



SNÍMAČE TEPLOTY TR10-F

Série TR10-F

TR10F-14369107

Snimač teploty PT100 3-trád -50-500°C 250x9 DN25 form2F

- PT100, PT1000
- Teplota -196 až 600°C
- Připojení příruba
- Média voda, plyny, oleje
- ATEX, IECEx, SIL2, GOST

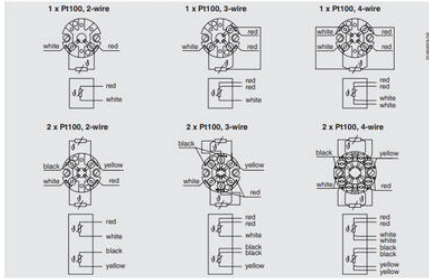


POPIS PRODUKTU

SPECIFIKACE

Délka	340 mm
Insertion length	250 mm
Inside diameter	7 mm
Materiál kontaktní části	Nerez ocel 316Ti
Materiál těla	Hliník
Neck length	0,065 m
Plug diameter	9 mm
Provozní teplota max.	500 °C
Provozní teplota min.	-50 °C
Teplota okolí do	80 °C
Teplota okolí od	-40 °C
Tlaková odolnost	16 bar
Třída krytí	IP65

Electrical connection (colour code per IEC-EN 60719)



Model	Material	Cable entry thread size	Ingress protection (max.) ¹⁾	Cap	Surface	Connection to neck tube
BS	Aluminum	M20 x 1.5 or 1/2 NPT ²⁾	IP65, IP68	Flat cap with 2 screws	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BSZ	Aluminum	M20 x 1.5 or 1/2 NPT ²⁾	IP65, IP68	Spherical hinged cover with cylinder head screw	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BSZ-H	Aluminum	M20 x 1.5 or 1/2 NPT ²⁾	IP65, IP68	Raised hinged cover with cylinder head screw	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BSZ-H (2x cable outlet)	Aluminum	2 x M20 x 1.5 or 2 x 1/2 NPT ²⁾	IP65, IP68	Raised hinged cover with cylinder head screw	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BSZ-H/DH10 ⁴⁾	Aluminum	M20 x 1.5 or 1/2 NPT ²⁾	IP65	Raised hinged cover with cylinder head screw	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BSS	Aluminum	M20 x 1.5 or 1/2 NPT ²⁾	IP65	Spherical hinged cover with clamping lever	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BSS-H	Aluminum	M20 x 1.5 or 1/2 NPT ²⁾	IP65	Raised hinged cover with clamping lever	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BVS	Stainless steel	M20 x 1.5 ²⁾	IP65	Precision-cast screw-on lid	Black, electroplated	M24 x 1.5
BSZ-K	Plastic	M20 x 1.5 or 1/2 NPT ²⁾	IP65	Spherical hinged cover with cylinder head screw	Black	M24 x 1.5
BSZ-HK	Plastic	M20 x 1.5 or 1/2 NPT ²⁾	IP65	Raised hinged cover with cylinder head screw	Black	M24 x 1.5

Model	Explosion protection				
	Without	Ex I (gas) Zone 0, 1, 2	Ex I (dust) Zone 20, 21, 22	Ex nA (gas) Zone 2	Ex to (dust) Zone 22
BS	x	x	x	x	x
BSZ	x	x	x	x	x
BSZ-H	x	x	x	x	x
BSZ-H (2x cable outlet)	x	x	x	x	x
BSZ-H/DH10 ⁴⁾	x	x	x	x	x
BSS	x	x	x	x	x
BSS-H	x	x	x	x	x
BVS	x	x	x	x	x
BSZ-K	x	x	x	x	x
BSZ-HK	x	x	x	x	x

