



# Electro-Optic Level Switch

## ELS-1200HC or ELS-1200CR Series (24 VDC)

Instruction Bulletin No. 183453 Rev A

### Installation

#### 1. 1/2" NPT Switch\*

Apply a curing type thread sealant (such as Loctite #565 with Primer "N"), which is compatible with the liquid media. Tighten one to two turns (max) from hand-tight engagement.

**\* Caution: Do not tighten unit via the conduit connection.**

- Sensor may be installed horizontally or up to 45° from horizontal, only.
- Do not install sensor close to infrared sources.
- Prism surface must be at least 2" from any reflective surfaces.
- Connect appropriate voltage to the sensor. Power input leads and output switching leads are not polarity sensitive.

Power Input	24 VDC
White/Black Leads	
Max. Switching Volts	28 VDC
Output Switching	
Red/Red Leads	
Max. Switching Current @ 25°C (Resistive)	100 mA

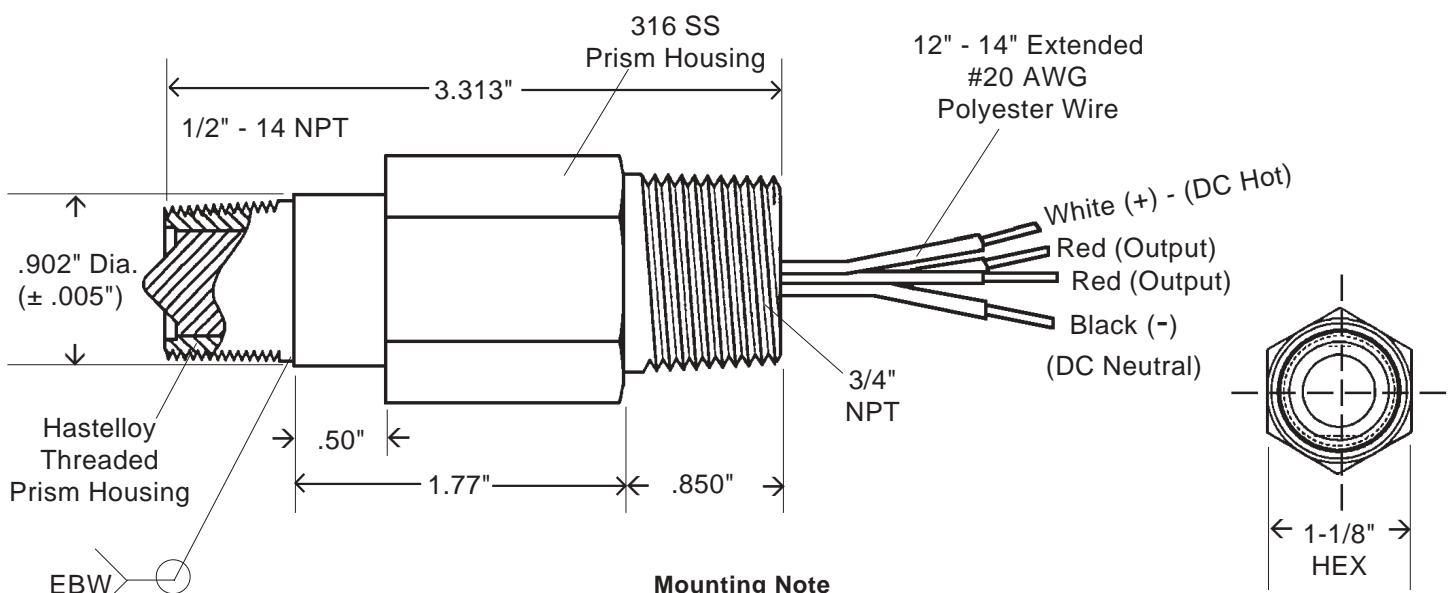
- Current Consumption: Approximately 10 mA @ Max. VDC
- Output Switching Specifications: 28 VDC
- If equipped with time delay feature - Actuation time delay after probe immersion is 6 to 12 seconds; Deactuation: 6 to 12 seconds after removal from media.
- Teflon (TFE) tape or Permatex #80725 plastic pipe sealant may be used for conduit connection thread.

