

# Precision Linear Transducers, Conductive Plastic, Up to 150 mm



The 38 L is a very compact model especially designed for precise measurement of short travels.

## FEATURES

- Measurement range 12.5 mm to 150 mm
- High accuracy  $\pm 1\%$  down to  $\pm 0.1\%$
- Long life
- Essentially infinite resolution
- Very small dimension: external diameter = 9.52 mm
- 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	Wires
Market appliance	Professional
Dimensions	9.52 mm dia.

## ELECTRICAL SPECIFICATIONS

Theoretical electrical travel (TET)	From 12.5 mm to 150 mm see Table 1
Actual electrical travel (AET)	AET = TET + 1 mm
Independent linearity (over TET)	$\leq \pm 1\%$ - $\leq \pm 0.5\%$ $\leq \pm 0.25\%$ for $E \geq 25$ mm $\leq \pm 0.1\%$ for $E \geq 50$ mm
Repeatability	$\leq 0.01\%$
Ohmic values ( $R_T$ )	From 400 $\Omega$ /cm to 4 k $\Omega$ /cm
Resistance tolerance at 20 °C	$\pm 20\%$
Maximum power rating	0.05 W/cm at 70 °C, 0 W at 125 °C
Wiper current	Recommended: a few $\mu$ A - 1 mA max. (continuous)
Load resistance	Minimum $10^3 \times R_T$
Insulation resistance	$\geq 1000$ M $\Omega$ , 500 V <sub>DC</sub>
Dielectric strength	$\geq 500$ V <sub>RMS</sub> , 50 Hz

## MECHANICAL SPECIFICATIONS

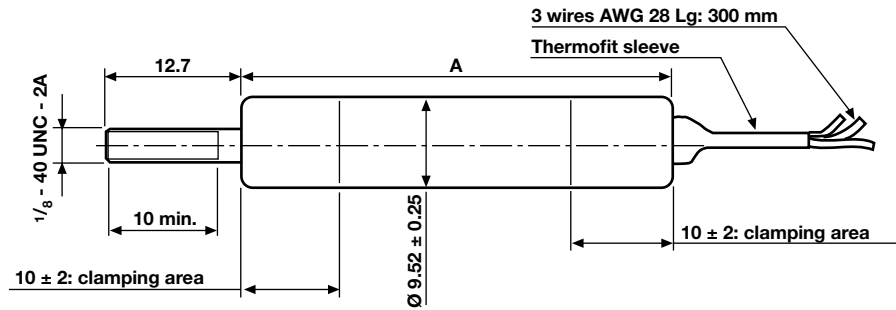
Mechanical travel (MT)	MT = TET + 3 mm $\pm$ 1 mm
Housing	Anodized aluminum
Operating force	0.35 N typical
Termination	3 wires PTFE AWG 26 length: 300 mm
Wiper	Precious metal multifinger

## PERFORMANCE

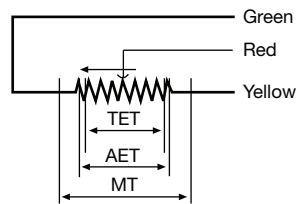
Operating life	25 million cycles typical/1 Hz/T° = 20 °C $\pm$ 5 °C/80 % TET
Temperature range	-55 °C to +125 °C
Sine vibration on 3 axes	1.5 mm peak to peak or 15 g - 10 Hz - 2000 Hz
Mechanical shocks on 3 axes	50 g -11 ms - half sine

### Note

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

**DIMENSIONS** in millimeters, general tolerance  $\pm 1$  mm

**TABLE 1**

SIZE	TET	MT	A
38 L0.5	12.5	15.5	43.5
38 L01	25	28	56
38 L02	50	53	81
38 L03	75	78	106
38 L04	100	103	131
38 L05	125	128	156
38 L06	150	153	181

**ELECTRICAL CONNECTIONS**


TET = theoretical electrical travel  
 AET = actual electrical travel  
 MT = mechanical travel

**ORDERING INFORMATION / DESCRIPTION**

REC	38	L	0.5	C	102	W...	e1
SERIES	MODEL	NUMBER OF TRACKS	ELECTRICAL TRAVEL	LINEARITY	OHMIC VALUE	MODIFICATIONS	LEAD FINISH
		L = 1 track	0.5 = 12.5 mm 1 = 25 mm 2 = 50 mm 3 = 75 mm 4 = 100 mm 5 = 125 mm 6 = 150 mm	A: $\pm 1$ % B: $\pm 0.5$ % C: $\pm 0.25$ % D: $\pm 0.1$ %	First 2 digits are significant numbers 3 <sup>rd</sup> digit indicates number of zeros	Special feature code number	Sn Ag Cu

**SAP PART NUMBERING GUIDELINES**

RE	38 L	0.5	C	102	W...
SERIES	MODEL	TET	LINEARITY	OHMIC VALUE	SPECIAL FEATURES



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