

**139 L****REC**

# precision linear transducer

– conductive plastic

MIL-R 39023  
NF C 93-255

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

- MEASUREMENT RANGE 25 mm to 3000 mm
- LONG LIFE
- HIGH ACCURACY  $\pm 1\%$  down to  $\pm 0,025\%$
- EXCELLENT REPEATABILITY
- ESSENTIALLY INFINITE RESOLUTION
- SIMPLE MOUNTING
- ACTUATION TOLERANT TO SOME MISALIGNMENT
- REDUCED BULK

**ELECTRICAL SPECIFICATIONS**

<b>Theoretical electrical travel (TET = E)</b>	from 25 mm to 3000 mm in increments of 25 mm on request up to 6000 mm
<b>Independent linearity (over TET)</b>	$\leq \pm 1\%$ - $\leq \pm 0,1\%$ on request $\leq \pm 0,05\%$ for $E \geq 100$ mm $\leq \pm 0,025\%$ for $E \geq 200$ mm
<b>Actual electrical travel (AET)</b>	AET = E + 1,5 mm min.
<b>Ohmic value (R<sub>T</sub>)</b>	400 $\Omega$ /cm to 2 k $\Omega$ /cm
<b>Resistance tolerance at 20°C</b>	$\pm 20\%$
<b>Repeatability</b>	$\leq 0,01\%$
<b>Maximum power rating</b>	0,04 W/cm at 70°C 0 W at 125°C
<b>Wiper current</b>	recommended : a few $\mu$ A 1 mA max. continuous
<b>Load resistance</b>	minimum $10^3 \times R_T$
<b>Insulation resistance</b>	$\geq 1000 M\Omega$ 500 VDC
<b>Dielectric strength</b>	$\geq 1000$ V RMS 50 Hz

**MECHANICAL SPECIFICATIONS**

<b>Mechanical travel (MT)</b>	MT = E + 7 mm min.
<b>Housing</b>	anodized aluminium
<b>Operating force</b>	2,5 N typical
<b>Coupling</b>	self alignment
<b>Termination</b>	hydraulic type connector DIN 43650
<b>Wiper</b>	precious metal multifinger
<b>Sealed to</b>	IP53
<b>Mounting</b>	movable brackets

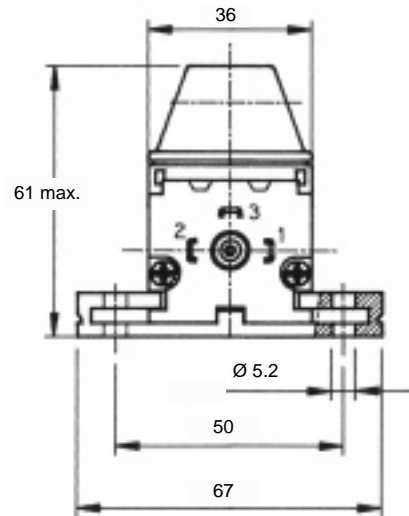
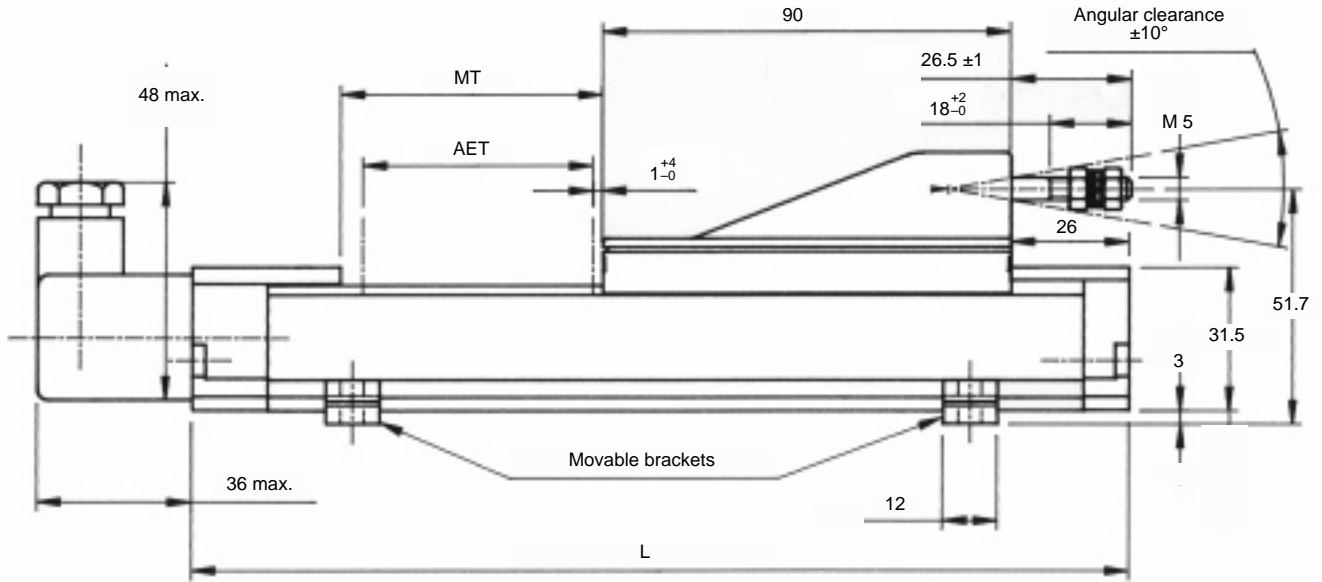
**PERFORMANCES**

<b>Operating life</b>	100 millions cycles typical
<b>Temperature range</b>	-55°C +125°C
<b>Sine vibration on 3 axes</b>	1,5 mm peak to peak or 15 g - 10 Hz - 2000 Hz
<b>Mechanical shocks on 3 axes</b>	50 g - 11 ms - half sine
<b>Speed (m/s)</b>	10 max.

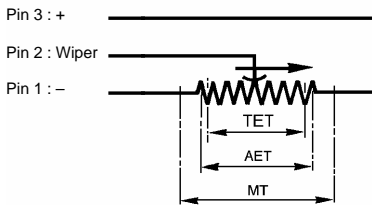
**ORDERING PROCEDURE**

SERIES	MODEL	NUMBER OF TRACKS	THEORETICAL ELECTRICAL TRAVEL	LINEARITY	OHMIC VALUE	MODIFICATIONS
<b>REC</b>	<b>139</b>	<b>L</b> L = 1	<b>43</b> Times 25 mm	<b>D</b> A : $\pm 1\%$ D : $\pm 0,1\%$ E : $\pm 0,05\%$ F : $\pm 0,025\%$	<b>103</b> First 2 digits are significant numbers 3rd digit indicates number of zeros	<b>W...</b> Special feature code number

# 139 L



## ELECTRICAL CONNECTIONS



TET = Theoretical electrical travel  
 AET = Actual electrical travel  
 MT = Mechanical travel

General tolerance  $\pm 1$  mm  
 Dimensions in mm

Table 1

SIZE	AET	MT	L
L1A L20	E +1,5 min.	E + 7 min.	E +158 max.
L 21A L40	E +1,5 min.	E +11 min.	E +163 max.
L41A L120	E + 1,5 min.	E +15 min.	E +169 max.



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