

With the thin-film-on-steel sensor technology with excellent long-term stability and offers reliable and accurate pressure measurement over a wide temperature range. The intrinsic safety design is certified for applications in Ex-Zones 0, 1, 2 (gas), 20, 21, 22 (dust) and mining.



**Applications**

- Shipbuilding
- Ex Zones 0, 1, 2 (gas); 20, 21, 22 (dust) and mining
- Hydrogen

**Features**

- Pressure ranges from 0.4 to 2000 bar
- ATEX and IECEx
- II 1G Ex ia IIC T4/T6 Ga
- II 1D Ex ia IIIC T<sub>200</sub> 160°C Da
- I M1 Ex ia I Ma
- II 1/2G Ex ia IIC T4/T6 Ga/Gb
- Optional with hydrogen-compatible sensor
- EC79/2009 certified by the KBA Kraftfahrt-Bundesamt

| Technical Data        |   |                       |  |
|-----------------------|---|-----------------------|--|
| Measuring principle   | Thin-film-on-steel  | Accuracy @ 25°C typ.  | ± 0.5 % FS typ.<br>± 0.3 % FS typ.   |
| Measuring range       | 0 ... 0.4 to 0 ... 2000 bar<br>0 ... 5 to 0 ... 30000 psi | Media temperature     | Max. -40°C ... +120°C<br>(see electrical connection)   |
| Output signal         | 4 ... 20 mA   | Ambient temperature   | Max. -40°C ... +120°C<br>(see electrical connection)   |
| NLH @ 25°C (BSL) typ. | ± 0.2 % FS typ.<br>± 0.1 % FS typ.                        | Approval / conformity | DNV-GL, KRS, RMRS<br>ATEX / IECEx, according to the norm<br>EN/IEC 60079-0/EN 60079-11/<br>EN 60079-26/ EN 50303 |

