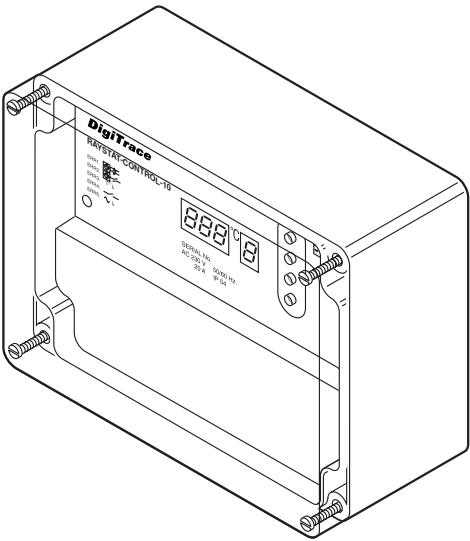# DigiTrace

# RAYSTAT-CONTROL-10

## Surface sensing
## Programmable thermostat with alarm relay

The RAYSTAT-CONTROL-10 surface sensing thermostat is designed to provide user friendly measurement and control for heating cables. The thermostat has a 25 A control relay (that can be arranged to be volt free) and a 2 A volt free SPDT alarm relay.

Parameter and eventual alarm conditions are shown on the digital display and settings can be programmed easily, even without power supply.
The RAYSTAT-CONTROL-10 thermostat is supplied with a Pt100 sensor. This sensor has a 3 m long silicone extension

cable giving freedom to locate the electronics remote from the sensor.
Two M25 entries allow for the power cable and heating cable to be connected directly into the unit. The units can be mounted on the pipe using the SB-100 or SB-101 support bracket.
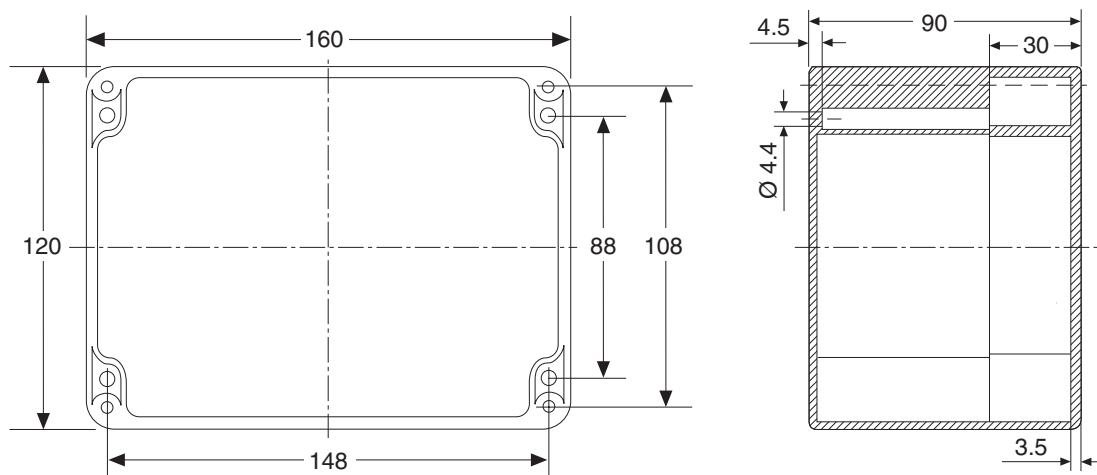


### General

| | |
|---|---|
| Application | Surface sensing |
| Area of use | Ordinary area (indoors, outdoors)<br>Sensing in zone 1 or zone 2 possible with MONI-PT100-EXE (seperately available) |
| Ambient operating temperature range | −40°C to +40°C |
| Supply voltage (nominal) | 230 V +10% −10%, 50/60 Hz |
| Internal power consumption | ≤ 14 VA |

