



FICHA TÉCNICA DE PRODUTO

PRODUCT DATASHEET

HMI – Automação e Instrumentação, Lda.

Rua dos 5 Caminhos, nº 570
4780-382 Santo Tirso
PORTUGAL

Tel. +351 252 850 501
Fax. +351 300 013 487

Web: www.hmi.pt

Email: hmi@hmi.pt

Model 261GR for gauge pressure Model 261AR for absolute pressure

2600T series pressure transmitters

Engineered solutions for all applications

Measurement made easy



Featuring remote seal with capillary tube

Base accuracy

- $\pm 0.1\%$

Span limits

- 6 ... 60000 kPa; 24 in H₂O up to 8700 psi
- 6 ... 3000 kPa abs; 45 mm Hg up to 1450 psia

Proven sensor technology together with state-of-the-art digital technology

- Large turn down ratio of up to 20:1

Stainless steel housing

- Optimized for use in harsh ambient conditions
- Extremely robust

Flexible configuration options

- Local configuration via setup button for upper and lower range values
- Local configuration via buttons on LCD indicator
- Via handheld terminal or PC user interface

Large selection of versions, options, filling fluids, and parts that make contact with the medium

- Enables complete flexibility and therefore maximum cost effectiveness

Adherence to Pressure Equipment Directive (PED / SEP)

Model 261GR for gauge pressure Model 261AR for absolute pressure

General description

This data sheet describes transmitters that are equipped with a remote seal connected to the transmitter sensor via a capillary tube.

IMPORTANT (NOTE)

All data and detailed information relating to the remote seal can be obtained from remote seal data sheet SS/S261-EN.

Functional specification

Measuring range limits and span limits

| Sensor code | Measuring range upper limit (URL) | Measuring range lower limit (LRL) Model 261GS | Overload limits Measuring equipment | Minimum measuring span | | | | |
|-------------|---|--|--|---|--|--|---|--|
| | | | | Flush diaphragm | | | With tube | |
| | | | | DN 25 / 1 in | DN 50 / 2 in | DN 80 / 3 in | DN 50 / 2 in | DN 80 / 3 in |
| | | | | max. 250 bar 25 MPa 3625 psi | max. 100 bar 10 MPa 1450 psi | max. 100 bar 10 MPa 1450 psi | max. 100 bar 10 MPa 1450 psi | max. 100 bar 10 MPa 1450 psi |
| | | | | Max. capillary tube length = 6 m | Max. capillary tube length = 16 m | Max. capillary tube length = 16 m | Max. capillary tube length = 16 m | Max. capillary tube length = 16 m |
| C | 6 kPa 60 mbar 24 inH ₂ O | -6 kPa -60 mbar 24 inH ₂ O | 1 MPa 10 bar 145 psi | - | - | 6 MPa 60 mbar 24 in H ₂ O | - | 6 MPa 60 mbar 24 in H ₂ O |
| F | 40 kPa 400 mbar 160 inH ₂ O | -40 kPa -400 mbar -160 inH ₂ O | 1 MPa 10 bar 145 psi | 16 kPa 160 mbar 64 in H ₂ O | 10 kPa 100 mbar 40 in H ₂ O | 6 kPa 60 mbar 24 in H ₂ O | 16 kPa 160 mbar 64 in H ₂ O | 6 kPa 60 mbar 24 in H ₂ O |
| L | 250 kPa 2500 mbar 1000 inH ₂ O | 0 abs | 500 kPa 5 bar 72,5 psi | 16 kPa 160 mbar 64 in H ₂ O | 12,5 kPa 125 mbar 50 in H ₂ O | 12,5 kPa 125 mbar 50 in H ₂ O | 16 kPa 160 mbar 64 in H ₂ O | 12,5 kPa 125 mbar 50 in H ₂ O |
| D | 1000 kPa 10 bar 145 psi | 0 abs | 2 MPa 20 bar 290 psi | 50 kPa 500 mbar 200 in H ₂ O | 50 kPa 500 mbar 200 in H ₂ O | 50 kPa 500 mbar 200 in H ₂ O | 50 kPa 500 mbar 200 in H ₂ O | 50 kPa 500 mbar 200 in H ₂ O |
| U | 3000 kPa 30 bar 435 psi | 0 abs | 6 MPa 60 bar 870 psi | 150 kPa 1,5 bar 21,8 psi | 150 kPa 1,5 bar 21,8 psi | 150 kPa 1,5 bar 21,8 psi | 150 kPa 1,5 bar 21,8 psi | 150 kPa 1,5 bar 21,8 psi |
| R | 10 MPa 100 bar 1450 psi | 0 abs | 20 MPa 200 bar 2900 psi | 500 kPa 5 bar 72,5 psi | 500 kPa 5 bar 72,5 psi | 500 kPa 5 bar 72,5 psi | 500 kPa 5 bar 72,5 psi | 500 kPa 5 bar 72,5 psi |
| V | 60 MPa 600 bar 8700 psi | 0 abs | 90 MPa 900 bar 13050 psi | 3 MPa 30 bar 435 psi | 3 MPa 30 bar 435 psi | 3 MPa 30 bar 435 psi | 3 MPa 30 bar 435 psi | 3 MPa 30 bar 435 psi |

IMPORTANT (NOTE)

The measuring range lower limit (LRL) for model 261AR sensor codes C, F, L, D, and U is absolute 0.

Measuring range limits and span limits

| Sensor code | Measuring range upper limit (URL) | Measuring range lower limit (LRL) Model 261GS | Overload limits Measuring equipment | Minimum measuring span | | | |
|----------------------------------|---|--|--|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| | | | | In-line diaphragm seal | | | |
| | | | | DN 25 / 1 in | DN 40 | DN 50 / 2 in | DN 80 / 3 in |
| | | | | max. 100 bar 10 MPa 1450 psi | max. 100 bar 10 MPa 1450 psi | max. 100 bar 10 MPa 1450 psi | max. 100 bar 10 MPa 1450 psi |
| Max. capillary tube length = 4 m | Max. capillary tube length = 6 m | Max. capillary tube length = 8 m | Max. capillary tube length = 16 m | | | | |
| C | 6 kPa 60 mbar 24 inH ₂ O | -6 kPa -60 mbar 24 inH ₂ O | 1 MPa 10 bar 145 psi | - | - | - | - |
| F | 40 kPa 400 mbar 160 inH ₂ O | -40 kPa -400 mbar -160 inH ₂ O | 1 MPa 10 bar 145 psi | - | - | - | - |
| L | 250 kPa 2500 mbar 1000 inH ₂ O | 0 abs | 500 kPa 5 bar 72,5 psi | - | - | - | - |
| D | 1 MPa 10 bar 145 psi | 0 abs | 2 MPa 20 bar 290 psi | 0,4 kPa 4 mbar 58 psi | 250 kPa 2,5 mbar 36 psi | 250 kPa 2,5 mbar 36 psi | 250 kPa 2,5 mbar 36 psi |
| U | 3 MPa 30 bar 435 psi | 0 abs | 6 MPa 60 bar 870 psi | 0,4 kPa 4 mbar 58 psi | 250 kPa 2,5 bar 36 psi | 250 kPa 2,5 bar 36 psi | 250 kPa 2,5 bar 36 psi |
| R | 10 MPa 100 bar 1450 psi | 0 abs | 20 MPa 200 bar 2900 psi | 500 kPa 5 bar 72,5 psi | 500 kPa 5 bar 72,5 psi | 500 kPa 5 bar 72,5 psi | 500 kPa 5 bar 72,5 psi |
| V | 60 MPa 600 bar 8700 psi | 0 abs | 90 MPa 900 bar 13050 psi | 3 MPa 30 bar 435 psi | 3 MPa 30 bar 435 psi | 3 MPa 30 bar 435 psi | 3 MPa 30 bar 435 psi |

Span limits

Maximum span = measuring range upper limit (URL)

To optimize performance characteristics, it is recommended that you select the transmitter sensor code with the lowest turn down ratio.

