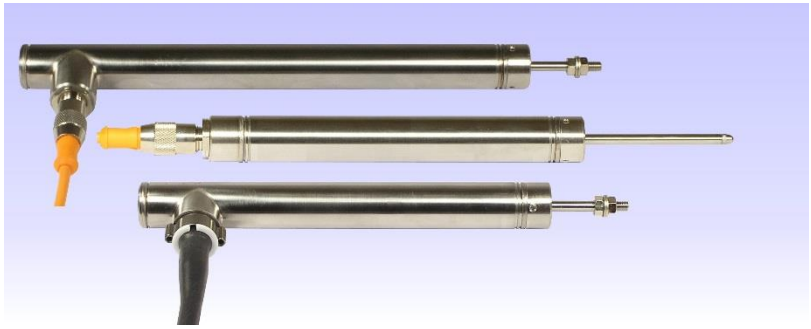
DISPLACEMENT

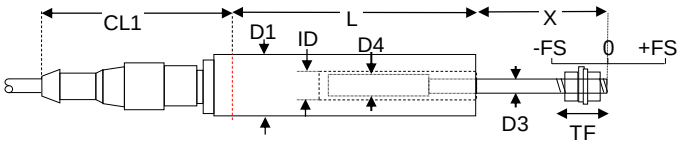
ACW Submersible LVDT Displacement Transducer

- 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.

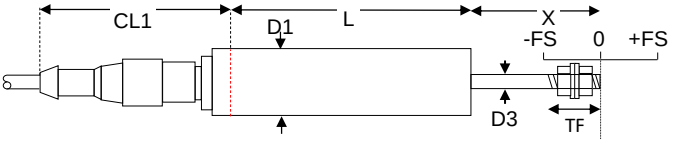


CL1=2.4"
D1=0.811" ±0.005"
D3=0.187"
D4=0.235"
ID=0.268"
TF=M5x0.8, 0.59"
X=Center of range

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	±12.5mm (±0.5")	±0.5/±0.25/±0.1	6.02"	1.5"	7.1oz	0.68oz	0.4"	0.7V/V
ACW1000	±25mm (±1")	±0.5/±0.25/±0.1	7.13"	2.5"	9.1oz	0.90oz	0.9"	0.9V/V
ACW2000	±50mm (±2")	±0.5/±0.25/±0.1	11.97"	3.0"	12.3oz	1.40oz	0.4"	1.5V/V
ACW3000	±75mm (±3")	±0.5/±0.25/±0.1	16.54"	4.5"	1.1lb	2.00oz	0.9"	1.5V/V
ACW4000	±100mm (±4")	±0.5/±0.25/±0.1	17.83"	5.0"	1.3lb	2.51oz	0.4"	3.2V/V
ACW6000	±150mm (±6")	±0.5/±0.25	24.88"	7.0"	1.9lb	3.65oz	0.4"	2.4V/V
ACW8000	±200mm (±8")	±0.5/±0.25	33.78"	10.0"	2.7lb	5.00oz	1.4"	1.5V/V

Captive guided version.

