Bently Nevada Service Manual

165855-15-CN

1. Description

165855-15-CN

3. Product Information

165855-15-CN | Bently Nevada | Cylinder Pressure Transducer

Manufacturer : Bently Nevada

Product No. : 165855-15-CN

Product Type : Cylinder Pressure Transducer

Made in U.S.A

Description

The Cylinder Pressure System consists of the 165855 Cylinder Pressure Transducer and the 146824 Interconnect cable. It is intended for measuring the cyclic absolute pressure changes inside a reciprocating compressor cylinder. This transducer is an integral part of a Reciprocating Compressor Condition Monitoring and Asset Management System when utilized with our 3500/77M Cylinder Pressure Monitor and System 1 Plant Asset Management Software.

The Cylinder Pressure Transducer has a robust design for high reliability in harsh chemical environments. The unique, patent-pending design also allows the transducer to continue to provide an accurate pressure reading, even after being continually cycled over large pressure gradients for an extended period of time. The transducer can also withstand over-pressure situations caused by application upsets without diaphragm degradation, returning to normal operation when the operating pressure returns to the transducer’s specified operating pressure range. The Cylinder Pressure Transducer is also designed to meet NEMA 4X and IP67 conditions for moisture ingression.

The wetted surface of the transducer is typically installed into an isolation valve or similar pressure indicator port on the compressor. A special adapter is usually required to provide a seal between the pressure indicator port and the transducer (such as the 166393 adapter). The electronics portion of the Cylinder Pressure Transducer is separated from the wetted surface by 1 metre of cable. The electronics must be secured on or near the compressor for optimal performance.

Transducer Characteristics

Measurement Range

0 to 100/ 250/ 500/ 1000/ 2500/ 5000/ 10,000 psia

0 to 6.8/ 17/ 34.5/ 69/172/ 345/ 689 bar

Proof (Over) Pressure 1.5X Full Scale

Burst Pressure 3X Full Scale (2X FS on 689 bar/ 10,000 psia units)

Full Scale Output 10 ± 0.3 Vdc

Zero 0.5 ± 0.1 Vdc

Power Supply 18 to 30 Vdc

Max. Current < 15 mA

Compensated Temperature

-40 to 85° C

-40 to 185° F

Thermal Zero Shift

-1.0 to +2.0 (for 6.8 and 17 bar/ 100 and 250 psia) %FS

-0.5 to +1.5 (for all other
pressure ranges)
Note: Within compensated
temperature range.
Linearity,
Hysteresis,
Repeatability
£ ±0.3 %FS
Frequency
response
0Hz to 5500 Hz ± 1 dB
Operating
Temperature
-40 to 85 (electronics
housing) °C
-40 to 150 (sensor head) °C
-40 to 185 (electronics
housing) °F
-40 to 302 (sensor head) °F
Overvoltage
Category II
Weight 250 g (0.55 lbm)
Sensor Head 150 g (0.33 lbm)
Materials
Gold plated, per MIL-G-45204
Type III Grade A, C-276
welded to a 316L stainless
steel body. (patent pending)
Humidity 95% condensing on exposed
surfaces excluding connector
Body Designed to meet IP67
Operating
Temperature
Dependent upon O-ring
material
Hifluor: -26°C to 150 °C (-15 °F
to 302 °F)
Ethylene Propylene:
-40°C to 150 °C (-40 °F to 302
°F)
Pressure
Media
Fluid media compatible with
C-276 and either Hifluor or
Ethylene Propylene o-ring
material (common media
below)
Pollution
Degree 2
Maximum Use
Altitude 2000 meters above sea level
O-rings
Hifluor
(black)
Hydrogen sulfide, sulfuric acid,
butane, fuel oil, petroleum oil,
turbine oil, propane, propylene,
butylenes, and natural gas.
Ethylene

Propylene

(purple)

Ammonium hydroxide,

anhydrous ammonia

Mounting

Torque 68 N-m (50 lbf-ft)

Ordering Information

165855 Cylinder Pressure

Transducer

All transducers have 7/8-14 UNF

thread.

Pressure Range Option : 15 - 0 to 172 bar (0 to 2,500 psia) w/ armor

Agency Approval Option : CN = Approvals country specific

Power Supply : 18 to 30 Vdc

Max. Current : < 15 mA

Frequency response : <0Hz to 5500 Hz ± 1 dB/li>

Weight : 0.4 Kg