

# AF111 LVDT

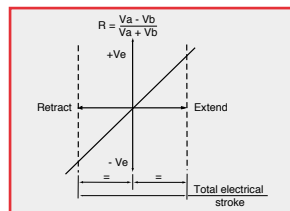
The AF111 range of high accuracy LVDT displacement transducers have been designed primarily for use in the ratiometric configuration and have a compact size, with stroke lengths from 5mm to 150mm. Suitable for clamp mounting, the AF111 range has a threaded, unguided core assembly to simplify installation. Suited to numerous applications, such as vehicle research, and test rigs.

## PERFORMANCE

<b>Electrical stroke E</b>	mm	<b>5</b>	<b>15</b>	<b>25</b>	<b>50</b>	<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>
	±	<b>2.5</b>	<b>7.5</b>	<b>12.5</b>	<b>25.0</b>	<b>37.5</b>	<b>50.0</b>	<b>62.5</b>	<b>75.0</b>
<b>Input voltage and frequency</b>		1 to 10VRMS at 400Hz to 12.5kHz (sinewave)							
<b>Insulation resistance</b>		Greater than 100MΩ at 500Vdc							
<b>Operational temperature</b>	°C	-35 to +125							
<b>Storage temperature</b>	°C	-55 to +135							
<b>Vibration</b>		RTCA/DO - 160C, Section 8, Fig 8 - 1 Curve C (Random), 10 - 2000Hz, 4.12g rms RTCA/DO - 160C, Section 8, Fig 8 - 3 Curve L (Sine), 10 - 2000Hz, 3g rms							
<b>Environmental protection</b>		IP66							
<b>Electrical output R proportional to position</b>		$R = \frac{V_a - V_b}{V_a + V_b}$							
<b>Electrical output R at extremes from null ±1% total stroke</b>		0.3	0.3	0.4	0.4	0.6	0.6	0.6	0.6
<b>Non-linearity ±% total stroke</b>		0.25	0.25	0.25	0.25	0.25	0.125	0.125	0.125
<b>Secondary coil output voltage</b>		3.3VRMS maximum							
<b>Input impedance</b>		Greater than 300Ω							
<b>Load resistance (per coil)</b>		Greater than 50kΩ (non reactive)							
<b>Temperature error maximum % total stroke/°C</b>		0.0012	0.0012	0.0012	0.0018	0.0018	0.0035	0.0030	0.0030

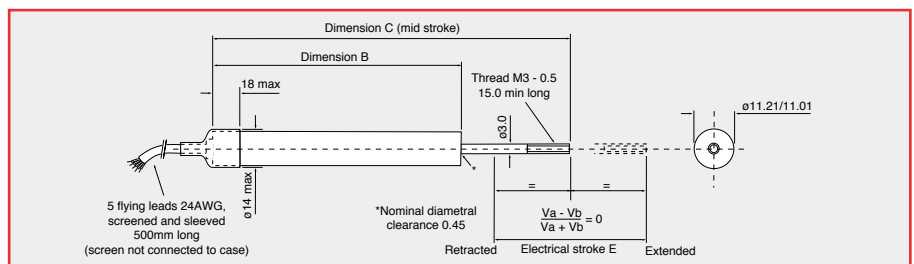
## OUTPUT SCHEMATIC

### Ratiometric configuration



## DIMENSIONS

Note: drawings not to scale



<b>Electrical stroke E</b>	mm	<b>5</b>	<b>15</b>	<b>25</b>	<b>50</b>	<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>
<b>Mechanical stroke M (non captive shaft)</b>	mm	<b>9</b>	<b>19</b>	<b>29</b>	<b>54</b>	<b>79</b>	<b>104</b>	<b>129</b>	<b>154</b>
<b>Dimension B</b>	mm	55	65	80	105	150	175	215	240
<b>Dimension C</b>	mm	75	90	110	147.5	205	242.5	295	332.5
<b>Weight (maximum)</b>	g	45	50	55	67	90	100	120	140

## AVAILABILITY

Normally available from stock

## ORDERING CODE

**AF111/.....**

Electrical stroke (total) mm

## ELECTRICAL CONNECTIONS

See AF145 page 15

# AF145<sub>LVDT</sub>

The AF145 range of high accuracy LVDT displacement transducers have been designed primarily for use in the ratiometric configuration, and have a compact size, with stroke lengths from 5mm to 150mm. The AF145 has self-aligning rod end bearing mounting, with an outer sliding sleeve which protects the movable core whilst enhancing the rigidity of the transducer during operation. Suited to harsh automotive and industrial environments.

