

Precision Linear Transducers, Conductive Plastic (REC)



The 139 L is a robust industrial linear motion transducer with a side actuation, ideally suited for applications with very long travels.

FEATURES

- Measurement Range 25mm to 3000mm
- Long Life
- High Accuracy $\pm 1\%$ down to $\pm 0.025\%$
- Excellent Repeatability
- Essentially Infinite Resolution
- Simple Mounting
- Actuation Tolerant to Some Misalignment
- Reduced Bulk

| ELECTRICAL SPECIFICATIONS | |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Theoretical electrical travel (TET = E) | from 25mm to 3000mm in increments of 25mm |
| Independent linearity (over TET) on request | $\leq \pm 1\%$ - $\leq \pm 0.1\%$ $\leq \pm 0.05\%$ for $E \geq 100\text{mm}$ $\leq \pm 0.025\%$ for $E \geq 200\text{mm}$ |
| Actual electrical travel (AET) | $AET = E + 1.5\text{mm min.}$ |
| Ohmic value (R _T) | 400Ω/cm to 2kΩ/cm |
| Resistance tolerance at 20°C | $\pm 20\%$ |
| Repeatability | $\leq 0.01\%$ |
| Maximum power rating | 0.05W/cm at 70°C, 0W at 125°C |
| Wiper current | recommended: a few μA, 1mA max. continuous |
| Load resistance | minimum $10^3 \times R_T$ |
| Insulation resistance | $\geq 1000M\Omega$ 500VDC |
| Dielectric strength | $\geq 1000VRMS$ 50Hz |

| MECHANICAL SPECIFICATIONS | |
|----------------------------------|------------------------------------|
| Mechanical travel (MT) | See dimensions table 1 |
| Housing | anodized aluminum |
| Operating force | 2.5N typical |
| Coupling | self alignment |
| Termination | hydraulic type connector DIN 43650 |
| Wiper | precious metal multifinger |
| Sealed to | IP53 |
| Mounting | movable brackets |

| PERFORMANCE | |
|-----------------------------|-------------------------------------------|
| Operating life | 40 million cycles typical |
| Temperature range | - 55°C + 125°C |
| Sine vibration on 3 axes | 1.5mm peak to peak or 15g - 10Hz - 2000Hz |
| Mechanical shocks on 3 axes | 50g - 11ms - half sine |



DIMENSIONS in millimeters, general tolerance ± 1 mm

STANDARD MODEL

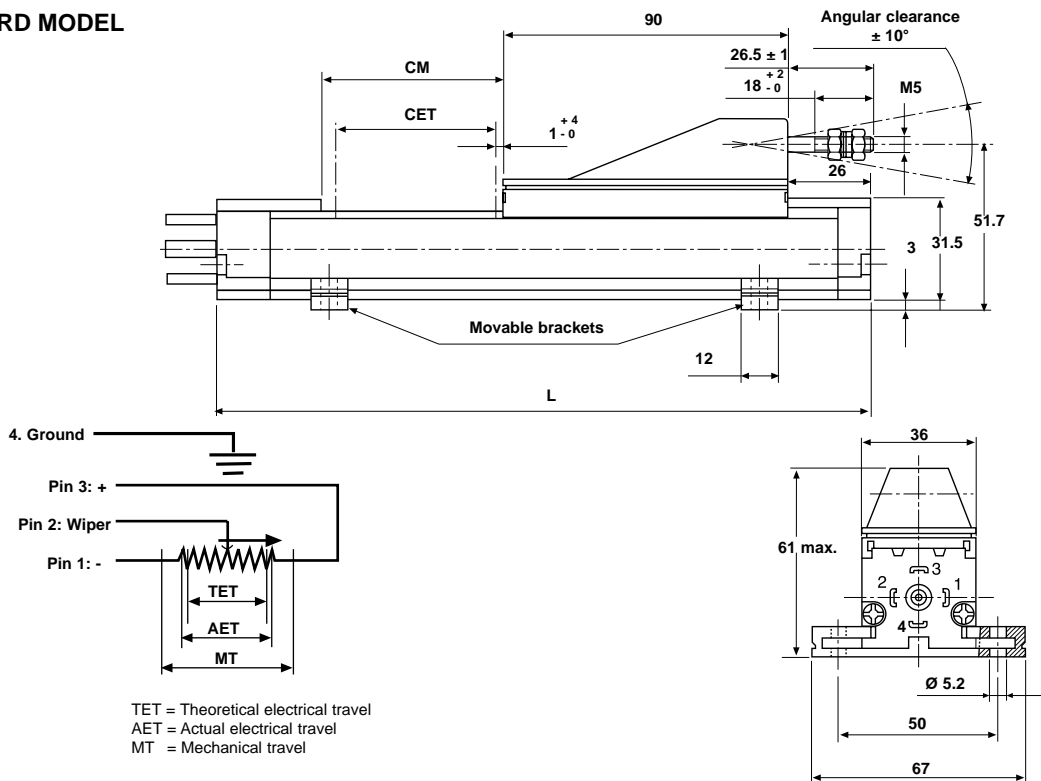
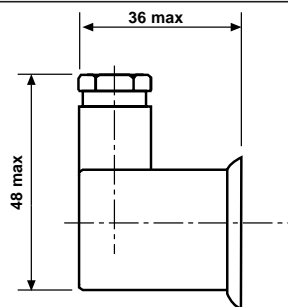


Table 1

| LENGTH | AET | MT | L |
|-------------|----------------|---------------|----------------|
| L1 to L20 | TET + 1.5 min | TET + 7 min. | TET + 158 max. |
| L 21 to L40 | TET + 1.5 min. | TET + 11 min. | TET + 163 max. |
| L41 to L120 | TET + 1.5 min. | TET + 15 min. | TET + 169 max. |

ACCESSORIES ON REQUEST DIMENSIONS in millimeters

Female Connector
 Vishay's Reference: 3248610



ORDERING INFORMATION

| REC | 139 | L | 43 | D | 103 | W... |
|--------|-------|------------------|-------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------|
| SERIES | MODEL | NUMBER OF TRACKS | THEORETICAL ELECTRICAL TRAVEL | LINEARITY | OHMIC VALUE | MODIFICATIONS |
| | | L = 1 | Times 25 mm | A: $\pm 1\%$ D: $\pm 0.1\%$ E: $\pm 0.05\%$ F: $\pm 0.025\%$ | First 2 digits are significant numbers 3rd digit indicates number of zeros | Special feature code number |