

elap

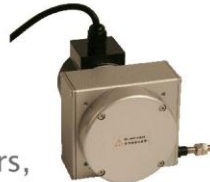
Since 1968 **ELAP** has been growing in the field of industrial automation, soon becoming a leader manufacturer of **position sensors and control equipments for industrial automation.**

**ELAP** product line offers a wide array of **position transducers** and a choice of **counting and control equipments**

Absolute & Incremental Encoders



Wire Transducers



Linear & Magnetic Transducers



Linear & Rotary Potentiometers, Industrial Joysticks



Vibration & Tilt Sensors



Electronic Counters & Readouts



PLC Controllers & HMI

ELAP represents as sole distributor in Italy the companies:



The accuracy and reliability featuring **ELAP** products result from advanced **technological research** joined to the long experience we achieved working strictly in touch with our customers. Proposing the best solution for each industrial reality is our goal; custom tailored solutions can be engineered if necessary.

Numberless **applications** have been developed on operating machines of all industrial fields: sheet working machinery, glass, wood-, paper-machinery, plastic- and textile machines, food-processing and further.

**ELAP** takes part to **international technology communities** promoting and supporting the development of industrial networks.



## ► LINEAR POTENTIOMETERS

- **Wide choice of models**
- **Stroke ranging from 25 to 950 mm**
- **High linearity**
- **Infinite resolution**
- **Easy mounting method**
- **Excellent resistance to environmental agents**
- **Versions with M12 connector available**
- **Versions with analogue output available**

Widely employed on industrial operating machines, linear motion potentiometers are specially designed to measure and control **linear displacements in absolute mode**.

Elap potentiometers range includes a **variety of mechanical sizes and strokes** to meet any application requirement: there are **square or round section** potentiometers, with **different sizes** and **measuring strokes ranging from 25 to 950 mm**. Different options are available for the connectors type.

All the types are designed for **industrial applications**, and offer **excellent reading accuracy and repeatability**, **speed** and **resistance to shocks and vibrations**.

The **conductive plastic resistive element** grants the potentiometers a **long life, high independent linearity** and virtually infinite resolution. The standard resistive value is **5 KOhm**, but **10 KOhm** is also available on request.

The **mounting method** – by steel brackets, ball joints or screw nut - is extremely easy.

Several **fittings** are available: ball joints, self-aligning joints, feeler pin and springs for the rod return.

All the potentiometers avail on a **stout aluminium housing** which ensures **high protection against environmental agents**, and makes them fit to severe applications, even outdoor.





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	PLS	PL2S	PL231
<b>Sensor</b>	Conductive plastic resistive element		
<b>Resistive value</b>	5 KOhm $\pm 20\%$		Optional 10 KOhm $\pm 20\%$
<b>Strokes mm</b>	50 ÷ 950 mm	50 ÷ 750 mm	50 ÷ 750 mm
<b>Linearity</b>	Strokes $\leq 400$ mm: $\pm 0,075\%$ - Strokes $\geq 500$ mm: $\pm 0,1\%$		
<b>Resolution</b>	Infinite		
<b>Mechanical life</b>	100 million cycles		
<b>Connections</b>	4-pin male connector DIN EN61984 (VDE 0627) provided with female angled orientable connector		
<b>Connector position</b>	Axial	Radial	Radial
<b>Materials: Housing</b>	Anodised aluminium with glass-filled nylon flanges - $\square 31 \times 31$ mm		
<b>Rod</b>	Stainless steel on self-lubricating bearings – free rotation		
<b>Rod diameter</b>	6 mm	6 mm	8 mm
<b>Mounting method</b>	Freely movable clamping brackets Optional ball joint or self-aligning joint	Freely movable clamping brackets 2 ball joints $\varnothing 5$ mm at the ends	Freely movable clamping brackets -2 ball joints $\varnothing 8$ mm at the ends
<b>Protection degree</b>	IP65		
<b>Operating temperature</b>	$-20 \div 80^{\circ}\text{C}$		

#### ► AVAILABLE STROKES

NOMINAL STROKE mm	50 •	100 •	150 •	200 •	250 •	300 •	400 •	500 •	750 •	950*
* Stroke mm 950 is only available for PLS series										
ELECTRIC STROKE: Nominal stroke + 1 mm	MECHANICAL STROKE: Nominal stroke + 3 mm									

#### ► FITTINGS series PLS

Ball joint • Self-aligning joint • Feeler pin • Internal or external return spring for strokes up to 150 mm

#### ► CONNECTIONS

4-pin male connector  
DIN EN61984 (VDE 0627)  
provided with female angled connector  
orientable in four positions.



