

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



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 _n | ± 20 % | | | | | | | | | |
| Temperature coefficient | -300 ± 300 ppm/°C | | | | | | | | | |
| Wiper current | ≤ 1 mA | | | | | | | | | |
| Recommended load impedance | ≥ 1000 R _n | | | | | | | | | |
| Dielectric strength | 500 V _{RMS} , 50 Hz, 1 min | | | | | | | | | |
| Insulation resistance | ≥ 10 GΩ at 500 V _{DC} | | | | | | | | | |
| 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 _n | 2.2 kΩ | 4.7 kΩ | 4.7 kΩ | 10 kΩ | 10 kΩ | 10 kΩ | 10 kΩ | 22 kΩ | 22 kΩ | |

MECHANICAL SPECIFICATIONS

| 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

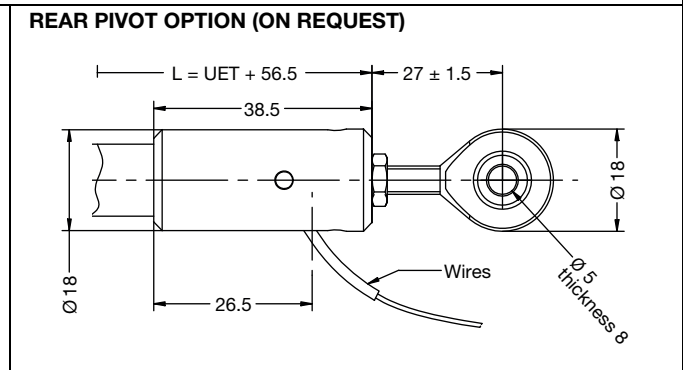
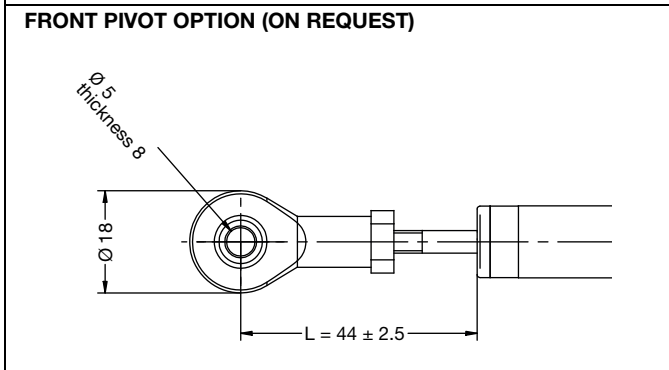
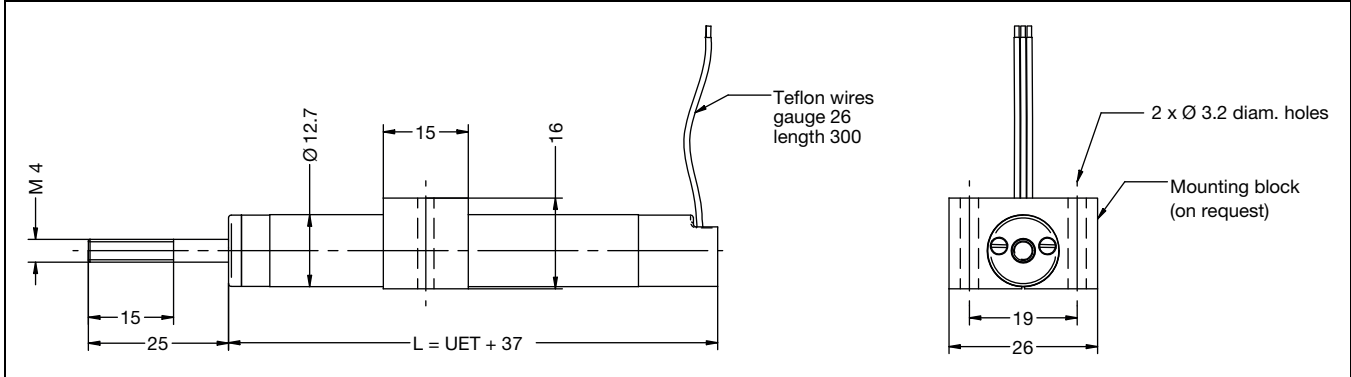
| PARAMETER | |
|-----------------------------|-------------------|
| Operating temperature range | -40 °C to +105 °C |
| Storage temperature range | -55 °C to +125 °C |
| Life | 20M cycles |

