



# Technical Specifications

## Pressure measuring range (bar)

|  | 0.1 ... 0.5, (1)       | > 0.5 ... 2                       | > 2 ... 25                        |
|--|------------------------|-----------------------------------|-----------------------------------|
| <b>Overpressure</b>  | 3 bar                  | 3 x FS ( $\geq 3$ bar)            | 3 x FS                            |
| <b>Burst pressure</b>  | > 200 bar              | > 200 bar                         | > 200 bar                         |
| <b>Accuracy, (4), (<math>\pm</math> % FS)</b>                        | $\leq 0.5 / \leq 0.25$ | $\leq 0.5 / \leq 0.25 / \leq 0.1$ | $\leq 0.5 / \leq 0.25 / \leq 0.1$ |
| <b>Thermal shift, (<math>\pm</math> % FS/<math>^{\circ}</math>C)</b> |                        |                                   |                                   |
| Zero point 0...70 $^{\circ}$ C                                       | $\leq 0.06$            | $\leq 0.03$                       | $\leq 0.015$                      |
| Zero point -25...85 $^{\circ}$ C                                     | $\leq 0.08$            | $\leq 0.04$                       | $\leq 0.02$                       |
| Span 0...70 $^{\circ}$ C   | $\leq 0.015$           | $\leq 0.015$                      | $\leq 0.015$                      |
| Span -25...85 $^{\circ}$ C   | $\leq 0.02$            | $\leq 0.02$                       | $\leq 0.02$                       |
| <b>Response time, (typ.)</b>   | < 1ms/10...90%         | < 1ms / 10...90% FS               | < 1ms / 10...90% FS               |
| <b>Long term stability, (5)</b>                                      | < 0.5% FS / < 4 mbar   | < 0.2% FS / < 4 mbar              | < 0.1% FS / < 0.2% FS             |

|  | > 25 ... 600, (2), (3)               | > 600 ... 1000, (2)             |
|--|--------------------------------------|---------------------------------|
| <b>Overpressure</b>  | 3 x FS ( $\leq 850 / \leq 1500$ bar) | 1500 bar                        |
| <b>Burst pressure</b>  | > 850 / $\leq 1500$ bar              | > 1500 bar                      |
| <b>Accuracy, (4), (<math>\pm</math> % FS)</b>                        | $\leq 0.5 / \leq 0.25 / \leq 0.1$    | $\leq 1 / \leq 0.5 / \leq 0.25$ |
| <b>Thermal shift, (<math>\pm</math> % FS/<math>^{\circ}</math>C)</b> |                                      |                                 |
| Zero point 0...70 $^{\circ}$ C                                       | $\leq 0.015$                         | $\leq 0.015$                    |
| Zero point -25...85 $^{\circ}$ C                                     | $\leq 0.02$                          | $\leq 0.02$                     |
| Span 0...70 $^{\circ}$ C   | $\leq 0.015$                         | $\leq 0.015$                    |
| Span -25...85 $^{\circ}$ C   | $\leq 0.02$                          | $\leq 0.02$                     |
| <b>Response time, (typ.)</b>   | < 1ms / 10...90% FS                  | < 1ms / 10...90% FS             |
| <b>Long term stability, (5)</b>                                      | < 0.1% FS / < 0.2% FS                | < 0.1% FS / < 0.2% FS           |

(1) 50 mbar on request

(2) Titanium available  $\leq 400$  bar (burst pressure > 550 bar)

(3) Overpressure and burst pressure 1500 bar (stainless steel) optional

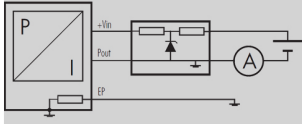
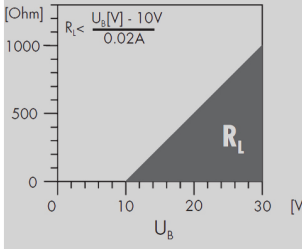
(4) Zero based accuracy according to DIN16086, incl. hysteresis and repeatability at ambient temperature

