ic 01

installation and operating manual

AUTOMETERS SYSTEMS

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Installation and Operation

Check Contents

Package should contain:

1. Meter
2. Fixing clamps (qty 2)
3. Installation and operation manual

The ***IC 01*** meter is the latest in the range of 96mm square panel mounted meters from Autometers. The meter is fitted with an L.C.D. display with 8 large (10mm x 5 mm) digits indicating power consumed in Kwh or Kvarh and five small text characters (2mm x 3mm) to indicate Kwh or Kvarh.

The meter is fitted with a volt free relay with normally open contacts and a closure of 75ms making it suitable for most B.M.S. systems. The value of the pulse is 1 Kwh from 50-400 amps and 10 Kwh from 500 to 5000 amps.

All the connections are at the rear of the meter, *see diagram 5.*

On the front of the meter there are two small indicator lights which will flash, Yellow indicating the volt free relay closing and a red light which is for calibration testing.

The meter has a six position binary switch under the front cover for selecting the current ratio settings and must match the current transformers being used for monitoring the power. *See diagram 4 for settings.*

The back has two rows of eight screw terminals for the cable connections. *See diagram 4 for correct connections.*

Programming the IC 01 meter

To programme the meter you must remove the clear cover and the label which is behind the clear cover. To do this place the meter on a flat surface and using a flat tool insert into the clear aperture as in *diagram 2*, gently push down and the clear window and label should fall forward. You will now see the red binary switch *diagram 3.* Turn the meter as in *diagram 3*, then select the switch positions accordingly to match your current transformers. Current transformer settings. *See diagram 4.*

Installation of the IC 01 meter

Meters should be mounted so that the front panel is vertical. A typical panel would be a switchgear cabinet door. The meter requires a depth behind the panel of 95mm (including wiring). A single square aperture 92mm wide x 92mm high should be prepared. Enter the meter into the aperture and secure it using two fixing clamps provided. Connect the meter as shown in *diagram 5.*

Location

Meters should be mounted in a dry, dirt free environment, away from heat sources and very high electric fields. Temperatures should not exceed 70ºC or fall below -20ºC.

Maintenance

IC 01 meters do not require any regular maintenance.

Field service considerations

In the unlikely event that a unit should fail. It will normally be serviced by exchanging the faulty unit with a replacement unit. The initial installation should be done in such a way which makes the replacement procedure as convenient as possible.

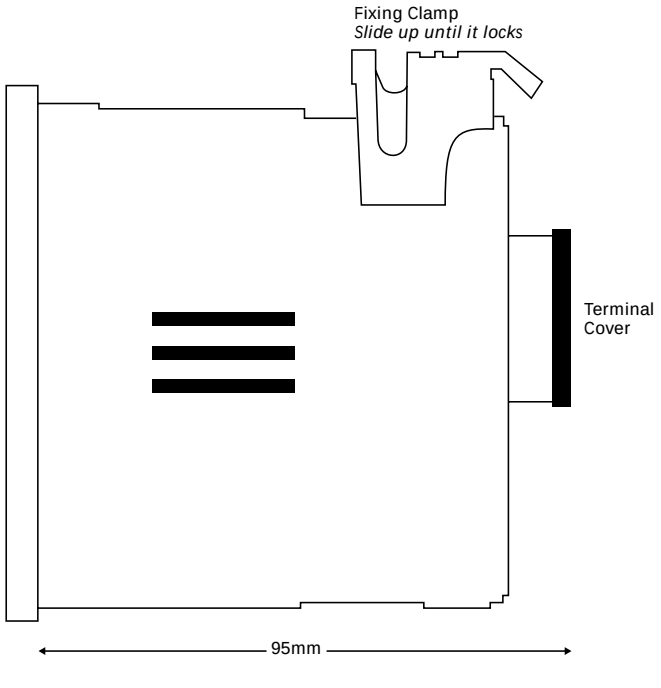


Diagram 1.
Dimensions.

1. A Current Transformer shorting block should be provided so that the meter current inputs can be disconnected without the Current Transformers becoming open circuit. The shorting block should be wired so that protective relays are not affected.

2. All wiring should be routed to allow easy removal of the connections to the terminals.

Important

The attention of the specifier, purchaser, installer and/or user is drawn to special measures and limitations or use which must be observed when these products are taken into service to maintain compliance with the CE Directives.

CE approval

The ***IC 01*** has been fully tested in accordance with the standards listed and meets the specified requirements defined in BS EN 61326: 1997: EMC requirements for electrical equipment for measurement, control and laboratory use incorporating amendments A1:1998 and A2: 2001.

Technical

measurement ranges

The unit is designed for measuring 3 phase in a 4 wire star configuration.

accuracy

Energy measurements comply to:

kWh: BS EN 1036 section 4.6.1 class 1.0

kVARh: CEI IEC 1268 class 2.0

volts

+ 10% nominal voltage
burden current burden less than 1 VA.

relay contacts

Max Switching Voltage

600 volts AC/DC

Max Switching Current 100 mA

Resistance 50 ohms

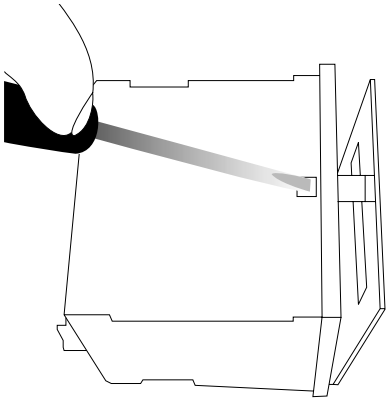
Optically isolated MOSFET Switch

temperatures

Operating temperatures:

