

AUTOMETERS

SYSTEMS

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)

IMPORTANT NOTICE

The HT-35 is a MID approved DIN rail 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. This rule does not apply to the Modbus settings.

Password Entry

PASS

1000

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

By firmly pressing the button **E** for 3 seconds, the password screen appears.

The default password is 1000.

If an incorrect password is entered, the display shows ERR.

C.T. (Current Transformer)

SET

CT

From the main Set-up menu, Use **MDI/PF/Hz** and **P** to select the CT option.

C.T.2 (Current Transformer)

SET
CT2

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 3s, the CT2 setting will flash.

Use **MDI/PF/Hz** and **P** to choose CT2 with 5A or 1A.

C.T. Rate (Current Transformer)

SET
CT
RATE
0001

To set the primary current ratio in the meter you must program the divider into the meter. e.g. to set 200/5 amp input "0040" (Divide the primary by 5) 5 amp being the secondary of the c.t. See table below.
Options: 1~2000
Default CT rate 1. (New Ratio Must Be Programmed Into The Meter)

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

Press **E** for 3s, the CT rate setting will flash.

Use **MDI/PF/Hz** and **P** to choose CT rate with 1~2000.

And long press **E** for confirmation

Example of meter set at 200/5 amp

SET
CT
RATE
0040

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

C.T Primary	Number to program into the meter	C.T Primary	Number to program into the meter
100/5	20	800/5	160
150/5	30	1000/5	200
200/5	40	1200/5	240
250/5	50	1500/5	300
300/5	60	1600/5	320
400/5	80	2000/5	400
500/5	100	2500/5	500
600/5	120	3000/5	600

HT-35 METER

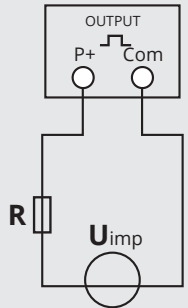
Quick setup guide



Pulse Output

The pulse outputs can be set to generate pulses to represent kWh/kVarh
Pulse constant: 0.001/0.01/0.1/1/10/100/1000 kWh or kVarh per Pulse
Pulse width: 200/100/60 Ms.
The pulse output is passive type, complies with IEC62053-31 Class A.

ATTENTION: Pulse output must be fed as shown in the wiring diagram below. Scrupulously respect polarities and the connection mode. Opto-coupler with potential-free SPST-No Contact.
Contact range: 5~27VDC Max. current Input: 27mADC



Pulse

This option allows you to configure the pulse output. The output can be set to provide a pulse for a defined amount of energy active or reactive.

SET

PULS

This option sets the pulse output type, pulse rate, duration time.

From the Set-up menu, Use **MDI/PF/Hz** and **P** to select the Pulse option.

Pulse rate

SET

PULS

RATE

0001

Pulse rate options: 0.001 , 0.01 , 0.1 , 1 , 10 , 100 , 1000 kWh / kVarh per Pulse. Default : 0.01 kWh (100imp/kWh)

Use **MDI/PF/Hz** and **P** to select Pulse Rate option.

Long press **E** the setting will flash.

Use **MDI/PF/Hz** and **P** to choose Options.

Long press **E** for confirmation.

Pulse Duration

SET

PULS

ELNE

100

Pulse Duration time option 200, 100, 60mS
Default : 100mS

Use **MDI/PF/Hz** and **P** to enter Pulse duration routine.

Long press **E** the setting will flash. Use **MDI/PF/Hz** and **P** to choose Options.

And long press **E** for confirmation.

Press **VIA/ESC** to return the Pulse Duration set up menu.

Communication (RS 485 Modbus)

SET

COM5

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

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

Communication status

RS

485

00

Indication only

Address



An RS485 network can accommodate up to 255 different devices, each identified by an individual address. The Modbus address range on the HT-35 is between 001~247
Default setting from Autometers is 001

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

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

Long press **E** for confirmation.

Baud rate



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

From the Set-up menu, Use **MDI/PF/Hz** and **P** to select the Baud rate options.

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

The Baud Rate setting will flash. Use **MDI/PF/Hz** and **P** to choose Baud Rate.

