

# Fluid Level, Proximity and Motion Sensors

## Standex Electronics



# Proximity and Motion Sensors

SUNSTAR 传感与控制 <http://www.sensor-ic.com/> TEL:0755-83376549 FAX:0755-83376182 E-MAIL:szss20@163.com

Standex proximity and motion sensors are widely applied in automotive applications, domestic appliances, process control equipment, telecommunications equipment, office equipment, security systems, construction equipment and a host of additional applications. Standex normally uses magnetic Reed switch technology; however, custom designs include use of Hall effect and variable reluctance technologies as appropriate for the specific application.

## Fluid Level Sensors

Standex fluid level sensors are applied in automobiles, trucks, heavy construction equipment and specialized industrial applications. In automotive applications they are used to monitor the level of fuel, windshield washer fluid, coolant, brake fluid, oil and DI water. Standex fluid level sensors normally use magnetic/Reed switch sensing technology, utilizing floats equipped with a permanent magnet source. Standex liquid level sensors also use Hall effect, capacitive and conductive technologies as appropriate for the specific application.

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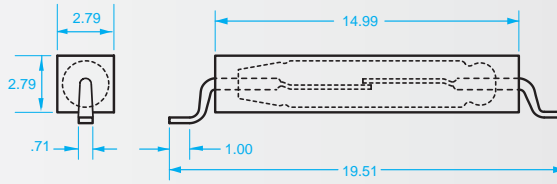
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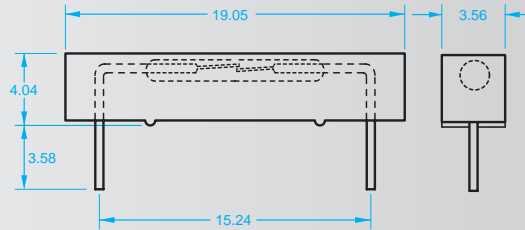
## R12476 Series

- Surface mounted Reed switch
- Switch rated 0.5A/100V/10VA max
- Switch sensitivity from 10 to 30 AT
- Form A (normally open) operation
- Insert molded



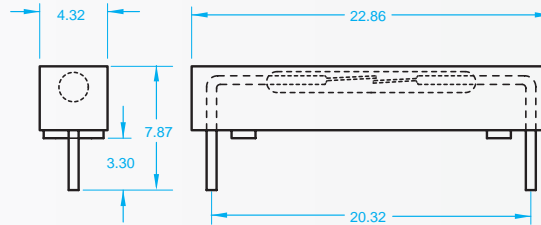
## R12464 Series

- PC mounted Reed switch
- Switch rated 0.5A/100V/10VA max
- Switch sensitivity from 10 to 30 AT
- Form A (normally open) operation
- Insert molded



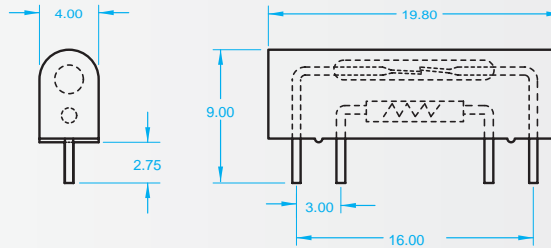
## R12459 Series

- PC mounted Reed switch
- Switch rated 0.5A/100V/10VA max
- Switch sensitivity from 10 to 30 AT
- Form A (normally open) operation
- Insert molded



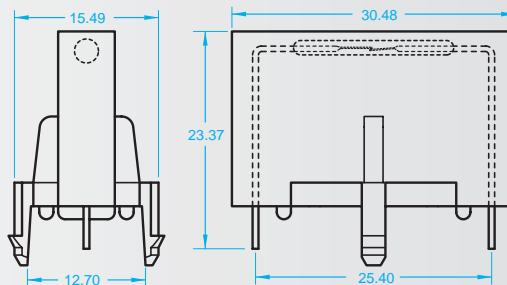
## KSR Series

- PC mounted Reed switch
- Switch rated 0.5A/100V/10VA max
- Form A (normally open) operation
- Insert molded
- Integral resistor



