

GESTRA Steam Systems

Product Range B

Temperature Sensors TRG 5-6x

TRG 5-6x

System description

The TRG 5-6x are temperature sensors with integrated platinum resistance thermometers Pt 100 to EN 60751. The temperatures sensed by the temperature sensor are converted by the temperature transmitter TRV 5-40 and provided as a data telegram on the CAN bus. The CANopen protocol is used for the data transfer via CAN bus.

The temperature sensor can be used as a measuring sensor for a safety temperature control monitor/limiter in conjunction with temperature transmitter TRV 5-40 and the switching controller NRS 1-40.1 and as sensor for a temperature limiter/controller in conjunction with temperature transmitter TRV 5-40 and the control unit TRS 5-40.

The equipment combinations can be used as controls, monitors or limiters in steam boilers and (pressurised) hot water installations to TRD and EN 12952 and EN 12953.

Function

The temperature sensors TRG 5-63, TRG 5-65, TRG 5-66 and TRG 5-67 feature one integrated platinum resistance thermometer Pt 100 each.

The temperature sensors TRG 5-64 and TRG 5-68 are equipped with two platinum resistance thermometers Pt 100 for the connection of additional indicating equipment.

The resistance value of these thermometers changes as a defined function of the temperature.

The resistance thermometer is supplied with a constant current by the temperature transmitter and the voltage generated by the changing of the resistance value is measured and processed in the transmitter.

System components

Temperature transmitter **TRV 5-40**
Control unit **NRS 1-40.1**
Control unit **TRS 5-40**

Design

TRG 5-63, TRG 5-64:
Screwed 1/2" BSP, ISO 228-1

TRG 5-65, TRG 5-66, TRG 5-67, TRG 5-68:
With welding sleeve

Technical Data

Measuring element (3-wire connection)

TRG 5-63
1 x Pt 100 to EN 60751, class A
TRG 5-64
2 x Pt 100 to EN 60751, class A
TRG 5-65, TRG 5-66
1 x Pt 100 to EN 60751, up to 300°C class A, > 300°C class B
TRG 5-67
1 x Pt 100 to EN 60751, class B
TRG 5-68
2 x Pt 100 to EN 60751, class B

Service pressure, service temperature

TRG 5-63, TRG 5-64
Nominal length 100, 160, 250 mm
36 bar at 251°C
Nominal length 400 mm
18 bar at 400°C

TRG 5-65, TRG 5-66
160 bar at 345°C
120 bar at 540°C

TRG 5-67, TRG 5-68
150 bar at 650°C

Admissible flow velocity

TRG 5-63, TRG 5-64
Air 25 m/s
Superheated steam 25 m/s
Water 3 m/s

TRG 5-65, TRG 5-66, TRG 5-67, TRG 5-68
Air 60 m/s
Superheated steam 60 m/s
Water 5 m/s

Connection

TRG 5-63, TRG 5-64
Screwed 1/2" BSP, ISO 228-1

TRG 5-65
Welding sleeve D 5 S

TRG 5-66
Welding sleeve D 4 S

TRG 5-67, TRG 5-68
Welding sleeve D 4

Length of protection tube

see dimensions

Materials

TRG 5-63, TRG 5-64
Protection tube 1.4571, X6 CrNiMoTi 17 122

TRG 5-65, TRG 5-66
Welding sleeve 1.7335

TRG 5-67, TRG 5-68
Welding sleeve 1.4961

Ambient temperature at terminal box

Max. 70°C

Protection

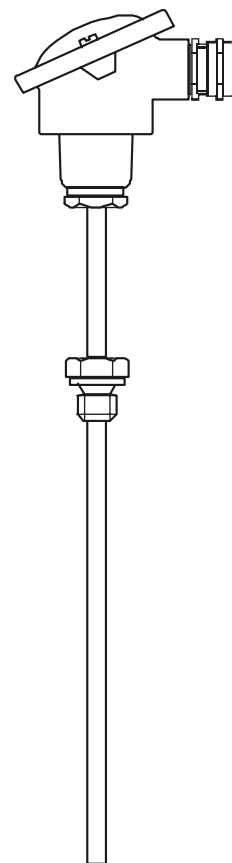
IP 66 to DIN EN 60529

Cable entry / Wiring

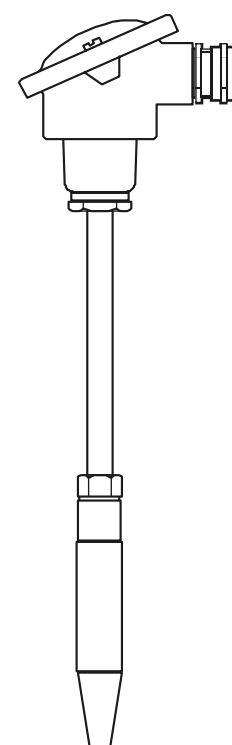
EMC cable gland with integrated cable gland M 20x1.5

Weight

TRG 5-63, TRG 5-64
Approx. 0.5 kg
TRG 5-65, TRG 5-66
Approx. 0.6 kg
TRG 5-67, TRG 5-68
Approx. 1 kg



TRG 5-63
TRG 5-64



TRG 5-65
TRG 5-66
TRG 5-67
TRG 5-68

Temperature Sensors TRG 5-6x

Please note:

When installing the electrode in pipes weld the elbow onto the pipe, (see Fig. 3, 4) ensuring that the temperature sensitive part of the temperature sensor is exposed to the fluid against the flow direction. Install the temperature sensor in such a way that the temperature sensitive part is permanently submerged in the fluid. Do not completely insulate the temperature sensors (see Fig. 5, 6).