Flying connector

#### ► TECHNICAL DATASHEET AVAILABLE @ URL

[PLS](#)

[PL2S](#)

[PL231](#)



POTENTIOMETER PLS WITH SELF-ALIGNING JOINT

# POTENTIOMETERS

*With M12 Connector*



**PNS**

**PN2S**

**PN231**

Conductive plastic resistive element

5 KOhm  $\pm 20\%$

Optional 10 KOhm  $\pm 20\%$

50 ÷ 950 mm

50 ÷ 750 mm

50 ÷ 750 mm

Strokes  $\leq 400$ mm:  $\pm 0,075\%$  - Strokes  $\geq 500$  mm:  $\pm 0,1\%$

Infinite

100 million cycles

4-pin M12 male connector

Axial

Radial

Radial

Anodised aluminium with glass-filled nylon flanges -  $\square$  31x31 mm

Stainless steel on self-lubricating bearings – free rotation

6 mm

6 mm

8 mm

Freely movable clamping brackets  
Optional ball joint or self-aligning joint

Freely movable clamping brackets  
2 ball joints  $\varnothing$  5 mm at the ends

Freely movable clamping brackets  
2 ball joints  $\varnothing$  8 mm at the ends

IP65

-20 ÷ 80°C

## ► AVAILABLE STROKES

NOMINAL STROKE mm    50 •    100 •    150 •    200 •    250 •    300 •    400 •    500 •    750 •    950\*

\*Stroke mm 950 is only available for PNS series

ELECTRIC STROKE: Nominal stroke + 1 mm

MECHANICAL STROKE: Nominal stroke + 3 mm

## ► FITTINGS series PNS

Ball joint • Self-aligning joint • Feeler pin • Internal return spring for strokes up to 150 mm

## ► CONNECTIONS

4-pin M12 male connector  
Flying part not included



POTENTIOMETER PNS

## ► TECHNICAL DATASHEET AVAILABLE @ URL

[PNS](#)

[PN2S](#)

[PN231](#)



# ► LINEAR TRANSDUCERS

*Heavy Duty*

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	PLS-V	PL2S-V	PL231-V
<b>Output signal</b>	0÷10 V voltage output proportional to the position		
<b>Supply voltage</b>	18÷30 Vdc		
<b>Strokes mm</b>	50 ÷ 950 mm	50 ÷ 500 mm	50 ÷ 750 mm
<b>Linearity</b>	Strokes ≤ 400mm: ±0,075% - Strokes ≥500 mm: ±0,1%		
<b>Resolution</b>	Infinite		
<b>Mechanical life</b>	100 million cycles		
<b>Connections</b>	4-pin male connector DIN EN61984 (VDE 0627) provided with female angled orientable connector		
<b>Connector position</b>	Radial	Radial	Radial
<b>Materials: Housing</b>	Anodised aluminium with glass-filled nylon flanges - □ 31x31 mm		
<b>Rod</b>	Stainless steel on self-lubricating bearings – free rotation		
<b>Rod diameter</b>	6 mm	6 mm	8 mm
<b>Mounting method</b>	Freely movable clamping brackets Optional ball joint or self-aligning joint	Freely movable clamping brackets 2 ball joints Ø 5 mm at the ends	Freelymovable clamping brackets 2 ball joints Ø 8 mm at the ends
<b>Protection degree</b>	IP65		
<b>Operating temperature</b>	-20 ÷ 80°C		

## ► AVAILABLE STROKES

NOMINAL STROKE mm    50 • 100 • 150 • 200 • 250 • 300 • 400 • 500 • 750\* • 950\*

\*Stroke mm 750 available for series PLS-V, PL231V - Stroke mm 950 available for series PLS-

ELECTRIC STROKE: Nominal stroke + 1 mm

MECHANICAL STROKE: Nominal stroke + 3 mm

## ► FITTINGS *series PLS-V*

Ball joint • Self-aligning joint • Feeler pin • Internal or external return spring for strokes up to 150 mm

## ► CONNECTIONS

4-pin male connector type  
DIN EN61984 (VDE 0627)  
provided with female angle connector  
orientable in four positions.



Flying connector

## ► TECHNICAL DATASHEET AVAILABLE @ URL

[PLS-V](#) • [PL2S-V](#) • [PL231-V](#)



