MS-13-SR series Linear Potentiometer Sensors

HYDROTECHNIK UK LIMITED

- ***Rugged Construction***
- ***Compact Design***
- ***Sealed to IP67***
- ***Long Life***
- ***Excellent Linearity***
- ***Regulated Output Options***

The MS13-SR series of linear potentiometers are designed to withstand the harsh environments of motorsport, testing and industrial applications. Using proven 'Conductive Plastic' technology, the sensors offer high performance and reliability at operational temperatures up to +150°C

The rugged, yet compact 13mm diameter MS13-SR is available with stroke lengths up to 75mm, flange mount, a choice of potentiometer and regulated outputs, sealing up to IP67.

Specifications

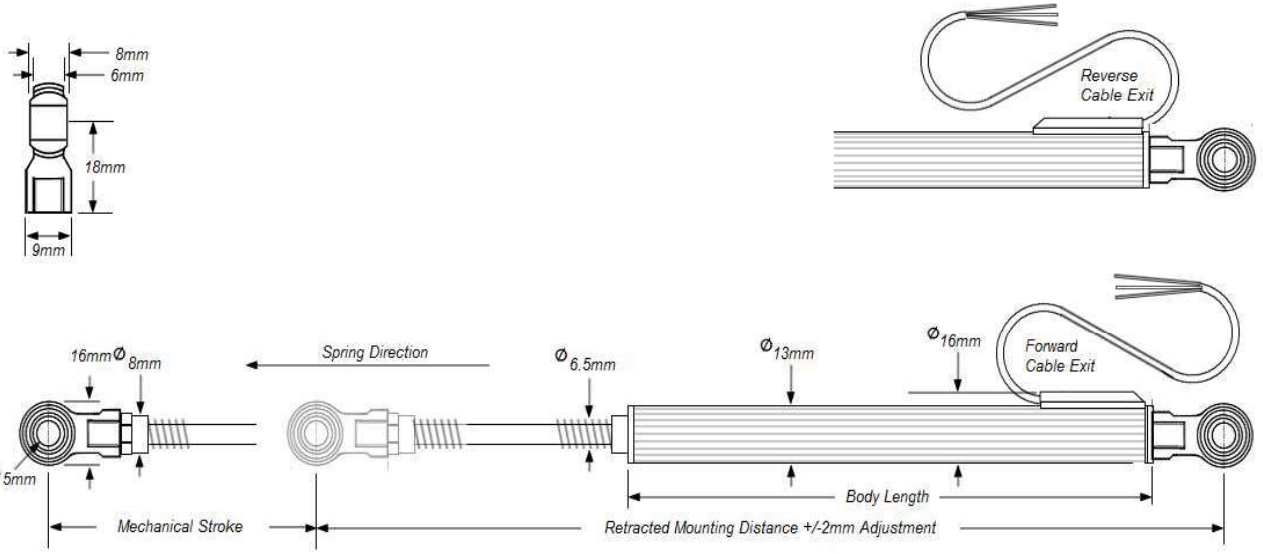
Electrical (Potentiometer Output)	
Technology	Conductive plastic
Max. Supply Voltage	40VDC
Resolution	Essentially infinite
Recommended Wiper Current	<10µA
Output Signal	Potentiometer (voltage divider)
Repeatability	≤0.01mm
Independent Linearity	≤0.5%

Electrical (Regulated Output)	
Technology	Conductive plastic with 'on board' signal conditioning
Supply Voltage	6-30VDC (4-20mA, 0-5V output) ; 11-30VDC (0-10V output)
Resolution	Essentially infinite
Reverse Polarity Protection	Yes
Output Signal	4-20mA ; 0-5VDC ; 0-10VDC regulated output options
Repeatability	≤0.01mm
Independent Linearity	≤0.5%

Mechanical	
Operating Temperature	-40°C - +150°C (Potentiometer output) ; -30°C - +125°C (4-20mA, 0-5V, 0-10V output)
Stroke lengths	25mm – 200mm
Operational Speed	10m/s max
Electrical & Mechanical Life	>25 million operations (depending on installation and environmental conditions)
Housing Material	Aluminium
Shaft & Spring Material	Stainless steel
Sealing	IP54 (felt) ; IP65 (2 x Viton O ring) ; IP67 (PTFE U spring, Viton O ring)

