

Analog Rectilinear Displacement Sensor



FEATURES

- Conductive plastic potentiometer technology. Infinite resolution
- Anodized light alloy housing
- Precious metal multi-contact wiper
- Stainless steel floating shaft
- Collar mounting
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



QUICK REFERENCE DATA

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

ELECTRICAL SPECIFICATIONS

PARAMETER					
Total electrical travel (TET)	UET - 0 + 0.3 mm				
Independent linearity standard	± 1 %				
Independent linearity optional	± 3 %, ± 1 %, ± 0.1 %, ± 0.25 %, ± 0.5 %				
Tolerance on R _n	± 10 % (± 20 % on request)				
Temperature coefficient	-300 ppm/°C ± 300 ppm/°C				
Power rating at +70 °C	0.2 W/cm of travel (see Power Rating Chart)				
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}				
Useful electrical travel (UET)	10 mm	25 mm	50 mm	75 mm	100 mm
Total resistance R _n	2.2 kΩ	1 kΩ to 22 kΩ	1 kΩ to 47 kΩ	2.2 kΩ to 47 kΩ	4.7 kΩ to 100 kΩ
Output smoothness	≤ 0.1 %	≤ 0.1 %	≤ 0.1 %	≤ 0.1 %	≤ 0.1 %

MECHANICAL SPECIFICATIONS

PARAMETER					
Mechanical travel	UET - 0 + 3 mm				
Driving force	≤ 2 N (≤ 1.5 N on request)				
Driving force with probe (optional)	≤ 3 N to 7 N				
Backlash	< 10 μm				
Protection class	IP 50				
Maximum displacement speed	1.5 m/s				
Maximum misalignment	± 0.2 mm				
Useful electrical travel (UET)	10 mm ⁽¹⁾	25 mm	50 mm	75 mm	100 mm
Total weight	13 g	18 g	23 g	28 g	33 g
Weight of moving part	3 g	4.5 g	6 g	7.5 g	9 g

Note

⁽¹⁾ Tolerances: - 2 mm, + 0 mm

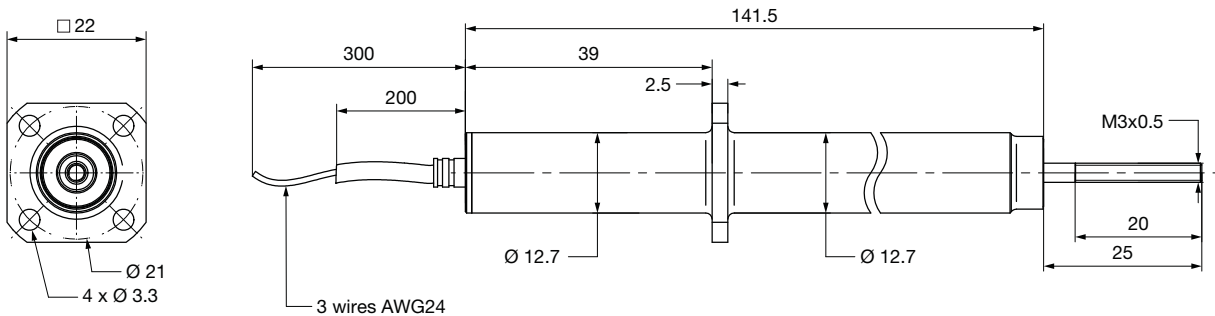
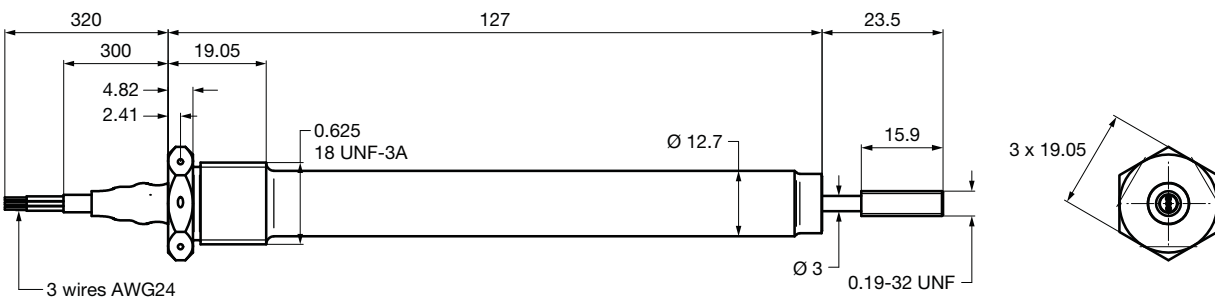
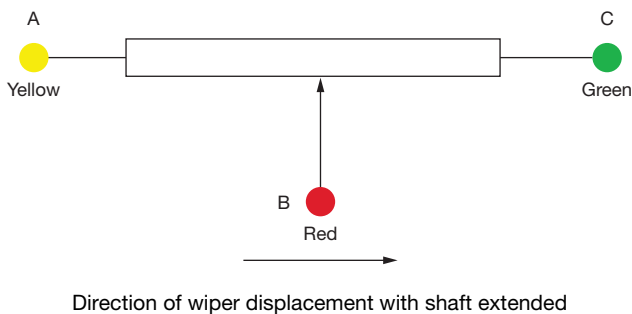
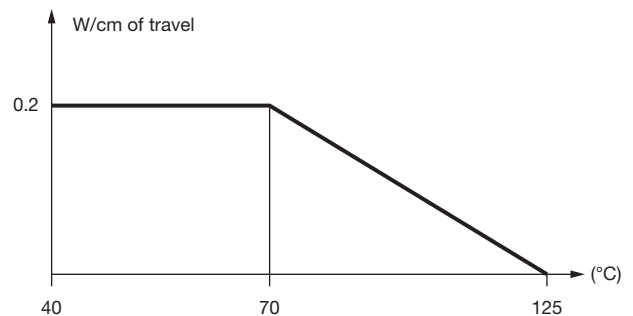
PERFORMANCE

