

LAIPALLINEN TERMoeLEMENTTI

TC10-F

TC10F-14369126

N Tyyppi -40-1200°C 160x12mm 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	160 mm
IP-luokka	IP65
Kaulan pituus	0,065 m
Kytinkotelon materiaali	Inconel - 600
Max. käyttölämpötila	1200 °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 (gas) Zone 0, 1, 2	Ex (dust) Zone 20, 21, 22	Ex nA (gas) Zone 3	Ex (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)

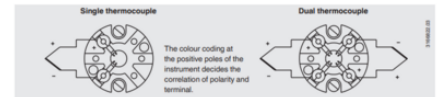
Cable entry



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 (gas) Zone 0, 1, 2	Ex (dust) Zone 20, 21, 22	Ex nA (gas) Zone 3	Ex (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	-	-	-

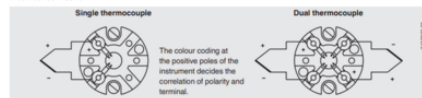
Cable entry



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)

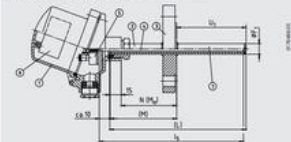
Protection tube designs in line with DIN 43772, wetted parts: special material, gilder flange: stainless steel

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)

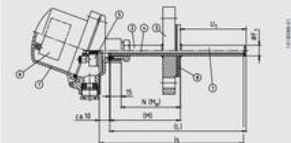
Protection tube designs in line with DIN 43772, tantalum cover with tantalum flange disc, carrier protection tube: stainless steel

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)

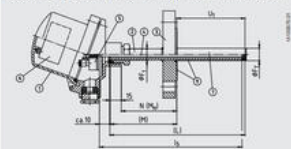
Version: Flanged protection tube from standard material



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 (optional)
 - 6 Transmitter (optional)
 - 7 Protection tube
 - 8 Flange disc from special material
 - 9 Tantalum cover
- L1 Overall length of protection tube
L2 Measuring insert length
L3 Protection tube insertion length
L4 Protection tube diameter
L5 Flange diameter
L6 Flange thickness
L7 Flange outer diameter
L8 Flange inner diameter
L9 Flange outer diameter
L10 Flange inner diameter
L11 Flange outer diameter
L12 Flange inner diameter
L13 Flange outer diameter
L14 Flange inner diameter
L15 Flange outer diameter
L16 Flange inner diameter
L17 Flange outer diameter
L18 Flange inner diameter
L19 Flange outer diameter
L20 Flange inner diameter