



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



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 Ω /cm to 4 k Ω /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 μ A - 1 mA max. (continuous) |
| Load resistance | Minimum $10^3 \times R_T$ |
| Insulation resistance | ≥ 1000 M Ω , 500 V _{DC} |
| Dielectric strength | ≥ 500 V _{RMS} , 50 Hz |

MECHANICAL SPECIFICATIONS

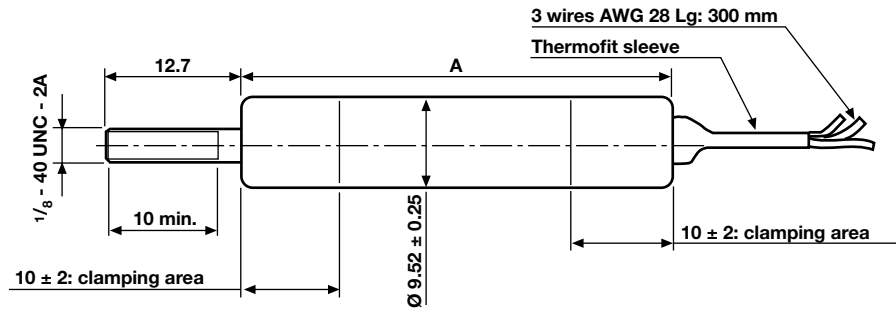
| | |
|------------------------|---------------------------------------|
| Mechanical travel (MT) | MT = TET + 3 mm \pm 1 mm |
| Housing | Anodized aluminum |
| Operating force | 0.35 N typical |
| Termination | 3 wires PTFE AWG 26 length: 300 mm |
| Wiper | Precious metal multifinger |

PERFORMANCE

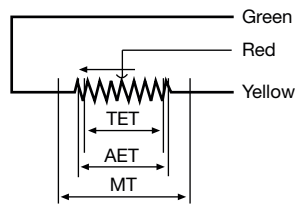
| | |
|-----------------------------|---|
| Operating life | 25 million cycles typical/1 Hz/T° = 20 °C \pm 5 °C/80 % TET |
| Temperature range | -55 °C to +125 °C |
| Sine vibration on 3 axes | 1.5 mm peak to peak or 15 g - 10 Hz - 2000 Hz |
| Mechanical shocks on 3 axes | 50 g -11 ms - half sine |

Note

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

DIMENSIONS in millimeters, general tolerance ± 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: ± 1 % B: ± 0.5 % C: ± 0.25 % D: ± 0.1 % | First 2 digits are significant numbers 3 rd 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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