(5) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

## Temperature range

|                              |                        |
|------------------------------|------------------------|
| <b>Operating temperature</b> | -25...85 $^{\circ}$ C  |
| <b>Process temperatur</b>    | -40...150 $^{\circ}$ C |
| <b>Storage temperatur</b>    | -25...85 $^{\circ}$ C  |

## Electrical specifications

|                        |   |
|------------------------|---|
|                        | 4 ... 20 mA   |
| <b>Power supply</b>    | 10...30 V DC  |
| Supply influence       | < 0.1% FS   |
| <b>Circuit diagram</b> |  |
| <b>Load resistance</b> |  |
| Load influence         | < 0.1% FS   |

## ATEX Approval

|   |                              |                        |              |
|---|------------------------------|------------------------|--------------|
| <b>Certificate, (1)</b>                         | SEE 99 ATEX 2640             |                        |              |
| <b>Gas</b>                                      | II 1G Ex ia IIC T3 / T4 / T6 | EN 60079-0 / -11 / -26 |              |
| <b>Dust</b>                                     | II 1D Ex iaD 20 IP6x Tx°C    | EN 61241-0 / -11       |              |
| <b>Mining</b>                                   | I M1 Ex ia I                 | EN 50303               |              |
| <b>Temperature class, (2)</b>                   | T6                           | T4                     | T3           |
| Ambient temperature                             | -25...55 °C                  | -25...85 °C            | -25...85 °C  |
| Process temperature                             | -25...55 °C                  | -25...100 °C           | -25...150 °C |
| <b>Maximum values of the connection circuit</b> | 30 V / 100 mA / 1 W          |                        |              |

(1) For detailed Ex specifications see certificate and operating an safety instructions

(2) Without any information about temperature class the transmitter will be delivered for T4

## GL Approval

|                             |             |
|-----------------------------|-------------|
| <b>Certificate</b>          | 40868-01 HH |
| <b>Field of application</b> | C, EMC1     |

## Additional approvals

|            |         |
|------------|---------|
| <b>FM</b>  | 3027351 |
| <b>CSA</b> | 2012692 |

## Qualifications

|                     | Description             | Level                         | Typical interferences          |
|---------------------|-------------------------|-------------------------------|--------------------------------|
| <b>EN 61000-4-2</b> | Electrostatic discharge | 8 kV contact<br>15 kV air     |                                |
| <b>EN 61000-4-3</b> | Irradiated RF           | 10V/m<br>(0.08...2.7 GHz, 3s) | Radio sets,<br>wireless phones |
| <b>EN 61000-4-4</b> | Transients (burst)      | 2 kV                          | Motors, valves                 |
| <b>EN 61000-4-5</b> | Surge                   | 10 kA<br>(8 / 20 µs), (1)     | Lightning                      |
| <b>EN 61000-4-6</b> | Conducted RF            | 10 V<br>(0.15...80 MHz, 3 s)  | Frequency converters           |

(1) Only with optional surge (lightning) protection

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## Physical specifications

| <b>Materials</b> |  |
|------------------|--|
| Transducer       | Stainless steel (316L / 1.4435), titanium (Gr. 2), (1) |
| Housing          | Stainless steel (316L / 1.4404), titanium (Gr. 2)      |
| Seals            | Viton (Standard), EPDM, Kalrez                         |
| Cable            | PUR, PTFE  |

(1) Hastelloy (C-276) on request

## Equipment

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### Overview

| <b>10.00.0091</b> | Accessories overview |
|-------------------|----------------------|

## Additional documents

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### Operating and safety instructions

|                   | Article number |
|-------------------|----------------|
| <b>10.88.0092</b> | DMM029         |

