

Series 2600T Pressure Transmitters 261GR, 261AR

Model 261GR for gauge pressure,
Model 261AR for absolute pressure,
featuring remote seal with capillary tube

- **Base accuracy: ± 0.15 % (± 0.1 % optional)**
- **Span limits**
 - 6 ... 60,000 kPa; 24 in H₂O up to 8,700 psi
 - 6 ... 3,000 kPa abs.; 45 in H₂O up to 435 psi
- **Proven sensor technology together with state-of-the-art digital technology**
 - Large turndown ratio of up to 20:1
- **Stainless steel housing**
 - Optimized for use in extreme conditions
 - Extremely sturdy design
- **Flexible configuration options**
 - Local configuration via setup button for upper and lower range values
 - Local configuration via keys on LCD display
 - Via handheld terminal or PC user interface
- **Large selection of versions, options, filling liquids, and parts in contact with the medium**
 - Enables complete flexibility and, therefore, maximum cost effectiveness
- **Full compliance with Pressure Equipment Directive (PED / SEP)**



HART
COMMUNICATION PROTOCOL

ABB 2600T Series
The solution for demanding
measuring applications

ABB

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1 General description

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



Important

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

2 Functional specifications

Measuring range and span limits

Sensor code	Upper range limit (URL)	Lower range limit (LRL)	Overload limits Measuring equipment	Minimum 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 in H ₂ O	-6 kPa -60 mbar -24 in H ₂ O	1MPa 10 bar 145 psi	-	-	6 kPa 60 mbar 24 in H ₂ O	-	6 kPa 60 mbar 24 in H ₂ O
F	40 kPa 400 mbar 160 in H ₂ O	-40 kPa -400 mbar -160 in H 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 in H ₂ O	0 absolute	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 absolute	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 absolute	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 absolute	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 absolute	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

Measuring range and span limits

Sensor code	Upper range limit (URL)	Lower range limit (LRL)	Overload limits Measuring equipment	Minimum span			
				Inline remote 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 in H ₂ O	-6 kPa -60 mbar -24 in H ₂ O	1 MPa 10 bar 145 psi	-	-	-	-
F	40 kPa 400 mbar 160 in H ₂ O	-40 kPa -400 mbar -160 in H ₂ O	1 MPa 10 bar 145 psi	-	-	-	-
L	250 kPa 2500 mbar 1000 in H ₂ O	0 absolute	500 kPa 5 bar 72.5 psi	-	-	-	-
D	1000 kPa 10 bar 145 psi	0 absolute	2 MPa 20 bar 290 psi	0.4 kPa 4 bar 58 psi	0.25 MPa 2.5 bar 36 psi	0.25 MPa 2.5 bar 36 psi	0.25 MPa 2.5 bar 36 psi
U	3000 kPa 30 bar 435 psi	0 absolute	6 MPa 60 bar 870 psi	0,4 kPa 4 bar 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 absolute	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 absolute	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

i Important

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

Span limits

Maximum span = URL = Upper range limit

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

Turndown = Upper range limit/set span

Zero position suppression and elevation

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

- Set span = minimum span

Damping

Adjustable time constant: 0 ... 60 s

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

Warm-up period

Operation within specifications: 10 sec. with minimum damping

Insulation resistance

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

3 Operating limits

Temperature limits in °C (°F)

	Ambient temperature range
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

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

Storage

	Storage temperature range
Storage temperature	-50 ... 85 °C (-58 ... 185 °F)
LCD display	-40 ... 85 °C (-40 ... 185 °F)
White oil filling	-6 ... 85 °C (21 ... 185 °F)

	Humidity during storage
Relative humidity	Up to 75 %

Pressure limits

The maximum permissible pressure depends on the permissible sensor overload (refer to table "Measuring range 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 liquid.

Filling liquids (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	IC	1055	8.1	-30 ... 250 °C (-22 ... 482 °F)	> 50	> 50	> 50	> 75	> 100	-
Carbon fluoride	L	1860	11.7	-30 ... 150 °C (-22 ... 302 °F)	> 100	> 100	> 100	-	-	-
High temperature oil	SH	1070	7.7	-10 ... 375 °C (14 ... 707 °F)	> 50	> 50	> 50	> 75	> 100	> 100
White oil (FDA)	WB	849	7.9	-6 ... 200 °C (21 ... 392 °F)	> 50	> 100	> 100	> 100	> 100	-
Silicone oil for vacuum-proof design	IC-V	1055	8.1	-30 ... 200 °C (-22 ... 392 °F)	> 0.5	> 2.5	> 3.8	> 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.