TURNDOWN = Upper range limit/set span

Zero suppression and elevation

The zero position and span can be set to any value within the measuring range limits listed in the table if:

- Set span ≥ minimum span

Damping

Configurable time constant between 0 and 60 s.

This is in addition to the sensor response time, and can be adjusted via the optional LCD indicator, handheld terminal, or PC user interface.

Warm-up time

Ready for operation as per specifications in less than 10 s with minimum damping.

Insulation resistance

>100 MΩ at 500 V DC (between terminals and ground).

Model 261GR for gauge pressure

Model 261AR for absolute pressure

Operating limits

Pressure limits

The maximum permissible pressure depends on the permissible sensor overload (refer to table "Measuring range limits and span limits") and the permissible working pressure for the process connection (according to the ordering information).

The table below specifies the minimum permissible pressure, as well as the process temperature depending on the remote seal filling fluid.

| Filling fluids (applications) | ID | Density at 20 °C in kg / m ³ | Thermal expansion (x 10 ⁻⁴ / K) | Process temperature | Pressure in kPa abs | | | | | |
|---|------|---|--|------------------------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | | | | | 20 °C (68 °F) | 100 °C (212 °F) | 150 °C (302 °F) | 200 °C (392 °F) | 250 °C (482 °F) | 375 °C (707 °F) |
| Silicone oil | IL | 935 | 10,8 | -30 ... 250 °C (-22 ... 482 °F) | > 0,5 | > 0,5 | > 1,5 | > 11 | > 100 | - |
| Fluorocarbon | G5 | 1830 | 10,9 | -30 ... 150 °C (-22 ... 302 °F) | > 0,3 | > 3,5 | > 32,5 | - | - | - |
| High temperature oil | SH | 1070 | 7,7 | -10 ... 375 °C (-14 ... 707 °F) | > 0,07 | > 0,07 | > 0,07 | > 0,07 | > 1,6 | > 100 |
| White oil (FDA) | WB | 849 | 7,9 | -6 ... 200 °C (-21 ... 392 °F) | > 50 | > 100 | > 100 | > 100 | > 100 | - |
| Silicone oil for vacuum-tight design | IL-V | 935 | 10,8 | -30 ... 250 °C (-22 ... 482 °F) | > 0,07 | > 0,07 | > 0,5 | > 4,5 | > 38,5 | - |
| White oil (FDA) for vacuum-proof design | WB-V | 849 | 7,9 | -6 ... 200 °C (-21 ... 392 °F) | > 0,5 | > 2,5 | > 5 | > 100 | - | - |

Overpressure limits (without damage to the transmitter)

The transmitter may be exposed to a process pressure level of up to the overload limit of the sensor, or up to the maximum working pressure of the remote seal, without being damaged. This is dependent on which value is lower.

Temperature limits °C (°F)

Environment

| Model 261GR, 261AR | Ambient temperature limits |
|-----------------------------|--------------------------------|
| Operating temperature range | -40 ... 85 °C (-40 ... 185 °F) |
| White oil filling | -6 ... 85 °C (21 ... 185 °F) |
| LCD display | -20 ... 70 °C (-4 ... 158 °F) |

IMPORTANT (NOTE)

For applications in potentially explosive atmospheres, the temperature range specified on the relevant certificate/approval must be observed.

Storage

| Model 261GR, 261AR | Storage temperature range |
|---------------------------|--------------------------------|
| Storage temperature range | -50 ... 85 °C (-58 ... 185 °F) |
| LCD display | -40 ... 85 °C (-40 ... 185 °F) |
| White oil filling | -6 ... 85 °C (21 ... 185 °F) |

| Model 261GR, 261AR | Humidity during storage |
|--------------------|-------------------------|
| Relative humidity | Up to 75 % |

Electromagnetic compatibility (EMC)

The devices conform to the requirements and tests for EMC Directive 2004/108/EC, as well as EN 61000-6-3 concerning emitted interference and EN 61000-6-1, EN 61000-6-2 concerning interference immunity. The devices fulfill NAMUR recommendations.

Low Voltage Directive

The devices meet the requirements of Directive 2006/95/EC.

Pressure Equipment Directive (PED)

The devices meet the requirements of Directive 97/23/EC, Category III, module H.

Humidity

Relative humidity: Up to 100 %
Condensation, icing: Permissible

Vibration resistance

Acceleration up to 2 g at frequencies of up to 1,000 Hz (according to IEC 60068-2-6).

Shock resistance

Acceleration: 50 g
Duration: 11 ms
(according to 60068-2-27)

Humid and dusty atmospheres (degree of protection)

The transmitter is dust and sand-tight, and is protected against immersion effects as defined by the following standards:

- IEC EN60529 (1989) with IP 67 (with IP 68, IP 69K on request)
- NEMA 4X
- JIS C0920

IP65 degree of protection with plug connection

Model 261GR for gauge pressure Model 261AR for absolute pressure

ATEX transmitter with type of protection "intrinsic safety Ex ia/ib" in accordance with Directive 94/9/EC

| Transmitter with 4 ... 20 mA output signal and HART communication | |
|---|--|
| Certificate no. | PTB 05 ATEX 2032 |
| Labeling | II 1/2 G Ex ia IIC T4 ... T6 II 2 G Ex ib IIC T4 ... T6 |

Permissible ambient temperature range according to temperature class:

| Ambient temperature | Temperature class |
|--------------------------------|-------------------|
| -40 ... 85 °C (-40 ... 185 °F) | T1 ... T4 |
| -40 ... 71 °C (-40 ... 159 °F) | T5 |
| -40 ... 56 °C (-40 ... 132 °F) | T6 |

or

| | |
|----------|--|
| Labeling | II 1/2 D IP65 T95 °C Ex ia D II 2 D IP65 T95 °C Ex ib D |
|----------|--|

Permissible ambient temperature range:
-40 ... 85 °C (-40 ... 185 °F)

