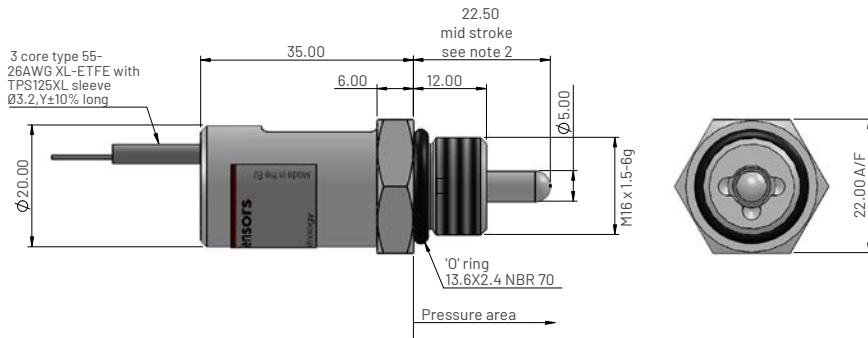


VHL2003 Series - Valve position sensor

Thread mounted. Sprung-loaded Shaft.

Dimensions for VHL2003-11-XX-Y-ZZZ - Hexagon case with a sprung loaded shaft



Ordering information

VHL2003-11-XX-Y-ZZZ

Stroke length

05 - 5mm to 10 - 10mm

Cable length 0 to 9

0 - 0.5m, 1 - 1m ... 9 - 9m

Output slope

See Output characteristics

Output signal

V1 - 0.5 - 4.5

Electrical and mechanical specification for VHL2003

Input specification

Supply voltage (Vs)	5.0±5% 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)	0.5 to 4.5	0.5 to 4.5	VDC
Line regulation	Ratiometric with Vs	<0.01	%FS
Monotonic range	0 to 100% measurement range		
Load resistance	>10K		Ohms
Output noise	<5		mV RMS

Performance specification

Measurement range	5 to 10 in 1mm increments		mm
Resolution	0.025		% of measurement range
Sensitivity tolerance (Note 3, 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	1		m/s

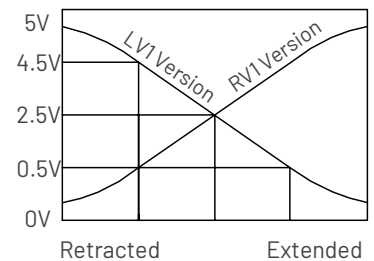
General specification

General specification:		
IP rating	IP68 and IP69K	
Shaft operation force (typical)	500 - 600	grams
Life (shaft in bush bearing)	25 million cycles	dependent on environment
Dither life	Contactless - no degradation	
Operational temperature	-40 to +150	See de-rating graph
Storage temperature	-55 to +150	°C
Weight (approx.)	50	grams
Torque setting	40	Nm
Working pressure	300	bar
Materials	Case - Anodised aluminium Electronic cover - PBT glass filled (black) Shaft - Stainless steel 303	

Electrical connections (see note 1)

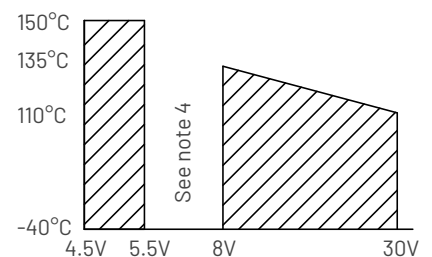
Wire Colour	Function
Red	Supply Voltage (Vs)
White	Output Voltage (Vout)
Black	Ground

Output characteristics



Temperature de-rating

Supply voltage(Vs) vs temp



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. Ideal sensitivity (mV/mm) is calculated from the ideal span of 4000mV (4.5-0.5VDC) divided by the measurement range in mm.
4. Do not operate between 5.5V and 8V.
5. Sensitivity and non-linearity are calculated from least squares best fit method.
6. Due to the Hall effect technology used in this device, close proximity of ferrous materials and magnetic fields may influence output.
7. General dimension tolerance is ±0.25mm.