



HCl SERIES

Hermetically Sealed
High Input Impedance AC LVDT

SPECIFICATIONS

- ◆ High Input Impedance
- ◆ Hermetically sealed, all welded
- ◆ Stainless steel housing
- ◆ MS type connector, glass sealed
- ◆ IEC IP68 rating to 1,000 PSI [70 bars]
- ◆ Stroke ranges from ± 0.125 to ± 5 inches
- ◆ AC operation from 400Hz to 5kHz
- ◆ Double magnetic shielding

The **HCl Series** hermetically sealed LVDTs provide premium performance in harsh industrial environments. Impervious to dirt, water, steam, and corrosive liquids/vapors compatible with its materials, the HCl all-welded stainless steel construction withstands external pressures up to 1,000 PSI [70 bars]. Double magnetic shielding offers excellent protection from external electromagnetic fields.

The HCl LVDTs have a high input impedance making them well suited for interfacing with loop powered (2-wire 4-20mA) signal conditioners. The HCl is the LVDT series that is offered as part of our CTS-420 system. All stroke ranges have about the same output at full scale.

Like in most of our LVDTs, the HCl windings are vacuum impregnated with a specially formulated, high temperature, flexible resin, and the coil assembly is potted inside its housing with a two-component epoxy. This provides excellent protection against hostile environments such as high vibration and shock.

FEATURES

- ◆ High input impedance
- ◆ All-welded stainless steel construction
- ◆ Glass sealed, MS type connector (MIL-C-5015)
- ◆ Shock and vibration tolerant
- ◆ Calibration certificate supplied with each unit

APPLICATIONS

- ◆ Harsh industrial environments
- ◆ Submersible (with appropriate connector)
- ◆ Pressure vessels
- ◆ Corrosive liquid and vapor areas (check materials)
- ◆ Turbine valve

PERFORMANCE SPECIFICATIONS

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ELECTRICAL SPECIFICATIONS						
Parameter	HCI 125	HCI 250	HCI 500	HCI 1000	HCI 2000	HCI 5000
Stroke range	±0.125 [±3.17]	±0.25 [±6.35]	±0.5 [±12.7]	±1 [±25.4]	±2 [±50.8]	±5 [±127]
Sensitivity, V/V/in [mV/V/mm]	2.47 [97.2]	1.24 [48.8]	0.62 [24.4]	0.32 [12.6]	0.14 [5.5]	0.062 [2.4]
Output at stroke ends, mV/V (*)	309	310	310	320	280	310
Phase shift	-2.8°	-1°	-4.6°	-7.5°	-4.2°	-16°
Input impedance, (PRIMARY)	3,070 Ω	2,830 Ω	4,000 Ω	5,465 Ω	2,020 Ω	3,340 Ω
Output impedance SECONDARY)	3,125 Ω	1,560 Ω	1,845 Ω	2,185 Ω	930 Ω	1,380 Ω
Non-linearity	±0.5 of FR					
Input voltage	1 VRMS sine wave					
Input frequency	400Hz to 5kHz					
Test frequency	5kHz					
Null voltage	1% of FRO, maximum					

ENVIRONMENTAL SPECIFICATIONS & MATERIALS	
Operating temperature	-65°F to +300°F [-55°C to +150°C]
Shock survival	1,000 g (11ms half-sine)
Vibration tolerance	20 g up to 2kHz
Housing material	AISI 400 Series stainless steel
Electrical connector	6-pin MS type connector (MIL-C-5015)
IEC 60529 rating	IP68 to 1,000 PSI [70 bars] with use of proper mating connector plug

Notes

All values are nominal unless otherwise noted

Electrical specifications are for the test frequency indicated in the table

Dimensions are in inch [mm] unless otherwise noted

FR: Full Range is the stroke range, end to end; FR=2xS for ±S stroke range

FRO (Full Range Output): Algebraic difference in outputs measured at the ends of the range

(*) Unit for output at stroke ends is millivolt per volt of excitation (input voltage)

