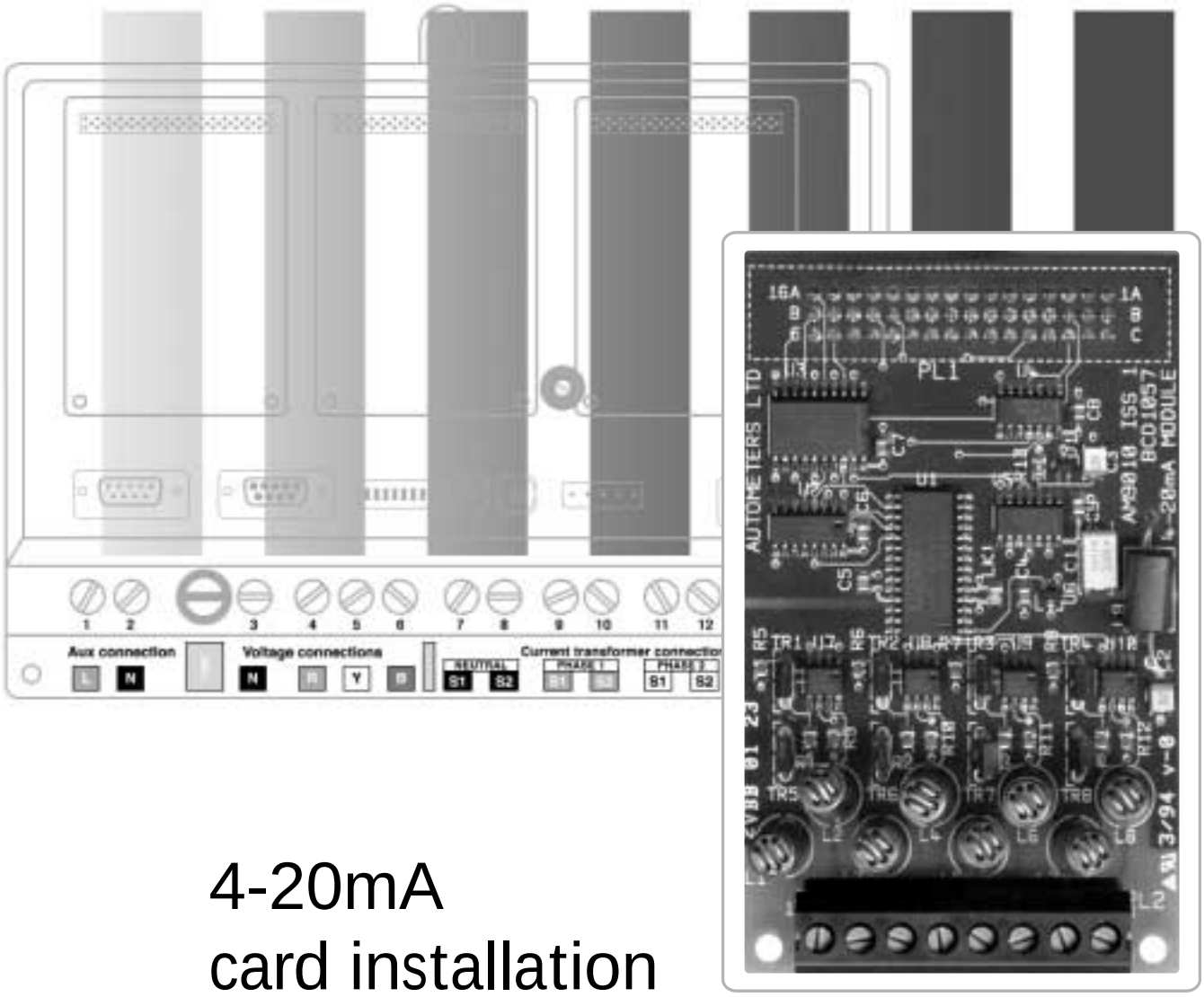
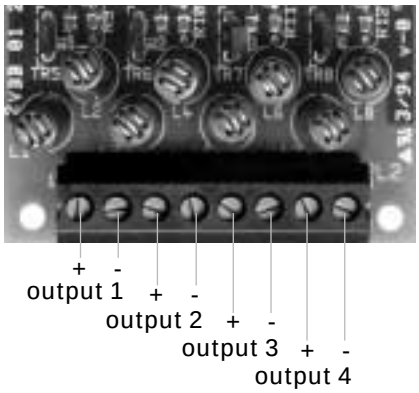
AUTOMETERS



4-20mA card installation

evo IC3 an evolution for metering **a revolution for information**

*evo ic*³ 4-20mA wiring information



1. All outputs are active current sources and are current limited to 25mA.
2. Current output loads should be less than or equal to 500 Ohms.
3. Voltage output loads should be greater than 500 kOhms.
4. All negative connections are common; therefore, all outputs should ideally be fed into isolated inputs to avoid ground loops.
5. All outputs have a resolution to 0.1% of scale.
6. Press function 51 to display approximate output value for all channels.