4 Environmental limits

Electromagnetic compatibility (EMC)

Conforms to the requirements and tests for EMC Directive 89/336/EC, as well as to EN 61000-6-3 concerning emitted interference and EN 61000-6-2 concerning interference immunity.

Meets NAMUR recommendations.

Low Voltage Directive

Complies with 73/23/EC.

Pressure Equipment Directive (PED)

Complies with 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 up to 1,000 Hz (according to IEC 60068-2-6).

Shock resistance (acc. to IEC 60068-2-27)

Acceleration: 50 g

Duration: 11 ms

Protection type (humid and dusty atmospheres)

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

Protection type with plug connection: IP 65

5 Potentially explosive atmospheres

Transmitter with "Intrinsically safe EEx ia/ib" type of explosion protection in accordance with Directive 94/9/EC (ATEX)

Transmitter with 4 ... 20 mA output signal and HART communication:

Identification (DIN EN 50014):

II 1/2 G EEx ia IIC T4 ... T6

II 2 G EEx ib IIC T4 ... T6

Permissible ambient temperature range depending on 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 identification (DIN EN 50014):

II 1/2 D IP 65 T95 °C Ex ia D

II 2 D IP 65 T95 °C Ex ib D

Permissible ambient temperature range:

-40 ... 85 °C (-40 ... 185 °F)

Supply and signal circuit with "Intrinsically safe EEx ia/ib IIB/IIC" type of explosion 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: $L_i = 0.5 \text{ mH}$

Factory Mutual (FM)

Transmitter with 4 ... 20 mA output signal and HART communication:

Intrinsically safe: 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 and III; Division 2; Groups A, B, C, D, F, G

Protection type: NEMA type 4X (indoor and outdoor installation)

Canadian Standards Association (CSA)

Transmitter with 4 ... 20 mA output signal and HART communication

Intrinsically safe: 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

Protection type: NEMA type 4X (indoor and outdoor installation)

NEPSI (China)

Transmitter with 4 ... 20 mA output signal and HART communication:

Intrinsically safe: (Gas, order code X3)

Identification: Ex ia II CT1~CT6

Permissible ambient temperature range depending on 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

Intrinsically safe: (Gas and dust, order code X4)

Identification: Ex ia II CT1~T6;
DIP A20 T_A 95 °C

Permissible ambient temperature range depending on 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		

6 Electrical data and options

6.1 HART digital communication and 4 ... 20 mA output current

Power supply

The transmitter operates at voltages between 11 and 42 V DC with no load, and is protected against reverse polarity connection (additional load enables operation above 42 V DC).

In the case of the EEx ia version and other intrinsically safe, approved versions, the supply voltage must not exceed 30 V DC.

Ripple

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

Load limitations

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

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



Note

A minimum of 250 Ω resistance 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 in accordance with Bell 202 FSK standard).

Output current limits (according to NAMUR standard)

Overload condition:

- Lower limit: 3.8 mA (can be configured up to 3.5 mA)
- Upper limit: 20.5 mA (can be configured up to 23.6 mA)

Alarm current

Min. alarm current: Can be configured from 3.5 ... 4 mA, default setting: 3.5 mA

Max. alarm current: Can be configured from 20 ... 23.6 mA, default setting: 21 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.

7 Measuring accuracy

Reference conditions acc. to IEC 60770

- Ambient temperature T_U = Constant, in range: 18 ... 30 °C (64 ... 86 °F)
- Relative humidity = Constant, in range: 30 ... 80 %
- Atmospheric pressure P_U = Constant, in range: 950 ... 1,060 mbar
- Span based on zero position
 - Transmitter with ceramic or Hastelloy isolating diaphragm
- Filling liquid: Silicone oil
- Supply voltage: 24 V DC
- Load with HART: 250 Ω
- Transmitter not grounded
- Characteristic setting: Linear, 4 ... 20 mA

Unless otherwise specified, errors are given as a percentage of the 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).

i Important

Select the transmitter sensor with the smallest possible turndown. This optimizes the accuracy of the measurement.