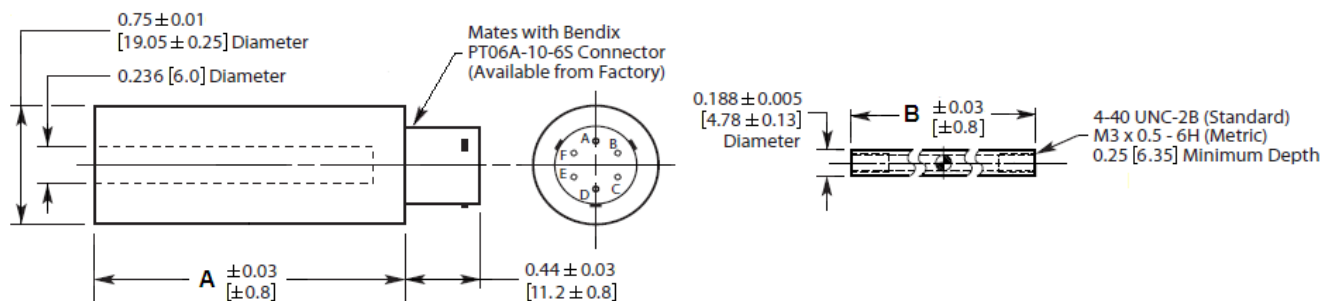
(**) Requires special reduced core length

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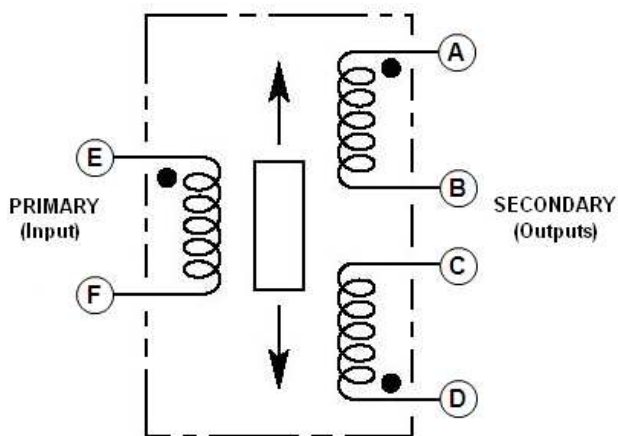
MECHANICAL SPECIFICATIONS

Parameter	HCI 125	HCI 250	HCI 500	HCI 1000	HCI 2000	HCI 5000
Body length "A"	2.50 [63.5]	3.84 [97.5]	5.03 [127.8]	7.29 [185.2]	10.68 [271.3]	19.70 [500.4]
Core length "B"	1.10 [27.9]	1.80 [45.7]	3.00 [76.2]	3.80 [96.5]	5.00 [127.0]	6.20 [157.5]



Dimensions are in inch [mm]

WIRING INFORMATION



A through F: Connector pin assignments
Connect B to C for differential output

ORDERING INFORMATION

Description	HCA Model	Part Number
±0.125 inch LVDT	HCI 125	02560916-000
±0.25 inch LVDT	HCI 250	02560917-000
±0.5 inch LVDT	HCI 500	02560919-000

Description	HCA-RA Model	Part Number
±1 inch LVDT	HCI 1000	02560918-000
±2 inch LVDT	HCI 2000	02560920-000
±5 inch LVDT	HCI 5000	02560921-000

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OPTIONS	
Description	Part Number
Metric threaded core	XXXXXXXX-006
Guided core	XXXXXXXX-010

Note: Add multiple option dash numbers together to determine proper ordering suffix

Example: HCI 1000, ± 1 inch, with guided and metric threaded core, P/N 02560918-016

ACCESSORIES FOR HCI		
Description	Comments	Part Number
Core connecting rod, 6 inches long, 4-40 threads		05282946-006
Core connecting rod, 12 inches long, 4-40 threads		05282946-012
Core connecting rod, 24 inches long, 4-40 threads		05282946-024
Core connecting rod, 36 inches long, 4-40 threads		05282946-036
Core connecting rod, 6 inches long, M3x0.5 metric threads		05282977-006
Core connecting rod, 12 inches long, M3x0.5 metric threads		05282977-012
Mounting block		04560950-000
Mating connector kit	PT06A-10-6S(SR)	62101011-000
Interconnect cable for LVM-110 and LiM 4-20 Signal Conditioners (1)	HCI to Stripped/Tinned	04290417-000
Interconnect cable for IEM-422 Signal Conditioner (1)	HCI to PTO6A-10-6P	04290133-000
Interconnect cable for ATA-2001 Signal Conditioner (1)	HCI to DB-9P	04290457-000
Interconnect cable for MP-2000 Series Set-Point Controller (1)	HCI to 05BL5M	04290560-000
Interconnect cable for LDM/PML-1000 Signal Conditioners, 200°C (1)	HCI to Stripped/Tinned	04290595-000

(1) All cables are shielded, 10 foot long, and rated 80°C [176°F] operating unless otherwise noted. Consult factory for other lengths.

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