

PRESSURE TRANSMITTER

Low pressure

General application

TPR-16/LP .../HP .../D /TPR-18

Desin
Instruments

DESCRIPTION

TPR-16

- PRESSURE RANGES BETWEEN 0 ... 10 MBAR AND 0 ... 1 bar, ALSO -1...0 bar
- CUSTOMER-DESIGNED PRESSURE RANGES E.G. -25 mbar ... +25 mbar
- OUTPUT SIGNALS
- 4 ... 20 mA / 2W , 0 ... 20 mA / 3W
- 0 ... 10 V / 3W AND OTHER VOLTAGE OUTPUTS
- WIDE RANGE OF PRESSURE PORTS AND ELECTRICAL CONNECTIONS
- SUITABLE FOR NON-AGGRESSIVE GAS AND DRY, CLEAN AIR; THIN, NON-AGGRESSIVE FLUIDS
- EXCELLENT LINEARITY
- SMALL THERMAL EFFECT
- SHORT REACTION TIME
- EXCELLENT LONG TERM STABILITY
- HIGH RESISTANCE AGAINST ELECTRICAL FAULTS CAUSED BY INCORRECT WIRING, SHORTCIRCUIT AND OVER-VOLTAGE
- RUGGED AND RELIABLE UNDER MOST CONDITIONS
- CUSTOMER-DESIGNED APPLICATIONS

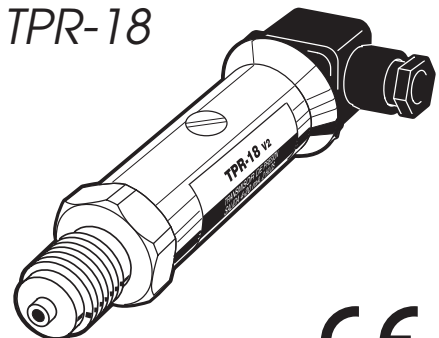
TPR-18

- MEASUREMENT OF VACUUM, ABSOLUTE OR GAUGE PRESSURE
- TRANSBAR® CERAMIC TECHNOLOGY
- ZERO ADJUSTMENT AS STANDARD ($\pm 10\%$ OF RANGE)
- WELDED CONSTRUCTION – REINFORCED PRODUCT
- MODULARITY OF ELECTRICAL AND HYDRAULIC CONNECTIONS
- CONFORMS TO EUROPEAN EMC DIRECTIVE, CE MARKED
- HIGHLY RESISTANT TO SEVERE PROCESS CONDITIONS (= 10⁷ PRESSURE CYCLES)
- INTRINSICALLY SAFE VERSIONS: LCIE 99-E6074X
- CERTIFICAT ; EEX IA IIC T6 OR T5 APPROVAL
- MARINE VERSION (BUREAU VERITAS, DNV ...)

TPR-16



TPR-18



FEATURES

These pressure transmitters are specially designed for use in hydraulic equipment under severe operation conditions. Demands of machine and equipment manufacturers for ruggedness and reliability have been optimally fulfilled.

These characteristics in connection with the outstanding instrumentation data, as well as excellent offset stability, offer the user an easy-to-use, reliable and rugged pressure transmitter that can be handled easily to the hydraulic user. The stainless steel sensor is welded to pressure port.

As complement, we manufacture a wide range of measuring and control instruments 4-20 mA input capability, to use with these transmitters.

- Controllers: **BS-1000, LS-3000 and HS-7000 Series**
- Indicators: **BS-1000, LS-3000 and HS-7000 Series**
- Loop-powered field Indicators: **PM-3650, PM-6670 and PM-2659 Series**
- 24 Vdc 1 A or 2 A instruments power supply units **FAC-24/1000/S and FAC-24/1000/D Series**
- Data acquisition and control systems **DAS-8000 and HS-7000**

TUV
PRODUCT SERVICE
EMPERIA
CERTIFIED
COMPANY
ISO 9001

127.56

SPECIFICATIONS

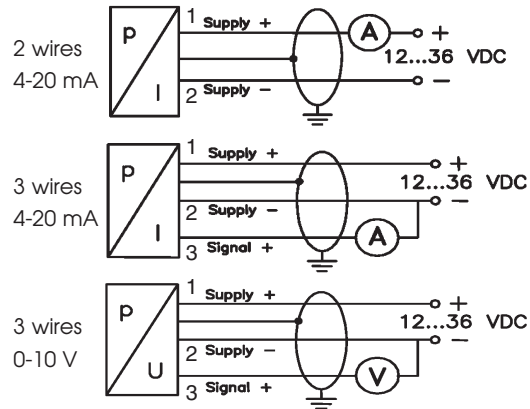
TPR-16

- Pressure (mbar):
Ranges: 1000, 0 0.10 0.25 0.40 0.60 0.100 160 0.250 0.400 0.600 0.1000
Overpr.: 3000 60 300 1000 3000
- Accuracy: $\leq \pm 0,5\%$ FSO
- Process connection: $1/2''$ GAS DIN 3852
- Output signal: 4-20 mA 2 w / 0-20 mA 3 w (0-5 / 0-10V option)
- Electrical connection: connector DIN 43650
- Voltage: between 12 and 36 Vcc
- Permissible Load:
2 wires $(U_B (V) - 12 V) / 0,02 A$
3 wires $>500 \Omega$
- Thermal effect: $\leq \pm 0,2\%$ FSO / year
- Operating Temperature range
Sensor: -25 to +90 °C
Ambient: -25 to +85 °C
Storage: -40 to 125 °C
- Materials:
Housing Stainless steel 1.4571
Sensor Ceramic Al₂O₃ 96%, silicon, RTV
Seals FKM

