






Pressure measuring device

- Ceramic/thick film measuring cell
- 2-wire variant for 4...20 mA output
- Compact, stable construction for the highest operational reliability

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

	Type 8802 ELEMENT continuous control valve systems - overview	▶
	Type 8611 eCONTROL - Universal controller	▶
	Type 8619 multiCELL - multi-channel/multi-function transmitter/controller	▶

Type description

The compact Type 8316 pressure measuring device meets the highest requirements with regard to mechanical loading, EMC characteristics and operational reliability. It is particularly suitable for demanding industrial applications.

For aggressive media where stainless steel is not resistant, process connections in PVDF are available.

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1. General technical data

Product properties

Material

Make sure the device materials are compatible with the fluid you are using.
Further information can be found in chapter [“3.1. Bürkert resistApp” on page 6.](#)

Non wetted parts

Housing Stainless steel 1.4404 (316L)

Wetted parts

Process connection Stainless steel 1.4404 (316L)

Measuring element

- Variant P_{max.} ≤ 0.6 bar: ceramic Al₂O₃ (99.6 %)
- Variant P_{max.} > 0.6 bar and ≤ 60 bar: ceramic Al₂O₃ (96 %)
- Variant 0...100 bar: stainless steel
- Variant P_{max.} ≤ 0.6 bar: FKM (others on request)
- Variant P_{max.} > 0.6 bar and ≤ 60 bar: FKM (others on request)
- Variant P_{max.} = 100 bar: none

Seal

Dimensions Further information can be found in chapter [“4. Dimensions” on page 6.](#)

Weight

- Variant P_{max.} ≤ 0.6 bar: approx. 120 g
- Variant P_{max.} > 0.6 bar: approx. 90 g

Measurement technology

- Variant P_{max.} ≤ 0.6 bar: ceramic
- Variant P_{max.} > 0.6 bar and ≤ 60 bar: ceramic
- Variant P_{max.} = 100 bar: metallic

Measured quantity

Relative pressure (absolute pressure on request)

Measuring range

- Variant P_{max.} ≤ 0.6 bar 0...0.05, 0.1 or 0.25 (0...0.4 or 0.6 bar on request)
- Variant P_{max.} > 0.6 bar and ≤ 60 bar:
 - 0...1, 4, 6, 10, 16, 40 (0...60 bar on request)
 - 0...50, 150 or 300 PSI
- Variant P_{max.} = 100 bar : 0...100 bar

Performance data

Temperature coefficient

- Variant P_{max.} ≤ 0.6 bar: ± 0.07 % of full scale/10 K (the zero point and range at - 15...+ 85 °C (+ 5...+ 185 °F))
- Variant P_{max.} > 0.6 bar: ± 0.2 % of full scale/10 K (in the range - 15...+ 85 °C (+ 5...+ 185 °F))

Measuring range resolution

< 0.1 % of full scale

Measurement deviation

- Sum of linearity, hysteresis and reproducibility, balancing accuracy of zero point and full scale
- Variant P_{max.} ≤ 0.6 bar: ± 0.35 % of full scale (for full scale < 100 mbar: ± 0.7 % of full scale)
 - Variant P_{max.} > 0.6 bar: ± 0.5 % max. of full scale (typical; ≤ 0.3 % of full scale)

Response time

- Suitable for static and dynamic measurements
- Variant P_{max.} ≤ 0.6 bar: < 150 ms
 - Variant P_{max.} > 0.6 bar: < 2 ms, typical 1 ms

Load cycle

< 100 Hz

Overload / bursting pressure

- Variant P_{max.} ≤ 0.6 bar: 2 bar
- Variant P_{max.} > 0.6 bar and ≤ 60 bar:
 - 3 x full scale (variant ≤ 0...4 bar)
 - 2.5 x full scale (0...4 bar < variant ≤ 0...60 bar)
- Variant P_{max.} = 100 bar:
 - 3 x full scale (overload)
 - 6 x full scale (bursting pressure)

