



Connecting Pulsed Output from inbuilt Electricity Meter to Genesis

Shoebox and Evo ground source heat pumps come with an inbuilt electricity meter which displays the amount of kWhs of electricity the heat pump consumes under normal operation. The idea of this electricity meter is so that the amount of electricity the heat pump consumes can be checked by a technician and can be shown to be within normal parameters. To obtain access to this meter and its display, the electric's box of the heat pump needs to be opened and visual access is generally required. However it is possible to wire the pulsed output from the electricity meter to the Genesis board so the power meter can be interrogated by the front display and access to the electricity meter is no longer required.

Each Genesis board comes with three pulse input connections for use if a supplementary heating system is used. The Pulse Input diagnostics screen displays the total rate detected of any device connected to the heat pump. Devices such as electricity meters, heat meters, etc.

It is possible using the wiring diagram (DI8) overleaf to wire in the electricity meter pulse output and provide a guide to the total kWh consumed by the heat pump from the front display. This avoids the need to open the electrical box to view the total electricity consumed by the heat pump, once wired.

Different meters have different technical characteristics for its pulsed outputs also known as Static output (SO+/SO-). These can also be different to the LED pulses per kWh e.g. the Lovato DME D100T 1 MID uses 10 pulses/kWh for Static Output & 1000 for the LED.

Note: If this is a retrofit the display will only start counting pulses from the moment the connections are made to the power meter. It will not bring the total kWh usage across, so it is recommended to take a meter reading at fitment to act as a start point.

Static output	
Number of pulses	10 pulses / kWh
Pulse length	100ms
External voltage	10...30VDC
Max current	50mA

Lovato DME D100T 1 MID Pulse Input

Application (AIS)

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Output specification (SO+/SO-)		
Number/Type		1 opto-isolated output
Voltage range/Maximum current (conforming to EN 62053-1)	V DC/mA	3.3...27/1...27
Pulses per kWh*	Imp/kWh*	1000
Pulse length	ms	100 ± 0.5
Maximum cable length	m	1000

Finder 7E series 7E.64.8.230.0001 uses 1000 pulses/kWh for Static Output & 5000 for the LED

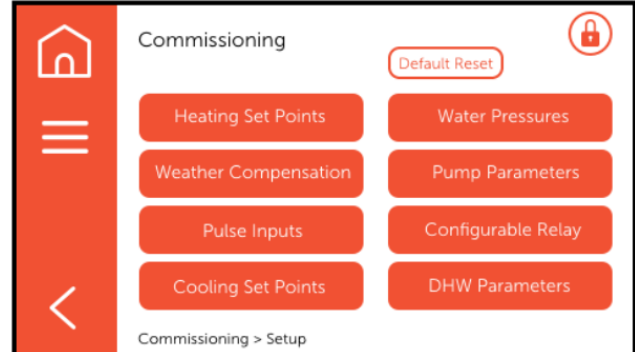
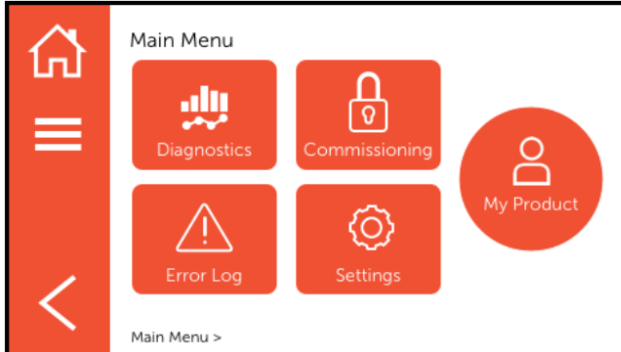
Output Specification		
Pulses per kWh	imp/kWh	1000

SDM120A electrical meter uses 1000 pulses/kWh for static output

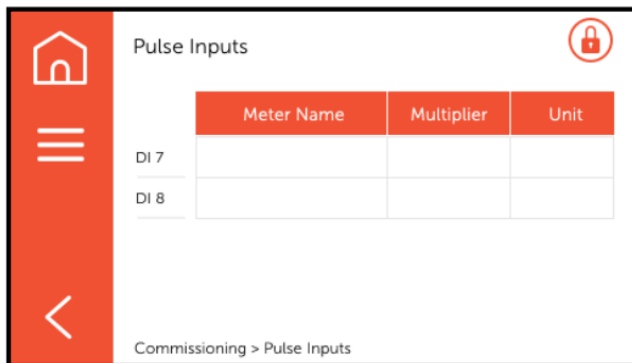
Application (AIS)

