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Pressure transmitter for air compressors
Model C-2

c UL us LISTED

Applications

- Pressure monitoring
- Pressure regulation and control
- Filter monitoring in screw-type, reciprocating and turbo compressors

Special features

- Robust design
- Compact design
- Long service life and high reliability

Pressure transmitter model C-2
Fig. left: with cable outlet
Fig. right: with Metri-Pack series 150

Description

High quality and flexibility
The model C-2 pressure transmitter has been designed for use in air compressors and compressed air stations. With measuring ranges from 0 ... 6 to 0 ... 60 bar, it covers almost the entire spectrum of currently available power classes for air compressors.

The high demands that are placed on its robustness by these applications, are fulfilled without a problem by this pressure transmitter. This instrument features a vibration resistance of 20 g (in accordance with IEC 60068-2-6) and wetted parts that are suited to compressed air and lubricating oil.

Simplest mounting
Specific process connections for the compressor industry enable a simple installation every time, even if the pressure transmitter cannot be mounted directly onto the compressor.

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Measuring ranges

Relative pressure								
bar	**Measuring range**	**0 ... 6**	**0 ... 10**	**0 ... 12**	**0 ... 16**	**0 ... 18**	**0 ... 20**	**0 ... 25**
	Overpressure limit	20	20	40	40	40	40	40
	Burst pressure	25	25	50	50	50	50	50
	Measuring range	**0 ... 30**	**0 ... 35**	**0 ... 40**	**0 ... 45**	**0 ... 50**	**0 ... 60**	
	Overpressure limit	100	100	100	100	100	100	
	Burst pressure	120	120	120	120	120	120	
psi	**Measuring range**	**0 ... 100**	**0 ... 150**	**0 ... 200**	**0 ... 250**	**0 ... 300**	**0 ... 350**	**0 ... 400**
	Overpressure limit	250	250	500	500	500	1,400	1,400
	Burst pressure	350	350	700	700	700	1,700	1,700
	Measuring range	**0 ... 450**	**0 ... 500**	**0 ... 550**	**0 ... 600**	**0 ... 650**	**0 ... 700**	**0 ... 700**
	Overpressure limit	1,400	1,400	1,400	1,400	1,400	1,400	1,400
	Burst pressure	1,700	1,700	1,700	1,700	1,700	1,700	1,700
	Measuring range	**0 ... 750**	**0 ... 800**	**0 ... 850**				
	Overpressure limit	1,400	1,400	1,400				
	Burst pressure	1,700	1,700	1,700				

Vacuum and +/- measuring range						
bar	**Measuring range**	**-1 ... +10**	**-1 ... +15**	**-1 ... +20**	**-1 ... +30**	**-1 ... +45**
	Overpressure limit	20	40	40	100	100
	Burst pressure	25	50	50	120	120
psi	**Measuring range**	**-30 inHg ... +100**	**-30 inHg ... +145**	**-30 inHg ... +200**	**-30 inHg ... +250**	**-30 inHg ... +300**
	Overpressure limit	250	250	500	500	1,400
	Burst pressure	350	350	700	700	1,700
	Measuring range	**-30 inHg ... +350**	**-30 inHg ... +400**	**-30 inHg ... +450**	**-30 inHg ... +500**	**-30 inHg ... +550**
	Overpressure limit	1,400	1,400	1,400	1,400	1,400
	Burst pressure	1,700	1,700	1,700	1,700	1,700
	Measuring range	**-30 inHg ... +600**				
	Overpressure limit	1,400				
	Burst pressure	1,700				

The given measuring ranges are also available in kg/cm^{2,} MPa and kPa
Other measuring ranges available on request

Vacuum tightness
Yes

Output signals

Signal type	Signal
Current (2-wire)	4 ... 20 mA
Voltage (3-wire)	DC 0 ... 10 V DC 1 ... 5 V
Ratiometric (3-wire)	DC 0.5 ... 4.5 V

Load in Ω

- 4 ... 20 mA: ≤ (power supply - 7 V) / 0.02 A
- DC 0 ... 10 V: > max. signal / 1 mA
- DC 1 ... 5 V: > max. signal / 1 mA
- DC 0.5 ... 4.5 V ratiometric: > max. signal / 1 mA

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Voltage supply

The permissible power supply depends on the corresponding output signal.

