

## GAUGE VS. ABSOLUTE VS. SEALED PRESSURE TRANSMITTERS

BY DYNISCO

The conventional units for defining pressure are PSI, pounds per square inch. However, in all pressure measuring devices, a reference pressure has to be established and the PSI qualified to indicate the reference datum. The suffixes “G”, “A”, and “S” identify the measured pressure as follows:

**PSIG**—Gauge Pressure    **PSIA**—Absolute Pressure    **PSIS**—Sealed Pressure

By design, pressure transducers are available to measure gauge, absolute or sealed pressure. The most common reference is atmospheric pressure and the units are designated at PSIG. In this case the measuring device is referred to as a Gauge Pressure Transducer.

### Gauge Pressure Transducer—PSIG

Measure pressure referenced to local atmospheric pressure and is vented to the atmosphere. When the pressure port is exposed to the atmosphere, the transducer will indicate 0 PSIG. This occurs because the pressure on both sides of the diaphragm is the same and there is no net output.

Venting is accomplished by means of a small diameter hole located near the transducer’s electrical termination - connector or cable. The vent hole contains a porous, stainless steel disk designed to filter out harmful airborne particles from entering the transducer.

Depending on accuracy class, PSIG transducers above certain pressure levels may in fact be sealed. This can be done because the possible measurement errors due to sealing will stay within the accuracy specifications of the transducer.

### Absolute Pressure Transducer—PSIA

Measure pressure referenced to an absolute vacuum, hermetically sealed at 0 PSIA. When the pressure port is exposed to the atmosphere, the transducer will indicate atmospheric pressure; approximately 14.7 PSIA. This occurs because there is a vacuum on one side of the diaphragm and atmospheric pressure on the other. The net output represents the difference, which is atmospheric pressure.

Depending on accuracy class, PSIA transducers above certain pressure levels may not have an absolute vacuum reference. They can be sealed with atmospheric pressure because the possible measurement errors will stay within the accuracy specification of the transducer.

### Sealed Pressure Transducer—PSIS

Measures pressure referenced to the prevailing atmospheric pressure hermetically sealed within the transducer. When the pressure port is exposed to the atmosphere, the transducer will indicate approximately 0 PSIS. This occurs because there is a fixed atmospheric pressure on one side of the diaphragm and the ambient atmospheric pressure on the other. If they are the same the net output is 0 PSIS. If they are not the same, then the net output will be a reading other than 0 PSIS.

Depending on the accuracy class, and design considerations, PSIS transducers below certain pressure levels are not available. Internal pressure changes due to temperature will produce measurement errors that will exceed the accuracy specification of the transducer. If a sealed transducer is required at low pressure levels, then the PSIA version should be used.

## Did You Know?

The origins of April Fool’s Day (April 1st) do not have a clear beginning. It is thought that the origins started with the change from the Julian calendar to the Gregorian calendar.

In Roman times, New Year’s was celebrated on April 1st according to the Julian calendar. When the calendar was changed in 1582 by Pope Gregory XIII, New Year’s fell on January 1st.

There were still those that celebrated on April 1st and were coined “fools” for their ways. They were ridiculed and pranks were played on them by those that had celebrated months earlier.

However, history shows that other traditions preceded these events.

Hilaria was an ancient Roman festival also known as Roman Laughing Day. It was a festival for the resurrection of the god Attis.

In India, Holi was celebrated by people playing jokes and throwing colorful dyes on each other. This tradition is celebrated today as the festival of colors.



## CLEARANCE ITEMS

Qty	Description	Price
1	2HP 1x230V Franklin Motor (14C14)	\$300
2	5HP 1x230V Franklin Motor (14D14)	\$650
3	2HP Std Franklin Control Box	\$100
1	MQ3-35 3/4HP 1x115V (1430)	\$400

## WTF fun fact #2454

A pound of any combination of dimes, quarters, and half-dollars is worth \$20.



wtfunfact.com

## Visitation Schedule

4/7-8—So. Utah (Richfield, Hanksville, Moab, Blanding) - Darren

4/16-17—So. Utah (Panguitch, Cannonville, Cedar City, Enterprise, St. George) - Darren

# WATER CONSERVATION

BY BRANDON MCGEE

Utah is the second driest state according to the Utah Division of Water Resources. Water rights in the state of Utah are highly coveted and protected. According to the Water Resources, there is a sufficient amount of water to currently supply our needs. However, they estimate that by the year 2050 we will exceed that capacity if we do not make some changes.

One of the biggest things we can do is to begin to implement water conservation efforts now. From water-wise plants to regulating flows for showers and baths, we can start with simple efforts. [www.conservewater.utah.gov](http://www.conservewater.utah.gov) has a lot of tips.

One way that people can conserve water is to collect rainwater. In Utah, you can use a container up to 2,500 gallons with a registration or (2) 100 gallons or less without registration. There are many ways to implement this. Visit <http://www.conservewater.utah.gov/pdf/Tips/RWHwebpage.pdf> for a complete article with links.

Similar systems can be used to collect grey water and for recycling shower water. While these efforts may require additional construction, they can be implemented in new construction designs.

Water is important. Not only to our industry and livelihood, but to our lives and communities. Now is the time to start new efforts to conserve.



2559 South 1935 West  
Salt Lake City, Utah 84119  
(801) 972-0900 (801) 972-1171 fax  
www.delcowerstern.com



## Product Spotlight

## END GUN BOOSTER

	2 HP	5 HP
Model Name	EB 20503-2	EB 20501-5
Pump #	98284727	98284726
Weight	78 lbs.	119 lbs.
Dealer Net Price	\$452.29	\$723.85
Call to Buy	801-972-0900	

Performance Curves:

