

## VASTUSLÄMPÖTILA-ANTURI ERILLISELLE SUOJATASKULLE

TR10-B

TR10B-14364745

PT100 2-johdin -50-500°C 150x6mm G1/2 NL=50mm



- Mittausalueet -196-600°C
- Vaihdeettava mittaosa
- Kaulan pituus vähintään 30mm
- PT100 tai PT1000
- ATEX optiolla

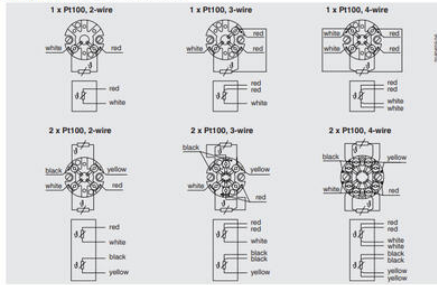
### TUOTEKUVAUS

Lämpötila-antureihin on saatavilla laaja valikoima mahdollisia Pt100- tai Pt1000-anturien ja liitäntäpäiden yhdistelmiä, mittauskärkien pituuksia, kaulan pituuksia, suojataskuliitäntöjä jne., jotka sopivat minkä tahansa kokoiseen suojataskuun ja mihin tahansa käyttökohteeseen.

### TEKNISEET TIEDOT

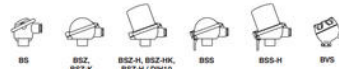
<b>Aineen kanssa kosketuksissa olevien osien materiaali</b>	Ruostumaton teräs 316Ti
<b>Asennussyvyys</b>	150 mm
<b>IP-luokka</b>	IP65
<b>Kaulan pituus</b>	0,05 m
<b>Max. käyttölämpötila</b>	500 °C
<b>Max. ympäristön lämpötila</b>	80 °C
<b>Min. käyttölämpötila</b>	-50 °C
<b>Min. ympäristön lämpötila</b>	-40 °C
<b>Pistokkeen halkaisija</b>	6 mm
<b>Rungon materiaali</b>	Alumiini

Electrical connection (colour code per IEC-EN 60751)



Connection head

■ European design per EN 50446 / DIN 43735



Model	Material	Cable entry thread size	Ingress protection (IP)	Cap	Surface	Connection to neck tube
BS	Aluminum	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65, IP68	Flat cap with 2 screws	Blue, lacquered <sup>2)</sup>	M24 x 1.5, 1/2 NPT
BSZ	Aluminum	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65, IP68	Spherical hinged cover with cylinder head screw	Blue, lacquered <sup>2)</sup>	M24 x 1.5, 1/2 NPT
BSZ-H	Aluminum	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65, IP68	Flared hinged cover with cylinder head screw	Blue, lacquered <sup>2)</sup>	M24 x 1.5, 1/2 NPT
BSZ-HK	Aluminum	2 x M20 x 1.5 or 2 x 1/2 NPT <sup>1)</sup>	IP65, IP68	Flared hinged cover with cylinder head screw	Blue, lacquered <sup>2)</sup>	M24 x 1.5
BSZ-K	Aluminum	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65	Flared hinged cover with cylinder head screw	Blue, lacquered <sup>2)</sup>	M24 x 1.5, 1/2 NPT
BS5	Aluminum	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65	Spherical hinged cover with clamping lever	Blue, lacquered <sup>2)</sup>	M24 x 1.5, 1/2 NPT
BS5-H	Aluminum	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65	Flared hinged cover with clamping lever	Blue, lacquered <sup>2)</sup>	M24 x 1.5, 1/2 NPT
BS5	Stainless steel	M20 x 1.5 <sup>1)</sup>	IP65	Precision cast screw cap	Black, electroplated	M24 x 1.5
BSZ-K	Plastic	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65	Spherical hinged cover with cylinder head screw	Black	M24 x 1.5
BSZ-HK	Plastic	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65	Flared hinged cover with cylinder head screw	Black	M24 x 1.5

Model	Explosion protection				
	without	Ex (gas) Zone 0, 1, 2	Ex (dust) Zone 20, 21, 22	Ex nA (gas) Zone 2	Ex tc (dust) Zone 22
BS	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-K (DIN19)	x	x	-	-	-
BS5	x	x	-	-	-
BS5-H	x	x	-	-	-
BS5	x	x	-	-	-
BSZ-K	x	x	-	-	-
BSZ-HK	x	x	-	-	-