- 4 ... 20 mA: DC 7 ... 30 V
- DC 0 ... 10 V: DC 8 ... 30 V
- DC 1 ... 5 V: DC 14 ... 30 V
- DC 0.5 ... 4.5 V ratiometric: DC 5 ± 0.5 V

Reference conditions (per IEC 61298-1)

Temperature
0 ... 60 °C

Atmospheric pressure
860 ... 1,060 mbar

Humidity
< 90 % rel., non-condensing

Power supply
DC 24 V

Nominal position
Calibrated in vertical mounting position with process connection facing downwards.

Operating conditions

Ingress protection (per IEC 60529)
The ingress protection depends on the type of electrical connection.

- Circular connector M12 x 1: IP 67
- Metri-Pack series 150: IP 67
- Angular connector DIN 175301-803 C: IP 65
- Cable outlet: IP 69K

The stated ingress protection only applies when plugged in using mating connectors that have the appropriate ingress protection.

Vibration resistance (per IEC 60068-2-6)
20 g (20 ... 2,000 Hz, 2 h, vibration under resonance)

Shock resistance (per IEC 60068-2-27)
40 g (6 ms, 50 repetitions, mechanical shock)

Service life

- > 10 million load cycles at reference conditions
- The tested service life at a medium temperature of 100 °C is >1 million load cycles.

Temperatures

- Medium: -20 ... +100 °C
- Ambient: -25 ... +85 °C
- Storage: -25 ... +80 °C

Accuracy data

Accuracy at reference conditions
Including non-linearity, hysteresis, zero offset and end value deviation (corresponds to measured error per IEC 61298-2).

Accuracy
≤ 2 % of span (standard)
≤ 1 % of span

Temperature error

- -20 ... 0 °C: ≤ 1 % of span
- 0 ... 60 °C: ≤ 0.5 % of span
- 60 ... 80 °C: ≤ 1 % of span

Settling time
≤ 5 ms

Long-term drift (per IEC 61298-2)
≤ 0.3 % of span/year

Process connections

Standard	Thread size
EN 837	G ¼ B G ⅛ female
DIN 3852-E	G ⅛ A G ¼ A
ANSI/ASME B1.20.1	⅛ NPT ¼ NPT
ISO 7	R ¼
KS	¼ PT

Specifically for the compressor industry
Special process connections are available for fixing to mounting plates.

Standard	Thread size
-	G ¼ male with G ⅛ female

Other process connections on request.

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Electrical connections

Short-circuit resistance
S_+ vs. 0V

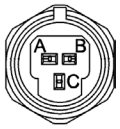
Reverse polarity protection
U_B vs. 0V

Overvoltage protection
max. DC 36 V

Insulation voltage
DC 500 V

Connection diagrams

Circular connector M12 x 1		2-wire	3-wire
	**U_B**	1	1
	0V	3	3
	S+	-	4

Metri-Pack series 150		2-wire	3-wire
	**U_B**	B	B
	0V	C	A
	S+	-	C

Angular connector DIN 175301-803 C		2-wire	3-wire
	**U_+**	1	1
	U-	2	2
	S_+	-	3

Cable outlet		2-wire	3-wire
	U_B	brown	brown
	**0V**	green	green
	S+	-	white

Wire cross-section 3 x 0.14 mm^2
Cable diameter 3.2 mm
Cable length: 0.5 m, 1 m, 2 m, 5 m

Materials

Wetted parts
- Brass
- Ceramic Al_2O_3 96 %
- O-ring from FKM

Non-wetted parts
- Case from brass
- Electrical connection from highly resistant, glass-fibre reinforced plastic

Approvals, directives and certificates

Approvals
without approval (standard)
cULus

CE conformity
EMC directive 2004/108/EC, EN 61326 emission (group 1, class B) and interference immunity (industrial application)

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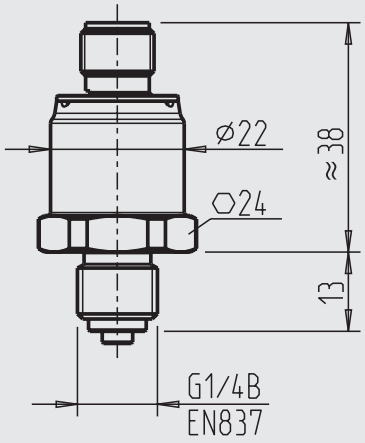
Dimensions in mm

