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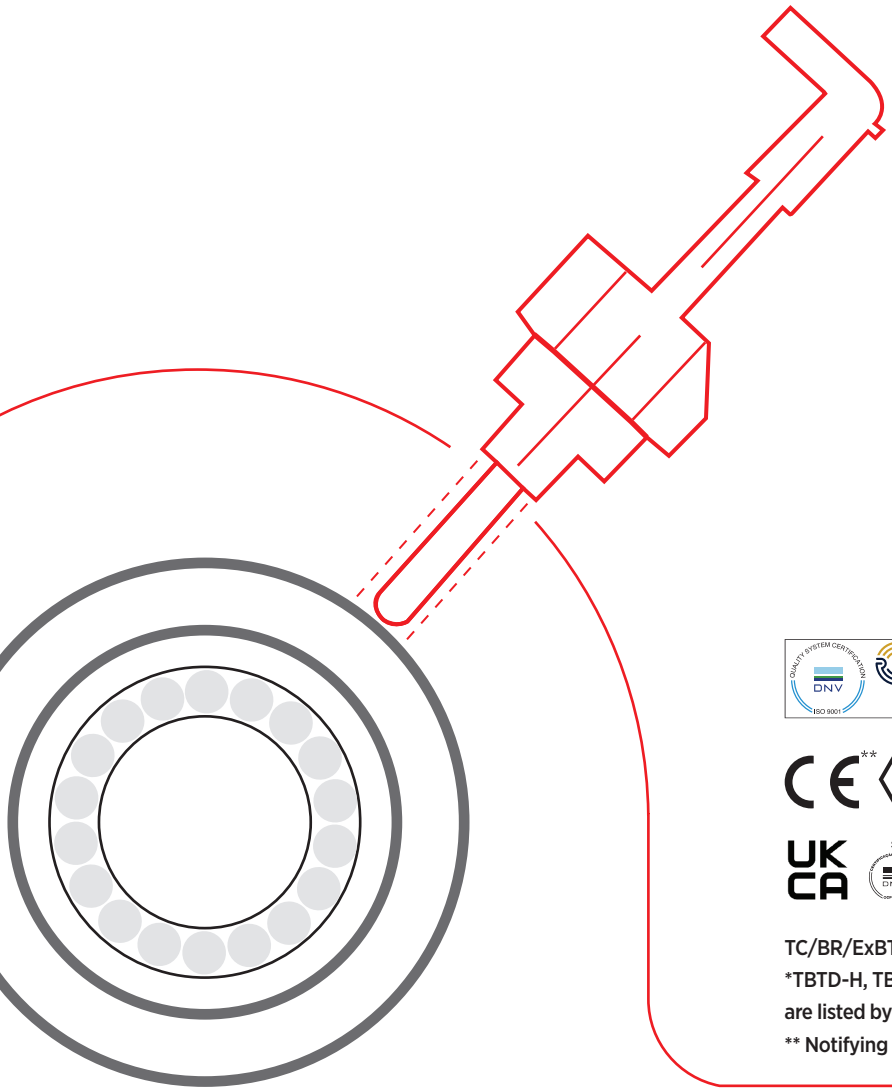
BEARING TEMPERATURE DETECTORS FOR HAZARDOUS AREA



TC/BR/ExBTD, Rev.01

*TBTD-H, TBTD-I, TBTD-K, TBTD-L, TBTD-O, TBTD-Q, TBTD-U are listed by CSA Group as Certified.

** Notifying Body Number - 2460

OFFERING SOLUTIONS FOR BEARING TEMPERATURE DETECTION IN HAZARDOUS AREAS

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PRODUCT OVERVIEW

- BTDs are Bearing Temperature Detectors and are installed in stationary bearing casing for monitoring bearing temperature. These BTDs can also be used for measuring and monitoring temperature for machines, hot air, cold air etc.
- Techno Controls offers a wide range of certified BTDs, intended for use in hazardous areas where explosive gas atmospheres, caused by mixture of air and gases, vapours etc. exist under normal atmospheric conditions.
- Techno Controls' certification portfolio includes ATEX, IECEx, CSA (Canada & US), EAC, CCC, UKCA, INMETRO & ECAS Ex certifications with increased safety 'e' for Class I, Zone 1 and intrinsically safe 'ia' for Class I, Zone 0 for different models*.
- These certified BTDs come with different constructions with distinct options and various sizes.

* - Refer individual models for available Ex protection and certifications.