Cable entry



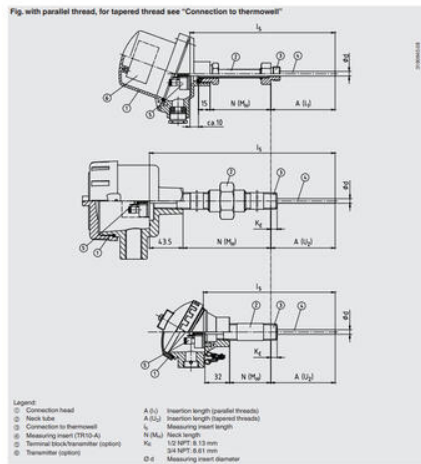
The pictures show examples of connection heads.

Cable entry	Cable entry thread size
Standard cable entry <sup>1)</sup>	M20 x 1.5 or 1/2 NPT
Plastic cable gland (cable Ø ... 10 mm) <sup>1)</sup>	M20 x 1.5 or 1/2 NPT
Nickel-plated brass cable gland (cable Ø ... 12 mm)	M20 x 1.5 or 1/2 NPT
Stainless steel cable gland (cable Ø ... 12 mm)	M20 x 1.5 or 1/2 NPT
Plain threaded <sup>1)</sup>	M20 x 1.5 or 1/2 NPT
2 plain threaded <sup>1)</sup>	2 x M20 x 1.5 or 2 x 1/2 NPT
Junction box M12 x 1 (4-pin) <sup>1)</sup>	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 (gas) Zone 0, 1, 2	Ex nA (gas) Zone 2	Ex tc (dust) Zone 22
Standard cable entry <sup>1)</sup>	Black	IP65	-40 ... +80 °C	x	-	-	-
Plastic cable gland <sup>1)</sup>	Black or grey	IP65, IP68	-40 ... +80 °C	x	-	-	-
Plastic cable gland, Ex e <sup>1)</sup>	Light blue	IP65, IP68	-30 ... +80 °C (standard) -40 ... +70 °C (optional)	x	x	-	-
Plastic cable gland, Ex e <sup>1)</sup>	Black	IP65, IP68	-30 ... +80 °C (standard) -40 ... +70 °C (optional)	x	-	x	-
Nickel-plated brass cable gland	Black	IP65, IP68	-40 °F ... -40 ... +80 °C	x	-	-	-
Nickel-plated brass cable gland, Ex e	Black	IP65, IP68	-40 °F ... -40 ... +80 °C	x	x	x	x
Stainless steel cable gland	Black	IP65, IP68	-40 °F ... -40 ... +80 °C	x	x	x	x
Stainless steel cable gland, Ex e	Black	IP65, IP68	-40 °F ... -40 ... +80 °C	x	x	x	x
Plain threaded <sup>1)</sup>	-	IP60	-	x	x <sup>2)</sup>	x <sup>2)</sup>	x <sup>2)</sup>
2 plain threaded <sup>1)</sup>	-	IP60	-	x	x <sup>2)</sup>	x <sup>2)</sup>	x <sup>2)</sup>
Junction box M12 x 1 (4-pin) <sup>1)</sup>	-	IP60	-40 ... +80 °C	x	x <sup>2)</sup>	x <sup>2)</sup>	x <sup>2)</sup>
Sealing plugs for transport	Transparent	-	-40 ... +80 °C	-	-	-	not applicable, transport protection

Components model TR10-B

Fig. with parallel thread, for tapered thread see "Connection to thermowell"

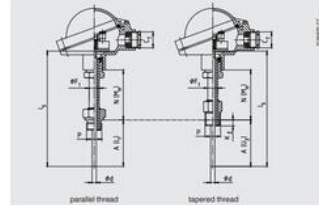


Legend:  
 ① Connection head  
 ② Neck tube  
 ③ Connection to thermowell  
 ④ Measuring insert (TR10-A)  
 ⑤ Terminal block/Transmitter (optional)  
 ⑥ Transmitter (optional)  
 A (S) Insertion length (parallel threads)  
 A (T) Insertion length (tapered threads)  
 L<sub>1</sub> Measuring insert length  
 N (M<sub>1</sub>) Neck length  
 K<sub>1</sub> 1/2 NPT Ø 13 mm  
 Ø 4 NPT Ø 8.1 mm  
 Ø d Measuring insert diameter