02/2023

Data sheet H7329aa

Subject to change

## Ordering information/type code

|                                      |  |                                     |                             | 8292 .                                  | XX                         | XX                          | XX    | XX | XX |  |
|--------------------------------------|--|-------------------------------------|-----------------------------|---|----------------------------|-----------------------------|-------|----|----|--|
| <b>Measuring range <sup>1)</sup></b> | <b>Pressure measurement range [bar]</b>  | <b>Over pressure [bar]</b>          | <b>Burst pressure [bar]</b> |   |                            |                             |       |    |    |  |
|                                      |  |                                     |                             | <b>Pressure measurement range [psi]</b> | <b>Over pressure [psi]</b> | <b>Burst pressure [psi]</b> |       |    |    |  |
|                                      | 0 ... 0.4  | 1.2                                 | 25                          | 69                                      | 0 ... 5                    | 18                          | 350   | F9 |    |  |
|                                      | 0 ... 0.6  | 1.5                                 | 25                          | 70                                      | 0 ... 10                   | 25                          | 350   | G0 |    |  |
|                                      | 0 ... 1.0  | 2.0                                 | 25                          | 71                                      | 0 ... 15                   | 30                          | 350   | G1 |    |  |
|                                      | 0 ... 1.6  | 3.5                                 | 80                          | 73                                      | 0 ... 25                   | 50                          | 1200  | G3 |    |  |
|                                      | 0 ... 2.5  | 5                                   | 100                         | 75                                      | 0 ... 30                   | 30                          | 720   | G5 |    |  |
|                                      | 0 ... 4  | 8                                   | 100                         | 76                                      | 0 ... 50                   | 120                         | 860   | G6 |    |  |
|                                      | 0 ... 6  | 12                                  | 100                         | 77                                      | 0 ... 100                  | 170                         | 1450  | G7 |    |  |
|                                      | 0 ... 10   | 20                                  | 200                         | 78                                      | 0 ... 150                  | 290                         | 2900  | G8 |    |  |
|                                      | 0 ... 16   | 32                                  | 200                         | 79                                      | 0 ... 250                  | 460                         | 2900  | G9 |    |  |
|                                      | 0 ... 25   | 50                                  | 300                         | 80                                      | 0 ... 400                  | 730                         | 4350  | H0 |    |  |
|                                      | 0 ... 40   | 80                                  | 300                         | 81                                      | 0 ... 500                  | 1160                        | 4350  | H1 |    |  |
|                                      | 0 ... 60   | 120                                 | 500                         | 82                                      | 0 ... 1000                 | 1740                        | 5800  | H2 |    |  |
|                                      | 0 ... 100  | 200                                 | 500                         | 83                                      | 0 ... 1500                 | 2900                        | 7250  | H3 |    |  |
|                                      | 0 ... 160  | 320                                 | 1000                        | 85                                      | 0 ... 2000                 | 4640                        | 10850 | H5 |    |  |
|                                      | 0 ... 250  | 500                                 | 1000                        | 74                                      | 0 ... 3000                 | 7250                        | 14500 | G4 |    |  |
|                                      | 0 ... 400  | 800                                 | 1500                        | 84                                      | 0 ... 5000                 | 11600                       | 21750 | H4 |    |  |
|                                      | 0 ... 600  | 1000                                | 2000                        | 86                                      | 0 ... 7500                 | 14500                       | 29000 | H6 |    |  |
|                                      | 0 ... 1000 <sup>9)</sup>   | 1600                                | 3000                        | 88                                      | 0 ... 15000 <sup>9)</sup>  | 25000                       | 45000 | H8 |    |  |
| 0 ... 1600                           | 3000   | 4000                                | 89                          | 0 ... 25000                             | 45000                      | 60000                       | H9    |    |    |  |
| 0 ... 2000                           | 3000   | 4000                                | 90                          | 0 ... 30000                             | 45000                      | 60000                       | J0    |    |    |  |
| <b>Sensor</b>                        | Relative pressure, accuracy: 0.3% (> 1 bar)  |                                     |                             |   |                            |                             |       | 23 |    |  |
|                                      | Relative pressure, accuracy: 0.5% (> 1 bar)  |                                     |                             |   |                            |                             |       | 25 |    |  |
|                                      | Relative pressure, accuracy: 0.5% (≤ 1 bar)  |                                     |                             |   |                            |                             |       | 26 |    |  |
|                                      | Relative pressure, accuracy: 0.5 %, wetted parts hydrogen compatible <sup>7) 8)</sup>  |                                     |                             |   |                            |                             |       | 35 |    |  |
|                                      | Relative pressure, accuracy: 0.3 %, wetted parts hydrogen compatible <sup>7) 8)</sup>  |                                     |                             |   |                            |                             |       | 33 |    |  |
| <b>Pressure connection</b>           | G1/4" male <sup>3)</sup>   |                                     |                             |   |                            |                             |       | 17 |    |  |
|                                      | G1/4" male (Manometer) EN 837 <sup>3) 8)</sup>   |                                     |                             |   |                            |                             |       | 53 |    |  |
|                                      | G1/4" female <sup>3) 8)</sup>  |                                     |                             |   |                            |                             |       | 10 |    |  |
|                                      | G1/2" male <sup>3) 8)</sup>  |                                     |                             |   |                            |                             |       | 21 |    |  |
|                                      | G1/2" male (Manometer) EN 837 <sup>3) 8)</sup>   |                                     |                             |   |                            |                             |       | 11 |    |  |
|                                      | R1/4" male <sup>3) 8)</sup>  |                                     |                             |   |                            |                             |       | 19 |    |  |
|                                      | 1/4" NPT male <sup>3) 8)</sup>   |                                     |                             |   |                            |                             |       | 30 |    |  |
|                                      | M18x1.5 male (conical seal: 58°) <sup>4) 8)</sup>  |                                     |                             |   |                            |                             |       | 29 |    |  |
| <b>Electrical connection</b>         | Male electrical connector EN 175301-803-A, plastic   |                                     |                             |   |                            |                             |       | 05 |    |  |
|                                      | Male electrical connector M12x1, 5-pole, metal   |                                     |                             |   |                            |                             |       | 35 |    |  |
|                                      | Male electrical connector MIL-C 26482, 6-pole, metal <sup>5)</sup>   |                                     |                             |   |                            |                             |       | 02 |    |  |
|                                      | Male electrical connector Binder 723, 5-pole, metal  |                                     |                             |   |                            |                             |       | 14 |    |  |
|                                      | Cable with shield, material FDR 25 (Raychem), 4 x 0.5mm <sup>2</sup> (cable length see "Accessories") - not ship approved <sup>10)</sup>                       |                                     |                             |   |                            |                             |       | 78 |    |  |
|                                      | Cable intrinsically safe with shield, material PVC, 2 x 0.75mm <sup>2</sup> (-40...+80°C), (cable length see "Accessories") - not ship approved <sup>10)</sup> |                                     |                             |   |                            |                             |       | 80 |    |  |
| <b>Output signal</b>                 | <b>Signal output</b>   | <b>Load resistance</b>              | <b>I (supply)</b>           | <b>U (supply)</b>                       |                            |                             |       |    |    |  |
|                                      | 4 ... 20 mA  | (U <sub>supply</sub> -10 V) / 20 mA |                             | 10 ... 30 VDC                           | 19                         |                             |       |    |    |  |

