



mm P111



Description

Rugged Stand-Alone Linear Position Sensor, Position Feedback for Industrial and Scientific Applications

- Measurement Range from 0 ... 50 mm to 0 ... 600 mm
- Spring-loaded version available
- Linearity $\pm 0.25\%$ (ranges over 450 mm: $\pm 0.5\%$)
- Multiple options for supply voltage and output signal

The P111 LIPS® (Linear Inductive Position Sensor) is a heavy-duty version of the P101 sensor with a stronger 12.6 mm push rod, recommended for applications where vibration is an issue or there is a need for longer travel sensors, mounted horizontally, and supported between rod eyes. It remains an affordable, durable, high-accuracy position sensor designed for industrial and scientific feedback applications. The unit is highly compact and space-efficient, being responsive along almost its entire length.

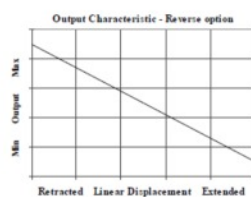
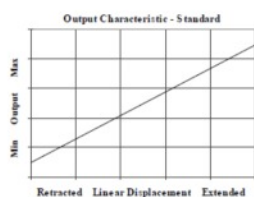
Like all LIPS® sensors, the P111 provides a linear output proportional to displacement. Each sensor is supplied with the output calibrated to the travel required by the customer, from 50 to 600 mm and with full EMC protection built in.

The sensor is very robust, the body and push rod being made of stainless steel for long service life and environmental resistance. It is particularly suitable for OEMs seeking good sensor performance for arduous applications such as industrial machinery where cost is important. Overall performance, repeatability and stability are outstanding over a wide temperature range. The sensor is easy to install with mounting options including M8 rod eye bearings and body clamps. The push rod can be supplied free or captive, with female M8 thread, an M8 rod eye, or dome end. Captive push rods can be sprung loaded, in either direction, on sensors up to 250 mm of travel. The P111 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
- Compact and self-contained
- High durability and reliability
- High accuracy and stability
- Sealing to IP65/IP67 as required

Dimensions



Performance specifications

Measurement Ranges:	0 ... 50 mm to 0 ... 600 mm, factory-set in increments of 1 mm	
Supply voltage:	see options	
Output signal:	see options	
Independent Linearity at 20 °C:	<±0.25 % for ranges up to 450 mm <±0.5 % for ranges >450 mm	
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...20mA 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.

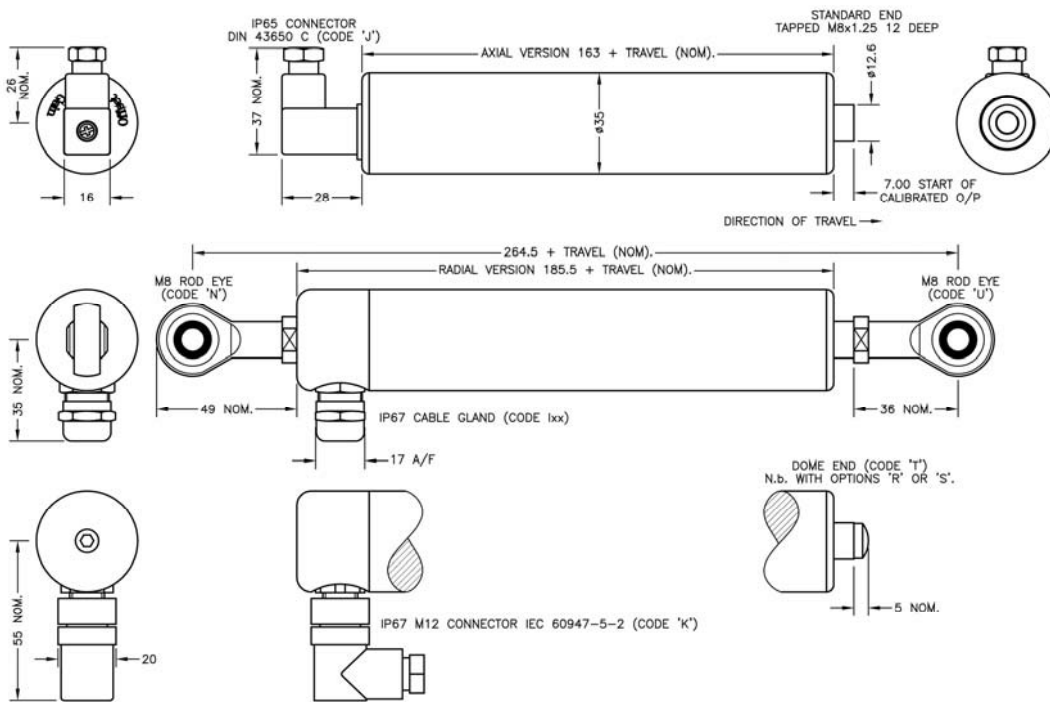
Options Connector / Cable:	
-J	Hirschmann connector, axial, IP65
-K	Hirschmann connector, radial, IP67
-L50	Cable with axial gland, IP67, 50 cm
-M50	Cable with short gland, IP67, 50 cm
-I50	Cable with radial gland, IP67, 50 cm
	Other cable lengths available

Body Mounting Options:	
-N	M8 rod eye bearing (radial versions only)
-P / -P2	Body tube clamps

Push Rod Options:	
-R	Spring return to extended position (for ranges up to 250 mm only)
-S	Spring return to retracted position (for ranges up to 250 mm only)
-T	Dome end (with option -R only)
-U	M8 rod eye bearing
-V	Free
blank	M8 x 1.25 female thread (standard)

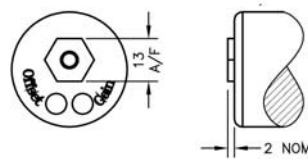
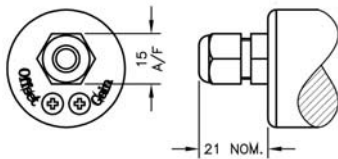
Potentiometer Option:	
-Y	Trim potentiometers for zero and span sealed

Dimensions



Cable gland, IP67, Option L:

Short Cable Gland, IP67, Option M,



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, Mxx or Ixx):

- 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: 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)