Measuring error (for terminal based conformity)

Percentage of set span, consisting of non-linearity, hysteresis, and non-reproducibility.

Turndown	Measurement error
1:1 to 10:1	± 0.15 %
>10:1	± (0.15 + 0.005 x TD - 0.05) %

Optional

Turndown	Measurement error
1:1 to 10:1	± 0.10 %
>10:1	± (0.10 + 0.005 x TD - 0.05) %

8 Operating influences

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

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 $\pm \left(\frac{0.1\%}{10\text{ K}} \times \text{TD} + \frac{0.1\%}{10\text{ K}} \right)$
60 ... 85 °C (140 ... 185 °F)	

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 span.

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"

i Important

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 effect is less than 0.001 % of the upper range limit per volt.

Load

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

Electromagnetic fields

Total effect: Less than 0.3 % of span between 80 and 1,000 MHz and at field strengths of up to 10 V/m, when tested with unshielded cables, and either with or without a display.

9 Technical specification



Important

Refer to the order information sheets to check the availability of different versions of the relevant model.

Materials

Isolating diaphragms ¹⁾	See the ordering information for remote seals
Process connection ¹⁾	See the ordering information for remote seals
¹⁾ Transmitter parts in contact with the medium	
Remote seal filling liquid	See the ordering information for remote seals
Sensor filling liquid	Silicone oil, inert filling (carbon fluoride), white oil (FDA)
Mounting bracket	Stainless steel
Sensor housing	Stainless steel (1.4404/316L)
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)
Inspection glass for cover LCD display	Polycarbonate, Makrolon 6557
O-ring cover	EPDM
Name plate	Plastic data plate attached to the electronics housing

Calibration

Standard:	0 to upper range limit (URL)
Optional:	To specified span

Optional accessories

Mounting bracket	For vertical and horizontal 60 mm (2") pipes or wall mounting
LCD display	Graphical display, pluggable and rotatable design
Additional tag for indicating measuring points	Tag with wire (both stainless steel) attached to the transmitter, with a maximum of 30 characters including spaces
Cleanliness level for oxygen applications	
Certificates (test, design, characteristics, material traceability)	
Language of operating instructions	

Process connections

See the ordering information for remote seals

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 cross sections 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 of 0.5 ... 1.5 mm² (16 AWG).

Grounding (optional)

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

Installation position

The transmitter can be installed in any position.

Weight (without options)

Approx. 0.7 kg

Wafer remote seal:

- DN 50, PN 16/40 with flush diaphragm: Approx. 3.3 kg
- DN 2", Class 300 with flush diaphragm: Approx. 3.7 kg
- DN 50, PN 16/40 with tube: Approx. 4.0 kg
- DN 2", Class 300 with tube: Approx. 5.4 kg
- DN 80, PN 16/40 with flush diaphragm: Approx. 5.8 kg
- DN 3", Class 150 with flush diaphragm: Approx. 5.3 kg
- DN 80, PN 16/40 with tube: Approx. 7.5 kg
- DN 3", Class 150 with tube: Approx. 7.0 kg

Remote seal with flush diaphragm DN 25/1", miniature remote seal, inline remote seal, and remote seal with quick couplings: See dimension drawings

Packaging

Carton

10 Configuration

10.1 Transmitter with HART communication and 4 ... 20 mA output current

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:

4 mA	Zero position
20 mA	Upper range limit (URL)
Output	Linear
Damping	0.1 sec.
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 limit values - can easily be changed using the optional LCD display, a HART handheld communicator, or a PC running the configuration software SMART VISION with DTM for 2600T.

