



## P499 Series Electronic Pressure Transducers

### Description

The P499 Series Electronic Pressure Transducers are compact, economical, rugged, direct-mount pressure transducers designed for use in commercial refrigeration and air conditioning applications. These transducers produce an analog signal based on the sensed pressure.

The P499 Series transducers feature environmentally protected electronics with stainless steel construction. The digitally compensated P499 transducers are highly accurate over a broad temperature range, resisting the effects of wide ambient temperature swings, high humidity, condensation, and icing.

The pressure port is machined from a solid piece of 17-4PH stainless steel. No O-rings, organic materials, or welds are exposed to the pressure media, allowing for a leak-proof, all-metal, sealed pressure system.

The P499 Series transducers operate with any corrosive or non-corrosive pressure medium that is compatible with 17-4PH stainless steel, including water, condensate, carbon dioxide, glycol, most refrigerants (including ammonia), and many other compatible fluids and gases.

The P499 Series provides transducers in a variety of pressure ranges, covering most common refrigeration and air conditioning applications.

### Features

- single-piece machined 17-4PH stainless steel pressure port provides a durable assembly that eliminates refrigerant loss due to O-ring or weld failures; resists damage due to physical shock, vibration, and pressure pulsations; enables use with non-corrosive or corrosive pressure media that is compatible with 17-4PH stainless steel.
- environmentally protected electronics withstand the effects of adverse conditions associated with typical HVAC/R applications, including freeze/thaw applications on suction lines.
- reliable, repeatable performance and long operating life minimizes service and replacement costs.
- many available pressure ranges provide a single line of transducers for all refrigeration and air conditioning application needs.
- 1% total error band provides high-accuracy performance.
- slender body design facilitates use of deep-socket wrenches for ease of installation; requires zero turning radius.
- CE and UL agency listings allow for global applications.



**P499 Electronic Pressure Transducers; Style 47 Fitting Shown on the Left and Style 49 Fitting Shown on the Right**

Refer to the *P499 Series Electronic Pressure Transducer Product/Technical Bulletin (LIT-12011190)* for important product application information.

### Repair Information

If the P499 Series Electronic Pressure Transducer fails to operate within its specifications, replace the unit. For a replacement transducer, contact the nearest Johnson Controls® representative.

### Accessories

P499 transducers require wire harnesses for all models that do not have an integral cable.

#### Wire Harnesses with Packard Electrical Connectors

Product Code Number <sup>1</sup>	Length
WHA-PKD3-200C	6-1/2 ft (2.0 m)
WHA-PKD3-400C	13 ft (4.0 m)
WHA-PKD3-600C	19-5/8 ft (6.0 m)

1. Wire harnesses for P399 transducers and P499 transducers are interchangeable.

### Selection Chart

#### 0.5 to 4.5 VDC Ratiometric P499 Transducer Models with Packard Electrical Connections, psis

Product Code Number	Pressure Connection	Pressure Range <sup>1</sup>		Individual or Kit <sup>2</sup>
		Minimum Pressure (Pmin)	Maximum Pressure (Pmax)	
P499RAPS100C	1/8 in. 27 NPT External Thread (Style 49)	-10 psis (-0.7 bar)	100 psis (6.9 bar)	Individual
P499RAPS100K		[20 in. Hg]		Kit
P499RAPS102C		0 psis (0 bar)	200 psis (13.8 bar)	Individual
P499RAPS102K				Kit
P499RCPS100C	1/4 in. SAE 45° Flare Internal Thread (7/16-20 UNF) with Depressor (Style 47)	-10 psis (-0.7 bar)	100 psis (6.9 bar)	Individual
P499RCPS100K		[20 in. Hg]		Kit
P499RAPS102C		0 psis (0 bar)	200 psis (13.8 bar)	Individual
P499RAPS102K				Kit

1. Transducer sealed and rated for IP67 harsh environments.

2. The **Individual** pack comes with a transducer only - you must order the wire harness separately. The **Kit** is packaged with a transducer, 6-1/2 ft (2 m) wire harness, and technical documentation.



