

Model DW7S DC-DC



Submersible* Displacement Transducer

DESCRIPTION

Model DW7S submersible displacement transducer is often ideal for drilling, mining, and hydraulic engineering applications which require a displacement transducer with a stainless steel, water-proof construction. This model 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.

FEATURES

- ± 0.25 % non-linearity
- Submersible
- Stainless steel construction
- Easy to operate
- 5 m [16 ft] submersible mating connector (standard)
- ± 12.7 mm to 76.2 mm range [± 0.5 in to ± 3.0 in range]
- Infinite resolution
- Single or dual supply wiring (field selectable)
- Reverse polarity protected
- Captive guided spring return armature
- Not RoHS compliant

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PERFORMANCE SPECIFICATIONS

| Characteristic | Measure |
|--------------------------|---------------------------------------|
| Stroke range | ±12,7 mm to 76,2 mm [±0.5 in to 3 in] |
| Non-linearity (max.) | ±0.25 % full scale |
| Non-repeatability (max.) | <20 microinches |
| Output sensitivity | See table |

ENVIRONMENTAL SPECIFICATIONS

| Characteristic | Measure |
|---------------------------------|--|
| Temperature, operating | -40 °C to 70 °C [-40 °F to 158 °F] |
| Temperature effect, zero (max.) | 0.005 % full scale/°F |
| Temperature effect, span (max.) | 0.015 % full scale/°F |
| Pressure rating, standard | 150 psi, up to 3000 psi with cable options |

ELECTRICAL SPECIFICATIONS

| Characteristic | Measure |
|---------------------------|--|
| Element type | dc-dc displacement transducer |
| Input supply (acceptable) | ±10 Vdc to 20 Vdc unregulated (45 mA max.) or 20 Vdc to 40 Vdc unregulated (45 mA max.) |
| Electrical termination | Submersible mating connector with 5.03 m [16.5 ft] cable |

MECHANICAL SPECIFICATIONS

| Characteristic | Measure |
|---------------------|------------------------------|
| Case material | Stainless steel |
| Probe material | Stainless steel |
| Armature type | Captive guided spring return |
| Probe thread | Not applicable |
| Spring force (max.) | 4 oz/in |

RANGE CODES

| Range Code | Available ranges |
|------------|--------------------|
| HP | ±12,7 mm [±0.5 in] |
| HQ | ±25,4 mm [±1.0 in] |
| HR | ±50,8 mm [±2.0 in] |
| HS | ±76,2 mm [±3.0 in] |

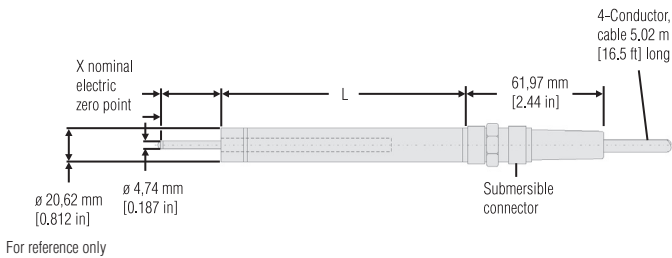
OPTION CODES

| Range Code | Many range/option combinations are available in our quick-ship and fast-track manufacture programs. Please see http://sensing.honeywell.com/TMsensor-ship for updated listings. |
|------------------------------|--|
| Stroke ranges | ±12,7 mm to 76,2 mm [±0.5 in to 3 in] |
| Electrical termination | Submersible mating connector with 5.03 m [16.5 ft] cable OPT1. No connector or cable, terminated with soldier pins OPT5. Mineral insulated welded stainless steel sheathed cable (3 mm [0.12 in] dia. cable, 50 m [1 ft to 164 ft] lengths available, -55 °C to 200 °C [-67 °F to 390 °F], 200 bar [3000 psi]) |
| Electrical cable orientation | OPT7. Radial output submersible connector with 5.03 m [16.5 ft] cable |
| Improved linearity | L10. ±0.1 % max. linearity |

