

M6 absolute pressure transducer for racing applications

Type 4080B...

Designed for racing applications, the piezoresistive pressure transducer Type 4080B... with the M6 thread size offers new possibilities for the car installation as weight and compactness are key factors.

- Thread size M6
- Wrench size 11
- Weight <13.5 g
- Media separated measuring element
- Temperature compensated 25 ... 150 °C
- Internal temperature measurement
- Variants with Lemo connector or flying lead
- FIA homologated

Description

The Type 4080B... absolute pressure transducer is designed to withstand the harsh environment of racing as well as on test benches in the factory.

The completely media separated measuring element allows operations without any concerns regarding performance or reliability of the transducer. The Type 4080B... has proven its strengths in the highest motorsports where robustness and performance are essential, especially for transducers used in control systems.

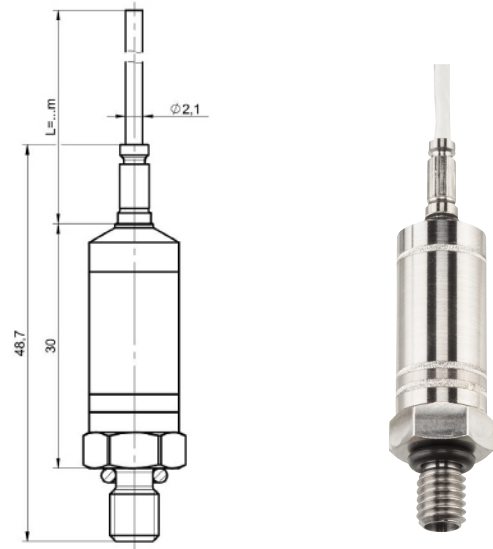
Ranges of 5, 10, 20, 130 and 250 bar with an output of 0.2 ... 4.4 VDC cover most applications such as steering- and brake systems, hydraulic-, water- and oil circuits, gearbox, pneumatic and fuel pressure measurements.

In addition, the transducer includes a temperature voltage output of 2.4 ... 4.2 VDC. This temperature probe is located on the sensitive pressure element itself and provides helpful diagnosis data.

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	130	250
Overload pressure	bar	10	20	30	200	300
Burst pressure	bar	>15	>30	>60	>250	>500
Operating temperature range	°C	-40 ... 150				
Compensated temperature range	°C	25 ... 150				
Reference temperature Tref	°C	25				
Supply voltage	VDC	8 ... 16				
Supply current	mA	<5				

Pressure output properties ⁽¹⁾

Measuring range	bar	5	10	20	130	250
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 ⁽²⁾						
inside comp. temp. range	%FSO (max)	<±2.0				
outside comp. temp. range	%FSO (typ)	<±5.0				
Non-linearity @Tref	%FSO	<±0.3				
Thermal FSO shift	%FSO	<±1.0				
Thermal ZMO shift	%FSO	<±1.5		<±1.0		
Freq. range (-3 dB)	Hz	0 ... 5 000				

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Technical data (continuation)

Temperature output properties

Measuring range	bar	5	10	20	130	250
Calibrated temperature range	°C	25 ... 150				
Temperature output range ⁽³⁾	VDC	2.4 ... 4.2				
Total error band	%FSO	<±5.0				

Mechanical properties

Measuring range	bar	5	10	20	130	250
Weight (excluding cable)	g	<13.5				
Housing material		Stainless steel				
Media compatibility		Liquids and gases compatible with stainless steel				
Pressure connection		M6				
Tightening torque	N·m	6				
Electrical connection Lemo		Lemo ECS.FF.304.SLD				
Electrical connection flylead		4 conductor AWG 28 screened cable				
Ingress protection		IP65				
Max load cycles @Tref Δp = FS) ⁽⁴⁾	n	50 Mio			0.1 Mio	
Max load cycles @Tref Δp = FS) ⁽⁵⁾	n	n.a.			50 Mio	

