

Precision Linear Transducers, Conductive Plastic, up to 450 mm

FEATURES

- Large measurement range
- High accuracy $\pm 1\%$ down to $\pm 0.05\%$
- Essentially infinite resolution
- Easy mounting


RoHS
COMPLIANT


The 110 L is a compact, robust, easily mounted precision industrial motion transducer.

ELECTRICAL SPECIFICATIONS	
Theoretical Electrical Travel (TET) = E	25 mm to 450 mm in increments of 25 mm
Independent Linearity (over TET) On Request	$\leq \pm 1\% \leq \pm 0.1\%$ $\leq \pm 0.05\%$ for $E \geq 100$ mm
Actual Electrical Travel (AET)	See Electrical Connections Table 1
Repeatability	$\leq 0.01\%$
Ohmic Values (R_T)	From 400 Ω /cm to 2 k Ω /cm
Resistance Tolerance at 20 °C	$\pm 20\%$
Maximum Power Rating	0.05 W/cm at 70 °C, 0 W at 125 °C
Wiper Current	Recommended: a few μ A - 1 mA max. (continuous)
Load Resistance	Minimum $10^3 \times R_T$
Insulation Resistance	≥ 1000 M Ω , 500 V _{DC}
Dielectric Strength	≥ 750 V _{RMS} , 50 Hz

MECHANICAL SPECIFICATIONS	
Mechanical Travel	TET + 6 mm min.
Housing	Anodized aluminum
Operating Force	5 N typical
Shaft (Free Rotation)	Stainless steel
Termination On Request	Connector: 723 series by cable
Wiper	Precious metal multifinger
Mounting	Movable brackets

PERFORMANCE	
Operating Life	40 million cycles typical/1 Hz/T° = 20 °C \pm 5 °C/80 % TET
Temperature Range	- 55 °C to + 125 °C
Mechanical Shocks on 3 Axes	50 g - 11 ms - half sine
Sine Vibration on 3 Axes	1.5 mm peak to peak or 15 g - 10 Hz - 2000 Hz
Speed (max.)	8 m/s for $f < 2$ Hz; 3 m/s for $f < 5$ Hz

Series REC 110 L

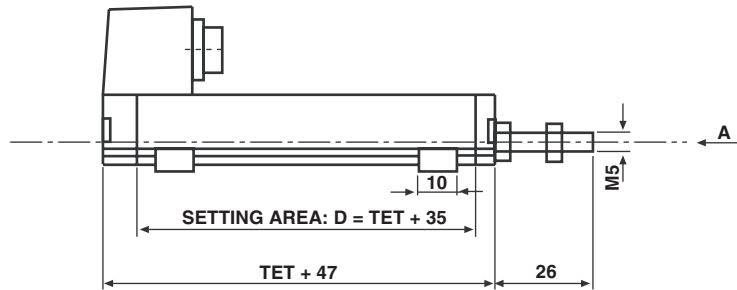
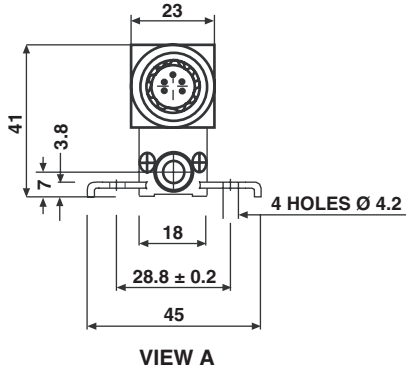
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Precision Linear Transducers, Conductive Plastic,
up to 450 mm

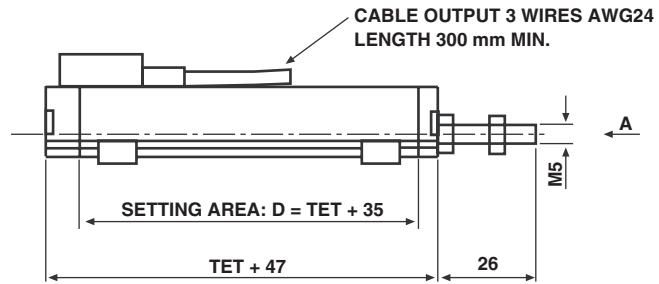
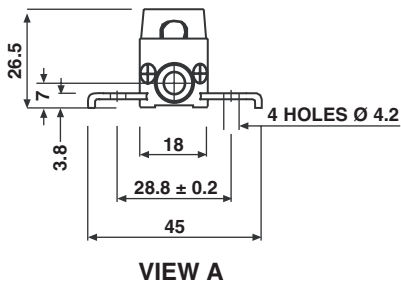


