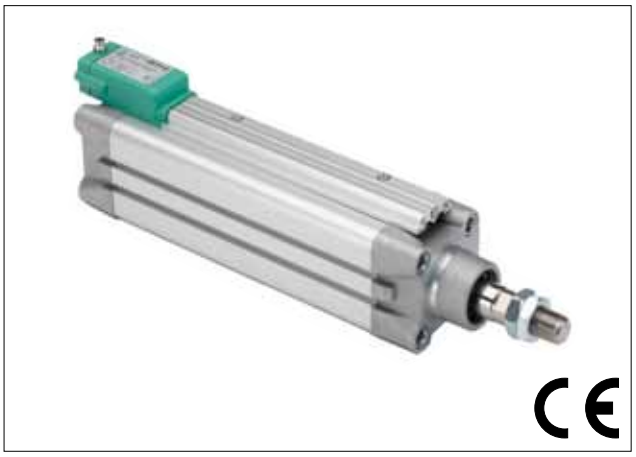
GEFRAN

ONPP-A (for pneumatic cylinders)

CONTACTLESS MAGNETOSTRICTIVE LINEAR POSITION TRANSDUCER WITH GEFRAN ONDA TECHNOLOGY (ANALOG OUTPUT)



Main characteristics

- *Strokes from 50 to 900mm*
- *Orientation detection of the magnet inside the cylinder*
- *Direct analog output for displacement*
- *Working temperature: 0...+50°C*
- *IP65 protection*
- *Power supply 24Vdc ±20%*

Contactless linear position transducer with innovative GEFRAN ONDA magnetostrictive technology for longer lifetime.
The absence of electrical contact on the cursor eliminates all wearing and guarantees almost unlimited life.
The new ONDA technology solution (patented by Gefran) allows to obtain an essential modular structure with compact size for simple installation.

TECHNICAL DATA

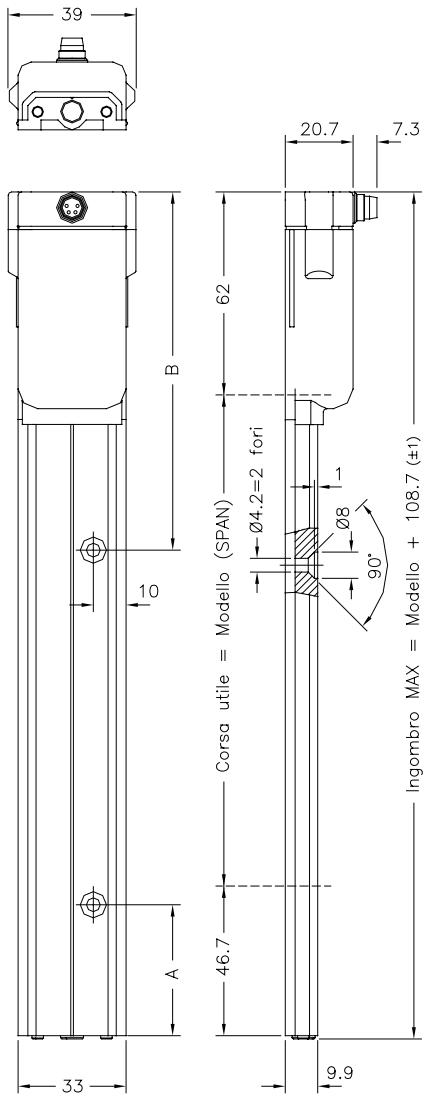
Model	from 50 to 900 mm
Measurement taken	Displacement
Position read sampling time (typical)	see table
Shock test DIN IEC68T2-27	100g - 11ms - single shock
Vibrations DIN IEC68T2-6	12g / 10...2000Hz
Displacement speed	≤10 m/s
Max. acceleration	≤ 100 m/s² displacement
Resolution	INFINITE (only limited from the electrical noise)
Cursor (*)	Compatibility with magnets inside the cylinder tested for 32, 40 and 50 mm bore sizes
Working temperature	0...+50°C
Storage temperature	-40...+100°C
Coefficient of temperature	≤ 0.01% f.s. / °C (min. 0,015mm/°C)
Protection	IP65

(*) The generated field intensity must be higher than 45 Gauss.
The magnet preliminary qualification is recommended.