POTENTIOMETERS PLS-V, PL2S-V, PL231-V

# WITH ANALOGUE OUTPUT

*With M12 Connector*



**PNS-V**

**PN2S-V**

**PN231-V**

0÷10 V voltage output proportional to the position

18÷30 Vdc

50 ÷ 950 mm

50 ÷ 500 mm

50 ÷ 750 mm

Strokes ≤ 400mm: ±0,075% - Strokes ≥500 mm: ±0,1%

Infinite

100 million cycles

4-pin M12 male connector

Radial

Radial

Radial

Anodised aluminium with glass-filled nylon flanges - □ 31x31 mm

Stainless steel on self-lubricating bearings – free rotation

6 mm

6 mm

8 mm

Freely movable clamping brackets  
Optional ball joint or self-aligning joint

Freely movable clamping brackets –  
2 ball joints Ø 5 mm at the ends

Freely movable clamping brackets -2 ball  
joints Ø 8 mm at the ends

IP65

-20 ÷ 80°C

## ► AVAILABLE STROKES

NOMINAL STROKE mm 50 • 100 • 150 • 200 • 250 • 300 • 400 • 500 • 750 • 950\*

\*Stroke mm 750 available for series PNS-V, PN231V - Stroke mm 950 available for series PNS

ELECTRIC STROKE: Nominal stroke + 1 mm

MECHANICAL STROKE: Nominal stroke + 3 mm

## ► FITTINGS *series PNS-V*

Ball joint • Self-aligning joint • Feeler pin



POTENTIOMETERS PNS-V, PN2S-V, PN231-V

## ► CONNECTIONS

4-pin M12 male connector  
Flying part not included

## ► TECHNICAL DATASHEET AVAILABLE @ URL

[PNS-V • PN2S-V • PN231-V](#)





	PM				PM2S				
Sensor	Conductive plastic resistive element								
Resistive value	5 KOhm ±20% Stroke 25 mm: 1 KOhm ±20% - Optional 5 KOhm ±20%								
Strokes mm	25	•	50	•	75	•	100	•	150
Linearity	±0,2%		±0,15%		±0,1%		±0,075%		
Resolution	Infinite								
Mechanical life	100 million cycles								
Connections	4-pin male connector DIN EN61984 (VDE 0627) provided with female angled orientable connector								
Connector position	Axial				Radial				
Materials: Housing	Anodised aluminium with glass-filled nylon flanges - □ 21x21 mm								
Rod	Stainless steel on self-lubricating bearings – free rotation								
Rod diameter	5 mm				5 mm				
Mounting method	Freely movable clamping brackets Optional ball joint or self-aligning joint				Freely movable clamping brackets 2 ball joints Ø 5 mm at the ends				
Protection degree	IP64								
Operating temperature	-20 ÷ 80°C								

#### ► AVAILABLE STROKES

NOMINAL STROKE mm	25	•	50	•	75	•	100	•	150
ELECTRIC STROKE: Nominal stroke + 0,5 mm					MECHANICAL STROKE: Nominal stroke + 2 mm				

#### ► FITTINGS *series PM*

Ball joint • Self-aligning joint • Feeler pin • Internal or external return spring (for strokes up to 100 mm)

#### ► CONNECTIONS

4-pin male connector  
DIN EN61984 (VDE 0627)  
provided with female angled connector  
orientable in four positions.



*Flying connector*

#### ► TECHNICAL DATASHEET AVAILABLE @ URL

PM



PM2S



POTENTIOMETER PM WITH FEELER PIN



# POTENTIOMETERS

*With M12 Connector*



**PTS**

**PT2S**

Conductive plastic resistive element

5 KOhm  $\pm 20\%$

Stroke 25 mm: 1 KOhm  $\pm 20\%$  - Optional 5 KOhm  $\pm 20\%$

25

50

75

100

150

$\pm 0,2\%$

$\pm 0,15\%$

$\pm 0,1\%$

$\pm 0,075\%$

Infinite

100 million cycles

4-pin M12 male connector

Axial

Radial

Anodised aluminium with glass-filled nylon flanges -  $\square$  21x21 mm

Stainless steel on self-lubricating bearings – free rotation

5 mm

5 mm

Freely movable clamping brackets  
Optional ball joint or self-aligning joint

Freely movable clamping brackets  
2 ball joints  $\varnothing$  5 mm at the ends

IP64

$-20 \div 80^\circ\text{C}$

## ► AVAILABLE STROKES

NOMINAL STROKE mm

25

50

75

100

150

ELECTRIC STROKE: Nominal stroke + 0,5 mm

MECHANICAL STROKE: Nominal stroke + 2 mm

## ► FITTINGS *series PT*

Ball joint • Self-aligning joint • Feeler pin • Internal return spring (for strokes up to 100 mm)