11 Mounting dimensions (not design data)

11.1 Pressure transmitter

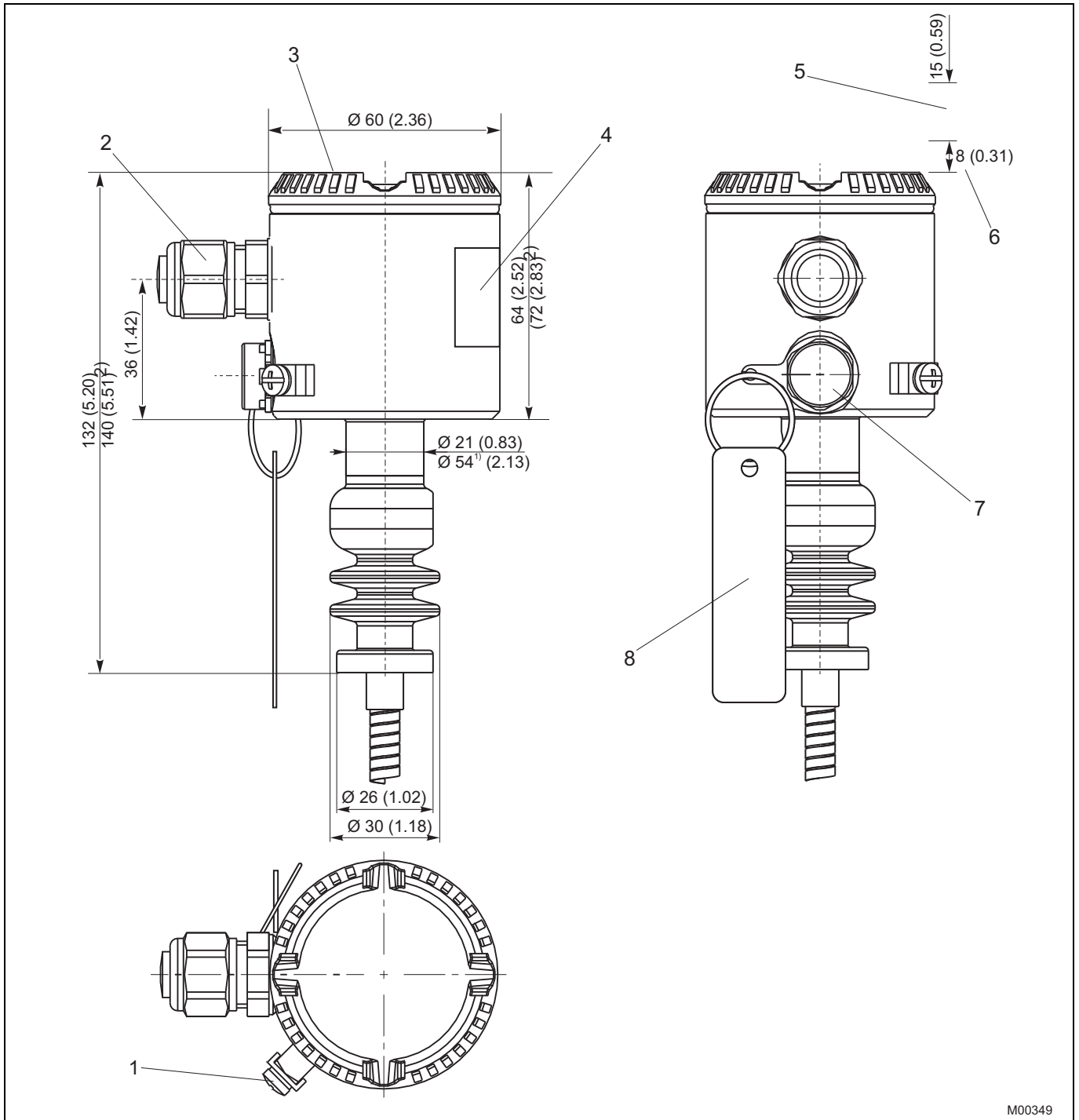


Fig. 1: Dimensions in mm (inches)

- 1 Grounding / equipotential bonding terminal (optional)
- 2 Electrical connection
- 3 Housing cover
- 4 Name plate

- 5 Space for removing the cover required
- 6 With LCD display
- 7 Filter for atmospheric ventilation
- 8 Tag (optional)