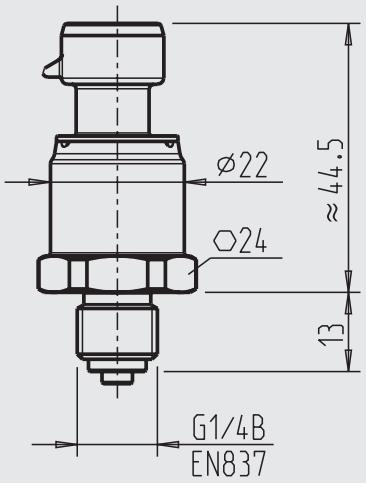
Pressure transmitter model C-2

with circular connector M12 x 1



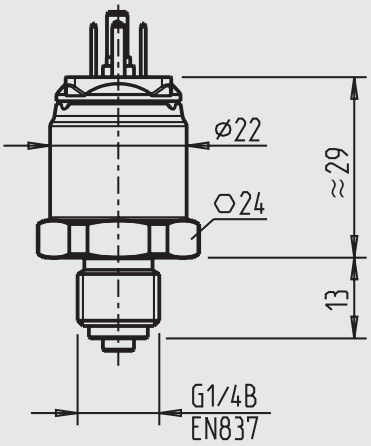
Weight: 80 g

with Metri-Pack series 150



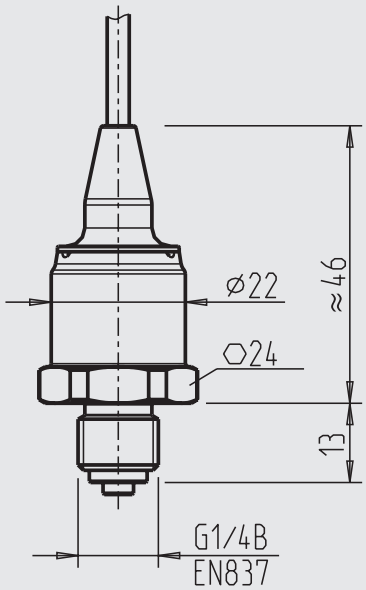
Weight: 80 g

with angular connector
DIN 175301-803 C



Weight: 80 g

with cable outlet



Weight: 80 g

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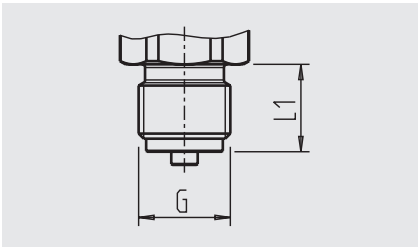
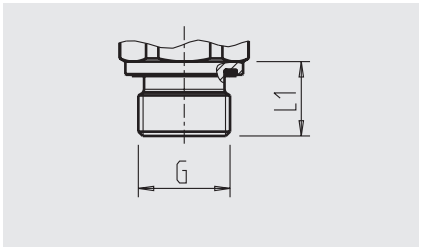
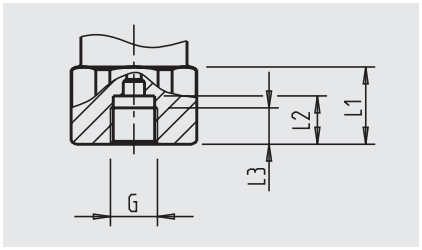
Process connections



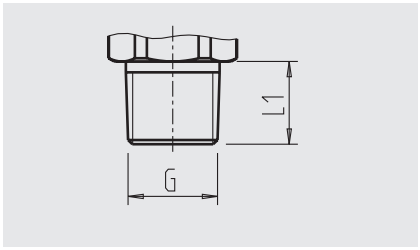
G	L1
G ¼ B EN 837	13



G	L1
G ⅛ A DIN 3852-E	9.5
G ¼ A DIN 3852-E	14

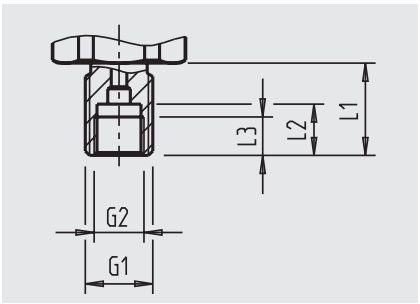


G	L1	L2	L3
G ⅛	16	10	7.5



G	L1
R ¼	13
¼ NPT	13
⅛ NPT	10
¼ PT	13

Process connection specifically for the compressor industry



G1	G2	L1	L2	L3
G ¼ B	G ⅛	18	10	7.5

For information on tapped holes and welding sockets, see Technical information IN 00.14 at www.wika.com.

Ordering information

Model / Measuring range / Output signal / Accuracy at reference conditions / Electrical connection / Process connection / Approval

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