AUTOMETERS SYSTEMS

A-35M METER

Electrician

The A35M 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 meters.

EMC Installation Requirements

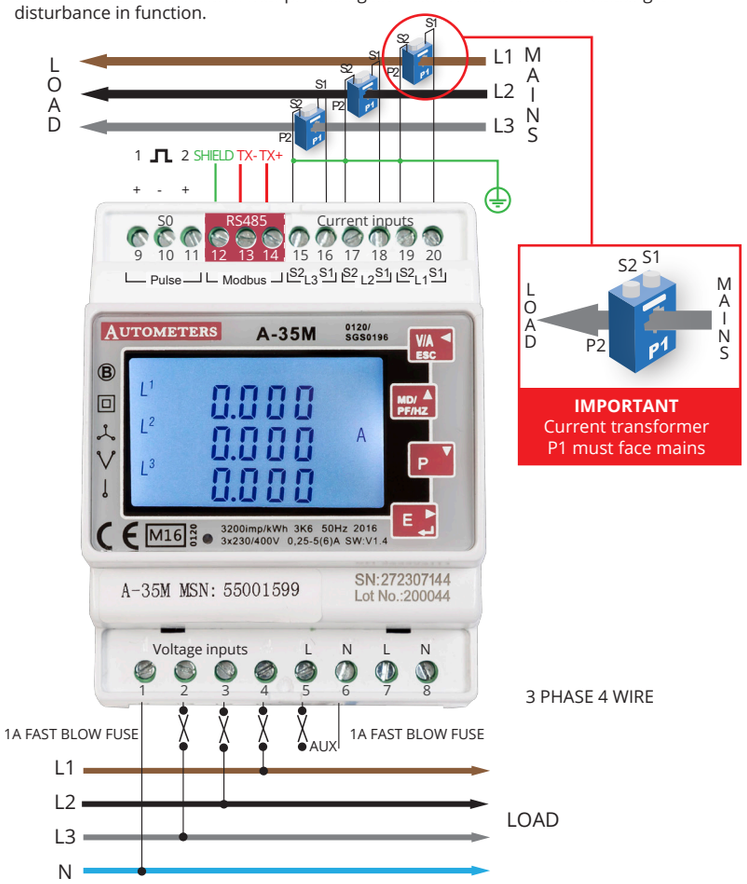
Whilst this unit complies with all relevant EU EMC (electro-magnetic compatibility) regulations, any additional precautions necessary to provide proper operation of this and adjacent equipment will be installation dependent and so the following can only be general guidance:
Avoid routing wiring to this 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 Auxiliary connection must be connected to power up the meter.

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

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

To Enter programing mode.

Press [E] for 3 seconds
Display will show pass
0000
The first digit will flash.

Press [MD PF Hz] once to increment the number to 1

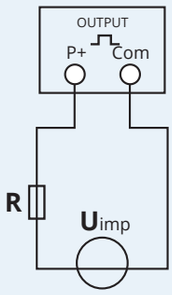
Press and hold down [E] to enter program mode.

Press [P] to scroll down to programme various parameters

Pulse Definition

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 wired 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



Pulse Output

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. Use this section to set up the pulse output—Units: kWh, kVArh

From the set-up menu, use [MD PF Hz] and [P] buttons to select the Pulse output option.

Press [E] to enter the selection routine. The unit symbol will flash.

Use [MD PF Hz] and [P] buttons to choose kWh or kVArh.

On completion of the entry procedure, press [E] to confirm the setting and press [V/A] to return to the main set up menu.

Pulse Rate (Energy Value per Pulse)

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.

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.

RS Address

From the set-up menu, use MD PF Hz and P buttons to select the address ID.

Long press E to enter the selection routine. The current setting will be flashing.

Use MD PF Hz and P buttons to choose Modbus address (001 to 247).

Press E to move cursor to the right.
On completion of the entry procedure, long press E to confirm the setting and press V/A to return the main set-up menu.

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.

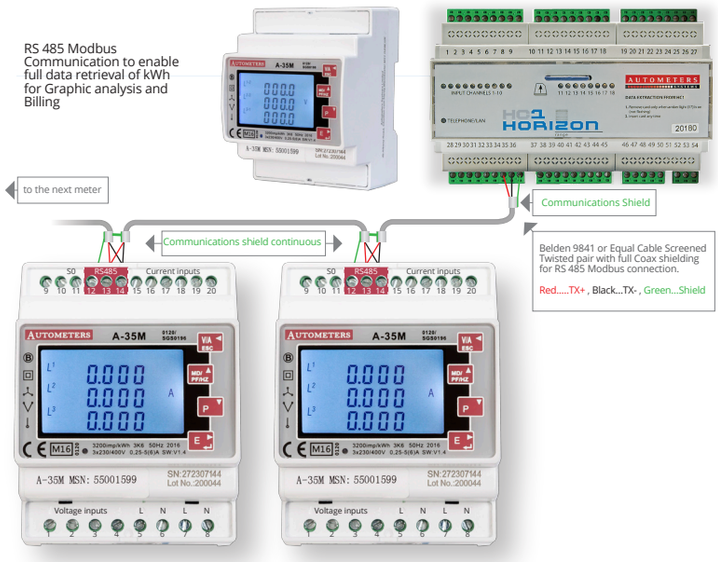
Example shows:
Set Parity: EVEN

And long press E for confirmation.

Press Ph S esc to return the main set up menu.

The Horizon Energy Monitoring System With the A-35M

RS 485 Modbus Communication to enable full data retrieval of kWh for Graphic analysis and Billing



IMPORTANT NOTICE

Do not enter the password and enter programming mode until you have read the instructions of this leaflet and the full instruction leaflet enclosed. You must know your complete programming requirement before entering programming mode.
This meter will lock when you leave programming mode and cannot be altered again.
This rule does not apply for setting the Modbus.

C.T.2 (Current Transformer)

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 (Setting the Current Transformer Ratio)

1. Enter password (see password entry on the front page)
2. Press P to step to c.t. rate
3. Press and hold down E to enter program mode 1st digit will flash
4. Press MD PF Hz to increment number on first digit
5. Press E to move cursor to the right
6. Repeat 4 and 5 until all four numbers have been entered
7. Press and hold E for 2 seconds
8. Wait a few seconds until display shows confirmed
9. Press V/A to return back to home page
10. **This meter is now locked and cannot be altered again**

Example of meter set at 200/5 amp

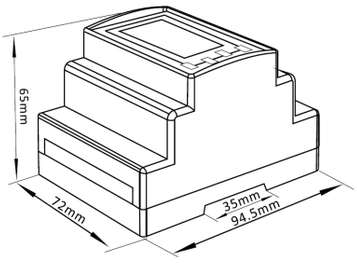
Example of how the display should look for a meter programmed to 200/5 amp.

See table below 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

Dimensions

The meter is a 72mm x 94.5mm panel mounted meter with a depth of 65mm The cut out hole for the panel meter is 72mm x 94.5mm.



"MID approved appendix "B" and "D"

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