

INSTALLATION INSTRUCTIONS

ALTRONIC 691360-1 LUBRICATION SENSOR ADAPTER

FORM LSA II 2-08

**WARNING:**

DEVIATION FROM THESE INSTALLATION INSTRUCTIONS
MAY LEAD TO IMPROPER ENGINE OPERATION, WHICH
COULD CAUSE PERSONAL INJURY TO OPERATORS OR
OTHER NEARBY PERSONNEL.

1.0 OVERVIEW

1.1 This manual provides installation instructions and operating information for the **Altronic Lubrication Sensor Adapter**, model **691360-1**. It is recommended that the user read this manual in its entirety before commencing operations.

It is not our intention to instruct others on how to design control systems, nor can we assume responsibility for their safe operation. This advice is intended to help the end user install the **Altronic Lubrication Sensor Adapter** in such a manner as to reduce the risk of accident to personnel or to equipment.

Do **NOT** attempt to operate, maintain, or repair the monitored equipment until the contents of this document have been read and are thoroughly understood.

1.2 The **Altronic Lubrication Sensor Adapters** are to be used with standard lubrication flow switches. Each adapter can monitor two individual flow switches. Combined with standard flow switches the **691360-1** forms a lubrication flow-monitoring system that responds directly to the presence or absence of properly timed lubrication pulses. If the lubrication pulses are detected as occurring consistently within the selected time interval, then the output of the **691360-1** is held in a constant **OPEN** or **OFF** state. If the lubrication pulses are not detected as occurring consistently within the selected time interval, then the output of the **691360-1** goes to a constant **CLOSED** or **ON** to ground state until the lubrication pulses return. Additionally, by connecting the outputs of **691360-1** to an Altronic Annunciator, the appropriate action can be taken to protect the equipment from damage when a lubrication system failure occurs.

1.3 The **Lubrication Sensor Adapter** is **NOT** a direct shutdown device. A safety shutdown system such as an Altronic annunciator or PLC should be used in addition to the flow sensors and adapter.

