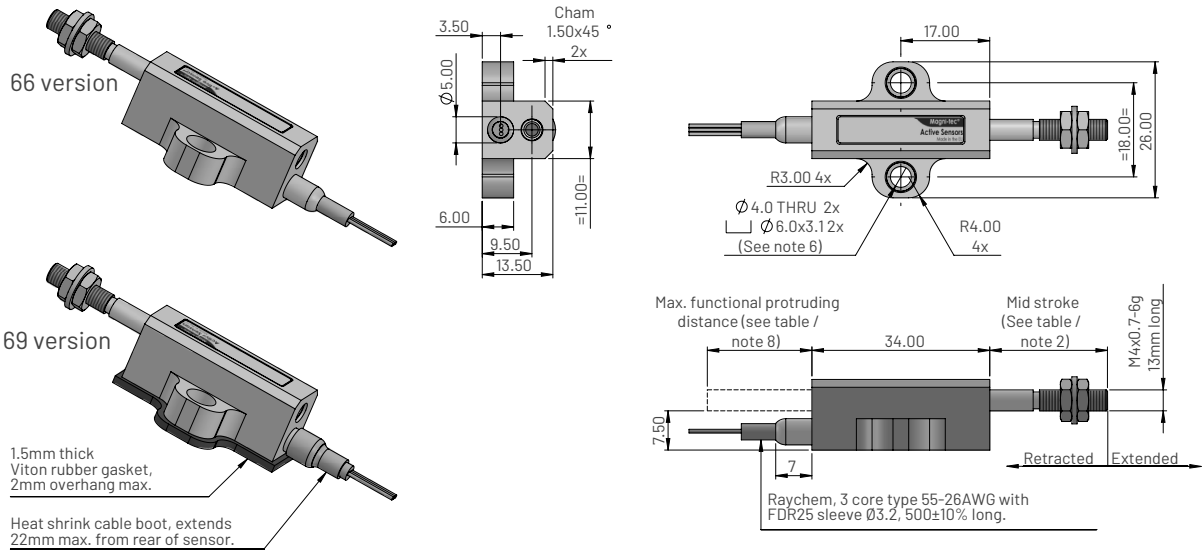


Dimensions for MHL1211 - Free shaft, 5mm to 40mm measurement range



1.5mm thick Viton rubber gasket, 2mm overhang max.

Heat shrink cable boot, extends 22mm max. from rear of sensor.

Measurement range	Mid stroke (mm)	Mid stroke output (V)	Max shaft rear protrusion (mm)	Approx. weight (grams)
5 - 15	22.5	2.5±0.130	7.0	20
16 - 25	27.5	2.5±0.080	17.0	22
26 - 40	35.0	2.5±0.080	32.5	25

Ordering information

**MHL1211 XV-XX-6X**

Output option (see graph)