parameter	input range	input value	output value
line voltage	V + 10%	0V	4mA
line voltage	V + 10%	V + 10%	20mA
phase voltage	(V x 1.732) + 10%	0V	4mA
phase voltage	(V x 1.732) + 10%	(V x 1.732) + 10%	20mA
phase voltage	I + 10%	0A	4mA
phase voltage	I + 10%	I + 10%	20mA
total current	(I + 10%) x 3	0A	4mA
total current	(I + 10%) x 3	(I + 10%) x 3	20mA
phase powers	(V + 10%) x (I + 10%)	0W	4mA
phase powers	(V + 10%) x (I + 10%)	(V + 10%) x (I + 10%)	20mA
total powers	(V + 10%) x (I + 10%) x 3	0W	4mA
total powers	(V + 10%) x (I + 10%) x 3	(V + 10%) x (I + 10%) x 3	20mA
maximum demand	(V + 10%) x (I + 10%) x 3	0W	4mA
maximum demand	(V + 10%) x (I + 10%) x 3	(V + 10%) x (I + 10%) x 3	20mA
frequency	0-100Hz	0Hz	4mA
frequency	0-100Hz	100Hz	20mA
power factor	-0 to -1/1 to +0	-0	4mA
power factor	-0 to -1/1 to +0	+/-1	12mA
power factor	-0 to -1/1 to +0	+0	20mA

Example

system details
3 phase 4 wire CT operated
230/400 volt 50 Hz
200/5 amp

phase current = I + 10% = mA
= 200 + 20 = 220A

total current = (I + 10%) x 3 = 20mA
= (200 + 20) x 3 = 660A

All calculations are based on voltage and current, therefore

volts = Ph-N voltage = 230 volt
current = CT primary = 200 amp

Ph-Ph volts = (V x 1.732) + 10% = 20mA
= (230 x 1.732) + 10% = 438.2V

phase power = (V + 10%) x (I + 10%) = 20mA
= (230 +23) x (200 +20) = 55660W = 55.66kW

AUTOMETERS

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email: sales@autometers.co.uk www.autometers.co.uk

Try our **virtual meter** on the product website **www.*evo-ic3*.co.uk**

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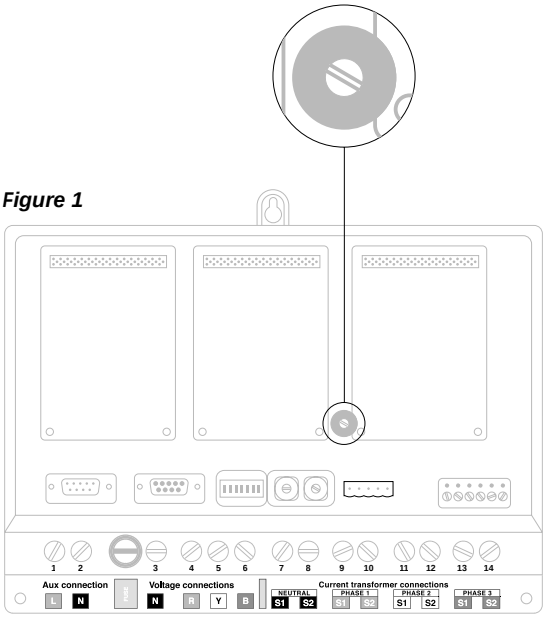
AUTOMETERS

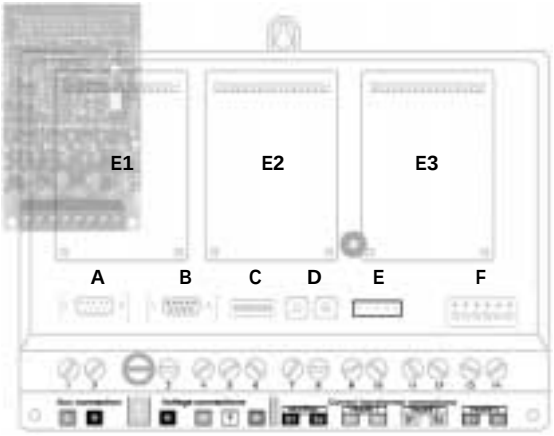
4-20mA card installation

1. Turn power off prior to installation of card.
2. Remove the screen interconnecting lead from the display socket on the base unit.
3. If fitted, remove the RS485 connecting block. *See Figure 1*
4. Remove the base unit clear cover by removing the retaining screw as shown.
5. Remove the cover by lifting from the bottom and sliding the cover upwards.
6. Carefully remove the card from its protective cover or bag and handle by gripping the outer edges only. Do not touch any of the electrical connections on the face or rear of the circuit board.

