

# Low differential pressure transducers

## Models XLdp1, XLdp2, XLdp3

Capacitive sensor with micro machined silicon diaphragm

Accuracy 0,25 %, 0,5 % and 1 % F.S.

### Features

- Protection IP65
- High overpressure limits
- Extreme high resolution
- Excellent long term stability
- High shock and vibration resistance
- Very low pressure ranges

### Ranges

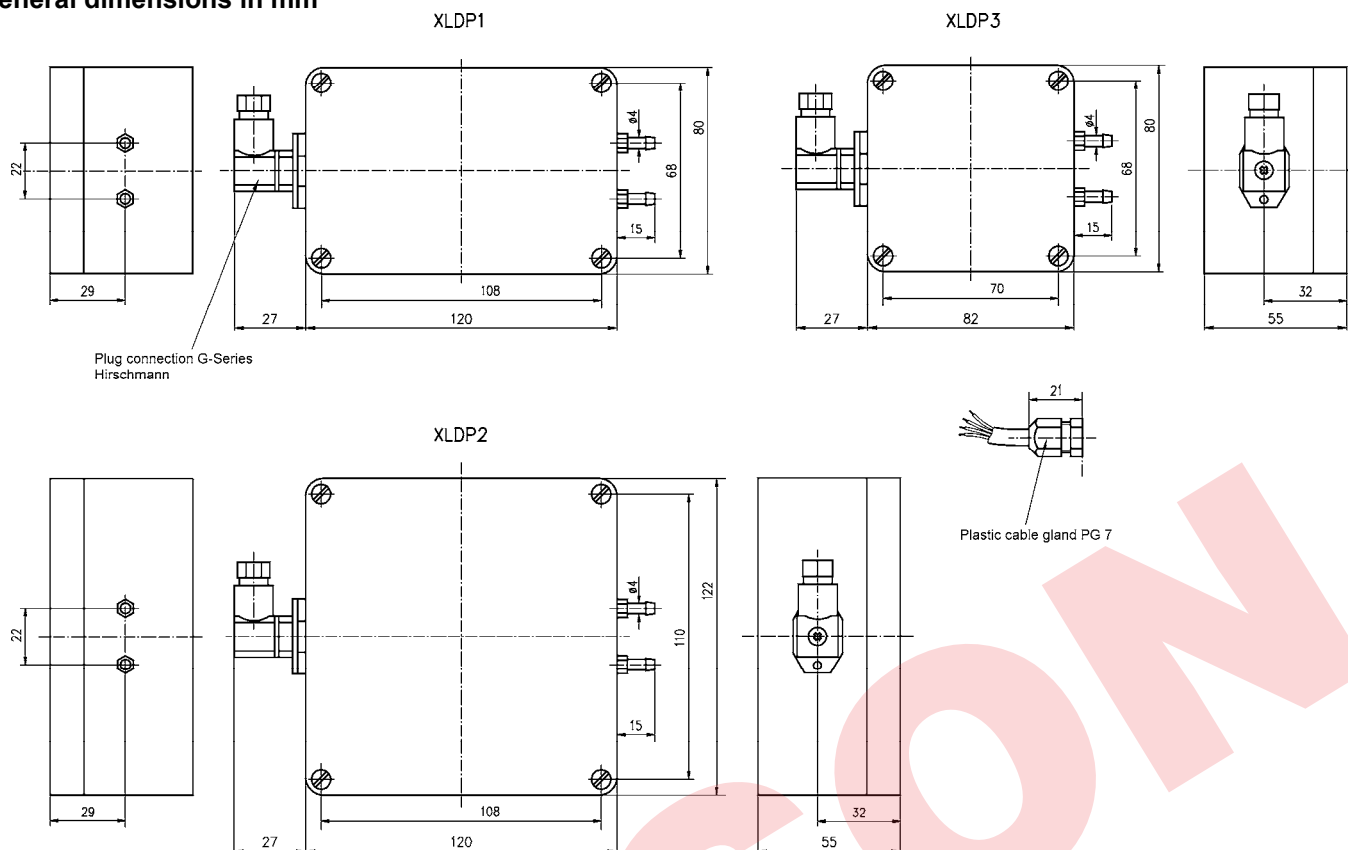
0 ... 0,25 mbar up to 0 ... 500 mbar

±0,125 mbar up to ±250 mbar



| Technical specifications                                                  | XLdp1                                                                                                   | XLdp2                                                                             | XLdp3                                                                           |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Measuring principle                                                       | Differential Si-glass/aluminum capacitor with single crystal silicon diaphragm                          |                                                                                   |                                                                                 |
| Range unidirectional in mbar                                              | 0,25 0,5 1,0 2,5 5 10 25 50 100 125 <sup>1)</sup> 250 <sup>2)</sup> 500 <sup>2)</sup>                   |                                                                                   |                                                                                 |
| directional in mbar                                                       | ±0,125 ±0,25 ±0,5 ±1,25 ±2,5 ±5 ±12,5 ±25 ±50 ±62,5 <sup>1)</sup> ±125 <sup>2)</sup> ±250 <sup>2)</sup> |                                                                                   |                                                                                 |
| Overpressure in bar                                                       | <sup>1)</sup> not for XLdp1, <sup>2)</sup> only XLdp1                                                   |                                                                                   |                                                                                 |
| Proof, differential/burst single side/static single side                  | 1/3,5/7                                                                                                 | 0,7/1,7/1,7                                                                       | 0,35/1,7/1,7                                                                    |
| Pressure type                                                             | Differential gauge, vacuum and compound                                                                 |                                                                                   |                                                                                 |
| Process connection                                                        | Ø4 mm dual barbed, bore Ø3 mm, (others on request)                                                      |                                                                                   |                                                                                 |
| Medium                                                                    | Clean and dry air, non conducting and non corrosive gases                                               |                                                                                   |                                                                                 |
| Material                                                                  | Brass, nickel plated, others on request                                                                 |                                                                                   |                                                                                 |
| Pressure connection                                                       | Silicon, aluminum, glass                                                                                |                                                                                   |                                                                                 |
| Sensor                                                                    | ABS, grey color                                                                                         |                                                                                   |                                                                                 |
| Case                                                                      |                                                                                                         |                                                                                   |                                                                                 |
| Power supply, reversed polarity protected                                 | 12 ... 36 VDC                                                                                           | 12 ... 36 VDC, 13 ... 36 VDC (4-20 mA)                                            | 12 ... 36 VDC                                                                   |
| Output signal                                                             | 4-20 mA (2-wire)<br>1-5/6 VDC (3-wire)<br>0-5 VDC (3-wire)<br>±2,5 VDC (3-wire)<br>±5 VDC (3-wire)      | 4-20 mA (2-wire)<br>1-5/6 VDC (3-wire)                                            | 4-20 mA (2-wire)<br>1-5/6 VDC (3-wire)<br>0-5 VDC (3-wire)<br>0-10 VDC (3-wire) |
| Maximum loop resistance for 4 ... 20 mA                                   | ≤ (U <sub>B</sub> - 12 V) / 0,022 A                                                                     | ≤ (U <sub>B</sub> - 13 V) / 0,022 A                                               | ≤ (U <sub>B</sub> - 12 V) / 0,022 A                                             |
