DISPLACEMENT

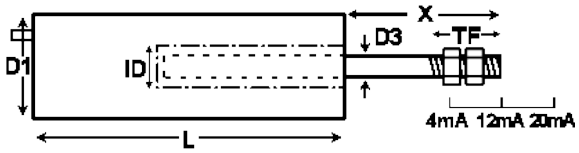
DCC Series 4-20mA 2-wire Output Displacement Transducer

- Electrical interface for industrial applications
- 4-20mA 2 wire interface
- Stainless steel
- High accuracy
- High cycle life
- 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 4-20mA LVDT transducer has all of the benefits of the LVDT sensor principle with the added convenience of a 2-wire interface..
This series of displacement transducer is available as either an unguided, captive or spring return version.

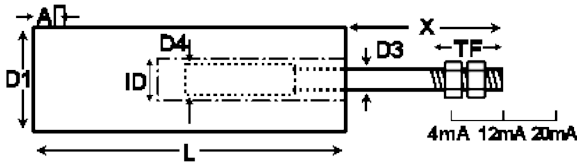
Unguided version.

DCC005U to DCC020U - End (axial) exit cable



D1=20.6mm ±0.12mm
D3=2mm
ID=2.54mm
TGF=M3x0.5
X=Centre of range

DCC025U to DCC0400U - Side (radial) exit cable



D1=20.6mm ±0.12mm
D3=4.75mm
D4=5.97mm
ID=6.8mm
TGF=M5x0.8
X=Centre of range

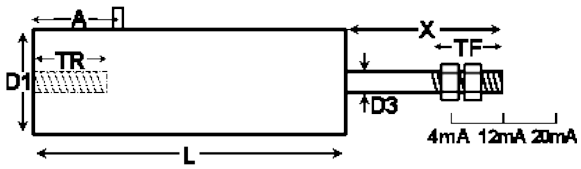
On our DCC unguided LVDTs the armature assembly is a separate component, to make a measurement the user must guide the armature inside the body without touching the sides. Our DCC unguided position measurement transducers are appropriate where external guidance is available and give truly non-contact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

Type	Range	Linearity error (% F.S.)	L	X (nom)	Total weight	Armature weight	TF	Inward over-travel
DCC005U	5mm	±0.5/±0.25/±0.1	64mm	33mm	74g	1.4g	18mm	12mm
DCC010U	10mm	±0.5/±0.25/±0.1	64mm	33mm	74g	1.8g	18mm	9mm
DCC015U	15mm	±0.5/±0.25/±0.1	64mm	33mm	74g	1.8g	18mm	7mm
DCC020U	20mm	±0.5/±0.25	64mm	33mm	74g	1.9g	18mm	4mm
DCC025U	25mm	±0.5/±0.25/±0.1	175mm	43mm	213g	17g	15mm	16mm
DCC050U	50mm	±0.5/±0.25/±0.1	203mm	69mm	270g	23g	15mm	22mm
DCC100U	100mm	±0.5/±0.25/±0.1	317mm	81mm	369g	37g	15mm	16mm
DCC150U	150mm	±0.5/±0.25/±0.1	430mm	120mm	497g	55g	15mm	29mm
DCC200U	200mm	±0.5/±0.25/±0.1	475mm	132mm	625g	71g	15mm	16mm
DCC300U	300mm	±0.5/±0.25	666mm	183mm	852g	100g	15mm	16mm
DCC400U	400mm	±0.5/±0.25	856mm	259mm	1.3kg	140g	29mm	27mm

Captive guided version.

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

DCC025C to DCC0940C - Side (radial) exit cable



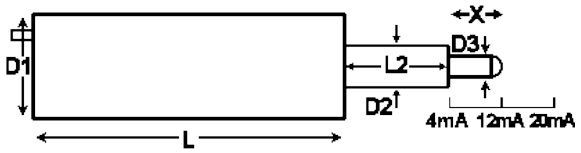
D1=20.6mm ±0.12mm
A=23mm
TGF=M5x0.8
TR=M5x0.8 / 11mm
X=Centre of range