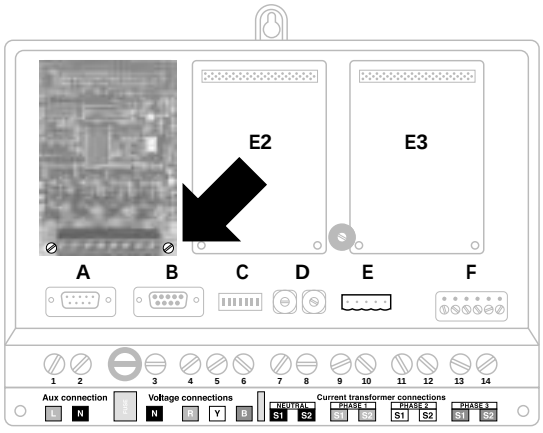
Figure 1



7. Begin by inserting a 4-20mA into slot E1 ensuring a level contact with the pins. (If applicable insert a second card into slot E2 and a third card into Slot E3.)



8. Insert the two retaining screws provided to retain the card into the holes shown (avoid over tightening).
9. Replace the base unit clear cover and re apply the retaining screw (avoid over tightening).
10. Replace the display lead into the display socket.
11. If previously fitted replace the RS485 connecting block.
12. Re-apply the power to the meter.

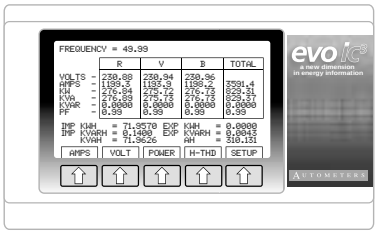


AUTOMETERS

on screen programming of the alarm outputs

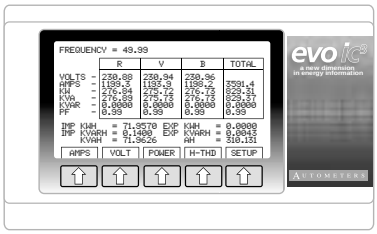
When the 4-20mA card has been installed and the power has been applied, the meter the will run through a set up routine and default to the main screen. You can now start to program the meter.

Step 1



Ensure the screen is showing main as shown in diagram

Step 2



Press **SET UP** (bottom right of screen)

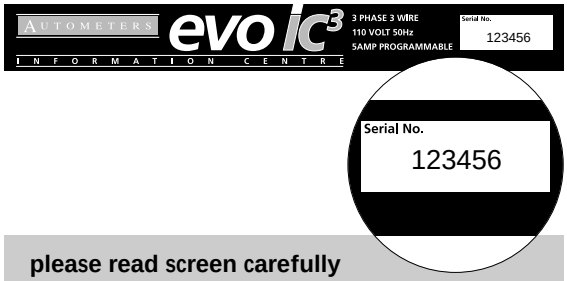
Step 3 Press 4-20mA

Step 4 Press 4-20mA source (VOLTS, AMPS/F, POWER or MD/PF).

Volts	The screen displays phase to neutral voltage 4-20mA. Press ph-ph for phase to phase voltage 4-20mA. Proceed to step 5.
Amps	The screen displays Current 4-20mA. Press FREQ for Frequency 4-20mA. Proceed to step 5.
Power	The screen displays real power alarms (KW) 4-20mA. Press KVA for apparent power (KVA) 4-20mA or press KVAR for reactive power (KVAR) 4-20mA. Proceed to step 5.
MD	The screen displays Maximum demand 4-20mA. Press PF for power factor 4-20mA. Proceed to step 5.

Step 5 Press 4-20mA

Step 6 Key in the password by pressing the numbers from the keypad located behind the door on the right and press ENTER (password is the serial number on the front of the base unit)
See example below



please read screen carefully

You are about to enter a multiple field editing screen. To help you move around this screen there are a set of editing keys which have the following operation.

EXIT	Leaves the editing mode
LAST	Move cursor to previous field (does not erase present field)
NEXT	Move cursor to next field (does not erase present field)
BACK	Move cursor back one space
ENTER	Terminate field and erase all other characters in field

If you edit a field always use ENTER key.

Press any key to continue.

Step 7 The Curser will default to the first 4-20mA channel number. Either proceed as step 2 or keep pressing the NEXT Key to move to the required 4-20mA setting.

Step 8 Key in the value required by pressing the numbers from the keypad located behind the door on the right and press ENTER. The curser will move to the next 4-20ma Channel number.

Step 9 Repeat step 8 or keep pressing NEXT to go to the required 4-20mA setting.

Step 10 Press EXIT to save data in memory and to view the setting you have entered.

Step 11 After five minutes of non use the screen will revert back to the Main screen. Alternatively, press the BACK key twice and then the MAIN key.