

Electrician

The Q-180 panel meter 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 panel meters.

EMC Installation Requirements

Whilst this unit complies with all relevant EU EMC (electro-magnetic compatibility) regulations, any additional precautions necessary to provide proper operation of this and adjacent equipment will be installation dependent and so the following can only be general guidance:
Avoid routing wiring to this unit alongside cables and products that are, or could be, a source of interference.

The supply to the unit should not be subject to excessive interference. In some cases, a supply line filter may be required.

To protect the product against incorrect operation or permanent damage, surge transients must be controlled. It is good EMC practice to suppress transients and surges at the source. The unit has been designed to automatically recover from typical transients; however in extreme circumstances it may be necessary to temporarily disconnect the supply for a period of greater than 10 seconds to restore correct operation.

Screened communication leads are recommended and may be required. These and other connecting leads may require the fitting of RF suppression components, such as ferrite absorbers, line filters etc., if RF fields cause problems.

It is good practice to install sensitive electronic instruments that are performing critical functions in EMC enclosures that protect against electrical interference causing a disturbance in function.

Electrical Connections

2.5mm flexible stranded cable is recommended for all main electrical 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.



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 have to program the Modbus parameters you require. See reverse Communication. (RS 485 Modbus)

Password Entry

Setting-up mode is password protected, so you must enter the correct password.

By firmly pressing the button **E** for 2 seconds, the password screen appears. The default password is 1000.

To increment number press **PF Hz MD** to 1000.

Press and hold **P** display will change to RS485 Comm. If an incorrect password is entered, the display shows ERR.

Communication (RS 485 Modbus)

The RS485 port can be used for communications using Modbus RTU protocol. Parameters such as Address, Baud rate, Parity, Stop bit can be selected.

To adjust all other parameters press **P**. When you find the parameter you want to reset press and hold **E** for 2s.

Long press **E** to enter the Address option.

To reset Baud rate, Parity, Stop bit, press **P**

Address

An RS485 network can accommodate up to 255 different devices, each identified by an individual address.

The Modbus address range on the Q-180 is between 001-247

Default setting from Autometers is 001

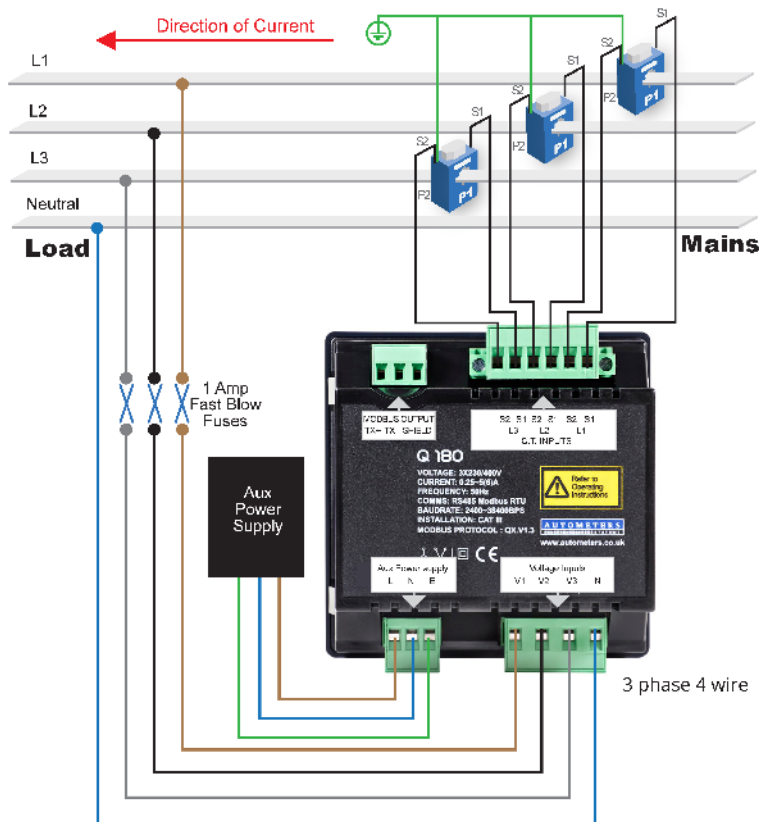
Long press **E** to enter the selection routine.

The address setting will flash. Use **PF Hz MD** and **P** to increment or reduce the number.