Electrical data	
Operating voltage (U)	<ul style="list-style-type: none"> Variant P_{max.} ≤ 0.6 bar : 10...33 V DC, unregulated (variant with 4...20 mA output) Variant P_{max.} > 0.6 bar : 7...33 V DC, unregulated (variant with 4...20 mA output), 12...33 V DC, unregulated (variant with 0...10 V DC output)
DC reverse polarity protection	Yes
Short circuit protection	Yes
Protection class	Class III
Current consumption	Max. 23 mA
Load	<ul style="list-style-type: none"> Variant P_{max.} ≤ 0.6 bar : < (U - 10 V)/0.02 A (in Ω) Variante P_{max.} > 0.6 bar : < (U - 7 V)/0.02 A (in Ω)
Insulation voltage	500 V DC
Output	<ul style="list-style-type: none"> Variant P_{max.} ≤ 0.6 bar : standard signal 4...20 mA (two-wire) Variant P_{max.} > 0.6 bar and ≤ 60 bar : standard signal 4...20 mA (two-wire) or 0...10 V DC (three-wire) Variant P_{max.} = 100 bar : standard signal 4...20 mA (two-wire)
Medium data	
Fluid temperature	<ul style="list-style-type: none"> Variant P_{max.} ≤ 0.6 bar : -15...+85 °C (+5...+185 °F) Variant P_{max.} > 0.6 bar and ≤ 60 bar : -15...+125 °C (+5...+257 °F) Variant P_{max.} = 100 bar : -40...+135 °C (-40...+275 °F)
Process/Pipe connection & communication	
Process connection	<ul style="list-style-type: none"> Thread G 1/4" according to DIN 3852 Form E Thread NPT 1/4"
Electrical connection	M12 x 1 male connector
Approvals and conformities	
Directives	
CE directive	Further information on the CE Directive can be found in chapter "2.2. Standards" on page 4.
Pressure equipment directive	<ul style="list-style-type: none"> The device does not meet the requirements for "safety accessories" within the meaning of the pressure equipment directive 2014/68/EU. Complying with article 4, paragraph 1 of 2014/68/EU directive. Further information on the pressure equipment directive can be found in chapter "2.3. Pressure Equipment Directive (PED)" on page 5.
North America (USA/Canada)	UL Listed for US and Canada (UL 61010-1 + CAN/CSA-C22.2 No. 61010-1)
Environment and installation	
Ambient temperature	<ul style="list-style-type: none"> Variant P_{max.} ≤ 0.6 bar : <ul style="list-style-type: none"> Operation: -25...+85 °C (-13...+185 °F) Storage: -40...+85 °C (-40...+185 °F) Variant P_{max.} > 0.6 bar : <ul style="list-style-type: none"> Operation: -30...+85 °C (-22...+185 °F) Storage: -50...+100 °C (-58...+212 °F)
Application range	Indoors and outdoors Protect the device against electromagnetic interference, ultraviolet rays and, when installed outdoors, against the effects of climatic conditions.
Degree of protection according to IEC/EN 60529	IP67
Mounting condition	<ul style="list-style-type: none"> Variant P_{max.} ≤ 0.6 bar : as required (position error: with horizontal mounting: +0.1 mbar, with vertical mounting, pressure connection upward: +0.2 mbar) Variant P_{max.} > 0.6 bar and ≤ 60 bar : as required, preferably with pressure connection in downward position Variant P_{max.} = 100 bar : as required

2. Approvals and conformities

2.1. General notes

- The approvals and conformities listed below must be stated when making enquiries. This is the only way to ensure that the product complies with all required specifications.
- Not all available variants of the device can be supplied with the below mentioned approvals or conformities.

2.2. Conformity

In accordance with the Declaration of Conformity, the product is compliant with the EU Directives.

2.3. Standards

The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU-Type Examination Certificate and/or the EU Declaration of Conformity.

