

Low differential pressure sensors

- ranges from +/-100 mbar to 0-10mbar
- accuracy 0.25%
- 2-wire 4-20mA or 3-wire 0-5V output
- compact and lightweight
- welded-aluminium construction
- very rugged
- IP65 protection
- wet air and aggressive vapours compatible

Description

The DT_LP series pressure sensors provide accurate measurement of gas and liquids differential pressure in low ranges from 10mbar to 100mbar. The standard output is 2-wire 4 to 20mA current loop, voltage output being an option. They are suitable for mono or bi-directional measurement.

Operation

A high-resolution contactless inductive position detector measures the position of a convoluted diaphragm exposed to the process media differential pressure. The detector is sealed from the media. The detector operation is insensitive to the media allowing the sensor operation with any media chemically compatible with its construction materials. The sensing element, the transducer, the electronics and the mechanical parts are optimised for every single application.

Performances

The DT_LP series design favours ruggedness and reliability and makes it suitable for demanding industrial applications. The micro-processor based electronics enhances compensations quality as well as it potentially offers a gateway to digital communications. The DT_LP series combine well-proven techniques with state of the art design.



actual size

Applications

- Test benches
- Glove boxes
- Wind-tunnels
- Furnace monitoring
- Painting cabinets
- Filter monitoring
- Off-road vehicles
- Flow measurements

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contact @nichesensor.com
DT_LPdocen02c

Represented by

DT_LP series

Low differential pressure sensors

Pressure measurement specification

- **standard ranges:**
 - **bi-directional:** -10 to +10mbar, -25 to +25mbar, -100 to +100mbar
 - **uni-directional:** 0 to +10mbar, 0 to +25mbar, 0 to +100mbar
- **non-standard ranges:** maximum full scale 100mbar, minimum 10mbar
- **overpressure:** 3bar
- **line pressure:** 15bar maximum
- **compatible media:** see physical description
- **supply voltage:** 6.5V to 30V (voltage output: 8.5V to 30V)
- **standard output signal:** 4-20mA 2-wire
- **optional output signal:** 0 - 5V 3-wire
- **load impedance:** $R_c(\text{k}\Omega)_{\text{max}} = (\text{Valim}-6.5) \times 0.05$
for voltage output $R_{c\text{min}} = 10\text{k}\Omega$
- **operating temperature range:** -40 to +70°C
- **humidity:** 0 - 100%
- **user settings:** user-accessible digital encoders
 - **zero:** +/-50%
 - **gain:** +/-10% min
 - **damping:** from 0 to 10 sec

Performance data

- (values referenced to full scale)
- **precision (non-linearity, repeatability, hysteresis):** 0.25%
 - **resolution:** 4.10⁻⁴-4, min 0.1Pa
 - **line pressure effect:** 0.05 / 0.10 / 0.20 mbar/bar maximum
 - **long-term stability:** +/- 0.3% typ over a year at reference conditions
 - **mounting position effect:** 30Pa/90° tilt, correctible by setting
 - **compensated temperature range:** 0 à 50°C
 - **temperature effects:** ≤2.10⁻⁴/°C on zero and sensitivity
 - **supply voltage effects:** ≤ 5.10⁻⁴/ Volt
 - **consumption:** ≤ 3.7 mA (basic)
 - **protection:** reverse excitation protected
 - **response time:** 50msec (excepting damping)
 - **insulation resistance:** >1GΩ@500V
 - **CE-compliance:** EMC-emission to EN61000-6-3 and
EMC-immunity to EN61000-6-2 (EN61000-6-1 for voltage output)

Physical description

- **housing:** aluminium alloy alodine1000-treated
- **construction:** EB-welded
- **sensing element:** beryllium copper and brass
- **pressure ports:** M5 female
- **environmental protection:** IP 65
- **electrical connection :** DIN43650 (plug supplied)
- **weight:** 350g
- **mounting:** 2x M4 holes 4 mm deep and 2x8-32 holes 3/16 deep

Options

- **pressure adaptors** 1/8NPTf or 1/8BSPPf
- **calibration certificate**
- **improved accuracy**
- **non-standard pressure range**
- **voltage output (0 to 5V)**
- **expanded compensated temperature range**
- **mounting bracket**
- **square root extraction**

