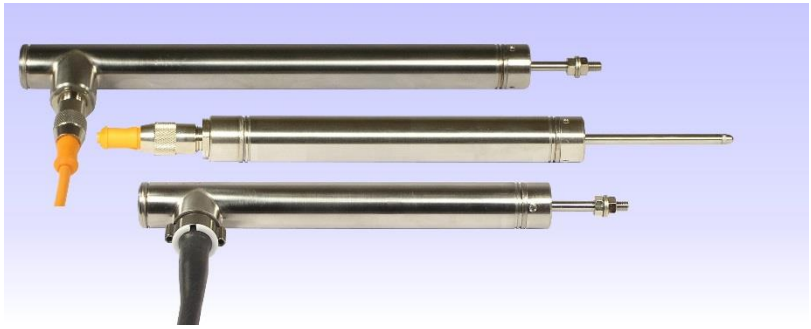
DISPLACEMENT

DCWV Submersible DC to DC LVDT Displacement Transducer

- High accuracy
- High cycle life
- Submersible
- Stainless steel
- Infinite resolution
- Supply 24V, Output 0-10V
- Supply/output isolation

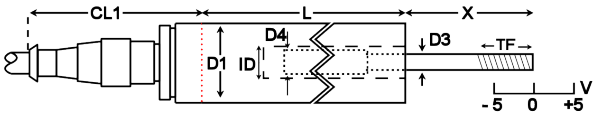


These transducers are for displacement / position measurement. They make an accurate position measurement of the movement of the armature (the sliding part) relative to the body of the displacement transducer.
This transducer uses the Linear Variable Differential Transformer (LVDT) principle which means 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.
Our submersible displacement transducers are designed to make measurements whilst submerged in suitable liquids. Fluids which are non-magnetic can be allowed to flood the armature tube without affecting the operation of the transducer.

Unguided version.

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

DCWV500 to DCWV8000

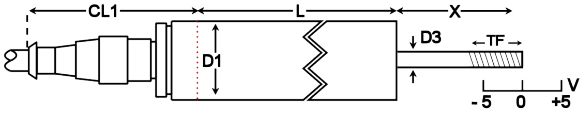


CL1=62mm
D1=20.6mm ±0.12mm
D3=4.75mm
D4=5.97mm
ID=6.80mm
TF=M5x0.8, 15mm
X=Centre of range

Type	Range	Linearity error (% F.S.)	L	X (nom)	Total weight	Armature weight	Inward over-travel
DCWV500	±12.5mm	±0.5/±0.25/±0.1	203mm	38mm	243g	19g	10mm
DCWV1000	±25mm	±0.5/±0.25/±0.1	231mm	63mm	300g	26g	23mm
DCWV2000	±50mm	±0.5/±0.25/±0.1	354mm	76mm	399g	40g	10mm
DCWV3000	±75mm	±0.5/±0.25/±0.1	470mm	114mm	527g	57g	23mm
DCWV4000	±100mm	±0.5/±0.25/±0.1	503mm	127mm	655g	71g	10mm
DCWV6000	±150mm	±0.5/±0.25	707mm	178mm	882g	104g	10mm
DCWV8000	±200mm	±0.5/±0.25	909mm	254mm	1.3kg	142g	36mm

Captive guided version.

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



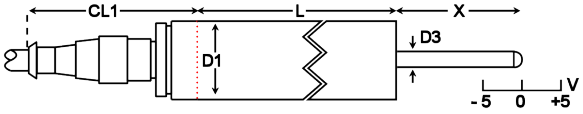
CL1=62mm
D1=20.6mm ±0.12mm
D3=4.75mm
TF=M5x0.8, 15mm
X=Centre of range

Type	Range	Linearity error (% F.S.)	L	X (nom)	Total weight	Inward over-travel	Outward over-travel
DCWV500B	±12.5mm	±0.5/±0.25/±0.1	203mm	38mm	370g	10mm	28mm
DCWV1000B	±25mm	±0.5/±0.25/±0.1	231mm	63mm	428g	17mm	25mm
DCWV2000B	±50mm	±0.5/±0.25/±0.1	354mm	76mm	541g	10mm	28mm
DCWV3000B	±75mm	±0.5/±0.25/±0.1	470mm	114mm	655g	23mm	28mm
DCWV4000B	±100mm	±0.5/±0.25/±0.1	503mm	127mm	797g	10mm	28mm
DCWV6000B	±150mm	±0.5/±0.25	707mm	178mm	1.1kg	10mm	35mm
DCWV8000B	±200mm	±0.5/±0.25	909mm	254mm	1.5kg	36mm	41mm
DCWV10000B	±250mm	±0.5/±0.25	1094mm	305mm	1.7kg	36mm	47mm
DCWV15000B	±380mm	±0.5	1493mm	406mm	2.2kg	10mm	28mm
DCWV18500B	±470mm	±0.5	1766mm	508mm	2.6kg	23mm	35mm

Spring return version.

