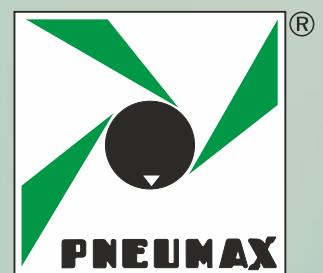


Components for pneumatic automation

## Position transducers



PNEUMAX GREEN LINE: TECHNOLOGY & INNOVATION





## General

GEFRAN linear displacement transducers for pneumatic cylinders.

The operating principle, based on a patented magnet strip solution with no direct contact between the transducer and the moving parts of the cylinder, this eliminates problems of wear and tear and guarantees almost unlimited life. The transducer is fixed, by means of two screws, and is mounted on the barrel of the cylinder in the slot normally used for mounting the sensors. The actuators to which the transducers can be mounted are the standard catalogue ISO 15552 ECOPLUS series (1386-1387, 1396-1397). The transducer required is determined by the stroke of the actuator as well as the application, If we need to monitor only a part of the working stroke, we can use a transducer with a smaller stroke and position it over the area to be monitored. There are several standard lengths of the transducers (see below the electro-mechanical characteristics). The transducers can be supplied individually (with a mounting kit) and calibrated by the customer (see below "Installing transducer on cylinder"). Alternatively, you can order the transducer already mounted to the actuator; the sales code will include the pneumatic actuator and the transducer mounted in the orientation required.

## Technical characteristics

Model	da 50 a 900mm
Measurement taken	displacement
Position read	see table
sampling time (typical)	
Shock test DIN IEC68T2-27	100g - 11ms - single shock
Vibrations DIN IEC68T2-6	12g / 10...2000Hz
Displacement speed	≤10m/s
Max. acceleration	≤100m/s <sup>2</sup> displacement
Resolution	infinite (only limited from the electrical noise)
Working temperature	0...+50°C
Storage temperature	-40...+100°C
Coefficient temperature	≤0.01% f.s. / °C (min. 0,015mm / °C)
Protection	IP65

\* The generated field must have intensity greater than 45 Gauss. Correct recognition of the signal, initial zero value, deviation span compared to nominal value, and correct sensor function depend on the shape of the magnetic field generated by the magnet in the cylinder. The shape of the magnetic field depends on the physical and geometric characteristics of the magnet. Preliminary testing of the magnet is recommended.

## Electrical characteristics

	Voltage Version	Current Version
Calibrated output signal	<b>0.6 - 9.6V (T)</b>	<b>4.8 - 19.2mA (C)</b>
Not calibrated output signal	0.5 - 9.5V	4.8 - 19.2mA
Span	9VDC	14.4mA
Nominal power supply	24VDC ±20%	24VDC ±20%
Max. power ripple	1Vpp	1Vpp
Output current consumption	35mA	60mA
Output load	≥10KΩ	50 - 500Ω
Max. output value	12V	35mA
Alarm output value	10.5V	21mA
Electrical isolation	50V	50V
Protection against polarity inversion	Yes	Yes
Protection against overvoltage	Yes	Yes
Protection against power supply in output	Yes	Yes

## Electromechanical characteristics

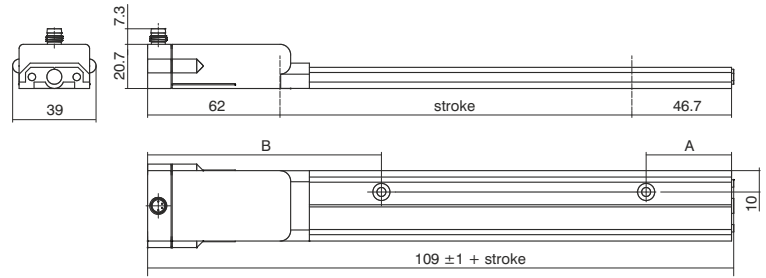
Model / Stroke (Readable)	mm	50	75	100	130	150	165	175	200	225	250	300	350	360	400	450	500	550	600	650	700	750	800	850	900	
Sampling time	ms	1																			1.5					
Independent linearity		≤±0.2% F.S. (min. ±1mm)																								
Max. dimensions	mm	Model +108,7 (±1)																								
Repeteatabillity	mm	≤0.05 (max)																								
Hysteresis	mm	≤0.2 (max)																								

**Transducer ordering code (not calibrated)**

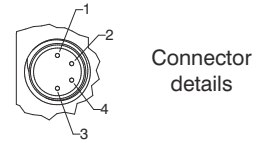
1800 .