MODELS OVERVIEW

TBTD-H & TBTD-HET	BTDs with bayonet lock
TBTD-I & TBTD-IET	BTDs with adjustable connection length
TBTD-J & TBTD-JET	Spring loaded BTDs with small insertion length
TBTD-K & TBTD-KET	BTDs with insulated sheath
TBTD-L & TBTD-LET	BTDs with Head
TBTD-N & TBTD-NET	Spring loaded BTDs
TBTD-O & TBTD-OET	Probe type BTDs
TBTD-Q & TBTD-QET	BTDs with armour protection over extension leads
TBTD-U & TBTD-UET	BTDs with insulated sheath and armour protection over extension leads

CERTIFICATION PORTFOLIO

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	CERTIFICATE NUMBER	APPROVALS
Ex	DNV 25 ATEX 90328U	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
IECEx	IECEx DNV 25.0012U	Ex eb IIC Gb Ex ia IIC Ga
CSA C US	70181802	IS Class I, Division 1, Groups A, B, C and D Ex ia IIC Ga Class I, Zone 0, AEx ia IIC Ga -50°C < T_{amb} < 180°C Class I, Division 2, Groups A, B, C and D Ex eb IIC Gb Class I, Zone 1, AEx eb IIC Gb -50°C < T_{amb} < 180°C
EAC	ЕАЭС KG417039.IN.02.01683 ЕАЭС RU C-IN.АЖ58.B.02879/22	Ex eb IIC Gb U Ex ia IIC Ga U
CCC	2022312315000595 2022312315000596 2022312315000597	Ex ia IIC Ga Ex eb IIC Gb Ex eb IIC Gb
UKCA	DNV 22 UKEX 68889U	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
Segurança DNV INMETRO	DNV 23.0140 U	Ex eb IIC Gb Ex ia IIC Ga
PESO (CCoE)	A/P/HQ/GJ/104/6237 (P604062) A/P/HQ/GJ/104/6174 (P582802)	Ex eb IIC Gb Ex ia IIC Ga -50°C to 180°C
PAC (Kazakhstan)	KZ86VTN00008391	Ex eb IIC Gb U Ex ia IIC Ga U
PAC (Russia)	77839-20	Ex eb IIC Gb U Ex ia IIC Ga U
ECAS-Ex	25-04-147588 / E25-04-153023 / NB0001	Ex eb IIC Gb Ex ia IIC Ga

TBTD-H / TBTD-HET

BTDs WITH BAYONET LOCK

Ideally suited for temperature monitoring of machines and tools in manufacturing and for industrial motor protection. This design is quite rugged and suitable for environment where vibration is present.

Product Overview:

BTDs with bayonet lock is assembled with one or two measuring elements, which are placed in stainless steel tube along with extension leads (supply lines). The spring is mounted on the SS tube to provide an adjustable pressing for a stable thermal coupling even under mechanical vibrations or elongations caused by temperature changes. This thermal coupling ensures fast and accurate readings of temperature from bearings and other parts. Furthermore, the bayonet cap can be screwed to adjust either the immersion depth within the drill hole or to adjust the spring tension according to customized set-up.

Distinct options are available with this design including various dimensions, connecting threads, single or double element, single or double notch etc.

Features:

- Firm contact with metal parts
- Adjustable bayonet cap
- Quick mounting and removal of sensor

Specifications:

Element	PT 100 / PT 1000 with Simplex or Duplex version
Temperature Coefficient	0.00385 °C^{-1}
Accuracy	A / B / 2B (As per IEC 60751)
Connection Mode	2, 3 or 4 wire
Measuring Temperature Range	-50° C to 180° C For ET versions: -40° C to 180° C
Dielectric Strength	1.5 KV, 50 Hz for 1 min.
Insulation Resistance	> 500 MΩ at 500 V DC for 1 min.
Sensing Current	10 mA max.
Body Material	SS 304 / SS 316 - Ø 6 to 10 mm; L = 25 mm to 100 mm; Drill angle 118°
Assembly	Holder (Bayonet lock cap) adjustable upon SS spring
Accessory (Optional)	SS 304 / SS 316 / Brass with various connection threads
Cable Details (Extension Leads/ Supply Lines)	0.5 meter to 50 meter, 20 AWG to 32 AWG with various cable construction

Note - Contact us for customizations other than above.

AVAILABLE CERTIFICATIONS

	TBTD-H	TBTD-HET
Ex	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
IECEx	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
C SP US	Class I, Division 2, Groups A, B, C and D Ex eb IIC Gb Class I, Zone 1, AEx eb IIC Gb -50°C < T_{amb} < 180°C	---
EAC	Ex eb IIC Gb U Ex ia IIC Ga U	---
CCC	Ex eb IIC Gb	Ex eb IIC Gb
UKCA	II 2 G Ex eb IIC Gb	II 2 G Ex eb IIC Gb
Segurança INMETRO	Ex eb IIC Gb	Ex eb IIC Gb
PESO (CCoE)	Ex eb IIC Gb	---
PAC (Kazakhstan)	Ex eb IIC Gb U Ex ia IIC Ga U	---
PAC (Russia)	Ex eb IIC Gb U Ex ia IIC Ga U	---
ECAS-Ex	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga

TBTD-I / TBTD-IET

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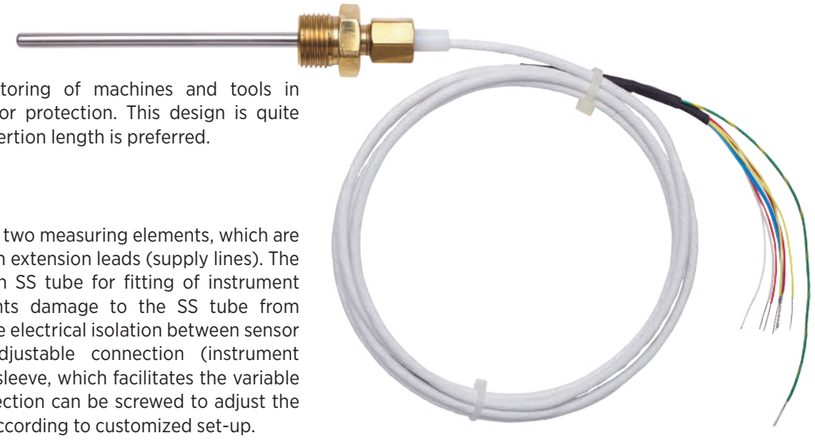
BTDs WITH ADJUSTABLE CONNECTION LENGTH



Ideally suited for temperature monitoring of machines and tools in manufacturing and for industrial motor protection. This design is quite rugged and suitable where variable insertion length is preferred.

Product Overview:

Model TBTD-I is assembled with one or two measuring elements, which are placed in stainless steel tube along with extension leads (supply lines). The Teflon insulation sleeve is provided on SS tube for fitting of instrument connection. This arrangement prevents damage to the SS tube from instrument connection and provides the electrical isolation between sensor and instrument connection. The adjustable connection (instrument connection) is free to move on Teflon sleeve, which facilitates the variable insertion length. The instrument connection can be screwed to adjust the immersion depth within the drill hole according to customized set-up.

Distinct options are available with this design including various dimensions, connecting threads, single or double element, compression fitting etc.

Features:

- Adjustable insertion length
- Electrical isolation between the instrument connection and SS tube
- Quick mounting and removal of sensor

Specifications:

Element	PT 100 / PT 1000 with Simplex or Duplex version
Temperature Coefficient	0.00385 °C^{-1}
Accuracy	A / B / 2B (As per IEC 60751)
Connection Mode	2, 3 or 4 wire
Measuring Temperature Range	-50° C to 180° C For ET versions: -40° C to 180° C
Dielectric Strength	1.5 KV, 50 Hz for 1 min.
Insulation Resistance	> 500 MΩ at 500 V DC for 1 min.
Sensing Current	10 mA max.
Body Material	SS 304 / SS 316 - Ø 5 to 15 mm; L = 50 mm to 1000 mm
Assembly	Optional adjustable compression fitting with Teflon sleeve upon SS tube
Accessory (Optional)	SS 304 / SS 316 / Brass compression fitting with various instrument connection threads
Cable Details (Extension Leads / Supply Lines)	0.5 meter to 50 meter, 20 AWG to 32 AWG with various cable construction

Note - Contact us for customizations other than above.

AVAILABLE CERTIFICATIONS

	TBTD-I	TBTD-IET
Ex	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
IECEx	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
C SP US	Class I, Division 2, Groups A, B, C and D Ex eb IIC Gb Class I, Zone 1, AEx eb IIC Gb -50°C < T_{amb} < 180°C	---
EAC	Ex eb IIC Gb U Ex ia IIC Ga U	---
CCC	Ex eb IIC Gb	Ex eb IIC Gb
UKCA	II 2 G Ex eb IIC Gb	II 2 G Ex eb IIC Gb
Segurança INMETRO	Ex eb IIC Gb	Ex eb IIC Gb
PESO (CCoE)	Ex eb IIC Gb	---
PAC (Kazakhstan)	Ex eb IIC Gb U Ex ia IIC Ga U	---
PAC (Russia)	Ex eb IIC Gb U Ex ia IIC Ga U	---
ECAS-Ex	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga

TBTD-J / TBTD-JET

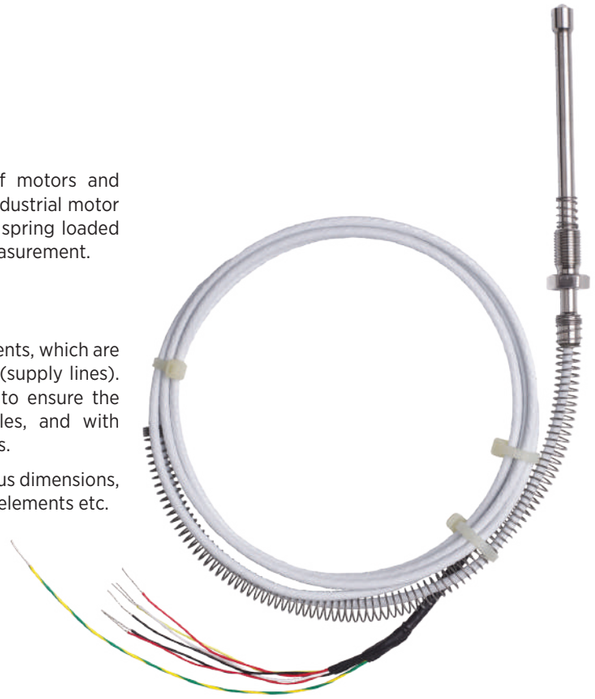
SPRING LOADED BTDs WITH SMALL INSERTION LENGTH

Ideally suited for temperature monitoring of bearings of motors and generators, machines, and tools in manufacturing and for industrial motor protection. This design is quite rugged and suitable where spring loaded low insertion length is preferred for bearing temperature measurement.

Product Overview:

Model TBTD-J is assembled with one or two measuring elements, which are placed in stainless steel sheath along with extension leads (supply lines). The SS fitting for instrument connection can be screwed to ensure the adequate spring tension for solid contact in drilled holes, and with measuring surfaces for faster response and accurate readings.

Distinct options are available with this design including various dimensions, connection threads, single or double element, different RTD elements etc.



Features:

- Small insertion length
- Firm contact with measuring surfaces
- Tip sensitive
- Quick mounting and removal of sensor

Specifications:

Element	PT 100 / PT 500/PT 1000 with Simplex or Duplex version
Temperature Coefficient	0.00385 °C^{-1}
Accuracy	A / B / 2B (As per IEC 60751)
Connection Mode	2, 3 or 4 wire
Measuring Temperature Range	-50° C to 180° C For ET versions: -40° C to 180° C
Dielectric Strength	1.5 KV, 50 Hz for 1 min.
Insulation Resistance	> 500 MΩ at 500 V DC for 1 min.
Sensing Current	10 mA max.
Body Material	SS 304 / SS 316 - Ø 8 to 10 mm; L = 50 mm to 100 mm
Assembly	Free movable instrument connection fitting having various threads with small spring upon SS sheath.
Cable Details (Extension Leads / Supply Lines)	0.5 meter to 50 meter, 20 AWG to 32 AWG with various cable construction

Note - Contact us for customizations other than above.

AVAILABLE CERTIFICATIONS

	TBTD-J	TBTD-JET
Ex	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
IECEx	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
CSA C US	---	---
EAC	Ex eb IIC Gb U Ex ia IIC Ga U	---
CCC	Ex eb IIC Gb	Ex eb IIC Gb
UKCA	II 2 G Ex eb IIC Gb	II 2 G Ex eb IIC Gb
Segurança DNV INMETRO	Ex eb IIC Gb	Ex eb IIC Gb
PESO (CCoE)	Ex eb IIC Gb U	---
PAC (Kazakhstan)	Ex eb IIC Gb U Ex ia IIC Ga U	---
PAC (Russia)	Ex eb IIC Gb U Ex ia IIC Ga U	---
ECAS-Ex	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga

TBTD-K / TBTD-KET

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BTDs WITH INSULATED SHEATH

Ideally suited for temperature monitoring of machines and tools in manufacturing and for industrial motor protection, where isolation is required between BTD and the drilled holes and measuring surfaces.

Product Overview:

Model TBTD-K is assembled with one or two measuring elements, which are placed in stainless steel tube along with extension leads (supply lines). The insulation over sheath is provided for isolation between BTD and the drilled holes and surfaces where temperature is to be measured. The insulation provides additional protection against corrosive measuring surfaces and/or provides electrical insulation. The BTD comes with the adjustable instrument fitting with distinct threads, which can facilitate customers to fix the BTDs for required length. The connection fitting comes with inside Teflon ring to prevent the damage to the insulation over sheath.

Distinct options are available with this design including various dimensions, connecting threads, single or double element, compression fitting etc.

Features:

- Adjustable insertion length
- Increased corrosion resistance
- Electrical isolation between BTD and the drilled holes
- Quick mounting and removal of sensor

Specifications:

Element	PT 100 / PT 1000 with Simplex or Duplex version
Temperature Coefficient	0.00385 °C^{-1}
Accuracy	A / B / 2B (As per IEC 60751)
Connection Mode	2, 3 or 4 wire
Measuring Temperature Range	-50° C to 180° C For ET versions: -40° C to 180° C
Dielectric Strength	1.5 KV, 50 Hz for 1 min.
Insulation Resistance	> 500 MΩ at 500 V DC for 1 min.
Sensing Current	10 mA max.
Body Material	SS 304 / SS 316 - Ø 8.5 ± 0.5 mm; L = 50 mm to 1000 mm
Assembly	Adjustable instrument connection - SS 304/ SS 316/ Brass having inside Teflon ring with various threads
Cable Details (Extension Leads / Supply Lines)	0.5 meter to 50 meter, 20 AWG to 32 AWG with various cable construction

Note - Contact us for customizations other than above.

