Quick Reference Guide

VEGASWING Contactless

Vibrating Level Switch (Solid State Relay) Electronic Switch

Document ID:
38811

Vibration

Contactless

The primary advantage of the Contactless VEGASWING (solid state relay) is the use of a single pair of conductors. The single pair of conductors allows for the replacement of existing two-wire magnetic reed, mercury, and other mechanical switch installations with a far more reliable VEGASWING option.

Electronics

The Contactless VEGASWING operates on a universal voltage between 20 and 250 V AC or V DC, which must be wired in series with a resistive or inductive load. The current draw associated with the load must be between 10mA and 400 mA. Figure 1 shows the load in series with Terminal 2.

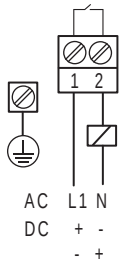

Figure 1: Wiring Plan – Single Chamber Housing

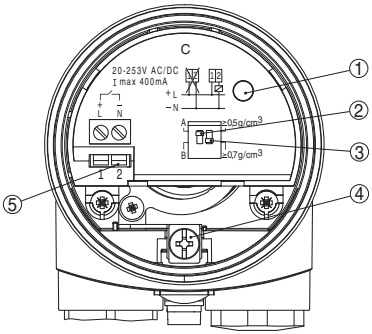

Figure 2: Electronics and Connection Compartment with Single Chamber Housing

1 Control Lamp
2 DIL Switch for Mode Adjustment
3 DIL Switch for Switching Point Adaption
4 Ground Terminal
5 Connection Terminals

Operation

With the probe in a dry state “open circuit normal condition”, the Contactless VEGASWING draws approximately 25 mW to provide the required power for operation as depicted in Figure 3.

0.25V drop across a 250 Ω load resistor (25mW)

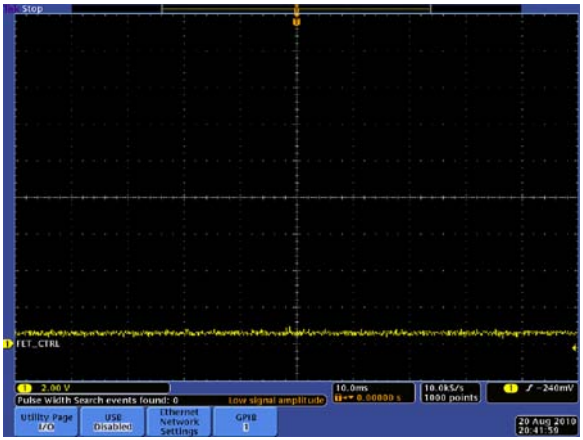

Figure 3: De-energized Dry

With the probe in a wet state “closed circuit alarm condition”, the Contactless VEGASWING intermittently draws power required for operation of the device. This intermittent draw is accomplished by momentarily opening the contact for 4.3 mS every 43 mS as shown in Figure 4 below.

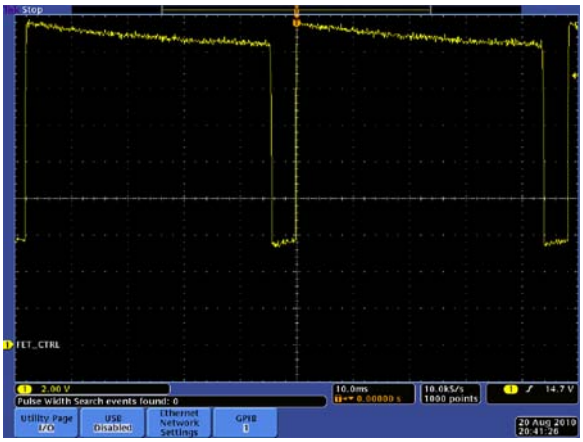

Figure 4: Energized Wet

Operation continued

There are two common approaches to wiring Contactless VEGASWING devices in the field. One method uses an external electromechanical relay as the load as detailed in Figure 5. Electromechanical relays used as a load will not and cannot respond to a change in state over a 4.3 mS zero power state and thereby remain energized. An alternative approach to the external relay is to use a 250 Ω (~ 100 mA @ 24 V DC) load resistor in the PLC/DCS panel wired to a digital input channel as shown in Figure 6. A time delay must be incorporated to ignore the 4.3 mS pulse during closed switch conditions when using the load resistor approach. A time delay of 500 mS is recommended to accommodate for the 4.3 mS pulse.