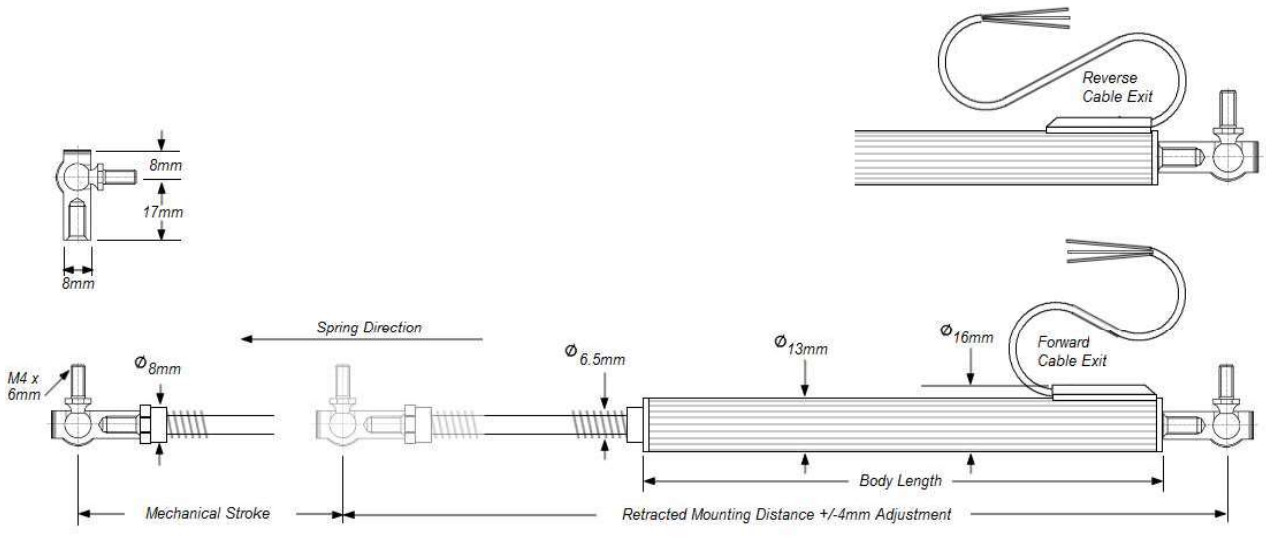
MS13-SRC

Electrical Stroke (mm)	25	50	75
Retracted Mounting Distance (mm)	184.5	234.5	284.5
Min. Mechanical Stroke (mm)	27	52	77
Body Length (mm)	97	122	147
Approx. Weight Without Cable (g)	49	54	59
Resistance (KΩ +/-20%	1.7	3.4	5
Mechanical Fixing	Compact Rod End Bearings - Ø5mm		



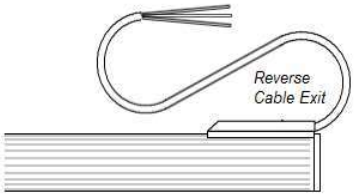
MS13-SRP

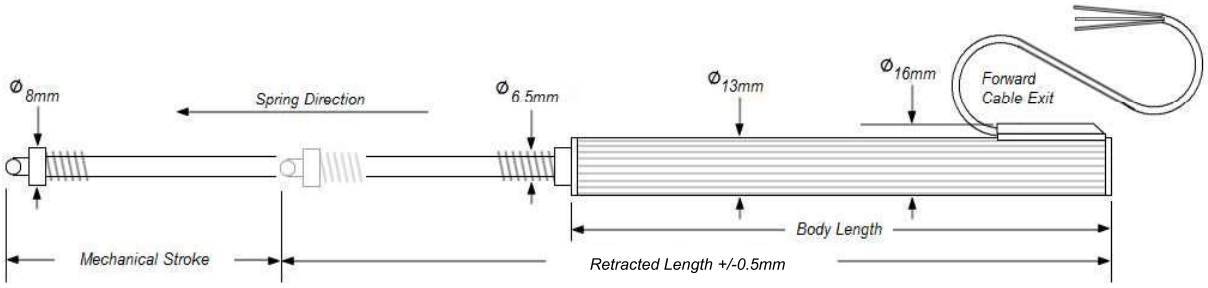
Electrical Stroke (mm)	25	50	75
Retracted Mounting Distance (mm)	184.5	234.5	284.5
Min. Mechanical Stroke (mm)	27	52	77
Body Length (mm)	97	122	147
Approx. Weight Without Cable (g)	49	54	59
Resistance (KΩ +/-20%)	1.7	3.4	5
Mechanical Fixing	Pop Joints M4 x 6mm		



MS13-SRA

Electrical Stroke (mm)	25	50	75
Retracted Length (mm)	156.5	201.5	251.5
Min. Mechanical Stroke (mm)	27	52	77
Body Length (mm)	97	122	147
Approx. Weight Without Cable (g)	42	47	52
Resistance (KΩ +/-20%)	1.7	3.4	5
Shaft End	Probe Ball Tip		