Type	Range	Linearity error (% F.S.)	L	X (nom)	D3	Total weight	TF	Inward over-travel	Outward over-travel
DCC025C	25mm	±0.5/±0.25/±0.1	194mm	38mm	4.75mm	340g	15mm	10mm	12mm
DCC050C	50mm	±0.5/±0.25/±0.1	222mm	63mm	4.75mm	398g	15mm	13mm	10mm
DCC100C	100mm	±0.5/±0.25/±0.1	336mm	76mm	4.75mm	511g	15mm	10mm	14mm
DCC150C	150mm	±0.5/±0.25/±0.1	448mm	114mm	4.75mm	625g	15mm	24mm	15mm
DCC200C	200mm	±0.5/±0.25/±0.1	494mm	127mm	4.75mm	767g	15mm	8mm	14mm
DCC300C	300mm	±0.5/±0.25	684mm	178mm	4.75mm	1.0kg	15mm	12mm	17mm
DCC400C	400mm	±0.5/±0.25	875mm	254mm	4.75mm	1.4kg	32mm	22mm	25mm
DCC500C	500mm	±0.5/±0.25	1067mm	305mm	4.75mm	1.7kg	27mm	34mm	35mm
DCC760C	760mm	±0.5	1473mm	406mm	4.75mm	2.2kg	19mm	13mm	13mm
DCC940C	940mm	±0.5	1740mm	508mm	6.00mm	2.6kg	27mm	5mm	33mm

Spring return version.

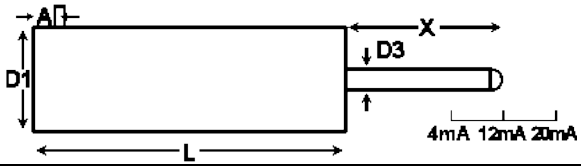
Our DCC spring displacement transducer has bearings to guide the armature inside the measurement sensor and a spring which pushes the armature to the fully out position. Our DCC spring return LVDTs are appropriate where it is not possible to connect the transducer armature to the moving component being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

DCC005A to DCC020A - End (axial) exit cable



D1=20.6mm ±0.12mm
D2=8mm
D3=4.0mm
L2=36mm
X=Centre of range

DCC025A to DCC150A - Side (radial) exit cable



D1=20.6mm ±0.12mm
D3=4.75mm
A=9mm
X=Centre of range

Type	Range	Linearity error (% F.S.)	L	X (nom)	Total weight	Spring force at X	Spring rate	Inward over-travel	Outward over-travel
DCC005A	5mm	±0.5/±0.25/±0.1	64mm	12mm	83g	100g	0.9N/cm	2mm	1mm
DCC010A	10mm	±0.5/±0.25/±0.1	64mm	13mm	83g	100g	0.8N/cm	0.3mm	1mm
DCC015A	15mm	±0.5/±0.25/±0.1	64mm	18mm	83g	150g	0.6N/cm	1mm	1mm
DCC020A	20mm	±0.5/±0.25	64mm	22mm	83g	175g	0.8N/cm	1mm	1mm
DCC025A	25mm	±0.5/±0.25/±0.1	182mm	38mm	227g	1.3N	0.2N/cm	1mm	13mm
DCC050A	50mm	±0.5/±0.25/±0.1	210mm	63mm	284g	2.0N	0.3N/cm	3mm	10mm
DCC100A	100mm	±0.5/±0.25/±0.1	324mm	75mm	398g	1.8N	0.2N/cm	8mm	14mm
DCC150A	150mm	±0.5/±0.25/±0.1	436mm	114mm	511g	6.0N	0.4N/cm	15mm	15mm

Specification	
Excitation/supply (acceptable)	12V to 36V
Max loop resistance	(Vs-11) x 50Ohms (maximum)
Output	4-20mA (4mA = inward full scale)
Output ripple	50uA (peak-to-peak)
Analogue output bandwidth	250Hz
Linearity error (Standard)	±0.5% F.S.
Linearity error (Optional on some models)	±0.25% F.S.
Temperature coefficient (span)	±0.03% F.S. /°C (typical)
Linearity error (Optional on some models)	±0.1% F.S.
Operating temperature range	-10°C to 70°C
Electrical termination	2m (integral cable) Longer available to order.

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

DCC - WARNING - PERSONAL INJURY
Do not use our DCC 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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