

LAIPALLINEN TERMoeLEMENTTI

TC10-F

TC10F-14369131

J Tyyppi -40-750°C 250x12mm DN40 form 2F

- Mittaelementti tyyppille K, J, E, N ja T
- Mitta-alue -40-1200°C
- Hitsattu putki laipalla
- Vaihdeettava mittaosa



TUOTEKUVAUS

TC10-F-sarjan termoelementit on saatavilla standardien DIN EN ja ASME mukaisia laippoja. Nämä lämpötilamittapääät sopivat nestemäisille ja kaasumaisille väliaineille, joita käytetään kohtalaisella mekaanisella kuormalla. Mukana putkimateriaalista valmistettu TW40-mallinen suojatasku.

TEKNISEET TIEDOT

Aineen kanssa kosketuksissa olevien osien materiaali	Ruostumaton teräs 316Ti
Asennussyvyys	250 mm
IP-luokka	IP65
Kaulan pituus	0,065 m
Kytinkotelon materiaali	Inconel - 600
Max. käyttölämpötila	750 °C
Max. painealue	16 bar
Max. termostaatin käyttölämpötila	80 °C
Min. käyttölämpötila	-40 °C
Min. termostaatin käyttölämpötila	-40 °C
Pistokkeen halkaisija	12 mm
Rungon materiaali	Alumiini
Sisähalkaisija	7 mm

Connection head

■ European designs per EN 50446 / DIN 43735



Model	Material	Cable entry thread size	Ingress protection (max. β)	Cap	Surface	Connection to neck tube
BS	Aluminum	M20 x 1.5 or 1/4 NPT ¹⁾	IP65, IP68	Flat cap with 2 screws	Blue, lacquered ¹⁾	M24 x 1.5, 1/4 NPT
BS2	Aluminum	M20 x 1.5 or 1/4 NPT ¹⁾	IP65, IP68	Spherical hinged cover with cylinder head screw	Blue, lacquered ¹⁾	M24 x 1.5, 1/4 NPT
BS2-H	Aluminum	M20 x 1.5 or 1/4 NPT ¹⁾	IP65, IP68	Raised hinged cover with cylinder head screw	Blue, lacquered ¹⁾	M24 x 1.5, 1/4 NPT
BS2-H (2x cable outlet)	Aluminum	2 x M20 x 1.5 or 2 x 1/4 NPT ¹⁾	IP65, IP68	Raised hinged cover with cylinder head screw	Blue, lacquered ¹⁾	M24 x 1.5
BS2-H / DM10 ¹⁾	Aluminum	M20 x 1.5 or 1/4 NPT ¹⁾	IP65	Raised hinged cover with cylinder head screw	Blue, lacquered ¹⁾	M24 x 1.5, 1/4 NPT
BS5	Aluminum	M20 x 1.5 or 1/4 NPT ¹⁾	IP65	Spherical hinged cover with clamping lever	Blue, lacquered ¹⁾	M24 x 1.5, 1/4 NPT
BS5-H	Aluminum	M20 x 1.5 or 1/4 NPT ¹⁾	IP65	Raised hinged cover with clamping lever	Blue, lacquered ¹⁾	M24 x 1.5, 1/4 NPT
BVS	Stainless steel	M20 x 1.5 ¹⁾	IP65	Physician-cast screw-on lid	Blank, electropolished	M24 x 1.5
BS2-K	Plastic	M20 x 1.5 or 1/4 NPT ¹⁾	IP65	Spherical hinged cover with cylinder head screw	Black	M24 x 1.5
BS2-HK	Plastic	M20 x 1.5 or 1/4 NPT ¹⁾	IP65	Raised hinged cover with cylinder head screw	Black	M24 x 1.5

Model	Explosion protection	Ex I (gas) Zone 0, 1, 2	Ex I (dust) Zone 20, 21, 22	Ex nA (gas) Zone 3	Ex nD (dust) Zone 22
BS	X	X	-	-	-
BS2	X	X	X	X	X
BS2-H	X	X	X	X	X
BS2-H (2x cable outlet)	X	X	X	X	X
BS2-H / DM10 ¹⁾	X	X	X	X	X
BS5	X	X	-	-	-
BS5-H	X	X	-	-	-
BVS	X	X	-	-	-
BS2-K	X	X	-	-	-
BS2-HK	X	X	-	-	-