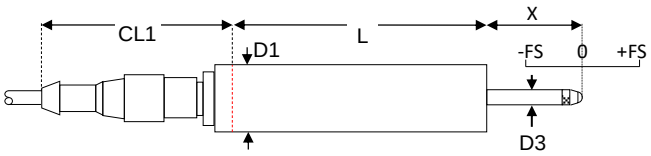


CL1=2.4"
D1=0.811" ±0.005"
D3=0.187"
TF=M5x0.8, 0.59"
X=Center of range

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	±12.5mm (±0.5")	±0.5/±0.25/±0.1	6.02"	1.5"	11.1oz	0.4"	1.1"	0.7V/V
ACW1000B	±25mm (±1")	±0.5/±0.25/±0.1	7.13"	2.5"	13.1oz	0.7"	1.0"	0.9V/V
ACW2000B	±50mm (±2")	±0.5/±0.25/±0.1	11.97"	3.0"	1.2lb	0.4"	1.1"	1.5V/V
ACW3000B	±75mm (±3")	±0.5/±0.25/±0.1	16.54"	4.5"	1.5lb	0.9"	1.1"	1.5V/V
ACW4000B	±100mm (±4")	±0.5/±0.25/±0.1	17.83"	5.0"	1.6lb	0.4"	1.1"	3.2V/V
ACW6000B	±150mm (±6")	±0.5/±0.25	24.88"	7.0"	2.3lb	0.4"	1.4"	2.4V/V
ACW8000B	±200mm (±8")	±0.5/±0.25	33.78"	10.0"	3.2lb	1.4"	1.6"	1.5V/V
ACW10000B	±250mm (±10")	±0.5/±0.25	41.06"	12.0"	3.6lb	1.4"	1.9"	2.0V/V
ACW15000B	±380mm (±15")	±0.5	56.81"	16.0"	4.8lb	0.4"	1.1"	3.2V/V
ACW18500B	±470mm (±18.5")	±0.5	67.56"	20.0"	5.6lb	0.9"	1.4"	3.6V/V

Spring return version.



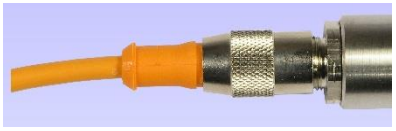
CL1=2.4"
D1=0.811" ±0.005"
D3=0.187"
X=Center of range

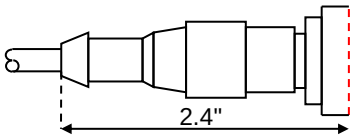
Our ACW spring displacement transducer has bearings to guide the armature inside the measurement sensor and a spring which pushes the armature to the fully out position. Our ACW spring return LVDTs are appropriate where it is not possible to connect the transducer armature to the moving component being 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	±12.5mm (±0.5")	±0.5/±0.25/±0.1	6.02"	1.5"	7.5oz	4oz	2oz/inch	0.2"	1.1"	0.7V/V
ACW1000A	±25mm (±1")	±0.5/±0.25/±0.1	7.13"	2.5"	9.1oz	7oz	2oz/inch	0.2"	1.0"	0.9V/V
ACW2000A	±50mm (±2")	±0.5/±0.25/±0.1	11.97"	3.0"	15.1oz	15oz	4oz/inch	0.2"	1.1"	1.5V/V
ACW3000A	±75mm (±3")	±0.5/±0.25/±0.1	16.54"	4.5"	1.1lb	1lbs	3oz/inch	0.6"	1"	1.5V/V

Electrical termination options

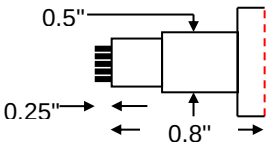
Standard cable - End exit connector with cable fitted





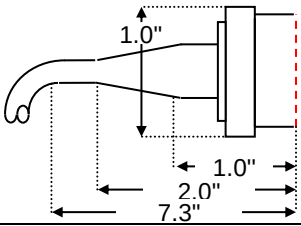
Cable length = 16ft
Operating temperature range* = -13°F to 194°F
Maximum static pressure* = 145psi

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



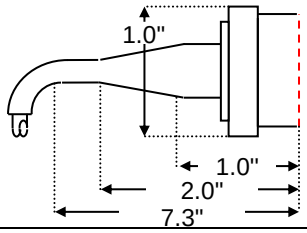
Operating temperature range* = -40°F to 257°F

Option code 2 - End exit fully sleeved integral cable



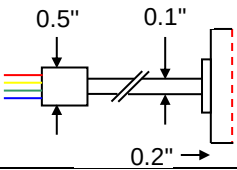
Cable length = 23.6" to 23ft
Operating temperature range* = -40°F to 212°F
Maximum static pressure* = 500psi

Option code 3 - End exit part-sleeved integral cable



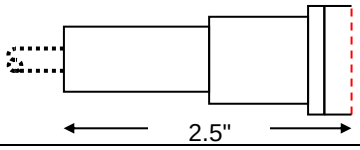
Cable length = 39.4" to 328ft
Cable sleeve length = 24"
Operating temperature range* = -40°F to 194°F
Maximum static pressure* = 250psi

