

# INSTALLATION & OPERATING MANUAL

IC 910

## CHECK CONTENTS

Package should contain.

1. Meter
2. Fixing Brackets (4)
3. Installation and Instruction Manual.

The IC 910 meter is the latest kWh meter in the 900 series from Autometers Systems Ltd. It has been designed to be installed in switch board panels where space is a premium. Simple to install, small dimensions and very easy to programme makes it an ideal choice.



## THE DISPLAY

The meter has been designed to give limited but sufficient information for you to fit the meter and be confident it has been set up correctly. A new feature is the engineering display in which you can select test mode, this will show two decimal places on the display.

Above you will see two pictures one showing the current ratio setting (0400 5) which you have selected and the lower picture showing you the kWh display. Also on the lower picture are the numbers 1, 2, 3. These will only appear if a reverse phase is detected in one or all of the CTs.



## THE INDICATOR LIGHTS

There are two lights on the front of the meter which will illuminate at preset times subject to how you have programmed the meter. The top light is for engineering purposes and allows the meter to be checked for accuracy. The lower of the two lights will illuminate to indicate the output relay contacts closing.

## PULSE OUTPUT

The meter is fitted with an optically isolated volt free pulse output with contacts normally open. The meter has been designed to allow the installer to programme the output relay to either 1 kWh/imp or 10 kWh/imp. The closure time of the contacts is 100 ms which makes the IC 910 meter suitable for nearly all management systems.

## LOCATION

The IC 910 meters should be mounted in a dry, dirt free environment away from heat sources and very high electric fields. Temperatures should not exceed 70°C or fall below -20°C.

## INSTALLATION

The meter 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 89 mm (including wiring). A single square aperture 92 mm wide, 92 mm high should be prepared. Enter the meter into the aperture and secure with the four fixing brackets provided.

See *diagram 2*.

## PROGRAMMING THE METER

To programme the meter you must first turn to the back of the meter and locate the binary switches. See *diagram 3*.

Diagram 3 (inset) shows the binary switches which are situated on the back of the meter. These switches allow you to set the various parameters on the IC 910 meter.

- a. Switching the numbers 1-5 to the “on” position enables the meter to be programmed to various current ratio settings. See *diagram 1*.
- b. Switch 6 allows the engineer to change the display to show two decimal places. Switch in the “on” position changes the display to show two decimal places. This switch must be in the “off” position when test is complete (no decimal places).

- c. Switch 7 is for changing the pulse output relay value to either 1 kWh/imp or 10 kWh/imp. The switch in the “off” position switches the pulse relay to 1 kWh/imp. The switch in the “on” position switches the meter relay output to 10k Wh/imp. (For current ratio values of 1000/5 amp and above set this switch to “on” position).
- d. Switch 8 is for switching on the strobe light for accuracy testing. This switch must be in the “off” position when testing is complete.

## CURRENT TRANSFORMER SELECTIONS

See *diagram 1* for the various ratios which can be selected by the binary switches.

## POWER ON

When you have programmed and installed the meter you will be ready to put power on. When power is first put on the meter the display will go through a small routine. First it will illuminate all characters on the display (3 seconds) then it will oscillate between the current ratio you have set and the kWh register. It will default to the kWh register after 60 seconds.