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 1.4571	9 x 1 mm 11 x 2 mm 12 x 2.5 mm 14 x 2.5 mm	6 mm	M24 x 1.5 (rotatable threaded connection, male nut)
Tapered, form 3F DIN 43772	Stainless steel 1.4571	12 x 2.5 mm, tapered to 9 mm	6 mm	M24 x 1.5 (rotatable threaded connection, male nut)

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 1.4571	9 x 1 mm, tapered to 6 mm 11 x 2 mm, tapered to 6 mm 12 x 2.5 mm, tapered to 6 mm	3 mm	M24 x 1.5 (rotatable threaded connection, male nut)

Protection tube designs in line with DIN 43772, wetted parts: special material, gilder 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	2.4360 (Nirox60) / stainless steel 2.4619 (Hastelloy C276) / stainless steel 2.4602 (Hastelloy C4) / stainless steel 3.7035 (Titan Grade 2) / stainless steel	13.7 x 2.2 mm	6 mm with sleeve Ø 8 mm / 8 mm	M24 x 1.5 (rotatable threaded connection, male nut)

Protection tube designs in line with DIN 43772, tantalum cover with tantalum flange disc, carrier protection tube: 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	Tantalum / stainless steel	11 x 2 mm, tantalum cover 12 x 0.4 mm 15 x 3 mm, tantalum cover 16 x 0.4 mm	6 mm	M24 x 1.5 (rotatable threaded connection, male nut)
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 (rotatable threaded connection, male nut)

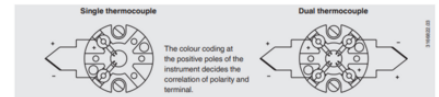
Cable entry



The pictures show examples of connection heads.

Cable entry	Cable entry threaded size
Standard cable entry ¹⁾	M20 x 1.5 or 1/4 NPT
Plastic cable gland (cable Ø 6 ... 10 mm) ¹⁾	M20 x 1.5 or 1/4 NPT
Nickel-plated brass cable gland (cable Ø 6 ... 12 mm)	M20 x 1.5 or 1/4 NPT
Stainless steel cable gland (cable Ø 7 ... 12 mm)	M20 x 1.5 or 1/4 NPT
Plain threaded	M20 x 1.5 or 1/4 NPT
2 x M20 x 1.5	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 1/4 NPT

Electrical connection



Connection head

■ European designs per EN 50446 / DIN 43735



Model	Material	Cable entry thread size	Ingress protection (max. β) ¹⁾	Cap	Surface	Connection to neck tube
BS	Aluminum	M20 x 1.5 or 1/4 NPT ¹⁾	IP65, IP68	Flat cap with 2 screws	Blue, lacquered ¹⁾	M24 x 1.5, 1/4 NPT
BS2	Aluminum	M20 x 1.5 or 1/4 NPT ¹⁾	IP65, IP68	Spherical hinged cover with cylinder head screw	Blue, lacquered ¹⁾	M24 x 1.5, 1/4 NPT
BS2-H	Aluminum	M20 x 1.5 or 1/4 NPT ¹⁾	IP65, IP68	Raised hinged cover with cylinder head screw	Blue, lacquered ¹⁾	M24 x 1.5, 1/4 NPT
BS2-H (2x cable outlet)	Aluminum	2 x M20 x 1.5 or 2 x 1/4 NPT ¹⁾	IP65, IP68	Raised hinged cover with cylinder head screw	Blue, lacquered ¹⁾	M24 x 1.5
BS2-H / DM10 ¹⁾	Aluminum	M20 x 1.5 or 1/4 NPT ¹⁾	IP65	Raised hinged cover with cylinder head screw	Blue, lacquered ¹⁾	M24 x 1.5, 1/4 NPT
BS5	Aluminum	M20 x 1.5 or 1/4 NPT ¹⁾	IP65	Spherical hinged cover with clamping lever	Blue, lacquered ¹⁾	M24 x 1.5, 1/4 NPT
BS5-H	Aluminum	M20 x 1.5 or 1/4 NPT ¹⁾	IP65	Raised hinged cover with clamping lever	Blue, lacquered ¹⁾	M24 x 1.5, 1/4 NPT
BVS	Stainless steel	M20 x 1.5 ¹⁾	IP65	Physician-cast screw-on lid	Blank, electropolished	M24 x 1.5
BS2-K	Plastic	M20 x 1.5 or 1/4 NPT ¹⁾	IP65	Spherical hinged cover with cylinder head screw	Black	M24 x 1.5
BS2-HK	Plastic	M20 x 1.5 or 1/4 NPT ¹⁾	IP65	Raised hinged cover with cylinder head screw	Black	M24 x 1.5