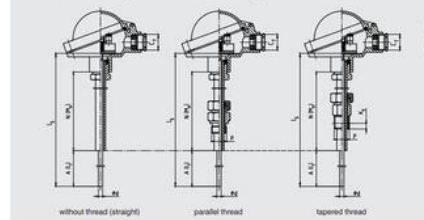
Neck tube

Neck tube design

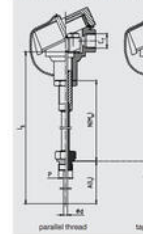
Neck tube per DIN 43772



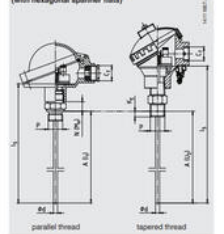
Neck tube per DIN 43772, straight, with/without compression fitting



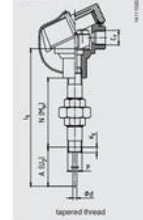
Neck tube, with counter nut to head



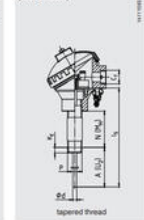
Double threaded hex bushing (with hexagonal spanner flats)



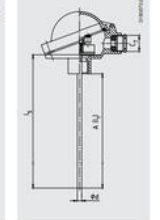
"Nipple-union-nipple" neck tube



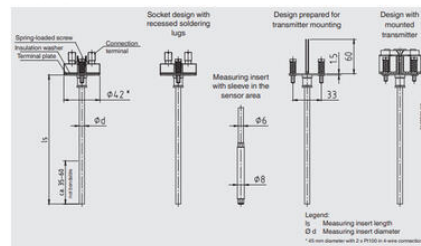
Double threaded hex bushing (tube section)



Without neck tube

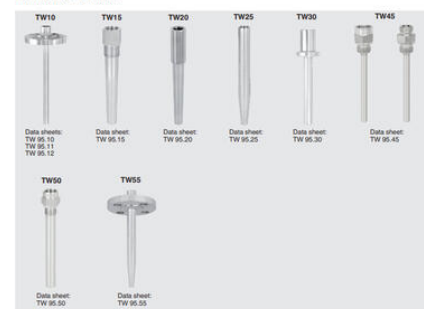


Dimensions in mm



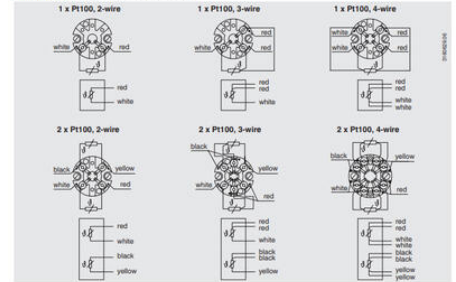
Measuring insert diameter Ø d in mm	Index per DIN 43735	Tolerance in mm	Sheath material
3 <sup>1)</sup>	Standard	30	3 ±0.05
4	Standard	80	4 ±0.1
5 (5 mm with sleeve)	Standard	80	5 ±0.1
6	Standard	80	6 ±0.1

Thermowell selection



Model	Data sheet
TW10	Data sheet TW 95.10
TW15	Data sheet TW 95.11
TW20	Data sheet TW 95.12
TW25	Data sheet TW 95.20
TW30	Data sheet TW 95.25
TW45	Data sheet TW 95.30
TW50	Data sheet TW 95.45
TW55	Data sheet TW 95.50

Electrical connection (colour code per IEC-EN 60751)



