DISPLACEMENT

D5W Submersible LVDT Displacement Transducer

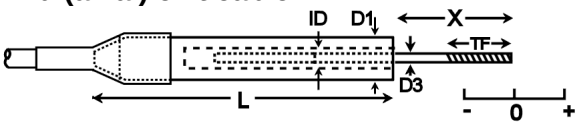
- High accuracy
- High cycle life
- Submersible
- Stainless steel
- Infinite resolution

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 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.
The LVDTs are available as either unguided or spring return versions.

Unguided version.

On our D5W 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 D5W unguided position measurement transducers are appropriate where external guidance is available and give truly non-contact operation

End (axial) exit cable.



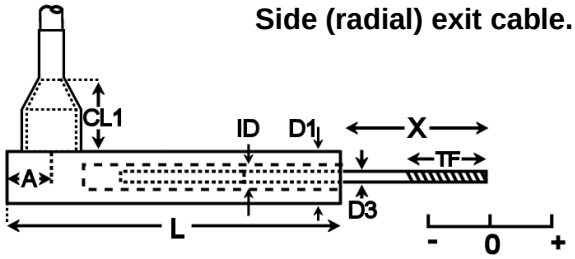
D5/40W
D1 = 8mm (7.965mm to 7.990mm)

D5/100W to MD5/500W
D1 = 9.5mm (9.398mm to 9.498mm)

D3=2.00mm,
TGF=M3x0.5
X=Centre of range

Type	Range	Linearity error (% F.S.)	L	X (nom)	ID	Total weight	Armature weight	TF	Inward over-travel	Sensitivity (nom)
D5/40W	±1mm	±0.5/±0.25	46mm	16mm	2.30mm	20g	1.3g	13mm	2.0mm	143mV/V
D5/100W	±2.5mm	±0.5/±0.25	53mm	20mm	2.29mm	22g	1.4g	14mm	1.5mm	375mV/V
D5/200W	±5mm	±0.5/±0.25/±0.1	55mm	26mm	2.29mm	24g	1.8g	19mm	2.9mm	320mV/V
D5/300W	±7.5mm	±0.5/±0.25/±0.1	70mm	30mm	2.54mm	26g	1.8g	19mm	4.0mm	435mV/V
D5/400W	±10mm	±0.5/±0.25	74mm	33mm	2.54mm	34g	1.9g	19mm	3.9mm	567mV/V
MD5/500W	±12.5mm	±0.5/±0.25	90mm	35mm	2.54mm	42g	2.3g	19mm	3.9mm	773mV/V

Side (radial) exit cable.



D5/40WRA
D1 = 8mm (7.965mm to 7.990mm)

D5/100WRA to MD5/500WRA
D1 = 9.5mm (9.398mm to 9.498mm)

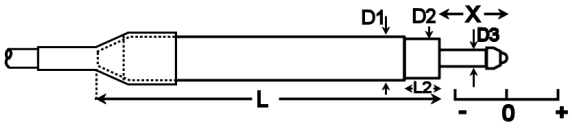
A=8mm (nominal)
CL1=18mm
D3=2.00mm
TGF=M3x0.5
X=Centre of range

Type	Range	Linearity error (% F.S.)	L	X (nom)	ID	Total weight	Armature weight	TF	Inward over-travel	Sensitivity (nom)
D5/40WRA	±1mm	±0.5/±0.25	48mm	19mm	2.30mm	20g	1.3g	13mm	2.0mm	143mV/V
D5/100WRA	±2.5mm	±0.5/±0.25	53mm	20mm	2.29mm	22g	1.4g	14mm	1.5mm	375mV/V
D5/200WRA	±5mm	±0.5/±0.25/±0.1	55mm	26mm	2.29mm	24g	1.8g	18mm	2.9mm	320mV/V
D5/300WRA	±7.5mm	±0.5/±0.25/±0.1	70mm	30mm	2.54mm	26g	1.8g	18mm	4.0mm	435mV/V
D5/400WRA	±10mm	±0.5/±0.25	74mm	33mm	2.54mm	34g	1.9g	18mm	3.9mm	567mV/V
MD5/500WRA	±12.5mm	±0.5/±0.25	90mm	35mm	2.54mm	42g	2.3g	18mm	3.9mm	773mV/V

Spring return version.