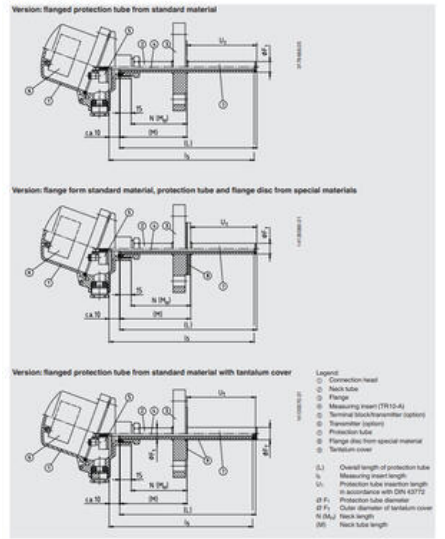
Cable entry



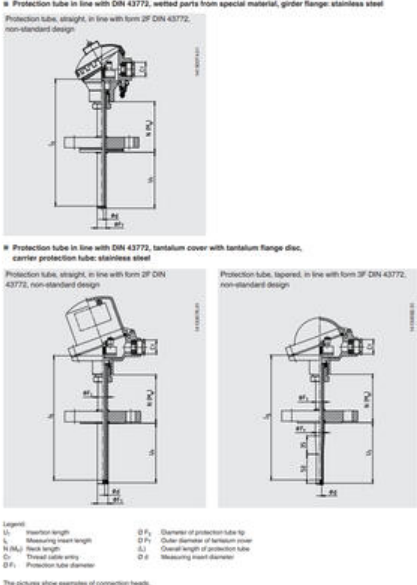
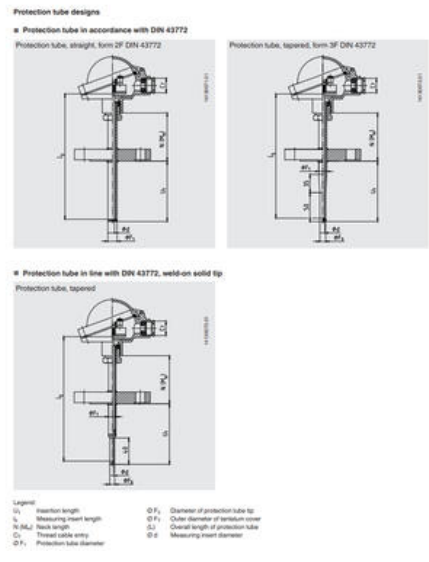
Cable entry	Cable entry thread size
Standard cable entry ¹⁾	M20 x 1.5 or 1/2 NPT
Plastic cable gland (cable Ø 6 ... 10 mm) ¹⁾	M20 x 1.5 or 1/2 NPT
Nickel-plated brass cable gland (cable Ø 6 ... 12 mm)	M20 x 1.5 or 1/2 NPT
Stainless steel cable gland (cable Ø 7 ... 12 mm)	M20 x 1.5 or 1/2 NPT
Plain threaded	M20 x 1.5 or 1/2 NPT
2 x M20 x 1.5 ¹⁾	2 x M20 x 1.5
Junction box M12 x 1 (4-pin) ¹⁾	M20 x 1.5
Sealing plugs for transport	M20 x 1.5 or 1/2 NPT

Cable entry	Colour	Ingress protection (max.)	Min./max. ambient temperature	Explosion protection
Standard cable entry ¹⁾	Black	IP65	-40 ... +80 °C	x
Plastic cable gland ¹⁾	Black or grey	IP65, IP68	-40 ... +80 °C	x
Plastic cable gland, Ex e ¹⁾	Light blue	IP65, IP68	-20 ... +80 °C (standard) -40 ... +70 °C (optional)	x
Plastic cable gland, Ex e ¹⁾	Black	IP65, IP68	-20 ... +80 °C (standard) -40 ... +70 °C (optional)	x
Nickel-plated brass cable gland	Black	IP65, IP68	-60 ... +80 °C	x
Nickel-plated brass cable gland, Ex e	Black	IP65, IP68	-60 ... +80 ... +80 °C	x
Stainless steel cable gland	Black	IP65, IP68	-60 ... +80 ... +80 °C	x
Stainless steel cable gland, Ex e	Black	IP65, IP68	-60 ... +80 ... +80 °C	x
Plain threaded	-	IP60	-	x
2 x M20 x 1.5 ¹⁾	-	IP60	-	x
Junction box M12 x 1 (4-pin) ¹⁾	-	IP65	-40 ... +80 °C	x
Sealing plugs for transport	Transparent	-	-40 ... +80 °C	not applicable, transport protection