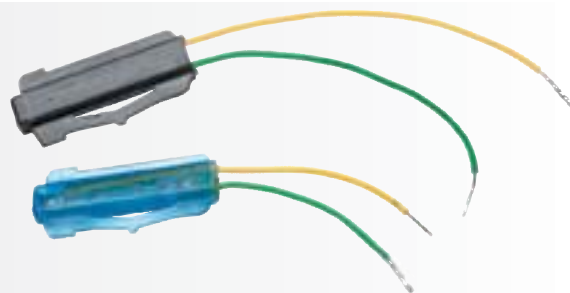
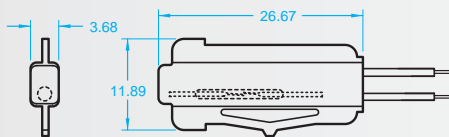
## R11808 Series

- PC mounted Reed switch
- Switch rated 1.5A/200V/50VA max
- Form A (normally open) operation
- Switch sensitivity 20 to 40 AT
- Snap lock mounting



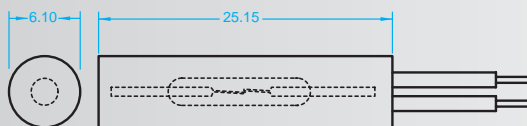
## R12303 Series

- Miniature snap lock mounting
- Switch rated 0.5/100V/10VA max
- Switch sensitivity 10 to 30 AT
- Form A (normally open) operation
- Wire length as required



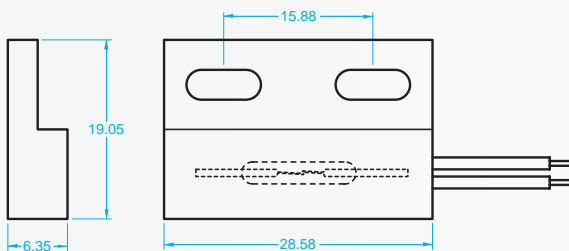
## R12457 Series

- Cylinder design
- Switch rated 0.5A/100V/10VA max
- Switch sensitivity 10 to 30 AT
- Form A (normally open) operation
- Wire length as required



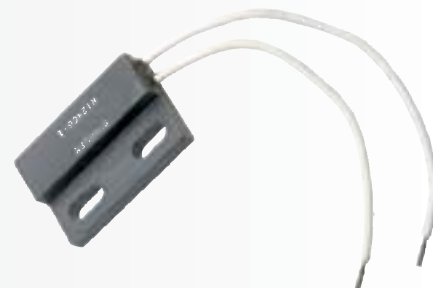
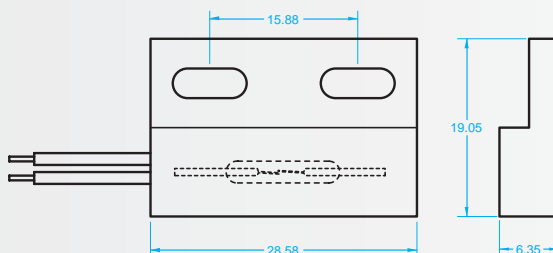
## R12465 Series

- General purpose proximity sensor
- Switch rated 0.5A/100V/10VA max
- Form A (normally open) operation
- Switch sensitivity 10 to 30 AT
- Operates with B124172 and B12473
- Max operate distance of 0.6"



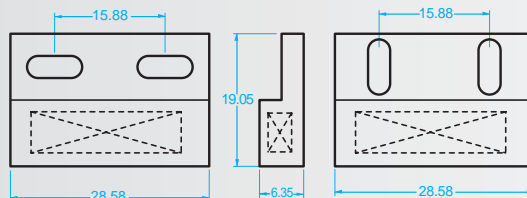
## R12466 Series

- General purpose proximity sensor
- Switch rated 0.5A/100V/10VA max
- Form A (normally open) operation
- Switch sensitivity 10 to 30 AT
- Operates with B124172 and B12473
- Max operate distance of 0.6"



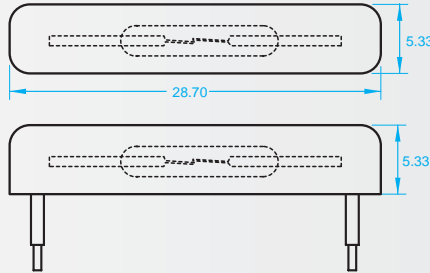
## B12472 and B12473 Actuators

- Operate with P/N's R12465 and R12466
- B12472 provides adjustment perpendicular to length axis
- B12473 provides adjustment along length axis



