

RoHS

HCI 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 **HCI 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 HCI 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 HCI LVDTs have a high input impedance making them well suited for interfacing with loop powered (2-wire 4-20mA) signal conditioners. The HCI 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 HCI 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

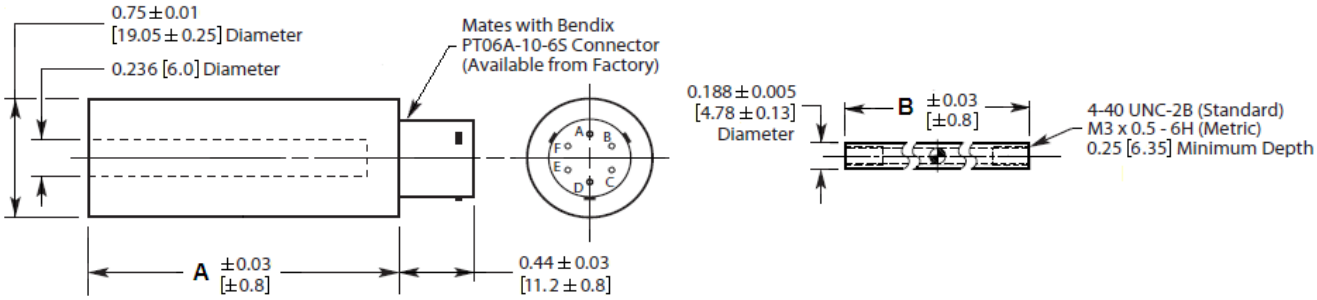
ELECTRICAL SPECIFICATIONS						
Parameter	**HCI 125**	**HCI 250**	**HCI 500**	**HCI 1000**	**HCI 2000**	**HCI 5000**
Stroke range	±0.125 [±3.17]	±0.25 [±6.35]	±0.5 [±12.7]	±1 [±25.4]	±2 [±50.8]	±5 [±127]
Sensitivity, V/V/in [mV/V/mm]	2.47 [97.2]	1.24 [48.8]	0.62 [24.4]	0.32 [12.6]	0.14 [5.5]	0.062 [2.4]
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

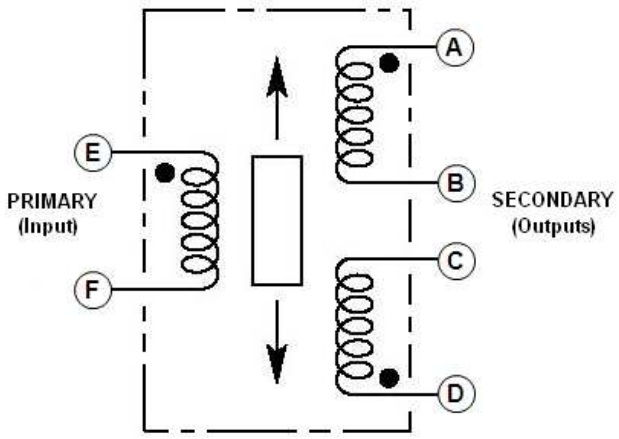
MECHANICAL SPECIFICATIONS

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

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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ABOUT MACRO SENSORS

Macro Sensors, founded by Howard A. Schaevitz, has more than three hundred man-years of experience in just one thing: the design and manufacture of LVDTs. We believe that you need solutions, not simply products. When you call us, you get the benefit of our experience and our commitment.

Most products listed are in stock for immediate delivery, and we strive to offer the finest customer service in the industry: technical support from people who understand LVDTs and how to apply them to your benefit, and a commitment to excellent pricing, quality products, and deliveries that you can truly rely on. Macro Sensors also has a comprehensive network of representatives and distributors in the U.S. and around the world to provide you with local support.

We manufacture an enormous array of LVDTs, from modified standards to complete custom designs. Our customers consistently tell us it is Macro Sensors? quality and service that keeps them coming back. Let our experience go to work for you.

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