

# M6 absolute pressure and temperature transducer for racing applications

Type 4080BT...

The Type 4080BT... piezoresistive pressure and temperature transducer features a protruding PT1000 probe for fast and accurate measurement of the media temperature. Extremely durable and compact in size, this sensor can be used for both high performance racing and in-vehicle test applications.

- Miniature M6x1 thread size
- Wrench size 11
- Weight <12.0 g
- Media separated measuring element
- Temperature compensated 25 ... 150 °C
- PT1000 probe with voltage output
- Variants with Lemo connector or flying lead
- FIA homologated

### Description

Based on the M6 Kistler Type 4080B piezoresistive pressure transducer, type 4080BT ensures mechanical and electrical compatibility within the 4080B family.

The protruding PT1000 probe in addition to the high-precision pressure module allow a fast and accurate measurement of the media temperature up to 200°C.

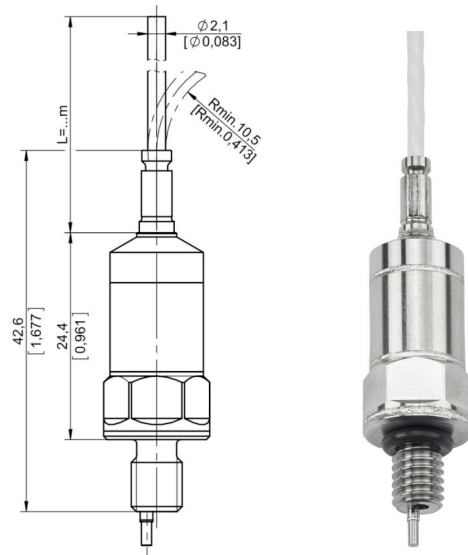
The unique 4-wire concept with conditioned voltage outputs of 0.2 to 4.4 VDC (pressure) and 0.5 to 4.5 VDC (temperature) ensures highest interface flexibility, allows to save weight on the cable harness and reduces pin count on the connectors.

With pressure ranges of 5, 10 and 20 bar, Type 4080BT covers the most popular applications such as low pressure hydraulic-, water- or oil circuits.

The enhanced electromagnetic compatibility ensures reliable operation and measurement quality even in environments with electrical or electromagnetic effects.

### Application

The transducer is primarily used in motorsports, but due to the robustness and small size, the transducer can be used in any other challenging applications as well.



### Technical data

#### General properties

Measuring range	bar	5	10	20
Overload pressure	bar	10	20	30
Operating temperature range	°C	-30 ... 150		
Compensated temperature range	°C	25 ... 150		
Reference temperature Tref	°C	25		
Supply voltage	VDC	8 ... 16		
Supply current	mA	<6		

#### Pressure output properties <sup>(1)</sup>

Measuring range	bar	5	10	20
Full scale output @Tref (FSO)	VDC	4.2 (±0.5 %FSO)		
Zero offset output @Tref (ZMO)	VDC	0.2 (±1.0 %FSO)		
Total error band (TEB) <sup>(2)</sup>				
inside comp. temp. range	%FSO (max)	<±2.0		
outside comp. temp. range	%FSO (typ)	<±3.5		
Non-linearity @Tref	%FSO	<±0.3		
Thermal FSO shift	%FSO	<±1.0		
Thermal ZMO shift	%FSO	<±1.5		
Freq. range (-3 dB)	Hz	0 ... 5 000		

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**Technical data (continuation)**

**Temperature output properties <sup>(1)</sup>**

Measuring range	bar	5	10	20
Temperature range probe	°C	-30 ... 200		
Temperature output range	VDC	0.5 ... 4.5		
Total error band (TEB) <sup>(3)</sup>	°C	<2		

**Mechanical properties**

Measuring range	bar	5	10	20
Weight (excluding cable)	g	<12		
Housing material		Stainless steel		
Media compatibility		Liquids and gases compatible with stainless steel		
Pressure connection		M6x1		
Tightening torque	N·m	6		
Ingress protection		IP65		

**EMC compliance**

EMC emission EN 61000-6-4

EMC immunity EN 61000-6-2

<sup>(1)</sup> Where not differently stated, the output properties are valid only within the compensated temperature range (important temperature on the Electronic PCB. Fluid temperature may be higher)

<sup>(2)</sup> Total Error Band includes non-linearity, hysteresis, thermal FSO shift and thermal ZMO shift

<sup>(3)</sup> Total Error Band of the temperature output includes non-linearity and hysteresis

