



# Position Sensing

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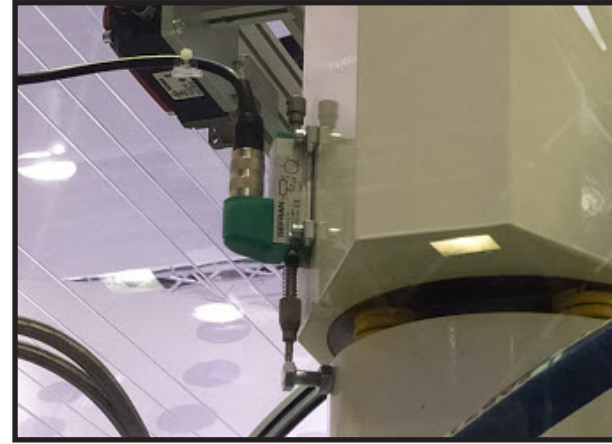




# Linear Position Sensors in Stock and Ready to Ship!

## What is a linear position sensor?

Linear position sensors are devices that connect to an object or piece of machinery and convert the linear displacement of the object into an electrical signal that is proportional to the object's displacement. Linear position sensors are available in many mechanical styles and mounting configurations, with a variety of measurement (stroke) lengths. Types of linear position sensors include linear potentiometers that convert the linear displacement to a resistance value via the use of an internal variable resistor or linear position transducers that convert the linear displacement to an analog signal such as 0-10VDC or 4-20mA. The latter are more specialized and used when higher accuracy is required.



## Why buy a linear position sensor from us?

There are several distinct advantages to purchasing a linear position sensor from AutomationDirect:

### Price

As with all of our product lines, our prices are often well below the list prices of traditional automation suppliers. Our direct business model allows us to operate more efficiently than other suppliers and pass the savings on to you.

### Quality

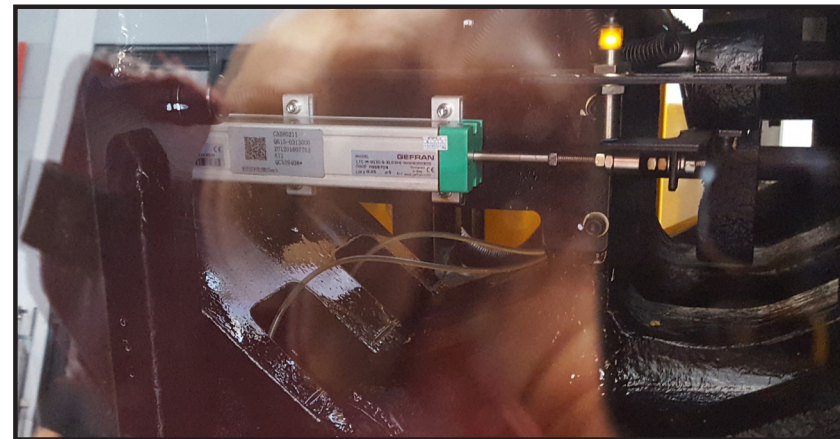
All of our linear potentiometers carry a 3-year warranty, linear transducers have a 1-year warranty and both have a 30-day money-back guarantee. If for any reason you are not satisfied with your purchase, send it back and we will refund your money.

### Service

We give you options for self-service but at the same time, we are there when you need us. You can place your order online or call/email our Customer Service. Have a technical question about one of our products or need help gathering up a bill of materials for one of your projects? You can call our free Technical Support.

### Selection

We offer a wide variety of styles and sizes for our linear position sensors. Whether you would like a standard cylindrical style potentiometer, a rectangular bodied style, a rodless style or push-in style, we have it. Our linear position sensors come in many stroke lengths and offer a variety of mounting options.



## Gefran™ Linear Potentiometers

Linear potentiometers convert linear displacement of an object to a resistance value with the value being proportional to the change in displacement.

### LT Series Potentiometers

Sturdy structure makes this series great for applications with heavy vibration.

