Smart-ECO Datasheet

SOLCO.
Advanced Trace Heating Solutions
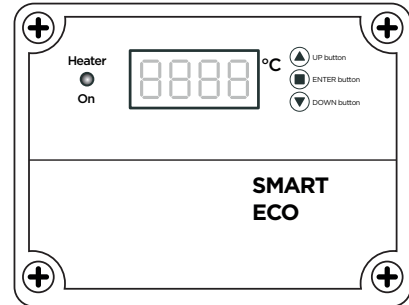
① Product category

Air/surface sensing programmable thermostat with BMS fault alarm relay. For electronic temperature control in commercial heating applications.
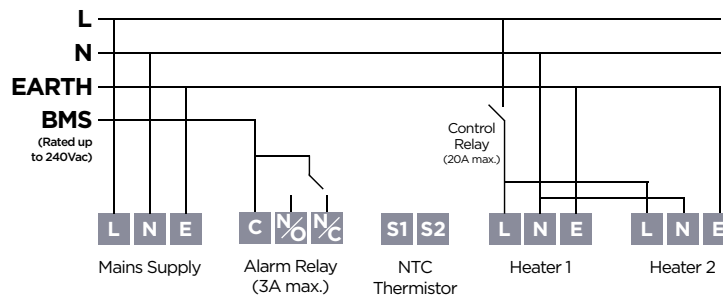
② Features

- User friendly - settings can be programmed easily.
- Controls all SOLCO PYROELEC heating cables.
- Thermostat has a 20A control relay and a 3A SPST BMS fault alarm relay.
- Units can be mounted on a pipe using a SOLCO PYROELEC support bracket.
- Display alternates between live temperature reading and set temperature once a minute.

Part list

No.	Part Name	Designation	Quantity
1	Smart-ECO V.03	Electronic PCB Assembly	1
2	SABP131808G	Enclosure, IP66, 125mm x 175mm x 75mm	1
3	50.612 PA7035	M12 cable gland	1
4	LN12LG	M12 locknut	1

③ Wiring diagram

L
N
EARTH
BMS (Rated up to 240Vac)

Control Relay (20A max.)

| L | N | E | | C | N/O | N/C | | S1 | S2 | | L | N | E | | L | N | E |
Mains Supply — Alarm Relay (3A max.) — NTC Thermistor — Heater 1 — Heater 2

④ Connections and controls

LED Display

°C

▲ UP button
■ ENTER button
▼ DOWN button

UP button
ENTER button
DOWN button

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❺ Specification

General

Model	Smart-ECO v.03
Application	Air/surface sensing, -20°C to +105°C
Area of use	Non-hazardous, ordinary area
Temperature setting range	-15°C to +100°C
Supply voltage	100Vac (min) – 270Vac (max), 50/60 Hz
Load current (max.)	20A
PCB terminal assembly	12 x 4mm² max. conductor size, WAGO lever type

Enclosure

Enclosure dimensions	125mm x 175mm x 75mm
Environmental ingress protection	IP66/67
Base and lid	Grey ABS base and lid
Lid fixing	4 captive screws
Entries	2 x M20/M25 guide points to drill out for heating cable entry
	2 x M20 max. guide points to drill out for mains supply and safety relay comms. cable
Ambient operating temperature range	-20°C to +60°C

Temperature sensor

Maximum exposure temperature	Sensor exposure temperature (metal part) - 200°C maximum, (PVC cable) 100°C maximum
Area of use	Non-hazardous, ordinary area
Length of sensor wire	3 metre – extendable using 2 core, can be shortened to suit
Temperature sensor type	NTC 10kohm type, material PVC
	Diameter sensor cable 3.5mm, diameter sensor head 5mm, length of head 50mm

The sensor cable can be shortened to 0.1m without any adverse effect. The sensor cable can also be extended to 100m max. using a 2 core conductor wire of similar size. It should not be grounded at the remote end.

Output relays

Control relay	Single pole single throw relay, rating 20A at 240Vac
Alarm relay	Single pole single throw relay, rating 3A, at up to 240Vac

Programmable parameters | settings

Temperature setting	-15°C to +100°C
Hysteresis	2K approx.
Heater operation if any error	Selectable ON or OFF in the menu

Diagnosed alarm (6 fault types)

Power loss	Yes, display is blank
High temperature limit exceeded	Yes, displays FL1 (5 secs) to ABSH (5 secs) then temperature reading*
Low temerature limit exceeded	Yes, displays FL1 (5 secs) to ABSL (5 secs) then temperature reading*
Sensor short/open circuit	Yes, displays FL1 (5 secs) to SEN (5 secs) then temperature reading*
Load relay error	Yes, displays FL2
Comms. cable wire break	Yes, continue to display current temperature

**The display will return to the fault code after 5 seconds and cycle through the screens as shown.*

Approvals

CE ✓RoHS UKCA   Made in United Kingdom, RoHS compliant