1. Description

The PPR & PPC pressure transducers are sensors that convert physical pressure into a ratiometric or current analog signal.

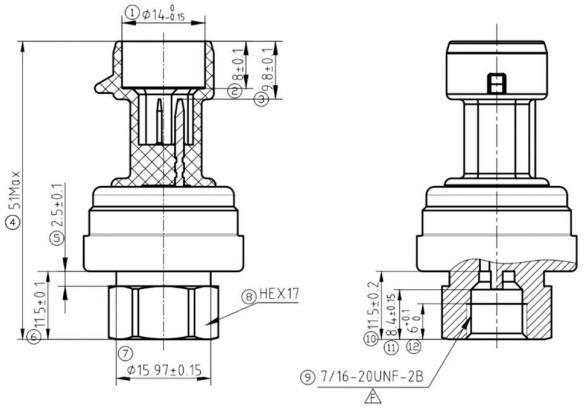
The compact design, proven long-term reliability and accuracy make this sensor ideal for both demanding air conditioning and refrigeration applications. Flexibility of connection is ensured by a range of cable lengths readily available for Packard mating.

This transmitter's technical state-of-the-art capabilities are possible thanks to the ceramic capacitive sensor element, the system is protected from overvoltage and short-circuits. All the above, and more, yield great potential for use in both air conditioning and refrigeration applications.

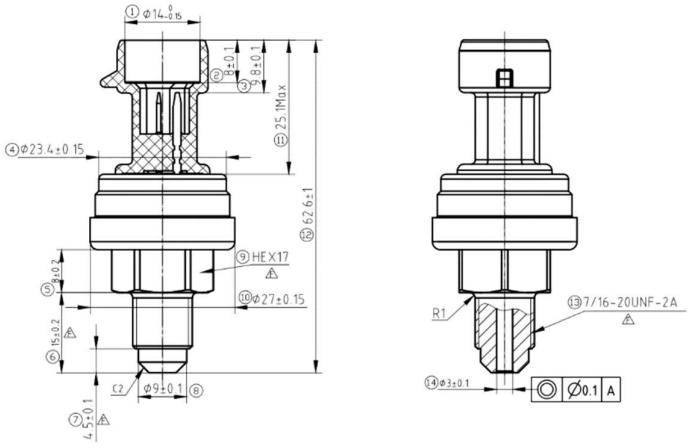
2. Dimension

Mechanical connector

Female

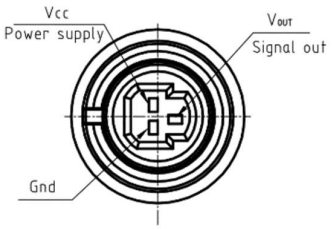


Male



3. Power Supply connection

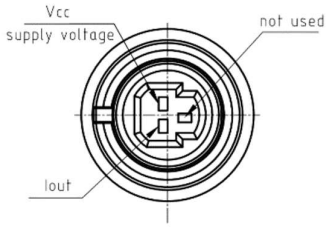
0.5÷4.5V Ratiometric Output



n function	Cable colors match*
Supply - V_{IN}	Black
Return - V_{OUT}	White
Ground - GND	Green

* with cables indicated in Available Codes

4÷20mA Current Output



Pin function	Cable colors match*
Supply - V_{IN}	Black
Return - V_{OUT}	Green
Not used	(White)

* with cables indicated in Available Codes

4. Features, Benefits & Applications

Features	Benefits
• Ceramic capacitive sensing element • Corrosion resistance • Compact and durable design • Shock resistance • High precision and stability • Overvoltage and short-circuit protected	• Reliable over time • Space saving • Electrically safe client application

This pressure transducer brings intrinsic characteristics which enable the delivery of valuable advantages and convenience, that in turn makes possible optimal operation in the customer interest.

Application	Application Benefits
• Evaporator and condenser pressure reading • Compressor suction and discharge monitoring	• Energy management via subcooling and superheat calculations for electronic expansion valve control • High/low pressure alarms from sensor's detection • Managing compressor staging and unloading

5. Available Codes

Pressure Transducer							
Part Number	How to Order	Output	Pressure Range [bar relative]	Body Material	Electrical Connection	Pressure Connection	Gasket material
BI51500A 05	PPR15S-ASF30	0,5÷4,5 V	0 ÷ 15	Stainless Steel	Packard Contro	Female	HNBR
BI53500A 05	PPR35S-ASF30		0 ÷ 35	Stainless Steel	Packard Contro	Female	HNBR
BI54500A 05	PPR45S-ASF30		0 ÷ 45	Stainless Steel	Packard Contro	Female	HNBR
BI20700B 05	PPC07S-BSF30	4÷20 mA	-0,5 ÷ 7	Stainless Steel	Packard Standard	Female	HNBR
BI20701B 05	PPC07S-BSM30			Stainless Steel	Packard Standard	Male	HNBR
BI21100B 05	PPC11S-BSF30		-0,5 ÷ 11	Stainless Steel	Packard Standard	Female	HNBR
BI21101B 05	PPC11S-BSM30			Stainless Steel	Packard Standard	Male	HNBR
BI23000B 05	PPC30S-BSF30		0 ÷ 30	Stainless Steel	Packard Standard	Female	HNBR
BI23001B 05	PPC30S-BSM30			Stainless Steel	Packard Standard	Male	HNBR
BI25000B 05	PPC50S-BSF30		0 ÷ 50	Stainless Steel	Packard Standard	Female	HNBR
BI25001B 05	PPC50S-BSM30			Stainless Steel	Packard Standard	Male	HNBR
BI26000B 05	PPC60S-BSF30		0 ÷ 60	Stainless Steel	Packard Standard	Female	HNBR