### Enclosure

| | |
|---|---|
| Protection | IP65 |
| Base and lid | Grey polycarbonate base<br>Transparent lid |
| Lid fixing | 4 captive screws |
| Entries | 2 x M25, 1 x M20, 1 x M16<br>Direct entry of heating cable into unit with M25 connection kit |
| Gland plug | 1 x M20 |

**Dimensions (in mm)**



**Temperature sensor**

| | |
|---|---|
| Type | 3-wire Pt 100 according to IEC Class B |
| Maximum exposure temperature | 200°C |
| Area of use | Ordinary area |

Sensor can be extended with a 3-wire shielded cable of max. 20 Ω per conductor (max. 150 m with a 3 x 1.5 mm² cable).
Sensing in hazardous area zone 1 or zone 2 can be done with MONI-PT100-EXE.
The sensor cable should be shielded if it is laid in cable ducts or in the vicinity of high-voltage carrying cables. The shield of the extension cable should be grounded at the controller end only.

**Output relays**

| | |
|---|---|
| Control relay | Single pole single throw relay, rating: 25 A at 250 VAC |
| Alarm relay | Single pole double throw relay, rating: 2 A at 250 VAC, voltfree |

**Programmable parameter settings**

| | |
|---|---|
| Temperature setting | 0°C to +150°C |
| Hysteresis | 1 K to 5 K |
| Low Temperature Alarm | −40°C to +148°C |
| High Temperature Alarm | +2°C to +150°C or switched OFF |
| Heater Operation if Sensor Error | ON or OFF |
| Volt Free Operation | YES or NO |

Parameters can be programmed without power supply (internal battery) and parameters are stored in non-volatile memory.
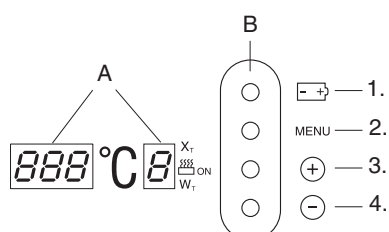
**Diagnosed alarms**

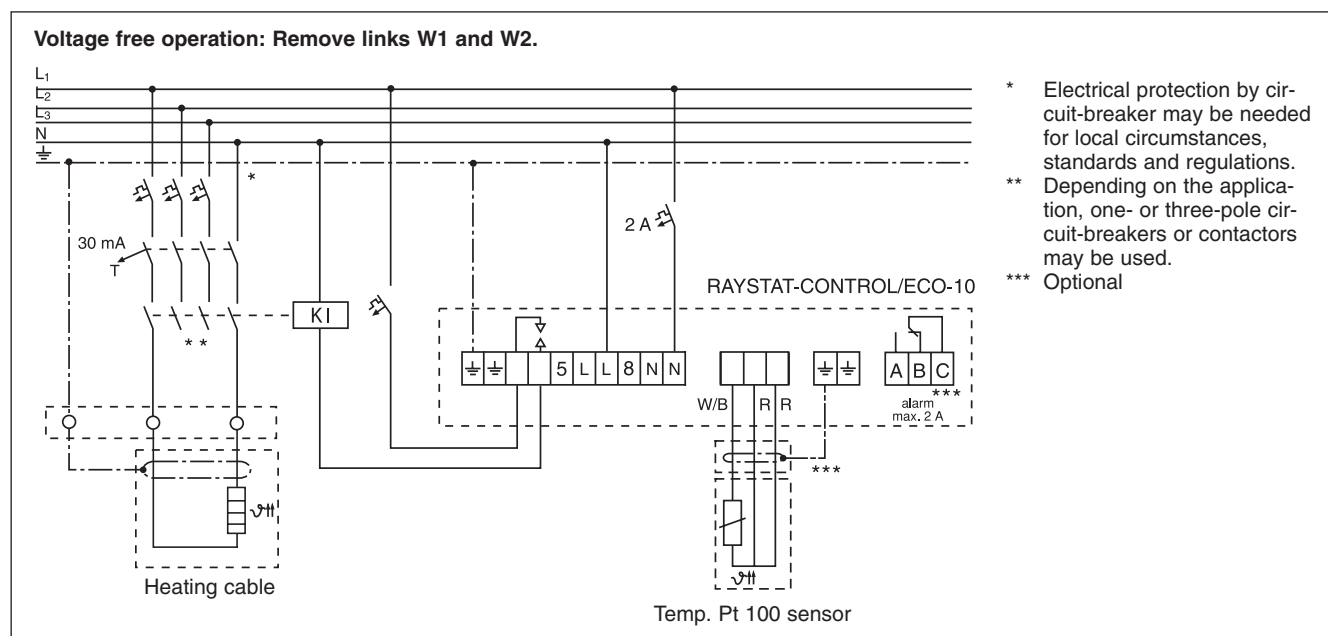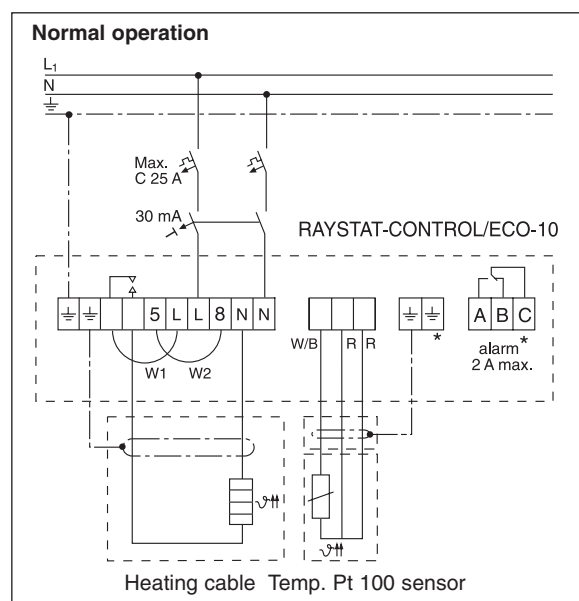| | |
|---|---|
| Sensor errors | Sensor short / Sensor open circuit |
| Low temperature | High temperature / Low temperature |
| Voltage errors | Low supply voltage / Output voltage fault |