Use screened four-core cable for wiring, e. g. Ölflex 110 CH, produced by Lapp, 4x0.5 mm², Max. cable length between temperature sensor and temperature transmitter TRV 5-40: 25 m.

Additional indicating devices can be connected to the terminals marked in yellow and black of the TRG 5-64 and TRG 5-68.

The EMC cable gland can be replaced by a twin screwed union.

Order & Enquiry Specification

GESTRA Temperature sensor TRG 5-6x

Equipment designation

Inspection

Length supplied mm

The following test certificate can be issued on request, at extra cost: in accordance with EN 10204-2.2, -3.1A and -3.1B.

All inspection requirements have to be stated with the order. After supply of the equipment certification cannot be established. For tests and inspection charges please consult us.

ATEX (Atmosphère Explosible)

According to the European Directive 94/9/EC the equipment must **not** be used in explosion risk areas.

	L	C	D	E	F	G
TRG 5-63 TRG 5-64	100 160 250 400	30	—	—	—	—
TRG 5-65	115	30	25	18	40	9
TRG 5-66	140	30	25	18	65	9
TRG 5-67	200	30	25	24	65	12.5
TRG 5-68	200	30	25	24	65	12.5
Values in mm						

Supply in accordance with our general terms of business.

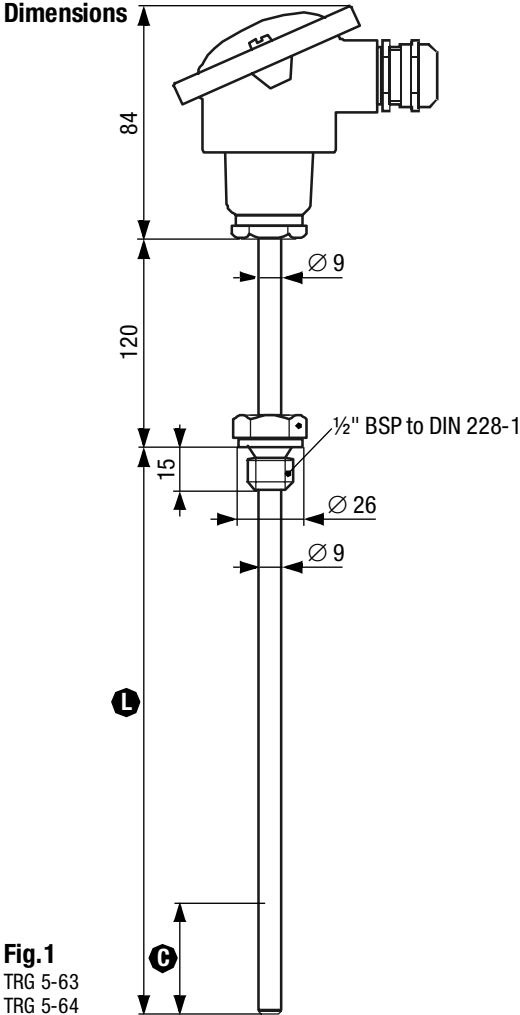


Fig. 1
TRG 5-63
TRG 5-64

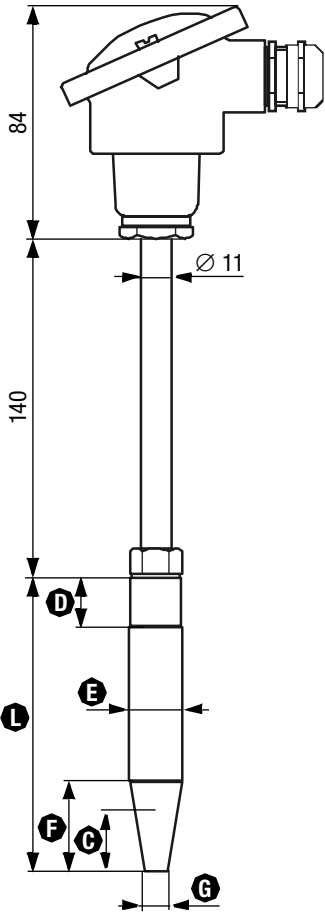
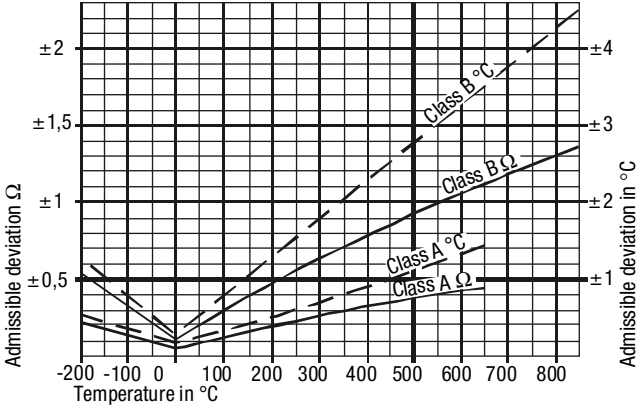


Fig. 2
TRG 5-65, TRG 5-66, TRG 5-67, TRG 5-68

Tolerances of the precision resistor according to EN 60751



Examples of Installation

Fig. 3

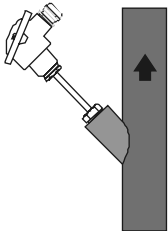


Fig. 4

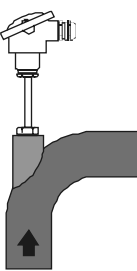


Fig. 5

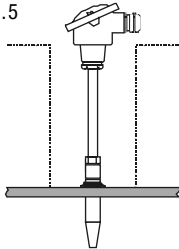
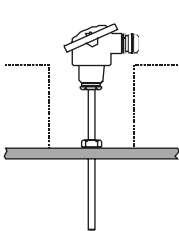


Fig. 6



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