2.4. Pressure Equipment Directive (PED)

The device conforms to article 4, paragraph 1 of the Pressure Equipment Directive (PED) 2014/68/EU under the following conditions:

Device used on a pipe

Note:

- The data in the table is independent of the chemical compatibility of the material and the fluid.
- PS = maximum admissible pressure (in bar), DN = nominal diameter of the pipe

Type of fluid	Conditions
Fluid group 1, article 4, paragraph 1.c.i	$DN \leq 25$
Fluid group 2, article 4, paragraph 1.c.i	$DN \leq 32$ or $PS \cdot DN \leq 1000$
Fluid group 1, article 4, paragraph 1.c.ii	$DN \leq 25$ or $PS \cdot DN \leq 2000$
Fluid group 2, article 4, paragraph 1.c.ii	$DN \leq 200$ or $PS \leq 10$ or $PS \cdot DN \leq 5000$

Device used on a vessel

Note:

- The data in the table is independent of the chemical compatibility of the material and the fluid.
- PS = maximum admissible pressure (in bar), V = vessel volume

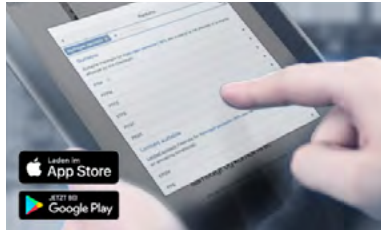
Type of fluid	Conditions
Fluid group 1, article 4, paragraph 1.a.i	$V > 1 \text{ L}$ and $PS \cdot V \leq 25 \text{ bar} \cdot \text{L}$ or $PS \leq 200 \text{ bar}$
Fluid group 2, article 4, paragraph 1.a.i	$V > 1 \text{ L}$ and $PS \cdot V \leq 50 \text{ bar} \cdot \text{L}$ or $PS \leq 1000 \text{ bar}$
Fluid group 1, article 4, paragraph 1.a.ii	$V > 1 \text{ L}$ and $PS \cdot V \leq 200 \text{ bar} \cdot \text{L}$ or $PS \leq 500 \text{ bar}$
Fluid group 2, article 4, paragraph 1.a.ii	$PS > 10 \text{ bar}$ and $PS \cdot V \leq 10000 \text{ bar} \cdot \text{L}$ or $PS \leq 1000 \text{ bar}$

2.5. North America (USA/Canada)

Approval	Description
	Optional: UL Listed for the USA and Canada The product variants $P_{\max} > 0.6 \text{ bar}$ are UL Listed for the USA and Canada according to: <ul style="list-style-type: none"> • UL 61010-1 (ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE – Part 1: General Requirements) • CAN/CSA-C22.2 No. 61010-1 Certificate number: 20171018-E312665

3. Materials

3.1. Bürkert resistApp



Bürkert resistApp – Chemical resistance chart

You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

[Start chemical resistance check](#)

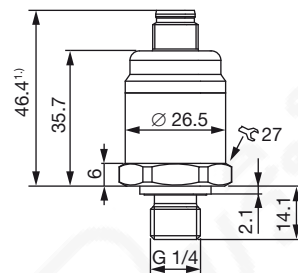
4. Dimensions

4.1. Variant $P_{\max.} \leq 0.6 \text{ bar}$

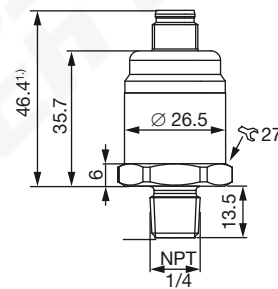
Note:

Dimensions in mm, unless otherwise stated

With process connection G 1/4"



With process connection NPT 1/4"



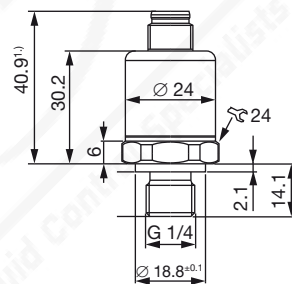
1.) The total height is increased by the height of the used female connector and cable.

4.2. Variant $P_{\max.} > 0.6 \text{ bar and } \leq 60 \text{ bar}$

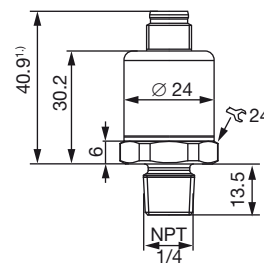
Note:

Dimensions in mm, unless otherwise stated

With process connection G 1/4"



With process connection NPT 1/4"

