



Thermocouple with Head

General purpose and Ex-proof

Features

- High quality TC cable
- Mineral insulated for flexibility and durability
- General purpose with spring loaded sensor
- Available with weatherproof and explosion proof head
- Custom designs for specific applications

Ranges

-200 up to 1700 °C

-325 up to 3100 °F

Applications

Chemical and petrochemical industry

Machine and apparatus construction

Steel, Power, Cement, Pulp and paper industry

Pharmaceuticals, Dairy & Food process industry



Technical specification	TCH
Head types	Compact, Sanitary, Weatherproof and Ex-proof heads.
Element	J, K, T, E, N, R, S, B others on request
Element Type	Simplex, Duplex
Junction	Grounded, Ungrounded
Range	J type (-40 to 750°C, -40 to 1380°F), K type (-200 to 1200°C, -325 to 2200°F), T type (-200 to 350°C, -325 to 660°F), E type (-200 to 900 °C, -325 to 1650 °F), N type (-200 to 1200 °C, -325 to 2200 °F), R type (0 to 1600°C, 32 to 2900°F) S type (0 to 1600°C, 32 to 2900°F), B type (200 to 1700°C, 400 to 3100°F) Others on Request
Sheath diameter	3mm, 4.5mm, 6mm, 6.4mm, 8mm
Sheath length	up to 30000mm for J, K, T, E, N, 2000mm for R, S, B
Process connection	1/4", 1/2", 3/4" NPT/BSP, adjustable, Nipple or Nipple union nipple connections
Material	
Process connection	Stainless steel 304, 316, CS Zinc Coated
Sheath	Stainless steel 316, optional SS316L, SS321, SS310, SS446, Inconel 600, Incoloy 800
Head*	Aluminum epoxy coated, SS304, SS316, PP
Electrical specification	
Terminal	Ceramic block with nickel plated brass terminal optional spring-loaded terminal
Ex-proof	CCOE : Zone 1 & 2 IIA / IIB / IIC T6 FM/CSA : Class I Div.1 Group B,C, D. Class II/III Div. 1 Group E, F, G. ATEX /IECEx : II 2GD, Ex db IIC Gb, Ex tb IIIC Db, Ta = -40°C to +85°C
Insulation	100 MΩ minimum insulation when measured at 500 VDC, higher on request
Electrical connection*	1/2" NPT(F) Standard, others on request. (Sanitary Head, standard M16x1)
General specification	
Accuracy	Class1 and Class 2 as per IEC 584.2/ ANSI MC 96.1
Protection IEC 60529*	IP65, IP66, IP67, IP68, NEMA 4x
Accessories, options	Thermowell, Head mounted transmitters, etc.

* Depending on Head type



TECHNOCRATIC SERVICES

ISO 9001:2015 Certified Company

Order information

Head Type	Element	Element type	Junction	Sheath material	Sheath Dia	Sheath length	Process connection	Connection Type	Electrical connection	Options
(E) Compact (H) Hinge type (K) Weather-proof (W) Weather-proof (B) CCOE certified IIA/IIB (C) CCOE certified IIC (G) Weather-proof (A) FM/CSA ATEX/IECEX certified (S) Sanitary Refer drawing for more details	(J) Iron - Constantan (K) Chromel - Alumel (T) Copper - Constantan (E) Chromel - Constantan (N) Nicrosil - Nisil (R) Pt-13%Rh/Pt (S) Pt-10%Rh/Pt (B) Pt-30%Rh/Pt 6%Rh	(S) Simplex (D) Duplex	(G) Grounded (U) Ungrounded	(S) SS316 (L) SS316L (SA) SS321 (310) SS310 (446) SS446 (I6) Inconel 600 (I8) Incoloy 800	(D3) 3 mm (D4.5) 4.5 mm (D6) 6 mm (D6.4) 6.4 mm (D8) 8 mm (D10) 10 mm	55 to 30000 mm ⁴⁾	(=) None (02) 1/4" NPT(M) (04) 1/2" NPT(M) (05) 3/4" NPT(M) (13) 1/4" BSP(M) (15) 1/2" BSP(M) (17) 3/4" BSP(M) (16) M20x1.5(M) (S15) 1.5" Tri-clamp (M12x1.5M) M12x1.5(M) (M27x2M) M27x2(M)	(=) None (F) Fixed Hex nut (N100B) Zinc plated CS Nipple 100mm ²⁾ (U150B) Zinc plated CS Nipple union Nipple 150mm ²⁾ (N100C) SS304 Nipple 100mm ²⁾ (U150C) SS304 Nipple union Nipple 150mm ²⁾ (N100S) SS316 Nipple 100mm ²⁾ (U150S) SS316 Nipple union Nipple 150mm ²⁾ (D) adjustable connection sliding on stem	(=) Threaded ³⁾ (B1) Ni plated brass double compression cable gland ⁷⁾ (C1) Ni plated brass CCOE (IIA/IIB) cable gland ⁷⁾ (D1) Ni plated brass CCOE (IIC) cable gland ⁷⁾ (E1) Ni plated brass ATEX cable gland ⁷⁾ (F1) SS double compression cable gland ⁷⁾ (G1) SS CCOE (IIA/IIB) cable gland ⁷⁾ (H1) SS CCOE (IIC) cable gland ⁷⁾ (I1) Plastic cable gland PG13.5 ⁷⁾ (J1) SS ATEX cable gland ⁷⁾ (7P) 7 Pin connector (9P) 9 Pin connector	(NH) Tagging wired (ST) Spring loaded terminal (HT) Head mounted transmitter (DE) Double entry for head ⁵⁾ (DR) Double entry with Aluminum plugged ⁵⁾ (DC) Double entry with SS304 plugged ⁵⁾ (DS) Double entry with SS316 plugged ⁵⁾ (TTS) Teflon-Teflon, SS braided extension cable ¹⁾⁶⁾ (TT) Teflon-Teflon, extension cable ¹⁾⁶⁾ (EE16) Electrical Entry M20x1.5 ⁸⁾ (EE05) Electrical Entry 3/4" NPT ⁸⁾ (EE99) Electrical Entry 3/4" ET ⁸⁾ (C4) Calibration Certificate

