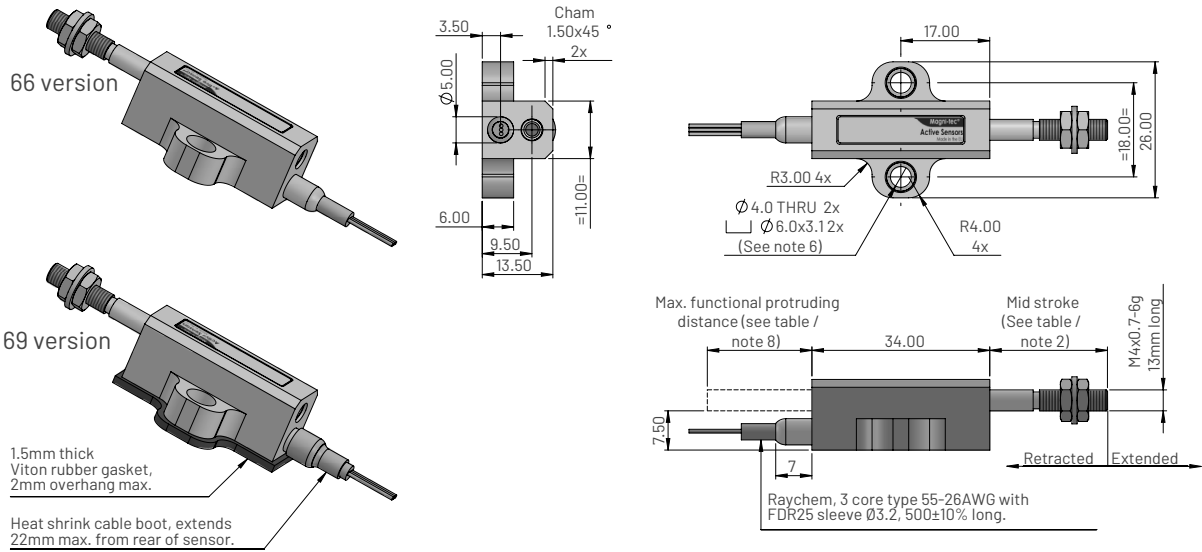


Dimensions for MHL1211 - Free shaft, 5mm to 40mm measurement range



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

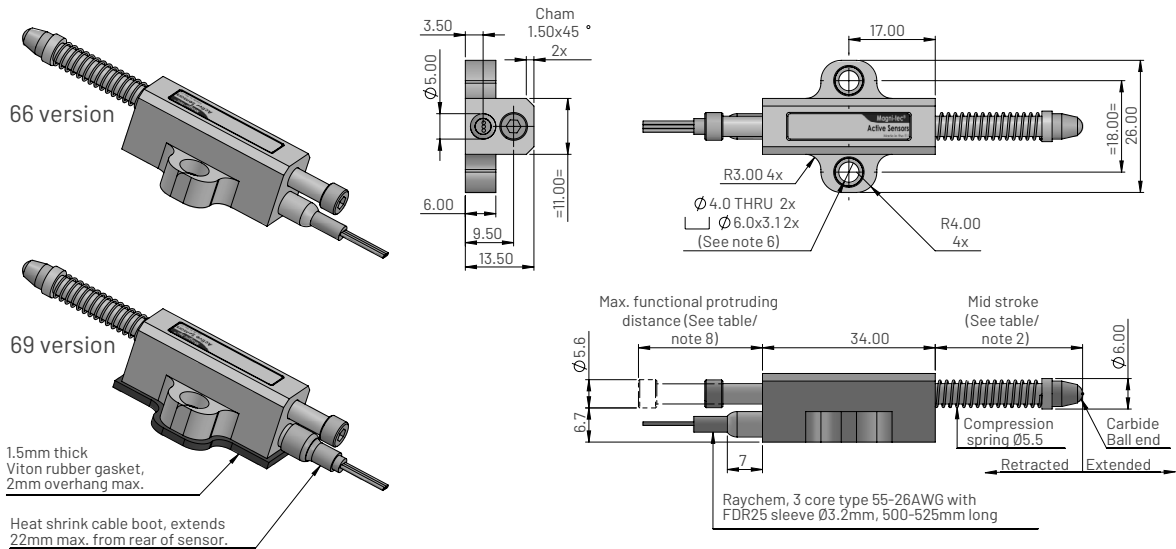
Measurement range in mm

IP Rating

66 = Standard

69 = Extreme

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



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	
Materials	Case - PBT glass filled (black) Shaft - Stainless steel 303	
Max torque screw setting (M3) for 69 version, gasket.	0.8	Nm

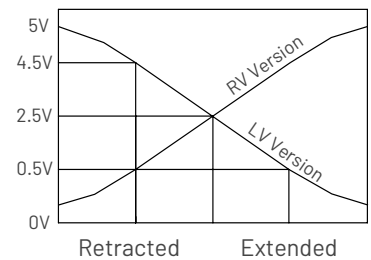
Notes

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.

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

