COMBINED PRESSURE & TEMPERATURE TRANSMITTER

BTT 26S Series

"−40…+150°C Temperature Measuring Range
10…5000Bar Pressure Measuring Range,
Analog Output"

- Simultaneous pressure and temperature measurement with a single sensor
- Completely welded thin−film steel diaphragm structure that does not require o−ring
- Pressure measuring range options from 0…10 to 0…5000 bar (optional others)
- −40…+150°C temperature measurement (optional others)
- 0−20mA, 4−20mA, 0−10V, 0.5−4.5V Ratiometric, PT100, PT1000 output options
- Stainless steel housing
- EMC and reverse polarity protection
- High accuracy and stability
- Excellent long−term operation

BTT 26S series combined pressure and temperature sensors provide simultaneous measurement of pressure and temperature in liquid and gaseous media via a single compact sensor, eliminating the need for 2 different sensors.

For reliable and accurate measurements, the sensor uses thin−film MEMS technology for pressure sensing as well as RTD for temperature sensing. Measurement values taken from sensors are converted into various analog output signals (4−20mA, 0−10V, etc.) and integrated into automation systems.

BTT 26S series, which is not affected by electrical fluctuations and reverse connections thanks to overvoltage and reverse polarity protection, has a long life. With its fully welded thin−film steel diaphragm structure that does not require O−rings, it is resistant to vibrations and is ideal for use in difficult areas such as chemical applications.

It has a wide range of user−selectable options such as measurement range, mechanical connection type, output signal, electrical connection type.
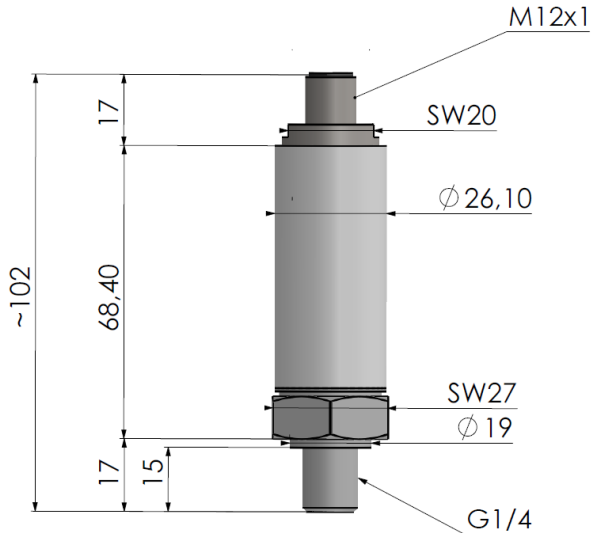
APPLICATIONS

- Industrial Machines
- Cooling and HVAC
- Hydraulic and Pneumatic

- Energy Facilities
- Automotive
- Compressors and pumps

- Test Benches
- Defense and aviation
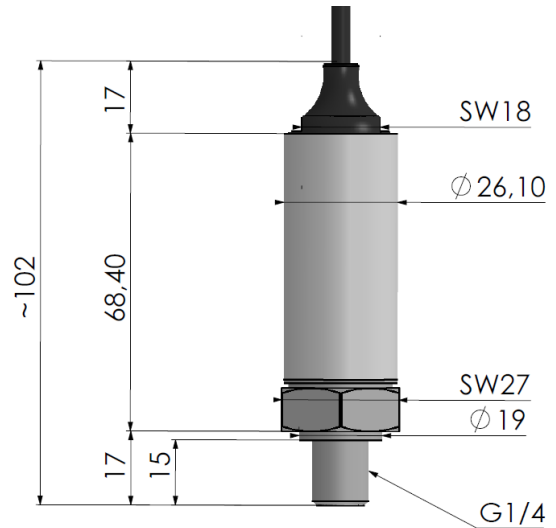- Rail systems