| Supply current                                                            | Max. 3 mA for VDC output, 20 mA for 4 ... 20 mA output signal                                           |                                                                                   |                                                                                 |
| Accuracy according DIN 16 086 (terminal point)                            | 0,25 % or 0,5 %                                                                                         | 0,25 % or 0,5 %                                                                   | 1,0 %                                                                           |
| Repeatability                                                             | 0,03 % for 0,25 % accuracy, 0,05 % for 0,5 % accuracy and 0,1 % for 1,0 %                               |                                                                                   |                                                                                 |
| Electrical resolution                                                     | 1x10 <sup>-4</sup> F.S.                                                                                 |                                                                                   |                                                                                 |
| Response time (10 ... 90 %)                                               | 250 ms (others on request)                                                                              |                                                                                   | 250 ms                                                                          |
| Warm up time                                                              | 1 sec                                                                                                   | 10 sec                                                                            | 15 sec                                                                          |
| Permissible                                                               |                                                                                                         |                                                                                   |                                                                                 |
| Operation temperature                                                     | -30 ... 80 °C                                                                                           | -30 ... 70 °C                                                                     |                                                                                 |
| Storage temperature                                                       | -40 ... 80 °C                                                                                           |                                                                                   |                                                                                 |
| Compensated temperature                                                   | -18 ... 70 °C                                                                                           | 0 ... 57 °C                                                                       | 4 ... 50 °C                                                                     |
| Temperature influence (Ref. 20 °C in compensated range for zero and span) | ±0,18 % / 10 K for 0,25 % acc.,<br>±0,36 % / 10 K for 0,5 % acc.                                        | ±0,3 % / 10 K                                                                     | ±0,45 % / 10 K                                                                  |
| Vibration influence (temporary)                                           | < 0,2 % F.S. for 1 g and 10-130 Hz                                                                      | < 0,05 % F.S. for 5 g and 0-60 Hz                                                 | < 0,2 % F.S. for 1 g and 10-130 Hz                                              |
| Electrical connection                                                     | 4 PIN angle connector according IEC 61984<br>1,0 m cable, vent tube, PG 7 thread joint                  |                                                                                   |                                                                                 |
| Protection according EN 60 529/IEC 529                                    | IP65 (case is ventilated over connection cable)                                                         |                                                                                   |                                                                                 |
| Mounting /position error (Zero adjustable)                                | ≥ 2,5 mbar < 0,1 % F.S.<br>≥ 0,6 mbar < 0,5 % F.S.<br>≥ 0,25 mbar < 0,8 % F.S.                          | ≥ 1,27 mbar < 0,1 % F.S.<br>≥ 0,64 mbar < 0,25 % F.S.<br>≥ 0,25 mbar < 0,5 % F.S. | ≥ 1,27 mbar < 0,1 % F.S.<br>≥ 1,27 mbar < 0,25 % F.S.                           |
| Adjustments                                                               | Zero and span ±10 % F.S.                                                                                |                                                                                   | Zero ±5 % F.S.,<br>Span ±3 % F.S.                                               |
| Weight in kg                                                              | 0,4                                                                                                     |                                                                                   | 0,3                                                                             |
| Options                                                                   | Indicators                                                                                              |                                                                                   |                                                                                 |

