

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

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 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	$\geq 500 \text{ V}_{RMS}$, 50 Hz

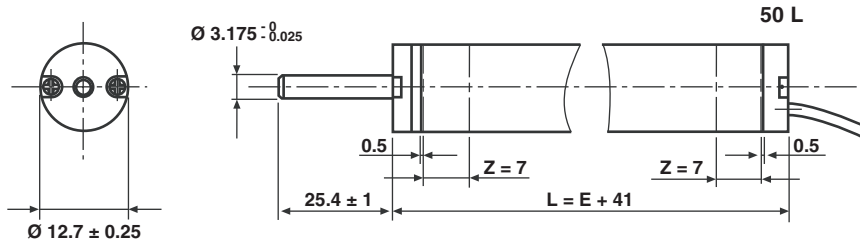
MECHANICAL SPECIFICATIONS

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

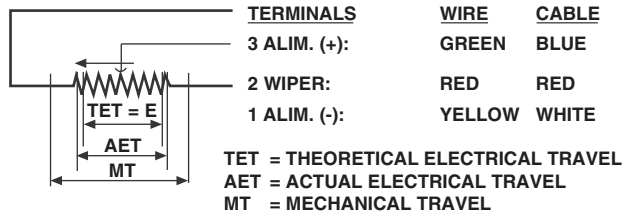
Operating life	25 million cycles typical/1 Hz/ $T^\circ = 20 \text{ }^\circ\text{C} \pm 5 \text{ }^\circ\text{C}/80\% \text{ TET}$
Temperature range	- 55 °C to + 125 °C
Sine vibration on 3 axes	1.5 mm peak to peak or 15 g - 10 Hz - 2000 Hz
Mechanical shocks on 3 axes	50 g -11 ms - half sine

STANDARD MODEL DIMENSIONS in millimeters, general tolerance ± 1 mm



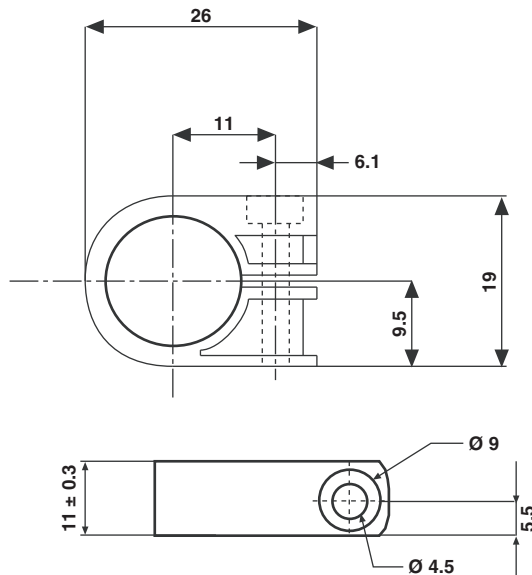
Z = TIGHTENING ZONE

ELECTRICAL CONNECTIONS

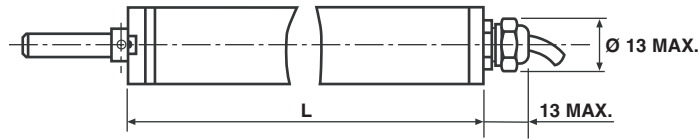


ACCESSORIES ON REQUEST - DIMENSIONS in millimeters, general tolerance ± 3 mm

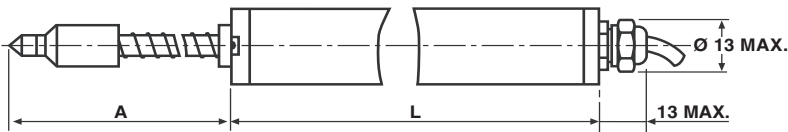
Clamp for 50L
Vishay Reference: CQ00050



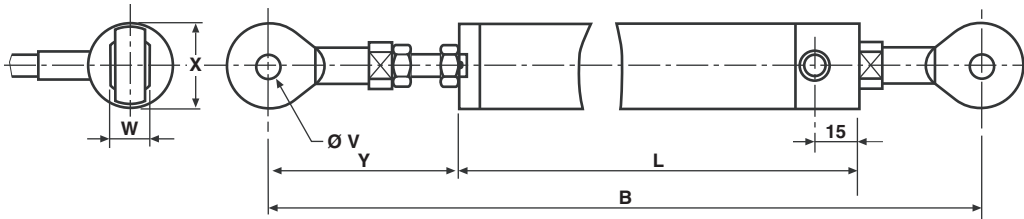
OPTIONS - DIMENSIONS in millimeters

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



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.