ELECTRICAL DATA

Output signal	0,5...9,5 V
Nominal power supply	24 Vdc ±20%
Max. power ripple	1Vpp
Output current consumption	35mA
Output load	≥10KΩ
Max. output value	12V
Alarm output value	10.5 V
Electrical isolation	50 V
Protection against polarity inversion	Yes
Protection against overvoltage	Yes
Protection against power supply in output	Yes

MECHANICAL DIMENSIONS



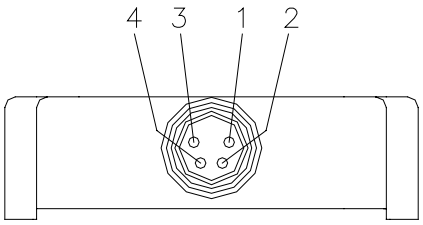
For details about the correct installation on the pneumatic cylinder, refer to the section CYLINDER MOUNTING

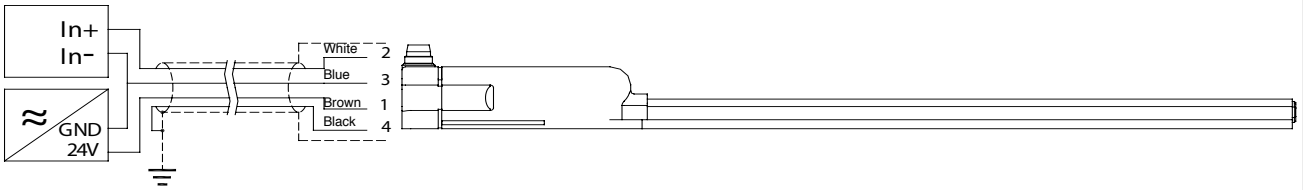
ELECTRICAL / MECHANICAL DATA

Model		50	75	100	130	150	175	200	225	250	300	350	360	400	450	500	550	600	650	700	750	800	850	900
Sampling time	ms	1																	1.5					
Electrical stroke (E.S.)	mm	Model																						
Independent linearity		≤ ± 0,2% FS (min ± 1 mm)																						
Max. dimensions	mm	Model + 108,7 (±1)																						
Fixing hole position (B)	mm	84.5		109.5																				
Fixing hole position (A)	mm	35		40																				
Repeatability	mm	≤ 0,05 (max)																						
Hysteresis	mm	≤ 0,2 (max)																						

ELECTRICAL CONNECTIONS

PIN	FUNCTION
1	Power supply +
2	Output
3	Power supply -
4	Shield





"The diagram shows the ideal wiring conditions, for the noise reduction, with the cylinder housing not connected to the ground.
In the case the cylinder housing is connected to the ground, be sure the sensor is isolated from the cylinder housing."

ORDER CODE

Position transducer **O N P P A** ☐ ☐ ☐ ☐ ☐ ☐ — **0 0 0 0 X 0 0 0 X 0 0 X 0 X X**

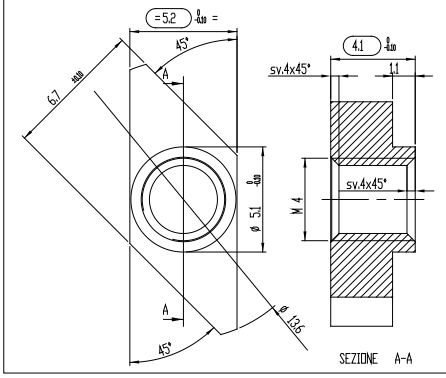
Analog output	**A**

Connector	
4 pin M8x1 connector output	**S**

Model

Output		
0,5...9,5 V d.c.	1 cursor only for direct output	**N**

MOUNTING KIT PKIT083 (order separately)



In the KIT

2 beackets
2 screws M4x14
TSPEI UNI5933

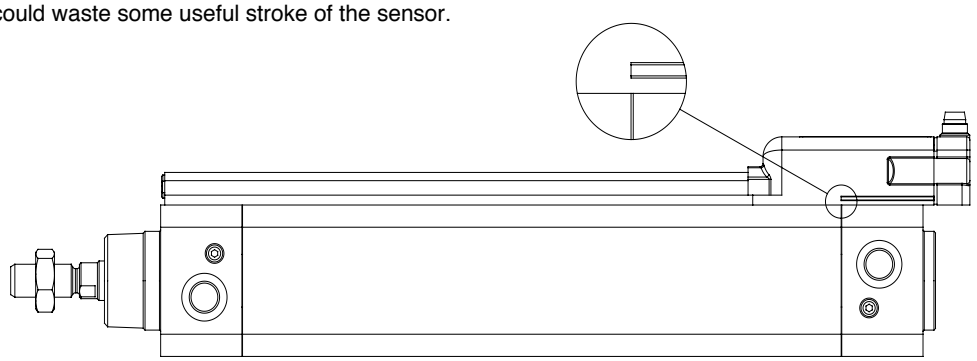
CABLES (order separately)