1) Dimensions for sensor code C, F

2) With display

11.2 Version with LCD display and Harting Han plug

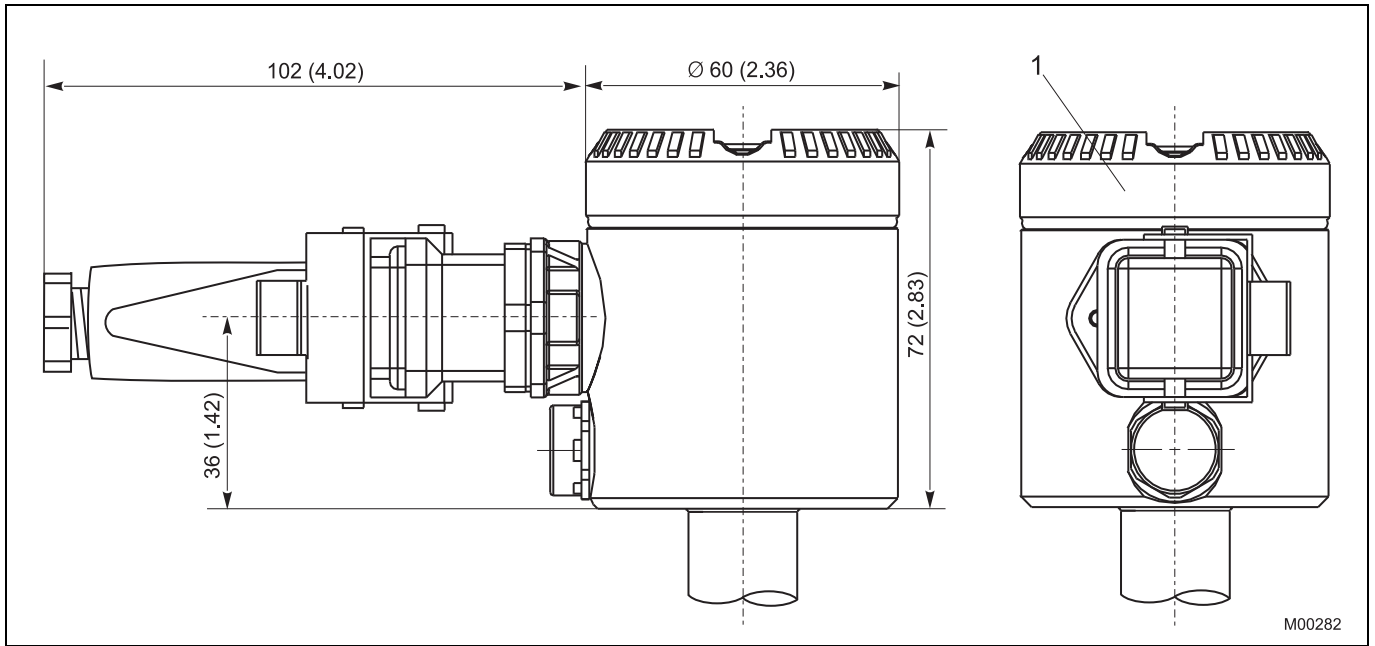


Fig. 2: Dimensions in mm (inches)

