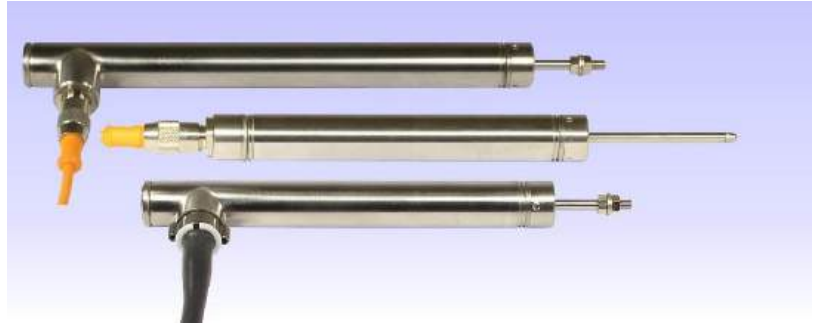


ACW Submersible LVDT Displacement Transducer

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



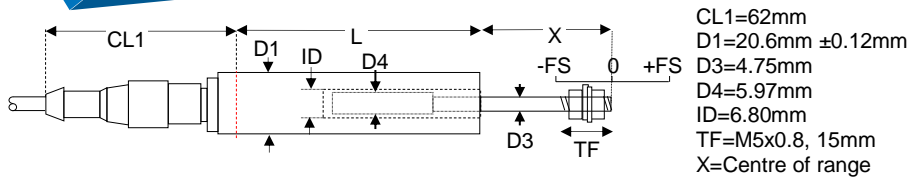
These transducers are for displacement / position measurement. They make an accurate position measurement of the movement of the armature (the sliding part) relative to the body of the displacement transducer.

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.

This series of displacement transducer is available as either an unguided, captive or spring return version.

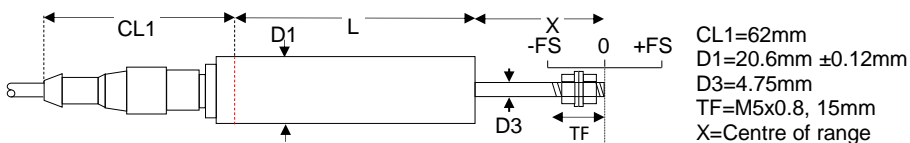
Unguided version.



On our ACW 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 ACW 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	Inward over-travel	Sensitivity (nom)
ACW500	± 12.5 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	153mm	38mm	200g	19g	10mm	0.7V/V
ACW1000	± 25 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	181mm	63mm	257g	26g	23mm	0.9V/V
ACW2000	± 50 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	304mm	76mm	350g	40g	10mm	1.5V/V
ACW3000	± 75 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	420mm	114mm	484g	57g	23mm	1.5V/V
ACW4000	± 100 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	453mm	127mm	598g	71g	10mm	3.2V/V
ACW6000	± 150 mm	$\pm 0.5/\pm 0.25$	632mm	178mm	854g	104g	10mm	2.4V/V
ACW8000	± 200 mm	$\pm 0.5/\pm 0.25$	858mm	254mm	1.2kg	142g	36mm	1.5V/V

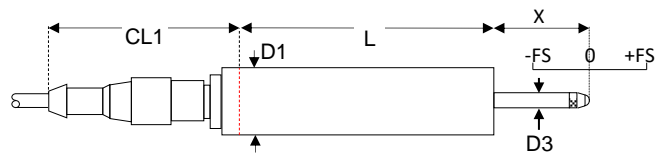
Captive guided version.



Our ACW captive guided displacement transducer has bearings to guide the armature inside the measurement sensor. Our ACW 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)	Total weight	Inward over-travel	Outward over-travel	Sensitivity (nom)
ACW500B	± 12.5 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	153mm	38mm	314g	10mm	28mm	0.7V/V
ACW1000B	± 25 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	181mm	63mm	370g	17mm	25mm	0.9V/V
ACW2000B	± 50 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	304mm	76mm	541g	10mm	28mm	1.5V/V
ACW3000B	± 75 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	420mm	114mm	683g	23mm	28mm	1.5V/V
ACW4000B	± 100 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	453mm	127mm	740g	10mm	28mm	3.2V/V
ACW6000B	± 150 mm	$\pm 0.5/\pm 0.25$	632mm	178mm	1.1kg	10mm	35mm	2.4V/V
ACW8000B	± 200 mm	$\pm 0.5/\pm 0.25$	858mm	254mm	1.5kg	36mm	41mm	1.5V/V
ACW10000B	± 250 mm	$\pm 0.5/\pm 0.25$	1043mm	305mm	1.6kg	36mm	47mm	2.0V/V
ACW15000B	± 380 mm	± 0.5	1443mm	406mm	2.2kg	10mm	28mm	3.2V/V
ACW18500B	± 470 mm	± 0.5	1716mm	508mm	2.6kg	23mm	35mm	3.6V/V

Spring return version.