Press **E** to move cursor to the right.

When address is correct, long press **E** for

confirmation and press **Ph S** to return to the main menu.



Wiring Information

Power Supply

The Q-180 requires auxiliary power to be connected

Wiring

The electrical connections of voltage, current and Pulse output are made directly to the back of the meter. The RS 485 Modbus connections are at the top on the side of the meter.

All terminals are green in colour and can be unplugged, The current terminals are screwed in but can be unplugged if the screws are removed

Baud rate

SEt
bAUD
9600

Baud rate options; 2400 4800 9600 19200 38400 (bps).
Default: 9600bps

From the Set-up menu, Use **PF1/MD** and **P** to select the Baud rate options.

Long press **E** to enter the selection routine.

The Baud Rate setting will flash. Use **PF2/MD** and **P** to choose Baud Rate.

Long press **E** for confirmation and then press **Ph5** to return to the main menu.

Parity

SEt
PARI
NONE

Parity Options: NONE, EVEN, ODD.

Default Parity : EVEN

Note that if parity is set to ODD or EVEN, Stop Bits will be set to 1 and cannot be changed.

From the Set-up menu, Use **PF1/MD** and **P** to select the Parity options.

Long Press **E** to enter the selection routine.

The Parity setting will flash. Use **PF2/MD** and **P** to choose Parity.

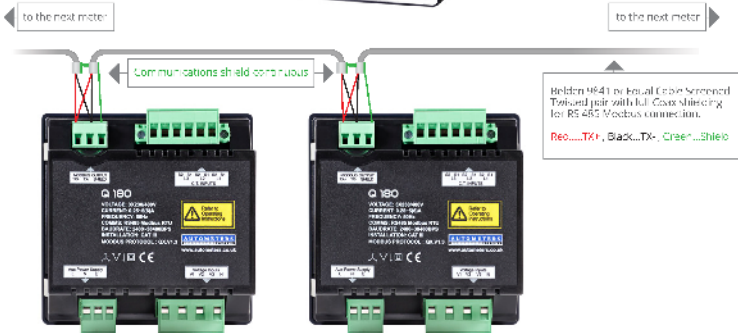
Example shows:
Set Parity: EVEN

And long press **E** for confirmation.

Press **Ph5** to return the main set up menu.

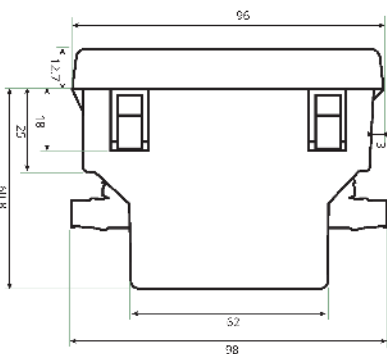
Connection

This meter is for monitoring only and can not be connected to the Autometers Horizon Data Monitoring System



Dimensions

The meter is a 96 x 96 mm panel mounted meter with a depth of 70mm
The cut out hole for the panel meter is 92 x 92 mm.



IMPORTANT NOTICE

The Q-180 series of meters are for monitoring only and are not suitable for revenue collection.

The Q-180 series of meters has a different RS 485 Modbus Protocol and therefore cannot be connected to the Horizon data monitoring system

C.T. (Current Transformer)

SEt
CT

From the main Set-up menu, Use **PF2/MD** and **P** to select the CT option.

C.T.2 (Current Transformer Secondary)

SEt
CT2
5 A

Set C.T.2 secondary current input.
Options: 5A or 1A
Default CT2: 5A

Long press **E** to enter the CT2 routine.

Press **E** for 2s, the CT2 setting will flash.

Use **PF1/MD** and **P** to choose CT2 with 5A or 1A.

Press **Ph5** to return to the main menu.

C.T. Rate (Current Transformer Primary)

SEt
CT
RATE
0001

To program the current ratio in the meter simply enter the primary current.

eg. if you require the meter to be set at 200amp program the numbers to be 0200.

Long press **E** to enter the CT Rate routine.

Press **E** for 2s, the CT rate setting will flash.

Use **PF1/MD** and **P** to choose the first digit of the CT value.

Press **E** to move the cursor to the right. When you have entered the desired setting long press **E** for

confirmation and then press **Ph5** to return to the main menu.

Example of meter set at 200/5 amp

SEt
CT
0200

Example of how the display should look for a meter programmed to 200/5 amp.

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

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