



Smart-GUARD Datasheet

1 Product category

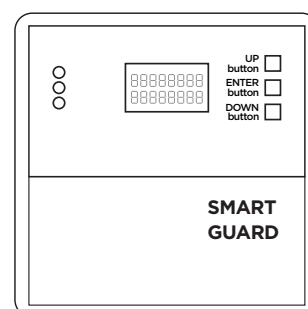
Air/surface sensing programmable temperature control device with innovative Soft-Start, Fault Monitoring and Auto Switchover features. For electronic temperature control of Fire Sprinkler trace heating systems in commercial, residential and non-residential applications.

2 Features

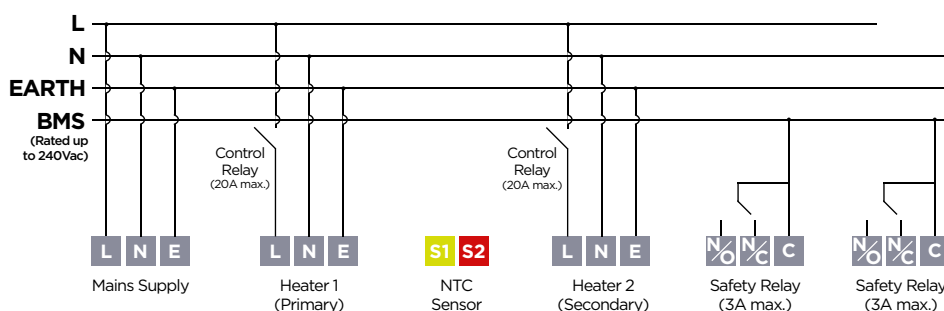
- **MONITORING** - 24 hrs/365 days per year active monitoring of 2 independent heating circuits (duty/standby), complies with BS EN 12845:2015 + a:2019, BS9251:2021 & BS EN 16925:2018 regulations.
- **SOFT-START** - Innovative built-in feature eliminates inrush currents on Solco Pyroelec self-regulating heating cables, thus allowing substantially increased circuit lengths over a standard controller.
- **SECURITY** - the UP, DOWN, ENTER buttons on the front of the unit are locked in normal use to prevent inadvertent or malicious altering/tampering of the programmed settings.
- **USER INTERFACE** - 3 x LED indication bulbs for POWER, FAULT & LOAD and main 8x2 digit LCD screen - informative as it alternates between live and set temperature readings once a minute.
- **ENTRIES** - guide markings for cable gland entry holes, 2 x M20 for power and comms. cables & 2 x M20/M25 for heating cables.
- **PLUG & PLAY** - The Smart-GUARD unit is pre-set to maintain 5°C (freeze protection application) and can be used as AIR (ambient) sensing OR LINE (Pipe) sensing.
- Units can be mounted on a SOLCO PYROELEC st/st pipe mount bracket.

Part list

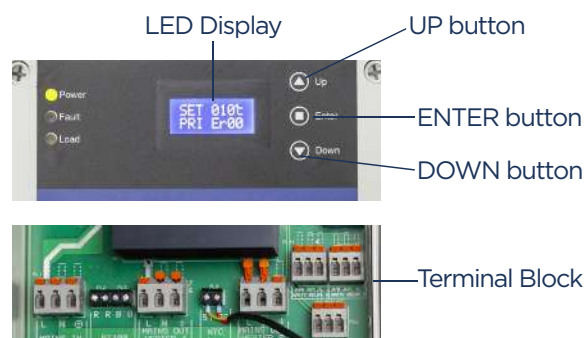
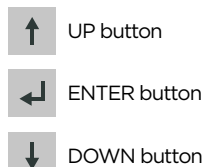
No.	Part Name	Designation	Quantity
1	Smart-GUARD V.01	Electronic PCB Assembly	1
2	SABP181808G	Enclosure, IP66, 175mm x 175mm x 75mm	1
3	50.612 PA7035	M12 cable gland	1
4	LN12LG	M12 locknut	1



3 Wiring diagram



4 Internal connections and controls



5 Specification

General

Model	Smart-GUARD v.01
Application	Air/surface sensing, -20°C to +105°C
Area of use	Non-hazardous
Temperature setting range	-15°C to 100°C
Supply voltage	100Vac (min) – 270Vac (max), 50/60 Hz
Load current (max.)	20A (Max. Power 4000 W)
Terminals (WAGO lever type)	9 x 4.0mm ² max. conductor size (24 – 12 AWG) 6 x 2.5mm ² max. conductor size (24 – 14 AWG)

Enclosure

Enclosure dimensions	175mm x 175mm x 75mm
Environmental ingress protection	IP66/67
Base and lid	Grey ABS base and lid
Lid fixing	4 x 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
Ambient operating temperature range	-20°C to +60°C

Temperature sensor

Maximum exposure temperature	200°C
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

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	2 x single pole single throw relay, rating 20A at 240Vac
Alarm relay	2 x single pole single throw relay, volt-free, rating 3A at 240Vac

Programmable parameters | settings

Temperature setting	-15°C to 100°C
Hysteresis	2K approx.
Heater operation if sensor error	Selectable ON/OFF (only available in single mode operation)

Diagnosed alarm

Error code = XY	PRI = Primary heating cable/load No. 1 SEC = Secondary heating cable/load No. 2
X = 0 X = 8 X = 4 X = C Y = 0 Y = 1 Y = 2 Y = 4 Y = 5 Y = 6 Y = 8 Y = 9 Y = A	No sensor faults Temperature sensor not detected/open circuit Temperature sensor short circuit Read temperature beyond absolute high and low limits set No PRI or SEC heating cable fault SEC Heating cable over current or short circuit detected SEC Heating cable not connected or detected PRI Heating cable over current or short circuit detected PRI & SEC Heating cables short circuit detected PRI Heating cable short circuit detected, SEC not connected PRI Heating cable not connected SEC Heating cable short circuit detected, PRI not connected PRI & SEC Heating cables not connected/open circuit detected
XY = 00	Normally no fault - however if relay state changes then possible BMS comms. cable wire break
Blank display	Loss of power supply

Approvals



Made in United Kingdom, RoHS compliant

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