DISPLACEMENT

DCTH Series Internally Amplified LVDT Displacement Transducer

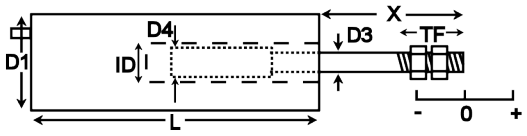
- Voltage output
- High accuracy
- High cycle life
- Stainless steel
- High resolution

These transducers are for displacement / position measurement. They make an accurate position measurement of the movement of the armature (the sliding part) relative to the body of the displacement transducer.
This transducer uses the Linear Variable Differential Transformer (LVDT) principle which means that it is probably the most robust and reliable position sensor type available. The strength of the LVDT sensor's principle is that there is no electrical contact across the transducer position sensing element which for the user of the sensor means clean data, infinite resolution and a very long life.
Our DC to DC LVDT transducer has all of the benefits of the LVDT sensor principle with the added convenience of built-in LVDT electronics enabling a dc supply and dc output.
This series of displacement transducer is available as either an unguided, captive or spring return version.

Unguided version.

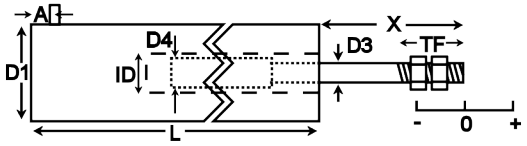
On our DCTH unguided LVDTs the armature assembly is a separate component, to make a measurement the user must guide the armature inside the body without touching the sides. Our DCTH unguided position measurement transducers are appropriate where external guidance is available and give truly non-contact operation

DCTH100 to DCTH400 - End (axial) exit cable



D1=0.811" ±0.005"
D3=0.08"
D4=0.08"
ID=0.100"
TF=M3x0.5
X=Center of range

DCTH500 to DCTH8000 - Side (radial) exit cable



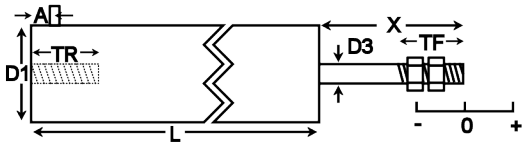
A=0.35"
D1=0.811" ±0.005"
D3=0.2"
D4=0.235"
ID=0.268"
TGF=M5x0.8

Type	Range	Linearity error (% F.S.)	L	X (nom)	Total weight	Armature weight	TF	Inward over-travel
DCTH100	±2.5mm (±0.1")	±0.5/±0.25/±0.1	2.52"	1.3"	2.6oz	0.05oz	0.73"	0.46"
DCTH200	±5mm (±0.2")	±0.5/±0.25/±0.1	2.52"	1.3"	2.6oz	0.06oz	0.73"	0.35"
DCTH300	±7.5mm (±0.3")	±0.5/±0.25/±0.1	2.52"	1.3"	2.6oz	0.06oz	0.73"	0.26"
DCTH400	±10mm (±0.4")	±0.5/±0.25	2.52"	1.3"	2.6oz	0.07oz	0.73"	0.15"
DCTH500	±12.5mm (±0.5")	±0.5/±0.25/±0.1	6.89"	1.7"	7.5oz	0.60oz	0.59"	0.63"
DCTH1000	±25mm (±1")	±0.5/±0.25/±0.1	7.99"	2.7"	9.5oz	0.81oz	0.59"	0.87"
DCTH2000	±50mm (±2")	±0.5/±0.25/±0.1	12.48"	3.2"	13.0oz	1.31oz	0.59"	0.63"
DCTH3000	±75mm (±3")	±0.5/±0.25/±0.1	16.93"	4.7"	1.1lb	1.94oz	0.59"	1.14"
DCTH4000	±100mm (±4")	±0.5/±0.25/±0.1	18.70"	5.2"	1.4lb	2.50oz	0.59"	0.63"
DCTH6000	±150mm (±6")	±0.5/±0.25	26.22"	7.2"	1.9lb	3.53oz	0.59"	0.63"
DCTH8000	±200mm (±8")	±0.5/±0.25	33.70"	10.2"	2.8lb	4.94oz	1.15"	1.06"

Captive guided version.

Our DCTH captive guided displacement transducer has bearings to guide the armature inside the measurement sensor. Our DCTH captive LVDTs are for position measurement applications where guidance may be poor and end bearings may be required.

