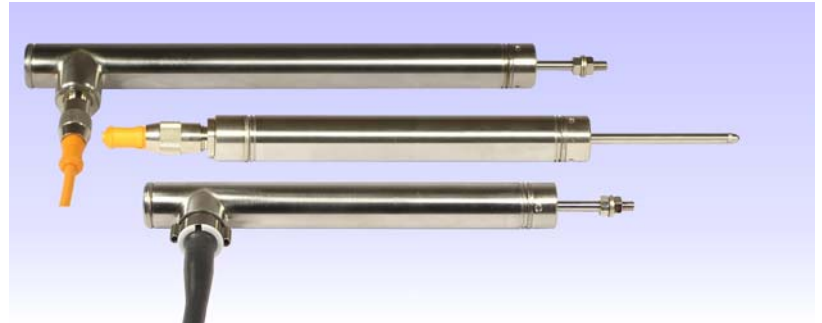




DISPLACEMENT

## 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.

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

Shown with standard cable assembly, see below for options

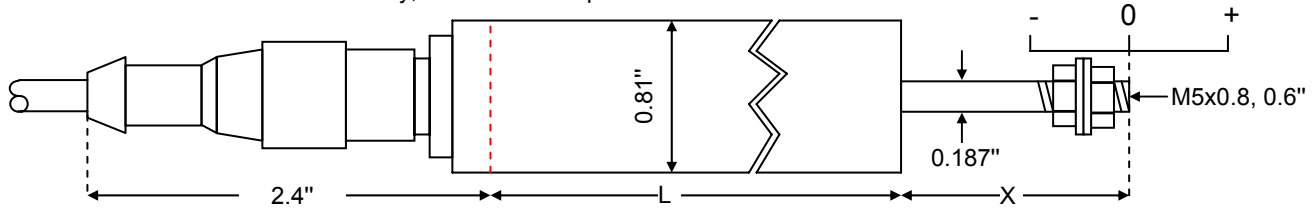


Type	Range	Linearity error (% F.S.)	L	X	Total weight	Armature weight	Inward over-travel	Sensitivity (nom)
ACW500	±12.5mm (±0.5")	<±0.5/±0.25/±0.1	6.0"	1.5"	7oz	0.7oz	0.4"	0.7V/V
ACW1000	±25mm (±1")	<±0.5/±0.25/±0.1	7.1"	2.5"	9oz	0.9oz	0.9"	0.9V/V
ACW2000	±50mm (±2")	<±0.5/±0.25/±0.1	12.0"	3.0"	12oz	1.4oz	0.4"	1.5V/V
ACW3000	±75mm (±3")	<±0.5/±0.25/±0.1	16.5"	4.5"	1lb	2.0oz	0.9"	1.5V/V
ACW4000	±100mm (±4")	<±0.5/±0.25/±0.1	17.8"	5.0"	1lb	2.5oz	0.4"	3.2V/V
ACW6000	±150mm (±6")	<±0.5/±0.25	24.9"	7.0"	2lb	3.7oz	0.4"	2.4V/V
ACW8000	±200mm (±8")	<±0.5/±0.25	33.8"	10.0"	3lb	5.0oz	1.4"	1.5V/V

## Captive guided version.

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

Shown with standard cable assembly, see below for options

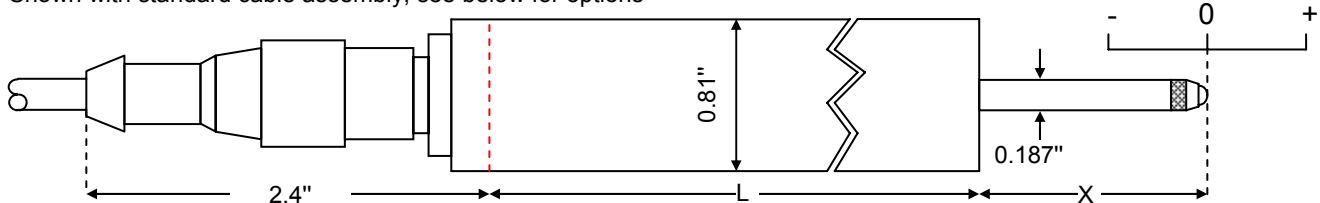


Type	Range	Linearity error (% F.S.)	L	X	Total weight	Inward over-travel	Outward over-travel	Sensitivity (nom)
ACW500B	±12.5mm (±0.5")	<±0.5/±0.25/±0.1	6.0"	1.5"	11oz	0.4"	1.1"	0.7V/V
ACW1000B	±25mm (±1")	<±0.5/±0.25/±0.1	7.1"	2.5"	13oz	0.7"	1.0"	0.9V/V
ACW2000B	±50mm (±2")	<±0.5/±0.25/±0.1	12.0"	3.0"	1lb	0.4"	1.1"	1.5V/V
ACW3000B	±75mm (±3")	<±0.5/±0.25/±0.1	16.5"	4.5"	2lb	0.9"	1.1"	1.5V/V
ACW4000B	±100mm (±4")	<±0.5/±0.25/±0.1	17.8"	5.0"	2lb	0.4"	1.1"	3.2V/V
ACW6000B	±150mm (±6")	<±0.5/±0.25	24.9"	7.0"	2lb	0.4"	1.4"	2.4V/V
ACW8000B	±200mm (±8")	<±0.5/±0.25	33.8"	10.0"	3lb	1.4"	1.6"	1.5V/V
ACW10000B	±250mm (±10")	<±0.5/±0.25	41.1"	12.0"	4lb	1.4"	1.9"	2.0V/V
ACW15000B	±375mm (±15")	<±0.5	56.8"	16.0"	5lb	0.4"	1.1"	3.2V/V
ACW18500B	±470mm (±18.5")	<±0.5	67.6"	20.0"	6lb	0.9"	1.4"	3.6V/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.

Shown with standard cable assembly, see below for options

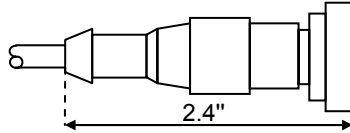


Type	Range	Linearity error (% F.S.)	L	X	Total weight	Spring force at X	Spring rate	Inward over-travel	Outward over-travel	Sensitivity (nom)
ACW500A	±12.5mm (±0.5")	<±0.5/±0.25/±0.1	6.0"	1.5"	8oz	4.4oz	2.0oz/inch	0.24"	1.1"	0.7V/V
ACW1000A	±25mm (±1")	<±0.5/±0.25/±0.1	7.1"	2.5"	9oz	7.0oz	2.3oz/inch	0.2"	1.0"	0.9V/V
ACW2000A	±50mm (±2")	<±0.5/±0.25/±0.1	12.0"	3.0"	15oz	15oz	3.6oz/inch	0.2"	1.1"	1.5V/V
ACW3000A	±75mm (±3")	<±0.5/±0.25/±0.1	16.5"	4.5"	1lb	1lbs	3.2oz/inch	1"	1"	1.5V/V

# Electrical termination options

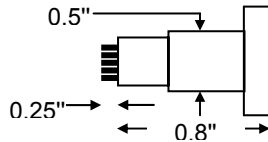
\*Transducer and cable option specifications should be compared and the worst figures used

Standard cable - End exit connector with cable fitted



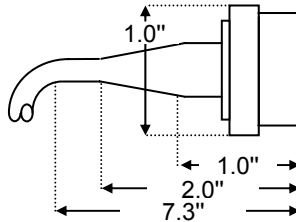
Cable length = 16ft  
 Operating temperature range\* = -13°F to 194°F  
 Maximum static pressure\* = 145psi

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



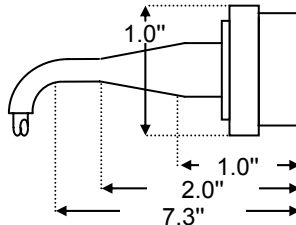
Operating temperature range\* = -40°F to 257°F

Option code 2 - End exit fully sleeved integral cable



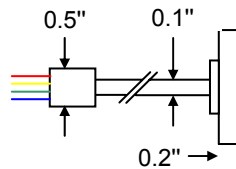
Cable length = 23.6" to 23ft  
 Operating temperature range\* = -40°F to 212°F  
 Maximum static pressure\* = 500psi