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| Accessories   |  |    |
|---|--|----|
| Female electrical plug EN 175301-803-A (DIN43650-A)/NBR, -40°C ... +90°C, for cable diameter 4 ... 9 mm, flammability standard UL94-V0                  |  | 46 |
| Female electrical plug EN 175301-803-A (DIN 43650-A)/silicone, -40°C ... +125°C, for cable diameter 4 ... 9 mm, flammability standard UL94-V0           |  | 56 |
| Female electrical plug EN 175301-803-A (DIN43650-A)/NBR, -40°C ... +90°C, for cable diameter 4 ... 9.5 mm, flammability standard UL94-V2 <sup>11)</sup> |  | 58 |
| Female electrical plug M12x1, 5-pole, plastic (not for zones 0 (gas))   |  | 33 |
| Female electrical plug M12x1, 5-pole, metal   |  | 35 |
| Female electrical plug MIL-C 26482, 6-pole, metal   |  | 32 |
| Female electrical plug Binder 723, 5-pole, metal  |  | 37 |
| Seal FKM, -18°C ... +125°C <sup>13)</sup>   |  | 61 |
| Seal EPDM, -40°C ... +125°C <sup>13)</sup>  |  | 63 |
| Pressure peak damping element ø 0.4 mm  |  | 44 |
| Pressure peak damping element ø 1.0 mm  |  | 40 |
| Cable length 1.5 m <sup>6)</sup>  |  | 1M |
| Cable length 3.0 m <sup>6)</sup>  |  | 3M |
| Cable length 5.0 m <sup>6)</sup>  |  | 5M |
| Special electrical connection: Pin 1 +, Pin 2 -<br>(only for output signal 4 ... 20 mA and male electrical connector EN175301-803-A/ DIN43650-A)        |  | 92 |
| Type label e1 (EC79) <sup>12)</sup>   |  | HC |
| Zener barrier ATEX/IECEX 28V/93mA; R ≈ 300Ω; Ordering no ZEN28VDC   |  |    |
| Damping elements and snubber see data sheet H72258  |  |    |

<sup>1)</sup> Extended overpressure as well as customized pressure ranges upon request

<sup>3)</sup> For pressure ranges ≤ 600 bar

<sup>4)</sup> For pressure ranges > 600 bar

<sup>5)</sup> For pressure ranges < 40 bar upon request

<sup>6)</sup> Other cable lengths upon request

<sup>7)</sup> Pressure ranges 0 ... 1 to 0 ... 1000 bar, max. ambient and media temperature +85°C

<sup>8)</sup> Upon request

<sup>9)</sup> With sensors 33 and 35: Overpressure 1300 bar/19000 psi, Burst pressure 2600 bar/38000 psi