DCTH500C to DCTH185000C - Side (radial) exit cable



A=0.91"
D1=0.811" ±0.005"

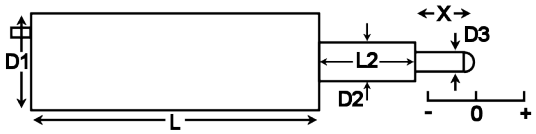
TR=M5x0.8 / 0.4"
TGF=M5x0.8

Type	Range	Linearity error (% F.S.)	L	X (nom)	D3	Total weight	TF	Inward over-travel	Outward over-travel
DCTH500C	±12.5mm (±0.5")	±0.5/±0.25/±0.1	7.64"	1.5"	0.187"	12.0oz	0.59"	0.39"	0.47"
DCTH1000C	±25mm (±1")	±0.5/±0.25/±0.1	8.74"	2.5"	0.187"	14.0oz	0.59"	0.51"	0.39"
DCTH2000C	±50mm (±2")	±0.5/±0.25/±0.1	13.23"	3.0"	0.187"	1.1lb	0.59"	0.39"	0.55"
DCTH3000C	±75mm (±3")	±0.5/±0.25/±0.1	17.64"	4.5"	0.187"	1.4lb	0.59"	0.94"	0.6"
DCTH4000C	±100mm (±4")	±0.5/±0.25/±0.1	19.45"	5.0"	0.187"	1.7lb	0.59"	0.31"	0.6"
DCTH6000C	±150mm (±6")	±0.5/±0.25	26.93"	7.0"	0.187"	2.3lb	0.59"	0.47"	0.67"
DCTH8000C	±200mm (±8")	±0.5/±0.25	34.45"	10.0"	0.187"	3.2lb	1.25"	0.87"	0.98"
DCTH10000C	±250mm (±10")	±0.5/±0.25	42.01"	12.0"	0.187"	3.7lb	1.05"	1.34"	1.38"
DCTH15000C	±380mm (±15")	±0.5	57.99"	16.0"	0.187"	4.9lb	0.75"	0.51"	0.51"
DCTH18500C	±470mm (±18.5")	±0.5	68.50"	20.0"	0.236"	5.8lb	1.05"	0.20"	1.30"

Spring return version.

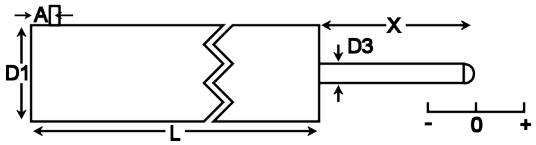
Our DCTH spring displacement transducer has bearings to guide the armature inside the measurement sensor and a spring which pushes the armature to the fully out position. Our DCTH spring return LVDTs are appropriate where it is not possible to connect the transducer armature to the moving component being measured.

DCTH100AG to DCTH400AG - End (axial) exit cable



D1=0.811" ±0.005"
D2=0.31"
D3=0.16"
L2=1.40"

DCTH500A to DCTH3000A - Side (radial) exit cable



A=0.35"
D1=0.811" ±0.005"
D3=0.187"

Type	Range	Linearity error (% F.S.)	L	X (nom)	Total weight	Spring force at X	Spring rate	Inward over-travel	Outward over-travel
DCTH100AG	±2.5mm (±0.1")	±0.5/±0.25/±0.1	2.52"	0.5"	2.9oz	4oz.	9oz/inch	0.09"	0.05"
DCTH200AG	±5mm (±0.2")	±0.5/±0.25/±0.1	2.52"	0.5"	2.9oz	4oz.	7oz/inch	0.01"	0.05"
DCTH300AG	±7.5mm (±0.3")	±0.5/±0.25/±0.1	2.52"	0.7"	2.9oz	5oz.	6oz/inch	0.06"	0.05"
DCTH400AG	±10mm (±0.4")	±0.5/±0.25	2.52"	0.9"	2.9oz	6oz.	7oz/inch	0.05"	0.05"
DCTH500A	±12.5mm (±0.5")	±0.5/±0.25/±0.1	7.17"	1.5"	8.0oz	5oz	2oz/inch	0.04"	0.51"
DCTH1000A	±25mm (±1")	±0.5/±0.25/±0.1	8.27"	2.5"	10.0oz	7oz	3oz/inch	0.12"	0.39"
DCTH2000A	±50mm (±2")	±0.5/±0.25/±0.1	12.76"	3.0"	14.0oz	6oz	2oz/inch	0.31"	0.55"
DCTH3000A	±75mm (±3")	±0.5/±0.25/±0.1	17.17"	4.5"	1.1lb	1lbs	3oz/inch	0.59"	0.59"

Specification	
Supply voltage (dual)	±12V to ±18V 30mA
Supply voltage (single, must be floating)	24V to 36V 30mA
Change in output for change in supply	5mV/V
Output 1	0V to 10V (+0% - 5%)
Output 2	±5V (+0% - 5%)
Output ripple	30mV (peak-to-peak)
Analogue output bandwidth	200Hz
Output impedance	2 Ohms
Linearity error (Standard)	±0.5% F.S.
Linearity error (Optional on some models)	±0.25% F.S.
Linearity error (Optional on some models)	±0.1% F.S.
Temperature coefficient (span)	±0.02% F.S. /°F (typical)
Operating temperature range	-40°F to 176°F
Electrical termination	7ft (integral cable) Longer available to order.

Due to our policy of on-going development, DCTH specifications may change without notice. Any modification to our DCTH may affect some or all of the specifications for our equipment.All DCTH dimensions and specifications are nominal.

DCTH - WARNING - PERSONAL INJURY
Do not use our DCTH as safety, emergency stop or feedback devices in any application where the failure of this product could result in damage to equipment, personal injury or death.

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