PARAMETER	
Operating temperature range	-55 °C to +125 °C
Life	10M cycles

Note

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

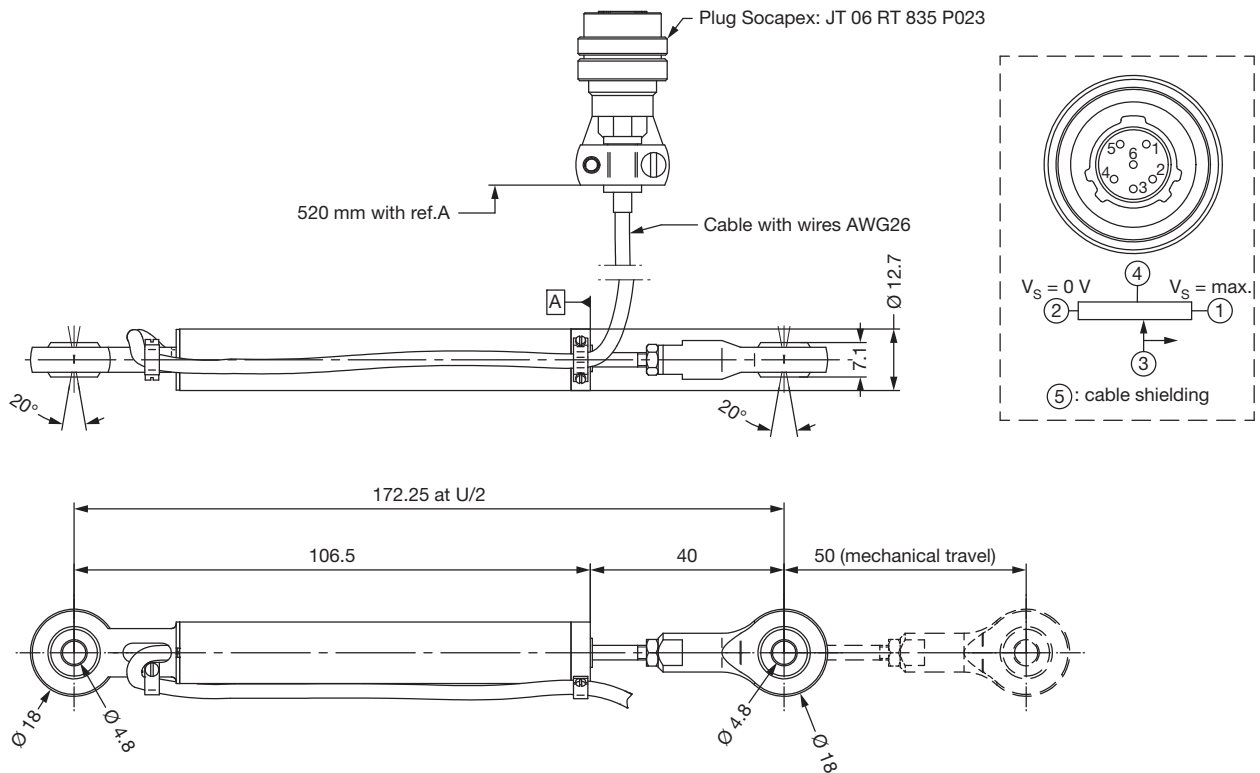
DIMENSIONS in millimeters

OPTION 2

OPTION 3

ELECTRICAL DIAGRAM

POWER RATING CHART

OPTIONS (on request)

- Other travels: UET = 72 mm with TET = 75.2 mm and mechanical travel = 81 mm
- Other ohmic value (R_n): 2.2 k Ω ; 5 k Ω , 6.5 k Ω
- Other linearity
- Electrically independent double track (= redundancy)
- Middle tap
- Electrical phasing (for double track) at U/2:
 0.5 U \pm 0.7 % U (for PORR12 shaft output at 75.5 mm \pm 1 mm),
 or 0.5 U \pm 0.5 % U (for PORR12),
 or up to \pm 0.13 % (track 1 / track 2) (for PORH12)