<sup>10)</sup> Cable length max. 20 m

<sup>11)</sup> Without ship approval DNV-GL

<sup>12)</sup> Only for process connections 17 (max. 350 bar) and 30

<sup>13)</sup> Only for pressure connections 17 and 21

### Standard products (extra short lead time)

| Product No. | Type Code                          | Pressure range [bar] | Over pressure max. [bar] | Supply [VDC] | Accuracy @ 25°C typ. [%] |
|-------------|------------------------------------|----------------------|--------------------------|--------------|--------------------------|
| EXNT0.4A    | 8292 69 2617 05 0000 0000 19 46 92 | 0 ... 0.4            | 1.2                      | 10 ... 30    | ± 0.5                    |
| EXNT0.6A    | 8292 70 2617 05 0000 0000 19 46 92 | 0 ... 0.6            | 1.5                      | 10 ... 30    | ± 0.5                    |
| EXNT1.0A    | 8292 71 2617 05 0000 0000 19 46 92 | 0 ... 1              | 2                        | 10 ... 30    | ± 0.5                    |
| EXNT2.5A    | 8292 75 2517 05 0000 0000 19 46 92 | 0 ... 2.5            | 5                        | 10 ... 30    | ± 0.5                    |
| EXNT4.0A    | 8292 76 2517 05 0000 0000 19 46 92 | 0 ... 4              | 8                        | 10 ... 30    | ± 0.5                    |
| EXNT6.0A    | 8292 77 2517 05 0000 0000 19 46 92 | 0 ... 6              | 12                       | 10 ... 30    | ± 0.5                    |
| EXNT10.0A   | 8292 78 2517 05 0000 0000 19 46 92 | 0 ... 10             | 20                       | 10 ... 30    | ± 0.5                    |
| EXNT16.0A   | 8292 79 2517 05 0000 0000 19 46 92 | 0 ... 16             | 32                       | 10 ... 30    | ± 0.5                    |
| EXNT25.0A   | 8292 80 2517 05 0000 0000 19 46 92 | 0 ... 25             | 50                       | 10 ... 30    | ± 0.5                    |
| EXNT40.0A   | 8292 81 2517 05 0000 0000 19 46 92 | 0 ... 40             | 80                       | 10 ... 30    | ± 0.5                    |
| EXNT100.0A  | 8292 83 2517 05 0000 0000 19 46 92 | 0 ... 100            | 200                      | 10 ... 30    | ± 0.5                    |
| EXNT250.0A  | 8292 74 2517 05 0000 0000 19 46 92 | 0 ... 250            | 500                      | 10 ... 30    | ± 0.5                    |

| Specifications                  |                                    |  |
|---------------------------------|------------------------------------|--|
| <b>Electrical data</b>          | Output / supply voltage            | 4 ... 20 mA; 24 (10 ... 30) VDC  |
|                                 | Rise time                          | Typ. 1 ms / 10 ... 90 % nominal pressure   |
|                                 | Power-on delay time                | Max. 1.5 s   |
| <b>Environmental conditions</b> | Media temperature                  | Max. -40°C ... +120°C<br>(see electrical connection)   |
|                                 | Ambient temperature                | Max. -40°C ... +120°C<br>(see electrical connection)   |
|                                 | Protection <sup>1)</sup>           | Min. IP65<br>Electrical connection cable: IP67<br>Electrical connection 02: IP67                           |
|                                 | Humidity                           | Max. 95 % relative   |
|                                 | Vibration                          | 10 g (50...2000 Hz)  |
|                                 | Shock                              | 50 g / 3 ms  |
| <b>EMC protection</b>           | Emission                           | IEC 61000-6-4  |
|                                 | Immunity                           | IEC 61000-6-2  |
| <b>Mechanical data</b>          | Sensor (wetted parts)              | 1.4542 (AISI630), optional hydrogen-compatible steel   |
|                                 | Pressure connection (wetted parts) | Pressure ranges ≤ 16 bar: 1.4542<br>Pressure ranges > 16 bar: 1.4404<br>Optional hydrogen-compatible steel |
|                                 | Housing                            | 1.4301 (AISI304)   |
|                                 | Sealing                            | FKM/EPDM   |
|                                 | Male electrical connector          | See ordering information   |
|                                 | Weight                             | ~ 165 g  |
|                                 | Mounting torque                    | 25 Nm<br>Pressure connection 29: 30 Nm   |

