

# Pressure transmitter for refrigeration and HVAC applications Model R-1

WIKA Data Sheet PE 81.45

## Applications

- Refrigeration and HVAC applications
  - Compressors
  - Condensers
  - Chillers

## Special Features

- Stainless steel wetted parts
- Resistant against all common refrigerants
- Special design for the best possible condensation tightness
- Customised pin configuration possible



Fig. left: R-1 with M 12x1  
 Fig. center: R-1 with Metri Pack 150  
 Fig. right: R-1 with flying leads

## Description

### Refrigeration and HVAC applications

The R-1 pressure transmitter is optimally suited to the special requirements of refrigeration and HVAC applications. Its monolithic design eliminates the need for seals on the process connection. This qualifies the R-1 for use with all typical refrigerants (e.g. Freon and Ammonia).

### Excellent performance

The hermetically welded, dry, thin-film measuring cell guarantees long-term leak tightness. In addition, the sputtered stainless steel measuring cell features high long-term stability, along with an especially high burst pressure.

### Attractive price/performance ratio

Production on highly-flexible manufacturing lines ensures a very attractive price/performance ratio, also for high volumes.

# Specifications

# Model R-1

Pressure ranges	bar	6	10	16	25	40	60
Over pressure safety	bar	20	20	32	50	80	100
Burst pressure	bar	100	100	160	250	400	400
All pressure ranges also from -1 bar available. {Vacuum, gauge pressure, compound ranges are available}							
<b>Materials</b>							
■ Wetted parts		Stainless steel					
■ Case		Stainless steel					
■ Electrical connection		Highly resistive, fibreglass- enforced plastic (PBT GF 30)					
		Signal output		Power supply		Maximum load RA	
		4 ... 20 mA, 2-wire		7 ... 30 VDC		$R_A \leq (U_B - 7 \text{ V}) / 0.02 \text{ A}$	
		0 ... 10 V, 3-wire		14 ... 30 VDC		$R_A > 10 \text{ kOhm}$	
		0.5 ... 4.5 V, ratiometric		5 ± 0.5 VDC		$R_A > 4.5 \text{ kOhm}$	
Response time (10 ... 90 %)	ms	≤ 5					
Insulation voltage	VDC	500					
Accuracy	% of span	≤ 2 *)					
		*) Including non-linearity, hysteresis, zero point and full scale error (corresponds to error of measurement per IEC 61298-2).					
1-year stability	% of span	≤ 0.3 (at reference conditions)					
<b>Permissible temperature of</b>							
■ Medium		-40 ... +100 °C	-40 ... +212 °F				
■ Ambience		-25 ... +80 °C	-13 ... +176 °F	other temperature ranges on request			
■ Storage		-25 ... +80 °C	-13 ... +176 °F				
Rated temperature range		-25 ... +80 °C	-13 ... +176 °F				
Temperature coefficients within rated temperature range							
■ Mean TC of zero	% of span	typ. ≤ 0.5 / 10 K					
■ Mean TC of range	% of span	≤ 0.3 / 10 K					
<b>CE-conformity</b>							
■ Pressure equipment directive		97/23/EC					
■ EMC directive		2004/108/EEC, EN 61 326 Emission (Group 1, Class B) and Immunity (industrial locations)					
<b>Wiring protection</b>							
■ Short-circuit protection		Sig+ towards U <sub>B-</sub>					
■ Reverse polarity protection		U <sub>B+</sub> towards U <sub>B-</sub>					
■ Overvoltage protection	VDC	36					
Weight	kg	Approx. 0.08					

{ } Items in curved brackets are optional extras for additional price

## Dimensions in mm

Ingress Protection IP per IEC 60529. The ingress protection classes specified only apply while the pressure transmitter is connected with female connectors that provide the corresponding ingress protection.

