

## 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.


**RoHS**  
COMPLIANT

**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](http://www.vishay.com/doc?99912)

**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)

**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 $\Omega$ /cm to 2 k $\Omega$ /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 $\mu$ A - 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	$\geq 500 \text{ V}_{RMS}$ , 50 Hz

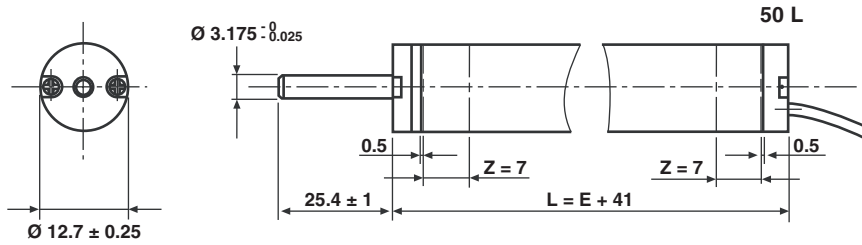
**MECHANICAL SPECIFICATIONS**

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**

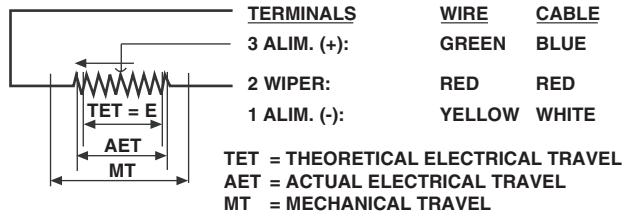
Operating life	25 million cycles typical/1 Hz/T° = 20 °C $\pm$ 5 °C/80 % TET
Temperature range	- 55 °C to + 125 °C
Sine vibration on 3 axes	1.5 mm peak to peak or 15 g - 10 Hz - 2000 Hz
Mechanical shocks on 3 axes	50 g -11 ms - half sine

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



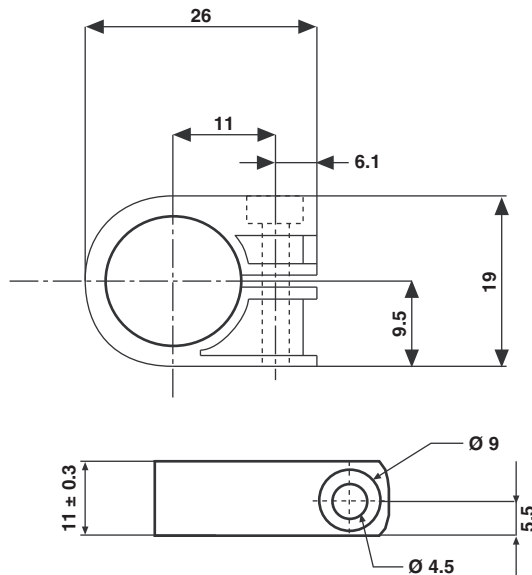
Z = TIGHTENING ZONE

**ELECTRICAL CONNECTIONS**

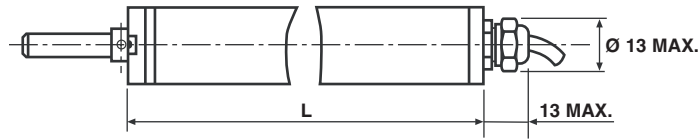


**ACCESSORIES ON REQUEST - DIMENSIONS** in millimeters, general tolerance  $\pm 3$  mm

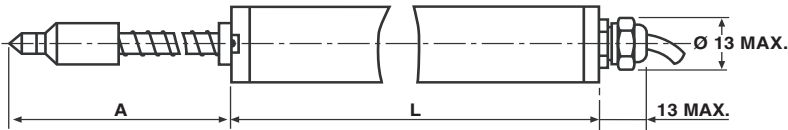
Clamp for 50L  
 Vishay Reference: CQ00050



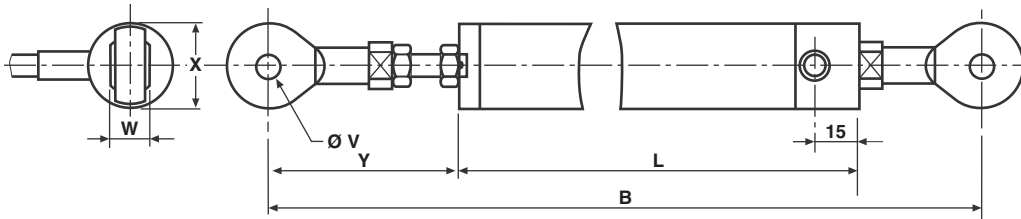
**OPTIONS - DIMENSIONS** in millimeters

**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 <sup>rd</sup> 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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