

Precision Linear Transducers, Conductive Plastic, up to 300 mm



The 50 L is a compact, accurate and adaptable motion transducer for both industrial and military markets.

QUICK REFERENCE DATA

| | |
|------------------|---|
| Sensor type | LINEAR, conductive plastic |
| Output type | Wires |
| Market appliance | Professional |
| Dimensions | L x 12.7 mm dia. (with L = TET + 41 mm) |

FEATURES

- Measurement range 25 mm to 300 mm
- High accuracy $\pm 1\%$ down to $\pm 0.025\%$
- Essentially infinite resolution
- Long life
- Sealed on request
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

ELECTRICAL SPECIFICATIONS

| | |
|--|--|
| Theoretical electrical travel (TET = E) in increments of 25 mm | 25 mm 300 mm |
| Independent linearity (over TET) on request | $\leq \pm 1\%$ - $\leq \pm 0.1\%$ $\leq \pm 0.05\%$ for $E \geq 100$ mm $\leq \pm 0.025\%$ for $E \geq 200$ mm |
| Actual electrical travel (AET) | $AET = E + 1 \text{ mm} \pm 0.5 \text{ mm}$ |
| Ohmic values (R_T) | 400 Ω /cm to 2 k Ω /cm |
| Resistance tolerance at 20 °C | $\pm 20\%$ |
| Repeatability | $\leq 0.01\%$ |
| Maximum power rating | 0.05 W/cm at 70 °C, 0 W at 125 °C |
| Wiper current | Recommended: a few μA - 1 mA max. (continuous) |
| Load resistance | Minimum $10^3 \times R_T$ |
| Number of tracks | 1; on request 2 |
| Insulation resistance | $\geq 1000 \text{ M}\Omega$, 500 V _{DC} |
| Dielectric strength | $\geq 500 \text{ V}_{\text{RMS}}$, 50 Hz |

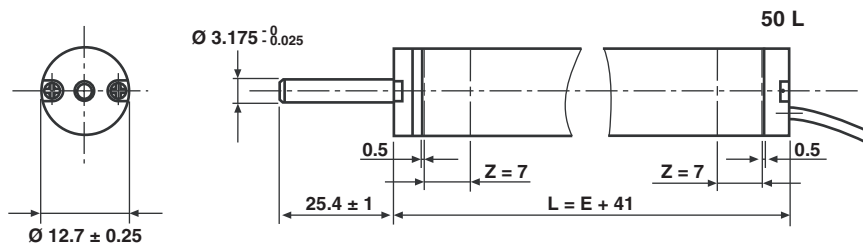
MECHANICAL SPECIFICATIONS

| | |
|----------------------------|--|
| Mechanical travel | TET + 2 mm min. |
| Housing | Anodized aluminum |
| Operating force on request | 0.35 N typical (standard model) 2.50 N typical (sealed model) |
| Shaft (free rotation) | Stainless steel |
| Termination on request | 3 wires PTFE AWG-30, L = 300 mm cable or connector |
| Wiper | Precious metal multifinger |
| Sealing | IP65 on request |

PERFORMANCE

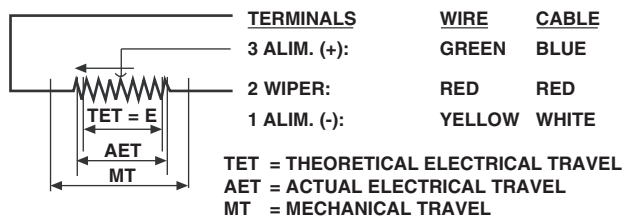
| | |
|-----------------------------|---|
| Operating life | 25 million cycles typical/1 Hz/T° = 20 °C \pm 5 °C/80 % TET |
| Temperature range | - 55 °C to + 125 °C |
| Sine vibration on 3 axes | 1.5 mm peak to peak or 15 g - 10 Hz - 2000 Hz |
| Mechanical shocks on 3 axes | 50 g -11 ms - half sine |