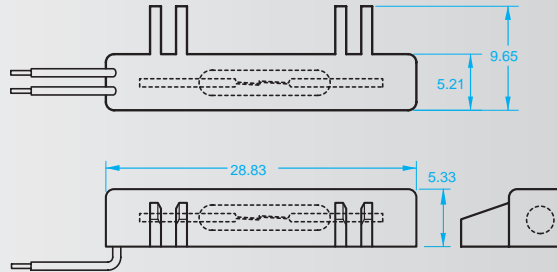
## R11883 Series

- Miniature proximity sensor
- Switch rated 0.5A/100V/10VA max
- Form A (normally open) operation
- Switch sensitivity 10 to 30 AT
- Wire length as required



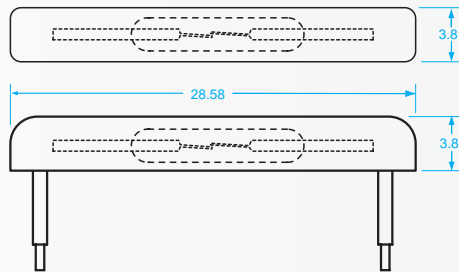
## R11883A Series

- Miniature proximity sensor
- Switch rated 0.5A/100V/10VA max
- Form A (normally open) operation
- Switch sensitivity 10 to 30 AT
- Wire length as required



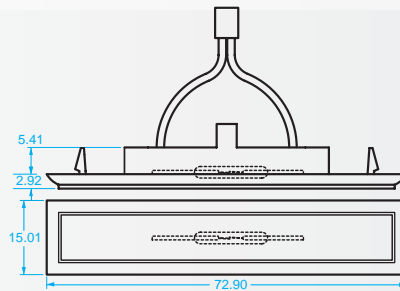
## R12075 Series

- Miniature proximity sensor
- Switch rated 0.5A/100V/10VA max
- Form A (normally open) operation
- Switch sensitivity 10 to 30 AT
- Wire length as required



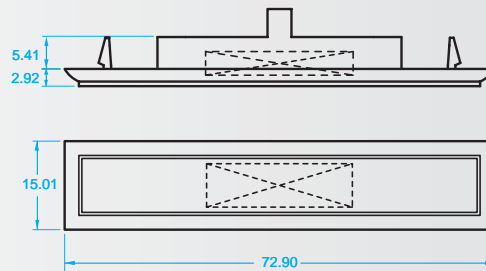
## R12391 Series

- Flush mount proximity sensor
- Snap lock mounting
- Switch rated 0.5A/100V/10VA max
- Form A (normally open) operation
- Switch sensitivity 10 to 30 AT
- Wire length as required



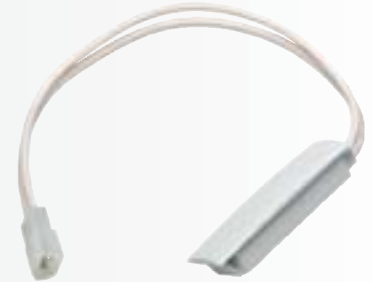
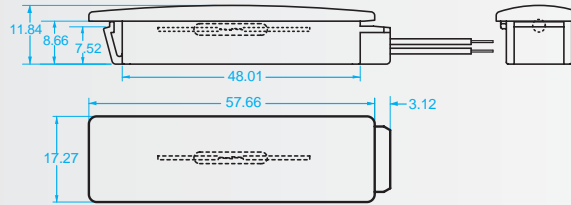
## B12392 Series Actuator

- Flush mount/snap lock mounting
- Operates with R12391 series



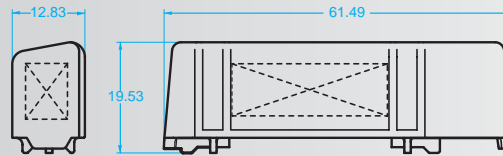
## R12444 Series

- Flush mount proximity sensor
- Snap lock mounting
- Switch rated 1.5A/200V/50VA max
- Switch sensitivity 20 to 40 AT
- Form A (normally open) operation
- Wire length and termination as required
- Available with 300V/70VA switch