## Ordering information

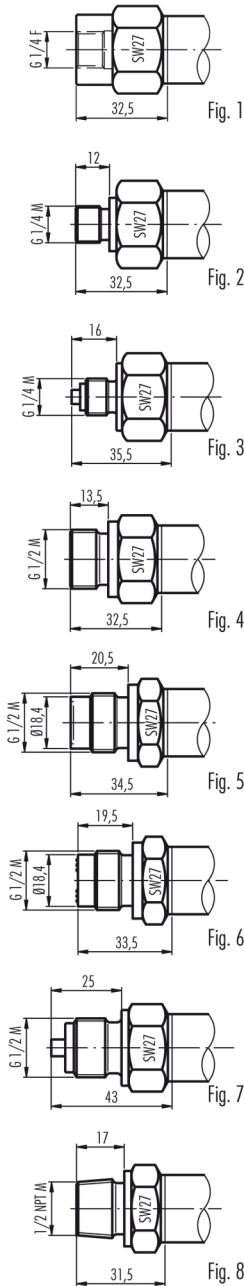
|                                 |  | X. XXXX. | XXXX. | XX. | XXX |
|---------------------------------|--|----------|-------|-----|-----|
| <b>Type</b>                     |  |          |       |     |     |
|                                 | ATM/EX   | 33       |       |     |     |
| <b>Pressure type</b>            |  |          |       |     |     |
|                                 | Gauge  | 1        |       |     |     |
|                                 | Absolute (vacuum)  | 2        |       |     |     |
|                                 | Sealed gauge   | 3        |       |     |     |
| <b>Pressure measuring range</b> |  |          |       |     |     |
|                                 | Any pressure measuring ranges between 0...100 mbar and 0...1000 bar available, (1), (2), (3) | XX       |       |     |     |
| <b>Process connection</b>       |  |          |       |     |     |
|                                 | G 1/4 F, (Fig. 1)  | 00       |       |     |     |
|                                 | G 1/4 M, (Fig. 2)  | 11       |       |     |     |
|                                 | G 1/4 M, manometer DIN 16288, (Fig. 3)   | 12       |       |     |     |
|                                 | G 1/2 M, (Fig. 4)  | 13       |       |     |     |
|                                 | G 1/2 M, frontal diaphragm, (Fig. 5)   | 14       |       |     |     |
|                                 | G 1/2 M, flush diaphragm, (Fig. 6)   | 15       |       |     |     |
|                                 | G 1/2 M, manometer DIN 16288, (Fig. 7)   | 16       |       |     |     |
|                                 | 1/4 NPT M  | 10       |       |     |     |
|                                 | 1/2 NPT M, (Fig. 8)  | 19       |       |     |     |
|                                 | Customized connection available  | XX       |       |     |     |
| <b>Electrical connection</b>    |  |          |       |     |     |
|                                 | DIN 43650, demountable, IP 65, (Fig. 10), (4)  |          | 01    |     |     |
|                                 | Binder 723, 5-pin, IP 67, (Fig. 11), (4)   |          | 03    |     |     |
|                                 | Binder 723, 5-pin, demountable, IP 67, (Fig. 12), (4)  |          | 43    |     |     |
|                                 | MIL C26482, 10-6, IP 40, (Fig. 13), (4)  |          | 06    |     |     |
|                                 | PUR cable, blue, IP 67, (Fig. 14), (5), (6)  |          | 17    |     |     |
|                                 | PTFE cable, blue, IP 67, (Fig. 14), (5)  |          | 22    |     |     |
|                                 | Customized connection available  |          | XX    |     |     |
| <b>Output signal</b>            |  |          |       |     |     |
|                                 | 4...20 mA  |          | 05    |     |     |
|                                 | 4...20 mA with surge (lightning) protection  |          | 08    |     |     |
| <b>Accuracy</b>                 |  |          |       |     |     |
|                                 | ≤ ± 0.5 % FS   |          |       | 0   |     |
|                                 | ≤ ± 0.25 % FS  |          |       | 1   |     |
|                                 | ≤ ± 0.1 % FS (on request)  |          |       | 2   |     |
| <b>Temperature range</b>        |  |          |       |     |     |
|                                 | T6 (Ta: -25...55 °C) 0...70 °C compensated (allowed process temperature: -25...55°C)         |          |       | 0   |     |
|                                 | T4 (Ta: -25...85 °C) -25...85 °C compensated (allowed process temperature: -25...100°C)      |          |       | 1   |     |
|                                 | T3 (Ta: -25...85 °C) -25...85 °C compensated (allowed process temperature: -25...150°C)      |          |       | 2   |     |
| <b>Option 1</b>                 |  |          |       |     |     |
|                                 | Throttle, (7)  |          |       |     | A   |
|                                 | Special oil filling: ASEOL Food (for food applications)                                      |          |       |     | G   |
|                                 | Special oil filling: Halocarbon (for oxygen applications), (8), (9)                          |          |       |     | H   |
|                                 | Pressure connection elastomerfree  |          |       |     | N   |
|                                 | Pressure connection welded   |          |       |     | V   |
| <b>Option 2</b>                 |  |          |       |     |     |
| <b>Option 3</b>                 |  |          |       |     |     |
|                                 | Version titanium   |          |       |     | K   |