L = Retracted output increases

R = Extended output increases

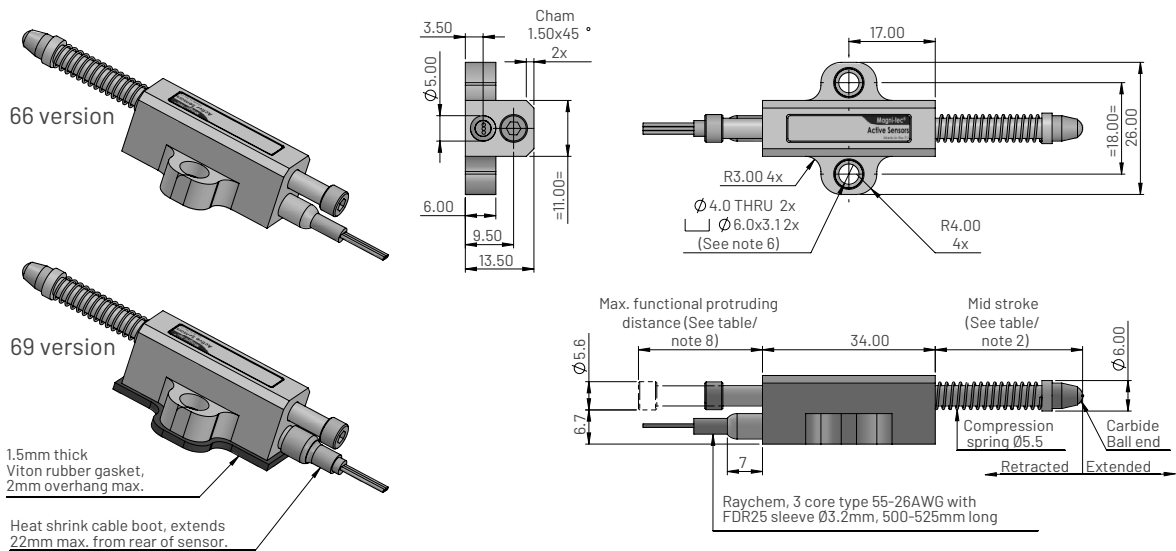
Measurement range in mm

IP Rating

66 = Standard

69 = Extreme

Dimensions for MHL1213 - Sprung shaft, 5mm to 25mm measurement range



1.5mm thick Viton rubber gasket, 2mm overhang max.

Heat shrink cable boot, extends 22mm max. from rear of sensor.

Measurement range	Mid stroke (mm)	Mid stroke output (V)	Max shaft rear protrusion (mm)	Approx. weight (grams)
5 - 15	29.0	2.5±0.130	19.0	20
16 - 25	34.0	2.5±0.080	29.0	22

Ordering information

**MHL1213 XV-XX-6X**

Output option (see graph)

L = Retracted output increases

R = Extended output increases

Measurement range in mm

IP Rating

66 = Standard

69 = Extreme

Electrical and mechanical specification for MHL1211 and MHL1213

Input Specification			
Supply voltage (Vs)	5.0±10% regulated	8 to 30 unregulated	VDC
Over voltage protection	Up to 50		VDC
Supply current	<15		mA
Reverse polarity protection	Up to -10		VDC
Power on settlement time	<100		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)	10 - 90%	0.5 - 4.5	VDC
Line regulation	Ratiometric with Vs	<0.01% FS	
Monotonic range	0 - 100% measurement range		
Load resistance	>10K		Ohms
Output noise	<5		mV RMS
Performance Specification			
Measurement range MHL1211	5 to 40 in 1mm increments		mm
Measurement range MHL1213	5 to 25 in 1mm increments		mm
Resolution	0.025		% of measurement range
Sensitivity tolerance (see note 4 and 5)	<±2.5		%FS
Non-Linearity (see note 5)	<±1		%FS
Temperature coefficient (Vout)	<±0.003	<±0.011	%FS/°C
Update rate (nominal)	500		Hz
Max operating speed	1000		mm/s
General Specification			
IP rating	IP66 or IP68 / IP69K as per ordering information		
Life (shaft bearing)	25 million cycles		(dependent on environment)
Dither life	Contactless - no degradation		
Operational temperature	-40 to +150	See de-rating graph	~C
Storage temperature	-55 to +150		~C
Materials	Case - PBT glass filled (black) Shaft - Stainless steel 303		
Max torque screw setting (M3) for 69 version, gasket.	0.8		Nm

Notes

1. Incorrect wiring may cause internal damage.
2. When the sensor is positioned as shown the instrument is mid-travel (2.5V output).
3. Do not operate between 5.5V and 8V.
4. Ideal sensitivity (mV/mm) is calculated from the ideal span of 4000mV (4.5-0.5VDC) divided by the measurement range in mm.
5. Sensitivity and Non-linearity are calculated from least squares best fit method.
6. Secured using 2 x M3x10 cap head screws (supplied).
7. Due to hall effect technology used in this device, ferrous materials or magnetic fields close to the sensor may influence output.
8. Ensure cable is routed away from protruding shaft.
9. General dimension tolerance is ±0.25mm.

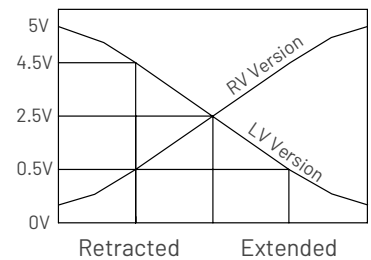
**Contact (Europe)**  
Active Sensors Ltd,  
Unit 12, Wilverley Road,  
Christchurch, Dorset,  
BH23 3RU, UK

**Contact (North America)**  
Active Sensors Inc,  
8520 Allison Pointe Blvd, Suite 220,  
Indianapolis,  
IN 46250, USA

Electrical connections (see note 1)

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

Output characteristics



Temperature de-rating

Supply voltage(Vs) vs temp

