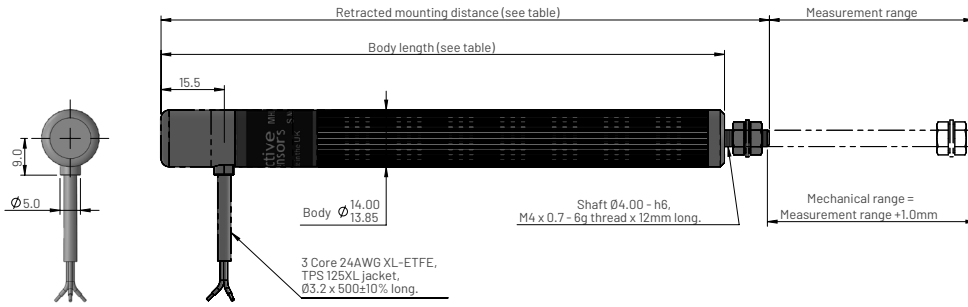


# MHL1400 Series - Magnetic Hall linear position sensor (50mm to 300mm range)

Contactless Technology. 14mm Ø Body. 4mm Ø Operating shaft.

## Dimensions for MHL1421 - Body clamp mounting



Measurement range	Body length	Retracted mounting distance	Approx. weight (grams)
50	138	149	46.5
75	163	174	52.5
100	188	199	58.5
125	213	224	64.5
150	238	249	70.5
175	263	274	76.5
200	288	299	82.5
225	313	324	88.5
250	338	349	94.5
300	388	399	106.5

### Ordering code

MHL1421 XV-XXX

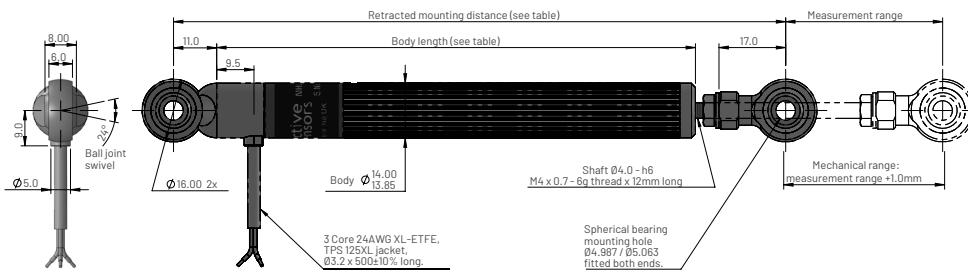
Output option (see graph)

L = Retracted output increases

R = Extended output increases

Measurement range in mm

## Dimensions for MHL1422 - Rod end mounting



Measurement range	Body length	Retracted mounting distance	Approx. weight (grams)
50	132	166	52
75	157	191	58
100	182	216	64
125	207	241	70
150	232	266	76
175	257	291	82
200	282	316	88
250	332	366	100
300	382	416	112

### Ordering code

MHL1422 XV-XXX

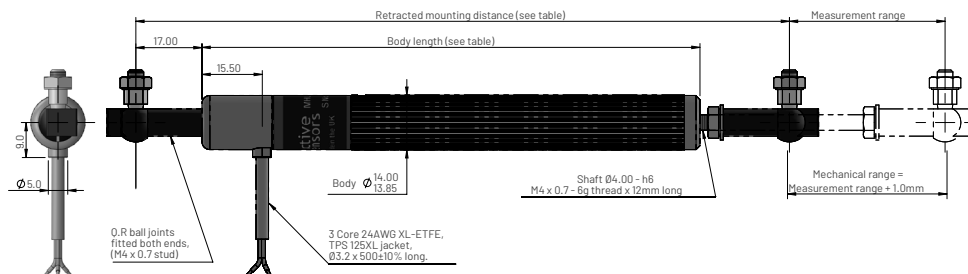
Output option (see graph)

L = Retracted output increases

R = Extended output increases

Measurement range in mm

## Dimensions for MHL1426 - Quick release ball joint



Measurement range	Body length	Retracted mounting distance	Approx. weight (grams)
50	138	178	54.5
75	163	203	60.5
100	188	228	66.5
125	213	253	72.5
150	238	278	78.5
175	263	303	84.5
200	288	328	90.5
250	338	378	102.5
300	388	428	114.5

### Ordering code

MHL1426 XV-XXX

Output option (see graph)

L = Retracted output increases

R = Extended output increases

Measurement range in mm

# MHL1400 Series - Magnetic Hall linear position sensor (50mm to 300mm range)

Contactless Technology. 14mm Ø Body. 4mm Ø Operating shaft.

