

# AC-AC Submersible\* LVDTs

## Models LW7U, LW7C and LW7S

SUBMERSIBLE

STAINLESS STEEL

3 ARMATURE DESIGNS



Sensotec's Models LW7U, LW7C and LW7S Submersible LVDTs are ideal for drilling, mining, and hydraulic engineering applications which require a displacement transducer with a stainless steel, waterproof construction. These models may be used as direct measuring linear displacement devices or positional feedback elements in dynamic systems. They are suitable for submersion in fresh water and some corrosive fluids for long periods. The captive guided spring return armature is fitted with a ball ended probe.

### Models LW7U, LW7C and LW7S

Order Codes: AY200, AY201, AY202

#### PERFORMANCE

Stroke Ranges (Model LW7U & LW7C).....	+/- 0.5" to 4.0" (12.5 mm to 100 mm)
(Model LW7S).....	+/- 0.5" to 3.0" (12.5 mm to 75 mm)
Non-linearity (max.).....	+/- 0.25% F.S.
Output Sensitivity.....	See dimension table
Resolution.....	Infinite

#### ENVIRONMENTAL

Temperature, Operating.....	-40° F to 194° F (-40° C to 90° C)
Temperature Effect	
- Zero (max.).....	0.005% F.S. / ° F (0.01% F.S. / ° C)
- Span (max.).....	0.005% F.S. / ° F (0.01% F.S. / ° C)
Pressure Rating, Std. ....	150 psi (10 bar)
	Up to 3000 psi (200 bar) with cable options

#### ELECTRICAL

Element Type.....	AC-AC LVDT
Input Supply.....	5V RMS at 5K Hz
Input Supply (acceptable).....	1-7V RMS at 5K Hz
Output Load (min.).....	100K
Wiring Diagram.....	See page LV-11
Electrical Termination (std.).....	Submersible mating connector with 16.5' (5 meters) cable

#### MECHANICAL

Case Material.....	Stainless Steel
Probe Material.....	Stainless Steel
Armature Type.....	LW7U.....Free Unguided
	LW7C.....Captive Guided
	LW7S.....Captive Guided Spring Return
Probe Thread (Model LW7U & LW7C).....	M5 x 0.8"
Spring Force (Model LW7S).....	4 oz./in. (.028 N-m)

#### OPTIONAL ELECTRICAL TERMINATIONS

- Available options – consult Sensotec
- No connector or cable, terminated with solder pins
  - Flexible stainless steel cable, up to 100 ft. (30 meters) long, pressure rating 3000 psi (200 bar).
  - Mineral insulated welded stainless steel sheathed cable, 0.12" (3 mm) dia. cable, 1 to 164 ft. (50 meters) lengths avail., -67° F to 390° F, (-55° to 200° C) 3000 psi, (200 bar).
  - Radial outlet submersible connector with 16.5 ft. (5 meters) cable

## DIMENSIONS

### Model LW7U (Order Code AY200) Free Unguided

Order Code Range	Available Stroke Ranges		L		X		Armature Wt.		Typical F.S. Output at 5V RMS
	in.	mm	in.	cm	in.	cm	oz.	gm	
HP	+/- 0.5	+/- 12.5	6.02	15.29	1.5	3.81	0.75	21.3	3.5V RMS
HQ	+/- 1.0	+/- 25	7.12	18.08	2.5	6.35	1.0	28.4	4.5V RMS
HR	+/- 2.0	+/- 50	11.97	30.40	3.0	7.62	1.5	42.5	7.6V RMS
HS	+/- 3.0	+/- 75	16.53	41.98	4.5	11.43	3.0	85.1	7.5V RMS
HT	+/- 4.0	+/- 100	17.83	45.28	5.0	12.7	3.7	104.9	16.0V RMS

### Model LW7C (Order Code AY201) Captive Guided

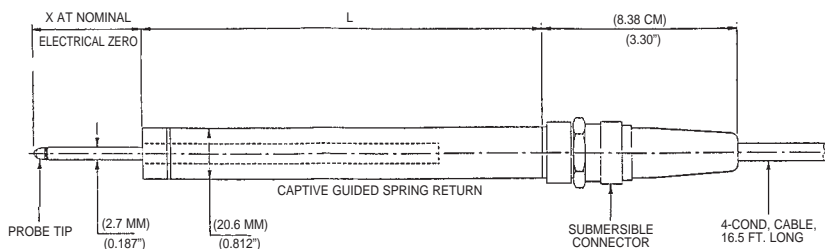
Order Code Range	Available Stroke Ranges		L		X		Armature Wt.		Typical F.S. Output at 5V RMS
	in.	mm	in.	cm	in.	cm	oz.	gm	
HP	+/- 0.5"	+/- 12.5	6.02	15.29	1.5	3.81	0.75	21.3	3.5V RMS
HQ	+/- 1.0"	+/- 25	7.12	18.08	2.5	6.35	1.0	28.4	4.5V RMS
HR	+/- 2.0"	+/- 50	11.97	30.40	3.0	7.62	1.5	42.5	7.6V RMS
HS	+/- 3.0"	+/- 75	16.53	41.98	4.5	11.43	3.0	85.1	7.5V RMS
HT	+/- 4.0"	+/- 100	17.83	45.3	5.0	12.7	3.7	104.9	16.0V RMS

### Model LW7S (Order Code AY202) Captive Guided Spring Return

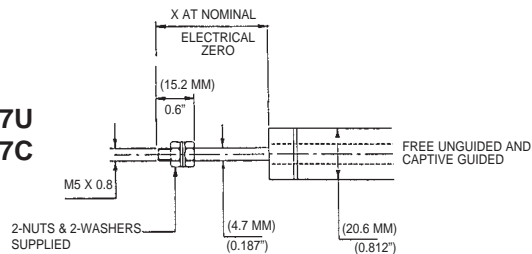
Order Code Range	Available Stroke Ranges		L		X		Spring Force		Typical F.S. Output at 5V RMS
	in.	mm	in.	cm	in.	cm	oz.-in.	N-m	
HP	+/- 0.5"	+/- 12.5	6.02	15.29	1.5	3.81	4	.028	3.5V RMS
HQ	+/- 1.0"	+/- 25	7.12	18.08	2.5	6.35	4	.028	4.5V RMS
HR	+/- 2.0"	+/- 50	11.97	30.4	3.0	7.62	4	.028	7.6V RMS
HS	+/- 3.0"	+/- 75	16.53	41.98	4.5	11.43	4	.028	7.5V RMS

DISPLACEMENT AC-AC SUBMERSIBLE

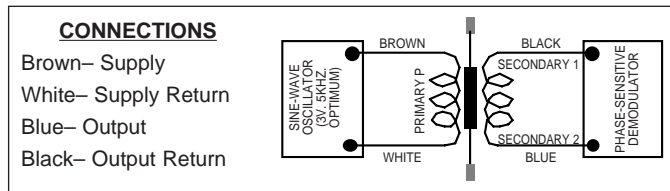
#### MODEL LW7S



#### MODEL LW7U MODEL LW7C



#### WIRING DIAGRAM



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