



Application Note 51617
(Revision -, 7/2019)
Original Instructions

Large Electric Sonic Valve (LESV) / (LESV-II) SIL Sensor Troubleshooting Guide

Woodward reserves the right to update any portion of this publication at any time. Information provided by Woodward is believed to be correct and reliable. However, no responsibility is assumed by Woodward unless otherwise expressly undertaken.

Copyright © Woodward, Inc. 2019
All Rights Reserved

LESV / LESV-II SIL Sensor Troubleshooting Guide

Product Description

The SIL sensor is an optional product feature for the Woodward LESV and LESV-II product lines. The SIL Sensor is intended to provide a completely independent feedback signal based on the actual valve position that is generally used by the Plant Level Safety System.

Description of Possible Loss of Output Signal from SIL Sensor

The SIL Sensor is designed to provide a highly reliable output signal for use in plant level safety systems when operated within the functional and environmental limits of the product. In the event that the SIL Sensor detects an internal error, the sensor will enter into a “self-protection” mode where the output signal ceases to function. When this occurs, the self-protection mode becomes a latching fault and requires a complete power reset before the sensor will again become functional.

Solution

To clear the latching event and restore the system, the sensor must have the power to the sensor cycled off for a minimum of three minutes.

To Cycle Power to the SIL Sensor

The SIL sensor electrical connection terminal block is located inside the sensor housing, under the removable cover. To access the terminal block, remove the five hex-head cap screws that secure the cover to the housing using a 3 mm hex wrench. Refer to Figures A and B for the location of the cover screws and electrical terminal block. In order to access the terminal block more easily, as shown in Figures C and D, the sensor housing may be removed by removing the six mounting screws.

The customer will need to disconnect all wiring from the SIL sensor terminal block by inserting a screwdriver into the terminal block to pry open the spring-loaded connectors as shown in Figure E, but use caution not to apply excessive force.

Allow the SIL sensor to be disconnected from the power source for a full three minutes then reconnect the wiring to the SIL sensor terminal block referring to Table 1 for terminal definition.

Once the wiring connections are secured, re-install the sensor housing and sensor cover; torque the cover screws for each to 0.9 N·m / 8 lb.-in.

Verify the SIL Sensor is functional by monitoring the Plant Safety System.

If the SIL sensor is not functional after complete power cycle, contact Woodward help desk for further instructions.

Table 1. SIL Sensor Wiring Connections

| Terminal | Function |
|----------|--------------------------------|
| 1 | Signal Output 1 |
| 2 | Signal Ground 1 |
| 3 | Do Not Connect |
| 4 | Do Not Connect |
| 5 | Supply 24 Vdc |
| 6 | Supply Ground |
| 7/PE | Housing/Potential Equalization |



Figure A



Figure B



Figure C



Figure D



Figure E

We appreciate your comments about the content of our publications.

Send comments to: icinfo@woodward.com

Please reference publication **51617**.



B 5 1 6 1 7 : -



PO Box 1519, Fort Collins CO 80522-1519, USA
1041 Woodward Way, Fort Collins CO 80524, USA
Phone +1 (970) 482-5811

Email and Website—www.woodward.com

Woodward has company-owned plants, subsidiaries, and branches, as well as authorized distributors and other authorized service and sales facilities throughout the world.

Complete address / phone / fax / email information for all locations is available on our website.