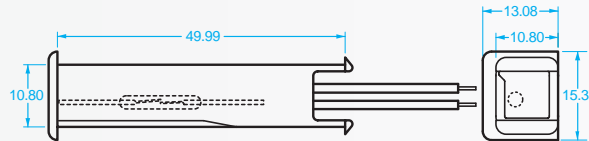
## B12427 Series Actuator

- Operates with R12444 proximity sensor
- Screw mounting
- Ceramic 8 magnet



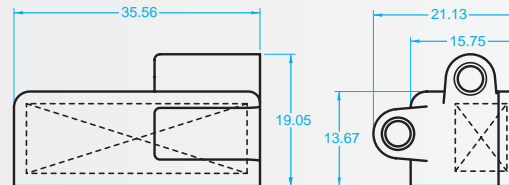
## R12454 Series

- Custom proximity sensor
- Snap locking feature
- Switch rated 1.5A/200V/50VA max
- Switch sensitivity 20 to 40 AT
- Form A (normally open) operation
- Wire length and termination as required
- Available with 300V/70VA switch



## R12455 Series Actuator

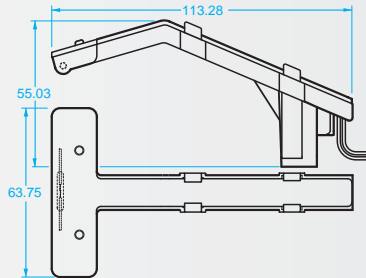
- Operates with R12454 proximity sensor
- Screw down mounting



## Magnetic Proximity & Motion Sensors - Reed Switch Technology

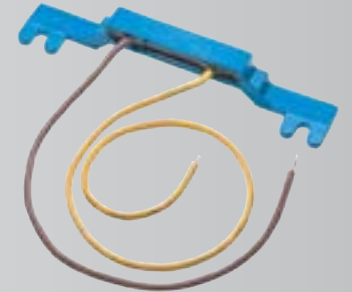
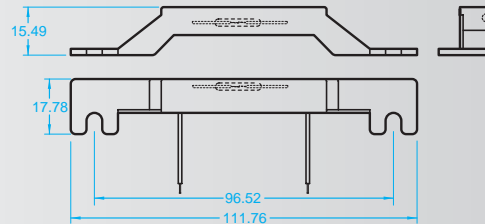
## R12199 Series

- Custom appliance rotation sensor
- Switch rated 0.5A/200V/10VA max
- Form A (normally open) operation
- Switch sensitivity 7 to 20 AT
- Max. operating distance 2"
- Wire length and termination as required



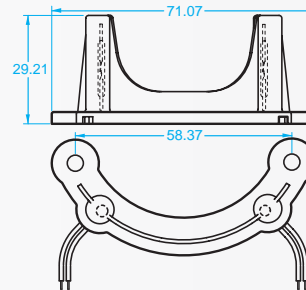
## R11737 Series

- Appliance lamp switch assembly
- Switch rated 1.5A/200V/50VA max
- Form B (normally closed) operation
- Switch sensitivity 20 to 40 AT
- Wire length and termination as required
- Available with 300V/70VA switch



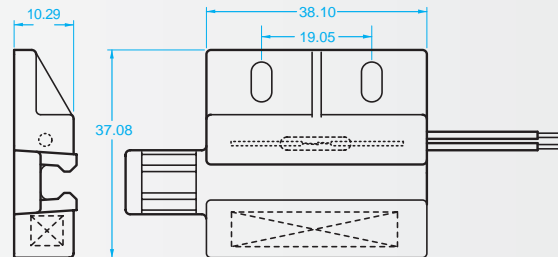
## R12355 Series

- Two switch tachometer
- Switch rated 0.5A/200V/10VA max
- Form A (normally open) operation
- Switch sensitivity 10 to 30 AT
- Wire length and termination as required