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

DCWV500A to DCWV3000A



CL1=62mm
D1=20.6mm ±0.12mm
D3=4.75mm
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
DCWV500A	±12.5mm	±0.5/±0.25/±0.1	203mm	38mm	257g	1.2N	0.2N/cm	6mm	28mm
DCWV1000A	±25mm	±0.5/±0.25/±0.1	231mm	63mm	314g	1.9N	0.3N/cm	4mm	25mm
DCWV2000A	±50mm	±0.5/±0.25/±0.1	354mm	76mm	428g	4.1N	0.4N/cm	6mm	28mm
DCWV3000A	±75mm	±0.5/±0.25/±0.1	470mm	114mm	541g	5.4N	0.4N/cm	15mm	28mm

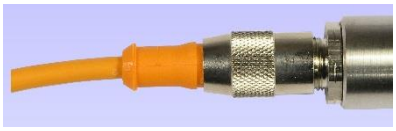
Options And Accessories

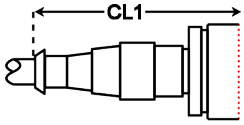
Rod-end bearings for captive-guided position transducers

Mounting block

Electrical termination options

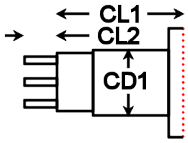
Standard cable - End exit connector with cable fitted





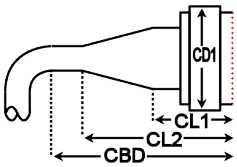
Cable length	=	-25°C to 90°C
Operating temperature range*	=	-25°C to 90°C
Maximum static pressure*	=	1000kPa
CL1	=	62mm

Cable Option 1 - End exit solder pins for customer to fit their own cable



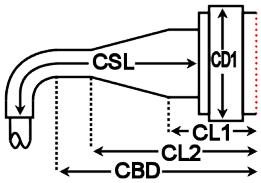
Operating temperature range*	=	-40°C to 125°C
CL1	=	21mm
CL2	=	6.4mm
CD1	=	12.7mm

Cable Option 2 - End exit fully sleeved integral cable



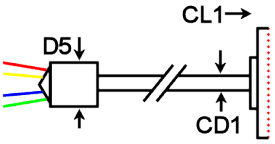
Cable length	=	600mm to 7m
Operating temperature range*	=	-40°C to 100°C
Maximum static pressure*	=	3MPa
CL1	=	25mm
CD1	=	25mm
CL2	=	51mm
CBD	=	184mm

Cable Option 3 - End exit part-sleeved integral cable



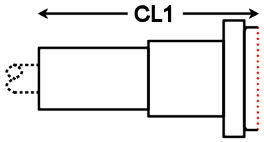
Cable length	=	1m to 100m
Cable sleeve length	=	600mm
Operating temperature range*	=	-40°C to 90°C
Maximum static pressure*	=	2MPa
Cable sleeve length	=	600mm
CL1	=	25mm
CL2	=	51mm
CD1	=	25mm
CBD	=	184mm

Cable Option 5 - End exit integral MI (mineral insulated) stainless steel cable



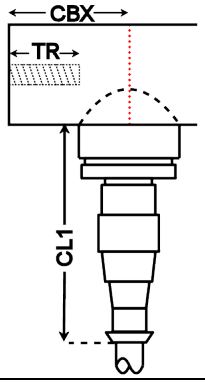
Cable length	=	100mm to 70m
Operating temperature range*	=	-40°C to 200°C
Maximum static pressure*	=	21MPa
CL1	=	4mm
CD1	=	3.0mm
D5	=	11.7mm

Cable Option 6 - End exit connector with customer defined cable length fitted



Cable length	=	0mm to 1000m
Operating temperature range*	=	-25°C to 125°C
Maximum static pressure*	=	800kPa
CL1	=	64mm