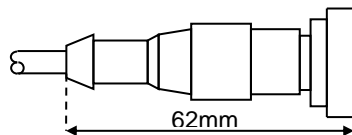
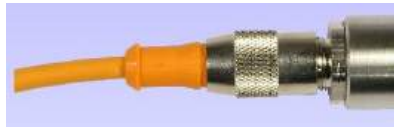
CL1=62mm
D1=20.6mm ± 0.12 mm
D3=4.75mm
X=Centre of range

Our ACW 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 ACW 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	Sensitivity (nom)
ACW500A	± 12.5 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	153mm	38mm	214g	1.2N	0.2N/cm	6mm	28mm	0.7V/V
ACW1000A	± 25 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	181mm	63mm	257g	1.9N	0.3N/cm	4mm	25mm	0.9V/V
ACW2000A	± 50 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	304mm	76mm	428g	4.1N	0.4N/cm	6mm	28mm	1.5V/V
ACW3000A	± 75 mm	$\pm 0.5/\pm 0.25/\pm 0.1$	420mm	114mm	513g	5.4N	0.4N/cm	15mm	28mm	1.5V/V

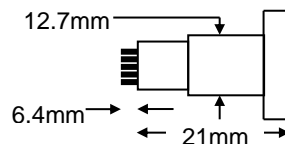
Electrical termination options

Standard cable - End exit connector with cable fitted



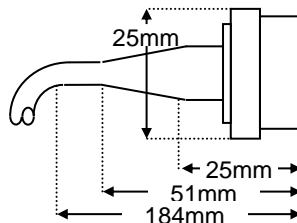
Cable length = 5m
Operating temperature range* = -25°C to 90°C
Maximum static pressure* = 1000kPa

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



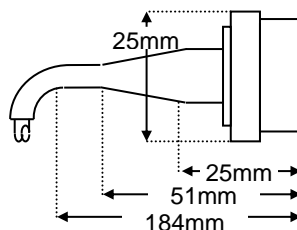
Operating temperature range* = -40°C to 125°C

Cable Option 2 - End exit fully sleeved integral cable



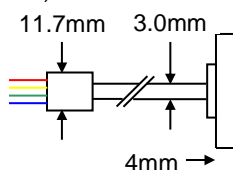
Cable length = 600mm to 7m
Operating temperature range* = -40°C to 100°C
Maximum static pressure* = 3MPa

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

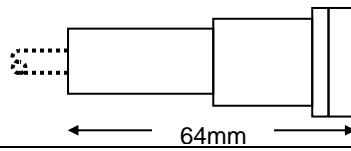
Cable Option 5 - End exit integral MI (mineral insulated) stainless steel cable



Operating temperature range* = -40°C to 200°C
Cable length = 100mm to 70m
Maximum static pressure* = 21MPa

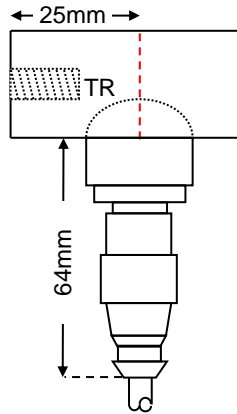
Torque
Position
Pressure
Load Cells
Displacement
Instrumentation

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



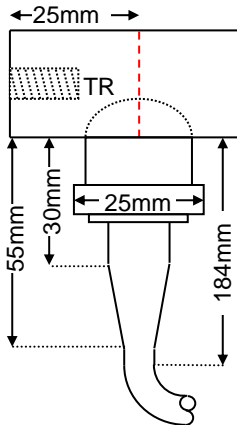
Cable length = 0mm to 1000m
 Operating temperature range* = -25°C to 125°C
 Maximum static pressure* = 800kPa

Cable Option 7 - Side exit connector with cable fitted



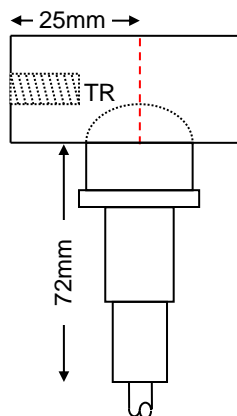
Cable length = 5m
 Operating temperature range* = -25°C to 90°C
 Maximum static pressure* = 1000kPa
 TR = M5x0.8, 11mm

Cable Option 8 - Side exit fully sleeved integral cable



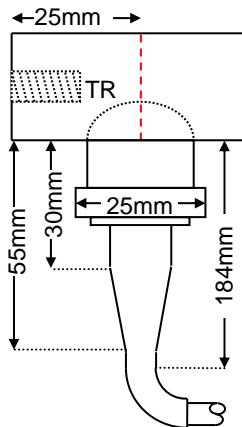
Cable length = 600mm to 7m
 Operating temperature range* = -40°C to 100°C
 Maximum static pressure* = 3MPa
 TR = M5x0.8, 11mm

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



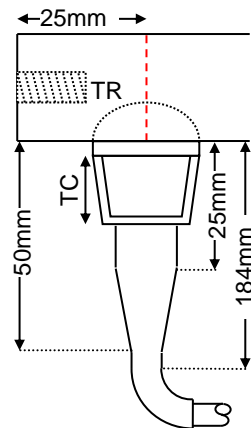
Cable length = 0mm to 1000m
 Operating temperature range* = -25°C to 125°C
 Maximum static pressure* = 800kPa
 TR = M5x0.8, 11mm

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

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

Specification *Transducer and cable option specifications should be compared and the worst figures used

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	-40°C to 125°C**



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

ACW - WARNING - PERSONAL INJURY

Do not use our ACW 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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Torque
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 Load Cells
 Displacement
 Instrumentation