Components model TR10-F

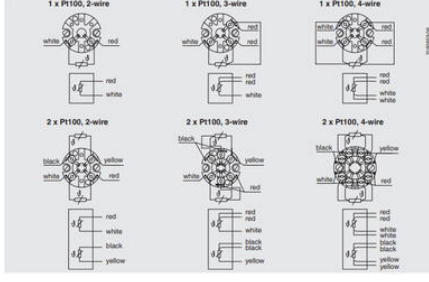


Protection tube



Protection tube design	Material	Protection tube ID	Suitable for measuring insert ID	Connection to head
Protection tube designs in accordance with DIN 43772	Stainless steel 1.4571	3 x 12 mm	6 mm	M24 x 1.5 (male/female)
		11 x 2 mm	6 mm with sleeve Ø 8 mm / 8 mm	male/female
		12 x 2.5 mm	6 mm	male/female
Tapered, form 3F DIN 43772	Stainless steel 1.4571	12 x 2.5 mm, tapered to 6 mm	6 mm	male/female
Protection tube designs in line with DIN 43772, weld-on solid top	Stainless steel 1.4571	3 x 12 mm, tapered to 6 mm	3 mm	M24 x 1.5 (male/female)
		11 x 2 mm, tapered to 6 mm	6 mm	male/female
		12 x 2.5 mm, tapered to 6 mm	6 mm	male/female
Protection tube designs in line with DIN 43772, welded parts from special material, girdler flange, stainless steel	2.4300 (Monel400) stainless steel 2.4610 (Hastelloy C276) stainless steel 3.7030 (Titan Grade 2) stainless steel	13.7 x 2.2 mm	8 mm with sleeve Ø 8 mm / 8 mm	M24 x 1.5 (male/female)
		11 x 2 mm, tapered to 6 mm	6 mm	male/female
		12 x 2.5 mm, tapered to 6 mm	6 mm	male/female
Protection tube designs in line with DIN 43772, tantalum cover with tantalum flange disc, carrier protection tube stainless steel	Tantalum / stainless steel	11 x 2 mm, tantalum cover 12 x 0.4 mm	8 mm	M24 x 1.5 (male/female)
		15 x 3 mm, tantalum cover 16 x 0.4 mm	8 mm with sleeve Ø 8 mm / 8 mm	male/female
		12 x 2.5 mm, tantalum cover 13 x 0.4 mm	6 mm	male/female

Electrical connection (colour code per IEC-EN 60719)



Model	Material	Cable entry thread size	Ingress protection (max.) ¹⁾	Cap	Surface	Connection to neck tube
BS	Aluminum	M20 x 1.5 or 1/2 NPT ²⁾	IP65, IP68	Flat cap with 2 screws	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BSZ	Aluminum	M20 x 1.5 or 1/2 NPT ²⁾	IP65, IP68	Spherical hinged cover with cylinder head screw	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BSZ-H	Aluminum	M20 x 1.5 or 1/2 NPT ²⁾	IP65, IP68	Raised hinged cover with cylinder head screw	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BSZ-H (2x cable outlet)	Aluminum	2 x M20 x 1.5 or 2 x 1/2 NPT ²⁾	IP65, IP68	Raised hinged cover with cylinder head screw	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BSZ-H/DH10 ⁴⁾	Aluminum	M20 x 1.5 or 1/2 NPT ²⁾	IP65	Raised hinged cover with cylinder head screw	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BSS	Aluminum	M20 x 1.5 or 1/2 NPT ²⁾	IP65	Spherical hinged cover with clamping lever	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BSS-H	Aluminum	M20 x 1.5 or 1/2 NPT ²⁾	IP65	Raised hinged cover with clamping lever	Blue, lacquered ³⁾	M24 x 1.5, 1/2 NPT
BVS	Stainless steel	M20 x 1.5 ²⁾	IP65	Precision-cast screw-on lid	Black, electroplated	M24 x 1.5
BSZ-K	Plastic	M20 x 1.5 or 1/2 NPT ²⁾	IP65	Spherical hinged cover with cylinder head screw	Black	M24 x 1.5
BSZ-HK	Plastic	M20 x 1.5 or 1/2 NPT ²⁾	IP65	Raised hinged cover with cylinder head screw	Black	M24 x 1.5

Model	Explosion protection				
	Without	Ex I (gas) Zone 0, 1, 2	Ex I (dust) Zone 20, 21, 22	Ex nA (gas) Zone 2	Ex to (dust) Zone 22
BS	x	x	x	x	x
BSZ	x	x	x	x	x
BSZ-H	x	x	x	x	x
BSZ-H (2x cable outlet)	x	x	x	x	x
BSZ-H/DH10 ⁴⁾	x	x	x	x	x
BSS	x	x	x	x	x
BSS-H	x	x	x	x	x
BVS	x	x	x	x	x
BSZ-K	x	x	x	x	x
BSZ-HK	x	x	x	x	x