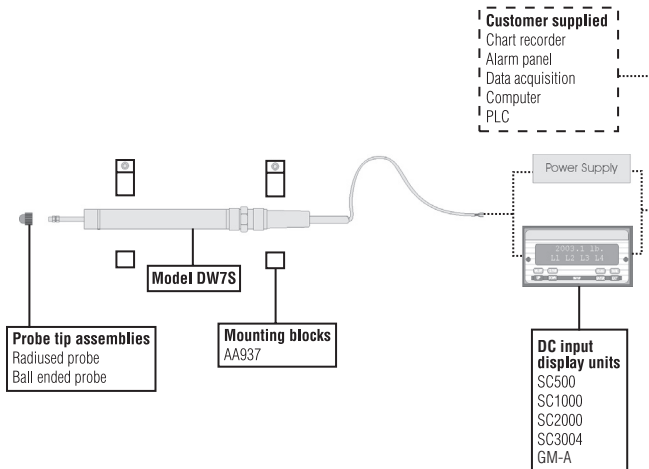
Submersible* Displacement Transducer

MOUNTING DIMENSIONS

| Range code | Available stroke range | L | X | Spring force (oz/in) | Typical full scale output |
|------------|------------------------|----------------------|-------------------|----------------------|---------------------------|
| HP | ±12,7 mm [±0.5 in] | 203,2 mm [8.00 in] | 38,1 mm [1.5 in] | 4 | ±5 Vdc |
| HQ | ±25,4 mm [±1.0 in] | 231,14 mm [9.10 in] | 63,5 mm [2.5 in] | 4 | ±5 Vdc |
| HR | ±50,8 mm [±2.0 in] | 354,33 mm [13.95 in] | 76,2 mm [3.0 in] | 4 | ±5 Vdc |
| HS | ±76,2 mm [±3.0 in] | 470,41 mm [18.52 in] | 114,3 mm [4.5 in] | 4 | ±5 Vdc |



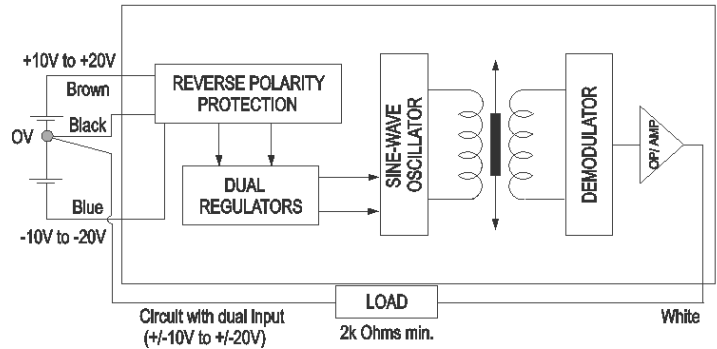
TYPICAL SYSTEM DIAGRAM



WIRING CODES

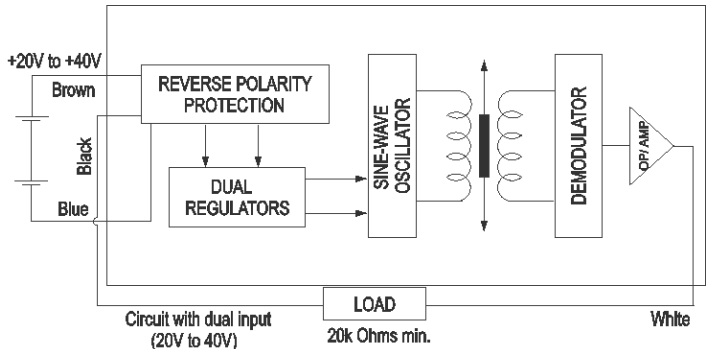
| Wire color | Dual power supply |
|------------|---|
| Brown | (+) supply, 10 Vdc to 20 Vdc |
| Blue | (-) supply, -10 Vdc to -20 Vdc |
| Black | (-) output common/supply return |
| White | (+) output, ±5 Vdc (min. 2k ohm across black and white) |

Reverse polarity protected with voltage regulator. Cable shield is not connected to transducer.



| Wire color | Single power supply |
|------------|--|
| Brown | (+) supply, 20 Vdc to 40 Vdc |
| Blue | Supply return |
| Black | (-) output |
| White | (+) output, ±5 Vdc (min. 20k ohm across black and white) |

Reverse polarity protected with voltage regulator. 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.



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NOTES

* Not recommended for salt water use. Consult factory for saltwater submersible applications.

Warranty. Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

For more information about Sensing and Control products, visit www.honeywell.com/sensing or call +1-815-235-6847

Email inquiries to info.sc@honeywell.com

WARNING **PERSONAL INJURY**

- DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

WARNING **MISUSE OF DOCUMENTATION**

- The information presented in this catalogue is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

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