

# Refrigeration and Air Conditioning Pressure Transmitter Model R-1

## Applications

- Refrigeration and air conditioning applications
  - Compressor suction and discharge pressure
  - Compressor staging
  - Condenser fan controls
  - Chiller systems

## Special Features

- Stainless steel wetted parts
- Compact design is shock and vibration resistant
- Compatible with all common refrigerants
- Condensation proof



Left: R-1 with M 12x1  
Center: R-1 with Metri Pack 150  
Right: R-1 with cable

## Description

### Refrigeration and Air Conditioning applications

The R-1 pressure transmitter is designed for the special requirements of refrigeration and HVAC applications. The all welded stainless steel measuring cell eliminates the need for soft sealing materials between the sensor and process connection. This qualifies the R-1 for use with all typical refrigerants including chlorofluorocarbons R12, R22, R123, R134a and ammonia.

### Excellent performance and reliability

The R-1 provides a linear amplified output with short circuit, reverse polarity, and overvoltage protection. The hermetically welded, dry, thin-film measuring cell provides long-term leak resistance. In addition, the sputtered stainless steel measuring cell features excellent long-term stability and an extremely high burst pressure.

### Economical price, high performance

Production on highly flexible manufacturing lines provides a very attractive price to performance ratio for large production runs.

## Specifications

Pressure ranges	psi <sup>1</sup>	100	150	200	300	600	850
Over pressure safety	psi	300	300	480	750	1200	1500
Burst pressure	psi	1500	1500	2400	3750	6000	6000
Pressure ranges	bar <sup>1</sup>	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
1. All pressure ranges available starting from 30INHG Vacuum (-1 bar)							
{Compound ranges available upon request}							
Materials							
■ Wetted parts		Stainless steel					
■ Case		Stainless steel					
■ Electrical connection		Chemical resistant fiberglass- reinforced plastic (PBT GF 30)					
		Signal output	Power supply		Maximum load RA		
		4 ... 20 mA, 2-wire	7 ... 30 VDC		RA ≤ (UB - 7 V) / 0.02 A		
		0 ... 10 V, 3-wire	14 ... 30 VDC		RA > 10 kOhm		
		0.5 ... 4.5 V, ratiometric	5 ± 0.5 VDC		RA > 4.5 kOhm		
Response time (10 ... 90 %)	ms	≤ 5					
Insulation voltage	VDC	500					
Accuracy	% of span	≤ 1.0 (B.F.S.L.) (≤ 2.0 per IEC 61298-2 *)					
		*) Including non-linearity, hysteresis, zero point and full scale error					
1-year stability	% of span	≤ 0.3 (at reference conditions)					
Permissible temperature of							
■ Medium		-40 ... +212 °F		-40 ... +100 °C			
■ Ambient		-13 ... +176 °F		-25 ... +80 °C			
■ Storage		-13 ... +176 °F		-25 ... +80 °C			
Rated temperature range		-13 ... +176 °F		-25 ... +80 °C			
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					
CE-conformity							
■ EMC directive		2004/108/EEC, EN 61 326 Emission (Group 1, Class B) and Immunity (industrial locations)					
Wiring protection							
■ Short-circuit protection		Sig+ to UB-					
■ Reverse polarity protection		UB+ to UB-					
■ Overvoltage protection	VDC	36					
Weight	oz	Approx. 2.8					

{ } Items in curved brackets are options available for additional cost

## Dimensions in inches (mm)

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

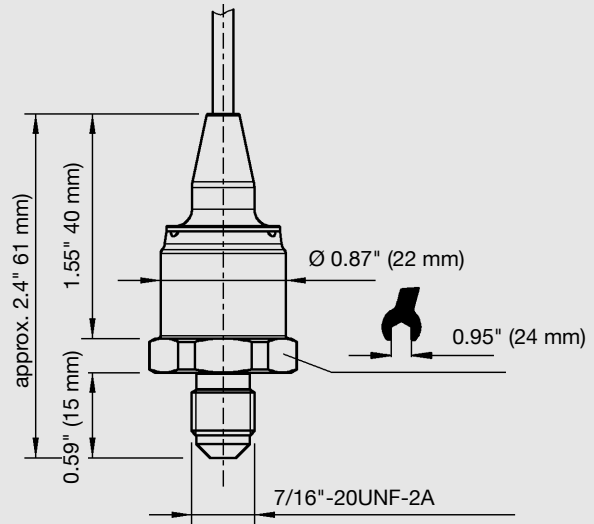
### Example

#### Electrical connection

Cable with free ends  
Wire gauge: 3 x 0.14 mm<sup>2</sup>  
Cable diameter: 3.2 mm  
IP 69K  
Order code: FN

#### Pressure connection

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

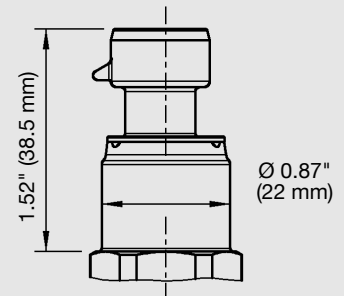
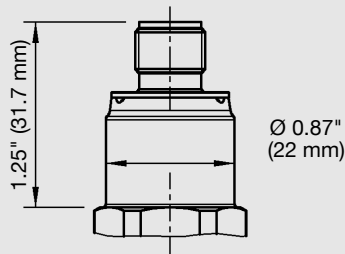
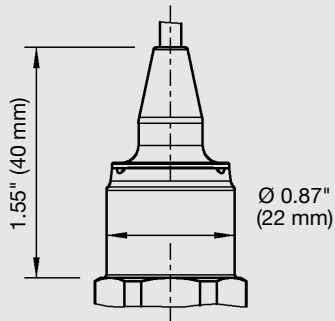


### Electrical connections

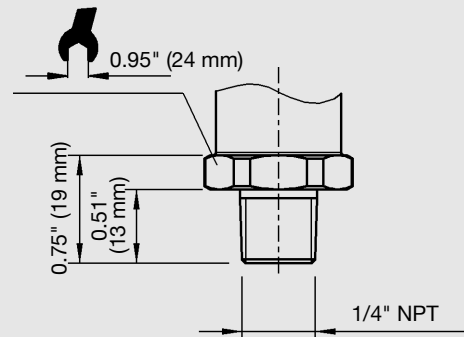
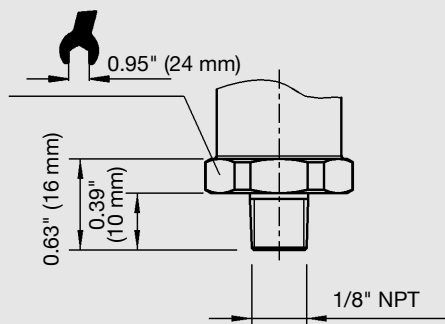
Cable with free ends  
Wire gauge: 3 x 0.14 mm<sup>2</sup>  
Cable diameter: 3.2 mm  
IP 69K  
Order code: FN

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



## Pressure connections



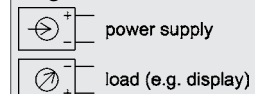
For installation and safety instructions refer to the operating instructions for this product.

## Electrical connections

	2-wire	3-wire
Circular connector M 12x1 4-pin		
Connector Metri Pack Series 150 connector 3-pin		
Cable with free ends		

Custom pin configurations available

### Legend:



Specifications and dimensions given in this data sheet 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.



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