



**PNEUMAX**



## **SERIES Eco-Smart**

ISO 15552 CYLINDERS WITH POSITION TRANSDUCER



## Series Eco-Smart - with integrated position transducer



- According to ISO 15552 standard
- Bores Ø40, Ø50, Ø63, Ø80, Ø100
- Strokes up to 1000 mm, with 50 mm increments
- Wide range of accessories
- IP67 protection degree

The cylinders of the Eco-Smart Series are pneumatic actuators according to ISO 15552 standard, equipped with a linear potentiometer integrated into the piston rod. This device enables continuous monitoring of the rod position along the entire stroke, which is detected by processing the internal resistance variation of the transducer. The pistons (from Ø50 to Ø100) are equipped with a permanent magnet, allowing the use of external end of stroke sensors from the SQ, SU, and SR series. The dynamic seals are made of low-friction polyurethane. The electrical connection, made via a male M12 connector located on the rear cap, makes the cylinder compliant with IP67 protection degree.

### Construction characteristics

Piston rod bushings	spheroidal bronze on steel strip with PTFE coating
Barrel	anodised aluminium alloy
Seals	standard: PUR rod seals, NBR piston seals <b>P</b> version: PUR rod seals, PUR piston seals <b>V</b> version: FPM rod seals, PUR piston seals <b>Q</b> version: plastic rod scraper, NBR rod seals, PUR piston seals <b>R</b> version: metallic rod scraper, FPM rod seals, PUR piston seals
Pistons	aluminium (magnetic version for external sensor from Ø50 to Ø100)
Piston rod	C43 chromed steel
End caps	aluminium
Cushion adjustment screw	brass

### Operational characteristics

Fluid	filtered and preferably lubricated air or not (if lubricated the lubrication must be continuous)					
Maximum pressure	10 bar					
Minimum pressure	1 bar					
Working temperature	-5°C ... +70°C (Standard seals) -30°C ... +80°C ( <b>P</b> version) -5°C ... +80°C ( <b>V</b> version) -20°C ... +80°C ( <b>Q</b> version) -10 °C ... +80 °C ( <b>R</b> Version)					
Bore	Ø	40	50	63	80	100
Cushioning lenght (front only)	mm	20	22	22	32	32

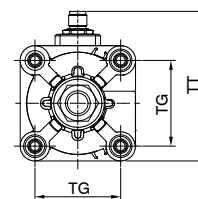
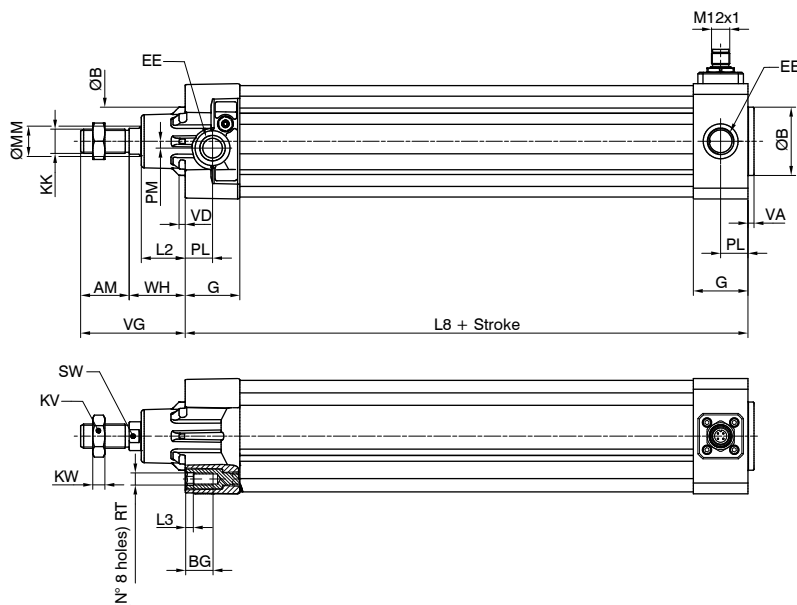
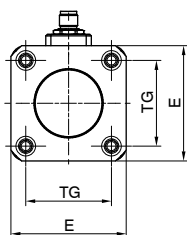
### Standard strokes

Standard strokes up to 1000 mm, with 50 mm increments

**Cylinder with integrated position transducer**

**CODING: 13V.Ø.C.09T**

V	VERSION
	90 = Magnetic chromed rod (Ø50 ... Ø100)
	92 = Non magnetic chromed rod
Ø	BORE
	40 = Ø40
	50 = Ø50
	63 = Ø63
	80 = Ø80
C	STROKE
	50 = 50 mm
	100 = 100 mm
	150 = 150 mm
	200 = 200 mm
T	TYPE
	= Standard seals
	P = PUR seals
	V = Version with FPM rod seals, PUR piston seals
	Q = Version with plastic rod scraper, NBR rod seals, PUR piston seals
	R = Version with metallic rod scraper, FPM rod seals, PUR piston seals

