Temperature Transmitter
BT1



Features

Fast response: Compact stainless-steel construction delivers fast-response temperature sensing and drift-resistant performance in aggressive media and high-cycle environments.

Flexible outputs: Available with CAN J1939, CANopen, and analog output options for modern platforms.

Hazardous-location approvals: Intrinsically safe CSA and ATEX options are available for hazardous locations.

Applications

- Hydraulic and Pneumatic Systems
- Heavy Mobile Equipment
- OEM Factory Automation
- Wellhead Tubing, Casing & BOP
- Fracking Trucks
- Natural Gas Compressors & Turbines
- Mobile Hydraulics

Performance Characteristics

Temperature Range	From -65°F to 392°F (-55°C to + 200°C)
Probe Length	1.0” to 4.0” (custom lengths available)
Pressure Port Thread	G1/4 Form E, 1/4" - 18NPT, 7/16"-20 UNF, 9/16"-18 UNF
Electrical Connector	EN 175 301-803-A /-C; M12x1 (S763-4); Deutsch DT04-3P; Packard Metri-Pack; cable outlet
Protection grade	IP65/IP67 (depending on connector)
Material of Construction	316 Stainless Steel
Approvals	**ATEX, IECEx:** II 2G Ex ia IIC T3 Gb, -40 °C ≤ Ta ≤ 85 °C **CSA:** IS Class I, Division 1, Groups C and D, T3; Class I, Zone 1, AEx ia IIB T3 Gb; Ex ia IIB T3 Gb. Rated for: Class 2258 04 Process Control Equipment (for hazardous Canadian locations) and Class 2258 84 Process Control Equipment (for hazardous locations, certified to U.S. standards).
Accuracy (25°C)	+/- 1 % FS
Overall accuracy	+/- 2 % FS
Long-term stability	±0.1 % FS per year in referential condition

Ambient temperature range	- 40 °C ... 85 °C (-40 °F ... 185 °F)
Storage temperature range	- 40 °C ... 85 °C (- 40 °F ... 185 °F)
Humidity	0 ... 100 % r. h., non-condensing
Shock protection	EN/IEC 60068-2-32 (1 m free fall)
Vibration	20 g / 3 axes to EN/IEC 60068-2-6
EMI/RFI emission	EN 61326-1:2013-section 7 EN 61326-2-3:2013
EMI/RFI susceptibility	EN 61326-1:2013 - section 6 EN 61326-2-3:2013
Material of wetted parts	Stainless steel
Media temperature range	- 40 °C ... 200 °C (-40 °F ... 392 °F)
Measuring element	1 x PT100, class B
Max. operating pressure	10,000 psi

Electrical Data

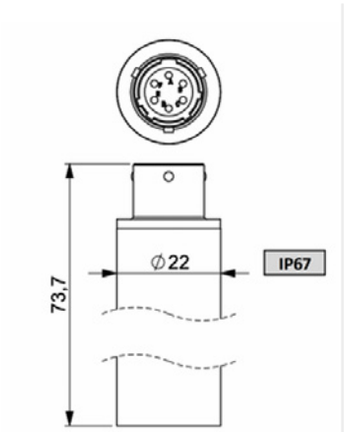
Certifications	**CSA/ATEX (Current Output)**	**CSA (Voltage Output)**	**CSA (Ratiometric Output)**
Output signal	4 ... 20 mA	0/1 ... 5 V DC; 0/1 ... 6 V DC; 0/1 ... 10 V DC	0,5 ... 4,5 V DC ratiometric
Supply voltage (DC)	CSA : 12 ... 27 V ATEX : 20 ... 27 V	10 ... 27 V (Vout x ... 5 V) 10 ... 27 V (Vout x ... 6 V) 15 ... 27 V (Vout x ... 10 V)	5 V DC +/- 5 %
Load resistance	< (Vcc-10 V)/20 mA	> 5 kOhm	> 2,5 kOhm
Current consumption	3,6 ... 21,4 mA	7 mA typ.	7 mA typ
Response time	< 2 ms	< 2 ms	< 2 ms
Reverse and overvoltage protection	yes	yes	yes

Technical data: Barksdale
Mod-Tronic Instruments Limited
www.mod-tronic.com | sales@mod-tronic.com | 1-800-794-5883

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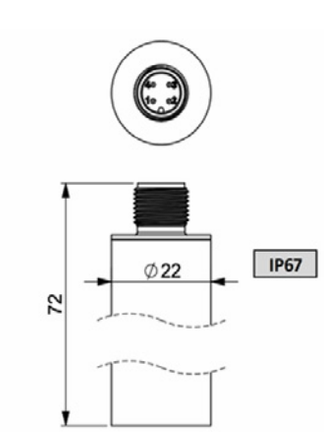
Electrical connection

MIL-C-26482



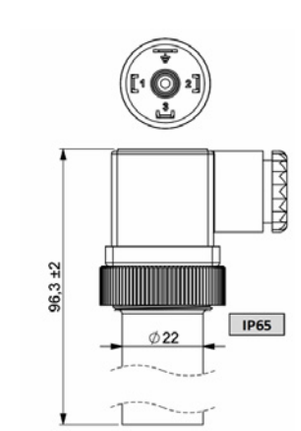
Output	Pin A	Pin B	Pin C
Volt	+	-	Vout
mA	+	-	nc

M12x1 (S763)



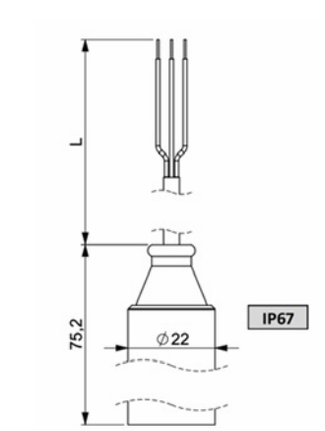
Output	Pin 1	Pin 3	Pin 4
Volt	+	-	Vout
mA	+	-	nc