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



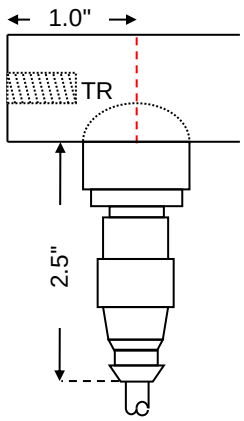
Operating temperature range* = -40°F to 392°F
Cable length = 3.9" to 230ft
Maximum static pressure* = 3000psi

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



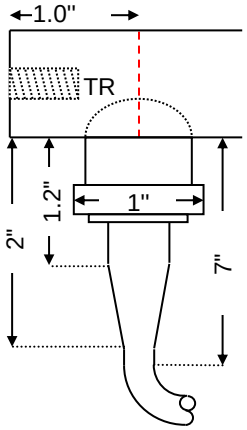
Cable length = 0" to 3281ft
Operating temperature range* = -13°F to 257°F
Maximum static pressure* = 116psi

Option code 7 - Side exit connector with cable fitted



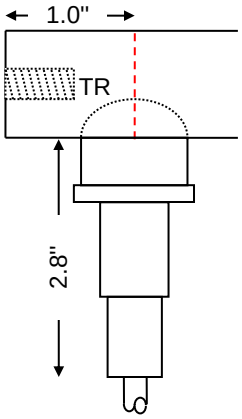
Cable length = 16ft
Operating temperature range* = -13°F to 194°F
Maximum static pressure* = 145psi
TR = M5x0.8, 0.43"

Option code 8 - Side exit fully sleeved integral cable



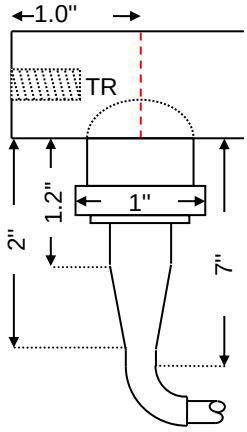
Cable length = 23.6" to 23ft
Operating temperature range* = -40°F to 212°F
Maximum static pressure* = 500psi
TR = M5x0.8, 0.43"

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



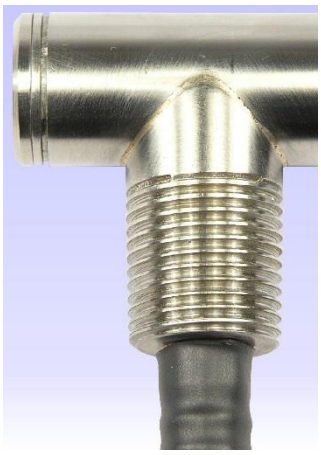
Cable length = 0" to 3281ft
Operating temperature range* = -13°F to 257°F
Maximum static pressure* = 116psi
TR = M5x0.8, 0.43"

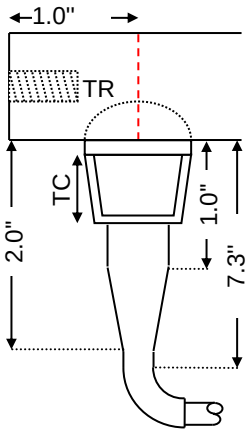
Option code 10 - Side exit part-sleeved integral cable



Cable length = 23.6" to 3281ft
Cable sleeve length = 6"
Operating temperature range* = -40°F to 194°F
Maximum static pressure* = 250psi
TR = M5x0.8, 0.43"

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





Cable length = 39.4" to 3281ft
Cable sleeve length = 6"
Operating temperature range* = -40°F to 194°F
Maximum static pressure* = 247psi
TR = M5x0.8, 0.43"
TC = 1/2"-14 NPT, 0.78"

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)	±0.006% F.S. /°F (typical)*
Operating temperature range	-40°F to 257°F**

bsi. ISO 9001 Quality Management

CE

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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