1) Specify length in meter EG. TTS1.5 = TTS with 1.5m

2) Only with connection "04, 05, 15, 16", length available 75, 100, 125, 150mm

3) Standard electrical entry is 1/2" NPT(F), see options for other threads, refer drawing for possible threads in head. (Sanitary Head, standard M16x1)

4) Maximum length 2000mm for R, S and B type.

5) Only for limited head types, refer drawing

6) Max temperature limit for extension cable is 250°C

7) For two cable glands, specify the codes as B2, C2... applicable only for (DE)

8) Refer drawing for possible threads and head combination



TECHNOCRATIC SERVICES

ISO 9001:2015 Certified Company

General dimensions in mm

NUN

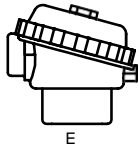
Fixed

Nipple

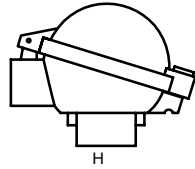
Adjustable

None

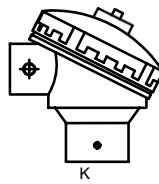
Types of Head



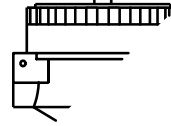
E



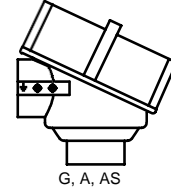
H



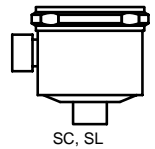
K



W, WC, WS
B, BC, BS
C, CC, CS



G, A, AS



SC, SL

Head Type	Material	IP Rating	No of Cable Entries	Cable Entry Thread	Approvals
E	Aluminium	IP65	Single	1/2" NPT, 3/4" ET	-
H	Aluminium	IP65	Single	1/2" NPT, 3/4" ET	-
K	Aluminium	IP67	Single	1/2" NPT	-
W	Aluminium	IP66 / IP67	Single / Double	1/2" NPT, 3/4" ET, 3/4" NPT, M20x1.5	-
WC	SS304				
WS	SS316				
B	Aluminium	IP66 / IP67	Single / Double	1/2" NPT, 3/4" ET, 3/4" NPT, M20x1.5	CCOE : IIA/IIB Zone 1 & 2 T6
BC	SS304				
BS	SS316				
C	Aluminium	IP66 / IP67	Single / Double	1/2" NPT, 3/4" ET, 3/4" NPT, M20x1.5	CCOE : IIC Zone 1 & 2 T6
CC	SS304				
CS	SS316				
G	Aluminium	IP66	Single	1/2" NPT, 3/4" NPT, M20x1.5	-
A	Aluminium	IP66 / IP68 NEMA 4X	Single	1/2" NPT, 3/4" NPT, M20x1.5	FM/CSA : Class I Division 1 Group B,C, D. Class II/III Division 1 Group E, F, G. ATEX /IECEX : II 2GD, Ex db IIC Gb, Ex tb IIIC Db, Ta = -40°C to +85°C
AS	SS316				
SC	SS304	IP65	Single	M16x1	-
SL	SS316				

Standard electrical connection is 1/2" NPT(F), for others use optional code. (Sanitary Head, standard M16x1)