

## 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

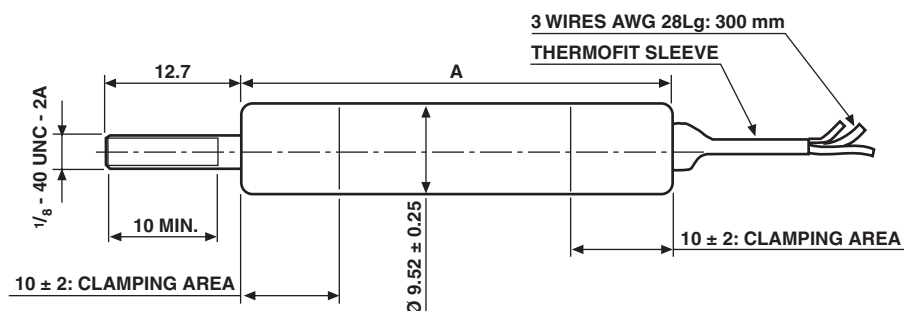
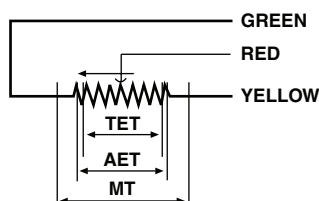


TABLE 1

| 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<br>SERIES | 38<br>MODEL | L<br>NUMBER<br>OF TRACKS | 0.5<br>ELECTRICAL<br>TRAVEL                                                                    | C<br>LINEARITY                                                      | 102<br>OHMIC VALUE                                                                     | W...<br>MODIFICATIONS          | e1<br>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<br>significant<br>numbers 3rd digit<br>indicates number<br>of zeros | Special feature code<br>number | Sn Ag Cu          |

## SAP PART NUMBERING GUIDELINES

| RE<br>SERIES | 38 L<br>MODEL | 0.5<br>TET | C<br>LINEARITY | 102<br>OHMIC VALUE | W...<br>SPECIAL FEATURES |
|--------------|---------------|------------|----------------|--------------------|--------------------------|
|--------------|---------------|------------|----------------|--------------------|--------------------------|



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**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331