AVAILABLE CERTIFICATIONS

	TBTD-K	TBTD-KET
Ex	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
IECEx	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
CSA C US	IS Class I, Division 1, Groups A, B, C and D Ex ia IIC Ga Class I, Zone 0, AEx ia IIC Ga -50°C < T_{amb} < 180°C	---
EAC	Ex eb IIC Gb U Ex ia IIC Ga U	---
CCC	Ex ia IIC Ga Ex eb IIC Gb	Ex ia IIC Ga Ex eb IIC Gb
UKCA	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
Segurança DNV INMETRO	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
PESO (CCoE)	Ex ia IIC Ga -50°C to 180°C	---
PAC (Kazakhstan)	Ex eb IIC Gb U Ex ia IIC Ga U	---
PAC (Russia)	Ex eb IIC Gb U Ex ia IIC Ga U	---
ECAS-Ex	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga

TBTD-L / TBTD-LET

BTDs WITH HEAD

Ideally suited for temperature monitoring of machines and tools in manufacturing and for industrial motor protection, where head type temperature sensor is the requirement.

Product Overview:

Model TBTD-L is assembled with one or two measuring elements, which are placed in stainless steel tube along with extension leads (supply lines). The optional adjustable instrument connection fitting is also provided to facilitate customer to fix the BTD as per their insertion requirement.

Distinct options are available with this design including various dimensions, instrument, and cable entry threads, single or double element, compression fitting, head material, cable length etc.

Features:

- Adjustable insertion length
- Quick mounting and removal of sensor

Specifications:

Element	PT 100 / PT 1000 with Simplex or Duplex version
Temperature Coefficient	0.00385 $°C^{-1}$
Accuracy	A / B / 2B (As per IEC 60751)
Connection Mode	2, 3 or 4 wire
Measuring Temperature Range	-50° C to 180° C For ET versions: -40° C to 180° C
Dielectric Strength	1.5 KV, 50 Hz for 1 min.
Insulation Resistance	> 500 MΩ at 500 V DC for 1 min.
Sensing Current	10 mA max.
Body Material	SS 304 / SS 316 / SS 316L- Ø 4 to 15 mm; L = 60 mm to 1000 mm
Assembly	SS or brass Head type BTD, with adjustable compression fitting upon SS tube; Head dia. - 25 mm or 36 mm with various 100 cable entry threads
Accessory (Optional)	SS 304 / SS 316 / SS 316L / Brass fitting for instrument connection with various connection threads
Cable Details (Extension Leads / Supply Lines)	0.5 meter to 50 meter, 20 AWG to 32 AWG with various cable construction

Note - Contact us for customizations other than above.

AVAILABLE CERTIFICATIONS

	TBTD-L	TBTD-LET
ATEX	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
IECEx	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
CSA C US	IS Class I, Division 1, Groups A, B, C and D Ex ia IIC Ga Class I, Zone 0, AEx ia IIC Ga -50°C < T_{amb} < 180°C Class I, Division 2, Groups A, B, C and D Ex eb IIC Gb Class I, Zone 1, AEx eb IIC Gb -50°C < T_{amb} < 180°C	---
EAC	Ex eb IIC Gb U Ex ia IIC Ga U	---
CCC	Ex ia IIC Ga Ex eb IIC Gb	Ex ia IIC Ga Ex eb IIC Gb
UKCA	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
Segurança DNV INMETRO	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
PESO (CCoE)	Ex eb IIC Gb Ex ia IIC Ga -50°C to 180°C	---
PAC (Kazakhstan)	Ex eb IIC Gb U Ex ia IIC Ga U	---
PAC (Russia)	Ex eb IIC Gb U Ex ia IIC Ga U	---
ECAS-Ex	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga

TBTD-N / TBTD-NET

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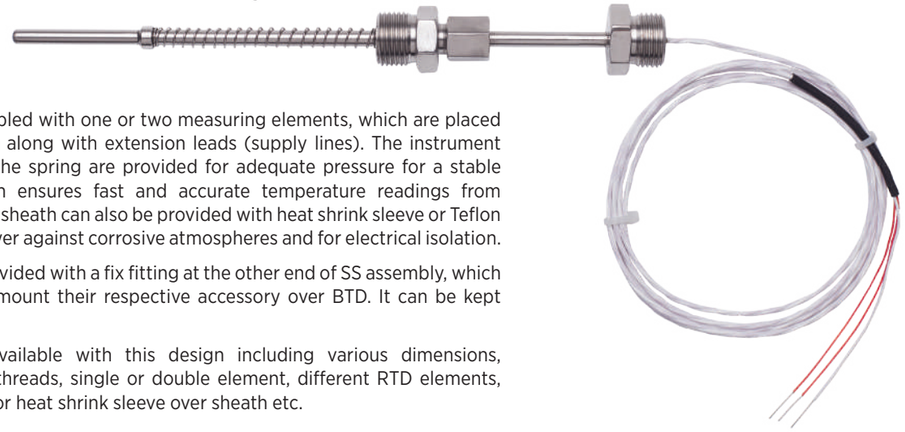
SPRING LOADED BTDs

Ideally suited for temperature monitoring of bearings of motors and generators, machines, and tools in manufacturing and for industrial motor protection where BTDs are required to be in solid contact with measuring surfaces.



Product Overview:

Model TBTD-N is assembled with one or two measuring elements, which are placed in stainless steel sheath along with extension leads (supply lines). The instrument connection fitting and the spring are provided for adequate pressure for a stable thermal coupling which ensures fast and accurate temperature readings from measuring surfaces. The sheath can also be provided with heat shrink sleeve or Teflon coating for additional layer against corrosive atmospheres and for electrical isolation.

In addition to, BTD is provided with a fix fitting at the other end of SS assembly, which facilitates customer to mount their respective accessory over BTD. It can be kept unused if not required.

Distinct options are available with this design including various dimensions, instrument connection threads, single or double element, different RTD elements, optional Teflon coating or heat shrink sleeve over sheath etc.

Features:

- Spring loading for firm contact with measuring surfaces
- Optional heat shrinkable sleeve or Teflon coating over sheath for additional protection against corrosive atmospheres and for electrical isolation
- Customer can mount their accessory over BTDs.
- Quick mounting and removal of sensor

Specifications:

Element	PT 100 / PT 1000 with Simplex or Duplex Version
Temperature Coefficient	0.00385 $°C^{-1}$
Accuracy	A / B / 2B (As per IEC 60751)
Connection Mode	2, 3 or 4 wire
Measuring Temperature Range	-50° C to 180° C For ET versions: -40° C to 180° C
Dielectric Strength	1.5 KV, 50 Hz for 1 min.
Insulation Resistance	> 500 MΩ at 500 V DC for 1 min.
Sensing Current	10 mA max.
Body Material	SS 304 / SS 316 / SS 316L - Ø 6 to 15 mm; L = 50 mm to 200 mm
Assembly	• SS Spring over assembly with SS 304 / SS 316 / SS 316L / Brass adjustable instrument fitting with various threads • Fix fitting with various threads at the other end of SS assembly • Sheath can be optionally provided with heat shrinkable sleeve or with Teflon coating
Cable Details (Extension Leads / Supply Lines)	0.5 meter to 50 meter, 20 AWG to 32 AWG with various cable construction

Note - Contact us for customizations other than above.

AVAILABLE CERTIFICATIONS

	TBTD-N	TBTD-NET
ATEX	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
IECEx	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
CSA C US	---	---
EAC	Ex eb IIC Gb U Ex ia IIC Ga U	---
CCC	Ex eb IIC Gb	Ex eb IIC Gb
UKCA	II 2 G Ex eb IIC Gb	II 2 G Ex eb IIC Gb
Segurança DNV INMETRO	Ex eb IIC Gb	Ex eb IIC Gb
PESO (CCoE)	Ex eb IIC Gb U	---
PAC (Kazakhstan)	Ex eb IIC Gb U Ex ia IIC Ga U	---
PAC (Russia)	Ex eb IIC Gb U Ex ia IIC Ga U	---
ECAS-Ex	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga

TBTD-O / TBTD-OET

PROBE TYPE BTDs

Ideally suited for temperature monitoring of machines and tools in manufacturing and for industrial motor protection where simple probe type temperature detector is preferred.

Product Overview:

Model of TBTD-O is assembled with one or two measuring elements, which are placed in stainless steel tube along with extension leads / supply lines. It offers simple construction.

Distinct options are available with this design including various dimensions, sheath material, single or double element, and cable construction.

Features:

- Simple construction
- Feasibility of Tip sensitive design
- Quick mounting and removal of sensor

Specifications:

Element	PT 100 / PT 1000 with Simplex or Duplex version
Temperature Coefficient	0.00385 °C^{-1}
Accuracy	A / B / 2B (As per IEC 60751)
Connection Mode	2, 3 or 4 wire
Measuring Temperature Range	-50° C to 180° C For ET versions: -40° C to 180° C
Dielectric Strength	1.5 KV, 50 Hz for 1 min.
Insulation Resistance	> 500 MΩ at 500 V DC for 1 min.
Sensing Current	10 mA max.
Body Material	SS 304 / SS 316 / SS 316L - Ø 3 to 15 mm; L = 12 mm to 1000 mm
Cable Details (Extension Leads / Supply Lines)	0.5 meter to 50 meter, 20 AWG to 32 AWG with various cable construction

Note - Contact us for customizations other than above.