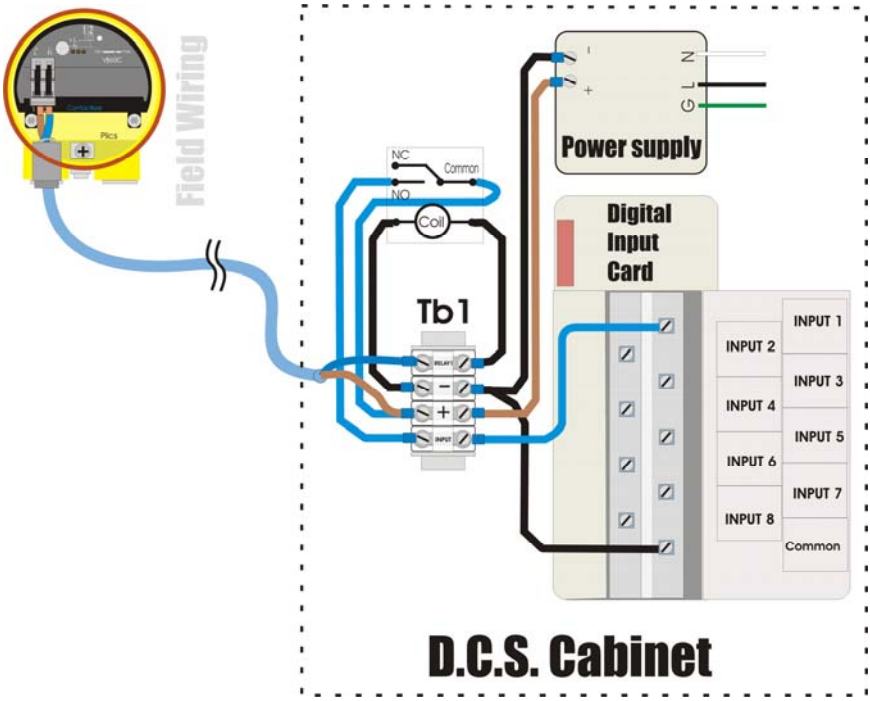

Figure 5: Electromechanical Relays used as a Load

Operation continued

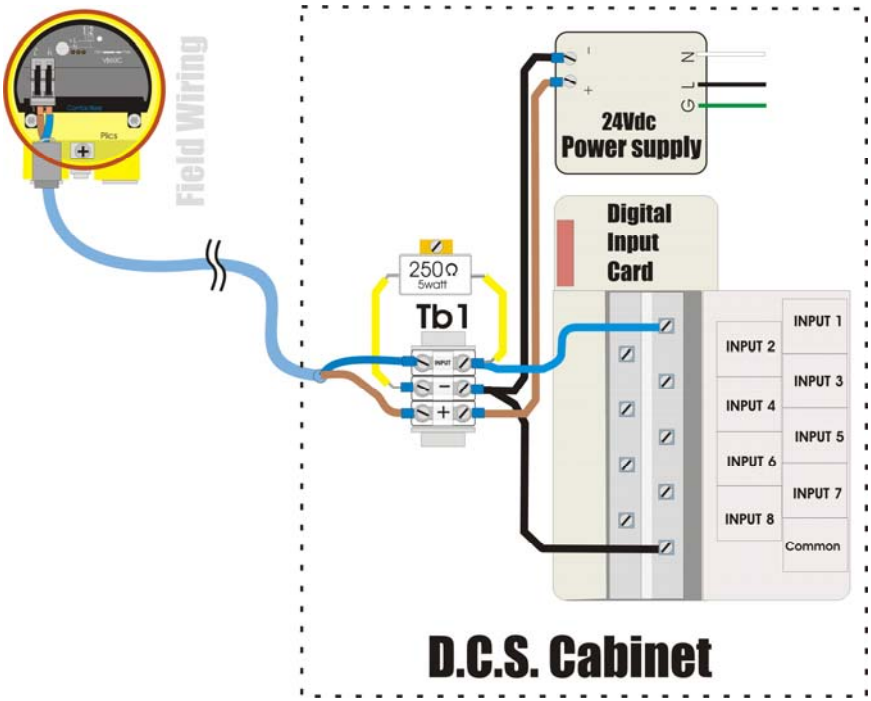

Figure 6: 250 Ohm (~100 mA) Load Resistor

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