DIMENSIONS in millimeters, general tolerance ± 1 mm

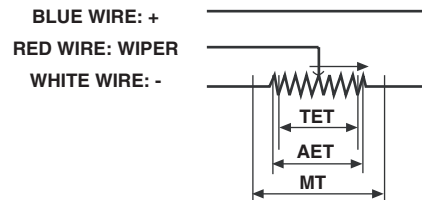
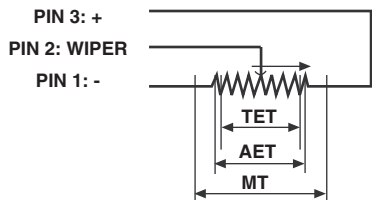
STANDARD MODEL



WITH CABLE OUTPUT: W04029



ELECTRICAL CONNECTIONS



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

Table 1

THEORETICAL ELECTRICAL TRAVEL TET	ACTUAL ELECTRICAL TRAVEL AET	TOLERANCE
From 25 mm to 275 mm	$TET + 1$ mm	± 0.5 mm
From 300 mm to 450 mm	$TET + 1$ mm	± 0.8 mm



OPTION: SPRING LOADED SHAFT DIMENSIONS in millimeters, general tolerance ± 1 mm

110L WITH SPRING LOADED SHAFT: W04030

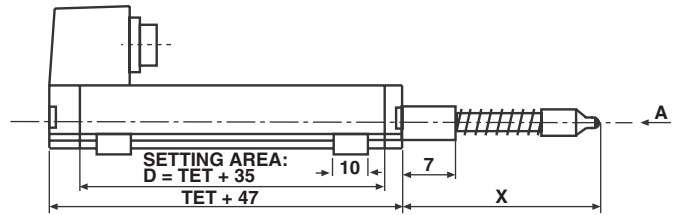
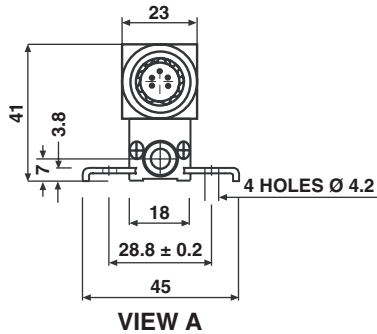
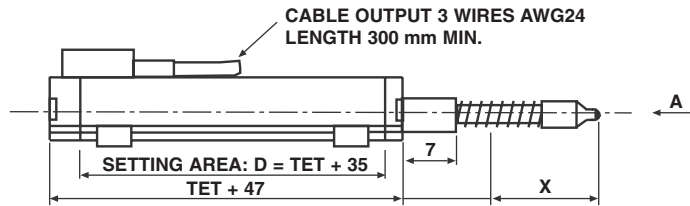
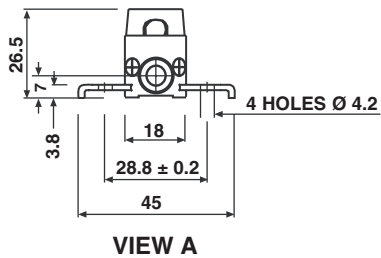


Table 2

MODEL	X
110 L1	75
110 L2	112
110 L3	150
110 L4	188

110L WITH CABLE OUTPUT AND SPRING LOADED SHAFT: W04031



Series REC 110 L

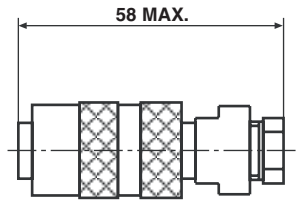
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Precision Linear Transducers, Conductive Plastic,
up to 450 mm