- 1 Housing cover for LCD display

12 Electrical connections

12.1 Standard terminal strip

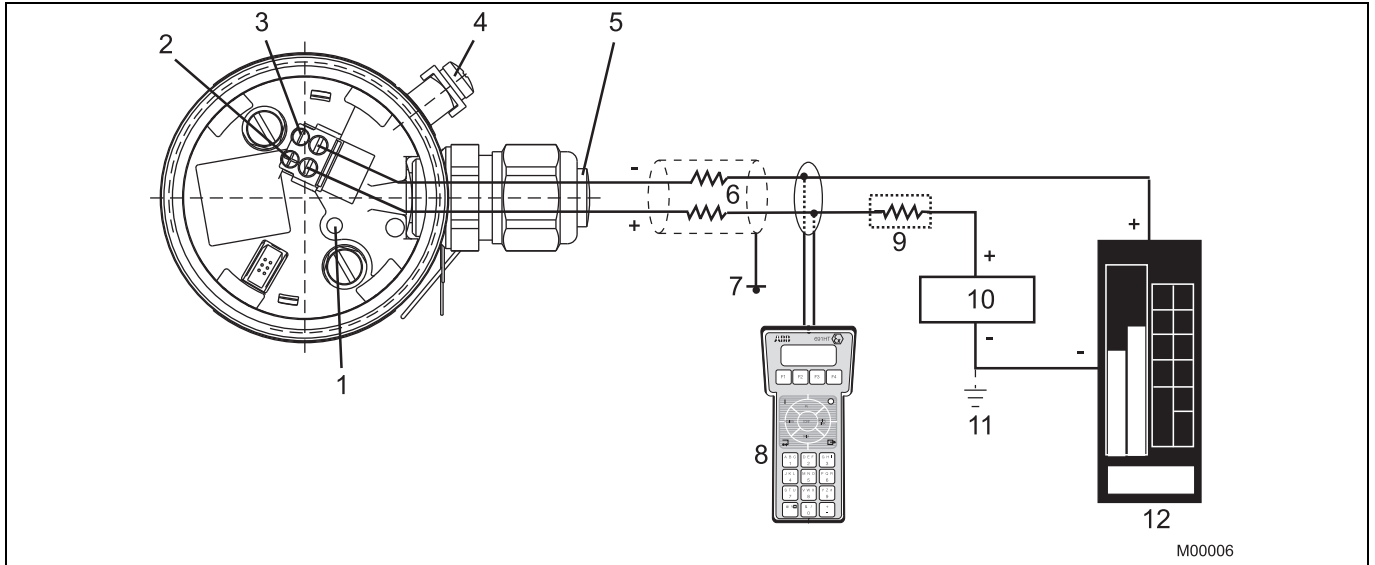


Fig. 3

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

12.2 Optional plug connectors

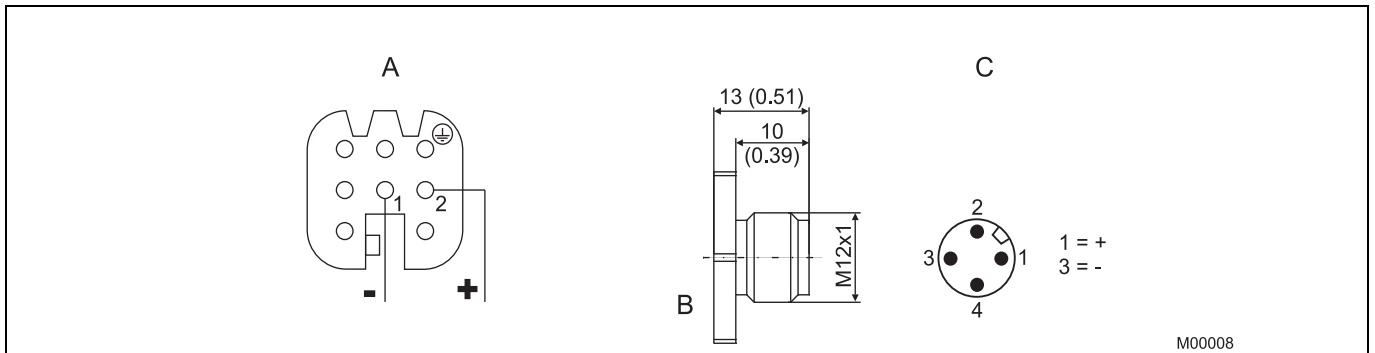


Fig. 4: Dimensions in mm (inches)

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

13 Ordering information

13.1 Ordering information for model 261GR/261AR

Gauge Pressure Transmitter		Variant digit No.		1 - 6	7	8	9	10	Code			
261GR	Base accuracy 0.15 %	Catalog No.		261GR-								
Sensor–Span limits				Overpressure limit								
0.3...6 kPa	3...60 mbar	1.2 and 24 in H ₂ O	1 MPa, 145 psi		C							
2...40 kPa	20...400 mbar	8 and 160 in H ₂ O	1 MPa, 145 psi		F							
12.5...250 kPa	125...2500 mbar	50 and 1000 in H ₂ O	0.5 MPa, 72.5 psi		L							
50...1000 kPa	0.5...10 bar	7.25...145 psi	2 MPa, 290 psi		D							
150...3000 kPa	1.5...30 bar	21.7...435 psi	6 MPa, 870 psi		U							
500...10000 kPa	5...100 bar	72.5...1450 psi	20 MPa, 2900 psi		R							
3000...60000 kPa	30...600 bar	435...8700 psi	90 MPa, 13050 psi		V							
Absolute Pressure Transmitter		Catalog No.		261AR-								
261AR	Base accuracy 0.15 %	Catalog No.		261AR-								
Sensor–Span limits				Overpressure limit								
0.3...6 kPa	3...60 mbar	2.25...45 mmHg	1 MPa, 145 psi		C							
2...40 kPa	20...400 mbar	15...300 mmHg	1 MPa, 145 psi		F							
12.5...250 kPa	125...2500 mbar	93.8...1875 mmHg	0.5 MPa, 72.5 psi		L							
50...1000 kPa	0.5...10 bar	375...7500 mmHg	2 MPa, 290 psi		D							
150...3000 kPa	1.5...30 bar	21.7...435 psi	6 MPa, 870 psi		U							
500...10000 kPa	5...100 bar	72.5...1450 psi	20 MPa, 2900 psi		R							
Diaphragm material / Fill fluid (sensor)												
with remote seal	Siliconoil		2)		R							
with remote seal	Carbon fluoride		1, 2)		2							
with remote seal	White oil (FDA)		2)		6							
with remote seal	No filling		3)		3							
Electronic housing												
Housing material		Electrical connection										
AISI 316L ss / 1.4404		M16 x 1.5 (with cable gland made of plastic)			2							
AISI 316L ss / 1.4404		1/2-14 NPT (without cable gland)			S							
AISI 316L ss / 1.4404		M20 x 1.5 (with cable gland made of plastic)			T							
AISI 316L ss / 1.4404		Harting Han connector	4)		3							
AISI 316L ss / 1.4404		Miniature-connector	4)		Z							
Output / Additional options												
HART digital communication and 4...20 mA		No additional options		5)	H							
HART digital communication and 4...20 mA		Options requested			1							
(to be ordered by "Additional ordering code")												

