

Hydraulic Displacement Transducer

HYDRASTAR is a non-contact, fast response, shock resistant displacement transducer designed for mounting inside hydraulic or pneumatic cylinders.

Designed to fit in applications where space is limited, its total length is only 2.6" (6.3 cm) longer than the measurement length. This includes bulkhead mounting flange and non-linear portion of the probe.

The core is mounted in a gun drilled hole in the piston and piston rod. As the core/piston moves over the transducer, a proportional voltage is generated by the signal processor.

Patented signal processing allows it to measure high speed displacement with less error than magnetostrictive sensors.

FEATURES

- Fast 35 μ S response
- $\pm 0.15\%$ linearity, ($\pm 0.10\%$ optional)
- Dynamic temperature compensation
- Body length only 2.6" longer than stroke
- Compact design
- Absolute continuous measurement
- Single coil wound with large gauge wire

BENEFITS

- Monitor high speed motions
- Accurate measurements
- Stable over a wide temperature range
- Measure high speed displacement
- Less sensitive to temperature extremes
- Accurate position at power-up
- Better shock and vibration resistance



APPLICATIONS

- Hydraulic cylinders
- Hydraulic valves
- Pneumatic cylinders
- Pneumatic valves
- Material handling systems
- Clevis cylinders
- Liquid level measurement
- Military applications
- Aerospace light controls
- X-Y positioning feedback

Technical Specifications

Models	HS1K	HS2K	HS3K	HS4K	HS5K	HS6K	HS9K	HS12K	
Nominal linear Range	2 (51)	4 (101)	6 (152)	8 (203)	10 (254)	12 (305)	18 (457)	24 (610)	inches (mm)

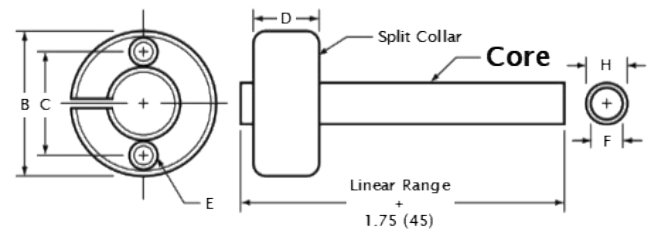
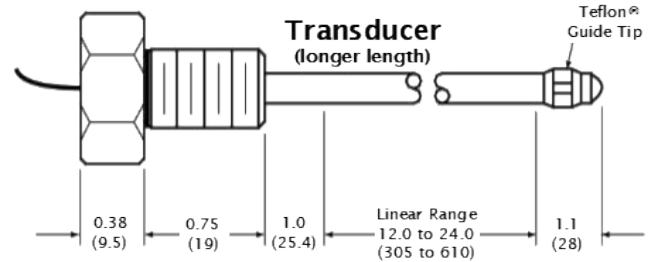
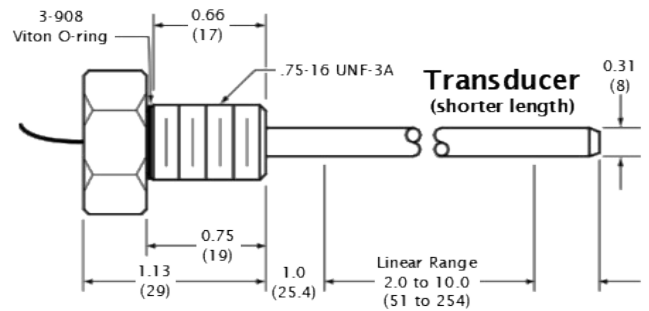
For DC Units, pair SCDR150 with a HS model, for more details contact Sentech (See SCDR150 datasheet)

Obsoleted Models

Models, Voltage Output, $\pm 10V$ DC, 0-10V DC	DCHS2	DCHS4	DCHS6	DCHS8	DCHS10	DCHS12	DCHS18	DCHS24
Models, Voltage Output, 4-20mA	DCIHS2	DCIHS4	DCIHS6	DCIHS8	DCIHS10	DCIHS12	DCIHS18	DCIHS24

PERFORMANCE

Non-Linearity	$< \pm 0.10\%$ standard ($\pm 0.05\%$ optional*)
Resolution	Infinite
Repeatability	0.003% of full scale typical
Compensated Temperature Range	25°F to 175°F (-5°C to 80°C)
Operating Temperature Range	-60°F to 257°F (-50°C to 125°C)
Vibration Resistance	Meets MIL-STD 810C, Figure 514-5, Curve AK Time Schedule II Random Vibration Test (Overall $g_{rms}=20.7$)
Shock Resistance	50 g's peak (6 milliseconds) half sine



ELECTRICAL

Excitation	112 kHz
Frequency Response	DC to 10,000 Hz (-3 dB)
Response Time	35 μ S
Connections	10 ft (3m) coaxial cable: cable dia: 0.1" (2.5mm) with Mini DIN connector

PHYSICAL

Core Material	Aluminum
Transducer Construction	Stainless Steel
Maximum Operating Pressure	5000 psi (350 bar)

	MODELS	
	HS1000 - HS 5000	HS6000 & Up
B	1.06 (26.9)	1.25 (31.7)
C	0.750 (19.05)	0.875 (22.2)
D	0.31 (7.9)	0.38 (9.6)
E	0.147 (3.73) Dia. & 0.246 (6.25) Dia. c' bore 0.15 (3.8) Deep, 2 places	0.175 (4.44) Dia. & 0.287 (7.29) Dia. c' bore 0.18 (4.6) Deep, 2 places
F	0.340 \pm 0.003 (8.64 \pm 0.08)	0.370 \pm 0.003 (9.40 \pm 0.08)
H	0.437 \pm 0.003 (11.12 \pm 0.08)	0.500 \pm 0.003 (12.70 \pm 0.08)

XX.XX = inches
(XX.XX) = mm

*Not available for HS1K

HydraStar and related products are protected by one or more of the following patents: U.S. 4,667,158; 4,327,350; 4,368,575; 4,912,409; 4,864,232; 4,866,378; 5,068,607; U.K. 2054954; Japan 1498268; France 8014767; 8101087. Additional U.S. and Foreign patents pending.

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