

## DCV Series Isolated 0 to 10V Output Displacement Transducer

- Electrical interface for industrial applications
- High cycle life
- Stainless steel
- High accuracy
- High resolution
- Input/output isolation
- Supply 24V, Output 0-10V



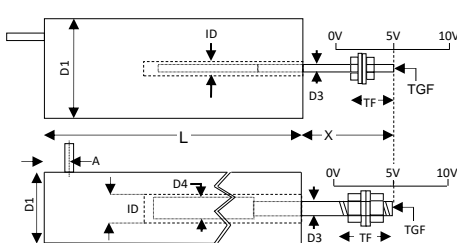
These transducers are for displacement / position measurement. They make an accurate position measurement of the movement of the armature (the sliding part) relative to the body of the displacement transducer.

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.



#### DCTH100/1430 to DCTH400/1430

D1=1.25" D3=0.079"  
ID=0.100" TGF=M3

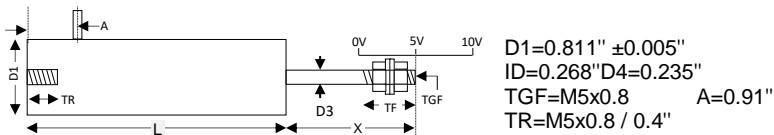
#### DCV025U to DCV0400U

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

On our DCV 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 DCV unguided position measurement transducers are appropriate where external guidance is available and give truly non-contact operation

Type	Range	Linearity error (% F.S.)	L	X (nom)	Total weight	Armature weight	TF	Inward over-travel
DCTH100/1430	5mm (0.2")	$\pm 0.5/\pm 0.25/\pm 0.1$	3.27"	1.3"	7.3oz	0.11oz	0.73"	0.46"
DCTH200/1430	10mm (0.4")	$\pm 0.5/\pm 0.25/\pm 0.1$	3.27"	1.3"	7.3oz	0.11oz	0.73"	0.35"
DCTH300/1430	15mm (0.6")	$\pm 0.5/\pm 0.25/\pm 0.1$	3.27"	1.3"	7.3oz	0.11oz	0.73"	0.26"
DCTH400/1430	20mm (0.8")	$\pm 0.5/\pm 0.25$	3.27"	1.3"	7.3oz	0.11oz	0.73"	0.15"
DCV025U	25mm (1")	$\pm 0.5/\pm 0.25/\pm 0.1$	6.89"	1.7"	7.5oz	0.60oz	0.59"	0.63"
DCV050U	50mm (2")	$\pm 0.5/\pm 0.25/\pm 0.1$	7.99"	2.7"	9.5oz	0.81oz	0.59"	0.87"
DCV100U	100mm (4")	$\pm 0.5/\pm 0.25/\pm 0.1$	12.48"	3.2"	13.0oz	1.31oz	0.59"	0.63"
DCV150U	150mm (6")	$\pm 0.5/\pm 0.25/\pm 0.1$	16.93"	4.7"	1.1lb	1.94oz	0.59"	1.14"
DCV200U	200mm (8")	$\pm 0.5/\pm 0.25/\pm 0.1$	18.70"	5.2"	1.4lb	2.50oz	0.59"	0.63"
DCV300U	300mm (12")	$\pm 0.5/\pm 0.25$	26.22"	7.2"	1.9lb	3.53oz	0.59"	0.63"
DCV400U	400mm (16")	$\pm 0.5/\pm 0.25$	33.70"	10.2"	2.8lb	4.94oz	1.15"	1.06"

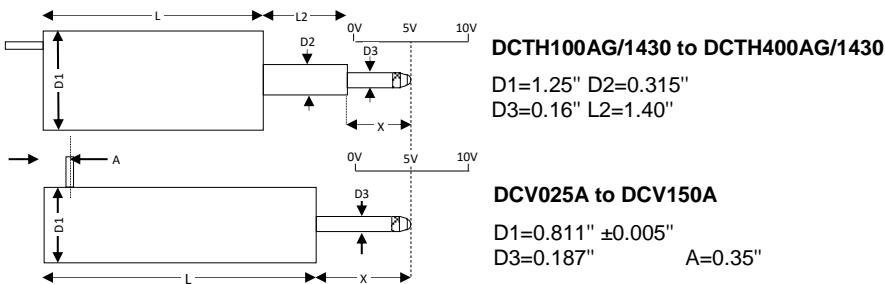
## Captive guided version.



