



mm P103



Description

Short Stroke Linear Position Sensor Position Feedback for Industrial and Scientific Applications

- Measurement ranges from 0 ... 10 mm to 0 ... 50 mm
- Spring-loaded version available
- Linearity $\pm 0.25\%$
- Multiple options for supply and output

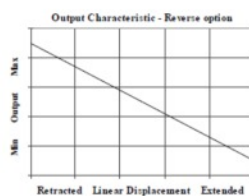
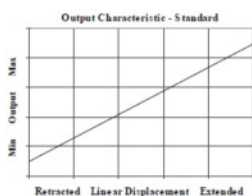
The P103 LIPS® (Linear Inductive Position Sensor) is an affordable, durable, accurate position sensor designed for a wide range of industrial applications. It is particularly suitable for OEMs seeking good sensor performance in situations where a short-bodied sensor is needed and cost is important. The unit is compact and space-efficient, being responsive along almost its entire length, and like all LIPS® sensors provides a linear output proportional to displacement. Each unit is supplied with the output calibrated to the travel required by the customer, from 10 to 50 mm and with full EMC protection built in.

Overall performance, repeatability and stability are outstanding over a wide temperature range. The sensor has a rugged stainless steel body and plunger. It is easy to install and set up, mounting options include flange and body clamps. The plunger can be supplied free or captive, with female M4 thread, or spring-loaded with a ball end. The P103 also offers a wide range of mechanical and electrical options, environmental sealing is to IP65 or IP67 depending on selected cable or connector options.

Features

- Non-contacting inductive technology to eliminate wear
- Travel set to customer's requirement
- Short body length
- High durability and reliability
- High accuracy and stability
- Sealing to IP65/IP67 as required

Dimensions



Performance specifications

| | | |
|----------------------------------|--|--|
| Measurement Ranges: | 0 ... 10 mm to 0 ... 50 mm, factory-set in increments of 1 mm | |
| Supply voltage: | see options | |
| Output signal: | see options | |
| Independent Linearity at 20 °C: | <±0.25 % | |
| Temperature Coefficients Gain: | <±0.01 %/K | |
| Temperature Coefficients Offset: | <±0.01 % FS/K | |
| Frequency Range: | 0...>10 kHz (-3dB) 0...>300 Hz (-3 dB) 2 wire 4...20 mA version | |
| Resolution: | Infinite | |
| Noise: | <0.02 % FSO | |
| Operating Temperature Range: | -40 ... +125 °C standard version -20 ... +85 °C buffered versions | |
| Storage Temperature Range: | -40 ... +125 °C | |
| Environmental Sealing: | IP65 or IP67 depending on connector / cable option | |
| EMC Performance: | EN61000-6-2, EN61000-6-3 | |
| Vibration, max.: | IEC 68-2-6: 10 g | |
| Shock, max.: | IEC 68-2-29: 40 g | |
| MTBF: | 350000 hours, 40 °C, Gf | |
| Electrical Connection | Connector or 0.5 m cable | |

Options

| Order Code | Output Signal | Supply Voltage | Output Load |
|--------------------|-----------------------------|--------------------------------|---------------|
| Standard version: | | | |
| -A- | 0.5 ... 4.5 V ratiometric | +5 VDC nom., ±0.5 V | 5 kΩ min. |
| buffered versions: | | | |
| -G- | 0.5 ... 4.5 V | 24 VDC nom., +9 ... 28 VDC | 5 kΩ min. |
| -B- | ±5 V | ±15 VDC nom., ±9 ... 28 VDC | 5 kΩ min. |
| -C- | 0.5 ... 9.5 V | +24 VDC nom., +13 ... 28 VDC | 5 kΩ min. |
| -D- | ±10 VDC | ±15 VDC nom., ±13.5 ... 28 VDC | 5 kΩ min. |
| Supply current | | 10 mA typ., 20 mA max. | |
| -E- | 4 ... 20 mA (2-wire) | +24 VDC nom., +18 ... 28 VDC | 300 Ω at 24 V |
| -F- | 4 ... 20 mA (3-wire sink) | +24 VDC nom., +13 ... 28 VDC | 950 Ω at 24 V |
| -H- | 4 ... 20 mA (3-wire source) | +24 VDC nom., +13 ... 28 VDC | 300 Ω max. |