Cable with M8, 4 pin axial connector, 2 meters, PUR, shielded	**PCAV331**
Cable with M8, 4 pin axial connector, 5 meters, PUR, shielded	**PCAV332**
Cable with M8, 4 pin 90° connector, 2 meters, PUR, shielded	**PCAV333**
Cable with M8, 4 pin 90° connector, 5 meters, PUR, shielded	**PCAV334**

CYLINDER MOUNTING

For a quick installation, it is possible to refer to the mark on the sensor's head by aligning it with the end of the cylinder body.

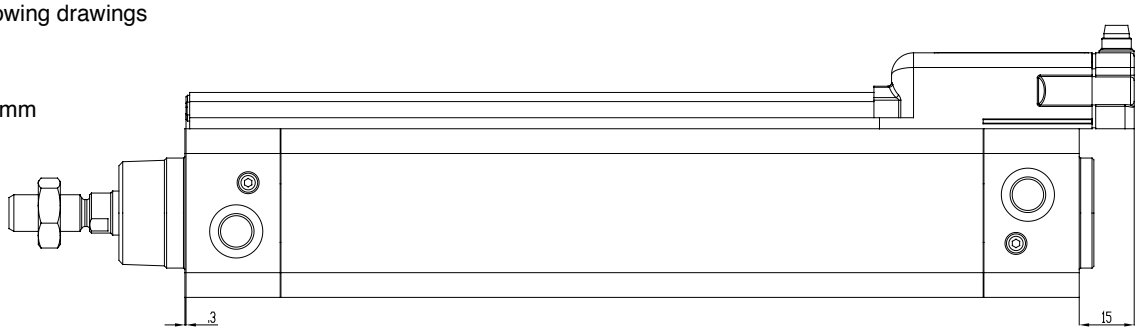
This is a rough alignment that guarantees to read the full cylinder stroke, independently on the internal magnet orientation.
At the same time, it could waste some useful stroke of the sensor.



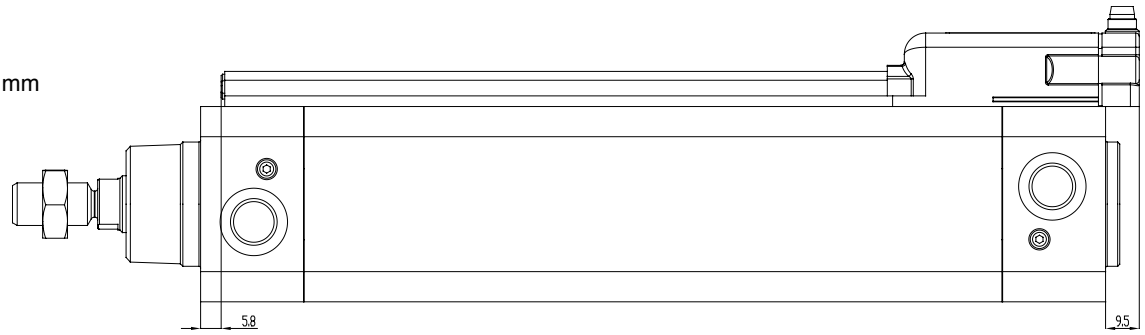
The best installation must be performed in the following way.
1) mount the sensor on the cylinder (no power) by aligning it to the cylinder body as indicated above but without fixing its position
2) turn the sensor on and wait up to 1 sec to let it perform the internal magnet orientation recognition
3) put the piston in the zero position and adjust the sensor position in order to obtain an output of 0,5 Vdc
4) fix the sensor by tightening the screws

Depending on the cylinder bore dimension, the minimum possible projection of the sensor from the cylinder head is indicated on the following drawings

Bore ø 32 mm



Bore ø 40 mm



Bore ø 50 mm

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