POTENTIOMETERS PT and PT2S

## ► CONNECTIONS

4-pin M12 male connector  
Flying part not included

## ► TECHNICAL DATASHEET AVAILABLE @ URL

PT

PT2S



# ► LINEAR POTENTIOMETERS

*Round section*

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	PR				PR2S			
Sensor	Conductive plastic resistive element							
Resistive value	5 KOhm ±20% Stroke 25 mm: 1 KOhm ±20% - Optional 5 KOhm ±20%							
Strokes mm	25	•	50	•	75	•	100	• 150
Linearity	±0,2%		±0,15%		±0,1%		±0,075%	
Resolution	Infinite							
Mechanical life	100 million cycles							
Connections	4-pin C male connector provided with female angled connector							
Connector position	Radial				Radial			
Materials: Housing	Anodised aluminium with glass-filled nylon flanges – Ø 26 mm							
Rod	Stainless steel on self-lubricating bearings – free rotation							
Rod diameter	5 mm				5 mm			
Mounting method	Freely movable clamping brackets, front thread Optional ball joint or self-aligning joint				Freely movable clamping brackets 2 ball joints Ø 5 mm at the ends			
Protection degree	IP65							
Operating temperature	-20 ÷ 80°C							

## ► AVAILABLE STROKES

NOMINAL STROKE mm	25	•	50	•	75	•	100	• 150
ELECTRIC STROKE: Nominal stroke + 0,5 mm					MECHANICAL STROKE: Nominal stroke + 2 mm			

## ► FITTINGS *series PR*

Ball joint • Self-aligning joint • Feeler pin • Fixing nut

## ► CONNECTIONS

4-pin C male connector  
provided with female angled connector



*Flying connector*

## ► TECHNICAL DATASHEET AVAILABLE @ URL

PR



PR2S



POTENTIOMETER PR WITH BALL JOINT

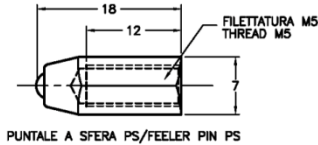
## ► MOUNTING & FITTINGS

The potentiometers are easily fastened by means of the provided **brackets**, which can be placed **freely along the body**.

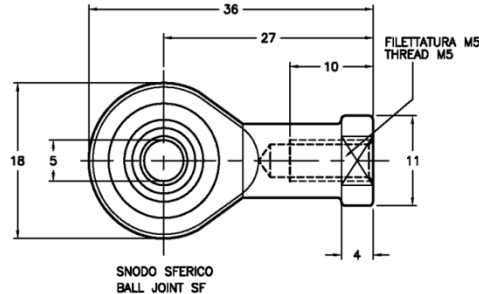
**Ball joints and self-aligning articulated joints** can be used **for air-fixing**, allowing to compensate mounting mis-alignments.

Some potentiometers can be provided with **feeler pin** and **in- or out return spring** for applications as comparator.

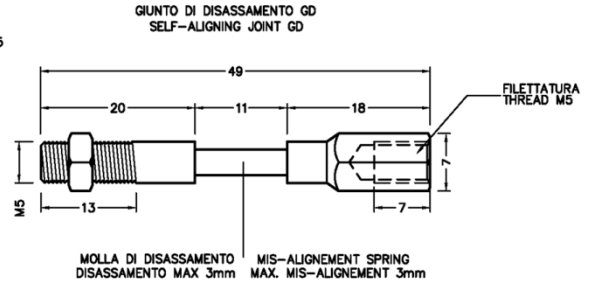
### FEELER PIN



### BALL JOINT



### SELF-ALIGNING JOINT



RIF. M1040/ M1041/M1039

## ► PROGRAMMABLE TRANSMITTER OMX380iDU

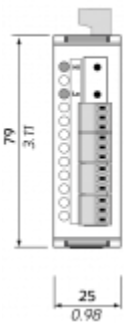
The transmitter OMX380iDU can be coupled to potentiometers to obtain the analogue output signal.

Easy to install and to program, OMX380iDU offers high accuracy and stability.

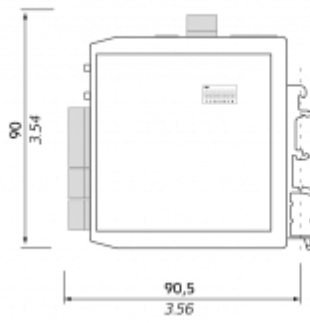
- Input by linear potentiometer – resistance range: 500 Ohm to 100 KOhm
- Programmable analogue output – 16 bit max resolution
- Output signals: 0...10 V / 4...20 mA
- Supply voltage 10/30 Vdc
- Dimensions 90.5 x 79 x 25 mm
- Installation on DIN rail, width 35 mm



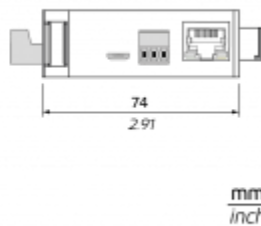
Front view



Side view



Top view



Installation to DIN rail of 35 mm width

► TECHNICAL DATASHEET AVAILABLE @ URL

OMX380iDU





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Visit our site [www.elap.it](http://www.elap.it) to stay updated about our products and events.

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