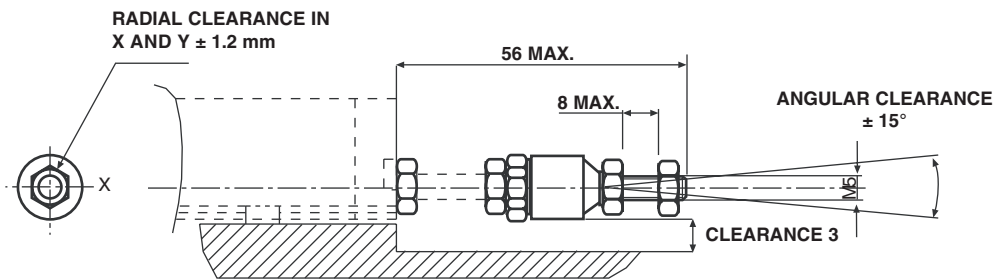


ACCESSORIES ON REQUEST DIMENSIONS in millimeters, general tolerance ± 1 mm

- 1) FEMALE CONNECTOR
Vishay's Reference: 328870



- 2) SPECIAL BALL JOINT
Vishay's reference: 323654



ORDERING INFORMATION/DESCRIPTION

REC	110	L	3	D	103	W...	e.
SERIES	MODEL	NUMBER OF TRACKS	THEORETICAL ELECTRICAL	LINEARITY	OHMIC VALUE	MODIFICATIONS	LEAD FINISH
		L = 1 track	Times 25 mm	A: $\pm 1\%$ D: $\pm 0.1\%$ E: $\pm 0.05\%$	First 2 digits are significant numbers 3rd digit indicates number of zeros	Special feature code number	

SAP PART NUMBERING GUIDELINES

RE	110 L	3	D	103	W....
SERIES	MODEL	TET	LINEARITY	OHMIC VALUE	SPECIAL FEATURES



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Precision Linear Transducers, Conductive Plastic, up to 1000 mm



FEATURES

- Measurement range 25 mm to 1000 mm
- High accuracy $\pm 1\%$ down to $\pm 0.025\%$
- Excellent repeatability
- Essentially infinite resolution
- Non sensitive to temperature variations


RoHS
COMPLIANT

The 115 L is a simply mounted, robust, high precision industrial linear motion transducer.

ELECTRICAL SPECIFICATIONS	
Theoretical Electrical Travel (TET) = E	From 25 mm to 1000 mm in increments of 25 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 = TET + 1.5 mm min.
Ohmic Values (R_T)	400 Ω /cm to 2 k Ω /cm
Resistance Tolerance at 20 °C	$\pm 20\%$
Repeatability	$\leq \pm 0.01\%$
Maximum Power Rating	0.05 W/cm at 70 °C, 0 W at 125 °C
Wiper Current	Recommended: a few μ A - 1 mA max. (continuous)
Load Resistance	minimum $10^3 \times R_T$
Insulation Resistance	≥ 1000 M Ω , 500 V _{DC}
Dielectric Strength	≥ 1000 V _{RMS} , 50 Hz
Protection Resistor	Integrated inside the transducer to protect against errors when setting up (short circuit)

MECHANICAL SPECIFICATIONS	
Mechanical Travel	$E + 8 \pm 2$ mm
Housing	Anodized aluminum
Operating Force	7.5 N typical
Shaft (Free Rotation)	Stainless steel
Termination	Hydraulic type connector DIN 43650
Wiper	Precious metal multifinger
Mounting	Movable brackets

PERFORMANCE	
Operating Life	40 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 0 - 10 Hz 15 g - 10 Hz - 2000 Hz
Mechanical Shocks on 3 Axes	50 g - 11 ms - half sine
Speed (max.)	8 m/s for $f < 2$ Hz; 3 m/s for $f < 5$ Hz