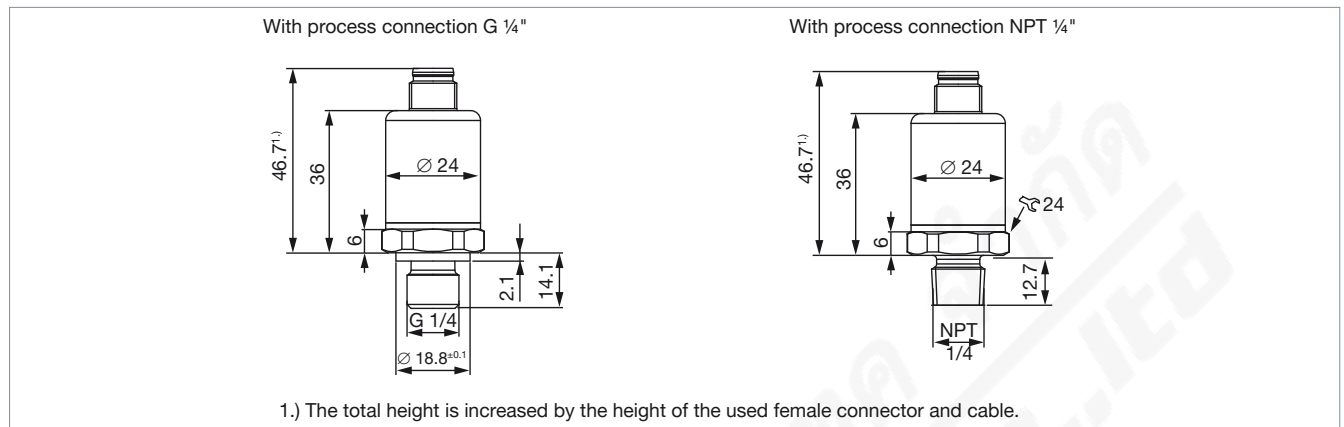


1.) The total height is increased by the height of the used female connector and cable.

4.3. Variant $P_{max.} = 100 \text{ bar}$

Note:

Dimensions in mm, unless otherwise stated



5. Ordering information

5.1. Bürkert eShop



Bürkert eShop – Easy ordering and quick delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

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5.2. Bürkert product filter














Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements? Use the Bürkert product filter and find suitable articles for your application quickly and easily.




[Try out our product filter](#)

5.3. Ordering chart






Variant with process connection G 1/4"

Pressure range [bar]	Operating voltage [V DC]	Output	UL approval	Electrical connection	Article no.
0...0.05	10...33	4...20 mA	–	M12 male connector	570536 
0...0.10	10...33	4...20 mA	–	M12 male connector	567953 
0...0.25	10...33	4...20 mA	–	M12 male connector	570721 
0...1.00	7...33	4...20 mA	UL Listed	M12 male connector	563777 
0...4.00	7...33	4...20 mA	UL Listed	M12 male connector	563778 
0...6.00	7...33	4...20 mA	UL Listed	M12 male connector	563779 
0...10.0	7...33	4...20 mA	UL Listed	M12 male connector	563780 
	12...33	0...10 V DC	UL Listed	M12 male connector	563784 
0...16.0	7...33	4...20 mA	UL Listed	M12 male connector	563781 
0...40.0	7...33	4...20 mA	UL Listed	M12 male connector	563782 
0...100.0	7...33	4...20 mA	UL Listed	M12 male connector	563783 

Variant with process connection NPT 1/4"

Pressure range [PSI]	Operating voltage [V DC]	Output [mA]	UL approval	Electrical connection	Article no.
0...60	7...33	4...20	UL Listed	M12 male connector	564466 
0...150	7...33	4...20	UL Listed	M12 male connector	564467 
0...300	7...33	4...20	UL Listed	M12 male connector	564468 


Further variants on request

	Process connection NPT 1/4" and more		Pressure Other relative or absolute measuring ranges
	Electrical connection Connectors: mini DIN, DIN and more		Additional Electrical outputs: 0...10 V DC, 0...5 V DC
	Material EPDM seal, PVDF process connection		

5.4. Ordering chart accessories

Note:

The following accessories are intended for all variants of the pressure measuring device.

Description	Article no.
M12 female connector with plastic threaded clamping ring, 5-pin, straight, to be wired	917116 
M12 female connector with moulded cable (shielded), 5-pin, straight, cable length: 2 m	438680 