Size.....45 mm high x 92 mm wide +1mm/-0mm  
Depth behind Panel.....80 mm  
Weight.....350 grammes  
Case Material.....Polycarbonate

Environmental  
Operating Temperature.....0-50 degrees C  
Storage Temperature.....-40 to +80 degrees C  
Humidity.....90 % rh non condensing maximum

Analogue O/P.....nil  
Drive Capacity.....nil  
Isolation.....nil  
Speed of Response.....nil  
Accuracy.....nil  
Linearity.....nil

Alarm O/P.....  
Format.....Solid state triac for AC loads only  
Current Rating.....100 mA AC  
Voltage Rating.....250 VAC  
Speed of Response.....0.3 second  
Hysteresis.....1 count  
Annunciation.....LED  
Setting Method.....Menu

BCD O/P.....nil  
Format.....nil  
Data Levels.....nil

Serial Data O/P.....nil  
Baud Rate.....nil  
Addressing.....nil  
Format.....nil  
Connections.....nil

# PANEL REQUIREMENTS



All wiring to this meter 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



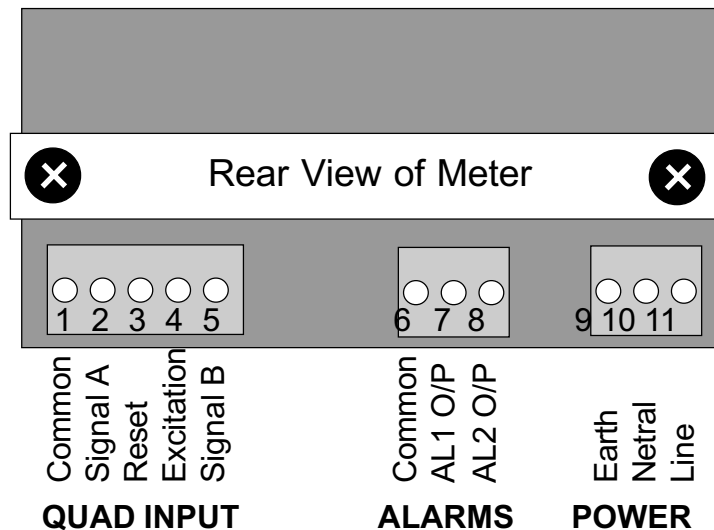
This meter is to be installed within a secure enclosure, to prevent accidental access by persons to the powered connections present on the meter's rear terminals.

## CUTOUT DIMENSIONS

A hole 45 mm high and 92 mm wide, with minimal radius is required

# Connections

**Connector Specifications :-** [VDE Rated Voltage, group B insulation VAC = 380]-[VDE Rated Current = 8 Amperes.]  
[Vibration Immunity per VDE0611 <10g]-[Rated Number of mating cycles <100]-[Screw Clamp material/plating Steel/ZnCc]  
[Contact Spring material/plating CuSN/gal SnPb]-[Plug-in force, per pole is from 3 to 6 Newtons]-[Disconnect force per pole is from 4 to 7 Newtons]-[Screw clamp tightening torque recommended 0.5Nm]-[Solid wire csa between 0.13 to 1.5mm<sup>2</sup>]  
[Multistrand wire csa from 0.5 to 1.5mm<sup>2</sup>]-[AWG conductor range from 22 to 16]-[Gauge to DIN/EN50027 Size A1]



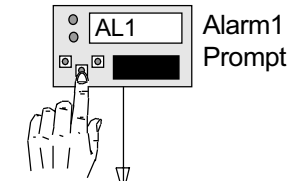
Alarms are solid state Thyristor types for switching AC loads only of up to 100mA, 75 to 260 V

**AVOID DISAPPOINTMENT!** Route **all** signals via individually screened cables. Do **not** mix input and output signals in the same screened cable. Earth the screens at a point as near to the meter as possible and do not earth the screen at the other end. Route all signal cables well away from power cables, relay switching cables and other sources of electrical noise.

# THE SETUP MENU

To enter the setup menu, press the middle button for more than 2 seconds. The display will show AL1

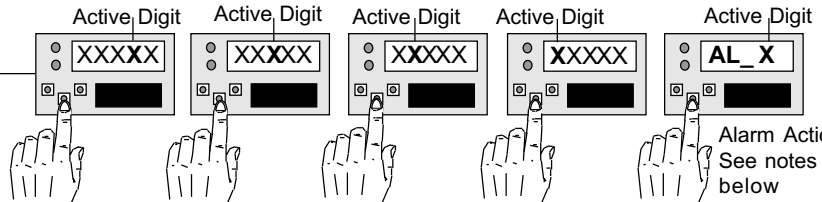
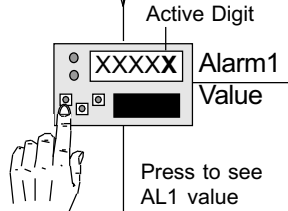
After a little more than 2 seconds, the display will show AL1



