SURFACE HEATING

Temperature Controllers and Temperature Sensors, Differential Temperature Controllers, Ice and Snow Detectors

Temperature controllers and temperature sensors from Klöpper-Therm are used in all electric heating systems in which the temperatures of the heated areas must be reliably measured and controlled with precision.

The **2-point temperature controllers Type 1780** and **Type 1793** detect the measuring point temperature via the connected temperature sensor, and, in the event of the temperature being below the set nominal value, activate the switch output. With switching hysteresis, the relay output is switched off again after the nominal value has been reached. In addition, in the event of the temperature being under shot below +2 °C, Type 1780 – with 2-digit, 7-segment indicator – enables an alarm signal to be sent via an alarm coupler and shows it accordingly on the display. Temperature controllers with alarm output, switching status indicator, sensor breakage and short circuit monitoring are suitable for the sensor types of the 31xx series.

Applications: ▸ Frost heave protection heating systems and concrete floor heatings in cold stores and cooling chambers

The **2-point differential temperature controller, Type 1783**, detects the measuring point temperature via two connected sensors and shows the difference between the two sensor values on the 2-digit, 7-segment indicator. In the even of an overshoot of the set temperature difference the relay output is activated. With switching hysteresis, the relay output is switched off again after the nominal difference value has been reached. Differential temperature controller with a 7-segment indicator, switching status indicator, sensor breakage and short circuit monitoring are suitable for the sensor types of the 31xx series.

Applications: ▸ Wall and ceiling heatings, -20 °C to +60 °C application range

The digital **ice and snow detector, Type 1773**, with LC display, switching status indicator as well the remaining minimum heating time indicators, detects ice and snow in good time a humidity and temperature sensor. By the timely switching on of the heater the monitored area is kept free of ice. Optionally, a second temperature sensor or humidity and temperature sensor can be connected. Suitable for humidity sensors of the types 3352, 3353, 3354, 3355 and temperature sensors of the 31xx series.

Applications: ▸ Outside area heating systems, for example footpaths, stairs, carriageways, entrances and exits, bridges, guttering and down pipes, roofs

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The Specialists *for Electrical Heating Systems*

QUALITY FROM GERMANY

Ice and snow detector
Type 1773

Temperature controller
Type 1780

Temperature controller
Type 1793

Differential temperature
controller, Type 1783

Temperature sensor with
ground socket, Type 3352

Technical Data

Temperature controllers

Temperature range:	-25 °C to +99 °C or -5 °C to +45 °C or +15 °C to +65 °C (Type 1780) -5 °C to +10 °C or +5 °C to +60 °C (Type 1793) (The temperature range can be set on the back of the instrument)
Temperature difference (Type 1783):	2…20 K
Supply voltage:	230 V AC / 50 Hz
Power consumption:	approx. 1.5 VA, approx. 10 VA (Type 1773)
Switching capacity:	230 V AC, max. 6 A
Switching hysteresis:	1780: 0.6 K (+0.4 K / -0.2 K) 1793: 1 K 1783: 2 K (± 1 K)
Alarm output (Type 1780, Type 1793):	24 V DC / 20 mA
Space requirements:	3 TE, 6 TE (Type3 1773) in accordance with DIN 43880, mounting on top-hat rail TH-35 in accordance with DIN EN 60715

Temperature Sensors (31xx Series)

Dimensions (L x B x H): 33 x 9.7 x 7.5 mm

Connecting cable length	6.0 m	20.0 m	50.0 m	100.0 m
Type	3133	3124	3135	3126

Sensor values (Characteristic curves in accordance with DIN EN 50350)

Temp.	Ohm	Temp.	Ohm	Temp.	Ohm	Temp.	Ohm	Temp.	Ohm	Temp.	Ohm
-20	14616	0	5634	+20	2431	+40	1154	+60	592	+80	324
-15	11383	+5	4520	+25	2000	+45	970	+65	506	+85	282
-10	8941	+10	3652	+30	1657	+50	819	+70	434	+90	246
-5	7070	+15	2970	+35	1379	+55	695	+75	375	+95	215

Klöpper-Therm offers complete electrical heating systems from planning to installation.
Components matched with each other guarantee trouble-free and economic operation.
All services from one source.

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