

DC-DC Submersible* LVDTs

Models DW7U, DW7C and DW7S

SUBMERSIBLE

STAINLESS STEEL

3 ARMATURE DESIGNS



Sensotec's Models DW7U, DW7C and DW7S 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 DW7U, DW7C and DW7S Order Codes: AY250, AY251, AY252

PERFORMANCE

Stroke Ranges (Model DW7U & DW7C)	+/- 0.5" to 4.0" (12.5 mm to 100 mm)
(Model (DW7S)).....	+/- 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 158° F (-40° C to 70° C)
Temperature Effect	
– Zero (max.).....	0.005% F.S. / ° F (0.01% F.S. / ° C)
– Span (max.).....	0.015% F.S. / ° F (0.03% F.S. / ° C)
Pressure Rating.....	150 psi (10 bar) standard Up to 3000 psi (200 bar) with cable options

ELECTRICAL

Element Type	DC-DC LVDT
Input Supply	+/- 10 to 20 VDC unregulated (45mA max.) or 20 to 40 VDC unregulated (45mA max.)
Wiring Diagram.....	See LV-13
Electrical Termination (std.)	Submersible mating connector with 16.5' (5 meters) cable

MECHANICAL

Case Material	Stainless Steel
Probe Material	Stainless Steel
Armature Type.....	DW7UFree Unguided DW7CCaptive Guided DW7SCaptive Guided Spring Return
Probe Thread (Model DW7U & DW7C)	M5 x 0.8"
Spring Force (Model DW7S)	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° C to 200° C), 3000 psi (200 bar).
- Radial outlet submersible connector with 16.5 ft. (5 meters) cable

*Not recommended for saltwater use. Consult SENSOTEC for saltwater submersible applications.

1-800-848-6564

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DIMENSIONS

Model DW7U (Order Code AY250) Free Unguided

Order Code Range	Available Stroke Ranges		L		X		Armature Wt.		Typical F.S. Output
	in.	mm	in.	cm	in.	cm	oz.	gm	
HP	+/- 0.5	+/- 12.5	8.00	20.32	1.5	3.81	0.75	21.3	+/- 5 VDC
HQ	+/- 1.0	+/- 25	9.10	23.11	2.5	6.35	1.0	28.4	+/- 5 VDC
HR	+/- 2.0	+/- 50	13.95	35.43	3.0	7.62	1.5	42.5	+/- 5 VDC
HS	+/- 3.0	+/- 75	18.52	47.04	4.5	11.43	3.0	85.1	+/- 5 VDC
HT	+/- 4.0	+/- 100	19.80	50.29	5.0	12.7	3.7	104.9	+/- 5 VDC

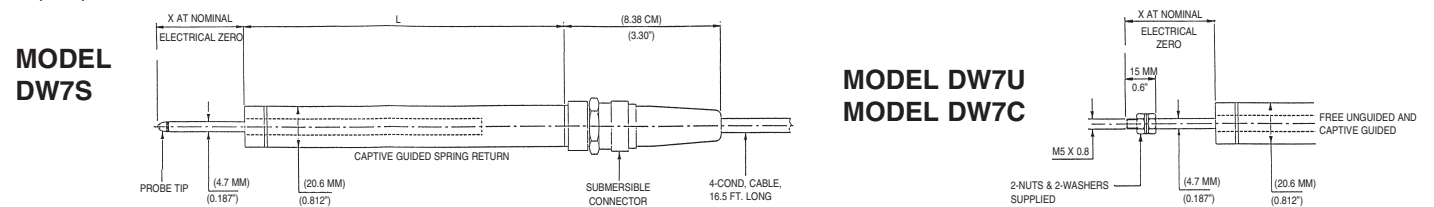
Model DW7C (Order Code AY251) Captive Guided

Order Code Range	Available Stroke Ranges		L		X		Armature Wt.		Typical F.S. Output
	in.	mm	in.	cm	in.	cm	oz.	gm	
HP	+/- 0.5"	+/- 12.5	8.00	20.32	1.5	3.81	0.75	21.3	+/- 5 VDC
HQ	+/- 1.0"	+/- 25	9.10	23.11	2.5	6.35	1.0	28.4	+/- 5 VDC
HR	+/- 2.0"	+/- 50	13.95	35.43	3.0	7.62	1.5	42.5	+/- 5 VDC
HS	+/- 3.0"	+/- 75	18.52	47.04	4.5	11.43	3.0	85.1	+/- 5 VDC
HT	+/- 4.0"	+/- 100	19.80	50.29	5.0	12.7	3.7	104.9	+/- 5 VDC

Model DW7S (Order Code AY252) Captive Guided Spring Return

Order Code Range	Available Stroke Ranges		L		X		Spring Force		Typical F.S. Output
	in.	mm	in.	cm	in.	cm	oz.-in.	N-m	
HP	+/- 0.5"	+/- 12.5	8.00	20.32	1.5	3.81	4	.028	+/- 5 VDC
HQ	+/- 1.0"	+/- 25	9.10	23.11	2.5	6.35	4	.028	+/- 5 VDC
HR	+/- 2.0"	+/- 50	13.95	35.43	3.0	7.62	4	.028	+/- 5 VDC
HS	+/- 3.0"	+/- 75	18.52	47.04	4.5	11.43	4	.028	+/- 5 VDC

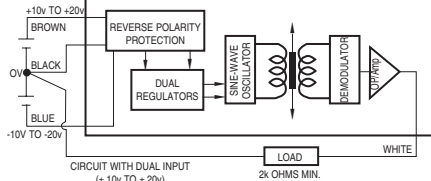
Output options of 0-10 VDC or 4-20mA available – consult Sensotec



DC/DC DUAL POWER SUPPLY

Reverse polarity protected with voltage regulator.

Brown – (+)Supply (+10 to +20 VDC)
Blue – (-)Supply (-10 to -20 VDC)
Black – (-)Output common/
Supply Return
White – (+)Output +/- 5 VDC (Min.
2K ohm load across
Black and White)

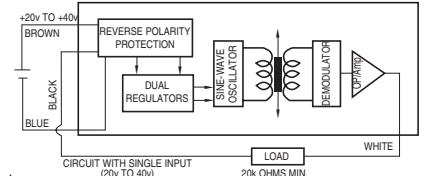


• Cable shield is not connected to transducer.

DC/DC SINGLE POWER SUPPLY

Reverse polarity protected with voltage regulator.

Brown – (+)Supply (+20 to +40 VDC)
Blue – Supply return
White – (+) Output +/- 5 VDC (Min.
20K ohm load across
Black and White)
Black – (-)Output



• Cable shield is not connected to transducer.
• Either black or blue must float. If both are grounded or connected together, the unit will be destroyed.

DISPLACEMENT

DC-DC SUBMERSIBLE