

## Programming the meter

When you receive the meter there will be at least one value that you must programme into the meter. This is the current transformer ratio.

If the meter has been purchased with the intention of using the RS 485 Modbus output then you will need to program the Modbus parameters you require.

## **IMPORTANT NOTICE**

The MA-10 is a MID approved electricity meter, once you have altered any of the parameters e.g. Current transformer ratio or voltage ratio and you have come out of the programming mode you cannot alter them again. Contact us to assist. This rule does not apply to the Modbus settings.

## Communication Settings

Where the meter has been supplied with a RS 485 protocol output the individual parameters are set by using the front key panel. The range is 001 to 247.

## Enter Password

Long press **L** to enter PASSWORD programming mode.

The first digit will flash, Press 🗰 to increment the number (1000)

Long press じ to confirm and enter programming mode.

## Modbus RS 485 Address

| SEE<br>Rddr<br>UD 1Set Address now appears on the display.<br>Long press I and the mod -bus address will be<br>shown.SEE<br>Rddr<br>10 1Long press I again and first digit for the mod-bus<br>address will flash.Press the I be key to increment the number.Press the I be key to move the cursor to the right.<br>When all three numbers have been selected long<br>press I to confirm, GOOD will appear to confirm<br>locked.Press the I be key to move the cursor to the right.<br>When all three numbers have been selected longPress I be confirm, GOOD will appear to confirm<br>locked.Press I be confirm, GOOD will appear to confirm<br>locked.Press I be I be key to move to baud rate.SEL<br>BRUD<br>95<br>95<br>95<br>95<br>95<br>95<br>95SEL<br>BRUD<br>95<br>95<br>95<br>95<br>95<br>95SEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL<br>brightSEL <bright< td="">SEL<br/>bri</bright<>  |                                 |  |  |  |
|---|---------------------------------|--|--|--|
| Shown.     Step     Rddr     Image: Shown.     Long press     address will flash.     Press the   | ្ទទទួម                          | Set Address now appears on the display.  |  |  |
| SEL<br>MUGGPress the Sec key to increment the number.SEL<br>MUGGPress the Sec key to move the cursor to the right.<br>When all three numbers have been selected long<br>press Sec to confirm, GOOD will appear to confirm<br>locked.Baud RatePress Sec to return to set address menu.SEL<br>SEL<br>MUGGPress the Sec to return to set address menu.SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>  | 888r<br>001                     | shown.   |  |  |
| SEE<br>Model   Press the See to move the cursor to the right.<br>When all three numbers have been selected long     press   It is to confirm, GOOD will appear to confirm<br>locked.     press   It is to return to set address menu.     Baud Rate   Press the See to return to set address menu.     Set<br>  | Rddr                            | Long press 💽 again and first digit for the mod-bus address will flash.                                     |  |  |
| press   Image: Set in the image: Set in |                                 | Press the 🗰 key to increment the number.   |  |  |
| Iocked.     Press     Saud Rate     Saud Rate     Press the     Press the     SEE     Select the parameter you want, Press Long<br>and confirm BAUD RATE. GOOD will appear to   | Rddr                            | Press the 🖭 key to move the cursor to the right.<br>When all three numbers have been selected long         |  |  |
| Saud Rate        SEL<br>SRUG<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL<br>SEL   |                                 | press 🔃 to confirm, GOOD will appear to confirm locked.  |  |  |
| SEE   Press the See to move to baud rate.     SEE   Long press See and the numbers will flash     Press the See to scroll through the options available.     SEE   Select the parameter you want, Press Long and confirm BAUD RATE. GOOD will appear to   |                                 | Press 🕍 to return to set address menu.   |  |  |
| Filid<br>g5         Long press         E.         and the numbers will flash              SEE           press the          E.         key to scroll through the options<br>available.             SEE           Select the parameter you want, Press Long<br>and confirm BAUD RATE. GOOD will appear to   | Baud Rate                       |  |  |  |
| SEL   SEL   and the numbers will flash     Press the   Image: Select the parameter you want, Press Long and confirm BAUD RATE. GOOD will appear to  | 585<br>5803<br>36 *             |  |  |  |
| 9.6 available.   SEE Select the parameter you want, Press Long   9.8 4 and confirm BAUD RATE. GOOD will appear to   |                                 | Long press 탈 and the numbers will flash  |  |  |
| 38 4 and confirm BAUD RATE. GOOD will appear to   | 68ี่ปีชี้<br><mark>9.6</mark> * | press the 🔃 key to scroll through the options available.   |  |  |
|   | 582<br>5803<br>384 *            | Select the parameter you want, Press Long<br>and confirm BAUD RATE. GOOD will appear to<br>confirm locked. |  |  |
|   |                                 |  |  |  |

Press the 🔛 key for Parity.

Long press to enter parity for options will flash.

