

Transducers Direct Monthly Tech Notes - January 2010

Compensated Temperature and Operating Temperature



What is the difference in compensated and operating temperature?

Pressure transducers often list values for both compensated temperature and operating temperature in their specifications.

Typical specifications may read:

Compensated Temperature: -20 to 80°C (-5 to 180°F)

Operating Temperature: -40 to 125°C (-22 to 260°F)

Any strain gauge based pressure transducer is subject to "heat expands cold contracts" effects that will introduce thermal error into the measurement. The effect of uncompensated thermal error is non-linearity as a function of temperature change.



The compensated temperature range is the range of temperatures the transducer is subjected to and will have the greatest linearity. The operating temperature range is the range of specific temperatures the transducer is subjected to that are higher or lower than the compensated temperature range.

(Note: The transducer will "work" at those extremes but linearity may suffer.)

A method of providing temperature compensation is to use a programmable ASIC chip located in the transducer body. Transducers Direct TD1000 and TDG Series Pressure Transducers utilize this technology to provide exceptional linearity through a wide range of compensated temperatures.

Pressure Transducer Applications

Our Pressure Transducers are used successfully in many industrial [applications](#).

- Hydraulic / Pneumatic Systems
- Food and Beverage Industry
- Pumps and Compressors
- Energy and Water Management
- Construction and Agricultural Equipment
- High Pressure Wash Down Applications

Transducers Direct - TD1000 - Low Cost Pressure Transducer



Digitally Designed Pressure Transducer

TD1000



Features

- Highly accurate digital measurements
- Redundant sensing elements
- 24V digital output signal to set pressure or temperature switch points
- Custom outputs and pressure ranges
- IP69K seal rating available

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New Manufacturers Representatives

Southern Illinois, Eastern Missouri, Iowa
Industrial Systems Solutions
 Wayne Reinwald, Phone: (314) 420-3512
 Email: wayne.reinwald@yahoo.com

Western Missouri, Kansas, Nebraska
Quadrant Solutions
 Glenn Archer, Phone: 314-606-2153
 Email: glenn@quadrantsolutions.net

Geri Fanning, Phone: 636-405-0956
 Email: geri@quadrantsolutions.net

Customer Service Spotlight

"I did use Tech support to choose the right parts. The staff was very knowledgeable and professional." - F.H., Technician

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