

Pressure switches for Chemical Process Industries (CPI), offshore applications, hazardous, severe and corrosive (ambient and process) installations.

By Gaurav Mathur - Product Manager (Industrial Switch Division)

Founded in 1973, the Neo-Dyn® switch operation provides standard industrial switches for Pressure and Temperature applications. Acquired in 1978 by ITT, the additional resources have provided the ability to better serve our customers and respond to their needs quickly with quality products and services. Our product installations, considered the gold standard for Pressure and Temperature applications, can be found in virtually every segment of the industrial, chemical process, and energy markets.

In this specialized topic, I would like to talk about ITT Neo-Dyn® switches specifically developed for the corrosive and hazardous environments found in Chemical, Petrochemical, Oil and Gas installations. These installations are prone to very high vibrations, dirty and sticky process media, and other severe plant hazards where ruggedness, repeatability, high switch cycle time and the setpoint stability of a pressure and temperature switch have a critical role in the applications success rate.

ITT Neo-Dyn® negative rate type switch (i.e., a Belleville spring) is a snap acting device. At a certain pressure (apex of the spring curve) the spring snaps over center. At this point, it takes less pressure (force) to continue its movement. The pressure switch set point is a function of the Belleville spring. The electrical switch is in a fixed position and is synchronized to the movement of the Belleville spring. Due to the Belleville design the common errors found in a conventional switches are eliminated altogether. For a more specific comparison, see our “**Conventional vs. ITT Neo-Dyn Pressure Switch Design**”.

The ITT Neo-Dyn® model 122P Chemical Process Industries Switch is an excellent solution when seeking compliance, particularly when the application demand is for 316 SS material (enclosure/body and variety of wetted parts).

This family of 316 SS enclosure switches is further expanded with the 112P (ANSI Flange Diaphragm – optional wetted materials) and 123P (flush weld 316 SS wetted only) all specifically designed to meet these material criteria.

The Model 122P wetted diaphragms are available in 316 SS, Hastelloy C, Inconel, Tantalum and Polyimide (consult product bulletin for welded options) materials. The wetted port options that are available for the 122P are 316 SS, Hastelloy C and Monel.



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The model 112P includes an integral flanged (150/300# ANSI Steel or 316 SS) diaphragm similar to a diaphragm seal, but considerably less expensive than other comparable models.

The 123P is a simple flush mount diaphragm incorporated into the threaded connection, and alternatively less costly than the flanged 112P.

As these switches can also utilize our welded diaphragms (optional on 122P), they excel in viscous slurries and other corrosive and abrasive liquid applications. More importantly, they incorporate the “Belleville Nega-Rate Advantage”, which makes them optimal for applications such as; high vibration/shock; offshore and onshore installations, refineries, pipeline, mobile equipment; and skid and panel projects such as filters, compressors and pumps to name a few.



As with our traditional switches, the return on investment, 3 years manufacturer’s warranty, near zero maintenance and longevity, more than compensate for the perceived higher cost of our “Nega-Rate Sensor”. For a more specific comparison, see our “[Conventional vs. ITT Neo-Dyn Pressure Switch Design](#)”.

Gaurav Mathur - Product Manager (Industrial Switch Division)
email: gaurav.mathur@itt.com
phone: 661-295-4166

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