Supply and signal circuit with "Intrinsically safe Ex ia/ib IIB/IIC" type of protection", with the following maximum values

| | |
|--------------------------------|------------------------|
| | $U_i = 30 \text{ V}$ |
| | $I_i = 130 \text{ mA}$ |
| | $P_i = 0.8 \text{ W}$ |
| Effective internal capacitance | $C_i = 10 \text{ nF}$ |
| Effective internal inductance | $L_i = 0.5 \text{ mH}$ |

IECEx transmitter with the following types of protection: "intrinsic safety ia", "non sparking nA" and "dust ignition protection by enclosure tb"

| Transmitter with 4 ... 20 mA output signal and HART communication | |
|---|--|
| Certificate no. | IECEx ZLM 10.0002 |
| Labeling | Ex ia IIC T6 bzw. T4 Ga/Gb Ex ia IIIC T66°C bzw. T95°C Da/Db Ex nA IIC T6 bzw. T4 Gc Ex tb IIIC T66°C bzw. T95°C Db |

Maximum permissible ambient temperature range according to temperature class

| Ambient temperature | Temperature class | Surface temperature |
|-----------------------------------|-------------------|---------------------|
| -40 ... 85 °C (-40 ... 185 °F) | T4 | 95 °C (203 °F) |
| -40 ... 56 °C (-40 ... 133 °F) | T6 | 66 °C (151 °F) |

Electrical data according to designation Ex ia IIC T6 or T4 Ga/Gb and Ex ia IIIC T66°C or T95°C IP6X Da/Db

Supply and signal circuit with "intrinsic safety" Ex ia or Ex ib type of protection, for connection to power supply units with the following maximum values (terminal signal ±)

| | |
|--------------------------------|------------------------|
| | $U_i = 30 \text{ V}$ |
| | $I_i = 130 \text{ mA}$ |
| | $P_i = 0.8 \text{ W}$ |
| Effective internal capacitance | $C_i = 10 \text{ nF}$ |
| Effective internal inductance | $L_i = 0.5 \text{ mH}$ |

If the transmitter is being integrated into a partition between equipment protection level Ga or Da and a lower protection level, the transmitter must be supplied with power by an Ex ia intrinsically safe circuit.

Electrical data according to designation Ex nA IIC T6 or T4 Gc and Ex tb IIIC T66°C or T95°C IP6X Db

| | |
|--|----------------------------|
| | $I_N \leq 22,5 \text{ mA}$ |
| | $U_N \leq 45 \text{ V}$ |

Factory Mutual (FM)

| Transmitter with 4 ... 20 mA output signal and HART communication | |
|---|---|
| Intrinsic Safety | Class I; II and III; Division 1; Groups A, B, C, D; E, F, G Class I; Zone 0; AEx ia Group IIC T6; T4 |
| Non-incendive | Class I, II, III, Division 2; Groups A, B, C, D, F, G |
| Degree of protection | NEMA type 4X (indoor and outdoor installation) |

Canadian Standards Association (CSA)

| Transmitter with 4 ... 20 mA output signal and HART communication | |
|---|---|
| Intrinsic Safety | Class I; II and III; Division 1; Groups A, B, C, D; E, F, G Class I; Zone 0; Group IIC T6; T4 |
| Non-incendive | Class I, II, III; Division 2; Groups A, B, C, D; F, G |
| Degree of protection | NEMA type 4X (indoor and outdoor installation) |

Permissible ambient temperature range according to temperature class:

| | | | |
|---------------------|---|---------------|---------------|
| | U _i max. = 30 V; I _i max = 130 mA; P _i = 0,8 W; C _i = 10 nF; L _i = 0,5 µH | | |
| Ex ia II CT1 ... T6 | T6 | T5 | T1 ... T4 |
| | -40 ... 56 °C | -40 ... 71 °C | -40 ... 85 °C |

| | |
|----------------------|---|
| Intrinsic safety | Gas and dust, order code X4 |
| Degree of protection | Ex ia II CT1~T6; DIP A20 T _A 95 °C |

NEPSI (China)

| Transmitter with 4 ... 20 mA output signal and HART communication | |
|---|----------------------|
| Intrinsic Safety | (Gas, order code X3) |
| Designation | Ex ia II CT1~CT6 |

Permissible ambient temperature range according to temperature class:

| | | | |
|------------------------------|---|---------------|---------------|
| | U _i max. = 30 V; I _i max = 130 mA; P _i = 0,8 W; C _i = 10 nF; L _i = 0,5 µH | | |
| Ex ia II CT1 ... T6 | T6 | T5 | T1 ... T4 |
| | -40 ... 56 °C | -40 ... 71 °C | -40 ... 85 °C |
| DIP A20 T _A 95 °C | -40 ... 85 °C | | |

Model 261GR for gauge pressure Model 261AR for absolute pressure

Electrical data and options

HART digital communication and 4 ... 20 mA output

Power supply

The transmitter operates from 11 ... 42 V DC with no load and is protected against reversed polarity (additional loads enable operation above 42 V DC).

During use in Ex ia zones and in other intrinsically safe applications, the power supply must not exceed 30 V DC.

Ripple

Maximum permissible supply voltage ripple during communication: Complies with HART FSK "Physical Layer" specification rev. 8.1.

Load limitations

Total loop resistance at 4 ... 20 mA and HART:

$$R(k\Omega) = \frac{\text{Voltage supply} - \text{Minimum operating voltage (VDC)}}{23.6 \text{ mA}}$$

A minimum resistance of 250 Ω is required for HART communication.

LCD display (optional)

Digital, graphic LCD display for customized visualization of:

- Gauge pressure/absolute pressure
- Output current in mA or %, or
- HART output (freely assigned start/end values and unit)

Diagnostic messages, alarms, errors, and measuring range upper limit violations are also displayed.

In addition, the LCD display can be used to configure and parameterize the transmitter using 4 buttons.

Output signal

Two-wire, 4 ... 20 mA output.

HART® communication provides digital process variables (% , mA or engineering units) superimposed on the 4 ... 20 mA signal (protocol according to Bell 202 FSK standard).

Output current limits (according to NAMUR standard)

Overload condition

- Lower limit: 3.8 mA (configurable up to 3.5 mA)
- Upper limit: 20.5 mA (configurable up to 23.6 mA)

Alarm current

- Minimum alarm current: 3.5 mA (configurable from 3.5 ... 4 mA)
- Maximum alarm current: 21 mA (configurable from 20 ... 23.6 mA)

Default setting: High Alarm Current

SIL: Functional safety (optional)

According to IEC 61508/61511

Device with certificate of conformity for use in safety-related applications, up to and including SIL 2.

Measuring accuracy

Reference conditions according to IEC 60770

- Ambient temperature TU = constant in the range 18 ... 30 °C (64 ... 86 °F)
- Relative humidity = constant in the range 30 ... 80 %
- Ambient pressure PU = constant in the range 950 ... 1,060 mbar.
- Measuring span based on zero position
- Transmitter with ceramic or Hastelloy separation diaphragm
- Filling fluid: Silicone oil
- Supply voltage: 24 V DC
- Load with HART: 250 Ω
- Transmitter not grounded
- Characteristic setting: linear, 4 ... 20 mA.