**Electrical connection**

Lemo version: ECS.FF.304.SLD

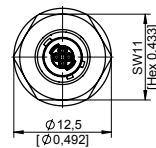
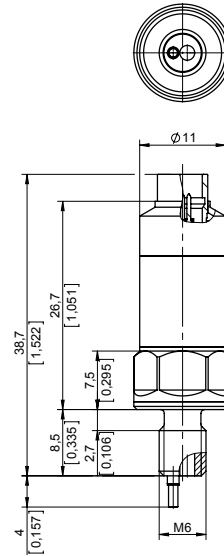
Pin	1	Supply
Pin	2	Signal pressure
Pin	3	GND
Pin	4	Signal temperature

Flylead version: 4 conductor 55M1444-28 screened cable

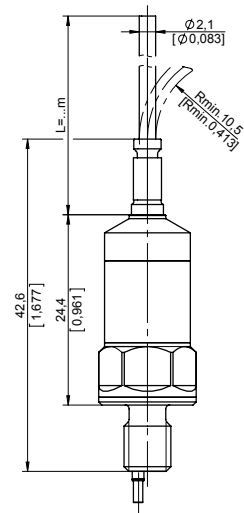
White	GND
Yellow	Supply
Blue	Signal pressure
Red	Signal temperature

**Dimensions**

**Dimensional drawing Type 4080BT...LC**



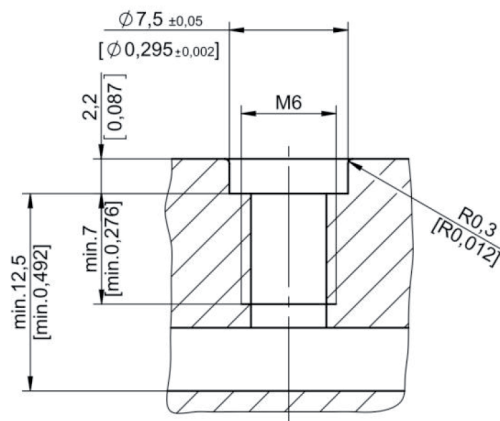
**Dimensional drawing Type 4080BT...FL**



**Mounting**

The sensor can be directly mounted into the recommended threaded measuring port with a maximum tightening torque of 6 N·m and a FPM 4.47x1.78 O-ring.

Einbaubohrung  
Mounting bore



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### Included accessories

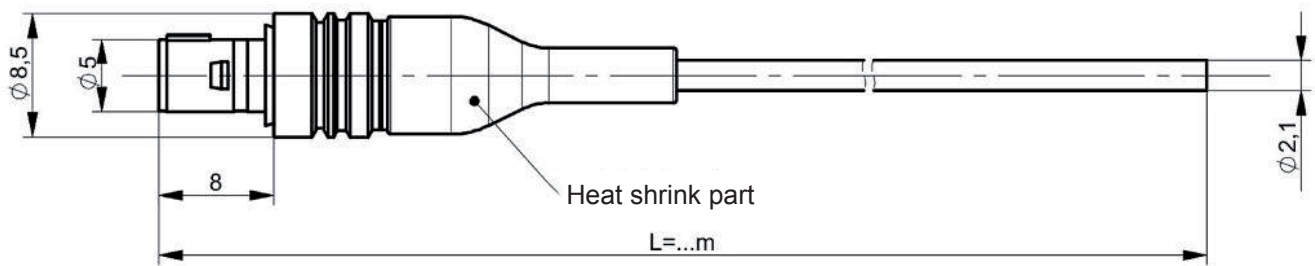
- Calibration document
- O-ring FPM 4.47x1.78

### Optional accessories

- O-ring FPM 4.47x1.78
- 2 m Lemo adapter cable for Type 4080B...-LC  
Connector: FGS.FF.304.YLM  
Cable: Typ 55M1444-28-2/4/6/9 (round braid shielded and jacketed)

### Type

- 1153A1
- 4779A2 (other length on request)



### Ordering key

Type 4080BT  -

#### Measuring range

0 ... 5 bar	005
0 ... 10 bar	010
0 ... 20 bar	020

#### Electrical connection

Lemo connector	LC
Flylead	FL

#### Cable length

Without cable (for Lemo variant)	
Cable length 1 m	1

### Ordering examples

- Transducer 20 bar with Lemo connector
- Transducer 10 bar with flylead 1 m
- 2 m connection cable with Lemo connector to open wire ends

### Type

- 4080BT020-LC
- 4080BT010-FL1
- 4779A2