DISPLACEMENT

D5W Submersible LVDT Displacement Transducer

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

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.

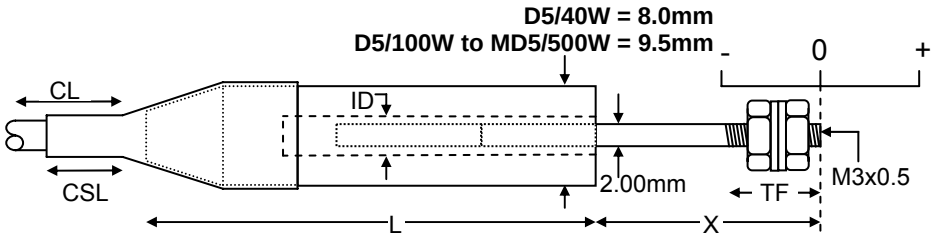
Our submersible displacement transducers are designed to make measurements whilst submerged in suitable liquids. Fluids which are non-magnetic can be allowed to flood the armature tube without affecting the operation of the transducer.

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

Unguided version.

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

End (axial) exit cable.

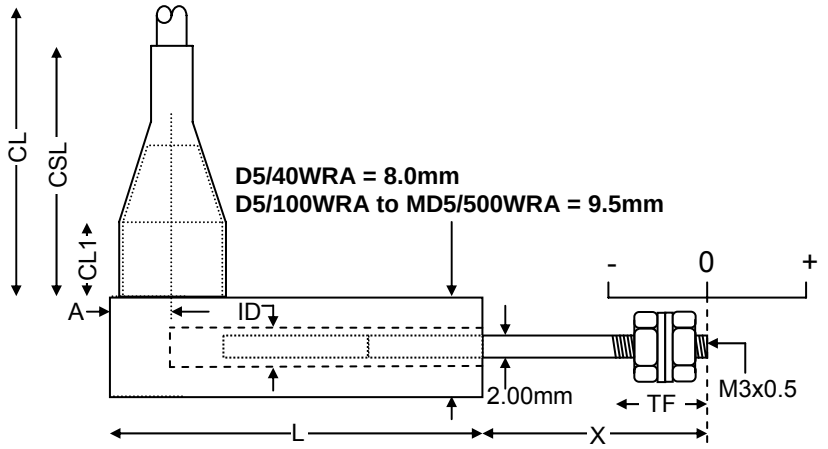


CL (Cable length). - See specification.
CSL (Cable sleeve length). - See specification.

Type	Range	Linearity error (% F.S.)	L	X	ID	Total weight	Armature weight	TF	Inward over-travel	Sensitivity (nom)
D5/40W	±1mm	<±0.5/±0.25	46mm	15.7mm	2.30mm	20g	1.3g	13mm	2.0mm	143mV/V
D5/100W	±2.5mm	<±0.5/±0.25	53mm	19.5mm	2.29mm	22g	1.4g	14mm	1.5mm	375mV/V
D5/200W	±5mm	<±0.5/±0.25/±0.1	55mm	26.3mm	2.29mm	24g	1.8g	19mm	2.9mm	320mV/V
D5/300W	±7.5mm	<±0.5/±0.25/±0.1	70mm	30.0mm	2.54mm	26g	1.8g	19mm	4.0mm	435mV/V
D5/400W	±10mm	<±0.5/±0.25	74mm	32.5mm	2.54mm	34g	1.9g	19mm	3.9mm	567mV/V
MD5//500W	±12.5mm	<±0.5/±0.25	90mm	35.0mm	2.54mm	42g	2.3g	19mm	3.9mm	773mV/V

Side (radial) exit cable.

A - 8mm (nominal)
CL1 - 18mm



CL (Cable length). - See specification.
CSL (Cable sleeve length). - See specification.

Type	Range	Linearity error (% F.S.)	L	X	ID	Total weight	Armature weight	TF	Inward over-travel	Sensitivity (nom)
D5/40WRA	±1mm	<±0.5/±0.25	48mm	19.0mm	2.30mm	20g	1.3g	13mm	2.0mm	143mV/V
D5/100WRA	±2.5mm	<±0.5/±0.25	53mm	19.5mm	2.29mm	22g	1.4g	14mm	1.5mm	375mV/V
D5/200WRA	±5mm	<±0.5/±0.25/±0.1	55mm	26.3mm	2.29mm	24g	1.8g	18mm	2.9mm	320mV/V
D5/300WRA	±7.5mm	<±0.5/±0.25/±0.1	70mm	30.0mm	2.54mm	26g	1.8g	18mm	4.0mm	435mV/V
D5/400WRA	±10mm	<±0.5/±0.25	74mm	32.5mm	2.54mm	34g	1.9g	18mm	3.9mm	567mV/V
MD5/500WRA	±12.5mm	<±0.5/±0.25	90mm	35.0mm	2.54mm	42g	2.3g	18mm	3.9mm	773mV/V

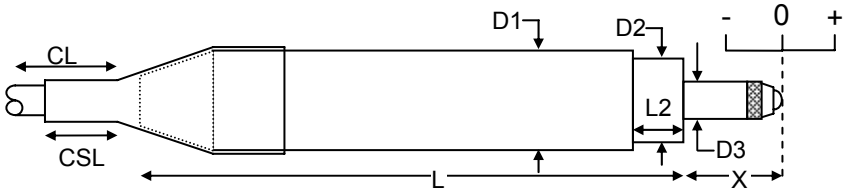
Spring return version.

