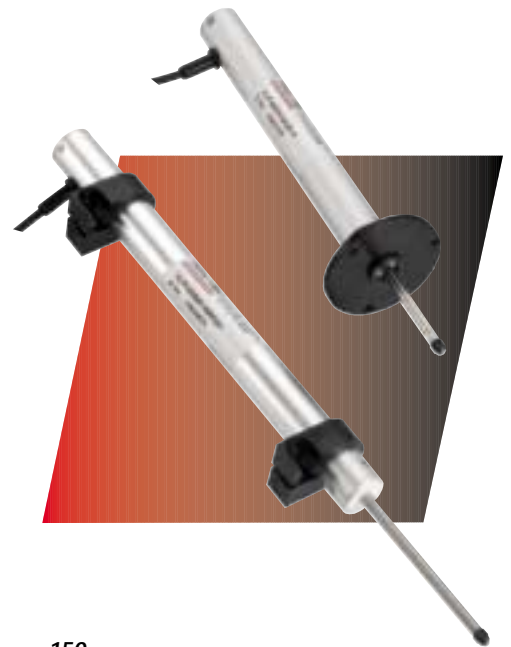


SPRING RETURN LINEAR DISPLACEMENT SENSOR

HLP190 Linear Potentiometers

The HLP190 range of hybrid linear potentiometers provides the facility for single or dual electrical output with a body diameter of only 19mm. Stroke lengths are from 25mm to 150mm, with a choice of body clamp (BS) or flange (FS) mounting. This model is supplied with a spring loaded shaft, biased to the fully extended position. Suited to a wide range of industrial applications for medium stroke length requirements – especially structural monitoring data acquisition.



PERFORMANCE

Electrical stroke E	mm	25	50	75	100	125	150
Resistance $\pm 10\%$	k Ω	1	2	3	4	5	6
Independent linearity	$\pm\%$	0.3	0.3	0.2	0.2	0.2	0.2
Power dissipation at 20°C	W	0.5	1.0	1.5	2.0	2.5	3.0
Applied voltage maximum	Vdc	22	44	67	74	74	74
Electrical output		Single or dual – minimum of 0.5% to 99.5% applied volts					
Resolution		Virtually infinite					
Hysteresis (repeatability)		Less than 0.01mm					
Phasing between elements		0.5mm total in retracted position (multi output units)					
Operational temperature	°C	-30 to +85					
Output smoothness		To MIL-R-39023 grade C 0.1%					
Insulation resistance		Greater than 100M Ω at 500Vdc					
Operating mode		Voltage divider only - see Circuit Recommendation below					
Wiper circuit impedance		Minimum of 100 x track resistance or 0.5M Ω (whichever is greater)					
Operating force maximum	gf	450	475	500	525	550	600
Life at 250mm per second		Typically greater than 100 million operations (50 x 10 ⁶ cycles) at 25mm stroke length					
Shaft velocity maximum	m/s	1					
Shaft seal		No seal fitted due to spring loaded probe action					

CIRCUIT RECOMMENDATION

Hybrid track potentiometers feature a high wiper contact resistance, therefore operational checks should be carried out only in the voltage divider mode. Hybrid track potentiometers should be used only as voltage dividers, with a minimum wiper circuit impedance of 100 x track resistance or 0.5M Ω (whichever is greater). Operation with wiper circuits of lower impedance will degrade the output smoothness and affect the linearity.

OPTIONS

Mounting	Body clamp (BS) or flange (FS)
Outputs	Single (1) or dual (2)
Stroke length	25 to 150mm in 25mm increments
Resistance	Standard value is 1k Ω per 25mm. Alternative values are possible – contact our sales team to discuss your application

AVAILABILITY

All standard configurations can be supplied rapidly from the factory - check with your local supplier for more details

ORDERING CODES

HLP190/...../...../...../.....

Mounting BS = Body clamp
 FS = Flange

Output 1 = Single
 2 = Dual

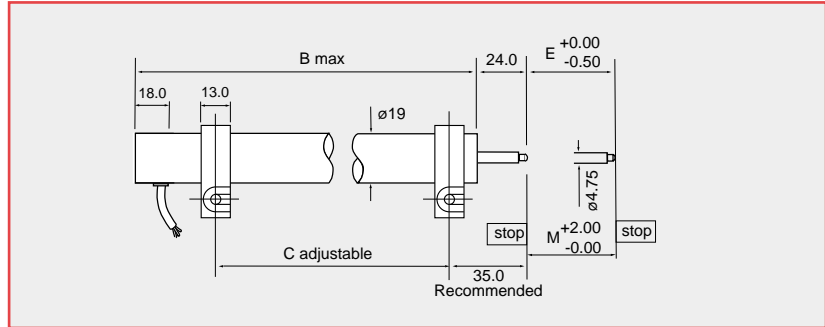
Stroke length mm

Resistance

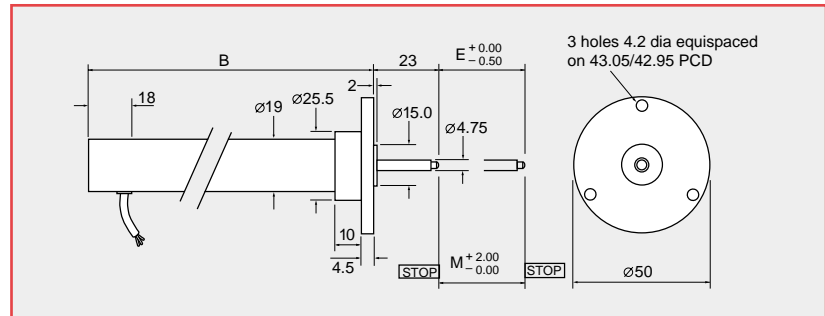
DIMENSIONS AND MOUNTING OPTIONS

Note: drawings not to scale

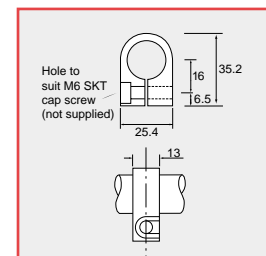
BODY CLAMP MOUNTING WITH SPRING LOADED SHAFT - HLP190/BS



FLANGE MOUNTING WITH SPRING LOADED SHAFT - HLP190/FS



Body clamp detail



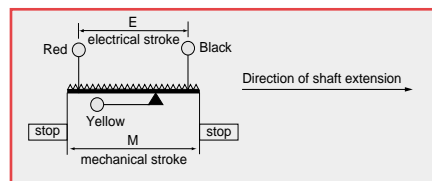
Mechanical stroke M	mm	25	50	75	100	125	150
Body length B							
Type BS	mm	155	205	230	255	305	355
Type FS	mm	156	206	231	256	306	356
Clamp spacing C[†]	mm	114	164	189	214	264	314
Weight approximate							
Type BS	g	115	135	150	180	195	210
Type FS	g	120	140	155	185	200	215

† recommended position

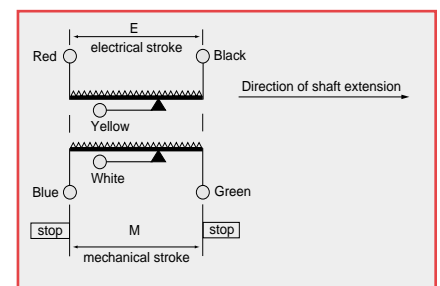
ELECTRICAL CONNECTIONS

3 core cable: PVC sheathed 0.5m long with ETFE insulated 19/0.15 cores (6 core cable for dual output version)

Single output



Dual output





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