## CONNECTION DIAGRAM

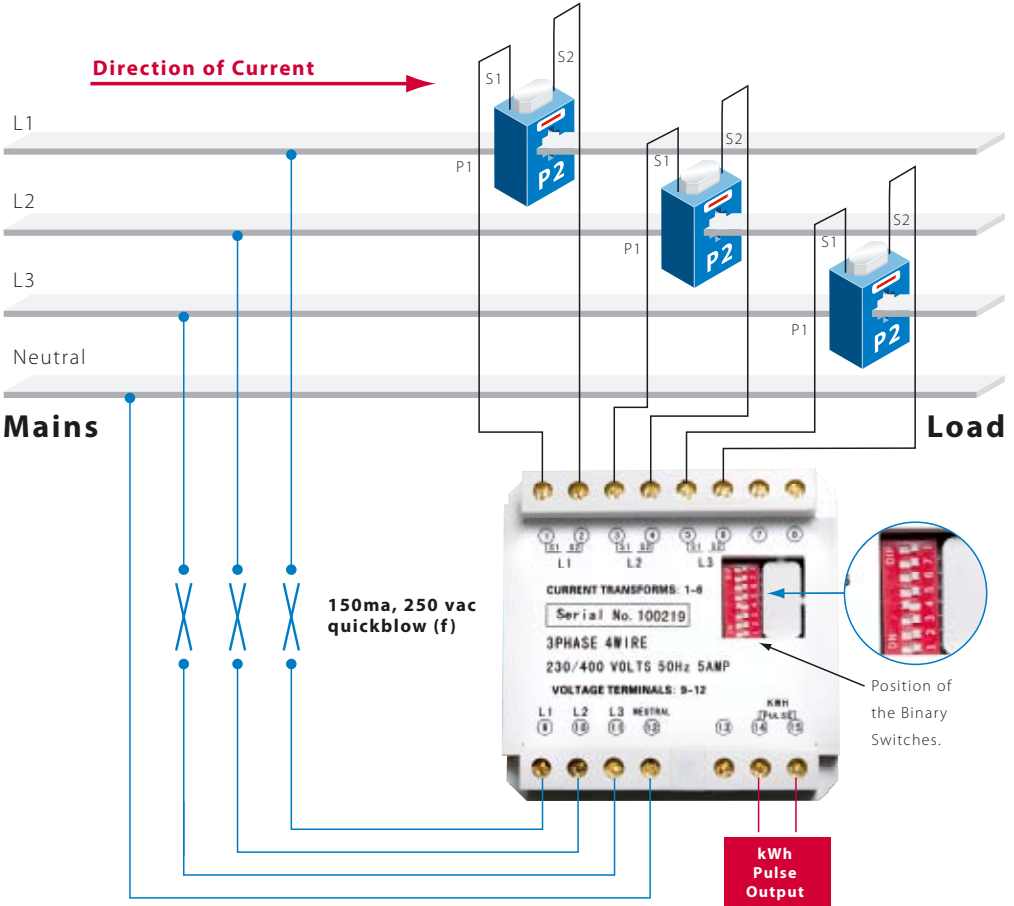


DIAGRAM 3

## ELECTRICAL CONNECTIONS

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

## MAINTENANCE

The IC 910 meters do not require any regular maintenance.

## IMPORTANT

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

## CURRENT TRANSFORMER SETTINGS

The label below indicates the individual dill switch settings for the current transformer ratio:

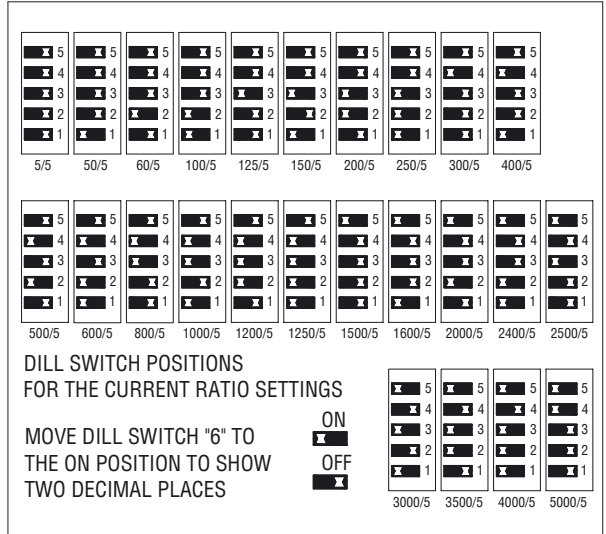
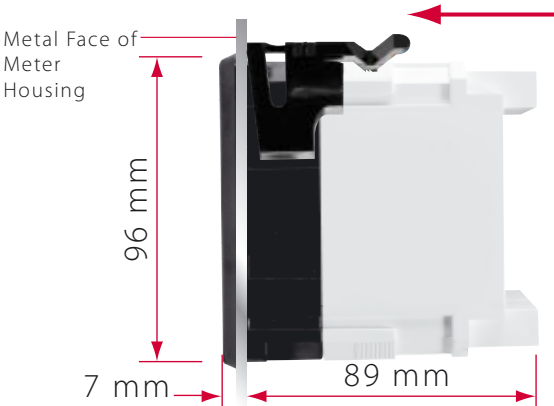


DIAGRAM 1

## DIMENSIONS

Four plastic fixing clips must be pushed against the metal face of the meter housing.



