

## Analog Linear Displacement Sensor



### DESIGN SUPPORT TOOLS

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**3D**  
Models  
Available

### FEATURES

- Conductive plastic potentiometer technology. Infinite resolution
- Anodized light alloy housing
- Stainless steel floating shaft
- Flange mounting
- Wire outputs
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### QUICK REFERENCE DATA

Sensor type	LINEAR, conductive plastic
Output type	Output by wires
Market appliance	Industrial
Dimensions	Diameter 1/2" (12.7 mm)

### ELECTRICAL SPECIFICATIONS

PARAMETER									
Theoretical electrical travel	UET +1 mm to 0 mm								
Independent linearity standard	± 0.5 %								
Independent linearity optional	± 0.1 % (UET ≥ 50 mm), ± 0.25 % (UET < 50 mm)								
Tolerance on R <sub>n</sub>	± 20 %								
Temperature coefficient	-300 ± 300 ppm/°C								
Wiper current	≤ 1 mA								
Recommended load impedance	≥ 1000 R <sub>n</sub>								
Dielectric strength	500 V <sub>RMS</sub> , 50 Hz, 1 min								
Insulation resistance	≥ 10 GΩ at 500 V <sub>DC</sub>								
Output smoothness	≤ 0.1 %								
Useful electrical travel (UET)	10 mm	25 mm	50 mm	75 mm	100 mm	150 mm	200 mm	250 mm	300 mm
Power rating at +70 °C (0.2 W/cm of travel)	0.2 W	0.5 W	1.0 W	1.5 W	2.0 W	3.0 W	4.0 W	5.0 W	6.0 W
Total resistance R <sub>n</sub>	2.2 kΩ	4.7 kΩ	4.7 kΩ	10 kΩ	10 kΩ	10 kΩ	10 kΩ	22 kΩ	22 kΩ

### MECHANICAL SPECIFICATIONS

MECHANICAL ELECTRICAL										
PARAMETER										
Mechanical travel		UET + 4 mm								
Driving force		≤ 2 N								
Backlash		< 15 μm								
Protection class		IP 64								
Maximum displacement speed		1.5 m/s								
Mounting		1 block (UET < 100 mm) and 2 blocks (UET ≥ 100 mm)								
Useful electrical travel (UET)		10 mm	25 mm	50 mm	75 mm	100 mm	150 mm	200 mm	250 mm	300 mm
Weight	Shaft + wiper	4 g	6 g	8 g	11 g	13 g	18 g	23 g	28 g	33 g
	Sensor	20 g	22 g	27 g	30 g	40 g	51 g	65 g	75 g	86 g

