

# 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

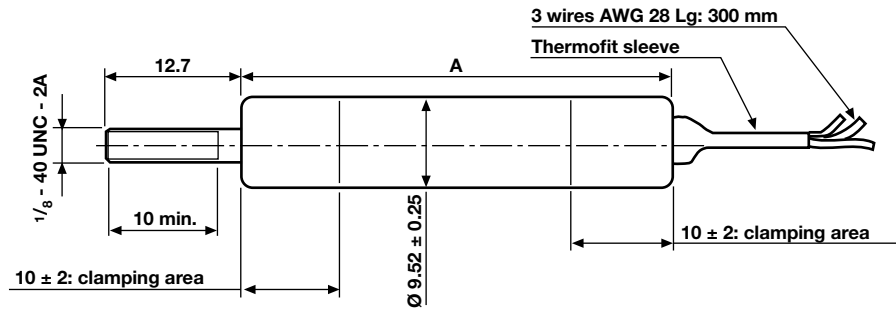
Mechanical travel (MT)	MT = TET + 3 mm $\pm$ 1 mm
Housing	Anodized aluminum
Operating force	0.35 N typical
Termination	3 wires PTFE AWG 26 length: 300 mm
Wiper	Precious metal multifinger

## PERFORMANCE

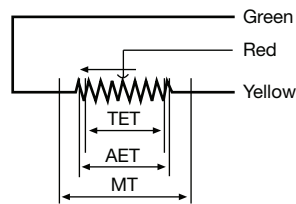
Operating life	25 million cycles typical/1 Hz/T° = 20 °C $\pm$ 5 °C/80 % TET
Temperature range	-55 °C to +125 °C
Sine vibration on 3 axes	1.5 mm peak to peak or 15 g - 10 Hz - 2000 Hz
Mechanical shocks on 3 axes	50 g -11 ms - half sine

### 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



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.