

- Pressure range 0.6 up to 2000 bar
- High strength, rugged stainless steel design
- Designed for railway applications

The **EPT3100R** is a high quality all stainless steel pressure transducer, specifically designed for railway applications.

The design meets the requirements and has been tested in accordance with the demanding standards for use in railway applications. With additional EMI / RFI protection, low static and thermal errors and high resistance to shock and vibration as standard, the **EPT3100R** assures trouble free operation at temperatures up to 105°C. The piezo resistive sensing element coupled with the latest ASIC circuitry, assures excellent accuracy, choice of high level outputs and long stability, protected within a rugged, stainless steel housing.

The **EPT3100R** high strength stainless steel construction contains no silicone oil and no internal O- rings. Measurements are available in gauge pressure, with ranges up to 2000 bar.



Specification

Performance

Accuracy @ RT	% of the range (gauge sensors) ± 0.5FS	incl. nonlinearity, hysteresis, repeatability and zero-offset
Non-linearity	% of the range ≤ 0.15	
Repeatability	% of the range ≤ 0.10	
Stability/year	% of the range ≤ 0.10	
Zero Output	4 mA	
Output at FS	20 mA	
Span	16 mA	
Response time	(10...90%) t(ms)1-2	
Overpressure	up to 2 x rated pressure	
Burst pressure	up to 5 x rated pressure	
Pressure cycles	> 10 million	

Electronics

Output → Supply	2R → 4... 20 mA Railway 1R → 0 -10 V (12-32V)
Output impedance	< 100 Ω
Current consumption	< 10 mA
Supply voltage	14.4 - 33.6 V
Recommended load resistor	(U _s - 10 V) 20 mA
Isolation resistance	100 mΩ
Isolation voltage	710 V _{DC}

Environment

Temperature [°C]:	
Ambient	-40...105
Measuring medium	-40...125
Storage	-55...125
Temperature coefficient within the compensated range:	
Mean TC offset	% of the range ≤ 0,15 / 10K
Mean TC range	% of the range ≤ 0,15 / 10K
Shock	1000 G, 11 msec., 1/2 Sine
Vibration	25 G peak, 20 to 2000 Hz
Sealing	IP 66, optional IP69K
Mechanics	
Housing	304 stainless steel
Wetted parts	17-4PH stainless steel
Pressure port	see select table
Electrical connection	see select table
Weight	ca. 80 g

Standards and References

Mechanical properties: Tests acc. EN61373	EMC-Properties: Tests according EN 50121-3-2:2006	
Vibration test (noise; lifetime simulation): F1 = 5 Hz / fL = 10 Hz / F0 = 100 Hz / f2 = 250 Hz 42,5 m/s ² 3 axis 5h per axis	Conducted disturbances: (EN55011)	< 79 dB(µV) (150...500 kHz) < 73 dB(µV) (500 kHz...30 MHz)
	Radiated disturbances: (EN55011)	< 34 dB(µV/m) (30...230 MHz) < 41 dB(µV/m) (230...1000 MHz)
Shock test: Halfsine 300 m/s ² 18ms 3 axis 3 shocks per direction and axis	Electrical fast transients (Burst): (EN61000-4-4)	± 4 kV 5/50 ns 5kHz capacitive coupling clamp
	Surge immunity: (EN61000-4-5)	line to line: ± 1 kV 42 Ω 0,5 µF line to ground: ± 2 kV 42 Ω 0,5 µF, 1,2/50 µs
Vibration test (noise): F1 = 5 Hz / fL = 10 Hz / F0 = 100 Hz / f2 = 250 Hz 5,4 m/s ² 3 axis 10 min per axis	Conducted disturbances: (EN61000-4-5)	0,15...230 MHz 80% AM 1 KHz 10 V 150Ω
	Radiated electromagnetic field immunity: (EN61000-4-3)	27 MHz... 6 GHz 80% AM 1KHz 150 V/m 895 ... 905 MHz 50% pulsem. 200 Hz 150 V/m 1,79 ... 1,81 GHz 50% pulsem. 200 Hz 150 V/m 1,89 ... 1,91 GHz 50% pulsem. 200 Hz 150 V/m
	Electrostatic surge immunity: (EN61000-4-2)	8 kV contact discharge 15 kV air discharge
IP66, IP67 acc. EN60529-9 Salt mist test acc. DIN EN ISO 9227 Damp heat test Db acc. EN 60068-2-30 Flammability acc. EN 45545: total mass of flammable material <100 g	A shielded cable was used for all EMC-tests.	

Ordering Information

(Please use the characters in the chart below to construct your product code)

Sample Code: EPT3100R - A - 01000 - B - 2R - A

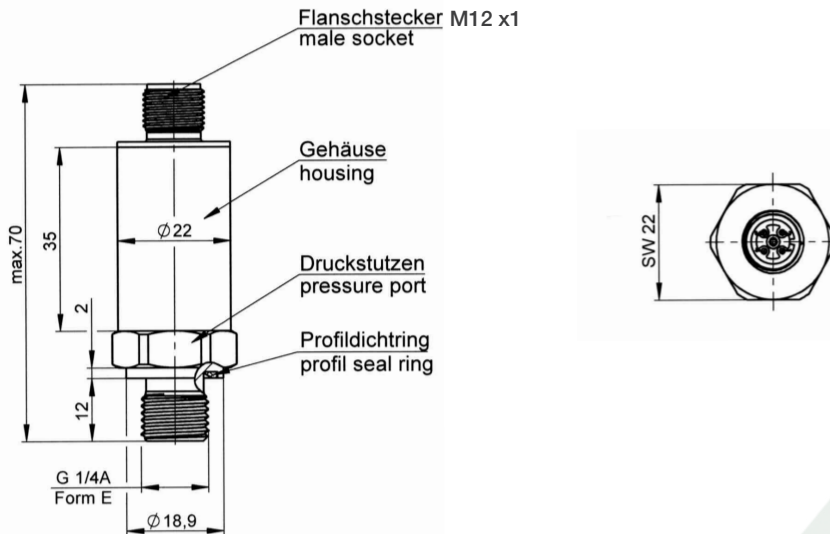
Series	Port Configuration	Pressure Range	Pressure Unit	Output Signal	Electrical Interface
EPT 3100R	A* - G 1/4" Male B* - 1/4" NPT Male C - 1/8" NPT Male D - 7/16" -20 UNF Male E - 9/16" -18 UNF Male F - M14x1.5 Male G - 1/4" SAE Female $\pm 7/16$ " UNF Female incl. Schrader opener H - 3/8x24 UNF Male (Dash Size 3) M10 - M10 x 1	Please use code from table below	B - gauge pressure	2R = 4...20 mA 1R = 0 -10 V	A - 600 mm cable F - M12x1 Round connector K* - Moulded cable * Sealing IP69K

Custom options available on request

Pressure Range																				
Bar	0.6	1.0	1.6	2.5	4	6	10	16	25	40	50	60	100	160	250	400	600	1000	1600	2000
Order Code	00060	00100	00160	00250	00400	00600	01000	01600	02500	04000	05000	06000	10000	16000	25000	40000	60000	100000	160000	200000

The EPT3100R series is backed by a 1 Year Warranty. The purchaser is responsible for compatibility of the media, functional adequacy and correct installation of the transmitter.

Dimensions



Wiring

Type	Output	PIN 1	PIN 2	PIN 3	PIN 4
 Round connector M12x1 A	0...10 mA	+ Supply	nc	GND	out
	4...20 mA	+ Supply	nc	current output -	nc
 Cable assembly	0...10 mA	Red	Black	White	Green
	4...20 mA	+ Supply	current output	nc	nc