- Mounting grooves that provide mounting options not requiring brackets
- Stroke lengths from 50 to 400mm
- IP60 environmental protection rating
- Resistance value of 5k ohms

### PC Series Potentiometers

Standard round body style with rod actuator works well in heavy-duty applications such as metalworking.

- Stroke lengths from 50 to 300mm
- IP65 environmental protection rating
- Resistance value of 5k ohms

### PK Series Potentiometers

Rodless style linear potentiometers work well in applications where installation space is at a premium such as plastic injection presses.

- Mounting grooves to provide mounting options not requiring brackets
- Stroke lengths from 400 to 1,000mm
- IP40 environmental protection rating
- Resistance value of 10k ohms

### PY2 Series Potentiometers

This push-in style with ball tip measures the change in displacement when the actuator is pressed. The actuator is spring-loaded to allow it to re-zero when pressure is removed. Shorter stroke length with higher resolution works well when measuring parameters such as flatness, thickness, and roundness.

- Stroke lengths from 10 to 100mm
- IP40 environmental protection rating
- Resistance values of 1k and 5k ohms

### PZ12 Series Potentiometers

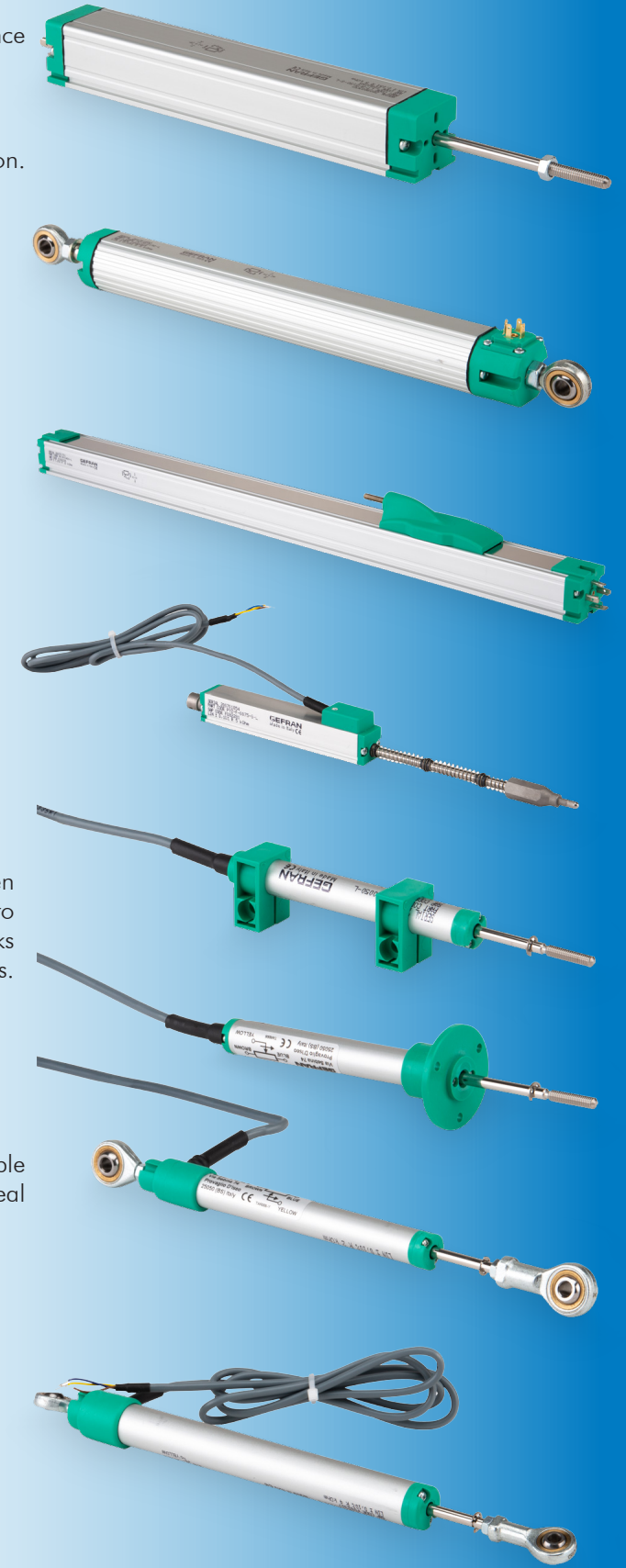
This round body style offers a small, 1/2" diameter housing, and is available with brackets, joints or flange mounting systems. The PZ12 series is ideal for smaller applications such as wood or metal finishing.