## PERFORMANCE

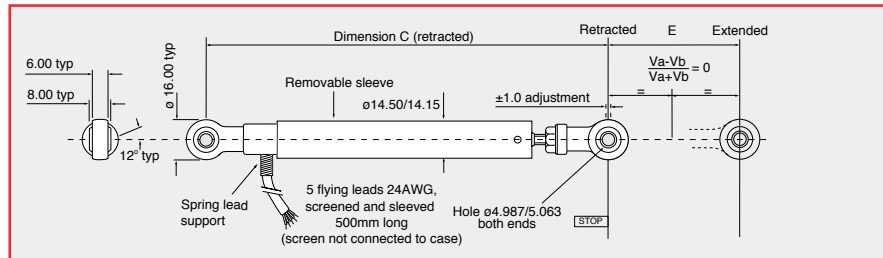
<b>Electrical stroke E</b>	mm	<b>5</b>	<b>15</b>	<b>25</b>	<b>50</b>	<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>
	±	<b>2.5</b>	<b>7.5</b>	<b>12.5</b>	<b>25.0</b>	<b>37.5</b>	<b>50.0</b>	<b>62.5</b>	<b>75.0</b>
<b>Input voltage and frequency</b>		1 to 10VRMS at 400Hz to 12.5kHz (sinewave)							
<b>Insulation resistance</b>		Greater than 100MΩ at 500Vdc							
<b>Operational temperature</b>	°C	-35 to +125							
<b>Storage temperature</b>	°C	-55 to +135							
<b>Vibration</b>		RTCA/DO - 160C, Section 8, Fig 8 - 1 Curve C (Random), 10 - 2000Hz, 4.12g rms RTCA/DO - 160C, Section 8, Fig 8 - 3 Curve L (Sine), 10 - 2000Hz, 3g rms							
<b>Environmental protection</b>		IP66							
<b>Electrical output R proportional to position</b>		$R = \frac{V_a - V_b}{V_a + V_b}$							
<b>Electrical output R at extremes from null ±1% total stroke</b>		0.3	0.3	0.4	0.4	0.6	0.6	0.6	0.6
<b>Non-linearity ±% total stroke</b>		0.25	0.25	0.25	0.25	0.25	0.125	0.125	0.125
<b>Secondary coil output voltage</b>		3.3VRMS maximum							
<b>Input impedance</b>		Greater than 300Ω							
<b>Load resistance (per coil)</b>		Greater than 50kΩ (non reactive)							
<b>Temperature error maximum % total stroke/°C</b>		0.0012	0.0012	0.0012	0.0020	0.0020	0.0030	0.0030	0.0030

## OUTPUT SCHEMATIC

See AF111 page 14

## DIMENSIONS

Note: drawings not to scale



<b>Electrical stroke E</b>	mm	<b>5</b>	<b>15</b>	<b>25</b>	<b>50</b>	<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>
<b>Mechanical stroke M (non captive shaft)</b>	mm	<b>9</b>	<b>19</b>	<b>29</b>	<b>54</b>	<b>79</b>	<b>104</b>	<b>129</b>	<b>154</b>
<b>Dimension C retracted</b>	mm	100	110	125	150	195	220	260	285
<b>Weight (maximum)</b>	g	65	80	90	115	155	175	200	220

## AVAILABILITY

Normally available from stock

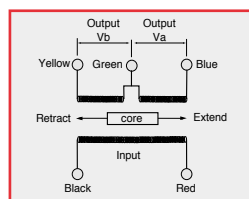
## ORDERING CODE

**AF145/.....**

Electrical stroke (total) mm

## ELECTRICAL CONNECTIONS

5 flying leads 24AWG, screened and sleeved 500mm long



## Phasing notes

With blue and black leads common, the output on the yellow lead will be in-phase with the red lead (input) as the shaft retracts from the null position.