Cable entry

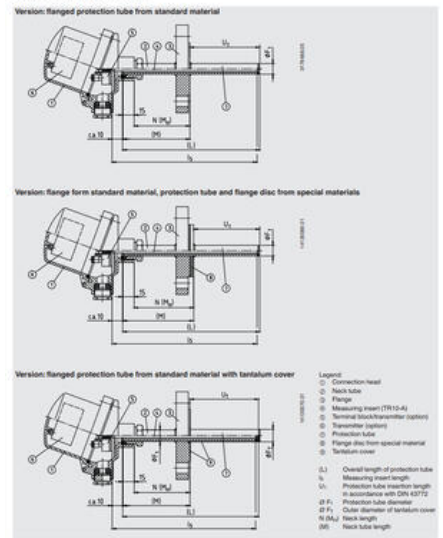


The pictures show examples of connection heads.

Cable entry	Cable entry thread size
Standard cable entry ¹⁾	M20 x 1.5 or 1/2 NPT
Plastic cable gland (cable Ø 6 ... 10 mm) ¹⁾	M20 x 1.5 or 1/2 NPT
Nickel-plated brass cable gland (cable Ø 6 ... 12 mm)	M20 x 1.5 or 1/2 NPT
Stainless steel cable gland (cable Ø 7 ... 12 mm)	M20 x 1.5 or 1/2 NPT
Plain threaded	M20 x 1.5 or 1/2 NPT
2 x M20 x 1.5 ¹⁾	2 x M20 x 1.5
Junction box M12 x 1 (4-pin) ¹⁾	M20 x 1.5
Sealing plugs for transport	M20 x 1.5 or 1/2 NPT

Cable entry	Colour	Ingress protection (max.)	Min./max. ambient temperature	Explosion protection					
				without	Ex I (Zone 0, 1, 2)	Ex II (Zone 20, 21, 22)	Ex III (Zone 2)	Ex III (Zone 2)	Ex III (Zone 2)
Standard cable entry ¹⁾	Black	IP66	-40 ... +80 °C	x	x	-	-	-	-
Plastic cable gland ¹⁾	Black or grey	IP66, IP68	-40 ... +80 °C	x	-	-	-	-	-
Plastic cable gland, Ex e ¹⁾	Light blue	IP66, IP68	-20 ... +80 °C (standard) -40 ... +70 °C (option)	x	x	x	-	-	-
Plastic cable gland, Ex e ¹⁾	Black	IP66, IP68	-20 ... +80 °C (standard) -40 ... +70 °C (option)	x	-	-	x	x	-
Nickel-plated brass cable gland, Ex e	Black	IP66, IP68	-50 °/-40 ... +80 °C	x	x	x	-	-	-
Nickel-plated brass cable gland, Ex e	Black	IP66, IP68	-50 °/-40 ... +80 °C	x	x	x	x	x	-
Stainless steel cable gland	Black	IP66, IP68	-50 °/-40 ... +80 °C	x	x	x	-	-	-
Stainless steel cable gland, Ex e	Black	IP66, IP68	-50 °/-40 ... +80 °C	x	x	x	x	x	-
Plain threaded	-	IP00	-	x	x	x ^{h)}	x ^{h)}	x ^{h)}	-
2 x M20 x 1.5 ¹⁾	-	IP00	-	x	x	x ^{h)}	x ^{h)}	x ^{h)}	-
Junction box M12 x 1 (4-pin) ¹⁾	-	IP65	-40 ... +80 °C	x	x ^{h)}	x ^{h)}	-	-	-
Sealing plugs for transport	Transparent	-	-40 ... +80 °C	-	-	-	-	-	not applicable, transport protection

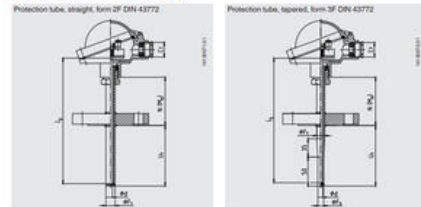
Components model TR10-F



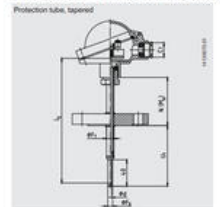
Protection tube

Protection tube designs

Protection tube in accordance with DIN 43772



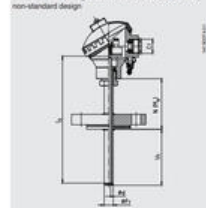
Protection tube in line with DIN 43772, weld-on solid tip