**Display layout**



A.  LED Display (parameter and error indications)

B.  Push buttons

| | |
|---|---|
| 1. | Battery activation |
| 2. | Parameter selection |
| 3. | Increase value |
| 4. | Decrease value |

## Connection details

**Normal operation**

L₁
N

Max.
C 25 A

30 mA

RAYSTAT-CONTROL/ECO-10

5 L L 8 N N

W/B  R R

alarm *
2 A max.

A B C

W1  W2

Heating cable  Temp. Pt 100 sensor

---

**Voltage free operation: Remove links W1 and W2.**

L₁
L₂
L₃
N

30 mA

T

K I

2 A

RAYSTAT-CONTROL/ECO-10

5 L L 8 N N

W/B  R R

A B C
alarm ***
max. 2 A

Heating cable

Temp. Pt 100 sensor

\*   Electrical protection by circuit-breaker may be needed for local circumstances, standards and regulations.
\*\*  Depending on the application, one- or three-pole circuit-breakers or contactors may be used.
\*\*\* Optional

## Connection terminals

| | |
|---|---|
| Supply | 3 terminals for 0.75 mm² to 4 mm² |
| Pt 100 connection | 4 terminals for 0.75 mm² to 2.5 mm² |
| Control relay connection | 3 terminals for 0.75 mm² to 4 mm² |
| Alarm relay connection | 3 terminals for 0.75 mm² to 2.5 mm² |

## Mounting method

| | |
|---|---|
| | Surface mounting with 4 fixing holes on 148 x 108 mm centres, M4 clearance |
| Support bracket | SB-100, SB-101 |

## Ordering details

| | |
|---|---|
| Part description | RAYSTAT-CONTROL-10 |
| PN (Weight) | 828810-000 (800 g) |

## Accessories

| | |
|---|---|
| PA Reducer | Reducer M25 (M) / M20 (F) |
| PN | 184856-000 |