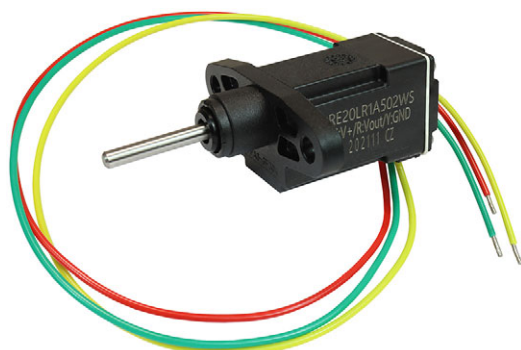


# Precision Linear Position Sensor, Conductive Plastic, Up to 10 mm Stroke



## FEATURES

- Measurement range up to 10 mm
- High accuracy  $\pm 1\%$
- Long life 4M cycles
- Essentially infinite resolution
- Compact 19 mm x 37 mm body
- Custom on request
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

## LINKS TO ADDITIONAL RESOURCES



3D Models



Related Documents

## QUICK REFERENCE DATA

Sensor type	LINEAR, conductive plastic
Output type	Wires
Market appliance	Industrial
Dimensions	46 mm x 23.3 mm x 37 mm

## ELECTRICAL SPECIFICATIONS

Theoretical electrical travel (TET)	Up to 10 mm
Actual electrical travel (AET)	$AET = TET + 1 \pm 0.5 \text{ mm}$
Independent linearity (over TET)	$\leq \pm 2\%$ to $\leq \pm 1\%$
Repeatability	$\leq 0.01\%$
Ohmic values ( $R_T$ )	From 500 $\Omega$ to 5 k $\Omega$
Resistance tolerance at 20 °C	$\pm 20\%$
Wiper current	Recommended: a few $\mu A$ - 1 mA max. (continuous)
Load resistance	Minimum $10^3 \times R_T$
Output smoothness	$\leq 0.1\%$
Power rating	1 W at 25 °C down to 0 W at 125 °C
Insulation resistance	$\geq 1000 \text{ M}\Omega$ , 500 V <sub>DC</sub>
Dielectric strength	$\geq 500 \text{ V}_{RMS}$ , 50 Hz

## MECHANICAL SPECIFICATIONS

Mechanical travel (MT)	$12 \pm 0.5 \text{ mm}$
Housing	Plastic
Operating force (over mechanical travel)	Unsealed version - without spring: 0.4 N max. / with spring: 1.5 N to 7 N Sealed version - without spring: 2.5 N max. / with spring: 2 N to 10 N
Shaft	Stainless steel / $\varnothing 3.175$ / threaded on request (specific "W7900" code must be used)
Termination	3 wires ETFE AWG 20, length: 300 mm / cable or connector on request
Wiper	Precious metal multifinger

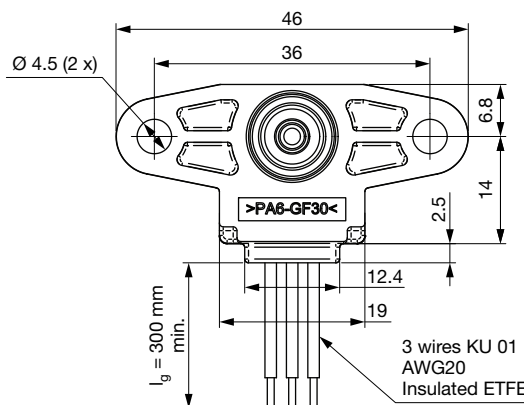
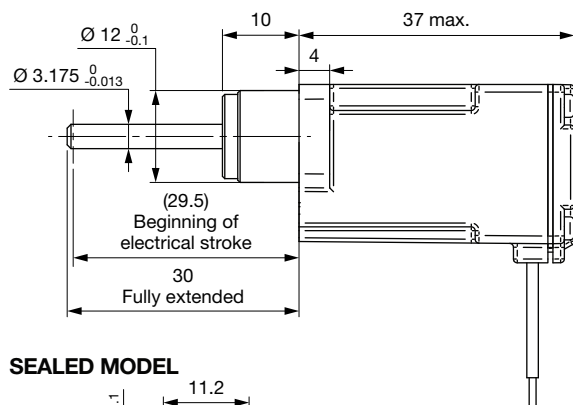
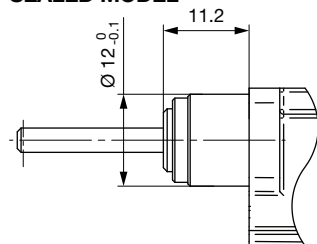
## PERFORMANCE AND ENVIRONMENTAL