Unless otherwise stated, errors are specified as a % of the measuring span value.

The accuracy of the measurement in relation to the upper range limit (URL) is affected by the turndown (TD); i.e., the ratio of the upper range limit (URL) to the set span (URL/span).

FOR OPTIMUM MEASURING ACCURACY, IT IS RECOMMENDED THAT YOU SELECT THE SENSOR CODE WHICH WILL PROVIDE THE LOWEST TD VALUE.

Measuring error for setting cut-off point

| Turndown | Measuring error |
|--------------|-------------------------------|
| 1:1 ... 10:1 | ± 0.1 % |
| >10:1 | ± (0.1 + 0.005 x TD - 0.05) % |

Ambient temperature

Thermal change in ambient temperature as regards the zero signal and span (turndown up to 6:1), in relation to the set span

| Temperature range | Maximum effect on zero signal and span |
|--------------------------------|--|
| -10 ... 60 °C (14 ... 140 °F) | All measuring ranges ± (0.2 % x TD + 0.2 %) |
| -40 ... -10 °C (-40 ... 14 °F) | All measuring ranges |
| 60 ... 85 °C (140 ... 185 °F) | ±((0.1 % / 10 K) x TD + (0.1 / 10K)) |

Temperature coefficient (T_k)

Effect of the ambient temperature per 10 K (but limited to the maximum effect of the temperature change, see previous information). The information refers to the set measuring span.

| Temperature range | Effect on zero signal and span |
|-------------------------------|--|
| -10 ... 60 °C (14 ... 140 °F) | Sensor code C, F: ± (0.15 % x TD + 0.15 %) |
| | Sensor code L, D, U, R, V: ± (0.05 % x TD + 0.05 %) |

Temperature limit for white oil; refer to "Operating limits"

IMPORTANT (NOTE)

Additional temperature effects that are dependent on the type and size of the process connection are provided in the dimension drawings for the remote seal.

Power supply

Within the specified limits for the voltage / load, the total influence is less than 0.001 % of the upper measuring range limit per volt.

Load

Within the specified load / voltage limits, the total influence is negligible.

Electromagnetic fields

Total influence is less than 0.3 % of measuring span from 80 ... 1,000 MHz and for field strengths up to 10 V/m when tested with unshielded conduit, with or without meter.

Mounting position

The transmitter can be installed in any position.

Model 261GR for gauge pressure Model 261AR for absolute pressure

Technical specification

(Please refer to the order information to check the availability of different versions of the relevant model)

Materials

Process separation diaphragms¹

Hastelloy C276, Hastelloy C276 gold plated,
Stainless steel (1.4435 / 316L)

Process connection¹

Stainless steel (1.4404 / 316L)

Sensor filling fluid

Silicone oil, inert fill (fluorocarbon), white oil (FDA)

Mounting bracket

Stainless steel

Sensor housing, electronics housing and cover

Stainless steel (1.4404 / 316L)

Filter for atmospheric ventilation

Filter housing: plastic (standard), stainless steel (code EA, AB)
Filter material: polyamide (PA)

Viewing window in cover (LCD display)

Polycarbonate, Makrolon 6557

Cover O-ring

EPDM

Plates

Plastic data plate attached to the electronics housing

Calibration

Standard:

– 0 to upper range limit (URL)

Optional:

– To specified measuring span

Optional extras

Mounting bracket

For vertical and horizontal 60 mm (2 in.) pipes or wall mounting

LCD display

Can be rotated in 90° increments into 4 positions

Additional tag plates

Code I2: For measuring point tag (up to 30 characters) and calibration specifications (up to 30 characters: lower and upper value plus unit), attached to transmitter housing.
Code I1: For customer data (4 lines with 30 characters each), attached to transmitter housing with wire.

Cleaning stage for oxygen applications (O2)

Certificates (test, design, characteristics, material traceability)

Name plate and operating instruction language

Communication plug connectors

Process connections

See order information for remote seals.

¹ Wetted parts of the transmitter.

Electrical connections

M16 x 1.5 tap hole with cable gland (cable diameter approx. 5 ... 10 mm), directly on housing

or

M20 x 1.5 (via adapter) with cable gland (cable diameter approx. 6 ... 11 mm)

or

1/2-14 NPT (via adapter) without cable gland

or

Harting Han plug connector (with mating plug (socket outlet, for wire diameters of 0.75 ... 1 mm² and cable diameters of 5 ... 11 mm))

or

Miniature plug connector (without mating plug (socket outlet))

Terminals

HART version:

Two connections for signal / auxiliary power, for wire cross-sections from 0.5 ... 1.5 mm² (16 AWG)

Grounding (optional)

External ground terminals for wire cross-sections up to 4 mm² (12 AWG).

Weight

(without options)

— Approx. 0.7 kg (1.54 lb)

Packaging

Carton

Configuration

Transmitter with HART communication and 4 ... 20 mA Standard configuration

Transmitters are set to the customer's specified span at the factory. The set range and measuring point number are provided on the name plate. If this data has not been specified, the transmitter will be delivered with the following configuration:

| Parameter | Factory setting |
|--------------------------|-----------------------------------|
| 4 mA | Zero position |
| 20 mA | Measuring range upper limit (URL) |
| Output | Linear |
| Damping | 0.1 s |
| Transmitter failure mode | 21 mA |
| Optional LCD display | 0 ... 100 % |

Any or all of the configurable parameters listed above - including the upper and lower range values - can easily be changed using the optional LCD indicator, a HART handheld communicator, or a PC running the configuration software SMART VISION with DTM for 2600T.