STANDARD MODEL DIMENSIONS in millimeters, general tolerance ± 1 mm



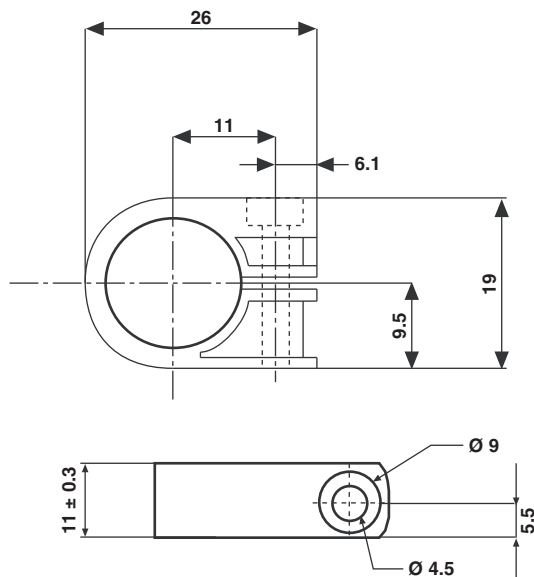
Z = TIGHTENING ZONE

ELECTRICAL CONNECTIONS

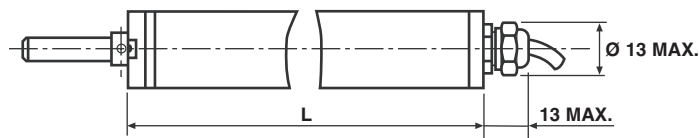


ACCESSORIES ON REQUEST - DIMENSIONS in millimeters, general tolerance ± 3 mm

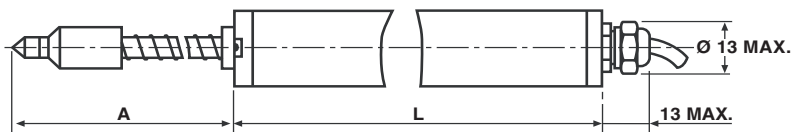
Clamp for 50L
Vishay Reference: CQ00050



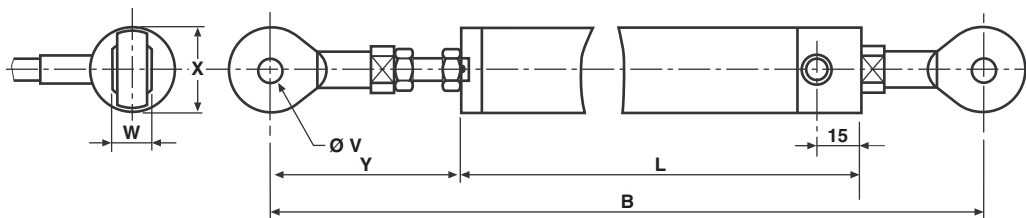
OPTIONS - DIMENSIONS in millimeters

OPTION 1: SEALED (IP65): W03242


| MODEL | CODE | L |
|----------|--------|------------|
| 50 L ... | W03242 | TET + 70.5 |

OPTION 2: SPRING LOADED SHAFT; OUTPUT BY SHIELDED CABLE: W01743


| MODEL | CODE | A | L |
|-------|--------|-----|------------|
| 50 L1 | W01743 | 70 | TET + 97.8 |
| 50 L2 | W01743 | 116 | |
| 50 L3 | W01743 | 162 | |
| 50 L4 | W01743 | 208 | |

OPTION 3: DOUBLE BALL JOINT: W01565


| MODEL CODE | B | L | Ø V | W | X | Y | TET |
|----------------------|-------------|------------|-----|---|----|--------|------------|
| 50 L W01565 L1 to L3 | TET + 108.5 | TET + 57.5 | 3 | 6 | 12 | 30 ± 2 | 25 to 75 |
| L4 to L6 | TET + 133.5 | TET + 82.5 | 3 | 6 | 12 | 30 ± 2 | 100 to 150 |

ORDERING INFORMATION/DESCRIPTION

| REC | 50 | L | 3 | D | 103 | W... | e1 |
|--------|-------|------------------------------|-------------------------------|---|---|-----------------------------|-------------|
| SERIES | MODEL | NUMBER OF TRACKS | THEORETICAL ELECTRICAL TRAVEL | LINEARITY | OHMIC VALUE | MODIFICATIONS | LEAD FINISH |
| | | L = 1 track LL = 2 tracks | Times 25 mm | A: ± 1 % D: ± 0.1 % E: ± 0.05 % F: ± 0.025 % | 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 | 50 L | 3 | D | 103 | W.... |
|--------|-------|-----|-----------|-------------|------------------|
| SERIES | MODEL | TET | LINEARITY | OHMIC VALUE | SPECIAL FEATURES |



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