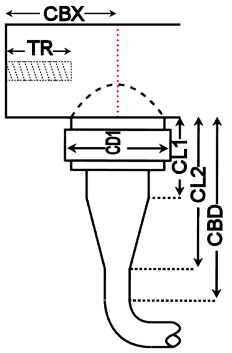
Cable Option 7 - Side exit connector with cable fitted



Cable length	=	5m
Operating temperature range*	=	-25°C to 90°C
Maximum static pressure*	=	1000kPa
TR	=	M5x0.8, 11mm
CL1	=	64mm
CBX	=	25mm

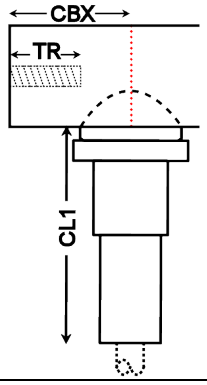
Electrical termination options

Cable Option 8 - Side exit fully sleeved integral cable



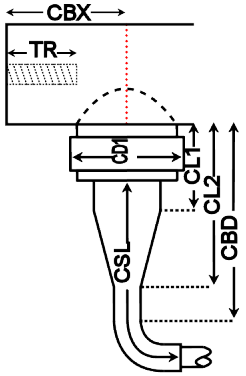
Cable length	=	600mm to 7m
Operating temperature range*	=	-40°C to 100°C
Maximum static pressure*	=	3MPa
TR	=	M5x0.8, 11mm
CBD	=	184mm
CBX	=	25mm
CD1	=	25mm
CL1	=	30mm
CL2	=	55mm

Cable Option 9 - Side exit connector with customer defined cable length fitted



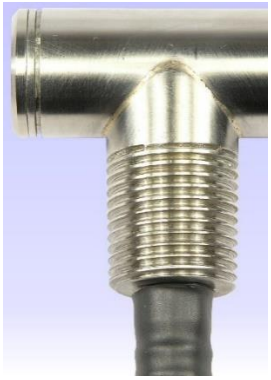
Cable length	=	0mm to 1000m
Operating temperature range*	=	-25°C to 125°C
Maximum static pressure*	=	800kPa
TR	=	M5x0.8, 11mm
CBX	=	25mm
CL1	=	72mm

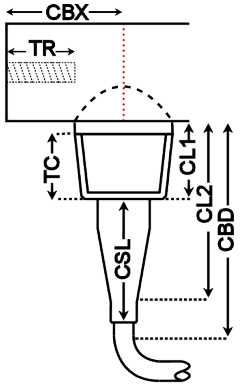
Cable Option 10 - Side exit part-sleeved integral cable



Cable length	=	600mm to 1000m
Cable sleeve length	=	150mm
Operating temperature range*	=	-40°C to 90°C
Maximum static pressure*	=	2MPa
TR	=	M5x0.8, 11mm
CBD	=	184mm
CBX	=	25mm
CD1	=	25mm
CL1	=	30mm
CL2	=	55mm

Cable Option 11 - Side exit part-sleeved integral cable and conduit fitting





Cable length	=	1m to 1000m
Cable sleeve length	=	150mm
Operating temperature range*	=	-40°C to 90°C
Maximum static pressure*	=	2MPa
TR	=	M5x0.8, 11mm
TC	=	1/2"-14 NPT, 20mm
CBD	=	184mm
CBX	=	25mm
CL1	=	25mm
CL2	=	50mm
CSL	=	150mm

Specification *Transducer and cable option specifications should be compared and the worst figures used	
Supply voltage (Vs)	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)	±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)	±0.03% F.S. /°C (typical)
Operating temperature range	-40°C to 70°C
Maximum static pressure	21MPa*

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

DCWV - WARNING - PERSONAL INJURY
Do not use our DCWV 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.

USA & Canada
RDP Electrosense
2216 Pottstown Pike
Pottstown, PA 19465
USA
Tel: 610-469-0850
Tel: 800-334-5838
Fax: 610-469-0852
Email: info@rdpe.com

Global Head Offiice
RDP Electronics Ltd
Grove Street, Heath Town
Wolverhampton, West Midlands, WV10 0PY
United Kingdom
Tel: +44 1902 457512
Email: sales@rdpe.com
URL: www.rdpe.com