

Pressure ranges from 0... 1 bar to 0... 25 bar



Advantages / Benefits

- ▶ Easy LINK to Burkert systems
- ▶ Three functions in one instrument
 - local read out
 - 4... 20 mA output
 - 2 switching points
- ▶ Mechanical construction with high operational safety
- ▶ High reliability
- ▶ Wetted parts made of stainless steel
- ▶ Easy installation

Design

Bourdon tube pressure gauge especially for process industry applications. Suitable for all corrosive environments and gaseous and liquid media. The instrument combines a conventional pressure gauge (with high-contrast dial) with a reliable electronics to transmit the displayed pressure reading as a 4... 20 mA signal.

The all stainless steel bourdon tube pressure gauge in safety pattern construction in compliance with EN 837-1, BS 1780 and ANSI B40.1 (solid front) with IP 65 degree of protection incorporates a Hall-effect sensor that measures the deflection of the pressure element and provides an electric signal proportional to the pressure applied.

The EMI properties have been tested in accordance with EN 50 081-1, EN 50 081-2 and EN 50 082-2 and ensure reliable signal acquisition even under rough ambient conditions.

An integral signal conditioner is incorporated to provide 4... 20 mA 2-wire signal output. All standard transmitters may be additionally equipped with 2 switching points, which enables easy link to the Bürkert systems.

Application

Process applications
Monitoring

- steam
- compressed gases
- corrosive, radioactive or toxic processes

Food industry

Machine industry

Process plant

Refrigeration

bürkert
Easy Fluid Control Systems

Specifications

General Data

Nominal size	100 mm
Accuracy	Class 1.0 according to EN 837-1
Scale range	1, 2.5, 6, 19, 25 bar according to EN 837-1
Working pressure	Steady: full scale value Fluctuating: 0.9 x full scale value Short time: 1.3 x full scale value
Operating temperature	Ambient: -40...+60 °C Medium: +100 °C maximum (without chemical seal)
Temperature error	Additional error when temperature of the pressure elements deviates from +20 °C: <ul style="list-style-type: none"> • Rising temperature: +0.3% /10 K of true scale value • Falling temperature: +0.3% /10 K of true scale value
Degree of protection	IP 65 according to EN 60 529/IEC 529
Pressure connection	Stainless steel 1.4571, threaded entry according to EN 837-1 G 1/2B, 1/2" NPT
Pressure element	Stainless steel 1.4571, C-type
Movement	Stainless steel
Dial	White aluminium with black lettering according to EN 837-1
Pointer	Black aluminium
Housing	Stock finish stainless steel, case with pressure vent in the back
Window	Laminated safety glass
Bezel ring	Cam ring (bayonet type), stock finish stainless steel
Wetted parts	Stainless steel 1.4571

Transmitter

Power supply U_B	$10 < U_B \leq 30$ VDC
Permissible residual ripple	$\leq 0.1\%$ of span / 10 V
Supply voltage effect	$\leq 10\%$ ss
Output signal and permissible load (max. R_A)	4... 20 mA, 2-wire, $R_A \leq (U_B - 10 \text{ V}) / 0.02 \text{ A}$ with R_A in Ohm and U_B in Volt
Effect of load	$\leq 0.1\%$ of span
Response time	approx. 50 ms
Output signal adjustment	
Zero point, electrical	$\pm 5\%$ of span
span, electrical	$\pm 5\%$ of span
Zero point, mechanical	approx. 5% of span (only on measuring ranges $\leq 0... 400$ mbar)
Linearity	± 0.8 (limit point calibration) % of span
Hysteresis	$\leq 0.5\%$ of span
Permissible	
Medium temperature	-25... +100 °C
Ambient temperature	-20... +60 °C
Compensated temperature range	-25... +60 °C
Temperature coefficient in compensated temperature range	
average T_c on zero point	$\leq 0.3\%$ of span / 10K
average T_c on span	$\leq 0.3\%$ of span / 10K
Wiring	Terminal box (screw terminals up to 2.5 mm ² PG 13.5)
Wiring protection	Protected against polarity crossing and overvoltage
EMI (electro-magnetic immunity)	Interference emission per EN 50 081-1 (March 93) and EN 50 081-2 (March 94), interference immunity EN 50 082-2 (March 95)
Weight	approx. 0.8 kg

Bourdon Tube Pressure Gauge for process applications

Type 8308

Switching contacts

These alarm contacts are fitted into the case of the pressure gauge to make or break an electric control circuit relative to the position of the instruments pointers. Points of contact actuation are adjustable over the full extension of the scale of graduation. Pointer deflection is not obstructed by the contacts' mechanism. The contact assembly is normally arranged behind the dial plate such as to enable clear observation of the gauge. Wiring is done with a junction box mounted on the side of the case with terminals for leads of

Contact setting

up to 2.5 mm² cross section.

