Pressure transducers type E-ATR-8
analog, for open and closed loop systems

E-ATR-8
This pressure transducers measure the static and dynamic pressure of the hydraulic fluid, supplying a voltage or current output signal.

The sensor is composed by a thin-film circuit, with high resistance to overloads and pressure peaks.

The integrated electronic circuit supplies an amplified voltage or current output signal, proportional to the hydraulic pressure, with thermal drift compensation.

E-ATR-8 equip pressure control digital proportional valves with integral transducer and electronics, REB/RES execution (see tech table GS205).

They are also used in association with other Atos digital proportionals to perform closed loop pressure controls:
- variable displacement axial piston pumps, PE(R)S execution (see tech table AS170)
- directional control valves with additional closed loop pressure control, SP and SF options on TES/LES execution (see tech table FS500)

Features:
- Factory preset and calibrated
- Standard 5 pin M12 main connector
- IP67 protection degree
- CE mark according to EMC directive

1 MAIN CHARACTERISTICS

<table>
<thead>
<tr>
<th>Pressure measuring range:</th>
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<tbody>
<tr>
<td>60 = 0 ÷ 60 bar</td>
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<tr>
<td>100 = 0 ÷ 100 bar</td>
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<tr>
<td>160 = 0 ÷ 160 bar</td>
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<tr>
<td>250 = 0 ÷ 250 bar</td>
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<tr>
<td>400 = 0 ÷ 400 bar</td>
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Pressure measuring range: 0 ÷ 60/100/160/250/400 bar; other values available on request

Note: negative pressure can damage the pressure transducer

Overload pressure: 2 x FS without exceeding 600 bar

Burst pressure: 5 x FS without exceeding 1700 bar

Response time: ≤ 2 ms

Temperature range: Operating -40 ÷ +100 °C; Storage -40 ÷ +100 °C

Thermal drift: @ zero: ±0.025 % FS/°C max; @ FS: ±0.025 % FS/°C max

Accuracy: ≤ ±1.2 % FS

Non-Linearity: ≤ ±0.5 % of FS (BFSL) as per IEC 61298-2

Fluid Compatibility: Hydraulic oil as per DIN51524...535; for water-glycol, phosphate ester and skydrol®, please contact Atos technical department

Power supply: 24 Vc nominal; 14 ÷ 30 Vdc for standard (8 ÷ 30 Vdc for /I option); Imax 25 mA

Output signal: Standard: voltage output signal 0 ÷ 10 V (3 pins); Minimum load > maximum output signal / 1 mA
/I option: current output signal 4 ÷ 20 mA (2 pins); Maximum load ≤ (power supply - 8 V) / 0.02 mA

Wiring protections: Against reverse polarity on power supply and short-circuit on output signal

Materials: Wetted parts: stainless steel 316L (13-8 PH for sensor); seals: FPM/FKM

Mass: Approx. 57 g

Electromagnetic compatibility (EMC): According to Directive 2014/30/UE EN 61326 emission (group 1, class B) and immunity (industrial application)


Vibration resistance: 20 g according to DIN EN 60068-2-6 from 2 to 2000 Hz

Shock resistance: 40 g / 6 ms / half-sinusoid, according to DIN EN 60068-2-27

Protection class: /IP67 with mating connector

Hydraulic connection: 1/4" GAS - DIN 3852 (pressure port orifice Ø 0.6 mm)

Electrical connection: Type: plastic 5 pins M12 at 90° (DIN 43650-C) with cable gland type PG7 for cable max Ø 6 mm

Protection: /IP67 according to EN 60529; Insulation: according to VDE 0110-C

Table GS465-1/E

Notes: FS = Full Scale; BFSL = Best Fit Straight Line
3 INSTALLATION AND COMMISSIONING

3.1 Warning
E-ATR-8 transducers have to be installed as near as possible to the point where the pressure have to be measured, taking care that the oil flow is not turbulent.

3.2 Commissioning
Install the transducer in the hydraulic circuit.
Switch-off the power supply before connecting and disconnecting the transducer connector as shown in scheme.

4 ELECTRONIC CONNECTIONS

E-ATR-8 / * voltage output signal 0 ÷ 10 V

E-ATR-8 / * / I current output signal 4 ÷ 20 mA

5 OVERALL DIMENSIONS [mm]

The max resistance $R_L [\Omega]$ is calculated: $R_L = \frac{V_{supply} - 10[V]}{0.02 [A]}$