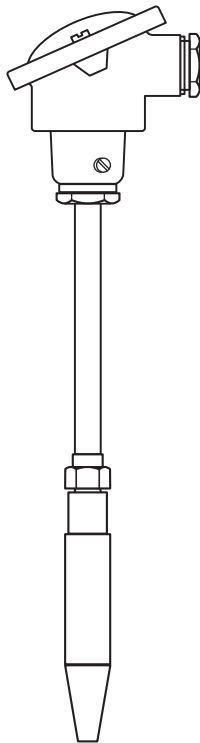

 TRG 5-53
 TRG 5-54

 TRG 5-55
 TRG 5-57

Temperature Sensors

TRG 5-53, TRG 5-54, TRG 5-55, TRG 5-57

Description

TRG 5-53, TRG 5-54, TRG 5-55 and TRG 5-57 are temperature sensors according to DIN EN 14597.

The temperature feeler Pt 100 integrated in the protection tube has a temperature-specific resistance. The temperature switches TRS 5-6 or TRS 5-8 measure the resistance and give an alarm according to the limit settings.

Application in steam and (pressurised) hot-water installations to TRD 604 and all kinds of heat-generating units.

Function

The temperature sensors TRG 5-53, TRG 5-54, TRG 5-55 and TRG 5-57 have a standardised platinum resistance thermometer Pt 100 to IEC 751. A temperature sensor together with a temperature switch type TRS 5-6 or TRS 5-8 form a temperature monitoring system. A current source supplies the resistance thermometer Pt 100 via an adjusting resistor with a constant current. The desired switch-off temperatures can be set via the eight-pole code switches of the temperature switches. To ensure fail-safe alarms if the temperature limit is exceeded the equipment features contact relays of the normally closed type that will signal alarm condition in the event of a mains failure.

System components

TRS 5-6
 Temperature switch TRS 5-6 as high-integrity self-monitoring temperature switch with periodic self-checking.

TRS 5-8
 Temperature switch TRS 5-8 as MIN/MAX temperature switch, temperature limiter.

Types

TRG 5-53, TRG 5-54:
 Design with screwed sockets ½" to ISO 228-1.

TRG 5-55, TRG 5-57:
 Design with welding stub, form 4

Design

The temperature sensors feature an exchangeable temperature sensing element Pt 100, IEC 751. To ensure short response times the temperature sensors are installed without an additional thermowell.

Versions

Platinum resistance thermometer Pt 100 to IEC 751, class B, with exchangeable temperature sensing element

- TRG 5-53, TRG 5-55, TRG 5-57: single
 TRG 5-54: double
- TRG 5-53, TRG 5-54: with protection tube
 TRG 5-55, TRG 5-57: with weld-in protection tube

Technical Data

Type approval

DIN STW (STB) 98507 S
 GL 99251-96 HH
 DIN TW 10 68 07
 EG 01 202931-B-010008

Service pressure/service temperature

TRG 5-53, TRG 5-54:
 nominal length 100/160/250 mm
 40 bar g (580 psig), 251 °C (484 °F)
 36 bar g (522 psig), 400 °C (752 °F)
 nominal length 400 mm
 18 bar g (261 psig), 400 °C (752 °F)

TRG 5-55, TRG 5-57:
 160 bar g (2321 psig), 345 °C (653 °F)
 120 bar g (1741 psig), 540 °C (1004 °F)

Admissible flow velocity

TRG 5-53, TRG 5-54:
 Air 25 m/s
 Superheated steam 25 m/s
 Water 3 m/s

TRG 5-55, TRG 5-57:
 Air 60 m/s
 Superheated steam 60 m/s
 Water 5 m/s

Connections

TRG 5-53, TRG 5-54: Screwed stub ½"
 TRG 5-55, TRG 5-57: Socket-weld end Ø 18 mm

Length of protection tube

TRG 5-53, TRG 5-54:
 100 mm, 160 mm, 250 mm, 400 mm
 nominal length

TRG 5-55: 115 mm, form 4
 TRG 5-57: 140 mm, form 4

Materials

TRG 5-53, TRG 5-54:
 Protection tube made of
 S. S. X 6 CrNiMoTi 17 12 2 (1.4571)

TRG 5-55, TRG 5-57:
 Protection tube made of forged alloy steel
 13 CrMo 4 4 (1.7335)

Max. admissible ambient temperature at terminal box

100 °C (212 °F)

Protection of terminal box

IP 65

Temperature sensing element

Pt 100 to IEC 751, class B/A

Weight

TRG 5-53, TRG 5-54:
 approx. 0.9 kg at nominal length 100 mm,
 approx. 1.0 kg at nominal length 160 mm,
 approx. 1.1 kg at nominal length 250 mm,
 approx. 1.3 kg at nominal length 400 mm.

TRG 5-55:
 approx. 0.7 kg at nominal length 115 mm

TRG 5-57:
 approx. 0.8 kg at nominal length 140 mm

Temperature Sensors

TRG 5-53, TRG 5-54, TRG 5-55, TRG 5-57

Important Notes

Use screened, four-core cable, e. g. I-Y(St)Y 2 x 2 x 0.8 mm or LIYCY 4 x 0.5 mm² for wiring.
Max. cable length 100 m.

Order and Enquiry Specification

GESTRA Temperature sensor in combination with GESTRA self-monitoring temperature limiter:

TRG 5-53, screwed sockets ½" BSP, 1 x Pt 100
nominal lengthmm.