Cable						
Part Number	How to Order	Length [m]	Connection type	UV protected	Wires	Terminal finishes
DD520902 01	CAB PKD 02	2	Packard	No	3	Tinned
DD520904 01	CAB PKD 04	4	Packard	No	3	Tinned
DD520906 01	CAB PKD 06	6	Packard	No	3	Tinned
DD520908 01	CAB PKD 08	8	Packard	No	3	Tinned

For further cable and transducer options please contact Emerson Marketing.

6. Technical Data

GENERAL FEATURES	0.5÷4.5V Ratiometric Output	4÷20mA Current Output
Operating pressure (Relative: sealed gauge @ 1 Bar)	Depending on pressure range Overall from -0.5 to 60 Bar	
Pressure connector	Female: 7/16-20UNF-2B threaded connection Male: 7/16-20UNF-2A threaded connection	
Electrical connector	Packard, IP67	
Operating temperature	-40°C to +125°C	
Storage temperature	-40°C to +125°C	
Over pressure Based on sensor's pressure range	2x Operating pressure	
Burst pressure Based on sensor's pressure range	3x Operating pressure	
Fluid compatibility	See table "Seal Materials"	

ELECTRICAL FEATURES	0.5÷4.5V Ratiometric Output	4÷20mA Current Output
Power supply	4.5 to 5.5 V_{DC}	6 to 32 V_{DC}
Output	0.5 to 4.5 V_{DC}	4 to 20 mA
Supply current	8 mA max	4 to 20 mA
Output load [Ω]	3.7 KΩ minimum	R (o/p load, ohm) < (V - 6) / 20mA (V= supply voltage)**
Overvoltage Protection	16 V_{DC}	36 V_{DC}
Polarity reversal protection	-14 V_{DC}	-24 V_{DC}
Short Circuit Protected	Yes	Yes
Response time (typical)	8 ms	3 ms max

ACCURACY	0.5÷4.5V Ratiometric Output	4÷20mA Current Output
Static error band @ 25°C & F.S. = 5V_{DC} (linearity, hysteresis, repeatability and calibration)	±1% F.S.	±1% F.S.
Total error band (over operating temperature range)	±1.0% F.S. (0°C to +50°C) ±1.5% F.S. (-10°C to +80°C) ±2.0% F.S. (-40°C to +125°C)	±1.0% F.S. (0°C to +50°C) ±1.5% F.S. (-10°C to +80°C) ±2.0% F.S. (-40°C to +125°C)

CERTIFICATIONS / EMC FEATURES	0.5÷4.5V Ratiometric Output	4÷20mA Current Output
EMC (512MHz to 1 GHz)	50 V/m	50 V/m
EMC (1 MHz to 512 MHz)	100 V/m	100 V/m
ESD	15 kV in air	15 kV in air

INSTALLATION	0.5÷4.5V Ratiometric Output	4÷20mA Current Output
Fixing torque	30 ±5 Nm	

MECHANICAL FEATURES	0.5÷4.5V Ratiometric Output	4÷20mA Current Output
Protection degree	IP67	
Housing material	316L (Stainless steel)	
Connector material	**PPE+PA+GF30%, black color**	
Pressure seal material	**HNBR gasket**	

PERFORMANCE FEATURES	0.5÷4.5V Ratiometric Output	4÷20mA Current Output
Life cycle	2M F.S. cycles	2M F.S. cycles
Drop (any axis)	1 m	1 m
Vibration test	10g (50 to 2000 Hz)	10g (5 to 2000 Hz)

SEAL MATERIALS	0.5÷4.5V Ratiometric Output	4÷20mA Current Output
HNBR (Hydrogenated Nitrile)		
• Fluid compatibility by refrigerant class		
A1 – No flame propagation	R22, R134a, R404a, R407a, R407c, R407f, R410a, R448a, R449a, R450a, R452a, R744, R507a, R513a	
A2L – Lower flammability	R32, R1234yf, R1234ze, R452b, R454a, R454b, R454c	
A3 – Higher flammability	R290, R600	

APPROVALS	0.5÷4.5V Ratiometric Output	4÷20mA Current Output
Compliance	CE compliant	