

# NP9000 extreme environment pressure transducers



## Key features

- Absolute pressure transducer
- Operating temperature to 650°F
- Remote operation up to 250 feet between transducer and electronics
- Magnetic field immunity
- Fully submersible
- 100% analog passive component / simple apparatus
- Compatible with our analog pressure transmitter electronics and strain gauge signal converters

## Overview

The NP9000 Series pressure transducers are the latest generation of harsh environment sensors designed and manufactured by Curtiss-Wright. These fully hermetic submersible transducers combine a Wheatstone bridge strain gauge pressure sensor and a temperature sensor. This allows for precise temperature compensation in the signal conditioner or transmitter electronics. The transducer is manufactured using a proprietary process with high temperature interconnects. Mineral insulated metal sheathed cable carries power and signals for connection to remote signal conditioners. The transducer is a fraction of the size of industrial pressure transmitters making it ideal for on-machine applications in extreme environments where traditional pressure transmitters are unsuitable. Signal converters can be located up to 250 feet away in a mild environment. No other pressure transducer can match the extreme temperature performance of the NP9000.



# Technical specification

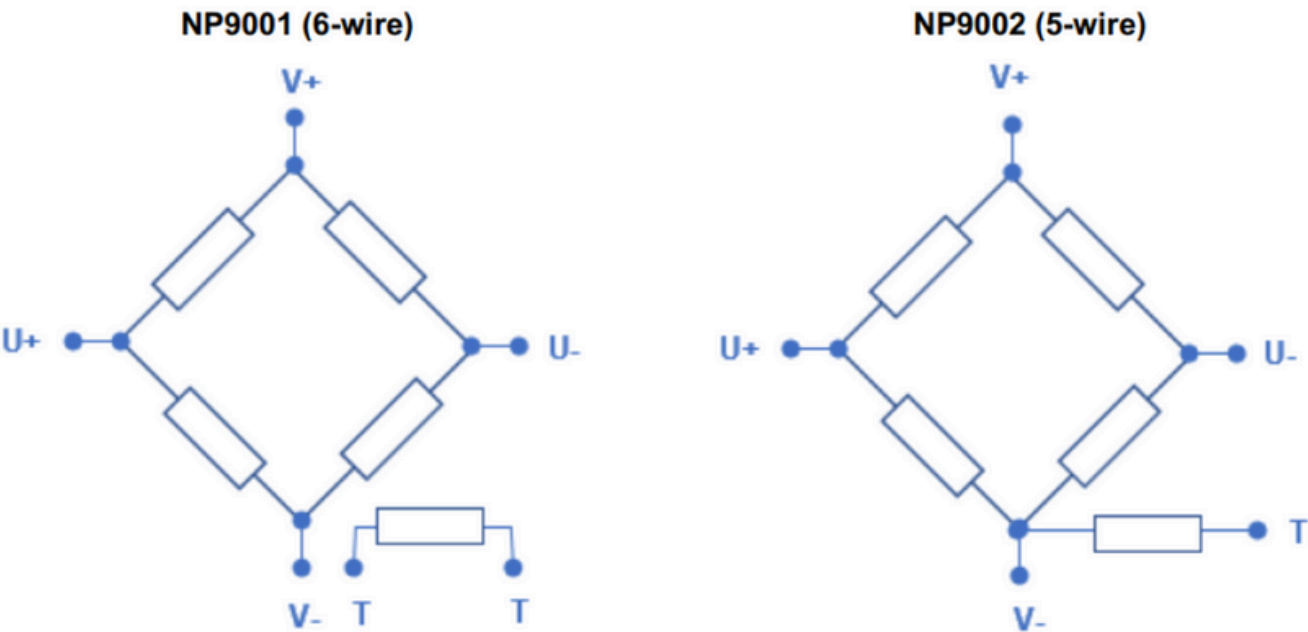
Feature	Description
Function	Harsh Environment absolute pressure transducer with temperature compensation
Ingress protection	Fully hermetic and submersible (1000 psi external pressure withstand)
Pressure ranges 0-URL (psia)	0-20, 0-100, 0-1500, 0-2500
Overpressure	2 x URL max
Burst	4 x URL min
Operating range	+40°F to +650°F (survival at +665°F for one hour)
Reference accuracy*	±0.25% URL at 25°C
Linearity	< 0.2% FS
Response time	≤ 0.4 sec
Ambient temperature effect*	±0.5% of URL / 100°F
Total accuracy (reference accuracy, ambient temperature effect, 24-month drift)*	±2.5 % of URL @300°F ±50°F
Total uncertainty (degraded conditions, DBA/LOCA, PAM)*	±5.2 % of URL
Materials	Stainless Steel 316/316L with 15-5 PH or Inconel diaphragm sensor
Process connection	JIC Fitting (JIC 37°) 7/16"-20 UNJF-3A thread per MS33656-4

