

# DS\_MP series

## Medium differential pressure sensors

- ranges from  $\pm 2$ bar to 0-200mbar
- accuracy 0.15%
- 2-wire 4-20mA or 3-wire 0-5V output
- compact and lightweight
- welded-stainless steel construction
- very rugged
- IP65 protection
- wet air and aggressive vapours compatible

### Description

The DS\_MP series pressure sensors provide accurate measurement of gas and liquids differential pressure in medium ranges from 100mbar up to 2bar. 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 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 DS\_MP series design favours ruggedness and reliability and makes it suitable for demanding industrial applications. The micro-processor based electronics enhances compensation quality as well as it potentially offers a gateway to digital communications. The DS\_MP series combine well-proven techniques with state of the art design.



actual size

## Applications

- Test benches
- Laboratories
- Process
- Level measurement

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# DS\_MP series

## Medium differential pressure sensors

### Pressure measurement specification

- **standard ranges:**
  - **bi-directional:** -0.2 to +0.2bar, -0.5 to +0.5bar, -1 to +1bar, -2 to +2bar
  - **uni-directional:** 0 to +0.2bar, 0 to +0.5bar, 0 to +1bar, 0 to +2bar
- **non-standard ranges:** maximum full scale 2bar, minimum 0.2bar
- **overpressure:** 5bar
- **line pressure:** 40bar maximum
- **compatible media:** see physical description
- **supply voltage:** 6.5V to 30V (voltage output: 8.5V)
- **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):**
  - **uni-directional ranges:** 0.15%
  - **bi-directional ranges:** 0.2%
- **resolution:** 4.10-4, min 0.1Pa
- **line pressure effect:** maximum 1.25.10-3/ 5bar
- **long-term stability:** +/- 0.15% typ. over a year at reference conditions
- **compensated temperature range:** 0 à 50°C
- **temperature effects:**  $\leq 2.10^{-4}/^{\circ}\text{C}$  on zero and sensitivity
- **supply voltage effects:**  $\leq 5.10^{-4}/\text{Volt}$
- **consumption:**  $\leq 3.7\text{ mA}$  (basic)
- **protection:** reverse excitation protected
- **response time:** 150msec (excepting damping)
- **insulation resistance:**  $>1\text{G}\Omega @ 500\text{V}$
- **CE-compliance:** EMC-emission to EN61000-6-3 and  
EMC-immunity to EN61000-6-2 (EN61000-6-1 for voltage output)

### Physical description

- **housing:** 316L stainless steel
- **construction:** EB-welded
- **sensing element:** beryllium copper and brass
- **pressure ports:** M5 female
- **environmental protection:** IP 65
- **electrical connection:** DIN43650 (plug supplied)
- **weight:** 950g
- **mounting:** 2x M4 holes in the base, 4 mm deep

### Options

- **pressure adaptors** 1/8NPTf or 1/8BSPPf
- **calibration certificate**
- **non-standard pressure range**
- **voltage output (0 to 5V)**
- **expanded compensated temperature range**
- **mounting bracket**
- **welded pressure fittings (Cajon VCR)**
- **square root extraction**
- **inconel sensing element (copper-free)**

### Ordering information

for example: **DS 25 T4 P**

25 = positive full scale in mbar

T meaning current output

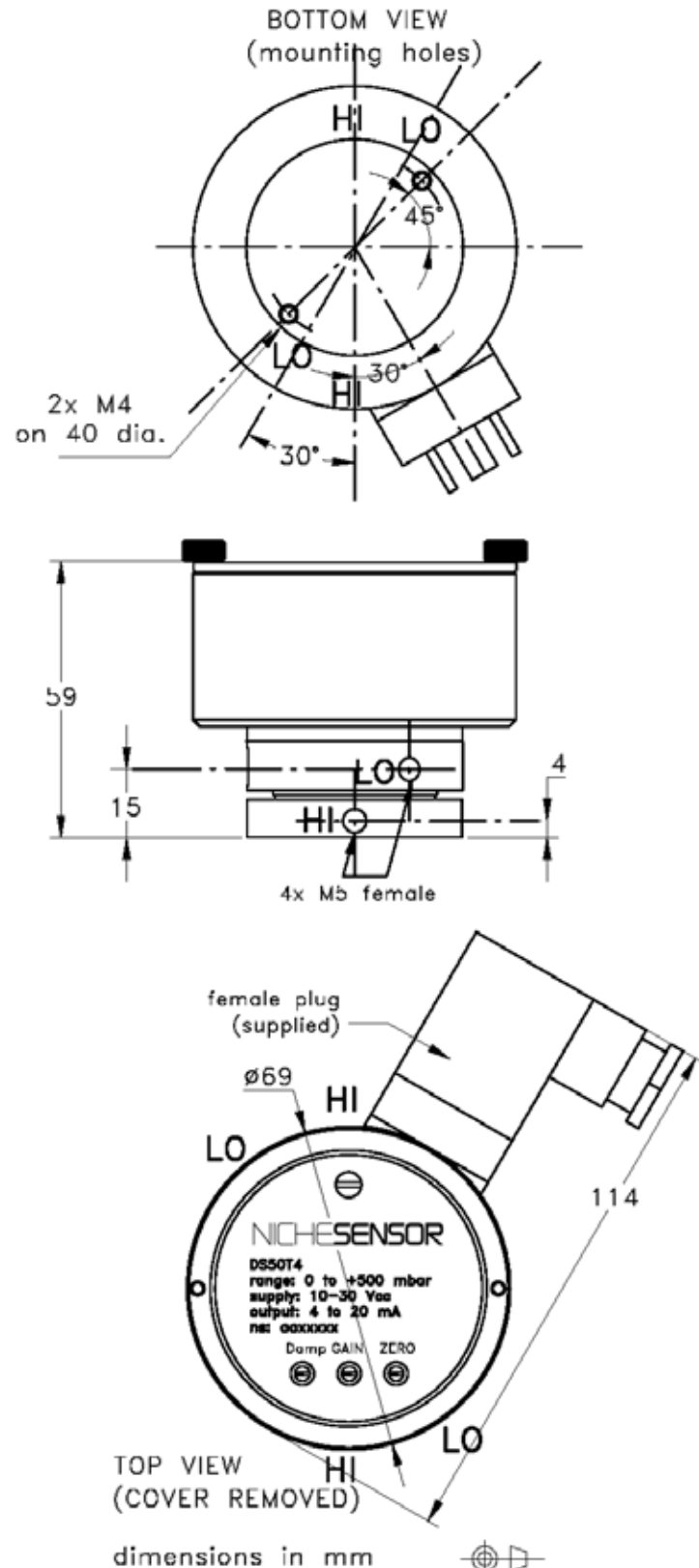
4 meaning 4mA at zero pressure

P meaning an option (to be precised)

> 4 to 20mA output for 0 to 25mbar pressure sensor

### Related products

DS\_ULP and DS\_LP series ; aluminium DT series



specifications subject to change without notice

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