## P499 Series Electronic Pressure Transducers (Continued)

### 0.5 to 4.5 VDC Ratiometric P499 Transducer Models with Integral 2 m (6-1/2 ft) Shielded Cable, psis

Product Code Number	Pressure Connection	Pressure Range <sup>1</sup>	
		Minimum Pressure (Pmin)	Maximum Pressure (Pmax)
P499RCSS101C	1/4 in. SAE 45° Flare Internal Thread (7/16-20 UNF) with Depressor (Style 47)	0 psis (0 bar)	100 psis (6.9 bar)

1. Transducer sealed and rated for IP67 harsh environments.

### 0.5 to 4.5 VDC Ratiometric P499 Transducer Models with Packard Electrical Connections, psi

Product Code Number	Pressure Connection	Pressure Range		Individual or Kit <sup>1</sup>
		Minimum Pressure (Pmin)	Maximum Pressure (Pmax)	
P499RAP-101C	1/8 in. 27 NPT External Thread (Style 49)	0 psi (0 bar)	100 psi (6.9 bar)	Individual
P499RAP-101K				Kit
P499RAP-102C		0 psi (0 bar)	200 psi (13.8 bar)	Individual
P499RAP-105C		0 psi (0 bar)	500 psi (34.5 bar)	Individual
P499RAP-105K				Kit
P499RAP-107C		0 psi (0 bar)	750 psi (51.7 bar)	Individual
P499RAP-107K				Kit
P499RCP-101C	1/4 in. SAE 45° Flare Internal Thread (7/16-20 UNF) with Depressor (Style 47)	0 psi (0 bar)	100 psi (6.9 bar)	Individual
P499RCP-101K				Kit
P499RCP-105C		0 psi (0 bar)	500 psi (34.5 bar)	Individual
P499RCP-105K				Kit
P499RCP-107C		0 psi (0 bar)	750 psi (51.7 bar)	Individual
P499RCP-107K				Kit

1. The **Individual** pack comes with a transducer only - you must order the wire harness separately. The **Kit** is packaged with a transducer, 6-1/2 ft (2 m) wire harness, and technical documentation.

### 0 to 10 VDC P499 Transducer Models with Packard Electrical Connections, psi

Product Code Number	Pressure Connection	Pressure Range		Individual or Kit <sup>1</sup>
		Minimum Pressure (Pmin)	Maximum Pressure (Pmax)	
P499VAP-101C	1/8 in. 27 NPT External Thread (Style 49)	0 psi (0 bar)	100 psi (6.9 bar)	Individual
P499VAP-101K				Kit
P499VAP-105C		0 psi (0 bar)	500 psi (34.5 bar)	Individual
P499VAP-105K				Kit
P499VAP-107C		0 psi (0 bar)	750 psi (51.7 bar)	Individual
P499VAP-107K				Kit
P499VCP-101C		1/4 in. SAE 45° Flare Internal Thread (7/16-20 UNF) with Depressor (Style 47)	0 psi (0 bar)	100 psi (6.9 bar)
P499VCP-101K				Kit
P499VCP-105C	0 psi (0 bar)		500 psi (34.5 bar)	Individual
P499VCP-105K				Kit
P499VCP-107C	0 psi (0 bar)		750 psi (51.7 bar)	Individual
P499VCP-107K				Kit

1. The **Individual** pack comes with a transducer only, you must order the wire harness separately. The **Kit** is packaged with a transducer, 6-1/2 ft (2 m) wire harness, and technical documentation.