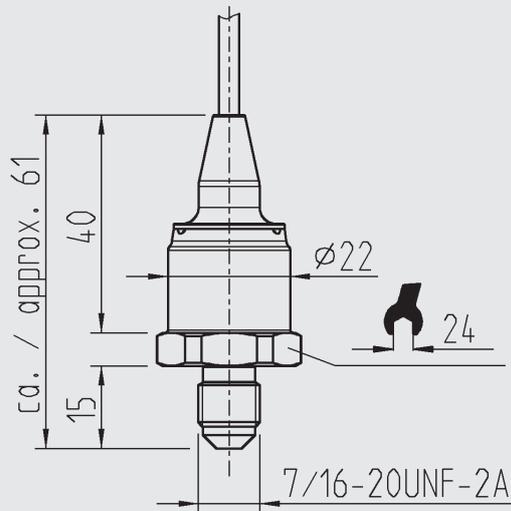
### Example

#### Electrical connection

Flying leads  
 Conductor cross section: 0.42 mm<sup>2</sup>  
 Conductor outer diameter: 3.2 mm  
 IP 69K  
 Order code: FN

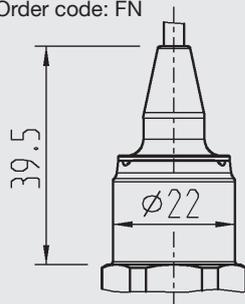
#### Pressure connection

7/16-20 UNF-2A  
 Cone 90°  
 Order code: U5

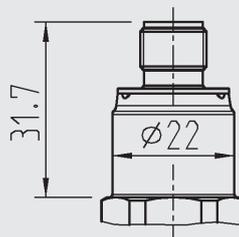


### Electrical connections

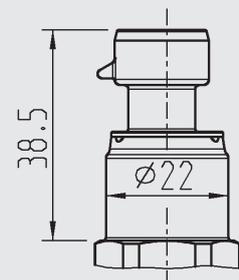
Flying leads  
 Conductor cross section: 0.42 mm<sup>2</sup>  
 Conductor outer diameter: 3.2 mm  
 IP 69K  
 Order code: FN



Circular connector  
 M 12x1  
 4-pin  
 IP 67  
 Order code: M4

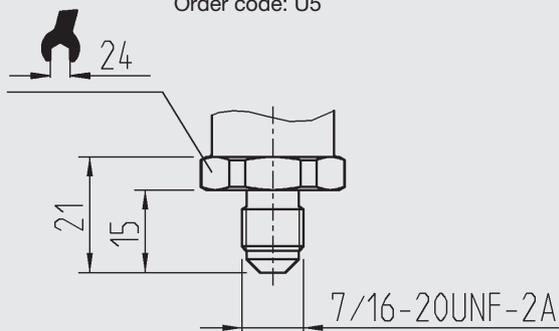


Connector  
 Metri Pack Series 150  
 3-pin  
 IP 67  
 Order code: R3

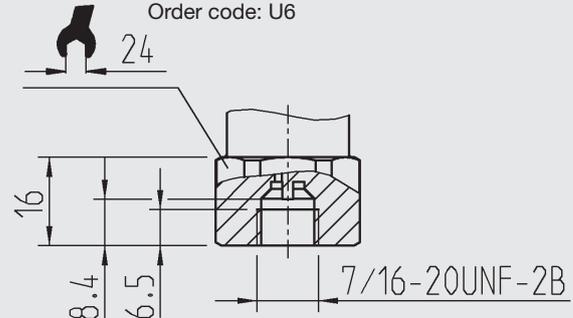


### Pressure connections

7/16-20 UNF-2A  
 Cone 90°  
 Order code: U5



7/16-20 UNF-2B  
 Schrader internal thread  
 Order code: U6



For installation and safety instructions see the operating instructions for this product.

For tapped holes and welding sockets please see Technical Information IN 00.14 for download at [www.wika.de](http://www.wika.de)

## Electrical connections

	2-wire	3-wire
Circular connector M 12x1 4-pin		
Connector Metri Pack Series 150 3-pin		
Flying leads		
Other pin assignments on request.		
<b>Legend:</b> power supply load (e.g. display)		

Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.