Legend:
 l₁ Insertion length
 l₂ Measuring insert length
 N, N_{1/2} Neck length
 C₁ Thread cable entry
 Ø F₁ Diameter of protection tube tip
 Ø F₂ Outer diameter of tantalum cover
 Ø L₁ Overall length of protection tube
 Ø L₂ Measuring insert diameter

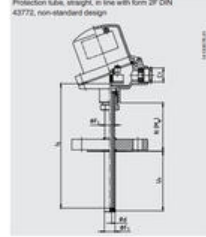
Protection tube in line with DIN 43772, wetted parts from special material, girder flange: stainless steel

Protection tube, straight, in line with form 2F DIN 43772, non-standard design

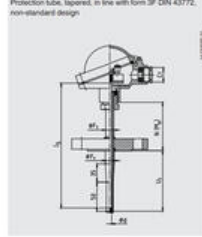


Protection tube in line with DIN 43772, tantalum cover with tantalum flange disc, carrier protection tube: stainless steel

Protection tube, straight, in line with form 2F DIN 43772, non-standard design



Protection tube, tapered, in line with form 3F DIN 43772, non-standard design



Legend:
 l₁ Insertion length
 l₂ Measuring insert length
 N, N_{1/2} Neck length
 C₁ Thread cable entry
 Ø F₁ Diameter of protection tube tip
 Ø F₂ Outer diameter of tantalum cover
 Ø L₁ Overall length of protection tube
 Ø L₂ Measuring insert diameter

The pictures show examples of connection heads.

Protection tube designs in accordance with DIN 43772

Protection tube	Material	Protection tube Ø	Suitable for measuring insert Ø	Connection to head
Straight, form 2F DIN 43772	Stainless steel 1.4371	9 x 1 mm	6 mm	M24 x 1.5 (standard threaded connection, male nut)
		11 x 2 mm	6 mm	
Tapered, form 3F DIN 43772	Stainless steel 1.4371	12 x 2.5 mm	6 mm with sleeve Ø 8 mm / 8 mm	M24 x 1.5 (standard threaded connection, male nut)
		12 x 2.5 mm, tapered to 9 mm	8 mm	

Protection tube designs in line with DIN 43772, weld-on solid tip

Protection tube	Material	Protection tube Ø	Suitable for measuring insert Ø	Connection to head
Tapered, weld-on solid tip, in line with DIN 43772, non-standard design	Stainless steel 1.4371	9 x 1 mm, tapered to 6 mm	3 mm	M24 x 1.5 (standard threaded connection, male nut)
		11 x 2 mm, tapered to 6 mm	3 mm	

Protection tube designs in line with DIN 43772, wetted parts: special material, girder flange: stainless steel

Protection tube	Material	Protection tube Ø	Suitable for measuring insert Ø	Connection to head
Straight, in line with form 2F DIN 43772, non-standard design	2.4306 (MonelK05)	13.7 x 2.2 mm	8 mm with sleeve Ø 8 mm / 8 mm	M24 x 1.5 (standard threaded connection, male nut)
	2.4819 (Hastelloy C276)	13.7 x 2.2 mm	8 mm	
	2.4610 (Hastelloy C4) / stainless steel 3.7035 (Titan Grade 2) / stainless steel	13.7 x 2.2 mm	8 mm	

Protection tube designs in line with DIN 43772, tantalum cover with tantalum flange disc,

Protection tube	Material	Protection tube Ø	Suitable for measuring insert Ø	Connection to head
Straight, in line with form 2F DIN 43772, non-standard design	Tantalum / stainless steel	11 x 2 mm, tantalum cover 12 x 0.4 mm	6 mm	M24 x 1.5 (standard threaded connection, male nut)
	stainless steel	15 x 3 mm, tantalum cover 18 x 0.4 mm	8 mm	
Tapered, in line with form 3F DIN 43772, non-standard design	Tantalum / stainless steel	12 x 2.5 mm, tantalum cover 13 x 0.4 mm	6 mm	M24 x 1.5 (standard threaded connection, male nut)
	stainless steel	15 x 3 mm, tantalum cover 18 x 0.4 mm	8 mm	