A U T O M E T E R S
S Y S T E M S

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 panel 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.
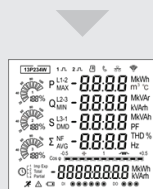This rule does not apply to the Modbus settings.

Meter programming check

Addr
001

To check the settings which have been progammed into the meter.

Long press **P** Modbus Address.

Short press **MD/PF/HZ** to scroll through the other settings:

Baud Rate
Parity
Primary current transformer ratio (c. .t 1)
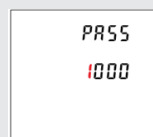Secondary current transformer ratio (c.t. 2)
Meter serial number, 7 day program time
Date and Time
Tariff 1-8
Full test icons on display
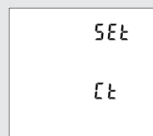
Password Entry

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.
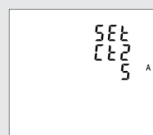The default password is 1000.
If an incorrect password is entered, the display shows ERR.

C.T. (Current Transformer)

SEt
Ct

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

C.T.2 (Current Transformer)

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 3s, the CT2 setting will flash.

Use **MD/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 **MD/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
100/5	0020
150/5	0030
200/5	0040
250/5	0050
300/5	0060
400/5	0080
500/5	0100
600/5	0120
800/5	0160

Example of meter set at 200/1 amp

SEt
Ct
RAtE
0200

Example of how the display should look for a meter programmed to 200/1 amp. See table for more settings.

| C.T Primary	Number to program into the meter
100/1	0100
150/1	0150
200/1	0200
250/1	0250
300/1	0300
400/1	0400
500/1	0500
600/1	0600
800/1	0800

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 polarties and the connection mode. Opto-coupler with potential-free SPST-No Contact.
Contact range: 5~27VDC Max. current Input: 27mADC
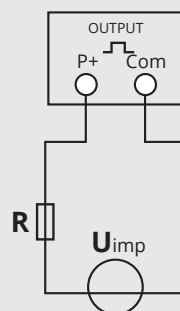
OUTPUT
P+ Com
R U_{imp}

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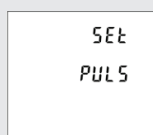
This option sets the pulse output type, pulse rate, duration time.

From the Set-up menu, Use **MD/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 **MD/PF/HZ** and **P** to select Pulse Rate option.

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

Use **MD/PF/HZ** and **P** to choose Options.

Long press **E** for confirmation.

Pulse Duration

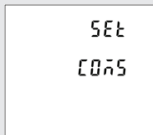Pulse Duration time option 200, 100, 60mS
Default : 100mS

Use [MD/PF/HZ▲] and [P▼] to enter Pulse duration routine.

Long press [E↵] the setting will flash. Use [MD/PF/HZ▲] and [P▼] to choose Options.

And long press [E↵] for confirmation.

Press [V/A◀ ESC] to return the Pulse Duration set up menu.
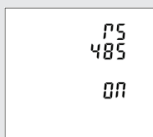
Communication (RS 485 Modbus)

The RS485 port can be used for communications using Modbus RTU protocol. Parameters such as Address, Baud rate, Parity, Stop bit can be selected.
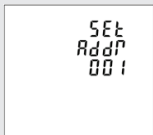
Long press [E↵] to enter the Address option.

Communication status

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 [MD/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 [MD/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 [MD/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 [MD/PF/HZ▲] and [P▼] to select the Parity options.

Long Press [E↵] to enter the selection routine.

The Parity setting will flash. Use [MD/PF/HZ▲] and [P▼] to choose Parity.

Example shows:
Set Parity: EVEN

And long press [E↵] for confirmation.

Press [V/A◀ 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 electricity meters.

EMC Installation Requirements

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

Wiring Information

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

Wiring
All electrical and comunication cables to be connected as per the daigaram shown on the leaflet.

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
Autometers recommend that all cables from the current transformers are 2.5 multi stranded flexible cables and do not exceed 2 metres. For longer distances please contact Autometers for advice.

The comunication cable must be a twisted pair shielded like belden 9841 or 9842.

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

Wiring Diagram for 3 phase 4 wire

IMPORTANT
Current transformer P1 must face mains

Terminals 5 & 6 (auxiliary supplies) must be connected
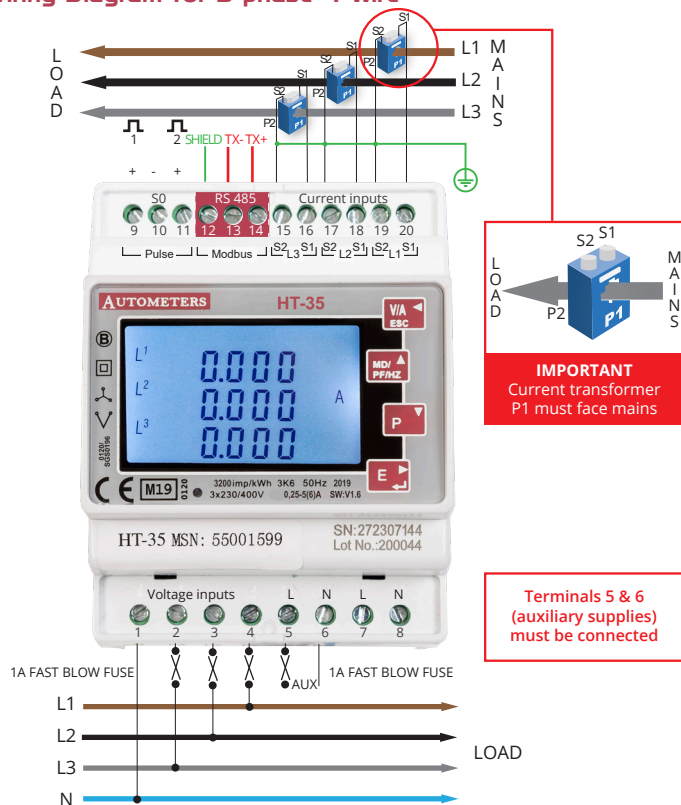
For full installation brochure please visit autometers.co.uk

Ref.HT-35.04.2022

AUTOMETERS SYSTEMS