

Refrigeration and Air Conditioning Pressure Transmitter Model AC-1

WIKA Datasheet AC-1

Applications

- Refrigeration and air conditioning applications
 - Heat pumps, central air conditioners
 - Compressors
 - Chillers

Special Features

- Brass, CR70 (polychloroprene) and ceramic wetted parts
- Compatible with most refrigerants
- Condensation proof



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

Description

Refrigeration and HVAC applications

The new AC-1 pressure transmitter uses an integrated thick film ceramic pressure sensor to meet the price and performance requirements of commercial and OEM HVAC and refrigeration applications.

The wetted parts include ceramic, brass, and a polychloroprene (Neoprene®) sealing ring. These materials are compatible with most common refrigerants.

Performance and reliability

The AC-1 provides a linear, amplified voltage or milliamp signal output with short circuit, reverse polarity, and overvoltage protection. The ceramic thick film sensor provides a non-linearity of less than 1.0% B.F.S.L. and has no measurable hysteresis error. The AC-1 was tested using strict protocols designed specifically for the refrigeration and HVAC industry. It meets or exceeds all test requirements including resistance to high pressure steam jets, condensation, dust tightness, and icing.

Economical price with high performance

Assembly on highly flexible manufacturing lines provides a cost effective transmitter for both small and large quantity production runs.

Neoprene® is a registered trademark of E.I. du Pont de Nemours and Company

Specifications

Pressure ranges	psi ¹	100	150	200	300	850
Over pressure safety	psi	300	300	600	600	1500
Burst pressure	psi	370	370	730	730	1800
Pressure ranges	bar ¹	7	10	16	25	60
Over pressure safety	bar	20	20	40	40	100
Burst pressure	bar	25	25	50	50	120
1. All pressure ranges available starting from 30INHG Vacuum (-1 bar)						
{Vacuum and Compound ranges available upon request}						
Materials		Brass, Al ₂ O ₃ ceramic 96%				O-ring: CR 70 (polychloroprene)
■Wetted parts		Compatible with R12, R22, R134a, R404a, R407c, R410a, R502, R507 refrigerants				
Media compatibility						
■Case		Brass				
■Electrical connection		Chemical resistant fiberglass- reinforced plastic (PBT GF 30)				
		Signal output	Power supply UB		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				
Isolation 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 ... +176 °F	-40 ... +80 °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 0V				
■Reverse polarity protection		UB+ to 0V				
■Overvoltage protection	VDC	36				
Weight	oz	Approx. 2.8				

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

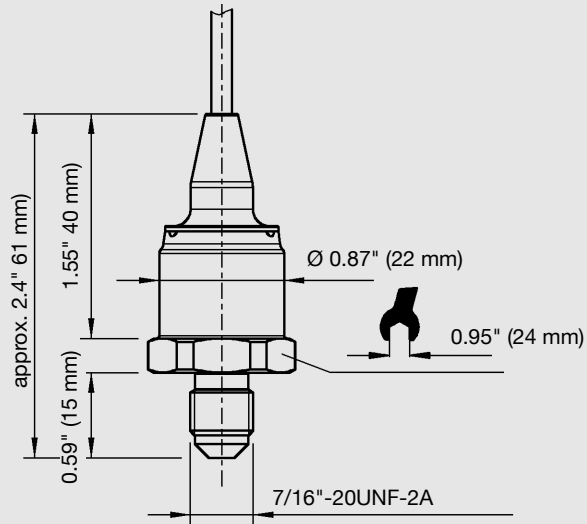
Dimensions in inches (mm)

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

Pressure connection
7/16"-20 UNF-2A
90° Cone

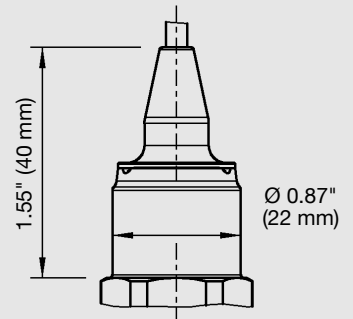
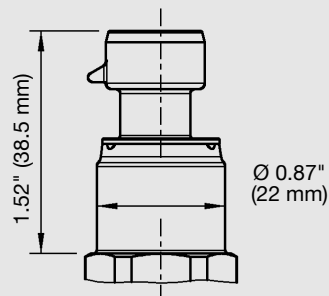
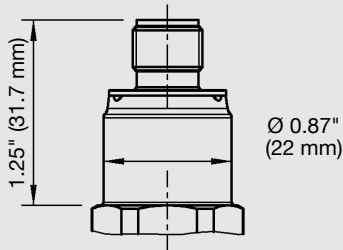


Electrical connections

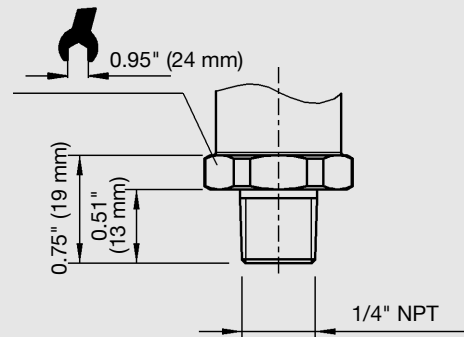
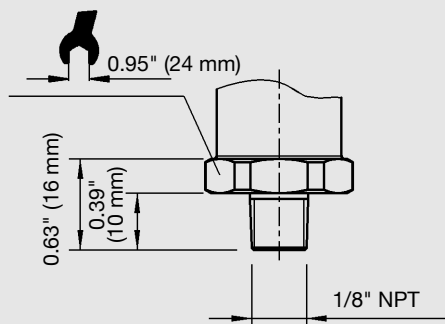
Circular connector
M 12x1
IP67

Connector
Metri Pack Series 150
IP67

Cable with free ends
IP69K



Pressure connections



Pressure connections

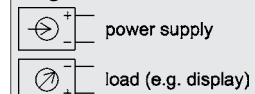


For installation and safety instructions refer to the operating instructions.

Electrical connections

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

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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