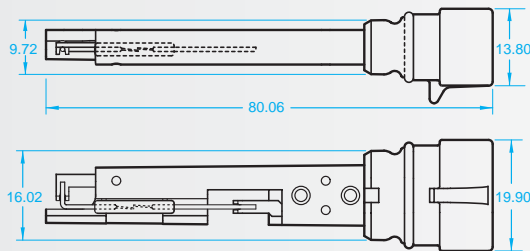
## R12320 Series

- Safety switch
- Switch rated 1.5A/200V/50VA max
- Form B (normally closed) operation
- Switch sensitivity 20 to 40 AT
- Wire length and termination as required
- Available with 300V/70VA switch



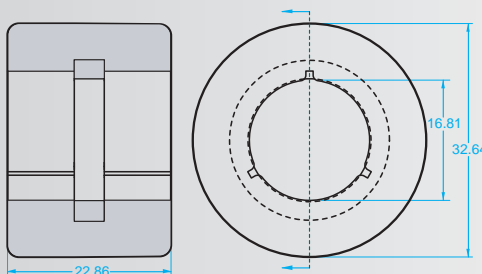
## R12468 Series

- External sensor for injection molded bottles
- Form A or Form B operation with separate float
- Bottom mount with o-ring seal
- Switch rated 1.5A/200V/50VA max
- Mates with Packard P/N 12052641



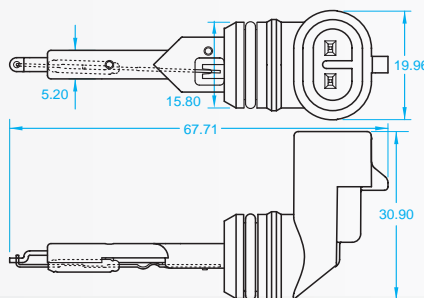
## B12469 Series

- Float/magnet assembly operates with R12468 sensor assembly
- Float locates in the bottle assembly
- Foamed PP
- Specific gravity per application



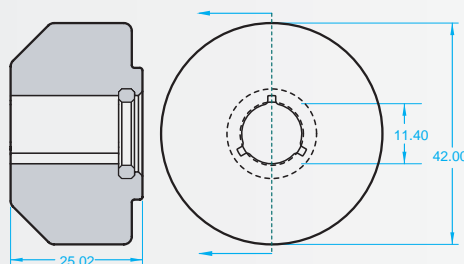
## R12481 Series

- External sensor for injection molded bottles
- Form A or Form B operation with separate float
- Bottom mount with o-ring seal
- Switch rated 0.5A/100V/10VA max
- Mates with Packard P/N 12052641



## B12482 Series

- Float/magnet assembly operates with R12481 sensor assembly
- Float locates in bottle assembly
- Foamed PP
- Specific gravity per application

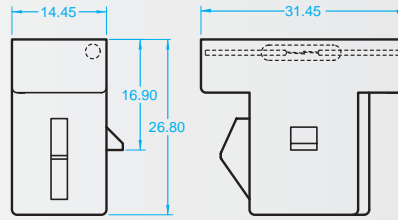


## Fluid Level Sensors - Magnetic Technology



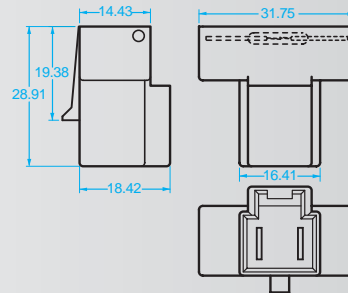
## R11774 Series

- External sensor for injection molded bottles
- Form A (normally open) operation with separate float
- Switch rated 0.5A/100V/10VA max
- Snap lock mounting
- Integral connector



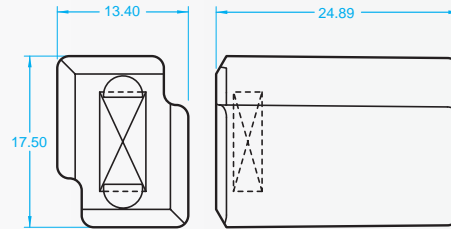
## R12180 Series

- External sensor for injection molded bottles
- Form A (normally open) operation with separate float
- Switch rated 0.5A/100V/10VA max
- Snap lock mounting
- Integral connector