### 4 to 20 mA P499 Transducer Models with Packard Electrical Connections, psi (Part 1 of 2)

Product Code Number	Pressure Connection	Pressure Range		Individual or Kit <sup>1</sup>
		Minimum Pressure (Pmin)	Maximum Pressure (Pmax)	
P499AAP-101C	1/8 in. 27 NPT External Thread (Style 49)	0 psi (0 bar)	100 psi (6.9 bar)	Individual
P499AAP-101K				Kit
P499AAP-105C		0 psi (0 bar)	500 psi (34.5 bar)	Individual
P499AAP-105K				Kit
P499AAP-107C		0 psi (0 bar)	750 psi (51.7 bar)	Individual
P499AAP-107K				Kit



## P499 Series Electronic Pressure Transducers (Continued)

### 4 to 20 mA P499 Transducer Models with Packard Electrical Connections, psi (Part 2 of 2)

Product Code Number	Pressure Connection	Pressure Range		Individual or Kit <sup>1</sup>
		Minimum Pressure (Pmin)	Maximum Pressure (Pmax)	
P499ACP-101C	1/4 in. SAE 45° Flare Internal Thread (7/16-20 UNF) with Depressor (Style 47)	0 psi (0 bar)	100 psi (6.9 bar)	Individual
P499ACP-101K				Kit
P499ACP-105C		0 psi (0 bar)	500 psi (34.5 bar)	Individual
P499ACP-105K				Kit
P499ACP-107C		0 psi (0 bar)	750 psi (51.7 bar)	Individual
P499ACP-107K				Kit

1. The **Individual** pack comes with a transducer only, you must order the wire harness separately. The **Kit** is packaged with a transducer, 6-1/2 ft (2 m) wire harness, and technical documentation.

### Technical Specifications

P499 Series Electronic Pressure Transducers		
<b>Pressure Ranges</b>		-10 to 100 psis, 0 to 100 psi, 0 to 200 psi, 0 to 500 psi, 0 to 750 psi
<b>Maximum Working Pressure</b>		2x Pressure Range; short duration; infrequent, abnormal condition
<b>Burst Pressure</b>		5x Pressure Range
<b>Vacuum</b>		30 microns (0.03 mm Hg); short term
<b>Media Compatibility</b>		All media compatible with 17-4PH stainless steel, including ammonia
<b>Output Signal</b>		0.5 to 4.5 VDC, 0 to 10 VDC, or 4 to 20 mA
<b>Supply Voltage</b>	<b>0.5 to 4.5 VDC Ratiometric Output</b>	5.0 ±0.25 VDC, Safety Extra-Low Voltage (SELV) or Class 2
	<b>4 to 20 mA Output</b>	9 to 30 VDC, SELV or Class 2
	<b>0 to 10 VDC Output</b>	12 to 30 VDC, SELV or Class 2
<b>Direct-Mount Pressure Connections</b>		1/8 in. 27 NPT External Thread (Style 49), 1/4 in. SAE 45° Flare Internal Thread (7/16-20 UNF) with Depressor (Style 47)
<b>Temperature and Humidity</b>	<b>Storage</b>	-40 to 257°F (-40 to 125°C)
	<b>Operating</b>	-40 to 185°F (-40 to 85°C)
	<b>Compensated Range</b>	-4 to 185°F (-20 to 85°C)
	<b>Humidity</b>	0 to 100% RH
<b>Linearity</b>		±0.25% Full Span best fit straight line
<b>Accuracy</b>		±1% Full Span (maximum) over compensated temperature range
<b>Materials</b>	<b>Pressure Port</b>	17-4PH stainless steel construction
	<b>Packard Connector</b>	40% glass-filled Polyetherimide (PEI)
<b>Vibration</b>		20G, 20 to 200 Hz
<b>Shock</b>		200G/11 ms
<b>Compliance</b>	<b>United States</b>	UL Listed, File E29374, CCN NKPZ UL Recognized for Use in Class I, Division 2 Hazardous Locations, File E322274
	<b>Canada</b>	UL Listed, File E29374, CCN NKPZ7 UL Recognized for Use in Class I, Division 2 Hazardous Locations, File E322274
	<b>Europe</b>	CE Mark – Johnson Controls, Inc., declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive 2004/108/EC.
	<b>Australia/ New Zealand</b>	C-Tick Mark, Emissions Compliant