<b>OUTPUT</b>
T = 0.5 - 9.5VDC
C = 4.8 - 19.2mA

<b>STROKE (READABLE)</b>
See electromechanical characteristics



	Stroke	
	50-75	100 - 900
A	35	40
B	84,5	109,5



Pin	Function	Wire color
1	Power supply +	Brown
2	Output	White
3	Power supply -	Blue
4	Shield	Black

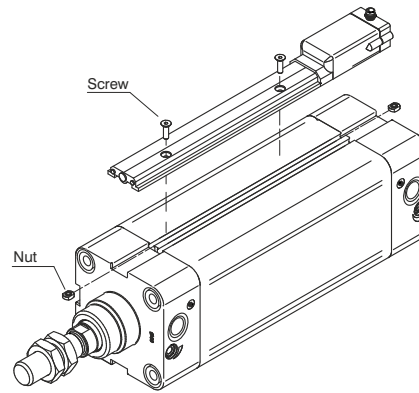
The diagram shows the ideal wiring conditions, for the noise reduction, with the cylinder housing not connected to the ground. In the case the cylinder housing is connected to the ground, be sure the sensor is isolated from the cylinder housing.

Example: 1800T0050 : Single transducer, with an output of: 0.5 to 9.5VDC, reading 50mm stroke (uncalibrated).

**Please note:** The part number for Transducers which are to be supplied and fitted by the customer does include the nuts and fastening screws, however, it is not possible to calibration without the correct calibration equipment. These transducers can only be used on ISO 15552 ECOPLUS series cylinders (1386-1387, 1396-1397).

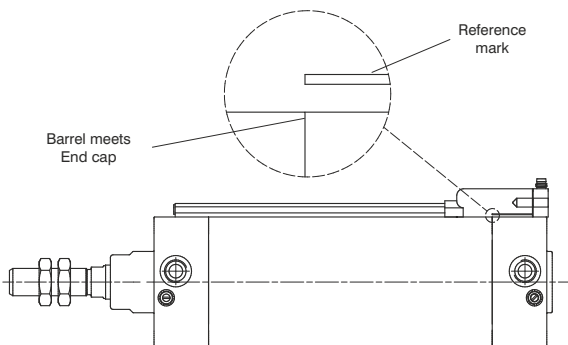
**Installing the Transducer on the cylinder**

The transducer can be mounted on cylinders ISO 15552 series ECOPLUS (1386-1387-1396-1397 series) and can be operated only at the end of assembly.