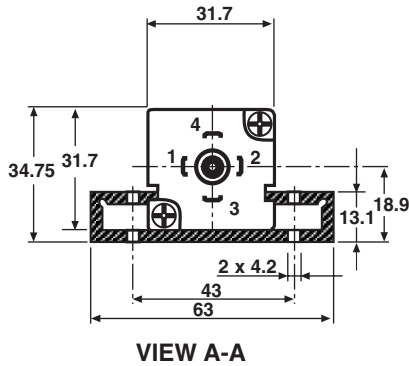
Series REC 115 L

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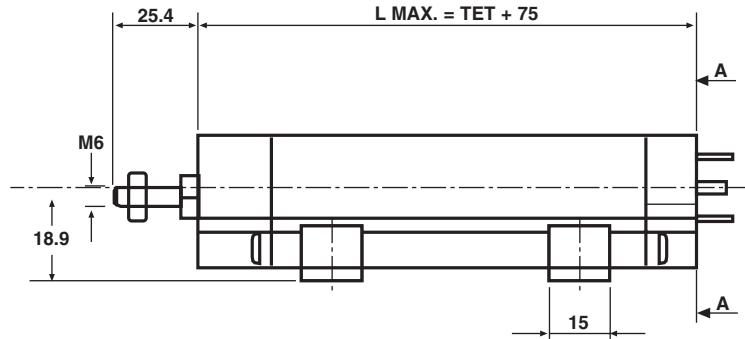
Precision Linear Transducers, Conductive Plastic,
up to 1000 mm



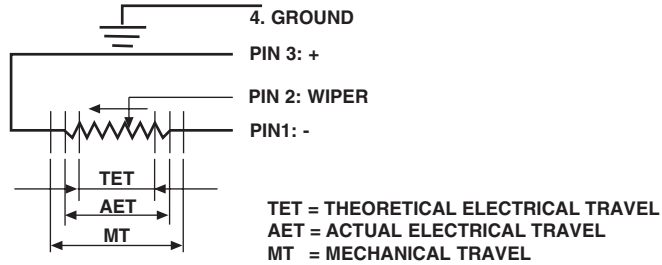
DIMENSIONS in millimeters, general tolerance ± 1 mm



VIEW A-A

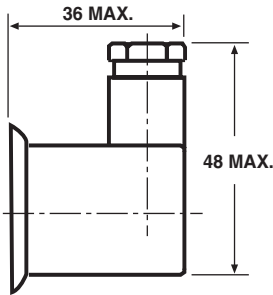


ELECTRICAL CONNECTIONS

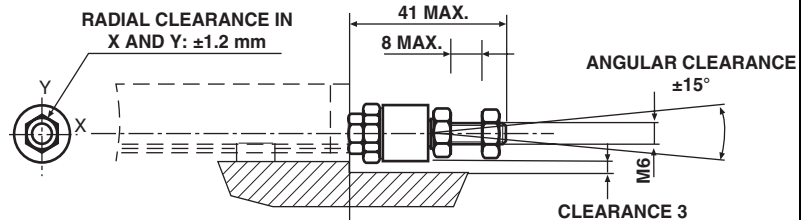


ACCESSORIES ON REQUEST DIMENSIONS in millimeters, general tolerance ± 1 mm

1) FEMALE CONNECTOR
Vishay's Reference: 3248610



2) SPECIAL BALL JOINT ON SHAFT
Vishay's reference: 323655



ORDERING INFORMATION/DESCRIPTION

REC SERIES	115 MODEL	L NUMBER OF TRACKS	23 THEORETICAL ELECTRICAL TRAVEL	D LINEARITY	103 OHMIC VALUE	W... MODIFICATIONS	e. LEAD FINISH
		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	

SAP PART NUMBERING GUIDELINES

RE SERIES	115 L MODEL	23 TET	D LINEARITY	103 OHMIC VALUE	W... SPECIAL FEATURES
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Precision Linear Transducers, Conductive Plastic, up to 3000 mm



FEATURES

- Measurement range 25 mm to 3000 mm
- High accuracy $\pm 1\%$ down to $\pm 0.025\%$
- Excellent repeatability
- Essentially infinite resolution
- Simple mounting
- Actuation tolerant to some misalignment
- Reduced bulk



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

ELECTRICAL SPECIFICATIONS	
Theoretical Electrical Travel (TET) = E	From 25 mm to 3000 mm in increments of 25 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 + 1.5 mm min.
Ohmic Value (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 μ A - 1 mA max. (continuous)
Load Resistance	Minimum $10^3 \times R_T$
Insulation Resistance	≥ 1000 M Ω , 500 V _{DC}
Dielectric Strength	≥ 1000 V _{RMS} , 50 Hz