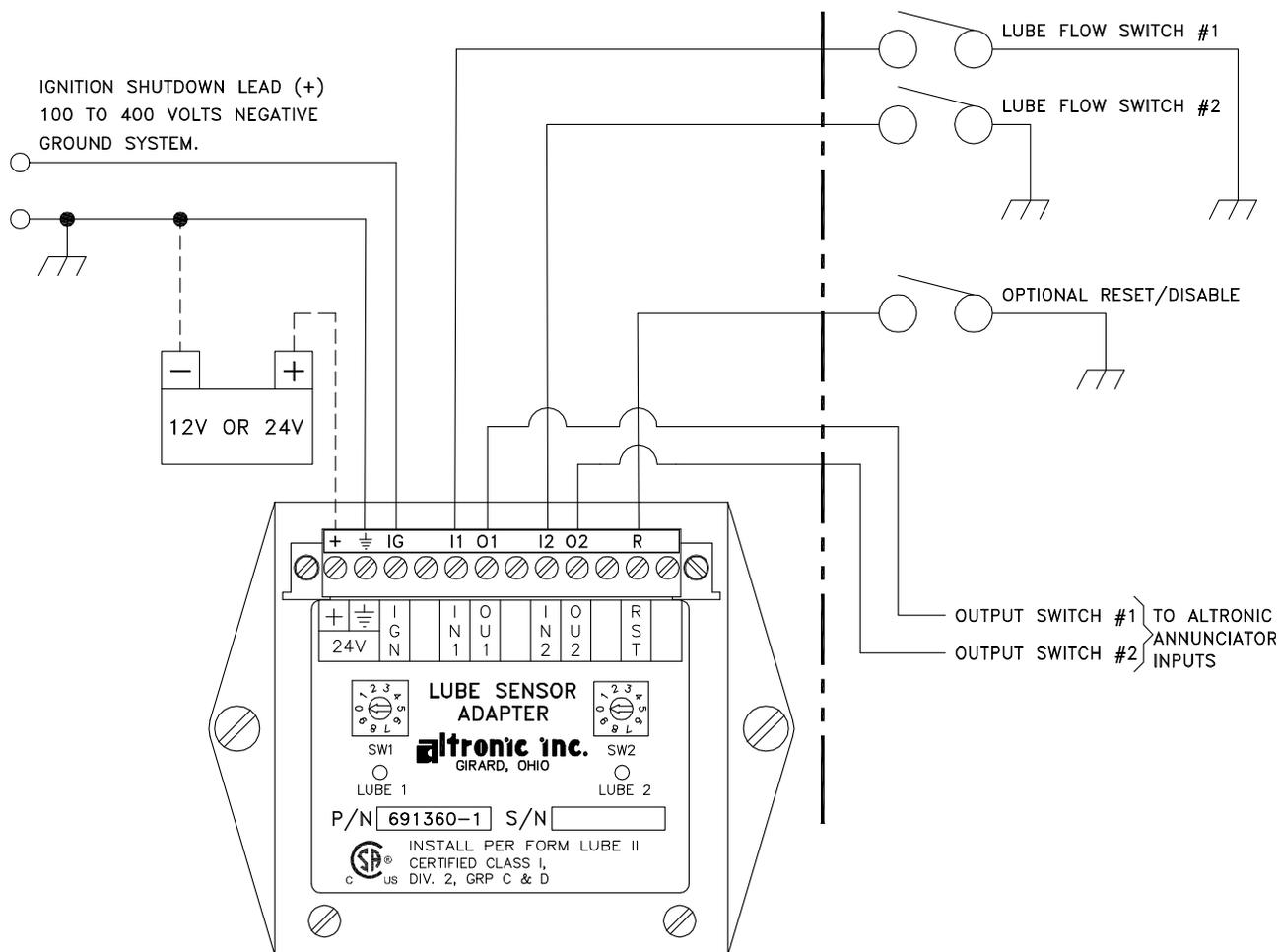
2.0 INSTALLATION

- 2.1** The **Lubrication Sensor Adapter** should be inspected immediately after unpacking. Check for any damage that may have occurred during shipping. If there are any questions regarding the physical integrity of the product, contact the distributor or Altronic, Inc.
- 2.2** The **Lubrication Sensor Adapter** is designed to be installed on reciprocating engines and compressors or other industrial equipment using auxiliary lubrication systems. The **691360-1** is designed to be mounted inside the control panel or another suitable weatherproof enclosure. The device should be protected from rain and other moisture sources at all times. Operating ambient temperature is **-40°F TO +185°F (-40°C TO +85°C)**. Do not expose the device to temperatures outside the indicated range.
- 2.3** The circuitry of the **Lubrication Sensor Adapter** is powered directly by either **12 to 24 volts DC** or from the shutdown lead (**+100 to +400 volts**) of an industrial, negative ground, CD ignition system. The switch inputs of the adapter are internally pulled up to **5 volts** and external power sources should not be connected to them. No additional external power source should ever be connected to the **691360-1** input terminals. See figure 1 for wiring connections. Each of the **691360-1** switch inputs monitors the connected lubrication flow switch for its' state changes (switch opening and closing to ground), since either a broken field wire (open) or a field wire shorted to ground prevents the changing signal from reaching the input, these wiring failures cause a fault to be sensed. This makes the single wire connection to the flow switch **Failsafe** even though the flow switch is connected as a switch to ground. The output switches connect directly to the discrete inputs of any Altronic Annunciator system and can be used as Class A or Class B inputs. The **OPEN DRAIN** transistor outputs of the adapter are rated **100volts** and **0.25 amperes** maximum, and are suitable for direct connection to most industrial PLC inputs. Each output switch is independently controlled according to the status of its input switch's current behavior. The **Reset** input is an optional connection, which when grounded resets both of the outputs to the **OFF** condition and holds them in this state until it is opened. This optional feature can be used to reset the outputs when interfacing to complex control systems.

3.0 OPERATION

- 3.1** The **Lubrication Sensor Adapter** should be setup to monitor for a loss of lubrication pulses from the flow switch for a period of time greater than that which is the normally expected time between lubrication pulses. The maximum time between pulses is set by adjusting a rotary switch on the device for each individual channel. The trip time is adjustable in approximately **30 second** increments from about **30 seconds to 4.5 minutes**. Each switch position (**1 to 9**) is actually equal to that position number times **32 seconds** for the total trip delay time. For example, switch position **5 = 5 x 32 or 160 seconds (approximately 2.5 minutes)**. The trip time is quartz crystal controlled and does not vary with temperature, voltage or the age of this device. Always select a trip time which is at least **30 seconds** longer than the actual maximum time between pulses to avoid false trips. During normal operation of the lubrication system the LED indicator flashes on each input pulse transition, this flashing LED can be used to measure the actual time between pulses and to confirm proper operation of the flow switches. The switch position **0** setting can be used to disable the specific channel for service of the lubrication system or testing.

FIG. 2 WIRING DIAGRAM



SWITCH POSITION	OUTPUT DELAY	SWITCH POSITION	OUTPUT DELAY
0	DISABLE	5	160
1	32	6	192
2	64	7	224
3	96	8	256
4	128	9	288

OUTPUT DELAY TIMES LISTED ARE IN SECONDS.