Round case gauges features hub in the window into which a key inserts. Normally all contacts may be set at exactly the same scale value. Contact actuation is made when the instruments' pointer sweeps the contact indicator from either side.

Type of contacts

Magnetic snap-action contacts

This is the universal type of contacts to provide reliable service also with liquid-filled instruments. The magnetically assisted contact features a small magnet attached to the setting hand. The magnet provides for a snap-action characteristic which considerably improves contact rating and service life, and also makes this typeless sensitive to vibration.

The force required to break the attraction of the magnet results in a certain hysteresis at the switch point when the same contact is alternatively approached with rising and falling pressure. The value of this hysteresis reflects a minimum of 2% and a maximum of 5%, depending on scale range and instrument.

Maximum contact rating with resistive load	Magnetic snap-action contact Dry gauges
Maximum voltage (MSR) $U_{\text{eff max}}$	250 V
Current ratings:	
Make rating	1.0 A ¹⁾
Break rating	1.0 A ¹⁾
Continuous load	0.6 A ¹⁾
Maximum load	30 W 50 VA
Material of contact points	Silver-Nickel Alloy (80% Ag / 20% Ni)
Ambient operating temperature	-20... +70 °C
No. of contacts	4

¹⁾ For scale range 0...1 bar half of these values are valid

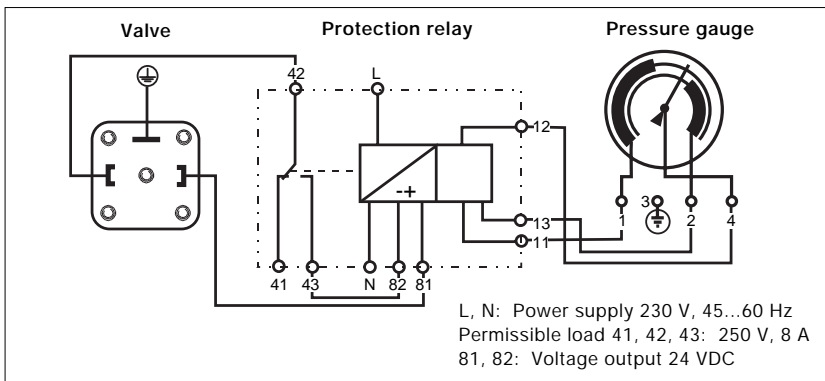
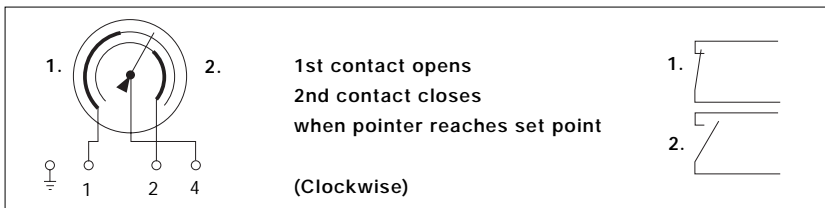
Recommended contact ratings

Voltage (IEC 38) AC/DC V	Magnetic snap-action contact Dry gauges		
	resistive load		inductive load $\cos \varphi > 0.7$ mA
	DC mA	AC mA	
220/230	100	120	65
110/110	200	240	130
48/48	300	450	200
24/24	400	600	250

Contact ratings

The contact rating values are given in consideration of many years of reliable service. Ratings below 24 V line voltage are to be individually established upon inquiry. For low ratings the current to be switched should not be less than 20 mA to maintain reliability. For lower switching powers, in storage programmable steering units (PLS), for example, we recommend to contact us. For higher ratings up to 1760 VA: relays with 1 or 2 double throw contacts on request.

Contact function



Option

To realize a two-point control circuit or a pump controlling:
1 double throw with flip-flop characteristic Item-No. 430 663 D (in snap-mounting housing for DIN-rail, IP 40)

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Ordering Chart (Other versions on request)

Type 8308 with G 1/2 with 4... 20 mA output

Measuring ranges [bar]	Item - No.
	Electrical connection DIN 43650
0 - 1.0	430 004 V
0 - 2.5	430 005 W
0 - 6.0	430 006 X
0 - 10.0	430 007 Y
0 - 25.0	430 008 H

Type 8308 with G 1/2 with 2 switching contacts

Measuring ranges [bar]	Item - No.
	Electrical connection DIN 43650
0 - 1.0	430 024 Q
0 - 2.5	430 025 R
0 - 6.0	430 026 J
0 - 10.0	430 027 K
0 - 25.0	430 028 U

Type 8308 with G 1/2 with 4... 20 mA output with 2 switching contacts

Measuring ranges [bar]	Item - No.
	Electrical connection DIN 43650
0 - 1.0	430 009 A
0 - 2.5	430 010 W
0 - 6.0	430 011 K
0 - 10.0	430 012 L
0 - 25.0	430 013 M

Easy Continuous Pneumatic Control

COST OF OWNERSHIP 1 -80 %

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