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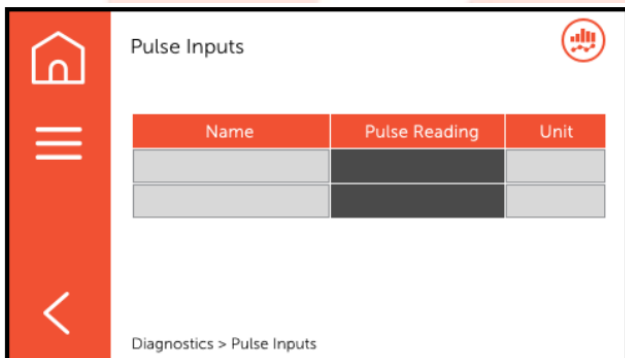
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In commissioning mode the Pulse Input screen can be used to enter the 'name, pulse reading and unit.' (padlock in top right corner) For the Lovato you would enter 'Lovato, 10 and kWh' whereas the Finder you would enter 'Finder, 1000, kWh'.



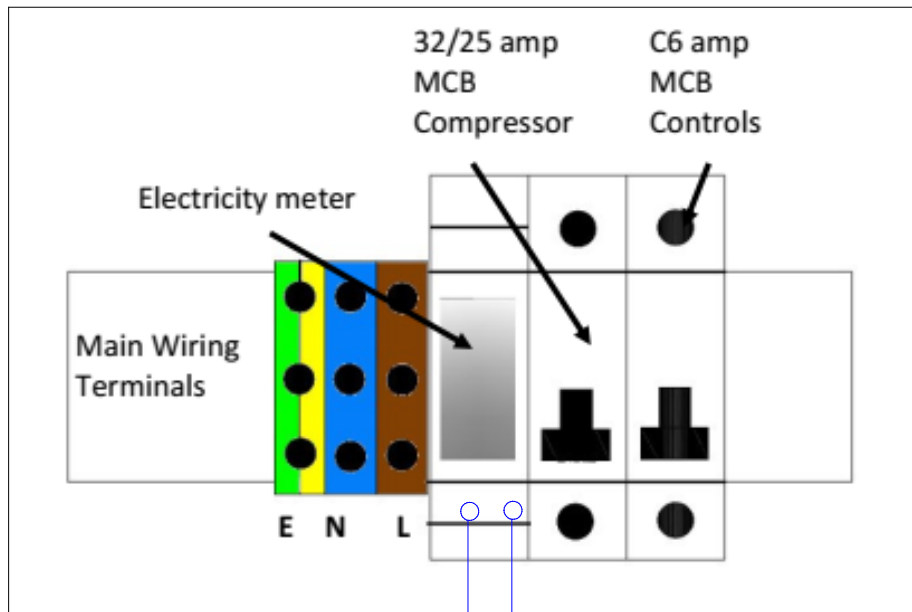
The total flowrate can then be read from the diagnostics pulsed output screen



Application (AIS)

Evo Pulsed Output from inbuilt Electricity Meter

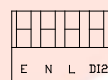
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Terminals SO+/SO- on the electricity meter. Please note these terminals can be at the top or bottom of the unit dependant on the make of the meter.



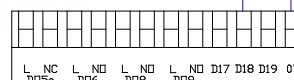
DI3 Cooling Signal
 DI4 End Heating Signal
 DI1 On Signal
 Live 240V AC, 2.5A
 Neutral
 Earth



DI2 Hot Water Signal
 Live 240V AC, 1A
 Neutral
 Earth



DI5 Power out to Hot Water Valve 240V AC, 1A
 Neutral
 Earth



DI9 Pulse Input
 DI8 Pulse Input
 DI7 Pulse Input
 DI9 Supplementary Heat Signal, (Max 240V AC, 1A) normally open volt free relay
 DI8 Hot Water Immersion Signal, (Max 240V AC, 1A) normally open volt free relay
 DI6 Fault Signal, (Max 240V AC, 1A) normally open volt free relay
 DI5a Under-floor Pump Cut Out, (Max 240V AC, 2.5A) normally closed volt free relay



T9 Weather Compensation and 0V

Bell Wire