-20˚C to +70˚C
Storage temperatures:
-30˚C to +80˚C

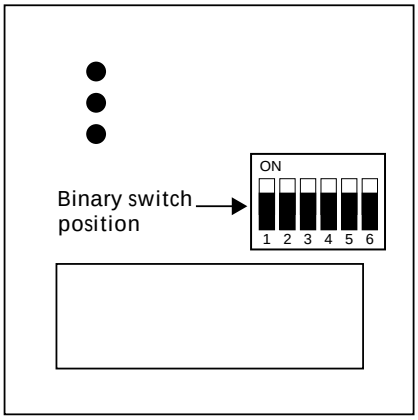
Diagram 2.
Removing the cover.



Programming the CT ratio

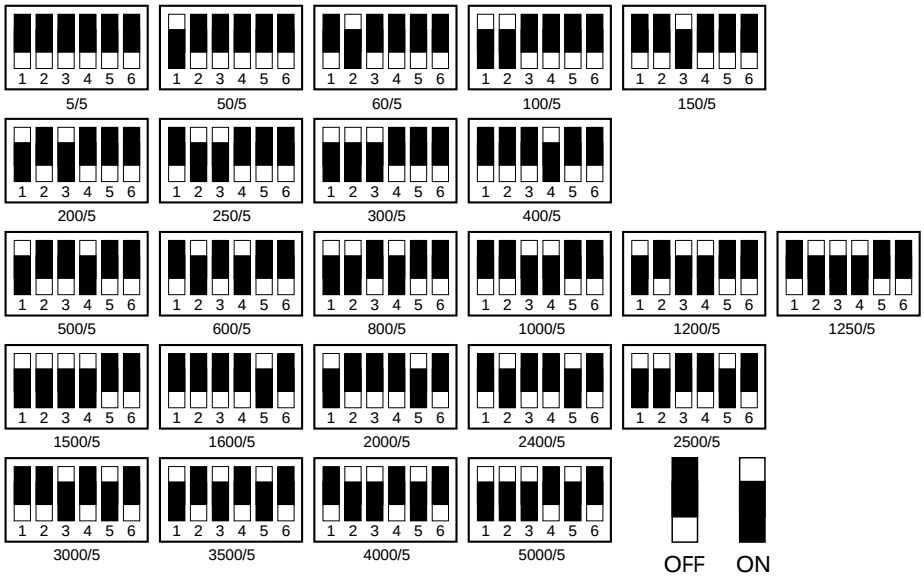
Setting is by means of a binary switch located inside the front of the meter as shown in *diagram 3.* To alter to the desired CT setting, slide the white switch to the correct position.

Diagram 3.
Indicates position of binary switch.



CT ratio switch positions

Diagram 4.



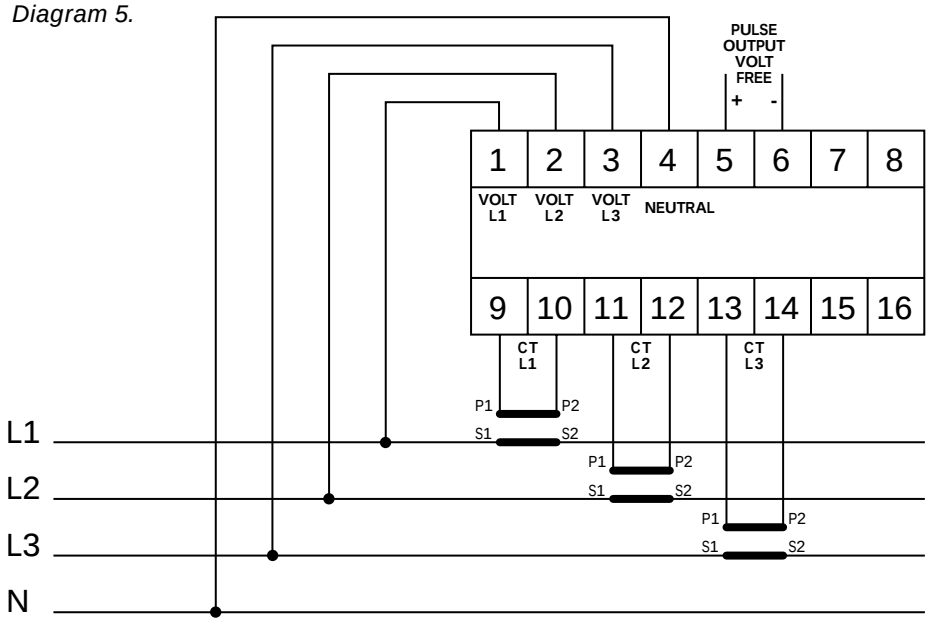
Connecting the meter

See diagram 5 below.

This shows a standard 3 phase 4 wire unbalanced load configuration.

Please note the Primary or the Secondary connection on the current transformers can be earthed.

Diagram 5.



Wiring

Electrical connections are made directly to the back of the meter.

See diagram 5 above.

Electrical connections

2.5 sq.mm wire is recommended for all electrical connections, subject to the distance between the meter and the current transformer. Phasing and polarity of the AC current and voltage inputs, and their relationship is critical to the correct operation of the unit.

Product development is continuous and Autometers Systems Ltd reserves the right to make alterations in specifications and manufacture without notice. Products as delivered may therefore differ from the description and illustrations in this publication.

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