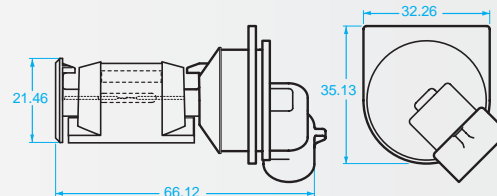
## B12450 Series Float

- Float/magnet assembly operates with R11774 and R12180 series sensors
- Float locates in bottle assembly
- Foamed PP
- Operates with fluid SG at 0.79 min



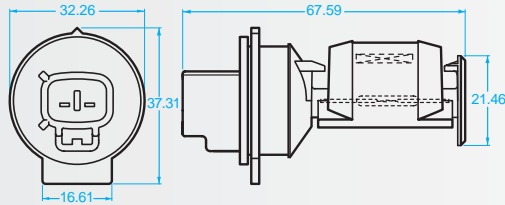
## R12431 Series

- For blow or injection molded bottles
- Side mount design uses separate seal grommet
- Form A (normally open) and Form B (normally closed) operation
- Switch rated 0.5A/100V/10VA max
- Internal snubber resistor
- Connector meets requirements of Packard Taxi Drawing 12162289



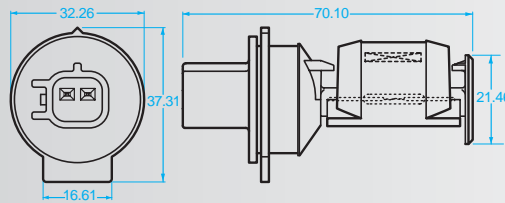
## R12449 Series

- For blow or injection molded bottles
- Side mount design uses separate seal grommet
- Form A (normally open) and Form B (normally closed) operation
- Switch rated 0.5A/100V/10VA max
- Internal snubber resistor
- Mates with Toyota connector P/N 90980-11068



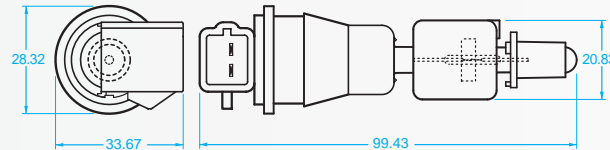
## R12456 Series

- For blow or injection molded bottles
- Side mount design uses separate seal grommet
- Form A (normally open) and Form B (normally closed) operation
- Switch rated 0.5A/100V/10VA max
- Internal snubber resistor
- Mates with Yazaki 7283-6434-40



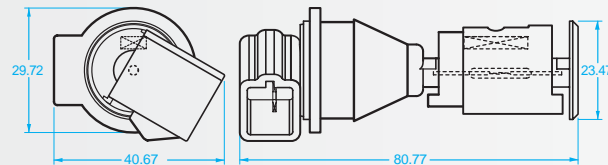
## R12347 Series

- For blow or injection molded bottles
- Bottom mount design
- Form A (normally open) and Form B (normally closed) operation
- Switch rated 0.5A/100V/10VA max
- Internal snubber resistor
- Mates with Ford E57B14A464AA



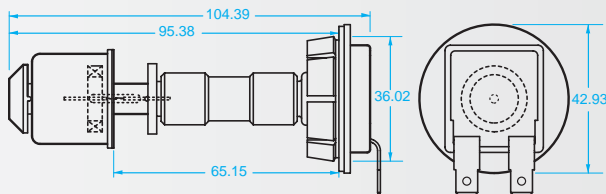
## R12349 Series

- For blow or injection molded bottles
- Side mount design
- Form A (normally open) and Form B (normally closed) operation
- Switch rated 0.5A/100V/10VA max
- Internal snubber resistor
- Mates with Ford E57B14A464AA



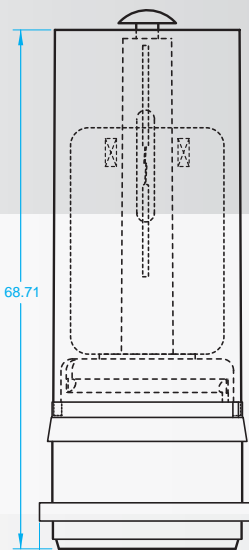
## R12072 Series

- For blow or injection molded bottles
- Top mount/snap in design
- Form A (normally open) operation
- Switch rated 1.5A/200V/50VA max
- Adjustable sensing point up to 18 inches from top of bottle
- Standard termination-0.25 inch open spade