<sup>1)</sup> See electrical connection

## EC79/2009 Certificate

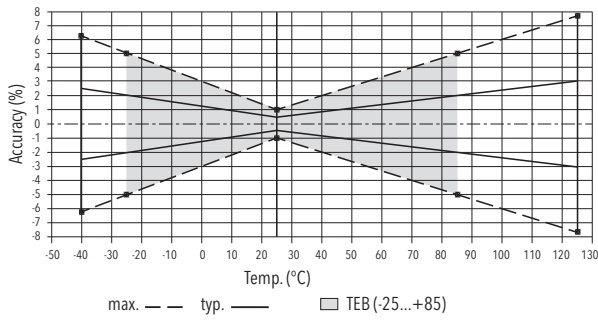
|                                      |  |
|--------------------------------------|--|
| Nominal working pressure (NWP) @15°C | 0.08 ... 70 MPa  |
| Maximum allowable working pressure   | 0.1 ... 100 MPa  |
| Classification                       | Class 0, Class 1 und Class 2*                          |
| Pressure codes                       | 71 ... 88  |
| Process connection                   | Code 17: Up to NWP 35 MPa<br>Code 30: Up to NWP 70 MPa |
| Seal                                 | Codes 61 and 63  |

\* The transmitters of class 0 were tested, Because the most highly loaded case was tested the results can be applied to the whole product family with pressure ranges from 0.8bar to 700bar.

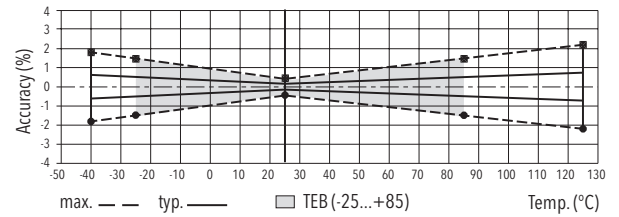
## Accuracy

|   |               | Class 0.5 %<br>Ordering No. 25/35<br>(> 1 bar) | Class 0.3 %<br>Ordering No. 23/33<br>(> 1 bar) | Class 0.5 %<br>Ordering No. 26<br>(≤ 1bar)                      |
|---|---------------|--|--|---|
| TEB @ -25 ... +85°C   | [% FS typ.]   | ± 2.0  | ± 0.5  | ± 1.0   |
| Accuracy @ +25°C  | [% FS typ.]   | ± 0.5  | ± 0.3  | ± 0.5   |
| NLH @ +25°C (BSL)   | [% FS typ.]   | ± 0.2  | ± 0.1  | ± 0.1   |
| TC zero point and span  | [% FS/K typ.] | ± 0.03   | ± 0.005  | ± 0.01  |
| Long term stability 1 year @ +25°C  | [% FS typ.]   | ± 0.2  | ± 0.2  | ± 0.2   |
| Mounting dependency with 180° rotation<br>(Vibration and shock: multiply this value with number of g) | [% FS typ.]   | -  | -  | 0 ... 1 bar: 0.05<br>0 ... 0.6 bar: 0.09<br>0 ... 0.4 bar: 0.13 |