Operating life	4M cycles typical
Temperature range	Unsealed: -55 °C to +125 °C Sealed: -30 °C to +100 °C
Sine vibration on 3 axes	15 g - 10 Hz to 2000 Hz
Mechanical shocks on 3 axes	50 g - 11 ms - half sine
Acceptable operating speed	1 m/s
Sealing	S: sealed option (validated by immersion test according to Vishay laboratory conditions) / N: IP51

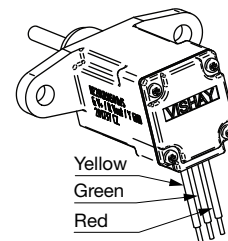
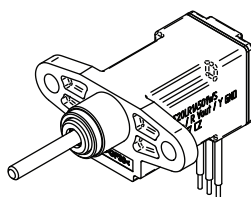
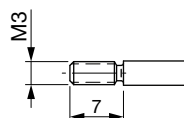
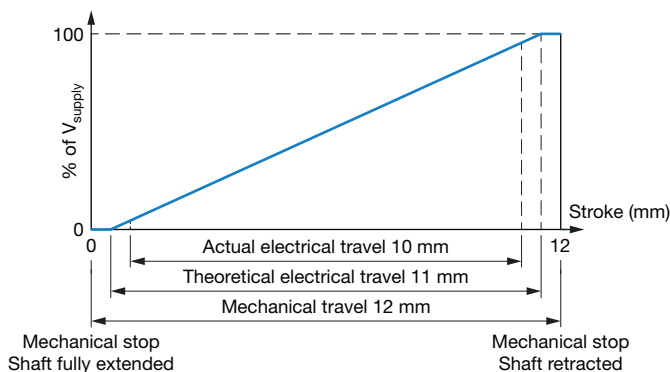
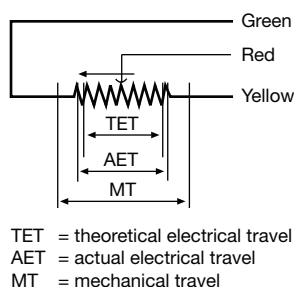
### Note

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

**DIMENSIONS** in millimeters, general tolerance  $\pm 0.5$  mm

**NON SEALED MODEL**

**SEALED MODEL**


ELECTRICAL CONNECTIONS	
YELLOW	GND (-)
RED	SIGNAL
GREEN	V <sub>CC</sub> (+)

**END SHAFT THREADED OPTION:  
P/N W7900**

**ELECTRICAL OUTPUT**

**SAP PART NUMBERING GUIDELINES**

RE20LR	1	A	501	W	N	Wxxxx
MODEL	FEATURE	LINEARITY	OHMIC VALUE	OUTPUT	SEALING	SPECIAL
	1 = spring return 2 = no spring	X = $\pm 2$ % A = $\pm 1$ %	501 = 500 $\Omega$ 102 = 1000 $\Omega$ 202 = 2000 $\Omega$ 502 = 5000 $\Omega$	W = wires Z = other <sup>(1)</sup>	N = not sealed S = sealed	W7900 = threaded shaft Other Wxxxx = special custom

**Note**
<sup>(1)</sup> For Z option a special "Wxxxx" will be assigned



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