

# HCD Series Hermetically Sealed



The HCD Series LVDTs are impervious to dirt, water, steam spray and most corrosives. Tungsten inert gas (TIG) welding provides hermetic sealing that is free from oxidation-producing faults that may cause leakage. They have been qualified at pressures up to 1000 psi (70 bars) and are suitable for numerous high-pressure applications. They are terminated with a glass-sealed, MS-type terminal connector. The connector prohibits the core from passing completely through the coil assembly. HCD units have double magnetic shielding that makes them insensitive to external magnetic influences.



## FEATURES

- Hermetically Sealed by TIG
- CE Compliant
- Glass-Sealed MS.Type Connector
- Calibration Certificate supplied with all models

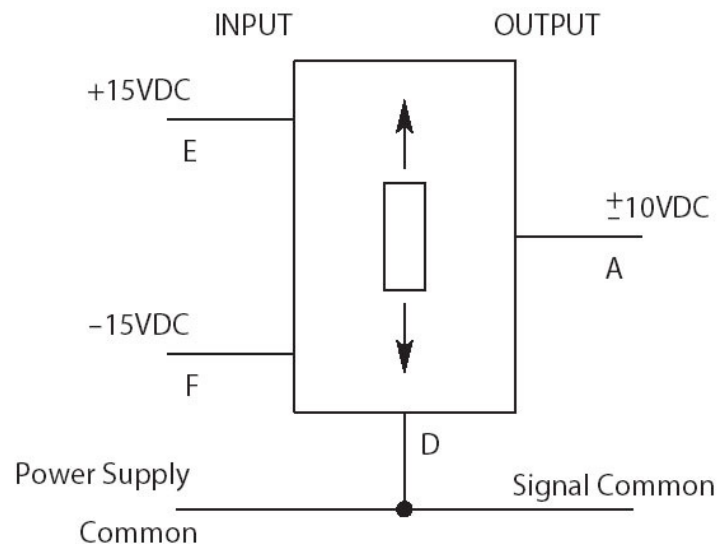
## APPLICATIONS

- Harsh Industrial Environments
- Ideal for Pressure Installations up to 1,000 psi
- Submersible with Appropriate Connector

## OPTIONS

- Metric Thread Core
- Captive Core Option for Convenient Installation
- Guided Core
- Small Diameter, Low Mass Core

## wiring



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## Specifications

<b>Input Voltage</b>	± 15 VDC (nominal), ±25 ma
<b>Operating Temperature Range</b>	32°F to 160°F (0°C to 70°C)
<b>Survival Temperature Range</b>	-65°F to 200°F (-55°C to 95°C)
<b>Null Voltage</b>	0 VDC
<b>Ripple</b>	Less than 25 mV rms
<b>Linearity</b>	0.25% full range
<b>Stability</b>	0.125% full scale
<b>Temperature – Coefficient of Scale Factor</b>	0.04%/°F (0.08 %/°C)
<b>Shock Survival</b>	250 g for 11 milliseconds half sine
<b>Vibration Tolerance</b>	10 g up to 2 kHz
<b>Coil Form Material</b>	High Density, Glass-Filled Polymer
<b>Housing Material</b>	AISI 400 Series Stainless Steel
<b>Electrical Termination</b>	6-pin Connector
<b>Output Impedance</b>	Less than 1 ohm

## Electrical

### Performance and Electrical Specifications<sup>1</sup>

HCD Series Model Number	Nominal Linear Range		Scale Factor		Response (-3 dB)
	Inches	mm	V/inch	V/mm	Hz
050 HCD	±0.050	±1.25	200.0	8.00	500
125 HCD	±0.125	±3.0	80.0	3.00	500
250 HCD	±0.250	±6.0	10.0	1.60	500
500 HCD	±0.500	±12.5	20.0	0.80	200
1000 HCD	±1.000	±25	10.0	0.40	200
2000 HCD	±2.000	±50	5.0	0.20	200
3000 HCD	±3.000	±75	3.3	0.13	200
5000 HCD	±5.000	±125	2.0	0.08	200
10000 HCD	±10.000	±250	1.0	0.04	200

<sup>1</sup>All calibration is performed at room ambient temperature.

## Mechanical

### Mechanical Specifications

HCD Series Model Number	Weight				Dimensions							
	Body		Core		A (Body)		B (Core)		C		P	
	Oz	gm	Oz	gm	In	mm	In	mm	In	mm	In	mm
050 HCD	1.41	40	0.07	2	2.40	61.0	0.75	19.1	1.90	48.3	0.55	14.0
125 HCD	1.77	50	0.11	3	3.23	82.0	1.25	31.8	2.73	69.3	0.96	24.5
250 HCD	2.19	62	0.18	5	4.10	104.1	2.00	50.8	3.60	91.4	1.39	35.3
500 HCD	2.93	82	0.28	8	5.79	147.1	3.00	96.2	5.29	134.4	2.23	56.5
1000 HCD	4.24	120	0.35	10	8.05	204.5	3.80	96.5	7.55	191.8	3.32	84.3
2000 HCD	6.09	174	0.53	15	11.42	290.1	5.30	127.0	10.92	277.4	5.05	128.3
3000 HCD	8.33	236	0.64	18	16.62	422.1	6.20	157.5	16.10	408.9	7.59	192.8
5000 HCD	10.38	294	0.64	18	20.45	519.5	6.20	157.5	19.95	506.7	9.56	242.8
10000 HCD	18.57	526	0.85	24	34.57	878.1	12.00	304.8	34.03	864.4	16.61	421.9