AVAILABLE CERTIFICATIONS

	TBTD-O	TBTD-OET
Ex	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
IECEx	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
CSA C US	IS Class I, Division 1, Groups A, B, C and D Ex ia IIC Ga Class I, Zone 0, AEx ia IIC Ga -50°C < T_{amb} < 180°C Class I, Division 2, Groups A, B, C and D Ex eb IIC Gb Class I, Zone 1, AEx eb IIC Gb -50°C < T_{amb} < 180°C	---
EAC	Ex eb IIC Gb U Ex ia IIC Ga U	---
CCC	Ex ia IIC Ga Ex eb IIC Gb	Ex ia IIC Ga Ex eb IIC Gb
UKCA	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
Segurança DNV INMETRO	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
PESO (CCoE)	Ex eb IIC Gb Ex ia IIC Ga -50°C to 180°C	---
PAC (Kazakhstan)	Ex eb IIC Gb U Ex ia IIC Ga U	---
PAC (Russia)	Ex eb IIC Gb U Ex ia IIC Ga U	---
ECAS-Ex	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga

TBTD-Q / TBTD-QET

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BTDs WITH ADJUSTABLE CONNECTION LENGTH AND ARMOUR PROTECTION FOR CABLE

Ideally suited for temperature monitoring of machines and tools in manufacturing and for industrial motor protection where cable is required to be protected against mechanical damages during the operation.

Product Overview:

Model TBTD-Q is assembled with one or two measuring elements, which are placed in stainless steel tube along with extension leads (supply lines). This BTD comes with the adjustable instrument connection fitting, which facilitates customer to adjust the insertion of the sensor. The flexible SS armour is provided over the extension leads as per the requirement. It provides mechanical protection to the extension lines. Optionally, the flexible armour can also be covered with Heat shrinkable sleeve, which provides the electrical and atmospheric isolation to the cable armour.

Distinct options are available with this design including various dimensions, instrument connection threads, single or double element, compression fitting etc.

Features:

- Adjustable insertion length
- SS flexible armour over the extension leads for mechanical protection.
- Isolation to the armour
- Quick mounting and removal of sensor

Specifications:

Element	PT 100 / PT 1000 with Simplex or Duplex version
Temperature Coefficient	0.00385 °C^{-1}
Accuracy	A / B / 2B (As per IEC 60751)
Connection Mode	2, 3 or 4 wire
Measuring Temperature Range	-50° C to 180° C For ET versions: -40° C to 180° C
Dielectric Strength	1.5 KV, 50 Hz for 1 min.
Insulation Resistance	> 500 MΩ at 500 V DC for 1 min.
Sensing Current	10 mA max.
Body Material	SS 304 / SS 316 / SS 316L - Ø 5 to 15 mm; L = 60 mm to 1000 mm
Armour Material	SS 304 / SS 316 / SS 316L - with suitable diameter, L = 100 to 50000 mm
Assembly	Adjustable instrument connection upon SS tube with distinct connection threads
Optional	Armour can be covered with heat shrinkable sleeve for electrical isolation
Cable Details (Extension Leads / Supply Lines)	0.5 meter to 50 meter, 20 AWG to 32 AWG with various cable construction

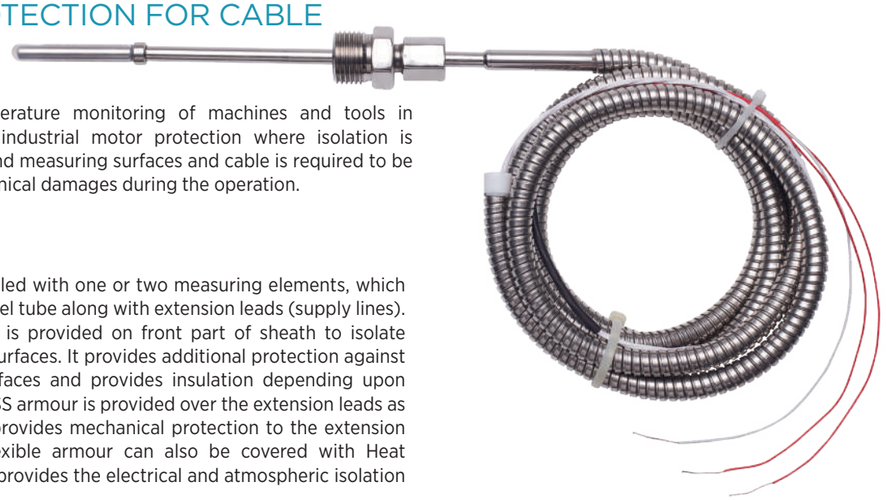
Note - Contact us for customizations other than above.