MECHANICAL SPECIFICATIONS	
Mechanical Travel (MT)	See dimensions table 1
Housing	Anodized aluminum
Operating Force	2.5 N 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/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
Speed (max.)	8 m/s for $f < 2$ Hz; 3 m/s for $f < 5$ Hz

Series REC 139 L

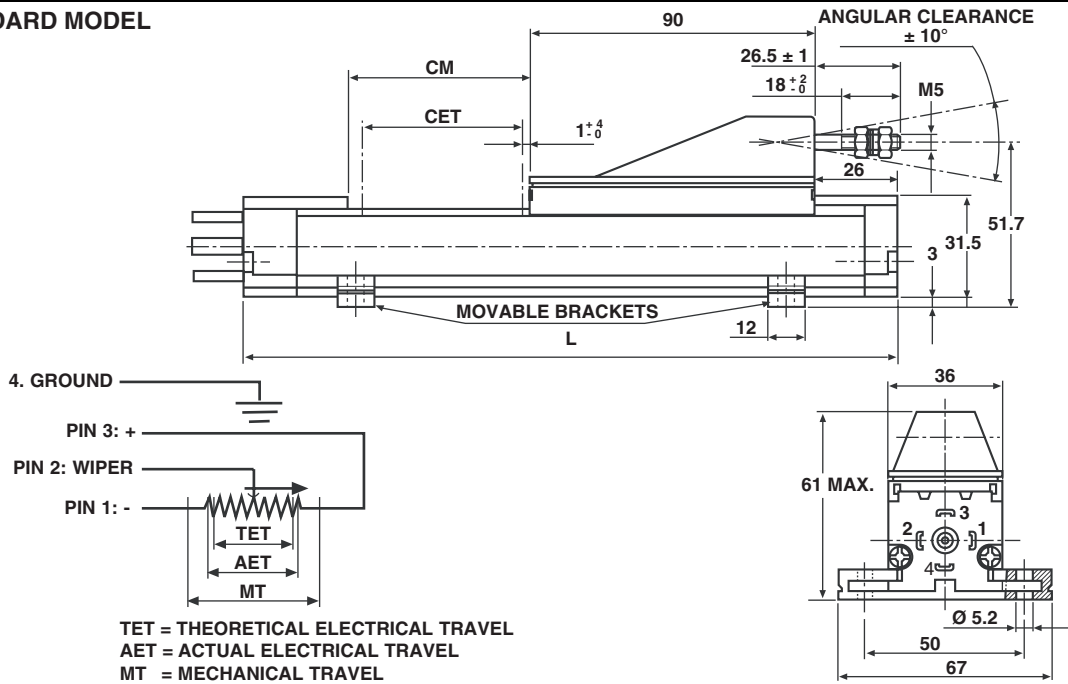
Vishay Sfernice

Precision Linear Transducers, Conductive Plastic,
up to 3000 mm



DIMENSIONS in millimeters, general tolerance ± 1 mm

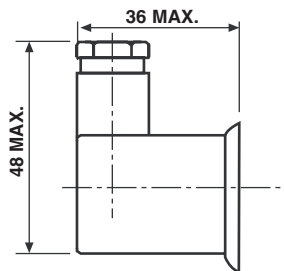
STANDARD MODEL



LENGTH	AET	MT	L
L1 to L20	TET + 1.5 min.	TET + 7 min.	TET + 158 max.
L21 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.

ELECTRICAL CONNECTIONS

FEMALE CONNECTOR
Vishay's Reference: 3248610



ORDERING INFORMATION/DESCRIPTION

REC	139	L	43	D	103	W...	e3
SERIES	MODEL	NUMBER OF TRACKS	THEORETICAL ELECTRICAL	LINEARITY	OHMIC VALUE	MODIFICATIONS	LEAD FINISH
		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	Pure tin

SAP PART NUMBERING GUIDELINES

RE	139 L	43	D	103	W....
SERIES	MODEL	TET	LINEARITY	OHMIC VALUE	SPECIAL FEATURES



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