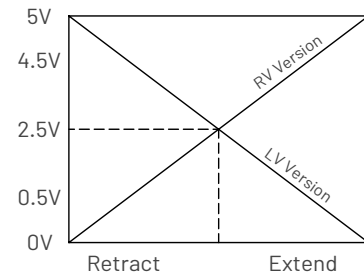
## Electrical and mechanical specification for MHL1400

Parameters	Values	Units
Input specification		
Supply voltage (Vs)	5.0±5% regulated      8 to 30 unregulated	Vdc
Over voltage protection	Up to 50	Vdc
Supply current	During power on settlement <100, normal operation up to 50mm = 30. Add 10 for each extra 25mm of sensor range	mA
Reverse polarity protection	Up to -50	Vdc
Power on settlement time	<250	ms
Input voltage rise time	0.25 minimum	V/ms
Output specification		
Output type	Analogue voltage	
Output direction	See output characteristics graph	
Voltage output (Vout)	0 to Vs      0 to 5	Vdc
Line regulation	Ratiometric with Vs      <0.01 %FS	
Monotonic range	1 to 99% measurement range	
Load resistance	>10K	Ohms
Output noise	<5	mV RMS
Performance specification		
Resolution	0.025	% of measurement range
Sensitivity (Note 2)	Ideal span (5000mV) / Measurement range(mm)	mV/mm
Sensitivity tolerance	<±2.5	%FS
Non-Linearity (Note 2)	<±0.5	%FS
Temperature coefficient (Vout)	<±0.003      <±0.011	%FS/°C
Update rate (nominal)	800	Hz
General specification		
IP rating	IP68 and IP69K	
Shaft operation force (typical)	20	grams
Life (shaft in bush bearing)	>20 million cycles	dependent on environment
Dither life	Contactless - no degradation	
Operational temperature	-40 to +125      See de-rating graph	°C
Storage temperature	-55 to +150	°C
Materials	Sensor	Case: Anodised aluminium 6063 T5, Shaft: Stainless steel 303
	Rod-ends	Body: Anodised aluminium 6026, Spherical ball: Nickel plated steel
	QR ball joints	Body: Nylon, Ball joint: Steel BZP

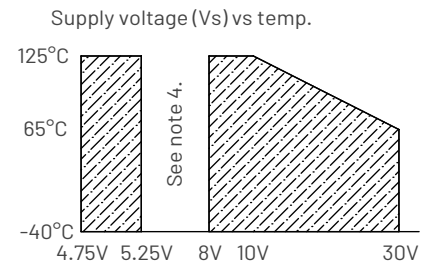
## Electrical connections (see note 1)

Wire Colour	Function
Red	Supply Voltage (Vs)
White	Output Voltage (Vout)
Black	Ground (0V)

## Output characteristics



## Temperature de-rating



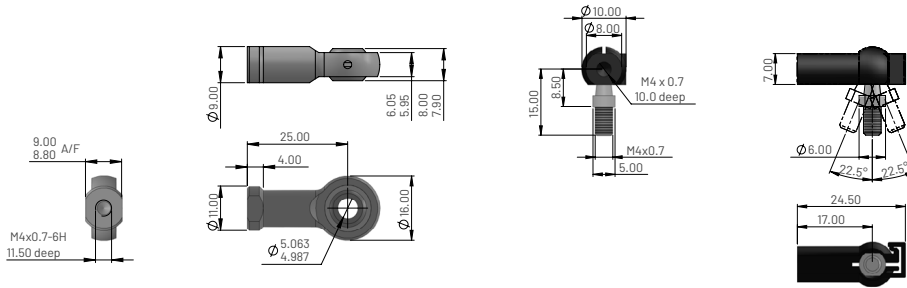
## Notes

1. Incorrect wiring may cause internal damage.
2. Sensitivity and non-linearity are calculated from least squares best fit method.
3. Due to the Hall effect technology used in this device, close proximity of ferrous materials and magnetic fields may influence output.
4. Do not operate sensor between 5.25V and 8V.
5. General dimension tolerance is ±0.25mm.

# MHL1400 Series - Magnetic Hall linear position sensor (50mm to 300mm range)

Contactless Technology. 14mm Ø Body. 4mm Ø Operating shaft.

## Accessories



### 5mm rod end

Ordering code: PT1322-0104-19

Material	
Housing	Aluminium alloy, anodised black
Ball	Steel BS970 230M07, electroless nickel plated
Race	Gr nylon

### Quick release ball joint

Ordering code: JN029-003

Material	
Body	PA66, Black
Ball stud	Hardened carbon steel
Coating	zinc plated, clear passivated

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