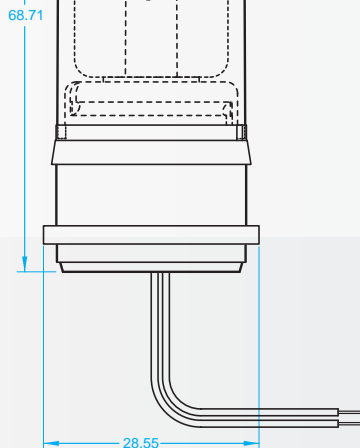
## R12372 Series

- For blow or injection molded bottles
- Indication delay feature
- Bottom mount design uses separate seal grommet
- Form A (normally open) and Form B (normally closed) operation
- Switch rated 1.5A/200V/50VA max



## R12421 Series

- For blow or injection molded bottles
- Indication delay feature
- Bottom mount design uses separate seal grommet
- Form A (normally open) and Form B (normally closed) operation
- Switch rated 1.5A/200V/50VA max



## R12406 Series

- For blow or injection molded bottles
- Indication delay feature
- Bottom mount design with power harness
- Form A (normally open) and Form B (normally closed) operation
- Switch rated 1.5A/200V/50VA max



## Fluid Level Sensors - Magnetic Technology

## Standex Conductivity Sensors

Standex LS100, 200 and 300 series conductivity based fluid level sensors represent a comprehensive line of fluid level sensors that can be applied in most any application where conductivity based sensors are appropriate. From “bare bones” LS100 series sensors which must be driven from external electronics to “turn key” LS300 series sensors that have a switched output, Standex sensors are engineered as needed to meet customer requirements.

LS200 and 300 series sensors are equipped with a Standex patented “bias ring”, designed to eliminate the issues of sensitivity changes that can occur due to a buildup of conductive material around the sensor. This buildup of conductive material can cause substantial shifts in sensor sensitivity. The Standex “bias ring” is charged with an opposing electrical polarity and eliminates secondary conductive paths, which can cause “false full” indications.

Typical applications include monitoring of soap levels in clothes washers and sensing food syrup levels in dispensing equipment. The sensing of basement flood water or the backup of fixed or mobile septic systems are all appropriate applications due to the ability of this technology to operate in conductive fluids with high particulate matter and large amounts of residue. These sensors are also appropriate for automotive applications for monitoring windshield washer fluid and coolant levels.

Standex conductivity sensors can be mounted with a seal grommet, spin plate bonded onto plastic containers, or screw threaded to the container. Conductivity sensors may be operated by a DC Voltage, DC Current or user electronics.

### LS100 Series Conductivity Fluid Level Sensor is a passive device with no internal electronics

- Driven from external electronics
- Suitable for most conductive fluids with minimal particulate matter
- May be operated from user's electronics in a “pulsing” mode to reduce electrolysis
- May be operated with a bipolar pulsing current from user electronics, eliminating electrolysis



## Fluid Level Sensors - Conductive Technology

## LS200 Series Conductive Fluid Level Sensors with False Full Protection and current level shift to indicate fluid level

- Available as a two-wire device
- Capable of substantial miniaturization
- Equipped with Standex patented "bias ring" concept
- Suitable for most conductive fluids
- Suitable in fluids with substantial particulate matter
- Operated by a DC current pulse supplied from user's electror current draw indicates fluid level
- Optional LED available for local fluid level indication



## LS300 Series Conductive Fluid Level Sensors with Sensitivity False Full Protection

- Full electronics and substantial probe miniaturization
- Equipped with Standex patented "bias ring" concept
- Available as a three-wire device
- Suitable for most conductive fluids
- Suitable in fluids with substantial particulate matter
- Internal electronics used to eliminate electrolysis
- Input is 9V to 30 V DC
- Provided with a switched output; 30 volt open collector sync, TTL or CMOS
- Optional LED available for local fluid level indication



## **Fluid Level Sensors - Conductive Technology**

Standex Electronics is a broad-based supplier of fluid level, proximity and motion sensors. While the majority of current applications use magnetic Reed switch based and conductivity based technology, Standex sensor designs include inductive, Hall chip (magnetic), magneto-resistive and capacitive technologies. Standex uses these technologies and other alternative technologies as appropriate for specific applications.