|                         |  |  |  |  |   |
|-------------------------|--|--|--|--|---|
| Seals: Viton (standard) |  |  |  |  | U |
| Seals: EPDM             |  |  |  |  | S |
| Seals: Kalrez           |  |  |  |  | T |
| Ageing                  |  |  |  |  | Z |

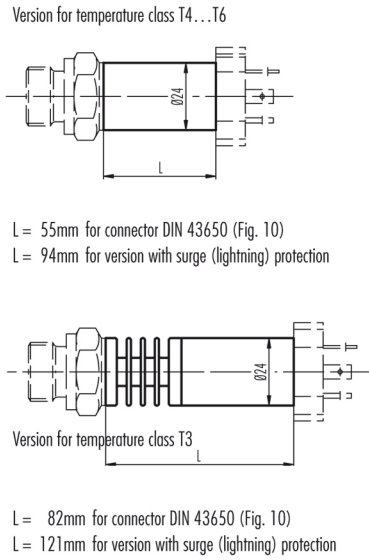
- (1) 50 mbar on request
- (2) Titanium available  $\leq$  400 bar (burst pressure > 550 bar)
- (3) mbar, PSI, kPa etc. available
- (4) Cable socket connector not included
- (5) Please specify the required cable length and medium
- (6) For operating temperature > 50°C, PTFE cable must be used
- (7) Only with pressure connection Fig. 2, Fig. 3, Fig. 4, Fig. 7 and Fig. 8
- (8) Maximum pressure measuring range  $\leq$  270 bar (burst pressure > 400 bar)
- (9) min. Medium temperature -25 ° C

# Technical drawings

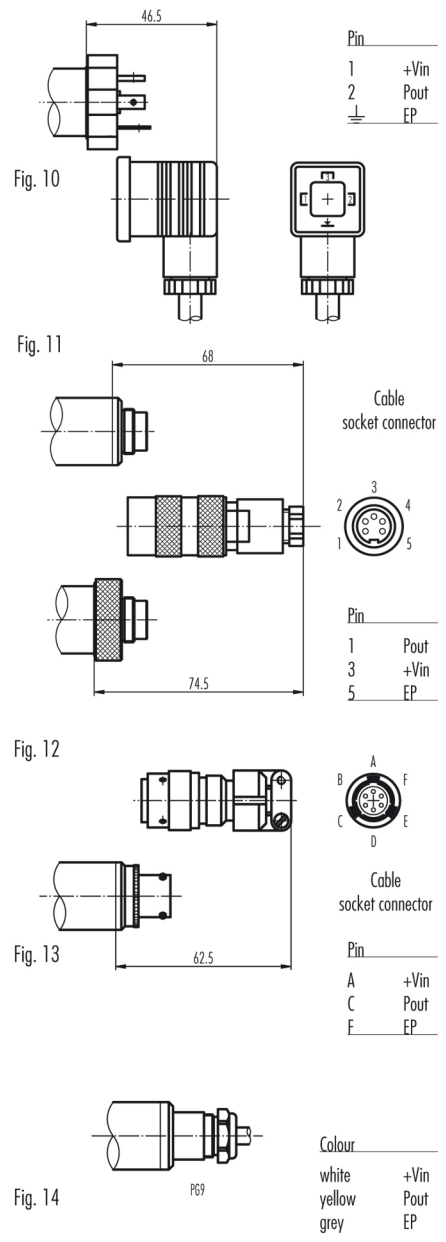
## Pressure connections



## Dimensions



## Electrical connections



Specifications may change without notice.

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