### Connection head

■ European designs per EN 50466 / DIN 43735



Model	Material	Cable entry thread size	Ingress protection (IP65)	Cap	Surface	Connection to neck tube
BS	Aluminum	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65, IP68	Flat cap with 2 screws	Blk. lacquered <sup>2)</sup>	M24 x 1.5, 1/2 NPT
BSZ	Aluminum	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65, IP68	Spherical hinged cover with cylinder head screw	Blk. lacquered <sup>2)</sup>	M24 x 1.5, 1/2 NPT
BSZ-H	Aluminum	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65, IP68	Raised hinged cover with cylinder head screw	Blk. lacquered <sup>2)</sup>	M24 x 1.5, 1/2 NPT
BSZ-H (2 cable outlet)	Aluminum	2 x M20 x 1.5 or 2 x 1/2 NPT <sup>1)</sup>	IP65, IP68	Raised hinged cover with cylinder head screw	Blk. lacquered <sup>2)</sup>	M24 x 1.5
BSZ-H/DIN19 <sup>3)</sup>	Aluminum	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65	Raised hinged cover with cylinder head screw	Blk. lacquered <sup>2)</sup>	M24 x 1.5, 1/2 NPT
BS5	Aluminum	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65	Spherical hinged cover with clamping lever	Blk. lacquered <sup>2)</sup>	M24 x 1.5, 1/2 NPT
BS5-H	Aluminum	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65	Raised hinged cover with clamping lever	Blk. lacquered <sup>2)</sup>	M24 x 1.5, 1/2 NPT
BVS	Stainless steel	M20 x 1.5 <sup>1)</sup>	IP65	Precision-cast screw cap	Black, electropolished	M24 x 1.5
BSZ-K	Plastic	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65	Spherical hinged cover with cylinder head screw	Black	M24 x 1.5
BSZ-HK	Plastic	M20 x 1.5 or 1/2 NPT <sup>1)</sup>	IP65	Raised hinged cover with cylinder head screw	Black	M24 x 1.5

Model	Explosion protection				
	without	Ex (gas) Zone 0, 1, 2	Ex (dust) Zone 20, 21, 22	Ex HA (gas) Zone 2	Ex to (dust) Zone 22
BS	x	x	-	-	-
BSZ	x	x	x	x	x
BSZ-H	x	x	x	x	x
BSZ-H (2 cable outlet)	x	x	x	x	x
BSZ-H/DIN19 <sup>3)</sup>	x	x	-	-	-
BS5	x	x	-	-	-
BS5-H	x	x	-	-	-
BVS	x	x	-	-	-
BSZ-K	x	x	-	-	-
BSZ-HK	x	x	-	-	-

### Cable entry

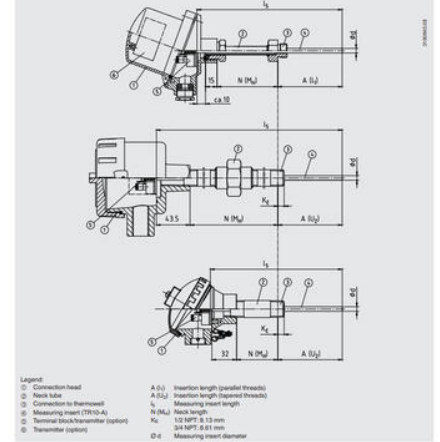


The pictures show examples of connection heads.

Cable entry	Colour	Ingress protection (max.)	Min. max. ambient temperature	Explosion protection without	Ex I (gas) Zone 0, 1, 2	Ex II (gas) Zone 20, 21, 22	Ex HA (gas) Zone 2	Ex to (dust) Zone 22
Standard cable entry <sup>1)</sup>	Black	IP65	-40...+80 °C	x	-	-	-	-
Plastic cable gland <sup>2)</sup>	Black or grey	IP65, IP68	-40...+80 °C	x	-	-	-	-
Plastic cable gland, Ex e <sup>3)</sup>	Light blue	IP65, IP68	-20...+80 °C (standard), -40...+70 °C (option)	x	x	x	-	-
Plastic cable gland, Ex e <sup>4)</sup>	Black	IP65, IP68	-20...+80 °C (standard), -40...+70 °C (option)	x	-	-	x	x
Nickel plated brass cable gland	Black	IP65, IP68	-60 °F / -40...+80 °C	x	x	x	x	x
Nickel plated brass cable gland, Ex e	Black	IP65, IP68	-60 °F / -40...+80 °C	x	x	x	x	x
Stainless steel cable gland	Black	IP65, IP68	-60 °F / -40...+80 °C	x	x	x	x	x
Stainless steel cable gland, Ex e	Black	IP65, IP68	-60 °F / -40...+80 °C	x	x	x	x	x
Plain threaded <sup>5)</sup>	-	IP60	-	x	x <sup>6)</sup>	x <sup>6)</sup>	x <sup>6)</sup>	x <sup>6)</sup>
2 x plain threaded <sup>6)</sup>	-	IP60	-	x	x <sup>6)</sup>	x <sup>6)</sup>	x <sup>6)</sup>	x <sup>6)</sup>
Junction box M12 x 1 (4-pin) <sup>7)</sup>	-	IP60	-40...+80 °C	x	x <sup>6)</sup>	x <sup>6)</sup>	-	-
Sealing plugs for transport	Transparent	-	-40...+80 °C	-	-	-	-	-