- Electrical bonding: $\leq 0.05 \Omega$
- Electrical output by connector:
plug Socapex: JT 06 RT 835 P023 (or equivalent) with cable length 300 mm, 500 mm, or 750 mm
- Specific design to support temperature pic of 200 °C
- Other length of shaft: 12 mm (pushed shaft)
- Guided shaft
- Probe with return spring and tip on request
- Other design including diameter 9.5 mm: version RH9.5
- Specific reinforced version for hard environment conditions (vibrations, shocks, temperature): version RR12
- Other wire lengths: 330 mm; 355 mm; 380 mm, and 1 m
- Temperature coefficient: $-200 \text{ ppm}/^\circ\text{C} \pm 200 \text{ ppm}/^\circ\text{C}$ (in function of ohmic value)
- Smaller length: 5 mm; 10 mm; 15 mm; 17 mm (UET = 16 mm)
- Option RH12050 with front pivot and rear pivot

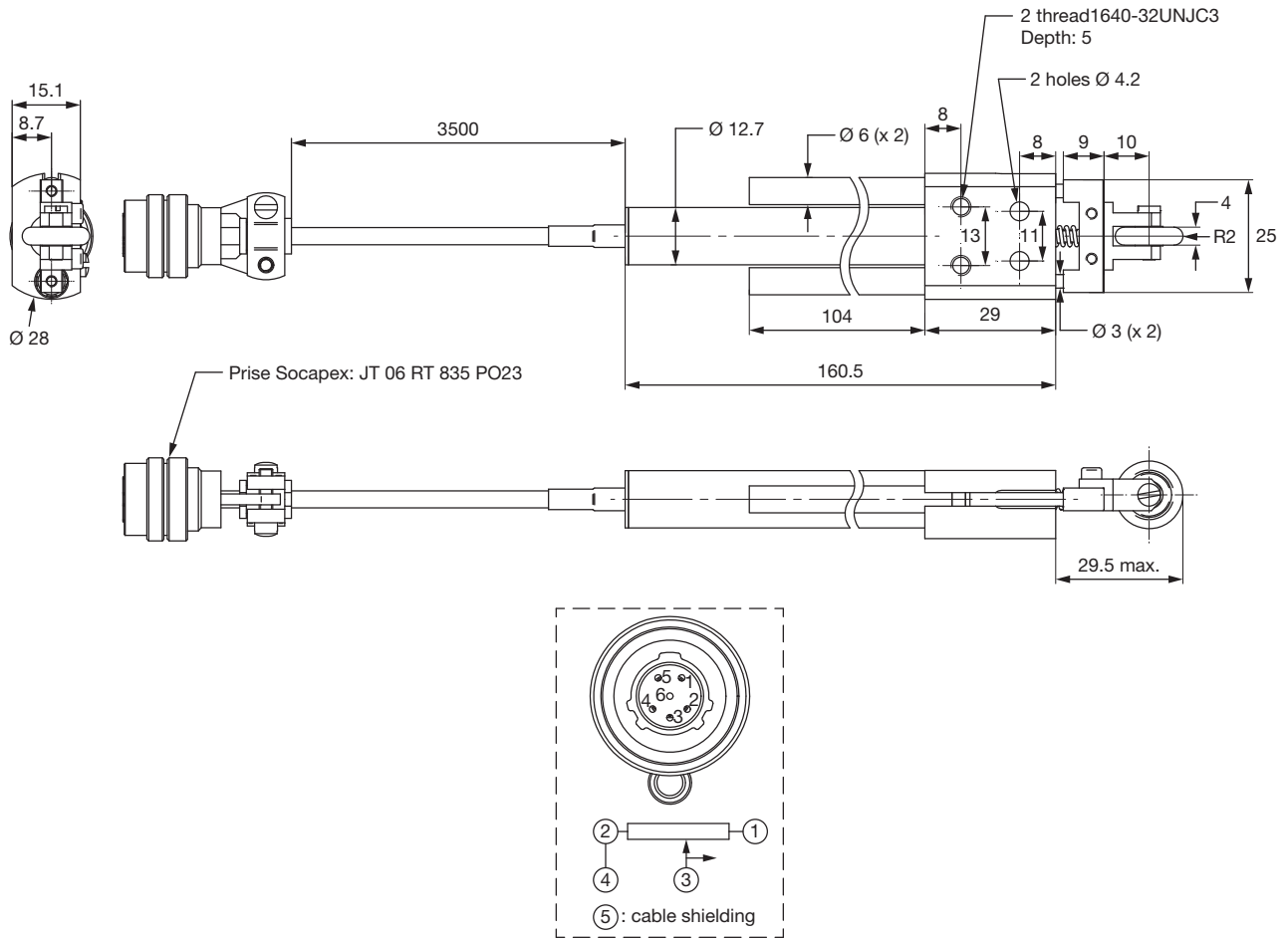
DIMENSIONS in millimeters





- Option RH12100 with roller pivot

DIMENSIONS in millimeters





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