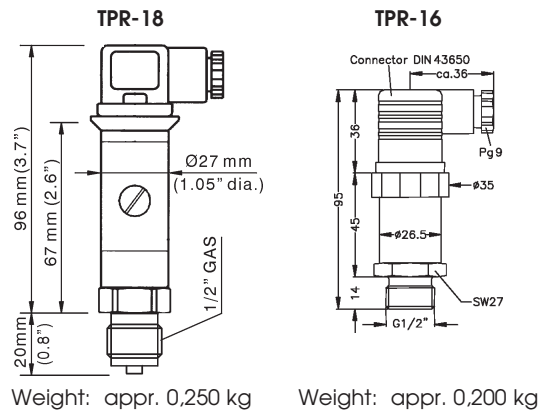
TPR-18

- Measurement range : from 0/25 mbar to 0/600 bar
Compound pressure, gauge or absolute pressure
- Output signal : 0 - 10 Vdc, 4 - 20 mA (except -1 +0 bar
where -1 = 20 mA, 0 = 4 mA), 1 - 5 Vdc, 0 - 20 mA
- Supply voltage : 11 to 40 Vdc
For intrinsically safe versions power supply
electrical parameters device must be :
 $U_{supply} = 28 Vdc ; I = 120 mA ; P = 0.8 W$
- Insulation : $> 100 M\Omega$ at 250 Vdc. Option: 500 Vdc.
- Electromagnetic compatibility :
• Standards EN50082-1 and -2 (immunity)
• Standards EN50081-1 and -2 (emission)
with screened cable, screen connected at both ends
- Global error (linearity, hysteresis and repeatability) :
Typically $\pm 0.2\%$ of F.S. / Max. $\pm 0.3\%$ of F.S.
- For P = 60 mbar and P= 600 bar : .. Typically $\pm 0.6\%$ of F.S.
Max. $\pm 1\%$ of F.S.
- Operating temperature :
• Ambient (Ta) : Standard : - 25 to + 85°C
Option : Low T°: - 40 to + 85°C
High T°: - 25 to + 100°C
Standard : - 25 to + 40°C (T6 approval)
- 25 to + 70°C (T5 approval)
• Fluid : - 25 to + 100°C (Ta = 50°C)
- Storage temperature : - 40°C to + 85°C
- Compensated temperature range (zero and sensitivity) :
Standard : - 10 to + 55°C. Option : - 10 to + 70°C
- Zero thermal drift :
 $\pm 0.025\%$ F.S./°C max. (except P = 1 bar: $\pm 0.06\%$ F.S./°C)
Option: $\pm 0.015\%$ F.S./°C max.
(except P = 1 bar: $\pm 0.025\%$ F.S./°C)
- Span thermal drift : Typically $\pm 0.01\%$ /°C
Max.: $\pm 0.015\%$ /°C
- Wetted parts : Ceramic + stainless steel 1.4404 (316L)
+ NBR seal (standard)
- Standard connections :
• Electrical : DIN 43650 connector
• Pressure : $G1/2''$
Many options available
- Protection rating (EN 60529) :
Standard: IP65 (DIN connector)
Option: IP67 or IP68 (depending on connection)
- Typical response time : = 3 ms
- Vibration resistance (IEC 68-2-6) : 1.5 mm (10-55 Hz), 20 g (55 Hz to 2 kHz)
- Shock resistance (IEC 68-2-32) : 25 falls from 1 m on concrete ground

WIRING DIAGRAM



DIMENSIONS



Weight: appr. 0,250 kg

Weight: appr. 0,200 kg

APPLICATIONS

- Machine tools
- Hydraulic presses
- Injection molding machines
- Handling equipment and mobile hydraulics
- Lifting platforms
- Test stands.

HOW TO ORDER

MODELS:

- TPR-16/LP** Range 10 to 160 mbar
- TPR-16/HP** Range 250 to 1000 mbar
- TPR-16/D** Range -1 to 0 bar
- TPR-18/G** Relative pressure
- TPR-18/V** Vacuum
- TPR-18/A** Absolute pressure
- TPR-18/Ex** Intrinsic Safety

Options

- Special ranges
- Absolute pressure
- 0/10 V and 0-20 mA 3 wires output