Model	Explosion protection	Ex I (gas) Zone 0, 1, 2	Ex I (dust) Zone 20, 21, 22	Ex nA (gas) Zone 3	Ex nD (dust) Zone 22
BS	X	X	-	-	-
BS2	X	X	X	X	X
BS2-H	X	X	X	X	X
BS2-H (2x cable outlet)	X	X	X	X	X
BS2-H / DM10 ¹⁾	X	X	X	X	X
BS5	X	X	-	-	-
BS5-H	X	X	-	-	-
BVS	X	X	-	-	-
BS2-K	X	X	-	-	-
BS2-HK	X	X	-	-	-

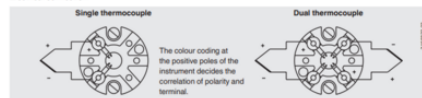
Cable entry



The pictures show examples of connection heads.

Cable entry	Cable entry threaded size
Standard cable entry ¹⁾	M20 x 1.5 or 1/4 NPT
Plastic cable gland (cable Ø 6 ... 10 mm) ¹⁾	M20 x 1.5 or 1/4 NPT
Nickel-plated brass cable gland (cable Ø 6 ... 12 mm)	M20 x 1.5 or 1/4 NPT
Stainless steel cable gland (cable Ø 7 ... 12 mm)	M20 x 1.5 or 1/4 NPT
Plain threaded	M20 x 1.5 or 1/4 NPT
2 x M20 x 1.5	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 1/4 NPT

Electrical connection



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 1.4571	9 x 1 mm 11 x 2 mm 12 x 2.5 mm 14 x 2.5 mm	6 mm	M24 x 1.5 (rotatable threaded connection, male nut)
Tapered, form 3F DIN 43772	Stainless steel 1.4571	12 x 2.5 mm, tapered to 9 mm	6 mm	M24 x 1.5 (rotatable threaded connection, male nut)

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 1.4571	9 x 1 mm, tapered to 6 mm 11 x 2 mm, tapered to 6 mm 12 x 2.5 mm, tapered to 6 mm	3 mm	M24 x 1.5 (rotatable threaded connection, male nut)

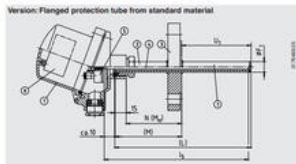
Protection tube designs in line with DIN 43772, wetted parts: special material, gilder flange: stainless steel

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	2.4360 (Nirox60) / stainless steel 2.4619 (Hastelloy C276) / stainless steel 2.4602 (Hastelloy C4) / stainless steel 3.7035 (Titan Grade 2) / stainless steel	13.7 x 2.2 mm	6 mm with sleeve Ø 8 mm / 8 mm	M24 x 1.5 (rotatable threaded connection, male nut)

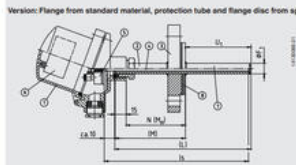
Protection tube designs in line with DIN 43772, tantalum cover with tantalum flange disc, carrier protection tube: stainless steel

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	Tantalum / stainless steel	11 x 2 mm, tantalum cover 12 x 0.4 mm 15 x 3 mm, tantalum cover 16 x 0.4 mm	6 mm	M24 x 1.5 (rotatable threaded connection, male nut)
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 (rotatable threaded connection, male nut)

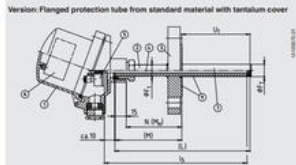
Version: Flanged protection tube from standard material



Version: Flange from standard material, protection tube and flange disc from special materials



Version: Flanged protection tube from standard material with tantalum cover



- | | |
|--------|---|
| Legend | |
| ① | Connection head |
| ② | Neck tube |
| ③ | Flange |
| ④ | Measuring insert (TC10-A) |
| ⑤ | Terminal block/Transmitter (option) |
| ⑥ | Transmitter (option) |
| ⑦ | Protection tube |
| ⑧ | Flange disc from special material |
| ⑨ | Tarbitum cover |
| L_1 | Overall length of protection tube |
| l_1 | Measuring insert length |
| l_2 | Protection tube insertion length in accordance with DIN 43772 |
| d_1 | Protection tube diameter |
| d_2 | Outer diameter of tarbitum cover |
| n | Neck length |
| n_1 | Neck tube length |