

# 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.....	DW7U .....Free Unguided DW7C .....Captive Guided DW7S .....Captive 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

## 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

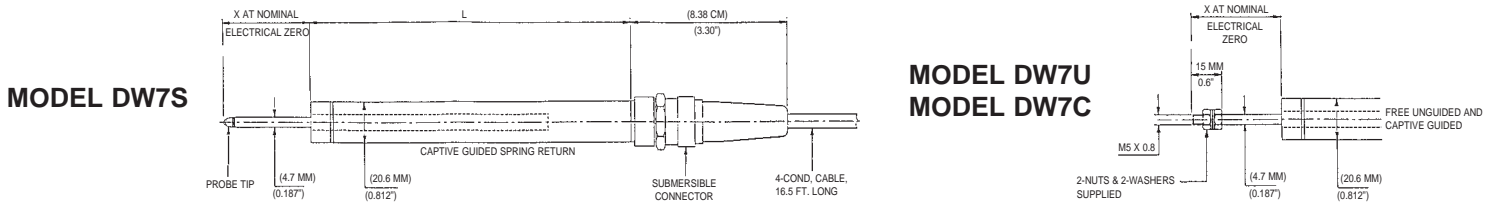
### Model DW7C (Order Code AY251) Captive Guided

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

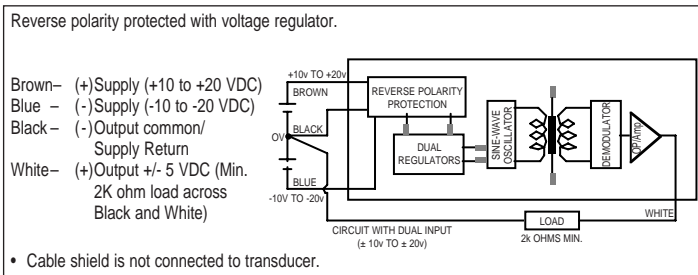
### Model DW7S (Order Code AY252) Captive Guided Spring Return

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

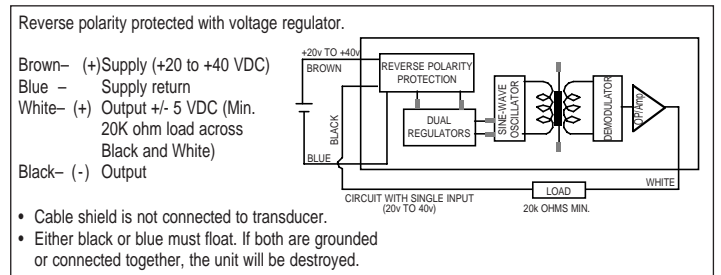
Output options of 0-10 VDC or 4-20mA available – consult Sensotec



### DC/DC DUAL POWER SUPPLY



### DC/DC SINGLE POWER SUPPLY



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传真：0755-83376182 (0) 13902971329 MSN: [SUNS8888@hotmail.com](mailto:SUNS8888@hotmail.com)

邮编：518033 E-mail:[szss20@163.com](mailto:szss20@163.com) QQ: 195847376

深圳赛格展销部：深圳华强北路赛格电子市场 2583 号 电话：0755-83665529 25059422

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西安分公司：西安高新开发区 20 所(中国电子科技集团导航技术研究所)

西安劳动南路 88 号电子商城二楼 D23 号

TEL: 029-81022619 13072977981 FAX:029-88789382