- Stroke lengths from 25 to 200mm
- IP60 environmental protection rating
- Resistance values from 1k to 8k ohms

### PZ34 Series Potentiometers

PZ34 series round body style is similar to the PZ12 series but with a 3/4" diameter housing.

- Sturdy design in a smaller size
- Stroke lengths from 25 to 250mm
- IP60 environmental protection rating
- Resistance values from 1k to 8k ohms





## Alliance LVIT Linear Position Sensors™ (Linear Transducers)

Linear transducers convert linear displacement of an object to an analog signal with the value being proportional to the change in displacement.

- Signals available in 0 to 10VDC and 4 to 20mA.
- IP67 environmental protection rating
- Contactless operation to prevent internal wear out

### GHS Series Transducers

Spring-loaded push-in style transducer great for use in QA labs and other higher precision applications.

- Stroke lengths from 0.25 to 4.0 inches
- 6-pin solder connector

### LRS Series Transducers

Spring-loaded push-in style transducer great for use in automotive testing and packaging equipment.

- Stroke lengths from 0.5 to 4.0 inches
- 1 meter cable connection

### LZE13 Series Transducers

Miniature rod-style transducer with 12.7mm diameter cylinder designed for use in factory automation or assembly machinery applications where space is a premium.

- Stroke lengths from 0.1 to 8.0 inches
- 1 meter cable connection
- 0 to 10 VDC output only

### LZE/I19 Series Transducers

Threaded rod-style transducer with 19mm diameter cylinder designed for use in factory automation or assembly machinery applications where space is a premium.

- Stroke lengths from 0.1 to 15.0 inches
- 1 meter cable connection

### LRE/I19 Series Transducers

Rod-style linear transducer with 19mm diameter cylinder. Typical applications would be solar cell position, wind turbine positioning and packaging equipment.

- Stroke lengths from 1.0 to 8.0 inches
- Easy mounting using swivel rod eyes

### LRE/I27 Series Transducers

Heavy-duty rod-style linear transducer with 27mm diameter cylinder. Suitable for industrial and commercial applications where ruggedness is required.

- Stroke lengths from 1.0 to 6.0 inches
- Field adjustable range scaling

### LRLE/I27 Series Transducers

Heavy-duty rod-style transducer similar to the LRE/I27 series but with longer stroke lengths.

- Stroke lengths from 8.0 to 18.0 inches
- Field adjustable range scaling

### LVE/I45 Series Transducers

Heavy-duty rod-style linear transducer with 45mm diameter cylinder, specifically targeted for measuring applications requiring rugged devices.

- Stroke lengths from 4.0 to 15.0 inches
- Field adjustable range scaling



## Gefran™ Magnetostrictive Linear Position Transducers

Magnetostrictive linear transducers are contactless devices that have a longer life when compared to other linear position sensors. Since there is no electrical contact on the cursor there is no wear of mechanical components which almost guarantees an infinite life. Since these transducers operate using magnetostrictive technology they are also immune from EMC and are suitable for use in industrial environments with electromagnetic interferences.

