

## Precision Linear Transducers, Conductive Plastic, up to 450 mm



### FEATURES

- Measurement range 25 mm to 450 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)


**RoHS**  
COMPLIANT

The 34 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 19 mm dia. (with L = TET + 63 mm)

### ELECTRICAL SPECIFICATIONS

Theoretical electrical travel (TET = E) in increments of 25 mm	25 mm 450 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)	See table 1
Ohmic values ( $R_T$ )	From 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	$\geq 1000$ M $\Omega$ , 500 V <sub>DC</sub>
Dielectric strength	$\geq 750$ V <sub>RMS</sub> , 50 Hz

### MECHANICAL SPECIFICATIONS

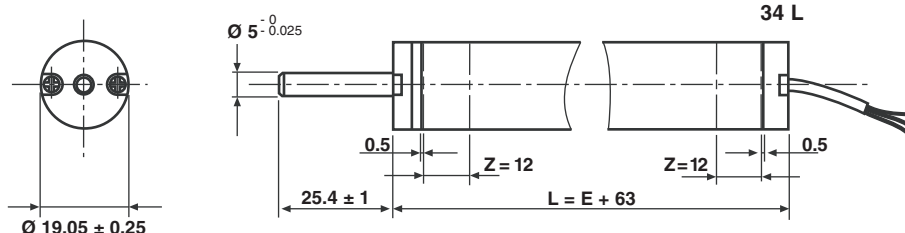
Mechanical travel	TET + 2 mm min.
Housing	Anodized aluminum
Operating force On Request	0.35 N typical (standard model)      2.50 N typical (sealed model)
Shaft (free rotation)	Stainless steel
Termination On request	3 wires PTFE AWG-30 L = 300 mm cable or connector
Wiper	Precious metal multifinger
Sealing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

### PERFORMANCE

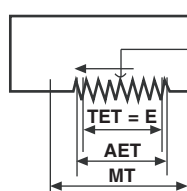
Operating life	25 million cycles typical/1 Hz/T° = 20 °C $\pm$ 5 °C/80 % TET
Temperature range	-55 °C to +125 °C
Sine vibration on 3 axes	1.5 mm peak to peak or 15 g - 10 Hz - 2000 Hz
Mechanical shocks on 3 axes	50 g - 11 ms - half sine

#### Note

- Nothing stated herein shall be construed as a guarantee of quality or durability.

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


Z = TIGHTENING ZONE

**ELECTRICAL CONNECTIONS**

**TERMINALS**

3 ALIM. (+):

2 WIPER:

1 ALIM. (-):

**WIRE**

GREEN

RED

YELLOW

**CABLE**

BLUE

RED

WHITE

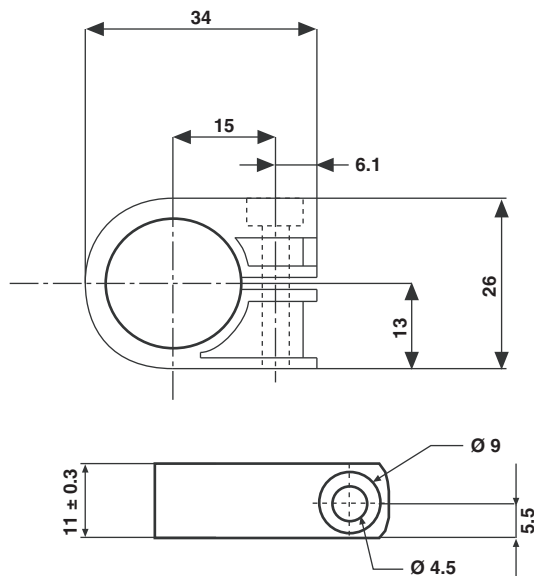
TET = THEORETICAL ELECTRICAL TRAVEL  
AET = ACTUAL ELECTRICAL TRAVEL  
MT = MECHANICAL TRAVEL

TET = E	AET	TOL.
25 mm to 275 mm	E + 1 mm	$\pm 0.5$ mm
300 mm to 450 mm	E + 1 mm	$\pm 0.8$ mm