EMC compliance

EMC emission EN 61000-6-4
EMC immunity EN 61000-6-2

- ⁽¹⁾ 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)
- ⁽²⁾ Total Error Band includes non-linearity, hysteresis, thermal FSO shift and thermal ZMO shift
- ⁽³⁾ Output corresponds to chip temperature which can differ from the fluid temperature. Sensor specific values are on the calibration certificate
- ⁽⁴⁾ Tested on Type 4080B250 with an impulsive pressure load from 0 bar to 250 bar with a gradient of 50 bar/ms
- ⁽⁵⁾ Tested on Type 4080B250 with a sinusoidal pressure load alternating between 250 bar and 150 bar with a gradient of 30 bar/ms

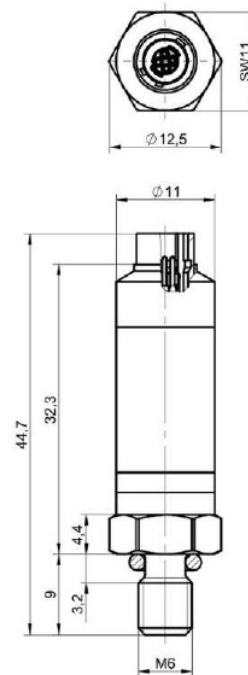
Electrical connection

Lemo version: ECS.FF.304.SLD

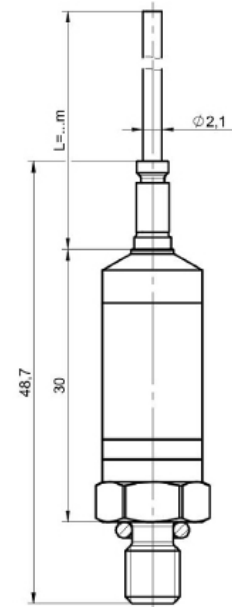
Pin	1	Supply
Pin	2	Signal pressure
Pin	3	GND
Pin	4	Signal temperature

Dimensions

Dimension drawing
Type 4080B...LC

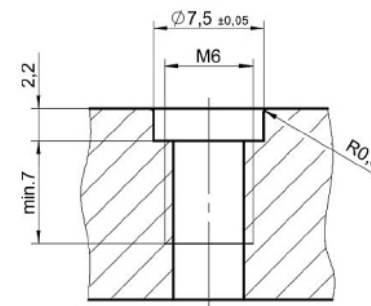


Dimension drawing
Type 4080B...FL



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.



Flylead version: 4 conductor 55M1444-28 screened cable

White	GND
Yellow	Supply
Blue	Signal pressure
Red	Signal temperature

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Included accessories

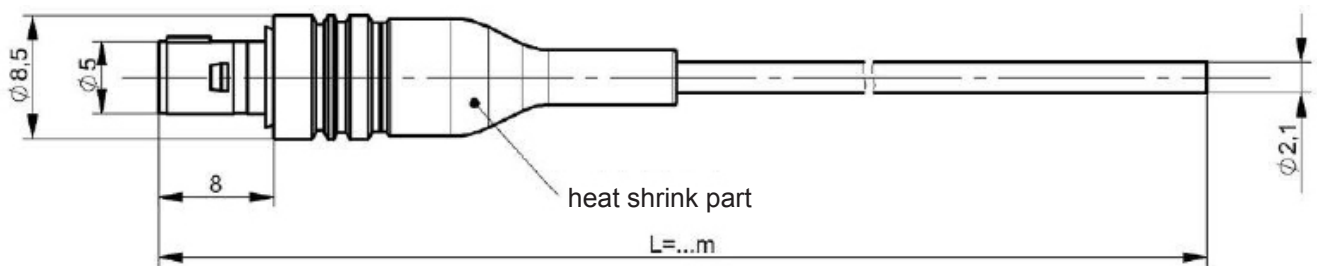
- Calibration document
- O-ring FPM 4.47x1.78

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 lengths on request)



Ordering key

Type 4080B -

Measuring range

0 ... 5 bar	005
0 ... 10 bar	010
0 ... 20 bar	020
0 ... 130 bar	130
0 ... 250 bar	250

Electrical connection

Lemo connector	LC
Flylead	FL

Cable length

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

Ordering examples

- Transducer 250 bar with Lemo connector 4080B250-LC
- Transducer 10 bar with flylead 1 m 4080B010-FL1
- 2 m connection cable with Lemo connector to open wire ends 4779A2

Type