

# Pressure transmitter for air compressors Model C-2

WIKA data sheet PE 81.47



## 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.

## Measuring ranges

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

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

The given measuring ranges are also available in kg/cm<sup>2</sup>, 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 $\Omega$

- 4 ... 20 mA:  $\leq (\text{power supply} - 7 \text{ V}) / 0.02 \text{ A}$
- DC 0 ... 10 V:  $> \text{max. signal} / 1 \text{ mA}$
- DC 1 ... 5 V:  $> \text{max. signal} / 1 \text{ mA}$
- DC 0.5 ... 4.5 V ratiometric:  $> \text{max. signal} / 1 \text{ mA}$

## 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.

## 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

## 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

## Process connections

Standard	Thread size
EN 837	G ¼ B G ½ female
DIN 3852-E	G ½ A G ¼ A
ANSI/ASME B1.20.1	½ 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 ½ female

Other process connections on request.

## Electrical connections

### Short-circuit resistance

S<sub>+</sub> vs. 0V

### Reverse polarity protection

U<sub>B</sub> vs. 0V


### Overvoltage protection

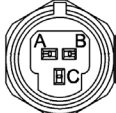
max. DC 36 V

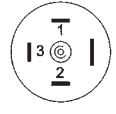
### Insulation voltage


DC 500 V

### Connection diagrams

Circular connector M12 x 1			
		2-wire	3-wire
	U <sub>B</sub>	1	1
	0V	3	3
	S <sub>+</sub>	-	4

Metri-Pack series 150			
		2-wire	3-wire
	U <sub>B</sub>	B	B
	0V	C	A
	S <sub>+</sub>	-	C

Angular connector DIN 175301-803 C			
		2-wire	3-wire
	U <sub>+</sub>	1	1
	U <sub>-</sub>	2	2
	S <sub>+</sub>	-	3

Cable outlet			
		2-wire	3-wire
	U <sub>B</sub>	brown	brown
	0V	green	green
	S <sub>+</sub>	-	white

Wire cross-section 3 x 0.14 mm<sup>2</sup>

Cable diameter 3.2 mm

Cable length: 0.5 m, 1 m, 2 m, 5 m

## Materials

### Wetted parts

- Brass
- Ceramic Al<sub>2</sub>O<sub>3</sub> 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

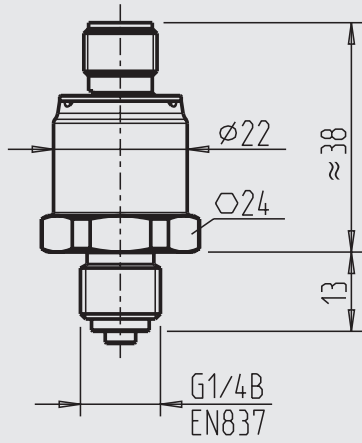
### CE conformity

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

## Dimensions in mm

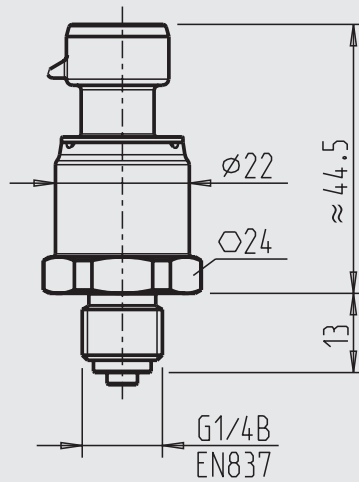
### Pressure transmitter model C-2

with circular connector M12 x 1



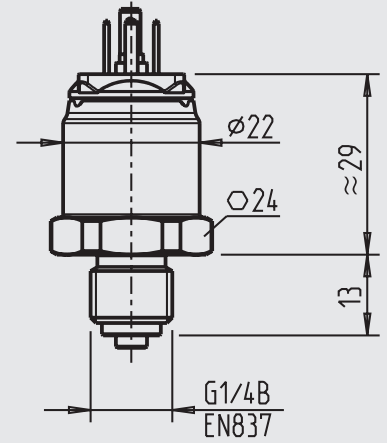
Weight: 80 g

with Metri-Pack series 150



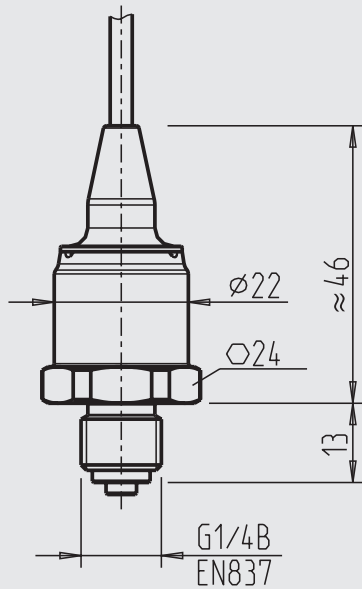
Weight: 80 g

with angular connector  
DIN 175301-803 C



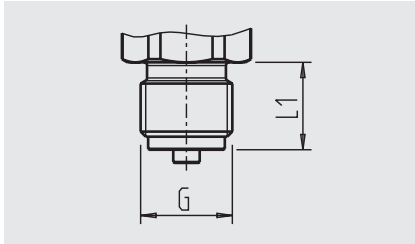
Weight: 80 g

with cable outlet

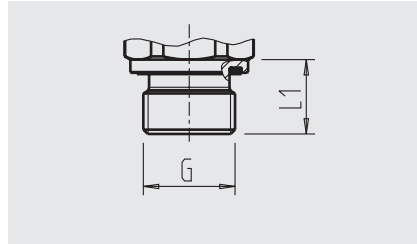


Weight: 80 g

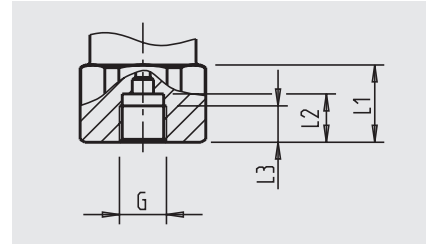
## Process connections



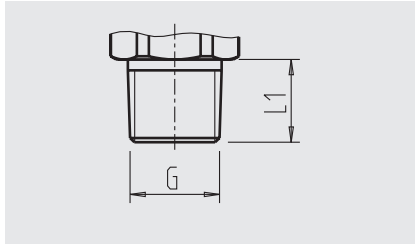
G	L1
G 1/4 B EN 837	13



G	L1
G 1/8 A DIN 3852-E	9.5
G 1/4 A DIN 3852-E	14

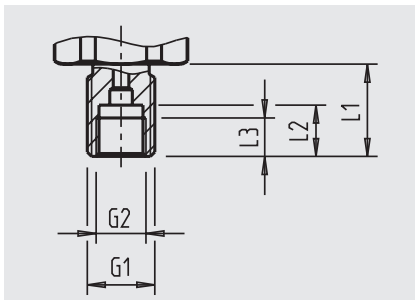


G	L1	L2	L3
G 1/8	16	10	7.5



G	L1
R 1/4	13
1/4 NPT	13
1/8 NPT	10
1/4 PT	13

## Process connection specifically for the compressor industry



G1	G2	L1	L2	L3
G 1/4 B	G 1/8	18	10	7.5

For information on tapped holes and welding sockets, see Technical information IN 00.14 at [www.wika.com](http://www.wika.com).

## Ordering information

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

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