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

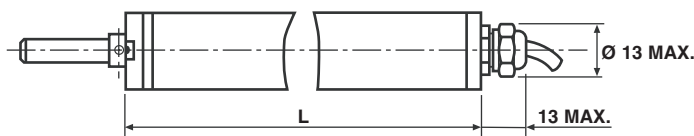
Clamp for 34L

Vishay Reference: CQ00051



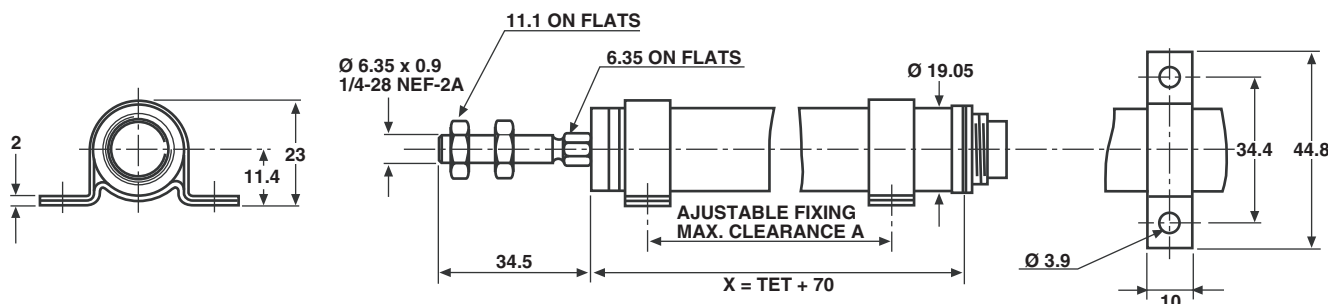
## OPTIONS - DIMENSIONS in millimeters, general tolerance $\pm 1$ mm

### OPTION 1: SEALED (IP65): W03280

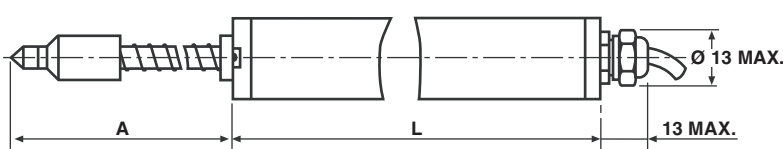


MODEL	CODE	L
34 L	W03280	TET + 83.5

### OPTION 2: DELIVERED WITH CLAMPS AND BINDER CONNECTOR 680: W05013

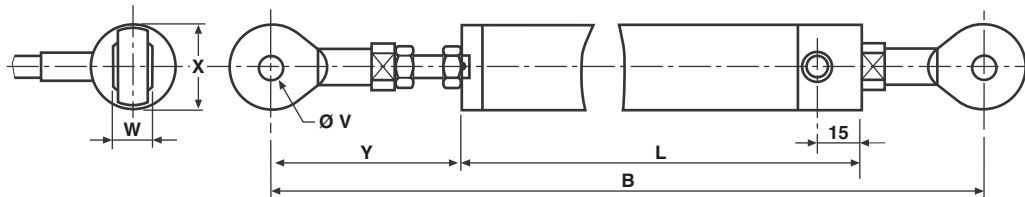


### OPTION 3: SPRING LOADED SHAFT; OUTPUT BY SHIELDED CABLE: W01744



MODEL	CODE	A	L
34 L1	W01744	61.4	TET + 119.5
34 L2	W01744	93.6	
34 L3	W01744	125.8	
34 L4	W01744	158	

### OPTION 4: DOUBLE BALL JOINT: W03263



MODEL CODE	B	L	Ø V	W	X	Y	TET
34 L W03263 L1 to L5	TET + 151.6	TET + 82.8	5	8	18	42 ± 2	25 to 125
L6 to L10	TET + 173.6	TET + 104.8	5	8	18	42 ± 2	150 to 250
L11 to L12	TET + 230	TET + 161.2	5	8	18	42 ± 2	275 to 300

## ORDERING INFORMATION/DESCRIPTION

REC	34	L	3	D	103	W...	e.
SERIES	MODEL	NUMBER OF TRACKS	THEORETICAL ELECTRICAL TRAVEL	LINEARITY	OHMIC VALUE	MODIFICATIONS	LEAD FINISH
		L = 1 track LL = 2 tracks	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	

## SAP PART NUMBERING GUIDELINES

RE	34 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.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. 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.