To set parity repeat using the the or the keys to choose between even, odd or none and long

press 💽 to lock. GOOD will appear to confirm locked.

Press I'vice to leave programming mode.

## Parity

SEE PACE ESEN SEE ESEN SEE PACE PACE

# MA-IO Quick setup guide



# CT Ratio Settings

### Enter Password

Long press 🕒 to enter PASSWORD programming mode.

The first digit will flash, Press 🗰 to increment the number (1000)

Long press じ to confirm and enter programming mode.

## CT1

6H

| - |                           |   |
|---|---------------------------|---|
|   | []                        | Set Address now appears on the display.   |
|   | [}<br>, R}E<br>000        | Press the 🔛 key to scroll through the various adjustable options.   |
| 1 | C E<br>7 8 E<br>000 I     | Stop at CT1 this is the c.t ratio setting.  |
|   |                           | Long press 💽 key channel CHO1 will flash  |
|   |                           | Long press 🔃 , again CH01 will stop flashing and the first large digit will flash for the C.T rate.                               |
|   |                           | Press the 😥 key to increment the number.  |
|   | 582<br>52<br>5200<br>5200 | Press the E key to move the cursor to the right.<br>E.g. 200 amp should be 0200.<br>When all four numbers have been selected long |
|   |                           | press 🔃 to confirm, Good should appear on the display confirming this is now locked.  |
|   |                           | Press 💹 twice to leave programming mode.  |
|   |                           | If the meter has been supplied with multiple channels, then enter programming mode and  |

press to change the channel and repeat as listed before.

#### Electrician

MA-10 Din rail electricity meters should only be installed by a fully qualified electrician who has knowledge of electricity meters connected with current transformers.

It is the installer who is fully responsible for the safe installation of this meter. It must be installed to meet the current electrical regulations concerning installation of electricity meters.

#### **EMC Installation Requirements**

Please see full installation brochure for details - visit autometers.co.uk

Wiring Information

#### Power Supply

The MA-10 receives it power from the bottom of the meter through the AUX terminals, this must be connected (240 volt).

#### Wiring

The electrical connections of voltage current and Mod-bus are made directly to the top and bottom of the meter. The Mod-bus connections are made to the top of the meter either using the wiring terminal or the RJ-45 sockets.

All electrical terminals can be unplugged for wiring. The current input is made via a RJ12 plug into the top of the meter.

#### **Electrical Connections**

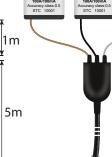
1.0 mm cable is all that is required for the voltage connections. For the low voltage communication connections we recommend a twisted shielded cable Belden 9841 -2 wire or 9842 -4 wire or equivalent. Phasing and polarity of the AC current and voltage inputs and their relationship is critical to the correct operation.

#### Dimensions

The meter is a four module DIN rail mounted meter. Dimensions are 71.7mm width x 122.5mm height x 66mm deep. The cut out hole for the front of the enclosure is 72mm x 46mm.

#### Wiring Diagram

3 phase 4 wire split core CT arrangement



Current transformer connection shown is using the new split core easy wire current

**CT Connection** 

transformers.



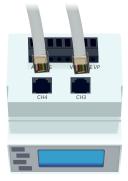
Brown- L1 Phase Black- L2 Phase Grey- L3 Phase

CHANNEL 1 CHANNEL 2 CT CONNECTION CT CONNECTION CHANNEL 3 CT CONNECTION C

CHANNEL 4 CT CONNECTION



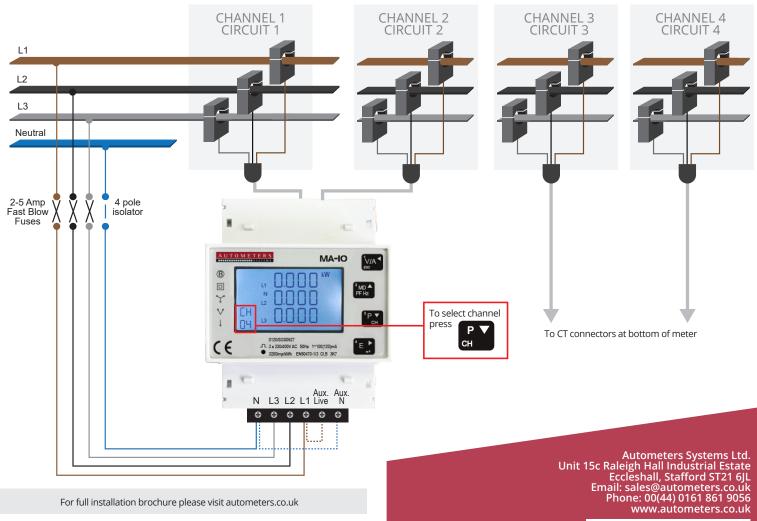
TOP



BOTTOM

UTOMETERS

S Y S T E M S



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

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