- Electrical connection options are standard DIN connector or M12 quick disconnect
- Electromagnetic compatibility EMC 2014/30/EU
- IP67 protection
- Powered from 24VDC

### WPG Series Magnetostrictive Linear Position Transducers

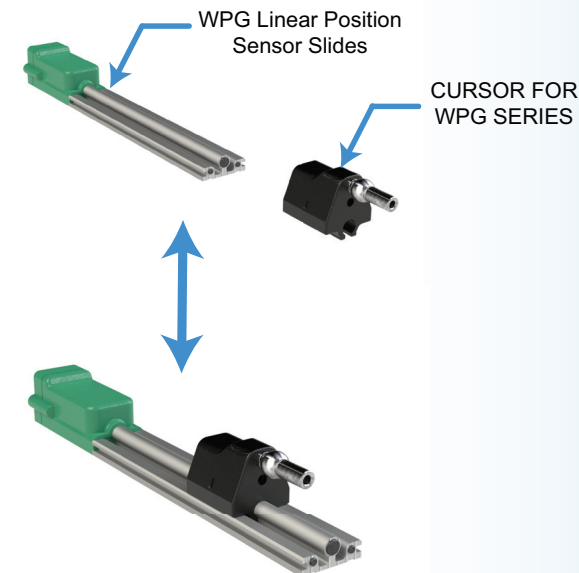
Single direct analog output for displacement.

- Analog outputs of 0-10VDC or 4-20mA available
- Working temperature -4 to 167°F
- Stroke lengths from 50 to 500mm
- 18mm DIN 43650 Form A electrical connection

### WPP Series Magnetostrictive Linear Position Transducers

Double analog output models with one directly proportional to the displacement and an additional analog output inversely proportional (reverse) to displacement.

- Mounting grooves to provide mounting options not requiring brackets
- IP40 environmental protection rating
- Stroke lengths from 50 to 500mm
- Resistance value of 10k ohms



# Inclination Sensors

## What is an inclination sensor?

Inclination sensors are used for leveling applications, platform stabilization and monitoring, and position detection in construction equipment. Inclination sensors measure an object's tilt or inclination angle with respect to gravity.

Gefran inclination sensors use MEMS technology, micro-electromechanical devices integrated onto a single silicon chip, to provide reliable tilt angle measurement. These encapsulated IP67/69K rated sensors are shock and vibration resistant and suitable for the harshest environments. Single and dual-axis sensors are available with integrated axial cables or M12 quick-disconnects.

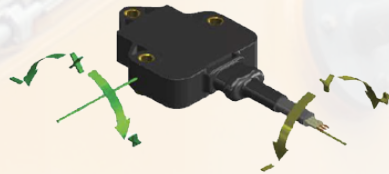
## Inclination Sensor Selection Considerations

- Single or dual-axis
- Output type
- Range of inclination
- Resolution
- Single or redundant output

### SINGLE AXIS



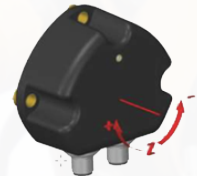
### DUAL AXIS



### DUAL AXIS REDUNDANT CIRCUIT



### SINGLE AXIS REDUNDANT CIRCUIT



## GIB Series Inclination Sensors

Gefran GIB series inclination sensors measure tilt angle with respect to gravity and can be used for applications such as agricultural machines, construction machines and material handling equipment.

- Single or dual-axis
- 10 to 36 VDC input power
- 4 to 20 mA or 0 to 10 VDC analog output
- 12-bit resolution
- +/-15 to +/-180 degree measuring range
- PKT312-1QJ magnetic pen included with dual-axis GIB models
- Integrated axial cable
- IP67/IP69K rated for harsh environments
- 3-year warranty



## GIG Series Inclination Sensors

Gefran GIG series inclination sensors are fully redundant tilt angle sensors, featuring two separate sensors in the same housing, for critical applications such as agricultural vehicles, earth-moving machines and hoisting equipment.

- Fully redundant with two sensors in each housing
- Single or dual-axis
- 10 to 36 VDC input power
- 4 to 20mA or 0 to 10 VDC analog output
- 12-bit resolution
- +/-15 to +/-180 degree measuring range
- M12 quick-disconnect (purchase cable separately)
- IP67/IP69K rated for harsh environments
- 3-year warranty



## Magnetic Pen

The Gefran magnetic pen zeroes GIB-XY inclination sensors to the horizontal plane. (dual-axis models only)

## Applications

- Agricultural vehicles
- Construction equipment
- Hoisting equipment
- Mobile hydraulics applications
- Material handling