TECHANICAL FEATURES

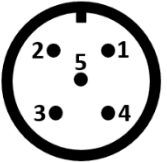|	Pressure	Temperature
Measuring Sensor	Thin−filmMEMS Sensor	PT100 (Class B EN60751)
Measuring Range	Different options from 10Bar to 5000Bar	−40…+150℃(optional others)
Over Pressure	%300FS <1000Bar,%150FS ≥1000Bar	–
Burst Pressure	%500FS <1000Bar,%300FS 1000Bar ≤pressure≤ 2500Bar, %250FS 4000Bar, %200FS 5000Bar	–
Response Time	25ms(standard) %10…%90 nominal pressure 1ms, 5ms, 125ms(optional) 1ms, 5ms, 125ms	1sn
Accuracy	±0.5%FS(@0℃~70℃)	±%0.5FS (@0℃~70℃)
Long Term Stability	≤±%0.2FS/ year	–
Zero offset temperature coefficient	≤±%0.03 fso/℃	–
Span temperature coefficient	≤±%0.03 fso/℃	–
Output Type(*) \n\n*There are 2 separate outputs for Pressure and Temperature on the sensor. Output types must be selected in accordance with the horizontal table on the side. For example, if the pressure output is selected as 0−10V; temperature output can be selected as 0−10V, PT100 or PT1000.	Pressure	Temperature
	2 wire 4−20mA	2 wire 4−20mA, PT100, PT1000
	3 wire 4−20mA	3 wire 4−20mA, PT100, PT1000
	3 wire 0−20mA	3 wire 0−20mA, PT100, PT1000
	0−10V	0−10V, PT100, PT1000
	0.5−4.5V Ratiometric	0.5−4.5V Ratiometric, PT100, PT1000
Supply Voltage	2 wire：8−32VDC \n3 wire：12−30VDC	2 wire：8−32VDC \n3 wire：12−30VDC
Current Consumption	2 wire：≤20mA@24VDC \n3 wire：<30mA@24VDC	2 wire：≤20mA@24VDC \n3 wire：<30mA@24VDC
Reverse polarity protection	Yes	
Short circuit protection	Yes	
Overload protection	Yes	
Electrical connection	M12 connector or cable	
Mechanical connection	G1/4(Optional others)	
Mounting Torque	15 ... 20 Nm	
Material	Body: 304LSS / Diaphragm: 17−4phSS (AISI630) / Mechanical conn: 17−4phSS (AISI630)	
Operating Temperature	−10℃ …+70℃	
Storage Temperature	−40℃ …+85℃	
Protection	IP65 or IP67 \n*IP67 protection is provided if M12 connector models are equipped with press−printed connectors.	

MECHANICAL DIMENSIONS (mm)

M12 CONNECTOR

M12x1
SW20
∅ 26,10
SW27
∅ 19
G1/4
17
68,40
~102
17
15

CABLE

SW18
∅ 26,10
SW27
∅ 19
G1/4
17
68,40
~102
17
15
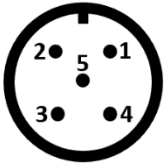
ELECTRICAL CONNECTIONS

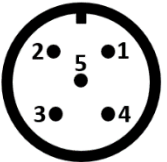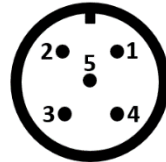### ▣ ANALOG PRESSURE OUTPUT + ANALOG TEMPERATURE OUTPUT

3 Wire 0–10V, 0.5–4.5V Ratiometric, 4–20mA, 0–20mA (Pressure and Temperature) Connection		
Cable	M12 5 pin male connector	Signal
Red	1	+12...30VDC (Supply)
Yellow	2	0–10V, 0.5–4.5V Ratiometric, 4–20mA, 0–20mA (Pressure)
Black	3	GND
Green	4	0–10V, 0.5–4.5V Ratiometric, 4–20mA, 0–20mA (Temp.)
Pink	5	N/C

2 Wire 4–20mA (Pressure and Temperature) Connection		
Cable	M12 5 pin male connector	Signal
Red	1	+8...32VDC (Supply)
Yellow	2	4–20mA (Pressure)
Black	3	N/C
Green	4	4–20mA (Temp.)
Pink	5	N/C

▣ ANALOG PRESSURE OUTPUT + RTD TEMPERATURE OUTPUT

3 Wire 0–10V, 0.5–4.5V Ratiometric, 4–20mA, 0–20mA (Pressure) and PT100, PT1000 (Temperature) Connection		
Cable	M12 5 pin male connector	Signal
Red	1	+12...30VDC (Supply)
Yellow	2	0–10V, 0.5–4.5V Ratiometric, 4–20mA, 0–20mA (Pressure)
Black	3	GND
Green	4	PT100, PT1000 (Temp.)
Pink	5	PT100, PT1000 (Temp.)