1) suitable for oxygen applications

2) not available with sensor range 60 and 400 mbar

3) only available with sensor range 60 and 400 mbar

4) select type in additional ordering code

5) not available for electrical connection with connector

13.2 Additional ordering information for model 261GR/261AR

261GR , 261AR	Code			
Electrical certification				
ATEX Group II Category 1/2 G – Intrinsic Safety EEx ia				
ATEX Group II Category 1/2 G and 1/2 D – Intrinsic Safety EEx ia	5)	EH		
Factory Mutual (FM) – Intrinsically Safe	5)	EL		
Canadian Standard Association (CSA) – Intrinsically Safe	5)	EA		
NEPSI Ex ia IIC T-T6 gas		ED		
NEPSI Ex ia IIC T-T6 gas & dust		X3		
		X4		
Integrated digital display (LCD)				
With integrated LCD display		L1		
Electronic housing accessories				
Housing with external ground terminal		AA		
Cable gland M16 x 1.5 / M20 x 1.5 and atmosphere ventilation of metal		AB		
Mounting bracket (shape and material)				
For pipe mounting stainless steel		B2		
For wall mounting stainless steel		B4		
Applications				
Oil and grease-free for oxygen measurement (O ₂) (only available with carbon fluoride fill, not with remote seal S261M) P _{max} = 21 MPa/210 bar/3045 psi, T _{max} = 60 °C/140 °F		P1		
Operating Instruction				
German		M1		
Italian		M2		
French		M4		
English		M5		
Swedish		M7		
Russian		MB		
Additional tag plate				
Stainless steel (Laser labeled, max. 30 characters)		I1		
Certificates / Approvals				
Inspection certificate EN 10204-3.1 of calibration		C1		
Inspection certificate EN 10204-3.1 of the cleanliness stage		C3		
Inspection certificate EN 10204-3.1 of helium leakage test of the sensor module		C4		
Inspection certificate EN 10204-3.1 of the pressure test		C5		
Confirmation of compliance with the order EN 10204-2.1 of instrument design		C6		
SIL2 - Declaration of conformity		CL		
MVO-approval (only with fill fluid white oil)		CR		
Non-linearity 0.1 % with calibration record		CQ		
Material certificates				
Confirmation of compliance with the order EN 10204-2.1 of process wetted parts		H1		
Inspection certificate EN 10204-3.1 for pressure-bearing process wetted parts with analysis certificates as material verification (minor parts with Factory Certificate acc. to EN 10204)		H3		
Test report EN 10204-2.2 for pressure bearing process wetted parts		H4		
Connector				
Miniature connector M12 x 1 (without mating female plug)		U2		
Harting Han 8D (8U) – straight entry	6)	U3		

5) not available for electrical connection with connector

6) only available for electrical connection with Harting Han connector

14 Standard scope of delivery (changes may be made by using additional ordering code)

- For general-purpose applications (no Ex applications)
- 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 liquids in order to ensure compatibility with the relevant process medium.

ABB has Sales & Customer Support
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The Company's policy is one of continuous product
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