**Class 0.5 %**



**Class 0.3 %**



**Electrical connection**

|               |                                  | Protection / electrical connection |                                      |                                       |                             |                              |                              |   |
|---------------|----------------------------------|------------------------------------|--------------------------------------|---------------------------------------|-----------------------------|------------------------------|------------------------------|---|
|               |                                  | IP65*)                             | IP67                                 | IP67                                  | IP65*)                      | IP67*)                       | IP65*)                       |   |
|               |                                  | Industrial standard EN175301-803A  | Cable **) (4 x 0.5 mm <sup>2</sup> ) | Cable **) (2 x 0.75 mm <sup>2</sup> ) | Binder 723                  | MIL-C 26482                  | M12x1 5-pole                 |   |
|               |                                  | <b>05</b>                          | <b>78</b><br>Shield                  | <b>80</b><br>Shield                   | <b>14</b>                   | <b>02</b>                    | <b>35</b>                    |   |
|               |                                  |                                    |                                      |                                       |                             |                              |                              |   |
| Output signal |                                  | Standard 2                         | <b>92</b> 1                          | brown                                 | 1 (black)                   | 3                            | A                            | 4 |
|               |                                  | 1                                  | 2                                    | black                                 | 2 (black)                   | 1                            | C                            | 1 |
|               |                                  |                                    |                                      | yellow / green                        | -                           | 5                            | F                            | 5 |
|               |                                  |                                    |                                      | (blue = not connected)                |                             |                              |                              |   |
| T-Range       | Ambient and media temperature T4 | -40 ... +120°C <sup>1)</sup>       | -40 ... +120°C <sup>1)</sup>         | -40 ... +80°C                         | -30 ... +95°C <sup>1)</sup> | -40 ... +120°C <sup>1)</sup> | -40 ... +120°C <sup>1)</sup> |   |
|               | Ambient and media temperature T6 | -40 ... +65°C                      | -40 ... +65°C                        | -40 ... +65°C                         | -30 ... +65°C               | -40 ... +65°C                | -40 ... +65°C                |   |
| For Ex zones  |                                  | 1, 2<br>20, 21, 22                 |                                      | 0, 1, 2<br>20, 21, 22                 |                             | 0, 1, 2<br>20, 21, 22        |                              |   |

\* **Attention!** Additional measure against static charges are required for Zone 0 to 20 for these cables (laid with earthed metal braid, metal hose or metal pipe).

\*) Provided female connector is mounted according to instructions

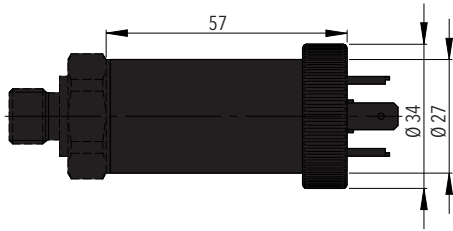
\*\*) Ventilation via cable end

\*\*) Only cable versions or female electrical plug with shield connection

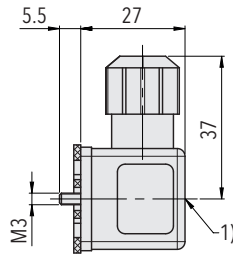
<sup>1)</sup> With sensors 33 and 35: max. +85°C

| Marking                          |  |
|----------------------------------|--|
| For Ex zones                     | Marking  |
| 0, 1, 2,<br>20, 21, 22<br>M1, M2 | <br>II 1G Ex ia IIC T4/T6 Ga<br>II 1D Ex ia IIIC T <sub>200</sub> 160°C Da<br>I M1 Ex ia I Ma  |
| 1, 2<br>20, 21, 22<br>M2         | <br>II 2 G Ex ia IIC T4/T6 Gb (version with plastic type connector)<br>II 1D Ex ia IIIC T <sub>200</sub> 160°C Da<br>I M1 Ex ia I Ma |

Dimensions

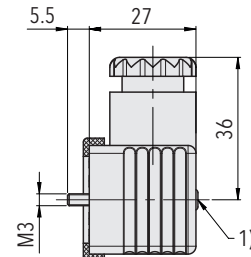


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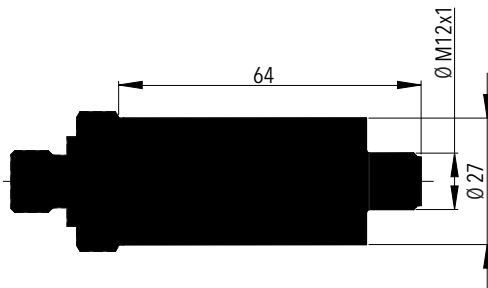
1) Tightening torque 50...60 Ncm

8292.XX.XXXX.XX.XX.46/56

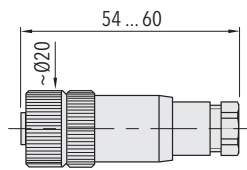


1) Tightening torque 50...60 Ncm

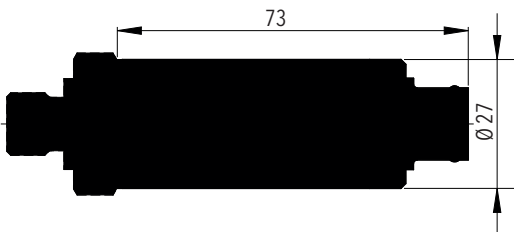
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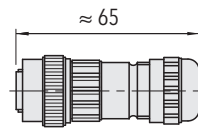
8292.XX.XXXX.35.XX.XX