AVAILABLE CERTIFICATIONS

	TBTD-Q	TBTD-QET
Ex	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
IECEx	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
CSA C US	IS Class I, Division 1, Groups A, B, C and D Ex ia IIC Ga Class I, Zone 0, AEx ia IIC Ga -50°C < T_{amb} < 180°C Class I, Division 2, Groups A, B, C and D Ex eb IIC Gb Class I, Zone 1, AEx eb IIC Gb -50°C < T_{amb} < 180°C	---
EAC	Ex eb IIC Gb U Ex ia IIC Ga U	---
CCC	Ex ia IIC Ga Ex eb IIC Gb	Ex ia IIC Ga Ex eb IIC Gb
UKCA	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
Segurança DNV INMETRO	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
PESO (CCoE)	Ex eb IIC Gb Ex ia IIC Ga -50°C to 180°C	---
PAC (Kazakhstan)	Ex eb IIC Gb U Ex ia IIC Ga U	---
PAC (Russia)	Ex eb IIC Gb U Ex ia IIC Ga U	---
ECAS-Ex	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga

TBTD-U / TBTD-UET

BTDs WITH INSULATED SHEATH AND ARMOUR PROTECTION FOR CABLE



Ideally suited for temperature monitoring of machines and tools in manufacturing and for industrial motor protection where isolation is required between BTD and measuring surfaces and cable is required to be protected against mechanical damages during the operation.

Product Overview:

Model TBTD-U is assembled with one or two measuring elements, which are placed in stainless steel tube along with extension leads (supply lines). Teflon coating or sleeve is provided on front part of sheath to isolate sheath from measuring surfaces. It provides additional protection against corrosive measuring surfaces and provides insulation depending upon application. The flexible SS armour is provided over the extension leads as per the requirement. It provides mechanical protection to the extension lines. Optionally, the flexible armour can also be covered with Heat shrinkable sleeve, which provides the electrical and atmospheric isolation to the cable armour.

Distinct options are available with this design including various dimensions, instrument connection threads, single or double element, compression fitting etc.

Features:

- Isolation between sheath and measuring surface.
- SS flexible armour over the extension leads for mechanical protection.
- Isolation to the armour over extension leads.
- Quick mounting and removal of sensor

Specifications:

Element	PT 100 / PT 1000 with Simplex or Duplex Version
Temperature Coefficient	0.00385 $°C^{-1}$
Accuracy	A / B / 2B (As per IEC 60751
Connection Mode	2, 3 or 4 wire
Measuring Temperature Range	-50° C to 180° C For ET versions: -40° C to 180° C
Dielectric Strength	1.5 KV, 50 Hz for 1 min.
Insulation Resistance	> 500 MΩ at 500 V DC for 1 min.
Sensing Current	10 mA max.
Sheath Material	SS 304 / SS 316 - Ø 4 to 15 mm; L = 50 mm to 1000 mm
Armour Material	SS - with suitable diameter, L = 100 to 10000 mm
Assembly	Compression fitting upon SS tube with various threads
Optional	Armour can be covered with heat shrinkable sleeve
Cable Details (Extension Leads / Supply Lines)	0.5 meter to 50 meter, 20 AWG to 32 AWG with various cable construction

Note - Contact us for customizations other than above.

AVAILABLE CERTIFICATIONS

	TBTD-U	TBTD-UET
Ex	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
IECEx	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
C SP US	IS Class I, Division 1, Groups A, B, C and D Ex ia IIC Ga Class I, Zone 0, AEx ia IIC Ga -50°C < T_{amb} < 180°C Class I, Division 2, Groups A, B, C and D Ex eb IIC Gb Class I, Zone 1, AEx eb IIC Gb -50°C < T_{amb} < 180°C	---
EAC	---	---
CCC	Ex ia IIC Ga Ex eb IIC Gb	Ex ia IIC Ga Ex eb IIC Gb
UKCA	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga	II 2 G Ex eb IIC Gb II 1 G Ex ia IIC Ga
Segurança DNV INMETRO	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga
PESO (CCoE)	Ex eb IIC Gb Ex ia IIC Ga -50°C to 180°C	---
ECAS-Ex	Ex eb IIC Gb Ex ia IIC Ga	Ex eb IIC Gb Ex ia IIC Ga

NOTES

techno controls

techno
controls

Techno Controls
Survey No. 1809, Block No. 1706 PK 1,
Block A, Opp Dhara Estate, Santej,
Ta-Kalol, Gandhinagar, Gujarat-382721

Mobile: +91-99099 25234, 93282 22937
Email: info@technocontrols.com

www.technocontrols.com