## General dimensions in mm



Rev. B

## Order information

| Type  | Output signal | Accuracy     | Range                                                                       | Engineering units | Protection                | Process connection                   | Electrical connection                | Options               |
|-------|---------------|--------------|-----------------------------------------------------------------------------|-------------------|---------------------------|--------------------------------------|--------------------------------------|-----------------------|
| XLDP1 | (42) 4-20 mA  | (025) 0,25 % | Unidirectional<br>0/ 0,25                                                   | MBAR              | (IP65) Protection<br>IP65 | (DN3) ø4 mm<br>barbed,<br>bore ø3 mm | (HM) Angle<br>connector<br>IEC 61984 | (NH) Tagging<br>wired |
|       | (15) 1-5 VDC  | (050) 0,50 % |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP2 | (16) 1-6 VDC  | (050) 0,50 % | 0/ 0,5                                                                      |                   |                           |                                      | (F2) Cable<br>connection             |                       |
|       | (05) 0-5 VDC  |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 | (25) ±2,5 VDC |              | 0/ 2,5                                                                      |                   |                           |                                      | specify cable<br>lengths in m        |                       |
|       | (50) ±5 VDC   |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP2 | (42) 4-20 mA  | (025) 0,25 % | 0/ 10                                                                       |                   |                           |                                      |                                      |                       |
|       | (15) 1-5 VDC  | (050) 0,50 % |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 | (16) 1-6 VDC  | (100) 1,0 %  | 0/ 25                                                                       |                   |                           |                                      |                                      |                       |
|       | (05) 0-5 VDC  |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 | (01) 0-10 VDC |              | 0/ 50                                                                       |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | 0/ 125 <sup>1)</sup>                                                        |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | 0/ 250 <sup>2)</sup>                                                        |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | 0/ 500 <sup>2)</sup>                                                        |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | Bidirectional<br>±0,125                                                     |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | ± 0,25                                                                      |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | ± 5,0                                                                       |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | ±12,50                                                                      |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | ± 25                                                                        |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | ± 50                                                                        |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | ±62,50 <sup>1)</sup>                                                        |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | ± 125 <sup>2)</sup>                                                         |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | ± 250 <sup>2)</sup>                                                         |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | others on request                                                           |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | kPa, mmH <sub>2</sub> O, Pa<br>or in. H <sub>2</sub> O others<br>on request |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |
| XLDP3 |               |              | others on request                                                           |                   |                           |                                      |                                      |                       |
|       |               |              |                                                                             |                   |                           |                                      |                                      |                       |

## How to order

| Series | Type  | Output signal | Accuracy | Range | Engineering units | Protection | Process connection | Electrical connection | Option |
|--------|-------|---------------|----------|-------|-------------------|------------|--------------------|-----------------------|--------|
| C      | XLDP1 | 42            | 050      | 0/10  | MBAR              | IP65       | DN3                | HM                    |        |

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