Model 261GR for gauge pressure Model 261AR for absolute pressure

Mounting dimensions

(No design information) — dimensions in mm (inches)
Standard Version

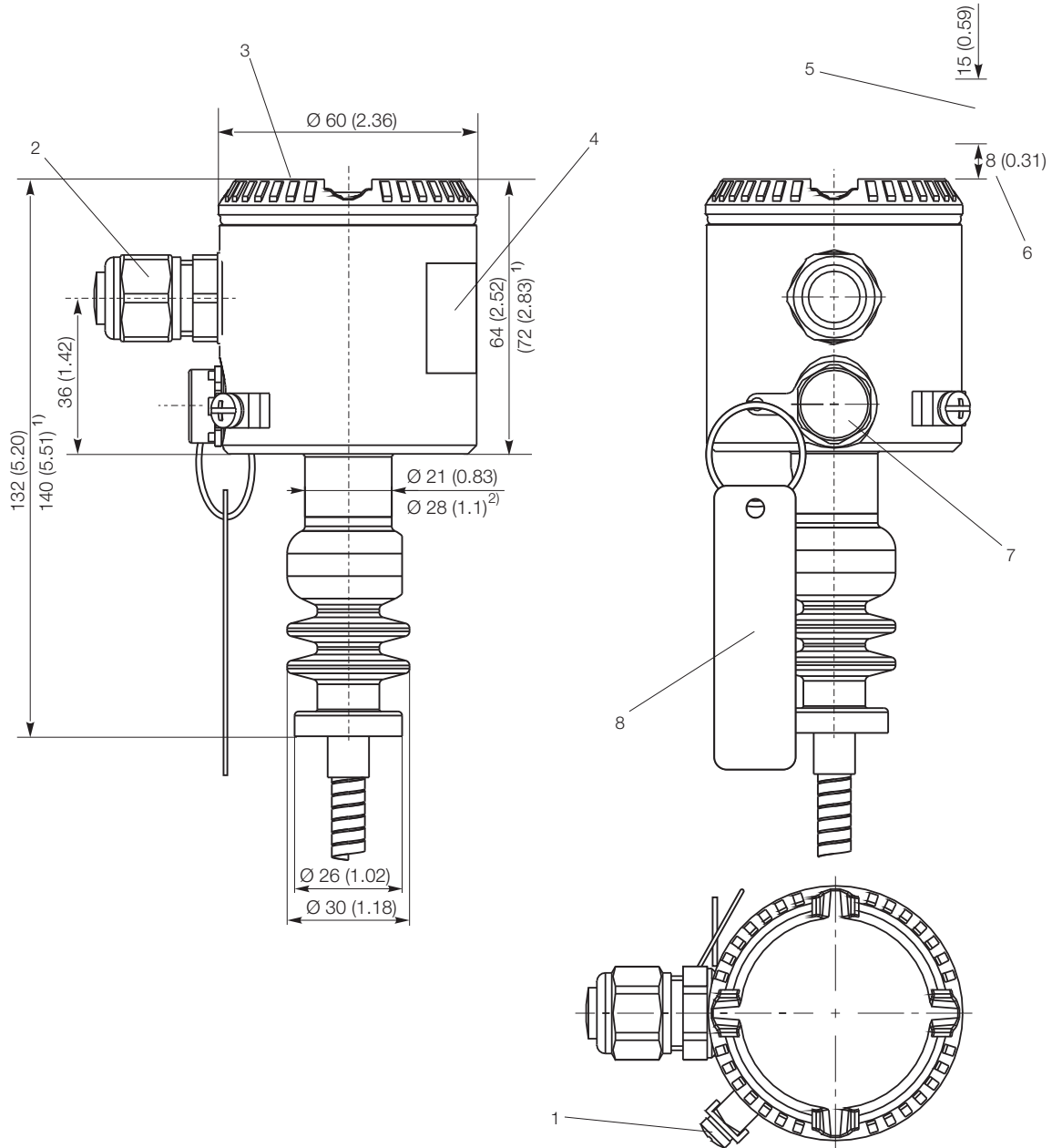


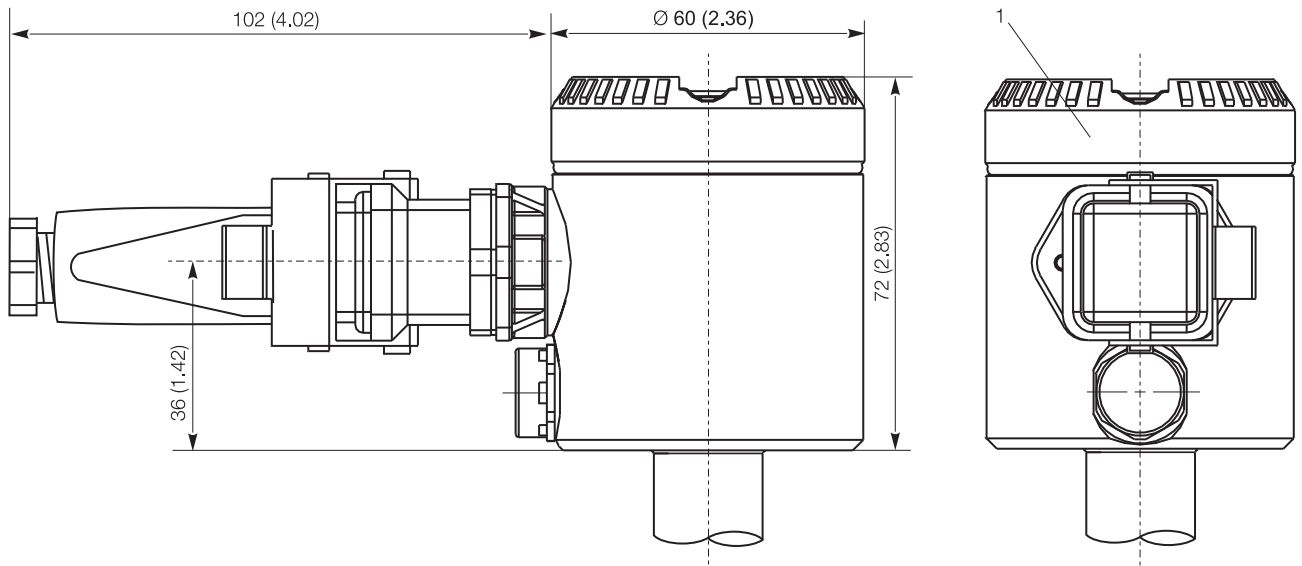
Fig. 1: Dimensions — standard design

1 Grounding / equipotential bonding terminal (optional) | 2 Electrical connection | 3 Housing cover | 4 Name plate |
5 Space for removing cover required | 6 With LCD indicator | 7 Filter for atmospheric compensation | 8 Tag (optional)

1 With LCD indicator

2 Dimensions for sensor code C and F

M10349-01



M10282

Fig. 2: Dimensions in mm (inch) - with options
1 Housing cover for LCD indicator option