EN 175 301-803-A



Output	Pin 1	Pin 2	Pin 3
Volt	+	-	Vout
mA	+	-	nc

Cable

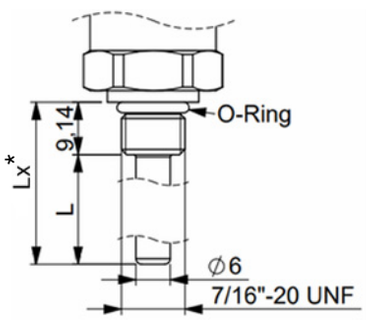


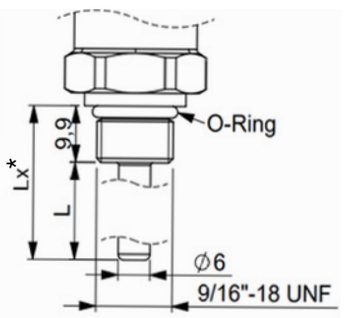
Output	Red	Black	White
Volt	+	-	Vout
mA	+	-	

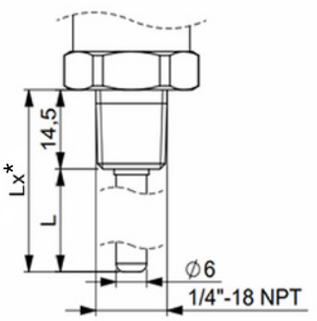
Process connection

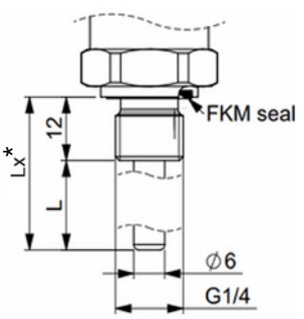
Process connections (standard)	G1/4 Form E, 1/4"-18NPT, 7/16"-20 UNF, 9/16"-18 UNF
Temperature tip	Stainless steel tip with a diameter of 6 mm (0.24") 10 mm ... 500 mm

** Lx= Probe Length, where x = 1,2,3,4 inches respectively*



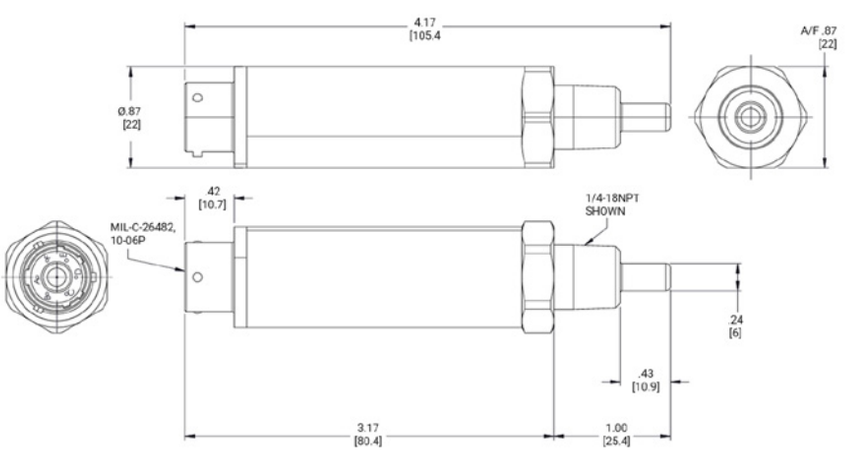






Entity Parameters

Type	Model	Supply/Signal Barrier		Temperature Transmitter		
		Vmax (Ui)	Imax (Ii)	Ci	Li	Pi max
Current Output	BT1/BT2-..-5	27 V	125 mA	12.1 nF	0	0.85 W
Voltage Output	BT1/BT2-..-3	6V	600 mA	9.27 nF	0	0.9 W
Ratiometric Output	BT1/BT2-..-4	6V	600 mA	9.27 nF	0	0.9 W



Temperature Transmitter

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Product configurator

Example	BT1	CS	-5	-KZ	F	-L1	P8	T2

Base Model

BT1	Barksdale Temperature Transmitter

Approvals

CS	CSA, Standard application
AT	ATEX, Standard application
CH	CSA, Hydrogen application
AH	ATEX, Hydrogen application

Electrical Output

-3	Voltage Output
-4	Ratiometric Output
-5	Current Output
-6	Custom Voltage Output

Temperature Range [1]

	°C	°F
V	-55	-65
N	-50	-60
K	-40	-40
H	-30	-20
G	-20	0
D	-10	20
0	0	32
1	10	50
2	20	70
3	30	85
4	40	100
5	50	120
6	60	140
7	70	160
8	80	180
9	90	200
X	100	210
Y	110	230
Z	120	250
B	130	265
E	140	285
M	150	300
J	180	355
P	200	392

Temperature Unit

F	Fahrenheit
C	Celsius
K	Kelvin

Probe Length

-L1	1 Inch
-L2	2 Inch
-L3	3 Inch
-L4	4 Inch

Process Connection

P1	G 1/4, washer seal, Male
P3	7/16-20 UNF
P8	1/4" -18 NPT
PC [1]	Custom

Electrical Connection

T2	MIL-C-26482
T4	M12x1 (S763-4)
T5	EN 175 301-803-A
H3	Cable 4P
TC [1]	Custom

Example part number format: BT1CS-5-KZF-L1P8T2

[1] *Consult the factory for a custom options.*