# Technical specification

Feature	Description
Cable	Harsh environment six-conductor mineral insulated metal sheathed cable, 1/4" O.D.
Electrical	4-wire closed bridge + 1 or 2 wire RTD for temperature compensation
Bridge	4-wire 5,000 – 10,000 k $\Omega$
Sensitivity	2 mV/V nominal
Bridge excitation	10 – 20 VDC
Insulation resistance	IR: >100 M $\Omega$ @ 50 VDC
Temperature sensor	1,000 $\Omega$ Pt 3850 ppm/K RTD or 300 $\Omega$ 5000 ppm/K
Environmental	IEEE Class 1E capable up to Safety Class A1, Seismic Cat I
Mission life	$\geq$ 24 months; $\geq$ 35Mrad TID
Quality class	Nuclear grade quality assurance
Conformity	ASME Section III, ANSI/ISA-67.02.01-2014 Nuclear Safety-Related Instrument Sensing Line Piping and Tubing Standard
Weights	<ul style="list-style-type: none"><li>• Bracket 2.4lbs</li><li>• Pressure Transducer 0.8lbs</li><li>• Swagelok® NVT4N5VG15-GR two-stem manifold 2.7lbs</li><li>• Manifold Mounting bolts 0.3lbs</li><li>• Swivel Nut Male Connector – SAE 37° Flared adapter 0.1lbs</li><li>• U-Bolt 0.3lbs</li><li>• Total Assembly w/o MI Cable 6.5lbs</li><li>• MI Cable @ 0.11 Lbs/Ft</li></ul>

# Technical specifications

## Schematic of bridge



Pinout	NP9001	NP9002
1	V+	V+
2	T	NC
3	T	U-
4	U-	V-
5	V-	T
6	U+	U+

V+ and V-: Supply Voltage  
U+ and U-: Signal  
T: Temperature

## Ordering information

Prefix	Sensor	Range (psia)	MI Cable Length ("L") in feet
NP	9001 9002	20 100 1500 2500	XXX (250 max)
NP	9001	2500	50

Example

## United States of America

707 Jeffrey Way  
Round Rock  
Texas 78665-2408  
USA

Tel: +1 512-434-2800

## United Kingdom

Innovation House  
Lancaster Road  
Ferndown Industrial Estate  
Wimborne  
Dorset BH21 7SQ  
UK

Tel: +44 (0) 1202 850 450

For more information

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## About Curtiss-Wright

Curtiss-Wright Round Rock and Wimborne have worked with nuclear and industrial customers for over 60 years. We support customers across the world from facilities located in the US and UK. Our solutions are embedded in strategic national infrastructure and our people are active partners in customer programs that are focused on delivering advanced future nuclear and industrial capabilities.

Curtiss-Wright Corporation (NYSE: CW) is a global integrated business that provides highly engineered products, solutions and services mainly to Aerospace & Defense markets, as well as critical technologies in demanding commercial power, process and industrial markets. We leverage a workforce of approximately 8,600 highly skilled employees who develop, design and build what we believe are the best engineered solutions to the markets we serve. Building on the heritage of Glenn Curtiss and the Wright brothers, Curtiss-Wright has a long tradition of providing innovative solutions through trusted customer relationships.