**Please note.**

An aperture of 92mm x 92mm must be cut into the metal face of meter housing for the meter to be mounted.

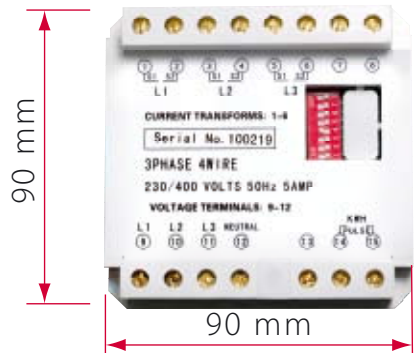


DIAGRAM 2

## PERFORMANCE AND DATA

### Technical Parameters

Meter standard	BS EN 61036	Pulse Constant	5000 imp/kWh
Accuracy	Active 1.0	Range of voltage	200v – 250v
Reference Voltage	3 x 230/400 volt	Operating temperature	- 10°C + 50°C
Basic Current	5 amp	Storage temperature	- 20°C + 70°C
Maximum Current	6 amp	Power consumption	0.1VA @5A; 1W
Frequency	50/60 Hz		2VA @230 volt


## DEFINITIONS

### Measurement Category CATIII

Measurement category III is for measurements performed in the building installation. Note 2 examples are measurements on distribution boards, circuit breakers, wiring, including cables, bus-bars, junction boxes socket-outlets in the fixed installation, and equipment for industrial use and some other equipment, for example, stationary motors with permanent connection to the fixed installation.

Table 1 symbol 11, IEC 60417-5172

Defined as: Insulation comprising both basic insulation and supplementary insulation.

 **Double Insulation Symbol**



**Caution, risk of electric shock**

## MAINTENANCE AND SERVICE

### Field Service Considerations

In the unlikely event that a unit should fail, it will generally be serviced by exchanging the unit for a replacement unit. The initial installation should be done in a way which makes this as convenient as possible.

1. It is good practice that a current transformer shorting block is fitted, this enables the meter to be disconnected without open circuiting the current transformers. The shorting block should be wired so that the protective relays are not affected.

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

### Disconnect From Supply

A suitable isolator for both voltage and current terminals shall be included in the wiring installation, close to the meter with easy access and marked as the meters disconnect device. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. Current measuring terminals are not intended to be connected to voltages to earth above 50Vac.

## DEDICATED CUSTOMER SERVICE

Customer care is the cornerstone of the company's success. A positive service policy is observed throughout every specialist area of operation.

The personal involvement of all the directors at every level, a highly trained and motivated staff, fully computerised systems and in depth stockholding combine to provide a level of service which has earned the appreciation of customers across the spectrum of the UK and overseas markets. Computerised distribution systems are geared to a consistent 24 hour despatch of products, with 20 minute despatch being possible in response to urgent demand for small orders.

## PRODUCT RANGE

Metering and monitoring equipment ranges from single phase and Polyphase kWh electromechanical meters to a sophisticated range of fully programmable information centres. Also available are Electronic Meters, Panel Mounted Meters, Maximum Demand Meters, DIN Rail Meters and Current Transformers.

### **CE Approval.**

The IC 910 has been fully examined and tested in accordance with the standards listed and meets the specified requirements defined in BS EN 61326:1997 inc A1, A2, A3 - Electrical equipment for measurement, control and laboratory use - EMC requirements.

- |                                      |                                      |
|--------------------------------------|--------------------------------------|
| 1. BS EN 61326:1997 inc. A1, A2 & A3 | Conducted Emissions                  |
| 2. BS EN 61326:1997 inc. A1, A2 & A3 | Radiated Electricity Field Emissions |
| 3. BS EN 61000-4-2:1995 inc. A1 & A2 | Electromagnetic Compatibility        |
| 4. BS EN 61000-4-3:2002 inc. A1 & A2 | Electromagnetic Compatibility        |
| 5. BS EN 61000-4-4:1995 inc. A1 & A3 | Electromagnetic Compatibility        |

Safety Standards: BS EN 61010-1:2001

### **Important.**

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

REF: IEC 1000-5-1(BS195/210788DC) IEC 1000-5-2 (BS 195/214642DC)  
IEC 10000-5-6 (BS 195/210789DC).

## WARNING DO NOT MEGGAR TEST

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