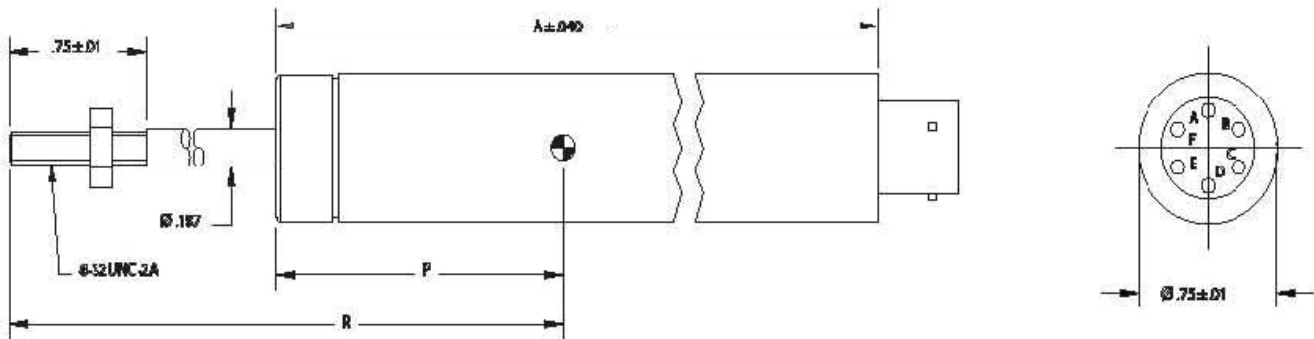
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## new captive core option

The HCD features a captive core design that greatly simplifies installation. The design utilizes a core rod and bearing assembly that is captured and guided within the LVDT providing low friction travel throughout the stroke length. The assembly incorporates two Delrin bearings on the core rod traveling through the stainless steel boreliner. A bronze bearing on the front end utilizes a self-aligning feature to accommodate lateral LVDT movement during operation, the core rod and bearing assembly is field replaceable.

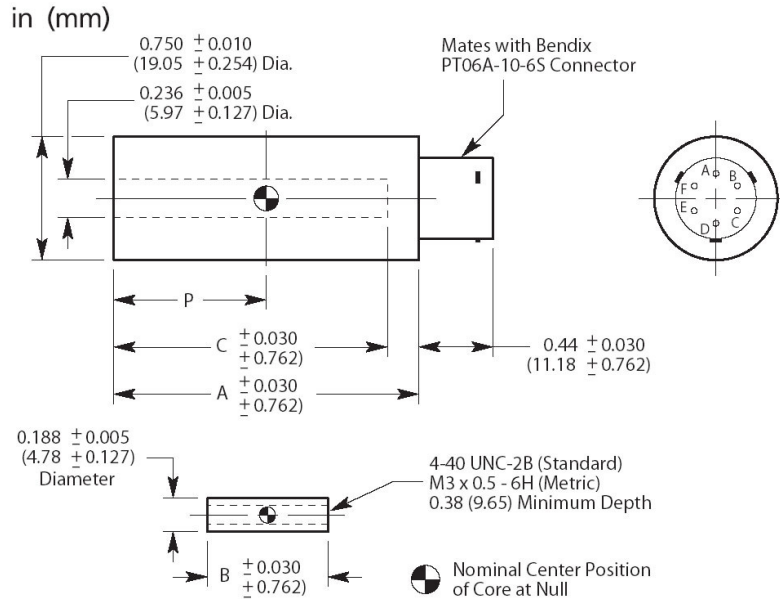


## Connection Configurations for HCA, HCD and HCT Series



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## dimensions



## HCD Series Mechanical Specifications

HCD Series	Linear Range		Weight Assembly		Dimensions					
	In	mm	oz	gm	A		P		R	
Model Number	In	mm	oz	gm	In	Mm	In	Mm	In	Mm
050 HCD	±0.050	±1.25	2.19	62	2.74	69.6	.89	22.8	3.78	96.0
125 HCD	±0.125	±3.0	2.65	75	3.57	90.7	1.30	33.0	4.36	110.7
250 HCD	±0.250	±6.0	3.14	89	4.44	112.8	1.73	43.9	4.85	123.2
500 HCD	±0.500	±12.5	4.06	115	6.13	155.7	2.57	65.3	6.04	153.4
1000 HCD	±1.000	±25	5.61	159	8.39	213.1	3.66	89.4	7.90	200.7
2000 HCD	±2.000	±50	7.87	223	11.76	298.7	5.39	113.4	10.52	267.2
3000 HCD	±3.000	±75	10.63	3.01	12.96	430.8	7.93	201.4	15.27	387.9

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### ordering information

Specify the HCD Model followed by the desired option number(s) ordered together.

#### Ordering Example:

**Model Number 050 HCD-026** is an HCD Series LVDT with a ±0.050" range (050 HCD), with a Metric Thread core (006) and a small diameter core (020).

### HCD model

050 HCD  
125 HCD  
250 HCD  
500 HCD  
1000 HCD  
2000 HCD  
3000 HCD  
5000 HCD  
1000 HCD

### options

Number	Description
006	Metric Thread Core
010	Guided Core
020	Small Diameter, Low Mass Core <sup>1</sup>
200	Captive Core <sup>2</sup>

<sup>1</sup>Consult factory for mass, dimensions and thread size.  
<sup>2</sup>Available on 050 HCD through 3000 HCD models only.