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

Type	Range	Linearity error (% F.S.)	L	X (nom)	D3	Total weight	TF	Inward over-travel	Outward over-travel
DCV025C	25mm (1")	$\pm 0.5/\pm 0.25/\pm 0.1$	7.64"	1.5"	0.187"	12.0oz	0.59"	0.39"	0.47"
DCV050C	50mm (2")	$\pm 0.5/\pm 0.25/\pm 0.1$	8.74"	2.5"	0.187"	14.0oz	0.59"	0.51"	0.39"
DCV100C	100mm (4")	$\pm 0.5/\pm 0.25/\pm 0.1$	13.23"	3.0"	0.187"	1.1lb	0.59"	0.39"	0.55"
DCV150C	150mm (6")	$\pm 0.5/\pm 0.25/\pm 0.1$	17.64"	4.5"	0.187"	1.4lb	0.59"	0.94"	0.6"
DCV200C	200mm (8")	$\pm 0.5/\pm 0.25/\pm 0.1$	19.45"	5.0"	0.187"	1.7lb	0.59"	0.31"	0.6"
DCV300C	300mm (12")	$\pm 0.5/\pm 0.25$	26.93"	7.0"	0.187"	2.3lb	0.59"	0.47"	0.67"
DCV400C	400mm (16")	$\pm 0.5/\pm 0.25$	34.45"	10.0"	0.187"	3.2lb	1.25"	0.87"	0.98"
DCV500C	500mm (20")	$\pm 0.5/\pm 0.25$	42.01"	12.0"	0.187"	3.7lb	1.05"	1.34"	1.38"
DCV760C	760mm (30")	$\pm 0.5$	57.99"	16.0"	0.187"	4.9lb	0.75"	0.51"	0.51"
DCV940C	940mm (37")	$\pm 0.5$	68.50"	20.0"	0.236"	5.8lb	1.05"	0.20"	1.30"

## Spring return version.



Our DCV 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 DCV spring return LVDTs are appropriate where it is not possible to connect the transducer armature to the moving component being measured.

Type	Range	Linearity error (% F.S.)	L	X (nom)	Total weight	Spring force at X	Spring rate	Inward over-travel	Outward over-travel
DCTH100AG/1430	5mm (0.2")	$\pm 0.5/\pm 0.25/\pm 0.1$	3.27"	0.5"	7.8oz	4oz.	9oz/inch	0.09"	0.05"
DCTH200AG/1430	10mm (0.4")	$\pm 0.5/\pm 0.25/\pm 0.1$	3.27"	0.5"	7.8oz	4oz.	7oz/inch	0.01"	0.05"
DCTH300AG/1430	15mm (0.6")	$\pm 0.5/\pm 0.25/\pm 0.1$	3.27"	0.7"	7.8oz	5oz.	6oz/inch	0.06"	0.05"
DCTH400AG/1430	20mm (0.8")	$\pm 0.5/\pm 0.25$	3.27"	0.9"	7.8oz	6oz.	7oz/inch	0.05"	0.05"
DCV025A	25mm (1")	$\pm 0.5/\pm 0.25/\pm 0.1$	7.17"	1.5"	8.0oz	5oz	2oz/inch	0.04"	0.51"
DCV050A	50mm (2")	$\pm 0.5/\pm 0.25/\pm 0.1$	8.27"	2.5"	10.0oz	7oz	3oz/inch	0.12"	0.39"
DCV100A	100mm (4")	$\pm 0.5/\pm 0.25/\pm 0.1$	12.76"	3.0"	14.0oz	6oz	2oz/inch	0.31"	0.55"
DCV150A	150mm (6")	$\pm 0.5/\pm 0.25/\pm 0.1$	17.17"	4.5"	1.1lb	1lb	3oz/inch	0.59"	0.59"

Specification	
Excitation/supply (acceptable)	14V to 26V, 30mA
Output	0V to 10V (0 = inward full scale)
Output ripple	30mV (peak-to-peak)
Analogue output bandwidth	200Hz
Output impedance	2 Ohms
Linearity error (Standard)	$\pm 0.5\%$ F.S.
Linearity error (Optional on some models)	$\pm 0.25\%$ F.S.
Linearity error (Optional on some models)	$\pm 0.1\%$ F.S.
Operating temperature range	-40°F to 158°F
Temperature coefficient (span)	$\pm 0.017\%$ F.S. /°F (typical)
Electrical termination	6.6ft (integral cable) Longer available to order.

Position  
 Pressure  
 Load Cells  
 Displacement  
 Instrumentation  
 Special Custom Designs



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

#### DCV - WARNING - PERSONAL INJURY

Do not use our DCV 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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Position  
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