

SHEATH TYPE THERMOCOUPLE

NEW-FLOW sheath type thermocouple is high precision and reliability measuring temperature sensor.

Technical Data

Head Housing: Weather proof; Explosion proof available
N, K, E, J, T type available

Sensor Dimensions: $\phi 1.0 \sim \phi 8.0$ mm on request

Sheath Material: SS316, SS310, Inconel 600 on request

Working Temperature Limited: $-200 \sim 1050^{\circ}\text{C}$, according to applicable standards table.

Measuring Junction Type: Grounded type, Ungrounded type, Ungrounded separated type

Element Material

Symbol	Positive Polarity (+)	Negative Polarity (-)
N	Alloy: nickel, chromium and silicone	Alloy: nickel and silicone
K	Alloy: nickel and chromium	Alloy: nickel
E	Alloy: nickel and chromium	Alloy: copper and nickel
J	Iron	Alloy: copper and nickel
T	Copper	Alloy: copper and nickel



Approvals:

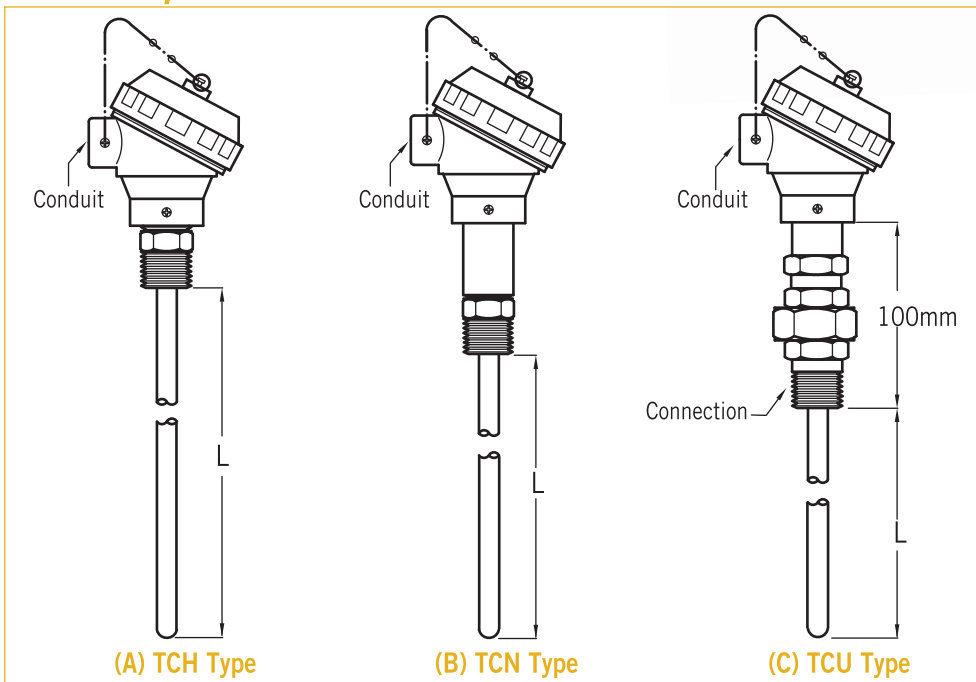


TD0400TJ
 工電(2014)第00267號
 工電(2014)第00268號
 工電(2015)第00108號
 工電(2015)第00103號

Explosion Proof

Weather Proof

Thermocouple Model



(A) TCH Type

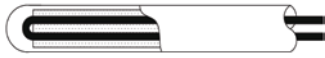
(B) TCN Type

(C) TCU Type

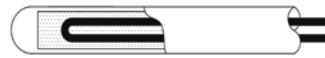
Sensor Type

(A) Spring Loading Hexagonal Head Thread Type (TCU Type)	(C) Welded Hexagonal Head Thread Type (TCH Type)
(B) Spring Loading Nipple Thread Type (TCN Type)	(D) Welded Nipple Thread Type (TCN Type)

Measuring Junction Type



(A) Grounded Type



(B) Ungrounded Type



(C) Ungrounded Separated Type

(A) It is not suitable for using in location such as electromagnetic induction interfered by radio frequency.
 (B) It has response slower than grounded. But ensured a long life, it is available for measuring in various location.
 (C) It could be used in two control loop separately.

Thermocouple Sensor Size

SINGLE ELEMENT	Sheath (mm)		Wire dia. (mm)	Maximum Temperature Range (in air) Limited (unit:°C)					Maximum Length Available (unit:M)		
	O.D	t		N	K	E	J	T			
	Ø1.0	0.17	Ø0.17	900 ⁽³⁾	650 ⁽¹⁾	650 ⁽¹⁾	450 ⁽¹⁾	300 ⁽¹⁾	400		
	Ø1.6	0.27	Ø0.27	1200 ⁽³⁾	650 ⁽¹⁾	650 ⁽¹⁾	450 ⁽¹⁾	300 ⁽¹⁾	180		
	Ø3.2	0.47	Ø0.51	1260 ⁽³⁾	750 ⁽¹⁾	750 ⁽¹⁾	650 ⁽¹⁾	350 ⁽¹⁾	130		
	Ø4.8	0.72	Ø0.76	1260 ⁽³⁾	800 ⁽¹⁾	800 ⁽¹⁾	750 ⁽¹⁾	350 ⁽¹⁾	140		
	Ø6.4	0.93	Ø1.0	1260 ⁽³⁾	1000 ⁽³⁾	900 ⁽²⁾	800 ⁽¹⁾	750 ⁽¹⁾	350 ⁽¹⁾	80	
	Ø8.0	1.16	Ø1.3	—	1050 ⁽³⁾	1000 ⁽²⁾	900 ⁽¹⁾	800 ⁽¹⁾	750 ⁽¹⁾	50	
DOUBLE ELEMENT	Ø3.2	0.47	Ø0.51	—	750 ⁽¹⁾			750 ⁽¹⁾	650 ⁽¹⁾	350 ⁽¹⁾	130
	Ø4.8	0.72	Ø0.76	—	800 ⁽¹⁾			800 ⁽¹⁾	750 ⁽¹⁾	350 ⁽¹⁾	140
	Ø6.4	0.93	Ø1.0	—	1000 ⁽³⁾	900 ⁽²⁾	800 ⁽¹⁾	800 ⁽¹⁾	750 ⁽¹⁾	350 ⁽¹⁾	80
	Ø8.0	1.16	Ø1.3	—	1050 ⁽³⁾	1000 ⁽²⁾	900 ⁽¹⁾	800 ⁽¹⁾	750 ⁽¹⁾	350 ⁽¹⁾	50