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

Spring return transducers should be cleared of air as trapped air may compress under pressure an cause errors. The mechanical frequency response of transducers may be reduced by fluid in the internal tubes.

End (axial) exit cable.

	D1	D2	D3	L2
D5/40AW	8.0mm	7.0mm	3.96mm	7.2mm
D5/100AW to MD5/500AW	9.5mm	8.0mm	4.75mm	8.0mm



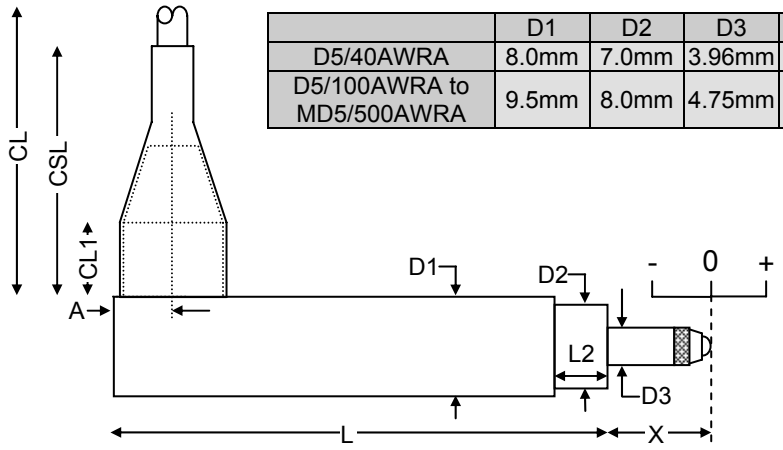
CL (Cable length). - See specification.
CSL (Cable sleeve length). - See specification.

Type	Range	Linearity error (% F.S.)	L	X	Total weight	Inward over-travel	Outward over-travel	Sensitivity (nom)
D5/40AW	±1mm	<±0.5/±0.25	58mm	11.5mm	11g	1.0mm	1.5mm	143mV/V
D5/100AW	±2.5mm	<±0.5/±0.25	69mm	12.5mm	30g	1.1mm	1.1mm	375mV/V
D5/200AW	±5mm	<±0.5/±0.25/±0.1	76mm	13.7mm	34g	1.4mm	0.3mm	320mV/V
D5/300AW	±7.5mm	<±0.5/±0.25/±0.1	98mm	15.3mm	38g	1.4mm	1.3mm	435mV/V
D5/400AW	±10mm	<±0.5/±0.25	110mm	19.0mm	44g	1.3mm	1.3mm	567mV/V
MD5/500AW	±12.5mm	<±0.5/±0.25	132mm	21.6mm	52g	1.9mm	1.3mm	773mV/V

Side (radial) exit cable.

A - 8mm (nominal)
CL1 - 18mm

CL (Cable length). - See specification.
CSL (Cable sleeve length). - See specification.



	D1	D2	D3	L2
D5/40AWRA	8.0mm	7.0mm	3.96mm	7.2mm
D5/100AWRA to MD5/500AWRA	9.5mm	8.0mm	4.75mm	8.0mm

Type	Range	Linearity error (% F.S.)	L	X	Total weight	Inward over-travel	Outward over-travel	Sensitivity (nom)
D5/40AWRA	±1mm	<±0.5/±0.25	59mm	11.5mm	11g	1.0mm	1.5mm	143mV/V
D5/100AWRA	±2.5mm	<±0.5/±0.25	69mm	12.5mm	30g	1.1mm	1.1mm	375mV/V
D5/200AWRA	±5mm	<±0.5/±0.25/±0.1	76mm	13.7mm	34g	1.4mm	0.3mm	320mV/V
D5/300AWRA	±7.5mm	<±0.5/±0.25/±0.1	98mm	15.3mm	38g	1.4mm	1.3mm	435mV/V
D5/400AWRA	±10mm	<±0.5/±0.25	110mm	19.0mm	44g	1.3mm	1.3mm	567mV/V
MD5/500AWRA	±12.5mm	<±0.5/±0.25	132mm	21.6mm	52g	1.9mm	1.3mm	773mV/V

All dimensions and specifications are nominal.

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

Specification	
Excitation/supply (acceptable)	0.5V to 7V rms, 2kHz to 10kHz (sinusoidal)
Excitation/supply (calibrated)	5V rms, 5kHz (sinusoidal)
Output load	100k Ohms
Temperature coefficient (zero)	±0.01% F.S. /°C (typical)
Temperature coefficient (span)	±0.01% F.S. /°C (typical)
Operating temperature range	-20°C to 125°C
Maximum pressure when sealed on inner cable with TM0960	17bar
Maximum pressure when sealed on cable sleeve	34bar

Cable length	Standard cable	CSL (Cable sleeve length) = 2m, CL (Cable length) = 2m
	Maximum cable sleeve length	7m
	Option code TM0828	CSL (Cable sleeve length) = 600mm, CL (Cable length) = 600mm to 1000m
	Option code TM0960	CSL (Cable sleeve length) = 50mm, CL (Cable length) = 600mm to 1000m

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