Option code 3 - End exit part-sleeved integral cable



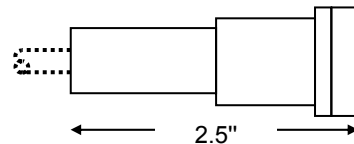
Cable length = 39.4" to 328ft  
 Cable sleeve length = 24"  
 Operating temperature range\* = -40°F to 194°F  
 Maximum static pressure\* = 250psi

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



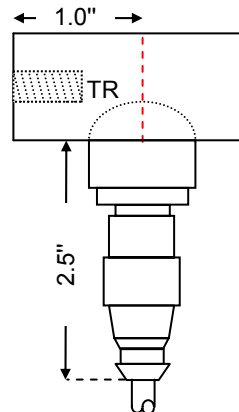
Operating temperature range\* = -40°F to 392°F  
 Cable length = 3.9" to 230ft  
 Maximum static pressure\* = 3000psi

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



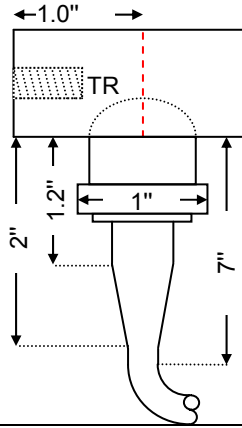
Cable length = 0" to 3281ft  
 Operating temperature range\* = -13°F to 257°F  
 Maximum static pressure\* = 116psi

Standard cable 7 - Side exit connector with cable fitted



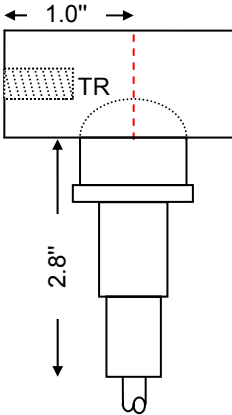
Cable length = 16ft  
 Operating temperature range\* = -13°F to 194°F  
 Maximum static pressure\* = 145psi  
 TR = M5x0.8, 0.43"

Standard cable 8 - Side exit fully sleeved integral cable



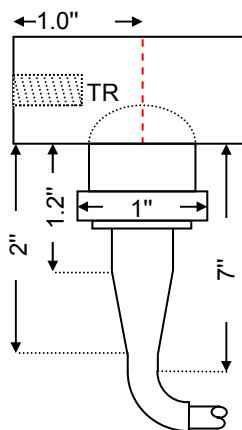
Cable length = 23.6" to 23ft  
 Operating temperature range\* = -40°F to 121°F  
 Maximum static pressure\* = 500psi  
 TR = M5x0.8, 0.43"

Standard cable 9 - Side exit connector with customer defined cable length fitted



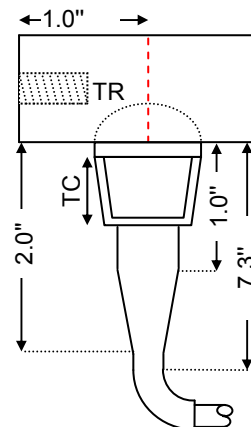
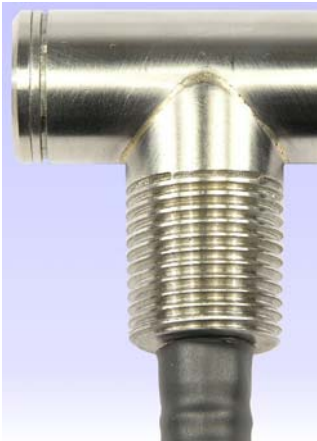
Cable length = 0" to 3281ft  
 Operating temperature range\* = -13°F to 257°F  
 Maximum static pressure\* = 116psi  
 TR = M5x0.8, 0.43"

Standard cable 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"

Standard cable 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, 0.8"

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)
Output load	100k Ohms
Temperature coefficient (zero)	±0.006% F.S. /°F (typical)
Temperature coefficient (span)	±0.006% F.S. /°F (typical)
Operating temperature range (minimum)	-40°F*
Operating temperature range (maximum)	257°F*
Maximum static pressure	3000psi*

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.

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