Pribusin Inc.

Section 3

Alarm Trips

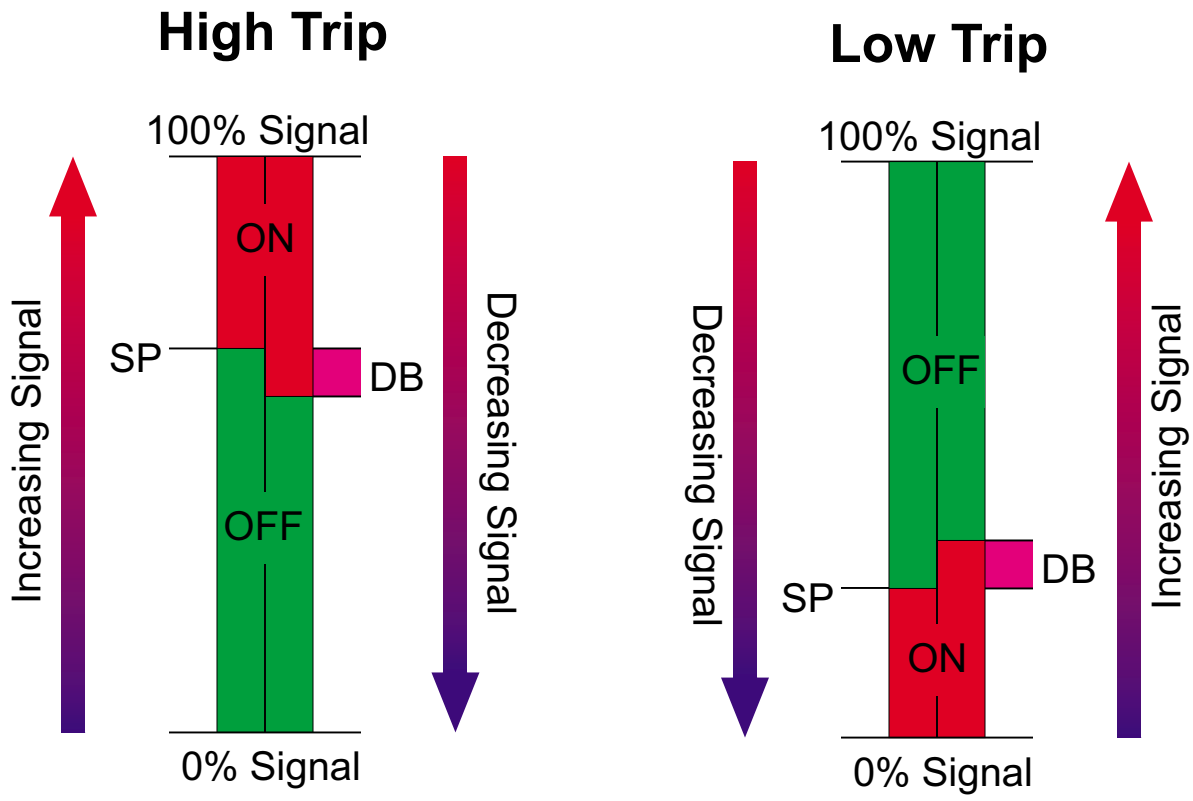
Setpoint Monitors - Alarming News

Setpoint Monitors have many different names. They are called Alarm Trips, Current Trips, Alarm Relays, Current Relays, and others. No matter what the name, they all perform one function: to signal an event that requires action to be taken. They all have a signal input and one or more relay contact outputs that are used to perform actions.

Trip Setpoint - This is the signal level at which the relay contact is activated to perform an action or indicate an event.

Deadband - This is the amount of *signal differential* at which the relay contact de-activates.

High vs. Low Trip - ***High Trip*** refers to an operating mode in which the relay contact becomes activated if the input level ***exceeds*** the Trip Setpoint. ***Low Trip*** refers to an operating mode in which the relay contact becomes activated if the input level ***falls below*** the Trip Setpoint.



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Setpoint Monitors - Setup Example

Pribusin's Setpoint Monitors have a unique variable adjustment method which makes them very easy to set up in the field. Each variable has a multi-turn potentiometer and a test jack associated with it. Each test jack read a voltage of 0-5VDC for a variable setting of 0-100%.

Use the Following equations to set the various variables:

Setpoint: $\frac{\text{Setpoint (mA) - 4mA}}{\text{16 mA}}$ x 5 VDC = Test Jack Voltage

Deadband: $\frac{\text{Deadband (\%)}}{\text{100\%}}$ x 5 VDC = Test Jack Voltage

Delay: $\frac{\text{Delay (sec.)}}{\text{60 sec.}}$ x 5 VDC = Test Jack Voltage

Example: A level probe delivers a 4-20mA signal of the level in a holding tank. The tank level is to be kept between a maximum level of 18mA and a minimum level of 7mA. A draining pump is to be turned on at 18mA and off at 7mA to accomplish this.

$$\frac{\text{Setpoint (mA) - 4mA}}{\text{16 mA}} \text{ x 5 VDC} = \frac{\text{18mA - 4mA}}{\text{16 mA}} \text{ x 5 VDC}$$

$$= 0.875 \text{ x 5 VDC}$$

$$= \underline{4.375 \text{ VDC}} \text{ (Setpoint Test Jack)}$$

18mA = 87.5% , 7mA = 18.75%

Deadband = 87.5% - 18.75% = 68.75%

= 0.6875 x 5 VDC = <u>3.4375 VDC</u> (Deadband Test Jack)

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