



LINEAR POTENTIOMETERS

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.





	PLS	PL2S	PL231
Sensor	Conductive plastic resistive element		
Resistive value	5 KOhm ±20%	Optional 10 KOhm ±20%	
Strokes mm	50 ÷ 950 mm	50 ÷ 750 mm	50 ÷ 750 mm
Linearity	Strokes ≤ 400mm: ±0,075% - Strokes ≥500 mm: ±0,1%		
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	Radial
Materials: Housing	Anodised aluminium with glass-filled nylon flanges - □ 31x31 mm		
Rod	Stainless steel on self-lubricating bearings – free rotation		
Rod diameter	6 mm	6 mm	8 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	Freely movable clamping brackets -2 ball joints Ø 8 mm at the ends
Protection degree	IP65		
Operating temperature	-20 ÷ 80°C		

► **AVAILABLE STROKES**

NOMINAL STROKE mm	50 • 100 • 150 • 200 • 250 • 300 • 400 • 500 • 750 • 950*
ELECTRIC STROKE: Nominal stroke + 1 mm	MECHANICAL STROKE: Nominal stroke + 3 mm

* Stroke mm 950 is only available for PLS series

► **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 ±20%		Optional 10 KOhm ±20%
50 ÷ 950 mm	50 ÷ 750 mm	50 ÷ 750 mm
Strokes ≤ 400mm: ±0,075% - Strokes ≥500 mm: ±0,1%		
Infinite		
100 million cycles		
4-pin M12 male connector		
Axial	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 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



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

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LÖSUNGEN MIT SYSTEM

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



► CONNECTIONS

4-pin M12 male connector
Flying part not included

► TECHNICAL DATASHEET AVAILABLE @ URL

[PNS-V • PN2S-V • PN231-V](#)



POTENTIOMETERS 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 ±20%								
Stroke 25 mm: 1 KOhm ±20% - Optional 5 KOhm ±20%								
25	•	50	•	75	•	100	•	150
±0,2%		±0,15%		±0,1%				±0,075%
Infinite								
100 million cycles								
4-pin M12 male connector								
Axial				Radial				
Anodised aluminium with glass-filled nylon flanges - □ 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 Ø 5 mm at the ends				
IP64								
-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 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



PR

PR2S

Sensor	Conductive plastic resistive element								
Resistive value	5 KOhm $\pm 20\%$ Stroke 25 mm: 1 KOhm $\pm 20\%$ - Optional 5 KOhm $\pm 20\%$								
Strokes mm	25	•	50	•	75	•	100	•	150
Linearity	$\pm 0,2\%$		$\pm 0,15\%$		$\pm 0,1\%$				$\pm 0,075\%$
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 – \varnothing 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 \varnothing 5 mm at the ends					
Protection degree	IP65								
Operating temperature	$-20 \div 80^{\circ}\text{C}$								

▶ 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 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

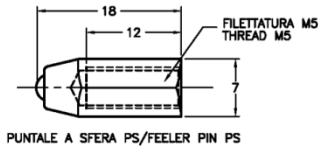
► MOUNTING & FITTINGS

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

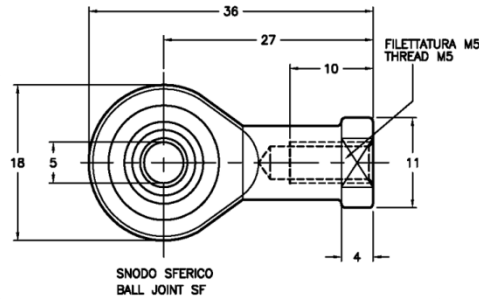
Ball joints and self-aligning articulated joints can be used **for air-fixing**, allowing to compensate mounting mis-alignments.

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

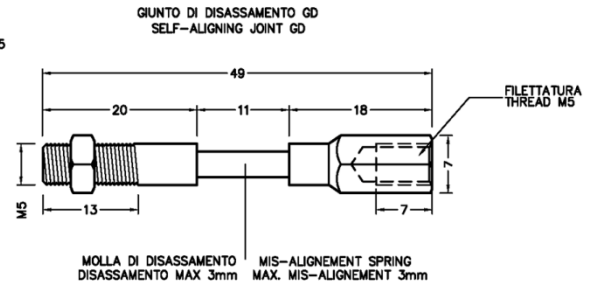
FEELER PIN



BALL JOINT



SELF-ALIGNING JOINT



RIF. M1040/ M1041/M1039

► PROGRAMMABLE TRANSMITTER OMX380iDU

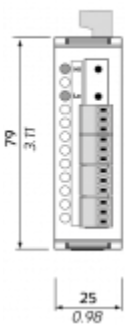
The transmitter OMX380iDU can be coupled to potentiometers to obtain the analogue output signal.

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

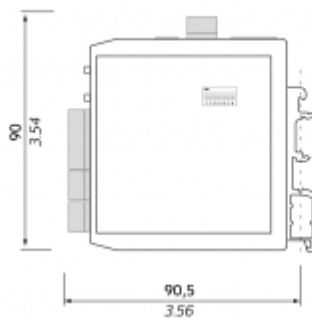
- Input by linear potentiometer – resistance range: 500 Ohm to 100 KOhm
- Programmable analogue output – 16 bit max resolution
- Output signals: 0...10 V / 4...20 mA
- Supply voltage 10/30 Vdc
- Dimensions 90.5 x 79 x 25 mm
- Installation on DIN rail, width 35 mm



Front view



Side view



Top view



mm
inch

Installation to DIN rail of 35 mm width

► TECHNICAL DATASHEET AVAILABLE @ URL

[OMX380iDU](#)

