

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



### 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



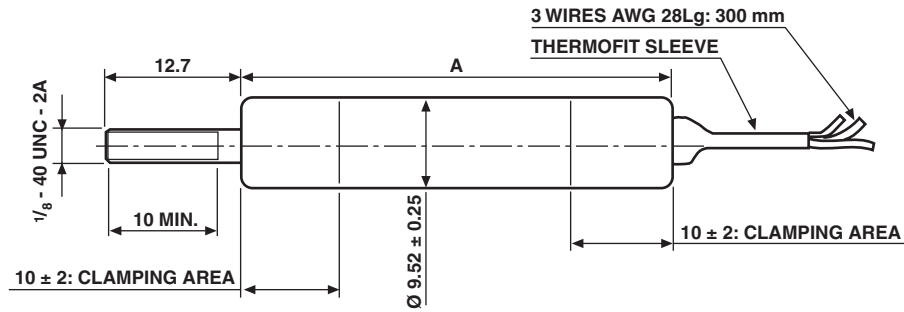
The 38 L is a very compact model especially designed for precise measurement of short travels.

| ELECTRICAL SPECIFICATIONS                  |  |
|--|--|
| Theoretical Electrical Travel (TET)        | From 12.5 mm to 150 mm see table 1   |
| Actual Electrical Travel (AET)             | $AET = TET + 1 \text{ mm}$   |
| Independent Linearity (over TET)           | $\leq \pm 1\%$ - $\leq \pm 0.5\%$<br>$\leq \pm 0.25\%$ for $E \geq 25 \text{ mm}$<br>$\leq \pm 0.1\%$ for $E \geq 50 \text{ mm}$ |
| Repeatability                              | $\leq 0.01\%$  |
| Ohmic Values ( $R_T$ )                     | From $400 \Omega/\text{cm}$ to $2 \text{ k}\Omega/\text{cm}$   |
| Resistance Tolerance at $20^\circ\text{C}$ | $\pm 20\%$   |
| Wiper Current                              | Recommended: a few $\mu\text{A}$ - $1 \text{ mA}$ max. (continuous)  |
| Load Resistance                            | Minimum $10^3 \times R_T$  |
| Insulation Resistance                      | $\geq 1000 \text{ M}\Omega$ , $500 \text{ V}_{\text{DC}}$  |
| Dielectric Strength                        | $\geq 500 \text{ V}_{\text{RMS}}$ , $50 \text{ Hz}$  |

| MECHANICAL SPECIFICATIONS |   |
|---------------------------|---|
| Mechanical Travel (MT)    | $MT = TET + 3 \pm 1 \text{ mm}$                 |
| Housing                   | Anodized aluminum                               |
| Operating Force           | $0.35 \text{ N}$ typical                        |
| Termination               | 3 wires PTFE AWG 28<br>length: $300 \text{ mm}$ |
| Wiper                     | Precious metal multifinger                      |

| PERFORMANCE                 |   |
|-----------------------------|---|
| Operating Life              | 25 million cycles typical/ $1 \text{ Hz}/T^\circ = 20^\circ\text{C} \pm 5^\circ\text{C}/80\% \text{ TET}$ |
| Temperature Range           | $-55^\circ\text{C}$ to $+125^\circ\text{C}$   |
| Sine Vibration on 3 Axes    | $1.5 \text{ mm}$ peak to peak or $15 \text{ g}$ - $10 \text{ Hz}$ - $2000 \text{ Hz}$                     |
| Mechanical Shocks on 3 Axes | $50 \text{ g}$ - $11 \text{ ms}$ - half sine  |

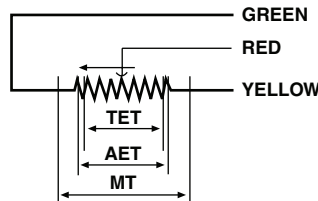
**DIMENSIONS** in millimeters, general tolerance  $\pm 1$  mm



**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<br>1 = 25 mm<br>2 = 50 mm<br>3 = 75 mm<br>4 = 100 mm<br>5 = 125 mm<br>6 = 150 mm | A: $\pm 1\%$<br>B: $\pm 0.5\%$<br>C: $\pm 0.25\%$<br>D: $\pm 0.1\%$ | First 2 digits are significant<br>numbers 3rd 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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