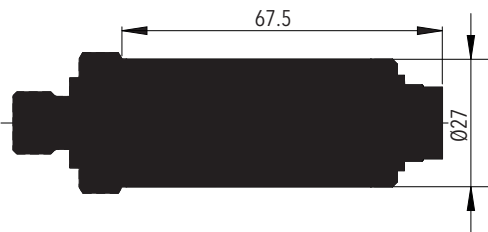
8292.XX.XXXX.XX.XX.33/35



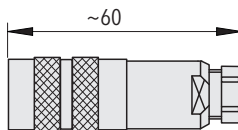
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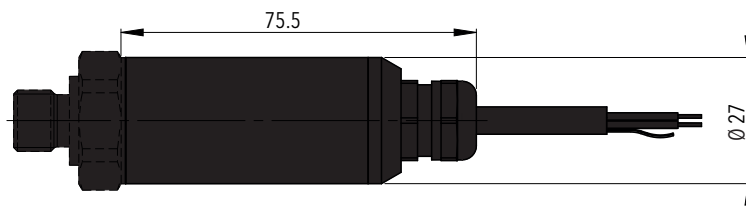
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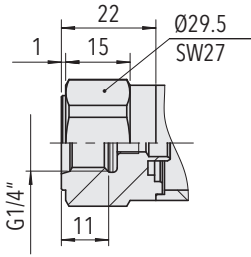


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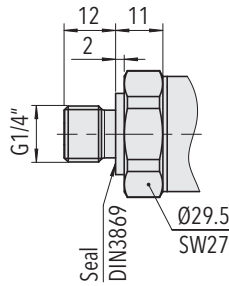


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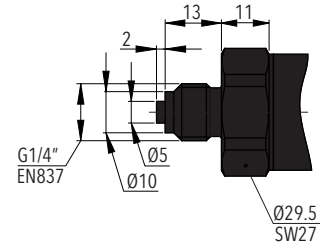
Dimensions



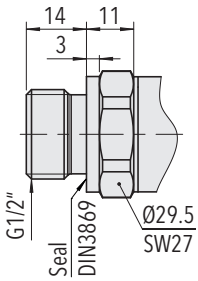
**8292.XX.XX10.XX.XX.XX**  
(≤ 600 bar)



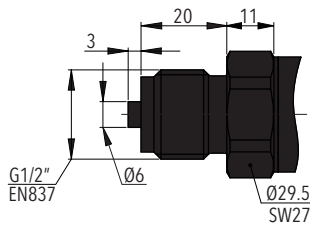
**8292.XX.XX17.XX.XX.XX**  
(≤ 600 bar)



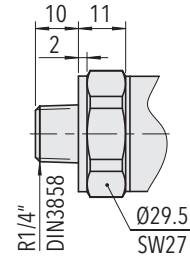
**8292.XX.XX53.XX.XX.XX**



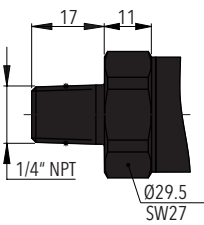
**8292.XX.XX21.XX.XX.XX**  
(≤ 600 bar)



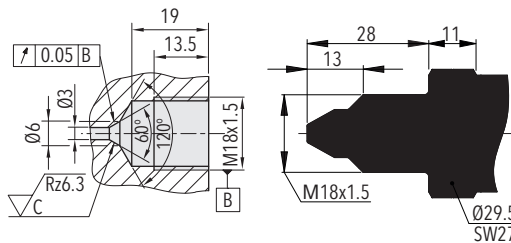
**8292.XX.XX11.XX.XX.XX**  
(≤ 600 bar)



**8292.XX.XX19.XX.XX.XX**  
(≤ 600 bar)



**8292.XX.XX30.XX.XX.XX**  
(≤ 1000 bar)



**8292.XX.XX29.XX.XX.XX**  
(> 600 bar)