Model 261GR for gauge pressure Model 261AR for absolute pressure

Electrical connections

HART version

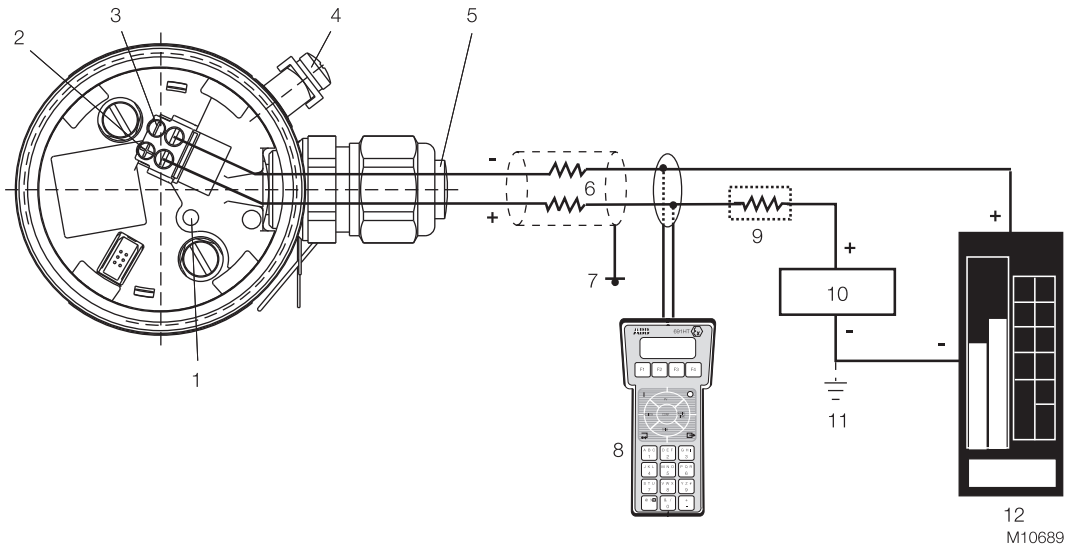


Fig. 3: Electrical connections - HART version

1 Pushbutton for lower/upper range values | 2 + Signal screw terminals for leads with cross-section of 0.5 ... 1.5 mm² |
3 - Signal screw terminals for leads with a cross-section of 0.5 ... 1.5 mm² | 4 Grounding / equipotential bonding terminal (optional) |
5 Cable entry | 6 Line load | 7 Grounding | 8 Handheld terminal | 9 Resistor (min. 250 Ω) | 10 Power supply / power supply unit |
11 Optional ground | 12 Receiver

Optional plug connectors

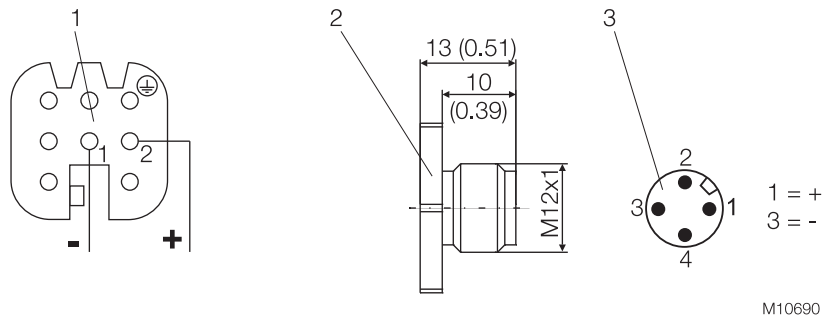


Fig. 4: Dimensions - Plug connector

1 Harting Han 8D (8U) socket insert for mating plug supplied (view of sockets) | 2 Mating plug (socket); not supplied |
3 M12 x 1 miniature plug (pins)

Ordering Information

Basic ordering information model 261GR Pressure Transmitters

Select one character or set of characters from each category and specify complete catalog number.

Refer to additional ordering information and specify one or more codes for each transmitter if additional options are required.

| Base model – 1 st to 5 th characters | | | 261GR | X | X | X | X |
|---|-----------|---------------------------|-----------|---|---|---|---|
| Gauge pressure transmitter, with remote seal with capillary tube, base accuracy 0.1 % | | | | | | | |
| Sensor - Span Limits – 6th characters | | | | | | | |
| 6 kPa | 60 mbar | 24 in. H2O (45 mm Hg) | | C | | | |
| 40 kPa | 400 mbar | 160 in. H2O (300 mm Hg) | | F | | | |
| 250 kPa | 2500 mbar | 1000 in. H2O (1875 mm Hg) | | L | | | |
| 1000 kPa | 10 bar | 145 psi | | D | | | |
| 3000 kPa | 30 bar | 435 psi | | U | | | |
| 10000 kPa | 100 bar | 1450 psi | | R | | | |
| 60000 kPa | 600 bar | 8700 psi | | V | | | |
| Diaphragm Material / Fill Fluid – 7th characters | | | | | | | |
| With remote seal / Silicone oil | | | | | | R | |
| With remote seal / Inert fluid | | | (Note: 1) | | | 2 | |
| With remote seal / White oil (FDA) | | | | | | 6 | |
| Electronic Housing Material / Electrical Connection – 8th characters | | | | | | | |
| AISI 316L SST (1.4404) / M16 x 1.5 (with cable gland made of plastic) | | | (Note: 2) | | | | 2 |
| AISI 316L SST (1.4404) / 1/2-14 NPT (without cable gland) | | | | | | | S |
| AISI 316L SST (1.4404) / M20 x 1.5 (with cable gland made of plastic) | | | (Note: 2) | | | | T |
| AISI 316L SST (1.4404) / Harting Han Connector | | | (Note: 3) | | | | 3 |
| AISI 316L SST (1.4404) / Miniature Connector | | | (Note: 3) | | | | Z |
| Output – 9th characters | | | | | | | |
| HART digital communication and 4 ... 20 mA (Additional options not requested) | | | (Note: 4) | | | | H |
| HART digital communication and 4 ... 20 mA (Additional options to be ordered by additional ordering code) | | | (Note: 5) | | | | 1 |

Model 261GR for gauge pressure

Model 261AR for absolute pressure

Additional ordering information for model 261GR

Add one or more 2-digit code(s) after the basic ordering information to select all required options.

| | XX | XX | XX | XX | XX | XX | XX |
|--|-----------|----|----|----|----|----|----|
| Explosion Protection Certification | | | | | | | |
| Factory Mutual (FM) - Intrinsically Safe | (Note: 6) | EA | | | | | |
| Canadian Standard Association (CSA) - Intrinsically Safe | (Note: 6) | ED | | | | | |
| ATEX Group II Category 1/2 G - Intrinsic Safety EEx ia | | EH | | | | | |
| ATEX Group II Category 1/2 G and 1/2 D - Intrinsic Safety EEx ia (without Cable Gland) | (Note: 6) | EL | | | | | |
| IECEX Ex ia IIC T6 + Ex nA IIC T6, Gas | | ER | | | | | |
| IECEX Ex ia IIC T6 + Ex nA IIC T6 + Ex tb. Gas & Dust | | ES | | | | | |
| GOST Russia - EEx ia | | W1 | | | | | |
| GOST Kazakhstan - EEx ia | | W3 | | | | | |
| GOST Ukraine - EEx ia | | WA | | | | | |
| GOST Belarus - EEx ia | | WG | | | | | |
| NEPSI Ex ia IIC T-T6 Gas | | X3 | | | | | |
| NEPSI Ex ia IIC T-T6 Gas & Dust | | X4 | | | | | |
| Integrated Digital Display (LCD) | | | | | | | |
| With integrated LCD display | | | | | | L1 | |
| Electronic Housing: Ground Terminal | | | | | | | |
| Housing with external grounding terminal | | | | | | | AA |
| Electronic Housing: Cable Gland | | | | | | | |
| Cable Gland M16 x 1.5 / M20 x 1.5 and atmosphere ventilation of metal | | | | | | | AB |
| Mounting Bracket Shape / Material | | | | | | | |
| For pipe mounting / AISI 304 SST (1.4301) | | | | | | | B2 |
| For wall mounting / AISI 304 SST (1.4301) | | | | | | | B4 |
| Applications: Oxygen | | | | | | | |
| Oil- and grease-free, for oxygen applications (O2) | | | | | | | |
| (Pmax = 21 MPa / 210 bar / 3045 psi, Tmax = 60 °C / 140 °F) | (Note: 7) | | | | | | P1 |
| Operating Instruction Language | | | | | | | |
| German | | | | | | | M1 |
| Italian | | | | | | | M2 |
| Spanish | | | | | | | M3 |
| French | | | | | | | M4 |
| English | | | | | | | M5 |
| Swedish | | | | | | | M7 |
| Finnish | | | | | | | M8 |
| Russian | | | | | | | MB |
| Dutch | | | | | | | MD |