2 Wire 4–20mA (Pressure) and PT100, PT1000 (Temperature) Connection		
Cable	M12 5 pin male connector	Signal
Red	1	+8...32VDC (Supply)
Yellow	2	4–20mA (Pressure)
Black	3	N/C
Green	4	PT100, PT1000 (Temp.)
Pink	5	PT100, PT1000 (Temp.)

PRESSURE RANGE SELECTION

Code	Pressure Range	Overpressure	Burst Pressure
10Bar	0 ~ 10 Bar	%300FS	%500FS
25Bar	0 ~ 25 Bar	%300FS	%500FS
40Bar	0 ~ 40 Bar	%300FS	%500FS
60Bar	0 ~ 46 Bar	%300FS	%500FS
100Bar	0 ~ 100 Bar	%300FS	%500FS
250Bar	0 ~ 250 Bar	%300FS	%500FS
400Bar	0 ~ 400 Bar	%300FS	%500FS
600Bar	0 ~ 600 Bar	%300FS	%500FS
1000Bar	0 ~ 1000 Bar	%150FS	%300FS
1600Bar	0 ~ 1600 Bar	%150FS	%300FS
2500Bar	0 ~ 2500 Bar	%150FS	%300FS
4000Bar	0 ~ 4000 Bar	%150FS	%250FS
5000Bar	0 ~ 5000 Bar	%150FS	%200FS

OUTPUT SIGNAL SELECTION

Output Type (*)	Pressure	Temperature
	2 wire 4–20mA	2 wire 4–20mA, PT100, PT1000
	3 wire 4–20mA	3 wire 4–20mA, PT100, PT1000
	3 wire0–20mA	3 wire0–20mA, PT100, PT1000
	0–10V	0–10V, PT100, PT1000
	0.5–4.5VRatiometric	0.5–4.5VRatiometric, PT100, PT1000

*There are 2 separate outputs for Pressure and Temperature on the sensor. Output types must be selected in accordance with the horizontal table above.

For example, if the pressure output is selected as 0–10V; temperature output can be selected as 0–10V or PT100 or PT1000.

For example, if the pressure output is selected as 2–wire 4–20mA; temperature output can be selected as 2–wire 4–20mA or PT100 or PT1000.

ORDER CODE

1–Model
BTT 26S

2–Temperature Range
–40…+150°C standard (Ask for others)

3–Pressure Range
10, 25, 40, 60, 100, 250, 400, 600, 1000, 1600, 2500, 4000 and 5000 bar (Ask for others)

4–Temperature Output Signal

A : 4–20mA (2–wire)	V : 0–10VDC	PT100
A0 : 0–20mA(3–wire)	V8 : 0.5–4.5VDCRatiometric	PT1000
A7 : 4–20mA(3–wire)		

*There are 2 separate outputs for pressure and temperature. Output signals must be selected in accordance with the output signal selection table above (page 4).

5–Pressure Output Signal

A : 4–20mA (2–wire)	V : 0–10VDC
A0 : 0–20mA(3–wire)	V8 : 0.5–4.5VDCRatiometric
A7 : 4–20mA(3–wire)	

*There are 2 separate outputs for pressure and temperature. Output signals must be selected in accordance with the output signal selection table above (page 4).

6−Process Connection

G1/4 : G1/4
* Optional others

7−Electrical Connection

S165 : M12 5 pin male connector   1M : 1 meters cable
* Optional others

8−Body Material

E304 : 304L
* Optional others

Sample order code 1: BTT 26S −40…+150250BarV V G1/4 S165 E304
BTT 26S series, −40…+150°C temperature measurement, 250Bar pressure measurement, 0−10V temperature output, 0−10V pressure output, G1/4 process connection, M12 5 pin male connector, 304L body

Sample order code 2: BTT 26S −40…+150100BarPT100 V G1/4 S165 E304
BTT 26S series, −40…+150°C temperature measurement, 100Bar pressure measurement, PT100 temperature output, 0−10V pressure output, G1/4 process connection, M12 5 pin male connector, 304L body