Note

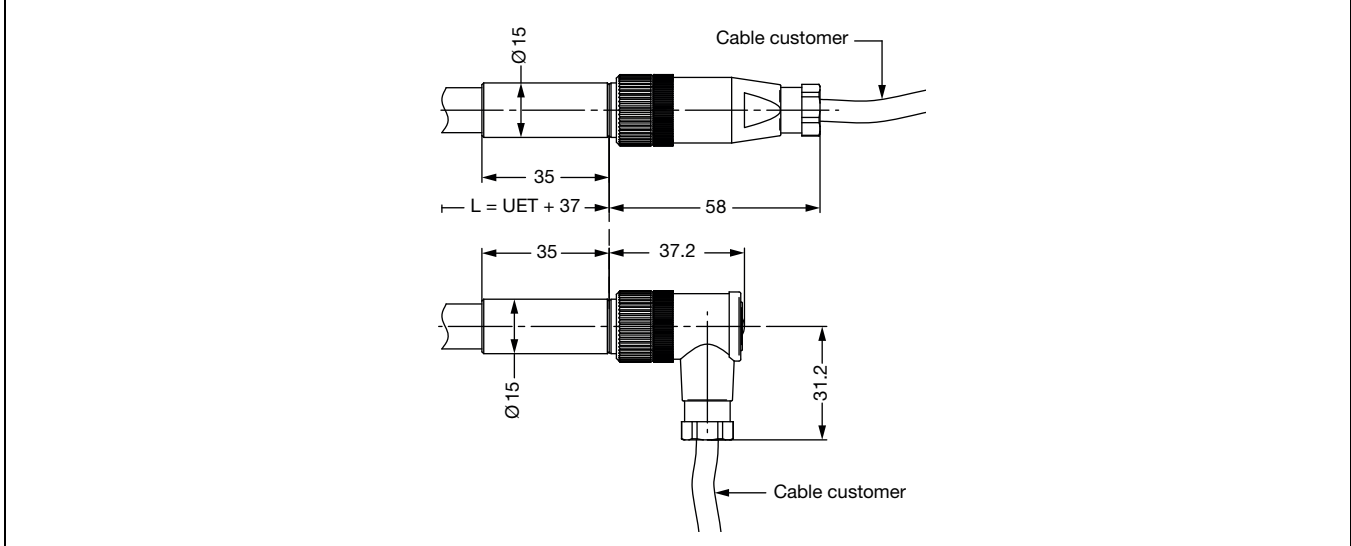
- Nothing stated herein shall be construed as a guarantee of quality or durability

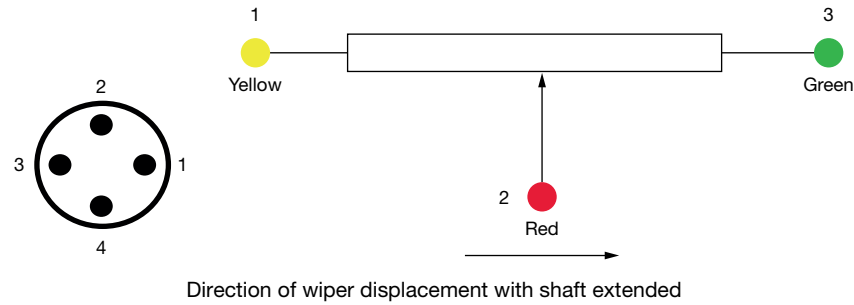
| SAP PART NUMBERING GUIDELINES | | | | | | | |
|-------------------------------|---|------------|-----------|-----------|----------|-----------|--|
| MODEL | USEFUL ELECTRICAL TRAVEL (mm) | TYPE | VALUE | LINEARITY | LEADS | PACKAGING | |
| RP12 | 010 | L = linear | 222 = 2K2 | B = 0.5 % | W = wire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

DIMENSIONS in millimeters



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 (≤ 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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