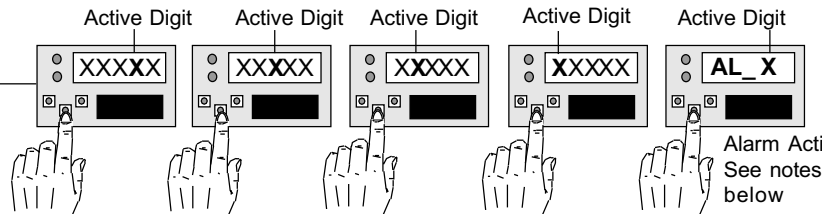
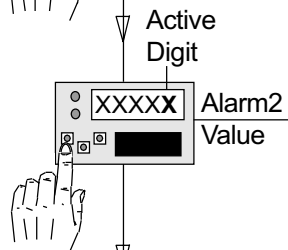
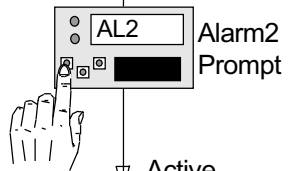
## It's as easy as ABC!

The left button (A for **A**dvance) is used to step down the main menu headings  
The middle button (B for **B**righten) is used to make digits 'ACTIVE', so that they may be altered by you. The right button (C for **C**hange) is used to alter active digits. Each press will increment the active digit.

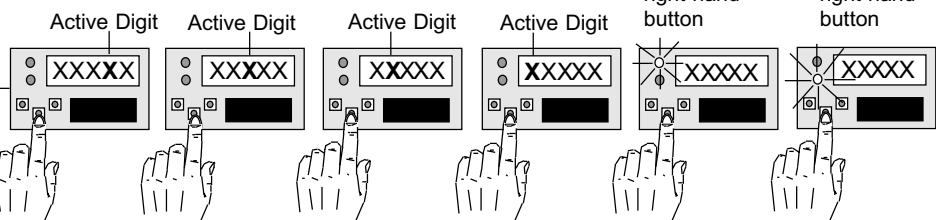
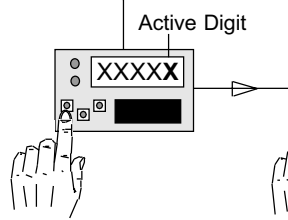
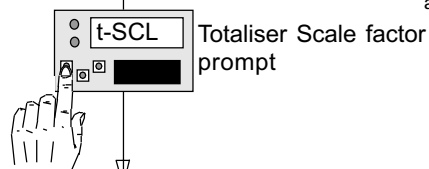
**NB The counter will not respond to, and will lose, incoming pulses whilst you are in the menu setup mode.**



If you wish to change the value of AL1, simply press the middle button B to brighten active digits, one at a time. Change the value of a brightened digit, using the right hand button C. You may also change the alarm action as a high or low, negative or positive alarm. When all your Alarm 1 settings are as desired, **A**dvance on to the next menu item, with the left hand button.



If you wish to change the value of AL2, simply press the middle button B to brighten active digits, one at a time. Change the value of a brightened digit, using the right hand button C. You may also change the alarm action as a high or low, negative or positive alarm. When all your Alarm 2 settings are as desired, **A**dvance on to the next menu item, with the left hand button.



Select decimal point in scale factor using right hand button

Select decimal point for display using right hand button

If you wish to change the value of the scale factor, simply press the middle button B to brighten active digits, one at a time. Change the value of a brightened digit, using the right hand button C. You may also change the decimal point position on the display and in the scale factor itself. When your scale factor is as desired, press **A**dvance on to end the setup routine.

**Alarm Notes:** The Alarm action is set as high or low in the AL\_ X choice, which offers the following:-

AL- H = Positive high alarm. If the display reaches or exceeds the set value, the alarm will activate. eg. Set alarm to 300, alarm occurs if display exceeds 300

AL\_-H = Negative high alarm. If the display goes beyond this value in a negative direction, the alarm will activate. eg set alarm to 750, alarm occurs if reading falls below -750

**Scale Factor Notes:** The scale factor is a DIVISION factor, as this accounts for the majority of requirements. So, when set to 100, the display will increment by 1 for every 100 input pulses. By moving the scale factor decimal point, you may obtain a multiplication. For example to multiply by 10, set the scale factor to 0.1 Available range 0.0001 to 32767

**Display Decimal Point Notes:** The setting of display decimal point position does not track the scale factor. It is a simple 'paste-on' decimal point function. For example, if your scale factor is 1, and you select 2 decimal places of display resolution, after 15 pulses on the input the display will read 0.15.

# Declaration of Conformity

Declaration Number : MINI-COUNT/RATE Iss. 2  
Issue Date : 6 November 1997  
Products Covered : MINI-COUNT & MINI-RATE  
Title : DOC. MINI-COUNT/RATE

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 REPORT # : TR 97/062  
MARCONI CERTIFICATE Issue #: 1  
MARCONI Certificate Issue Date : 11 April 1997

## Conditions

The meters are permitted a worst case error of 0% 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 716001 or higher.

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



Warren Court, Beds.

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G.Laming Director