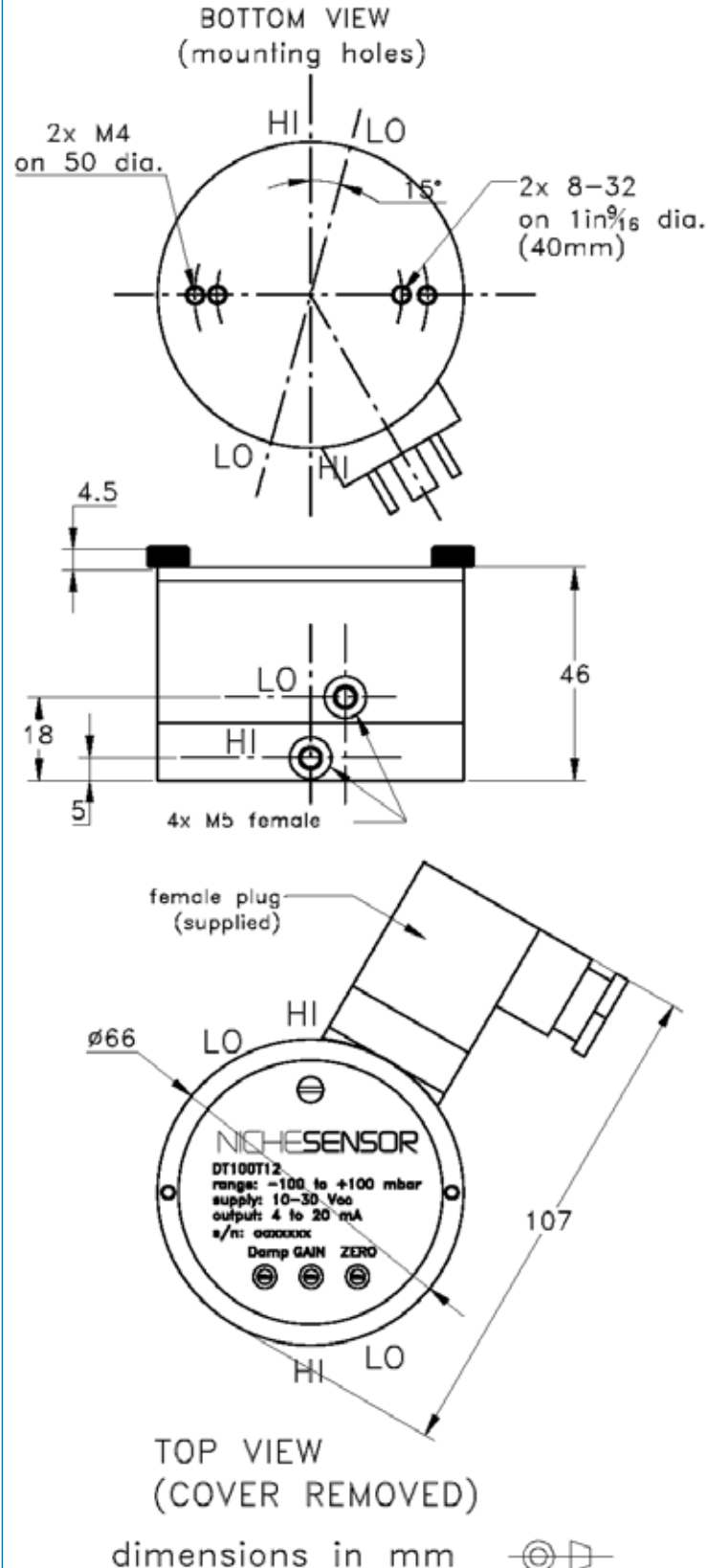
Ordering information

for example: **DT 25 T4 P**

25 = positive full scale in mbar
 T meaning current output
 4 meaning 4mA at zero pressure
 P meaning an option (to be precised)
 > 4 to 20mA output for 0 to 25mbar pressure sensor

Related products

DT_ULP and DT_MP series ; stainless steel DS series



specifications subject to change without notice

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