Temperature Range	
Min / Max Fluid Temp.	-40°C / 116°C
Replacement Electronics	-40°C / 72°C

**Pressure Range**  
0 - 2500 psi  
  
(See Mounting Notes)

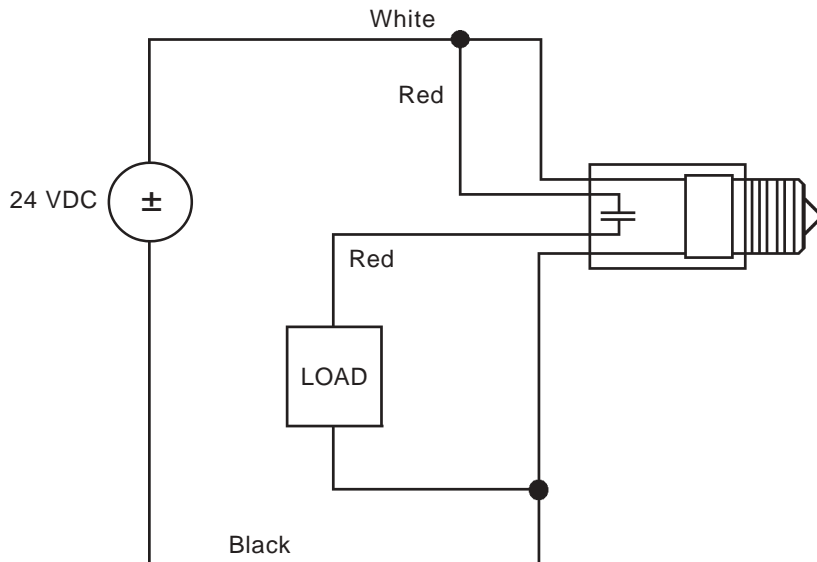
**Notes:**  
1. Not for use in freezing liquids.  
2. Wetted Materials: Hastelloy C276 and Glass

### ELS-1200HC or ELS-1200CR with Conduit (Mounting: 1/2" NPT Thread)



**Mounting Note**  
Tighten one-to-two turns past hand-tight engagement.  
(See item #1 under "Installation")

### Wiring Diagram

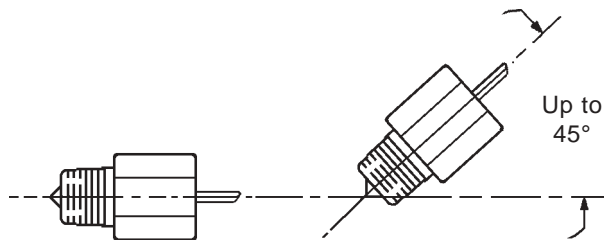


### Caution

Be sure to connect appropriate voltage to appropriate sensor. Solid-State output switching device may require transient protection when switching inductive loads.

### Mounting Attitude

These units must be mounted horizontally - or up to 45° from horizontal - only.



### Maintenance

1. Sensor may require a periodic cleaning of the prism surface. A mild detergent may be used to clean prism surface.
2. Do not use any abrasives on prism.

### Important Points!

Product must be maintained and installed in strict accordance with the National Electrical Code and GEMS product catalog and instruction bulletin. Failure to observe this warning could result in serious injuries or damages.

An appropriate explosion-proof enclosure or intrinsically safe interface device must be used for hazardous area applications involving such things as (*but not limited to*) ignitable mixtures, combustible dust and flammable materials.

Pressure and temperature limitations shown on individual catalog pages and drawings must not be exceeded. These pressures and temperatures take into consideration possible system surge pressures/temperatures and their frequencies.

Selection of materials for compatibility with the media is critical to the life and operation of GEMS products. Take care in the proper selection of materials of construction; particularly wetted materials.

Life expectancy of switch contacts varies with applications. Contact GEMS if life cycle testing is required.

Ambient temperature changes do affect switch set points, since the specific gravity of a liquid can vary with temperature.

Switches have been designed to resist shock and vibration; however, shock and vibration should be minimized.

Liquid media containing particulate and/or debris should be filtered to ensure proper operation of GEMS products.

Electrical entries and mounting points may require liquid/vapor sealing if located in an enclosed tank.

Switches must not be field repaired.

Physical damaged sustained by the product may render it unserviceable.



**Gems Sensors Inc.**  
One Cowles Road  
Plainville, CT  
06062.1198

tel 860.747.3000  
fax 860.747.4244