And long press **E** for confirmation

Parity



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 **MDI/PF/Hz** and **P** to select the Parity options.

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

The Parity setting will flash. Use **MDI/PF/Hz** and **P** to choose Parity.

Example shows:
Set Parity: EVEN

And long press **E** for confirmation.

Press **VIA/ESC** to return the main set up menu.



Electrician

The HT-35 DIN rail 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.

Wiring Information

Power Supply

The HT-35 receives its power from any one of the voltage connections and Neutral.

Wiring

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

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

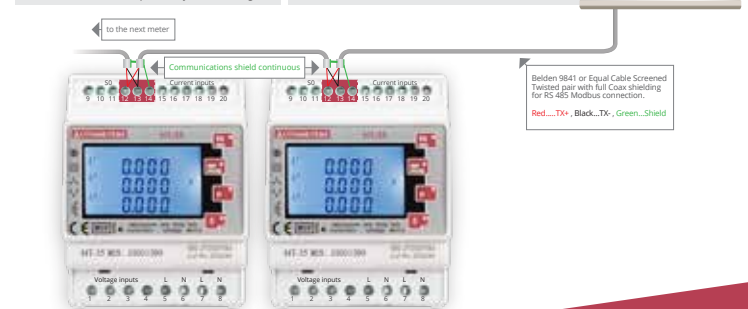
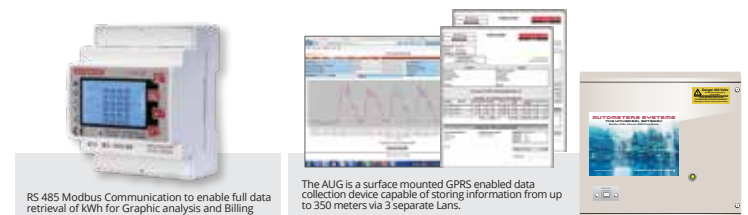
Electrical Connections

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.

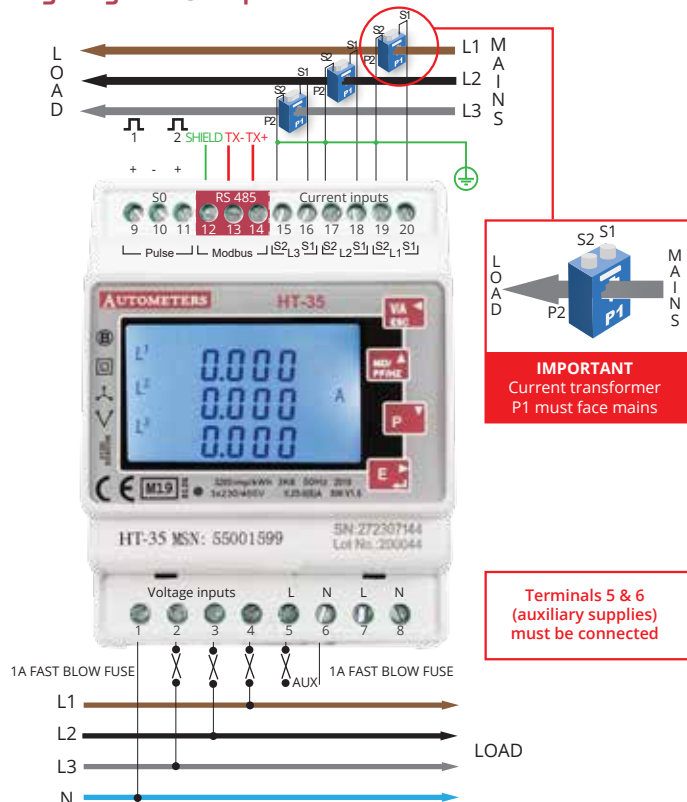
Dimensions

Dimensions are 72mm width x 94.5mm height x 65mm deep
The cut out hole for the panel meter is 73mm x 46mm

The Autometers Universal Gateway (AUG) with the HT-35



Wiring Diagram for 3 phase 4 wire



For full installation brochure please visit autometers.co.uk

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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