### Components model TR10-B

Fig. with parallel thread, for tapered thread see "Connection to thermowell"



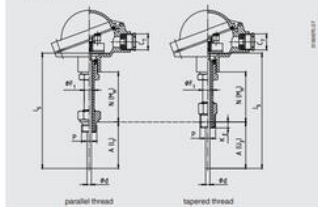
Legend:  
 ① Connection head  
 ② Neck tube  
 ③ Connection to thermowell  
 ④ Measuring insert (TR10-A)  
 ⑤ Terminal block (transmitter option)  
 ⑥ Transmitter (option)

A (D) Insertion length (parallel threads)  
 A (D) Insertion length (tapered threads)  
 L Measuring insert length  
 N (M) Neck length  
 K 1/2 NPT, 0.81 mm  
 D Measuring insert diameter

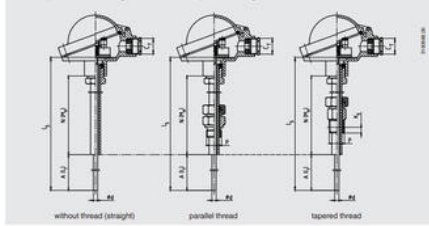
### Neck tube

Neck tube designs

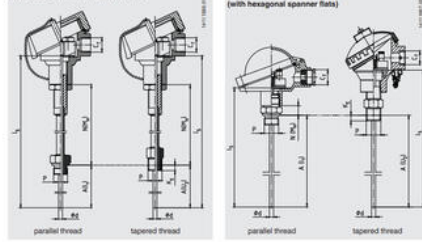
Neck tube per DIN 43772



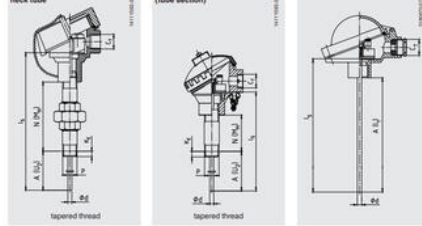
Neck tube per DIN 43772, straight, with/without compression fitting



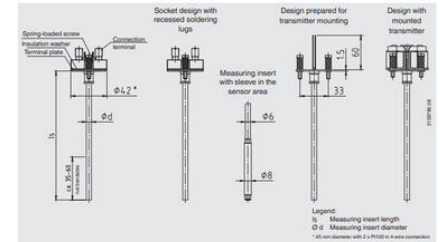
Neck tube, with counter nut to head



"Nipple-union-nipple" neck tube

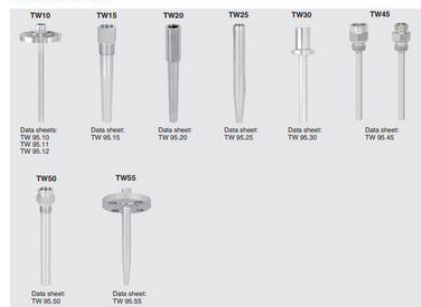


Dimensions in mm



Measuring insert diameter Ø d	Index per DIN 43735	Tolerance in mm	Health material	Standard design	Increased welding legs
3	Standard	±0.10	1.4571, 316L, 1.4571	1.4571	1.4571
6	Standard	0...0	1.4571, 316L, 1.4571	1.4571	1.4571
8 (8 mm with sleeve)	Standard	0...0	1.4571, 316L, 1.4571	1.4571	1.4571
8	Standard	0...0	1.4571, 316L, 1.4571	1.4571	1.4571

### Thermowell selection



Data sheet TW 65.10  
TW 65.11  
TW 65.12

Data sheet TW 65.15

Data sheet TW 65.20

Data sheet TW 65.25

Data sheet TW 65.30

Data sheet TW 65.45

Data sheet TW 65.50

Data sheet TW 65.55