| Additional ordering information for model 261GR | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX |
|--|----|----|----|----|----|-----------|----|----|----|----|
| Additional Tag Plate | | | | | | | | | | |
| Stainless steel | I1 | | | | | | | | | |
| Certificates: 3.1 Calibration | | | | | | | | | | |
| Inspection certificate 3.1 acc. EN 10204 of calibration | C1 | | | | | | | | | |
| Certificates: 3.1 Cleanliness Stage | | | | | | | | | | |
| Inspection certificate 3.1 acc. EN 10204 of cleanliness stage | C3 | | | | | | | | | |
| Certificates: 3.1 Helium Leakage Test | | | | | | | | | | |
| Inspection certificate 3.1 acc. EN 10204 of helium leakage test of the sensor module | C4 | | | | | | | | | |
| Certificates: 3.1 Pressure Test | | | | | | | | | | |
| Inspection certificate 3.1 acc. EN 10204 of pressure test | C5 | | | | | | | | | |
| Certificates: 2.1 Instrument Design | | | | | | | | | | |
| Declaration of compliance with the order 2.1 acc. EN 10204 for instrument design | C6 | | | | | | | | | |
| Certificates: SIL2 | | | | | | | | | | |
| SIL2 - Declaration of Conformity | | | | | | | | CL | | |
| Calibration Record | | | | | | | | | | |
| Calibration record | | | | | | | | | CB | |
| Separate calibration record | | | | | | | | | CC | |
| Certificates: MVO Approval | | | | | | | | | | |
| MVO approval | | | | | | (Note: 8) | | | | CR |
| Certificates: GOST | | | | | | | | | | |
| GOST Russia - Without Explosion Protection | | | | | | | | | | WC |
| GOST Kazakhstan - Without Explosion Protection | | | | | | | | | | WD |
| GOST Ukraine - Without Explosion Protection | | | | | | | | | | WE |
| GOST Belarus - Without Explosion Protection | | | | | | | | | | WF |

Model 261GR for gauge pressure

Model 261AR for absolute pressure

| Additional ordering information for model 261GR | | XX | XX | XX | XX |
|---|--|----|----|----|----|
| Material: 2.1 Compliance | | | | | |
| Certificate of compliance with the order 2.1 acc. EN 10204 for process wetted parts | | H1 | | | |
| Material: 3.1 Inspection | | | | | |
| Inspection certificate 3.1 acc. EN 10204 of process wetted parts (Note: 9) | | | H3 | | |
| Material: 2.2 Test Report | | | | | |
| Test report 2.2 acc. EN 10204 of the pressure bearing and process wetted parts | | | | H4 | |
| Connector Type | | | | | |
| Miniature connector M12 x 1 (without mating plug) | | | | | U2 |
| Harting Han 8D (8U) - Straight entry (Note: 10) | | | | | U3 |

- Note 1: Suitable for oxygen applications
 Note 2: With Cable Gland made of Plastic
 Note 3: Select connector with additional ordering code
 Note 4: Additional options not requested / Not available for electrical connection with connector
 Note 5: Additional options to be ordered by additional ordering code
 Note 6: Not available with electrical connection with connector
 Note 7: Only available with inert fill
 Note 8: Only with Fill Fluid White oil
 Note 9: Minor parts with factory certificate acc. EN 10204
 Note 10: Only for electrical connection with Harting Han connector

Standard delivery scope (changes possible with additional ordering code)

- For general-purpose applications (no Ex applications)
- Buna O-ring for G 1/2 process connection, flush diaphragm
- No display, no mounting bracket
- English-language operating instructions; English and German-language labels
- Configuration with kPa and °C units
- No test, inspection, or material certificates

Unless otherwise specified prior to manufacture, the customer shall be responsible for the selection of suitable parts that make contact with the medium and appropriate filling fluids in order to ensure compatibility with the relevant process medium.

Basic ordering information model 261AR Pressure Transmitters

Select one character or set of characters from each category and specify complete catalog number.

Refer to additional ordering information and specify one or more codes for each transmitter if additional options are required.

| Base model – 1 st to 5 th characters | | | 261AR | X | X | X | X |
|---|-----------|---------------------------|-----------|---|---|---|---|
| Absolute pressure transmitter, with remote seal with capillary tube, base accuracy 0.1 % | | | | | | | |
| Sensor - Span Limits – 6th characters | | | | | | | |
| 6 kPa | 60 mbar | 24 in. H2O (45 mm Hg) | | C | | | |
| 40 kPa | 400 mbar | 160 in. H2O (300 mm Hg) | | F | | | |
| 250 kPa | 2500 mbar | 1000 in. H2O (1875 mm Hg) | | L | | | |
| 1000 kPa | 10 bar | 145 psi | | D | | | |
| 3000 kPa | 30 bar | 435 psi | | U | | | |
| 10000 kPa | 100 bar | 1450 psi | | R | | | |
| Diaphragm Material / Fill Fluid – 7th characters | | | | | | | |
| With remote seal / Silicone oil | | | | | | R | |
| With remote seal / Inert fluid | | | (Note: 1) | | | 2 | |
| With remote seal / White oil (FDA) | | | | | | 6 | |
| Electronic Housing Material / Electrical Connection – 8th characters | | | | | | | |
| AISI 316L SST (1.4404) / M16 x 1.5 (with cable gland made of plastic) | | | (Note: 2) | | | 2 | |
| AISI 316L SST (1.4404) / 1/2-14 NPT (without cable gland) | | | | | | S | |
| AISI 316L SST (1.4404) / M20 x 1.5 (with cable gland made of plastic) | | | (Note: 2) | | | T | |
| AISI 316L SST (1.4404) / Harting Han Connector | | | (Note: 3) | | | 3 | |
| AISI 316L SST (1.4404) / Miniature Connector | | | (Note: 3) | | | Z | |
| Output – 9th characters | | | | | | | |
| HART digital communication and 4 ... 20 mA (Additional options not requested) | | | (Note: 4) | | | | H |
| HART digital communication and 4 ... 20 mA (Additional options to be ordered by additional ordering code) | | | (Note: 5) | | | | 1 |

Model 261GR for gauge pressure

Model 261AR for absolute pressure

Additional ordering information for model 261AR

Add one or more 2-digit code(s) after the basic ordering information to select all required options.