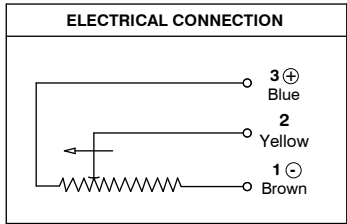
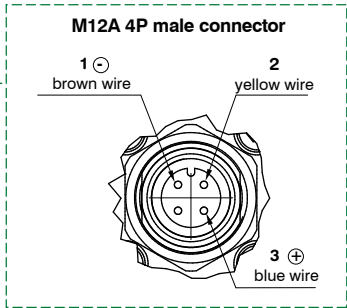
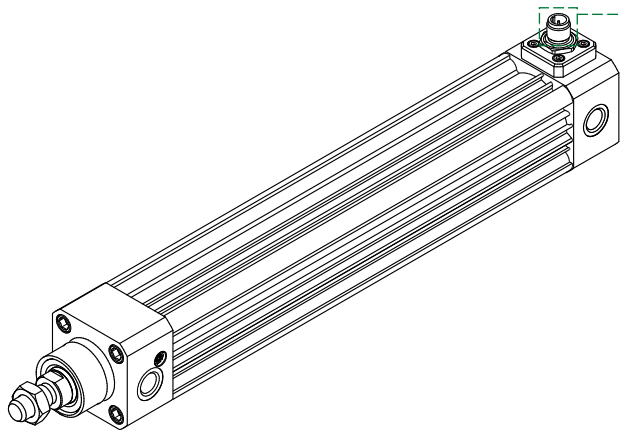


**Table of dimensions**

Bore		40	50	63	80	100
AM		24	32	32	40	40
B (d 11)		35	40	45	45	55
BG		16	18	18	16	16
E		54	65	76	95	113
EE		G1/4"	G1/4"	G3/8"	G3/8"	G1/2"
G		33	32	36	38.5	41.5
KK		M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5
KV		19	24	24	30	30
KW		7	8	8	9	9
L2		22	29	29	35	36
L3		4	5	5	/	/
L8		105	106	121	128	138
MM		20	20	20	25	25
PL		16.5	18	18	16	18
PM		4	5	4.5	2.5	6
RT		M6	M8	M8	M10	M10
SW		17	17	17	22	22
TG		38	46.5	56.5	72	89
TT		77	88	99	118	136
VA		4	4	4	4	4
VD		4	4	4	4	4
VG		54	69	69	86	91
WH		30	37	37	46	51
Weight g	Stroke 0	650	1030	1360	2180	2890
	every 10 mm	32	45	49	75	81



Wiring diagram



Operation instructions

- Make the specified electrical connections (do not use the transducer as a variable resistance).
- When calibrating the transducer, be careful to set the stroke so that the output does not drop below 1% or rise above 99% of the voltage level.
- The potentiometer operates based on a "magnetic drag" principle for its movement.
- The allowed accelerations must not exceed 10 m/s<sup>2</sup> to prevent decoupling of the internal element from the transducer.

Transducer data

	Useful electrical stroke +1/-0 (mm)																			
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Resistance (kΩ)	5						10						20							
Resistance tolerance (±%)	20																			
Independent linearity (±%)	0.1			0.05																
Maximum applicable voltage (V)	40	60																		
Displacement sensitivity (without hysteresis) (mm)											0,05 ... 0,1									
Repeatability (mm)											≤0,08									
Output voltage thermal coefficient (ppm/°C)											≤5									
Hysteresis (mm)											≤0,25									
Displacement speed (m/s)											≤1									
Maximum acceleration (m/s²)											≤10									
Acquisition device input impedance (MΩ)											>100									
Maximum current in cursor circuit (Pin 2) in case of fault (mA)											10									

Accessories and fixing devices

All ISO 15552 ECOLIGHT series cylinder fixing devices and accessories can be used.

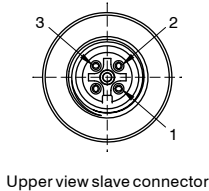
Sensors

All sensors from the SQ, SU and SR series can be used.

POWER SUPPLY connectors

**Straight connector M12A 4P female**

CODING: 5312A.F04.00



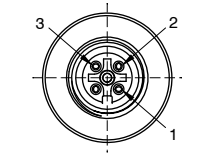
Upper view slave connector

PIN	DESCRIPTION
1	brown wire (-)
2	yellow wire
3	blue wire (+)

Power supply socket

**90° M12A 4P female connector**

CODING: 5312A.F04.90.00



Upper view slave connector

PIN	DESCRIPTION
1	brown wire (-)
2	yellow wire
3	blue wire (+)

90° power supply socket



**PNEUMAX**

**PNEUMAX S.p.A.**

Via Cascina Barbellina, 10  
24050 Lurano (BG) - Italy  
P. +39 035 41 92 777  
[info@pneumaxspa.com](mailto:info@pneumaxspa.com)