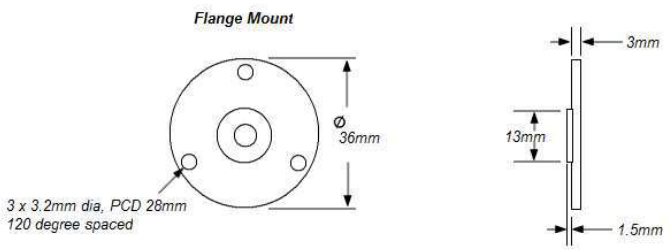
Flange Mount

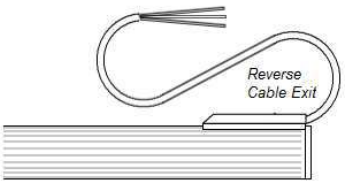
Compatible with MS13-SRC, MS13-SRP, MS13-SRA - Refer to model for specifications, except below

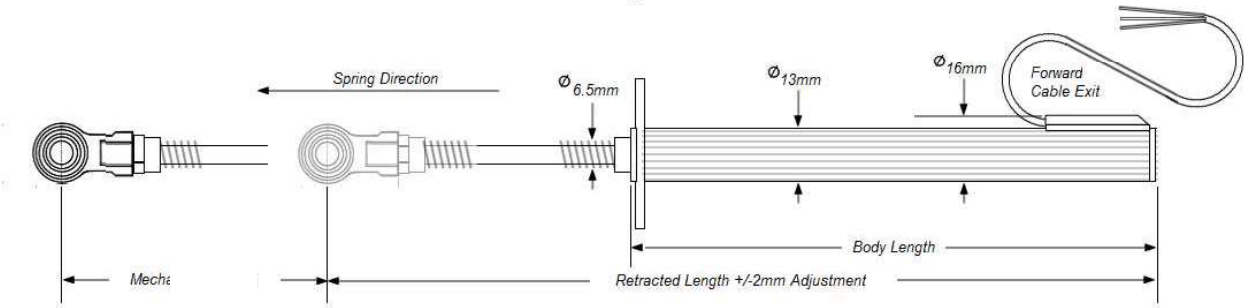
Rod End Bearing (MS13-SRC) or Pop Joint (MS13-SRP) is removed from the rear of the sensor

Retracted Length (mm) = Retracted Mounting Distance -18mm (13SRC) , -17mm (13SRP)

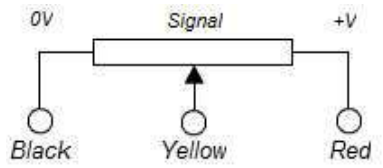
Body Length (mm) = +2.5mm to all models







Electrical Connection (Potentiometer output)



Wiring	+Ve Supply	0V Supply (GND)	Signal	
Single Output	RED	BLACK	YELLOW	
Dual Output (option)	BROWN	BLUE	WHITE	(Green wire = Not Used)
Output Signal	Output signal may be reversed by swapping connections to the Red & Black and Brown & Blue wires. DO NOT connect +Ve supply to the Yellow or White wires, as this will cause damage to the sensor element.			

Electrical Connection (0-5VDC ; 0-10VDC output)

Wiring	+Ve Supply	0V Supply (GND)	Signal
Single Output	RED	BLACK	YELLOW

Electrical Connection (4-20mA output) 2 wire

Wiring	+Ve Supply	0V Supply (GND)	
Single Output	RED	BLACK	(Yellow wire = Not Used)

Electrical Cable

Cable Type	Raychem 55A, 26AWG, FDR 25 sleeve
Cable Length	Approximately 500mm

Accessories

Protection Sleeve - SLV For use with models MS13-SRC, MS13-SRP

Material	Carbon fibre, Peek Ø16mm

Body clamp - DG8 For use with model MS13-SRA

Material	Aluminium, Rubber Lined

Ordering Information

Please use the chart below to construct your product code…

MS13-SRA – 050 – L50 – IP65 – F010 – I420

Model

MS13-SRC	= Compact end rod bearings – Ø5mm
MS13-SRP	= Pop joints M4 x 6 mm
MS13-SRA	= Probe ball tip

Stroke length

025	= 25 mm
050	= 50 mm
075	= 75 mm

Linearity

L50	= +/- 0.50% f.s.

Seal rating

IP54
IP65
IP67

Cable exit direction

F	= Forward facing cable exit
R	= Reverse facing cable exit

Cable length

005	= 500 mm (standard)
020	= 2000 mm

Or any other length

Options

I420	= 4-20mA output
U005	= 0-5V output
U010	= 0-10V output
DUAL	= Dual output – 6 wire (only potentiometer output)