Our D5W 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 D5W spring return LVDTs are appropriate where it is not possible to connect the transducer armature to the moving component being measured.

End (axial) exit cable.



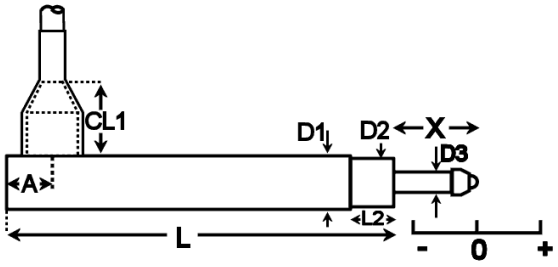
X=Centre of range

D5/040AW
D1 = 8mm (7.965mm to 7.990mm)
D2 = 7.0mm, D3 = 3.96mm, L2 = 7.2mm

D5/100AW to MD5/500AW
D1 = 9.5mm (9.398mm to 9.498mm)
D2 = 8.0mm, D3 = 4.75mm, L2 = 8.0mm

Type	Range	Linearity error (% F.S.)	L	X (nom)	Total weight	Inward over-travel	Outward over-travel	Sensitivity (nom)
D5/40AW	±1mm	±0.5/±0.25	58mm	12mm	11g	1.0mm	1.5mm	143mV/V
D5/100AW	±2.5mm	±0.5/±0.25	69mm	13mm	30g	1.1mm	1.1mm	375mV/V
D5/200AW	±5mm	±0.5/±0.25/±0.1	79mm	14mm	34g	1.4mm	0.3mm	320mV/V
D5/300AW	±7.5mm	±0.5/±0.25/±0.1	98mm	15mm	38g	1.4mm	1.3mm	435mV/V
D5/400AW	±10mm	±0.5/±0.25	110mm	19mm	44g	1.3mm	1.3mm	567mV/V
MD5/500AW	±12.5mm	±0.5/±0.25	132mm	22mm	52g	1.9mm	1.3mm	773mV/V

Side (radial) exit cable.



X=Centre of range

D5/040AWRA
D1=8mm (7.965mm to 7.990mm)
D2 = 7.0mm, D3 = 3.96mm, L2 = 7.2mm

D5/100AWRA to MD5/500AWRA
D1 = 9.5mm (9.398mm to 9.498mm)
D2 = 8.0mm, D3 = 4.75mm, L2 = 8.0mm

A=8mm (nominal), CL1=18mm

Type	Range	Linearity error (% F.S.)	L	X (nom)	Total weight	Inward over-travel	Outward over-travel	Sensitivity (nom)
D5/40AWRA	±1mm	±0.5/±0.25	59mm	12mm	11g	1.0mm	1.5mm	143mV/V
D5/100AWRA	±2.5mm	±0.5/±0.25	69mm	13mm	30g	1.1mm	1.1mm	375mV/V
D5/200AWRA	±5mm	±0.5/±0.25/±0.1	79mm	14mm	34g	1.4mm	0.3mm	320mV/V
D5/300AWRA	±7.5mm	±0.5/±0.25/±0.1	98mm	15mm	38g	1.4mm	1.3mm	435mV/V
D5/400AWRA	±10mm	±0.5/±0.25	110mm	19mm	44g	1.3mm	1.3mm	567mV/V
MD5/500AWRA	±12.5mm	±0.5/±0.25	132mm	22mm	52g	1.9mm	1.3mm	773mV/V

Specification	
Excitation/supply (acceptable)	0.5V to 7V rms, 2kHz to 10kHz (sinusoidal)
Excitation/supply (calibrated)	5V rms, 5kHz (sinusoidal)
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)	±0.01% F.S. /°C (typical)
Operating temperature range	-20°C to 125°C
Electrical termination	2m (integral cable) Longer available to order.
Maximum static pressure	3.4MPa

Options And Accessories				
				
TM0315 Increase the maximum temperature to 200°C On some models	Mounting block for RDP transducers	E74 In-Line LVDT Amplifier Depending on cable type	Amplifiers	Panel meter

Due to our policy of on-going development, D5W specifications may change without notice. Any modification to our D5W may affect some or all of the specifications for our equipment.

All D5W dimensions and specifications are nominal.

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