

## Ghost Voltages on the LD Terminal

Some wiring situations provide the FMU ghost voltages or false indications of Pump Handle Detection (PHD). Most of these false indications occur when solid state relays are used in the FMU. When the dispenser is also using solid state relays to activate solenoid valves or pump motors, voltage feedback to LD may occur after a transaction is completed. Solid state relays restrict the flow of power in the normal direction, from LN to LD but allow it in the reverse direction, from LD to LN. When power is being fed to LD it will pass through a solid-state relay to LN and provide a false indication the pump handle has not been turned off. This voltage can be detected by measuring the voltage at both LD and LN. If the voltage is greater at LD than LN, then the voltage is feedback from the dispenser. This commonly occurs when Gasboy 9800 series dispensers are controlled by solid state relays in the FMU.

RC networks (i.e., spark quenchers or snubbers) may be used to remove these false indications (Figure 1). The device must be installed as close as possible to the device being controlled (i.e., solenoid valve or suction pump motor) between LD and neutral. Ensure one wire is connected to hot and the other, neutral.



Figure 1. '0.2 Microfarad RC network - Okaya XEB1202'

Similar problems may occur when directly controlling 230 VAC suction pump motors. A 230 VAC pump motor requires two inputs of 115 VAC each. Some dispenser installation manuals depict one input being a constant 115 VAC from a circuit breaker and the other input being controlled by the dispenser reset mechanism. Problems arise when the input from the FMU is not applied. The other 115 VAC input from the circuit breaker passes through the coil windings of the pump motor and feeds back to the FMU LD position. This situation also provides a false indication of pump handle detection but with a higher current input. Voltage comes into LD and feeds through the solid-state relay to LN. The false indication is removed by installing a 1.0 microfarad RC network between LD and neutral, as close to the motor as possible. A common source for a 1.0 microfarad RC network is Okaya part number XEB01010.

See a sample installation with the RC network installed in the dispenser junction box (Figure 2). In the event, you are unable to install the device in the dispenser junction box, it may be installed in the FMU.

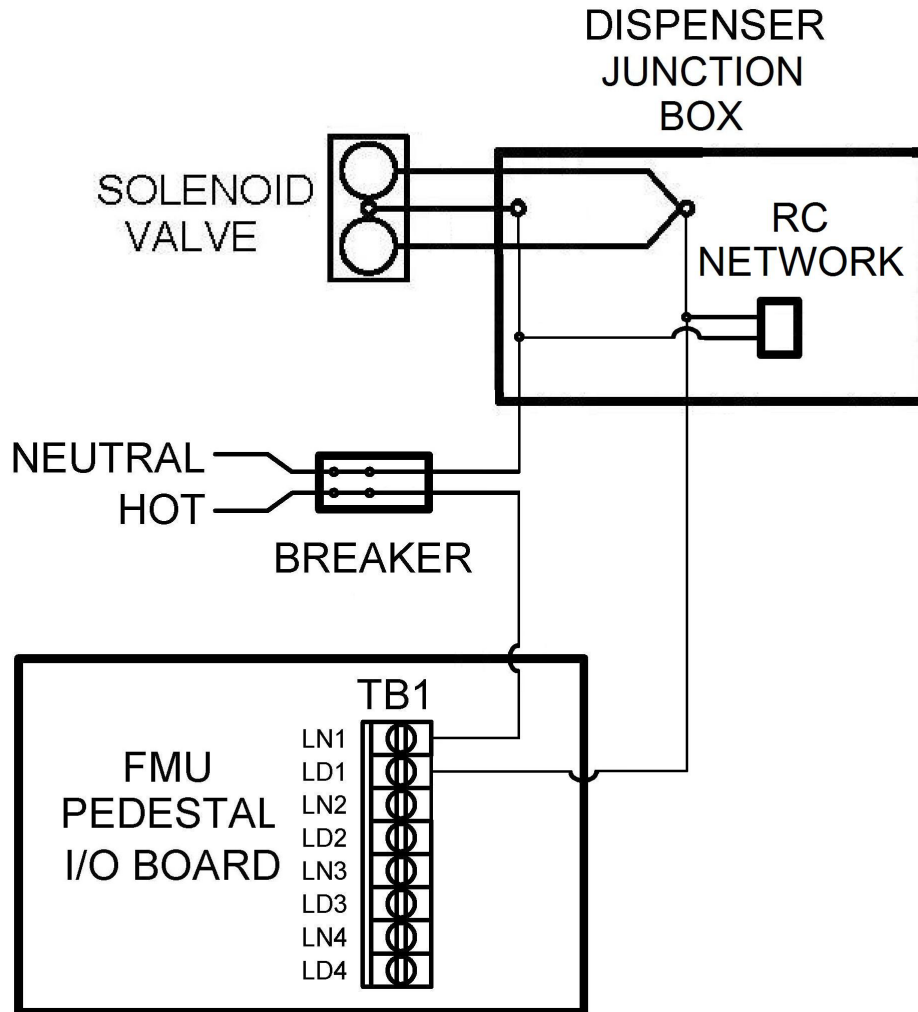


Figure 2. Sample RC Network Installation

**TIP**

If any questions arise, contact Syntech Systems, Inc.'s Customer Satisfaction Center (CSC) at 1-800-888-9136, ext. 2, or email support@myfuelmaster.com.

## Change Log

Date	Change
06/09/1995	Original
04/30/2015	Revision to branding
07/20/2020	Changed title of document from "RC Networks" to "Ghost Voltages on the LD Terminal". Revision to branding, formatting, styling. Edited content for conciseness and clarity.