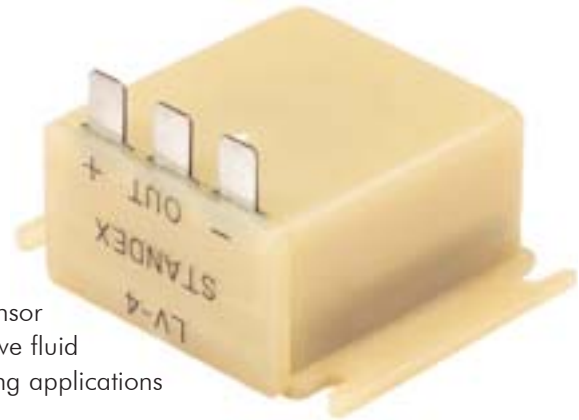
Standex fluid level sensors are widely used in automotive, heavy truck and construction equipment applications as well as a wide range of industrial and commercial applications for monitoring the levels of many different fluids, including coolant, brake fluid, windshield washer fluid, oil, potable water, DI water, and waste water.

Standex fluid level sensors are designed for harsh environments such as "under-hood" applications.

Standex proximity and motion sensors are mainly applied in heavy truck and construction equipment applications as well as home appliance, office equipment and security applications.



LS800 series fluid level sensor with operation verification for safety critical fluid level applications



Patented Capacitive Sensor for non-intrusive fluid level monitoring applications

## Custom Sensors & Alternative Technologies

# Alternative Technologies for Fluid Level and Motion

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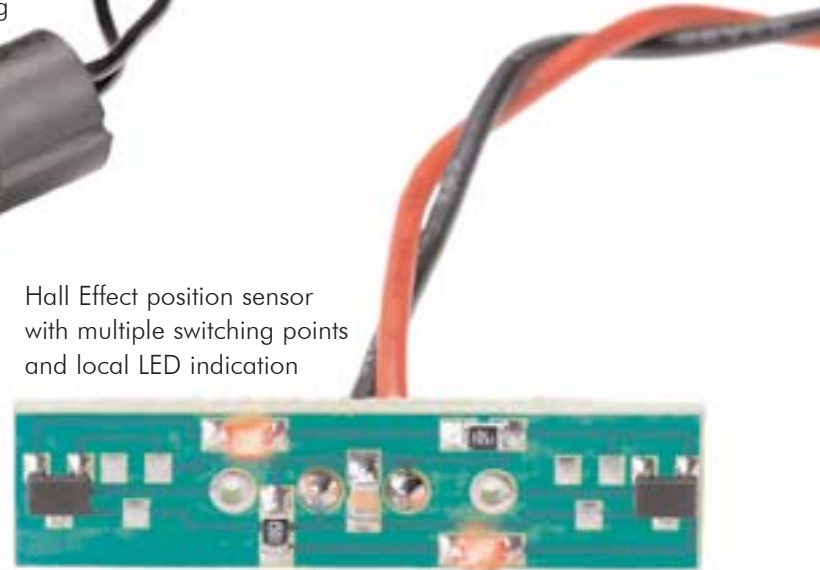
Inductive speed sensors first applied in appliance safety applications requiring ability to withstand harsh environments



Differential pressure sensor for use in high pressure fluid monitoring



Hall Effect position sensor with multiple switching points and local LED indication



## Custom Sensors & Alternative Technologies

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### About Standex Electronics

Standex Electronics Inc. is a subsidiary of Standex International Corporation, symbol SXI on the New York Stock Exchange. Standex Electronics is registered to quality standard ISO/TS 16949:2002. Standex Electronics divisional headquarters are located in Cincinnati, Ohio, USA. In addition to the factory in Cincinnati, facilities are also maintained in Sonora, Mexico; Arizona, USA; Kent, United Kingdom; Ontario, Canada; Hong Kong; and China.

### Other Products

Standex Electronics is a manufacturer of electronic components and subassemblies including inductors, chokes, transformers, antenna coils, Reed switches, Reed relays, connectors, progressive die stampings, insert-molded plastic components and custom products combining many of the above components as well as the proximity and fluid level sensors detailed within.





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