### PERFORMANCE

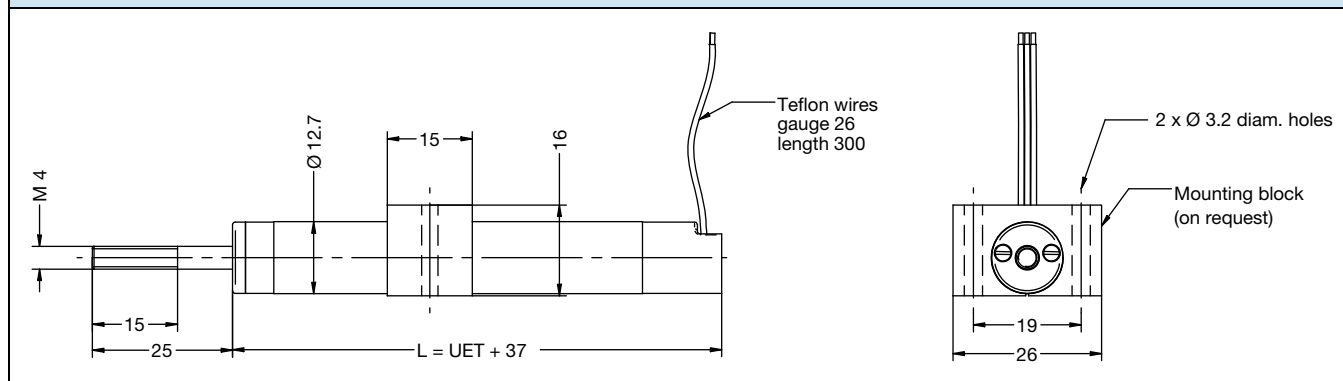
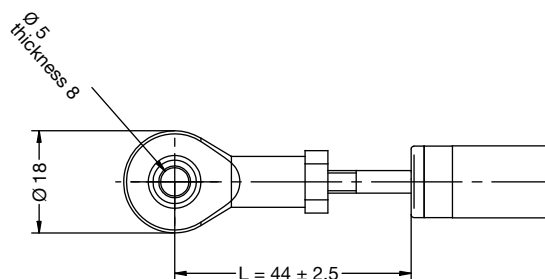
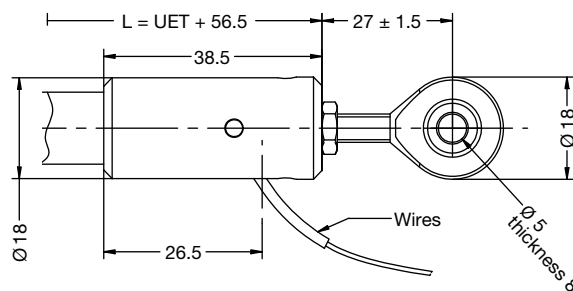
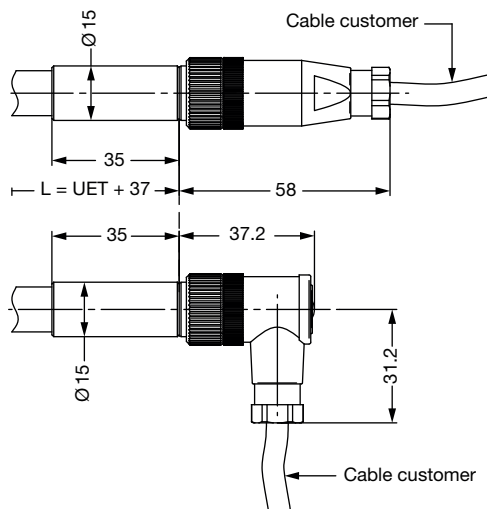
PARAMETER	
Operating temperature range	-40 °C to +105 °C
Storage temperature range	-55 °C to +125 °C
Life	20M cycles

#### Note

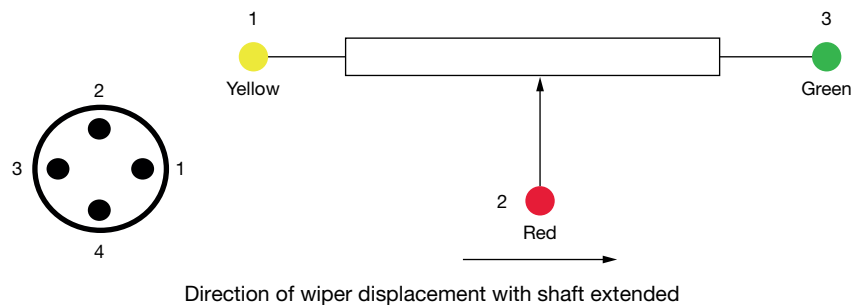
- Nothing stated herein shall be construed as a guarantee of quality or durability

**SAP PART NUMBERING GUIDELINES**

MODEL	USEFUL ELECTRICAL TRAVEL (mm)	TYPE	VALUE	LINEARITY	LEADS	PACKAGING
RP12	010 025 050 075 100 150 200 250 300	L = linear	222 = 2K2 472 = 4K7 103 = 10K 223 = 22K  In accordance with UET, see "Electrical Specifications"	B = 0.5 %	W = wire	b = bulk

**DIMENSIONS** in millimeters

**FRONT PIVOT OPTION (ON REQUEST)**

**REAR PIVOT OPTION (ON REQUEST)**

**STRAIGHT OR RIGHT ANGLE CONNECTOR OPTION (ON REQUEST)**


## ELECTRICAL DIAGRAM



## CONNECTION

### OPTIONS (on request)

- Other linearity
- Probe version for UET < 100 mm (spring and tip)
- Low driving force version ( $\leq 30$  cN/ IP 50)
- Lateral or axial cable output
- Binder 713-M12 series straight connector output
- Binder 713-M12 series right angle connector output
- Male socket fitted on connector
- Additional mounting block
- Front pivot
- Rear pivot (only with lateral cable output)



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