| | XX | XX | XX | XX | XX | XX | XX |
|--|--------------|----|----|----|----|----|----|
| Explosion Protection Certification | | | | | | | |
| Factory Mutual (FM) - Intrinsically Safe | (Note: 6) EA | | | | | | |
| Canadian Standard Association (CSA) - Intrinsically Safe | (Note: 6) ED | | | | | | |
| ATEX Group II Category 1/2 G - Intrinsic Safety EEx ia | EH | | | | | | |
| ATEX Group II Category 1/2 G and 1/2 D - Intrinsic Safety EEx ia (without Cable Gland) | (Note: 6) EL | | | | | | |
| IECEX Ex ia IIC T6 + Ex nA IIC T6, Gas | ER | | | | | | |
| IECEX Ex ia IIC T6 + Ex nA IIC T6 + Ex tb. Gas & Dust | ES | | | | | | |
| GOST Russia - EEx ia | W1 | | | | | | |
| GOST Kazakhstan - EEx ia | W3 | | | | | | |
| GOST Ukraine - EEx ia | WA | | | | | | |
| GOST Belarus - EEx ia | WG | | | | | | |
| NEPSI Ex ia IIC T-T6 Gas | X3 | | | | | | |
| NEPSI Ex ia IIC T-T6 Gas & Dust | X4 | | | | | | |
| Integrated Digital Display (LCD) | | | | | | | |
| With integrated LCD display | | L1 | | | | | |
| Electronic Housing: Ground Terminal | | | | | | | |
| Housing with external grounding terminal | | | | | | AA | |
| Electronic Housing: Cable Gland | | | | | | | |
| Cable Gland M16 x 1.5 / M20 x 1.5 and atmosphere ventilation of metal | | | | | | | AB |
| Mounting Bracket Shape / Material | | | | | | | |
| For pipe mounting / AISI 304 SST (1.4301) | | | | | | | B2 |
| For wall mounting / AISI 304 SST (1.4301) | | | | | | | B4 |
| Applications: Oxygen | | | | | | | |
| Oil- and grease-free, for oxygen applications (O ₂) | | | | | | | |
| (P _{max} = 21 MPa / 210 bar / 3045 psi, T _{max} = 60 °C / 140 °F) | (Note: 7) | | | | | | P1 |
| Operating Instruction Language | | | | | | | |
| German | | | | | | | M1 |
| Italian | | | | | | | M2 |
| Spanish | | | | | | | M3 |
| French | | | | | | | M4 |
| English | | | | | | | M5 |
| Swedish | | | | | | | M7 |
| Finnish | | | | | | | M8 |
| Russian | | | | | | | MB |
| Dutch | | | | | | | MD |

| Additional ordering information for model 261AR | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX |
|--|----|----|----|----|-----------|----|----|----|----|----|
| Additional Tag Plate | | | | | | | | | | |
| Stainless steel | I1 | | | | | | | | | |
| Certificates: 3.1 Calibration | | | | | | | | | | |
| Inspection certificate 3.1 acc. EN 10204 of calibration | | C1 | | | | | | | | |
| Certificates: 3.1 Cleanliness Stage | | | | | | | | | | |
| Inspection certificate 3.1 acc. EN 10204 of cleanliness stage | | | C3 | | | | | | | |
| Certificates: 3.1 Helium Leakage Test | | | | | | | | | | |
| Inspection certificate 3.1 acc. EN 10204 of helium leakage test of the sensor module | | | | C4 | | | | | | |
| Certificates: 3.1 Pressure Test | | | | | | | | | | |
| Inspection certificate 3.1 acc. EN 10204 of pressure test | | | | | C5 | | | | | |
| Certificates: 2.1 Instrument Design | | | | | | | | | | |
| Declaration of compliance with the order 2.1 acc. EN 10204 for instrument design | | | | | | C6 | | | | |
| Certificates: SIL2 | | | | | | | | | | |
| SIL2 - Declaration of Conformity | | | | | | | | CL | | |
| Calibration Record | | | | | | | | | | |
| Calibration record | | | | | | | | | CB | |
| Separate calibration record | | | | | | | | | CC | |
| Certificates: MVO Approval | | | | | | | | | | |
| MVO approval | | | | | (Note: 8) | | | | | CR |
| Certificates: GOST | | | | | | | | | | |
| GOST Russia - Without Explosion Protection | | | | | | | | | | WC |
| GOST Kazakhstan - Without Explosion Protection | | | | | | | | | | WD |
| GOST Ukraine - Without Explosion Protection | | | | | | | | | | WE |
| GOST Belarus - Without Explosion Protection | | | | | | | | | | WF |

Model 261GR for gauge pressure

Model 261AR for absolute pressure

| Additional ordering information for model 261AR | | XX | XX | XX | XX |
|---|--|----|----|----|----|
| Material: 2.1 Compliance | | | | | |
| Certificate of compliance with the order 2.1 acc. EN 10204 for process wetted parts | | H1 | | | |
| Material: 3.1 Inspection | | | | | |
| Inspection certificate 3.1 acc. EN 10204 of process wetted parts (Note: 9) | | | H3 | | |
| Material: 2.2 Test Report | | | | | |
| Test report 2.2 acc. EN 10204 of the pressure bearing and process wetted parts | | | | H4 | |
| Connector Type | | | | | |
| Miniature connector M12 x 1 (without mating plug) | | | | | U2 |
| Harting Han 8D (8U) - Straight entry (Note: 10) | | | | | U3 |

- Note 1: Suitable for oxygen applications
 Note 2: With Cable Gland made of Plastic
 Note 3: Select connector with additional ordering code
 Note 4: Additional options not requested / Not available for electrical connection with connector
 Note 5: Additional options to be ordered by additional ordering code
 Note 6: Not available with electrical connection with connector
 Note 7: Only available with inert fill
 Note 8: Only with Fill Fluid White oil
 Note 9: Minor parts with factory certificate acc. EN 10204
 Note 10: Only for electrical connection with Harting Han connector

Standard delivery scope (changes possible with additional ordering code)

- For general-purpose applications (no Ex applications)
- Buna O-ring for G 1/2 process connection, flush diaphragm
- No display, no mounting bracket
- English-language operating instructions; English and German-language labels
- Configuration with kPa and °C units
- No test, inspection, or material certificates

Unless otherwise specified prior to manufacture, the customer shall be responsible for the selection of suitable parts that make contact with the medium and appropriate filling fluids in order to ensure compatibility with the relevant process medium.

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Notes



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HMI – Automação e Instrumentação, Lda.

Rua dos 5 Caminhos, nº 570
4780-382 Santo Tirso
PORTUGAL

Tel. +351 252 850 501
Fax. +351 300 013 487

Web: www.hmi.pt

Email: hmi@hmi.pt

Contact us

ABB Ltd.

Process Automation

Howard Road, St. Neots
Cambridgeshire, PE19 8EU
UK

Tel: +44 (0)1480 475321

Fax: +44 (0)1480 217948

ABB Inc.

Process Automation

125 E. County Line Road
Warminster PA 18974
USA

Tel: +1 215 674 6000

Fax: +1 215 674 7183

ABB Automation Products GmbH

Process Automation

Schillerstr. 72
32425 Minden
Germany

Tel: +49 571 830-0

Fax: +49 571 830-1806

www.abb.com/pressure

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