* Material:
 (1) SS316
 (2) SS310
 (3) Inconel 600

Applicable Standards Table

Standard	IEC 584-2-1982 / JIS C1605-1995			ASTM E230-1996			
	Class	Temp. Range(°C)	Tolerance(°C)	Class	Temp. Range(°C)	Tolerance(°C)	
N & K	1	-40~+375	±1.5	STD.	0~+1260	±2.2 or ±0.75 %	
		+375~+1000	±0.004 t			±1.1 or ±0.4 %	
	2	-40~+333	±2.5	SP.		±1.7 or ±0.5 %	
		+333~+1200	±0.0075 t			±1 or ±0.4 %	
	3	-167~+40	±2.5	STD.		-200~0	±1.7 or ±1 %
		-200~-167	±0.015 t				
E	1	-40~+375	±1.5	STD.	0~+870	±1.7 or ±0.5 %	
		+375~+800	±0.004 t			±1 or ±0.4 %	
	2	-40~+333	±2.5	SP.		±1.7 or ±1 %	
		+333~+900	±0.0075 t				
	3	-167~+40	±2.5	STD.		-200~0	±1.7 or ±1 %
		-200~-167	±0.015 t				
J	1	-40~+375	±1.5	STD.	0~+760	±2.2 or ±0.75 %	
		+375~+750	±0.004 t			±1.1 or ±0.4 %	
	2	-40~+333	±2.5	SP.		±1.7 or ±1 %	
		+333~+750	±0.0075 t				
T	1	-40~+125	±0.5	STD.	0~+370	±1 or ±0.75 %	
		+125~+350	±0.004 t			±0.5 or ±0.4 %	
	2	-40~+133	±1.0	SP.		±1 or ±1.5 %	
		+133~+350	±0.0075 t				
	3	-67~+40	±1.0	STD.		-200~0	±1 or ±1.5 %
		-200~-67	±0.0075 t				

Ordering Information

THERMOCOUPLE

WWW.NEW-FLOW.COM • TEL: 886-7-8135500 • FAX: 886-7-8225588 • Email: info@new-flow.com

TEMPERATURE

01Jan2023

T041

Model	TCH	TCN	TCU												
Code	Head Housing Protection														
	Weather Proof (1) HN (2) HP (3) HD (4) HI (5) HB (6) LS (7) option														
	Explosion Proof (8) XDS (9) XDA (10) S1 (11) S2 (12) ES (13) EA (14) option														
Code	Sensor Type														
A	Spring Loading Hexagonal Head Thread Type			C	Welded Hexagonal Head Thread Type										
B	Spring Loading Nipple Thread Type			D	Welded Nipple Thread Type										
Code	Sensor Connection Size														
	Thread type (1) 1/2" NPT (2) 3/4" NPT (3) Option														
Code	Conduit Connection														
	(A) 1/2"NPT Female (B) 3/4"NPT Female (O) option														
Code	Sensor Dimensions "O.D" mm														
	(1) 1.6 (2) 3.2 (3) 4.8 (4) 6.0 (5) 8.0 (6) 9.0 (7) 12.75 (8) 1.0 (9) 1.2														
	(10) 2.3 (11) 2.7 (12) 3.0 (13) 3.175 (14) 3.8 (15) 4.0 (16) 4.5 (17) 4.72														
	(18) 5.0 (19) 6.35 (20) 6.4 (21) 10.0 (22) 12.0 (23) 12.7 (24) 13.8														
	(25) 15.0 (26) 16.0 (27) 18.0 (28) 19.0 (29) 20.0 (30) 21.34 (31) 21.7														
Code	Sheath Material														
A	SS316/SS316L			B	SS310		C	Inconel 600		O	Option				
Code	Element Type														
	N	K	E	J	T										
Code	Element No														
S	Single			D	Double										
Code	Measuring Junction														
G	Grounded type					U	Ungrounded type								
US	Ungrounded separated type														
Code	Sensor Class														
	(1) Class 1 (2) Class 2 (3) Class 3														
Code	Sensor insertion Length "L"														
	Please directly fill in requesting length (mm).														
Code	Transmitter														
1	NT-IB														
2	5335A (SIL)			3	5335D (SIL)										
4	Other			5	Without										
Code	Explosion Proof Type / Head Housing Model														
N	For Weather Proof Type														
A	<i>Certificate on Housing Only / S1 & S2:</i> Ex d IIC-T6, II 2 GD														
B	<i>Taiwan Explosion Proof Certification / ES & EA:</i> Ex d IIB + H2 T6 Gb														
S	<i>Certificate on Housing Only / XDS & XDA:</i> II 2G D Ex db IIC Gb Ex tb IIIC Db														
														Complete Ordering Code	