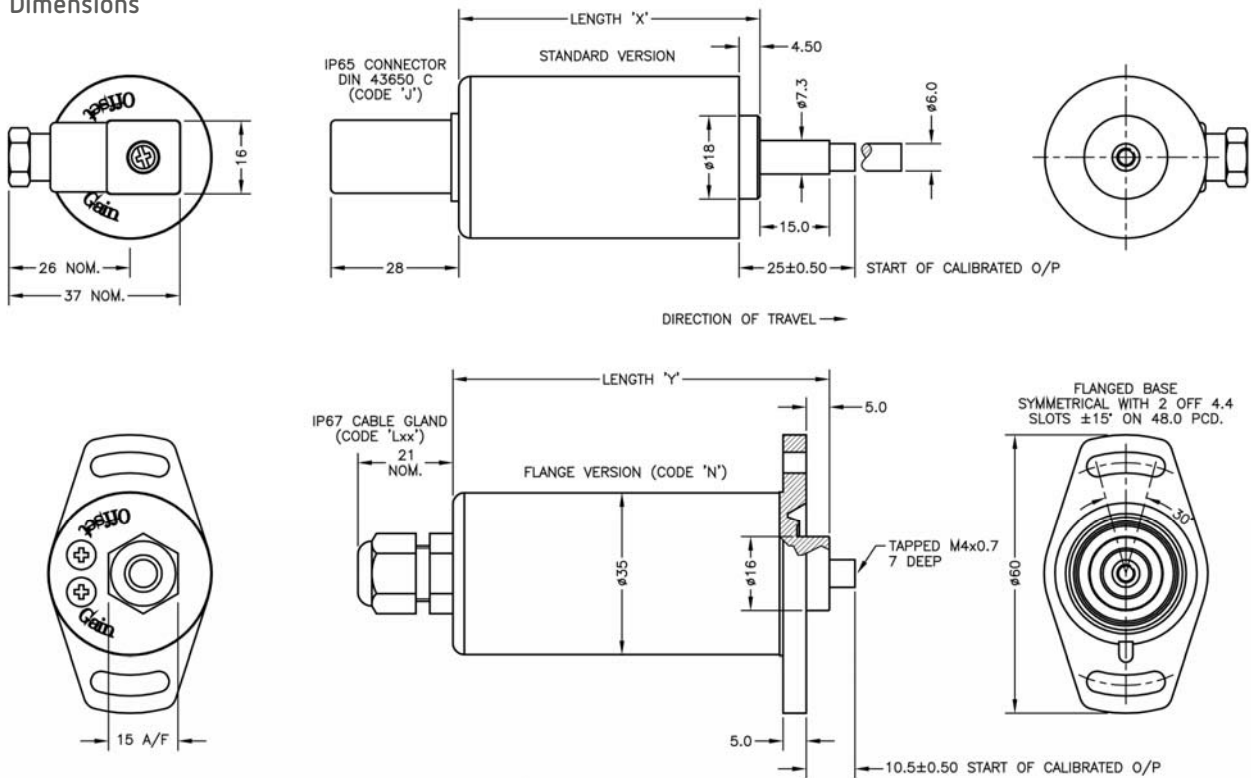
| Options Connector / Cable: | |
|----------------------------|-------------------------------------|
| -J | Hirschmann connector, axial, IP65 |
| -L50 | Cable with axial gland, IP67, 50 cm |
| -M50 | Cable with short gland, IP67, 50 cm |
| | Other cable lengths available |

| Body Mounting Options: | |
|------------------------|------------------|
| -N | Flange |
| -P | Body tube clamps |

| Push Rod Options: | |
|-------------------|-----------------------------------|
| -R | Sprung loaded |
| -T | Dome end (sprung loaded only) |
| -V | Free (not with Option -R or -T) |
| blank | M4 x 0.7 female thread (standard) |

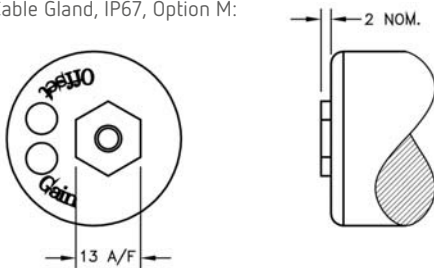
| Potentiometer Option: | |
|-----------------------|--|
| -Y | Trim potentiometers for zero and span sealed |

Dimensions

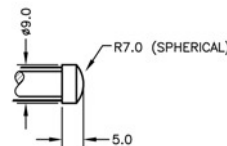


| Travel (Measurement Range) | Body Length X (Standard) | Body Length Y (Flange) |
|----------------------------|--------------------------|------------------------|
| 10 mm | 65.0 mm | 81.3 mm |
| 11 mm to 20 mm | 75.0 mm | 91.3 mm |
| 21 mm to 30 mm | 85.0 mm | 101.3 mm |
| 31 mm to 50 mm | 105.0 mm | 121.3 mm |

Short Cable Gland, IP67, Option M:



Domed End, Code T:



Gain and offset adjustment sealed (Code Y)

All dimensions in mm, approx. values.

These drawings are for information only and not intended for construction purpose. Please ask for detailed drawings.

Electrical Connection

Cable (Options Lxx or Mxx):

- 3-core screened PUR cable, 0.2 mm², Ø 4 mm,
- 4-core screened PUR cable, 0.2 mm², Ø 4.6 mm
- Standard length 50 cm

Connector (Option J):

maximum conductor cross section 0.75 mm²

Connections:

| 3-core Cable | 4-core Cable | Connector | Function |
|--------------|--------------|-----------|--------------------------------|
| red | red | pin 1 | + supply voltage |
| black | green | pin 3 | 0 V |
| | yellow | pin 4 | - supply voltage (code B or D) |
| white | blue | pin 2 | output signal |
| screen | screen | pin 4 | Body (code A, C, E, F, G, H) |