TRG 5-54, screwed sockets ½" BSP, 2 x Pt 100
nominal lengthmm.

TRG 5-55, welding stub, form 4, 1 x Pt 100.
TRG 5-57, welding stub, form 4, 1 x Pt 100.

Ancillary Units

Temperature measuring transducer type TR04 eco,
2 conductor connection, 24 V DC, 4-20 mA output.

PED (Pressure Equipment Directive)

The equipment fulfills the requirements of the Pressure Equipment Directive PED 97/23/EC. Applicable in fluids of group 2. With CE marking (apart from equipment according to section 3.3, that is excluded from the scope of this directive).

ATEX (Atmosphère Explosible)

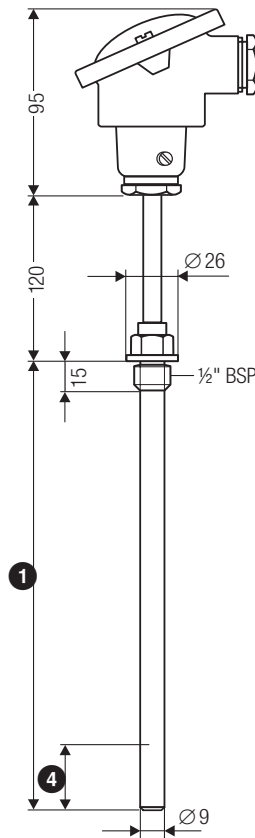
The equipment constitutes a simple item of electrical equipment as defined in DIN EN 50020 section 5.4. According to the European Directive ATEX 94/9/EC the equipment may only be used in potentially explosive atmospheres if it is provided with approved Zener barriers. Application in Ex zones 1, 2 (1999/92/EC). The equipment does not bear an Ex marking. The suitability of the Zener barrier is certified in a separate document.

Key

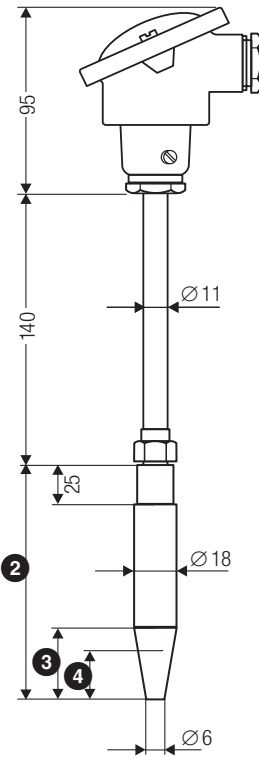
- ➊ Protection tube
- ➋ Welding sleeve
- ➌ Tapered part
- ➍ Temperature-sensitive part (tip)
- ➎ Terminal, red
- ➏ Terminal, red
- ➐ Terminal, black
- ➑ Terminal, black
- ➒ Terminal, red
- ➓ Terminal, red
- ➔ Terminal, yellow

Supply in accordance with our general terms of business.

Dimensions



TRG 5-53
TRG 5-54



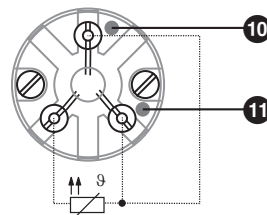
TRG 5-55
TRG 5-57

Type TRG	5-53	5-54	5-55	5-57
➊ [mm]	100 / 160 / 250 / 400			
➋ [mm]			115	140
➌ [mm]			40	65
➍ [mm]	40		30	

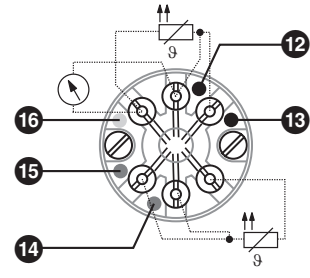
Basic values of precision resistors acc. to IEC 751

Temperature-resistance characteristics of precision resistors with measuring winding made of platinum.
Nominal resistance: 100 Ω at 0 °C. Temperature coefficient between 0 °C and 100 °C: 3.85 · 10⁻³ deg.

°C	0	10	20	30	40	50	60	70	80	90	100	Ω/deg
0	100.00	103.90	107.79	111.67	115.54	119.40	123.24	127.07	130.89	134.70	138.50	0.385
100	138.50	142.28	146.06	149.82	153.57	157.32	161.04	164.76	168.47	172.16	175.84	0.373
200	175.84	179.51	183.17	186.82	190.46	194.08	197.70	201.30	204.88	208.46	212.03	0.361
300	212.03	215.58	219.13	222.66	226.18	229.69	233.19	236.67	240.15	243.61	247.06	0.350
400	247.06	250.50	253.93	257.34	260.75	264.14	267.52	270.89	274.25	277.60	280.93	0.338
500	280.93	284.26	287.57	290.87	294.16	297.43	300.70	303.95	307.20	310.43	313.65	0.327
600	313.65	316.86	320.05	323.24	326.41	329.57	332.72	335.86	338.99	342.10	345.21	0.315
700	345.21	348.30	351.38	354.45	357.51	360.55	363.59	366.61	369.62	372.62	375.61	0.304
800	375.61	378.59	381.55	384.50	387.45	390.38						0.295



TRG 5-53 (1 x Pt 100)
TRG 5-55
TRG 5-57



TRG 5-54
(2 x Pt 100)

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