**Mounting sequence**

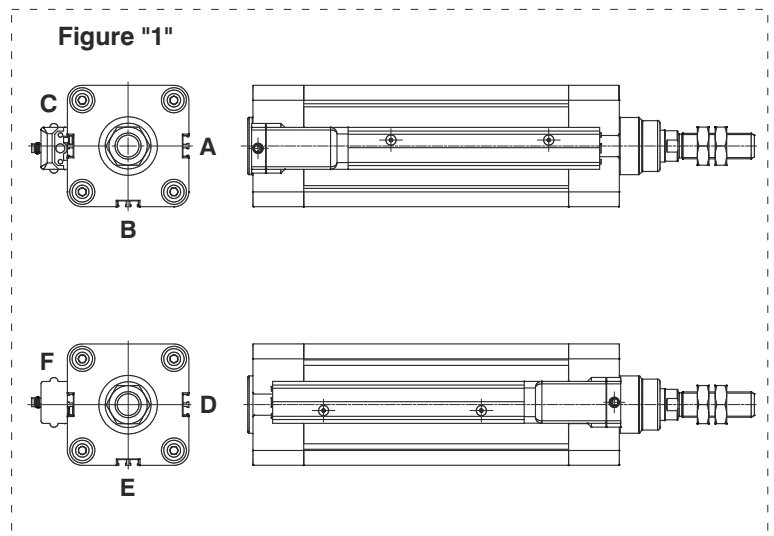
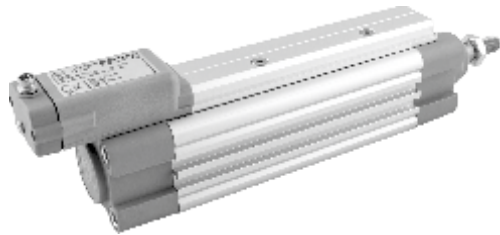
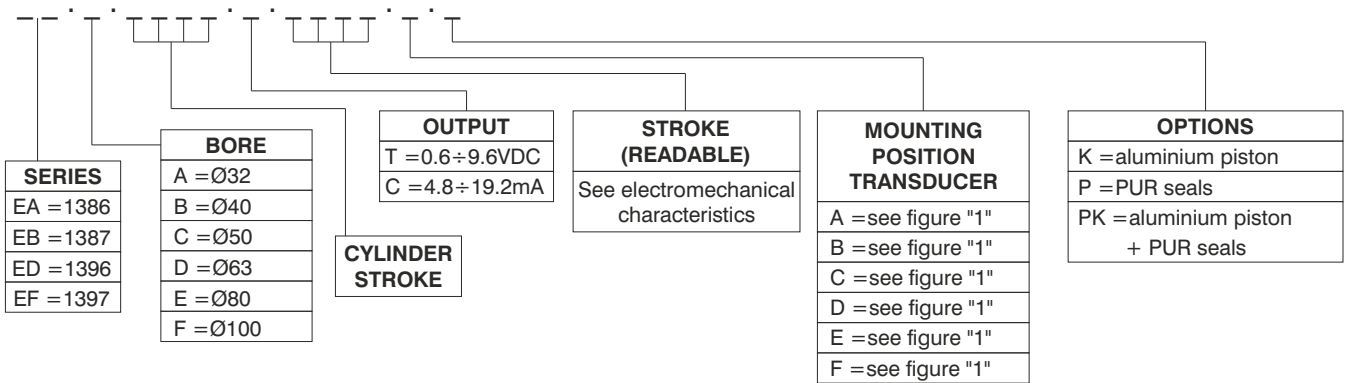
- 1 - Insert the mounting nuts into the slot located on the cylinder barrel
- 2 - Place the transducer on the cylinder and insert the screws into Mounting holes, locating and screwing them into the mounting nuts without tightening (The transducer must be free to slide)
- 3 - Place the transducer as follows



- 4 - Power the transducer
- 5 - Check that the reading of zero is between 0.5V and 0.8V (Voltage version) or 4,8mA and 5,3mA (Current version)
- 6 - If the reading is less than 0.5V / 4,8mA adjust the position Of the sensor to obtain a 0.5V / 4,8mA signal.
- 7 - If the reading is higher than 0.8V / 5,3mA adjust the position Of the sensor to obtain a 0.8V / 5,3mA signal.
- 8 - Secure the sensor in position by tightening the screws.

**For any technical / functional detail not mentioned in this document or for the purchase of the equipment to calibrate, contact the Transducer manufacturer GEFRAN (www.gefran.com)**

Ordering code for the transducer and actuator assembly



You can order the assembly with the transducer mounted on any of the three available sides of the cylinder, with the connector either mounted towards the front or the rear. The transducer is factory calibrated to the cylinder on which it is mounted. Therefore you cannot have as a spare part the cylinder or individual transducer.

Example: EA.E.0050.T.0050.A.K : cylinder 1386 series, 80mm, 50 mm stroke, aluminium piston, including the model voltage output transducer, reading stroke 50 mm, mounted in position "A"  
**Important note:** Mounting and sensor calibration are performed by PNEUMAX, (only applicable for ISO 15552 cylinders ECOPLUS 1386-1387-1396-1397).

**Transducer mounting kit**

Ordering code	The kit comprises: n°2 nuts (stainless steel) n°2 screws (stainless steel)
<b>1800.01KT</b>	



**Straight connector**

Ordering code	<b>1800.04.L.00</b>
CABLE LENGTH	
<b>L</b> 02 = 2 meters	
05 = 5 meters	

Cable PUR insulated



**90° connector**

Ordering code	<b>1800.04.L.90</b>
CABLE LENGTH	
<b>L</b> 02 = 2 meters	
05 = 5 meters	

Cable PUR insulated



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D. NW. 84/GB - 12/2016  
PRINTED IN ITALY - 12/2016

