

## SSD Seawater Submersible LVDT Displacement Transducer

- High resolution
- Voltage / 4-20mA output
- High cycle life
- Seawater submersible
- Stainless steel



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.

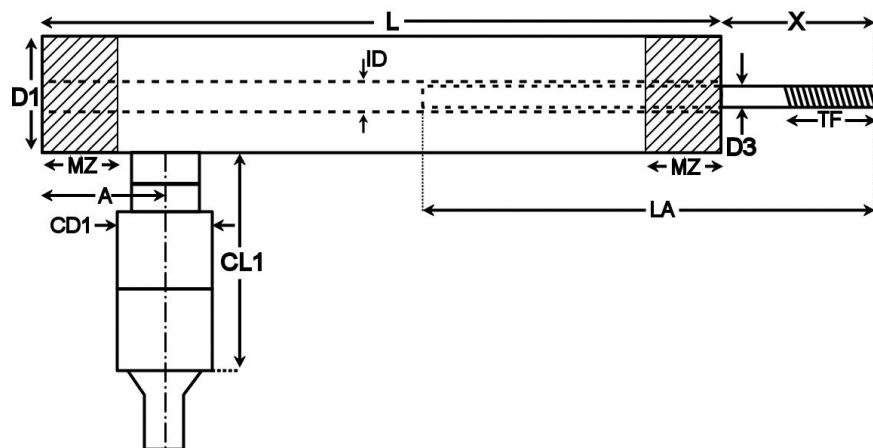
Our DC to DC LVDT transducer has all of the benefits of the LVDT sensor principle with the added convenience of built-in LVDT electronics enabling a dc supply and dc output. As an option we can offer a 4-20mA 2 wire connection to the transducer on some models.

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.

The SS series LVDTs are specially designed for use in sea water and heavy industrial environments with some corrosive chemicals. These LVDTs are made of welded 316 stainless steel and have a through bore plus very heavy construction. Therefore, the SS series LVDTs are capable of withstanding the most arduous industrial applications as well as 10 years seawater submersion at a depth of up to 2.3km.

# 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



|     |   |                                     |
|-----|---|-------------------------------------|
| A   | = | 48mm                                |
| CD1 | = | 35mm                                |
| CL1 | = | 92mm                                |
| D1  | = | 38.1mm                              |
| D3  | = | 10mm                                |
| ID  | = | 13mm                                |
| MZ  | = | 27mm (Optimum sensor mounting zone) |
| TF  | = | M10x1.5, 30mm                       |

| Type    | Range   | Linearity error (% F.S.) | L     | X     | LA    | Total weight | Armature weight |
|---------|---------|--------------------------|-------|-------|-------|--------------|-----------------|
| SSD500  | ±12.5mm | <±0.5                    | 224mm | 53mm  | 145mm | 1.2kg        | 90g             |
| SSD1000 | ±25mm   | <±1                      | 251mm | 66mm  | 170mm | 1.3kg        | 100g            |
| SSD2000 | ±50mm   | <±0.5                    | 346mm | 91mm  | 265mm | 1.8kg        | 160g            |
| SSD3000 | ±75mm   | <±0.5                    | 435mm | 117mm | 349mm | 2.0kg        | 210g            |
| SSD4000 | ±100mm  | <±0.5                    | 536mm | 142mm | 440mm | 2.2kg        | 260g            |

| Specification |   |                               |
|---------------|---|-------------------------------|
| V output      | Supply voltage (dual)                     | ±12V to ±20V dc, 30mA         |
|               | Supply voltage (single, must be floating) | 24V to 40V dc, 30mA           |
|               | Change in output for change in supply     | 5mV/V (typical)               |
|               | Output load                               | 10kOhms                       |
|               | Output ripple                             | 30mV peak-to-peak (typical)   |
|               | Electrical output bandwidth               | 200Hz                         |
|               | Output impedance                          | 2 Ohms                        |
|               | Operating temperature range               | -40°C to 60°C                 |
| 4-20mA output | Supply voltage                            | 12V to 36V dc                 |
|               | Max loop resistance                       | (Supply voltage-11) x 50 Ohms |
|               | Output ripple                             | 50uA (peak-to-peak)           |
|               | Electrical output bandwidth               | 200Hz                         |
|               | Operating temperature range               | -10°C to 60°C                 |
| Both outputs  | Temperature coefficient (zero)            | ±0.01% F.S. /°C (typical)     |
|               | Temperature coefficient (span)            | ±0.03% F.S. /°C (typical)     |
|               | Electrical termination                    | 2m (integral cable)           |
|               | Maximum static pressure                   | 23MPa                         |

| Output details |          |                |      |                |
|----------------|----------|----------------|------|----------------|
| Option code    | Note     | - position     | 0    | + position     |
| Standard       |          | -5V (+0% - 5%) | 0V   | +5V (+0% - 5%) |
| TM0627         |          | +5V (+0% - 5%) | 0V   | -5V (+0% - 5%) |
| TM85A          |          | 0V             | 5V   | 10V (+0% - 5%) |
| TM85B          |          | 10V (+0% - 5%) | 5V   | 0V             |
| TM0321A        | ≥±12.5mm | 4mA            | 12mA | 20mA           |
| TM0321B        | ≥±12.5mm | 20mA           | 12mA | 4mA            |

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.

USA & Canada  
RDP Electrosense  
2216 Pottstown Pike  
Pottstown, PA 19465  
USA  
Tel: 610-469-0850  
Tel: 800-334-5838  
Fax: 610-469-0852  
Email: [info@rdpe.com](mailto:info@rdpe.com)

Rest of the world  
RDP Electronics Ltd  
Grove Street, Heath Town  
Wolverhampton, West Midlands, WV10 0PY  
United Kingdom

Tel: +44 1902 457512  
Fax: +44 1902 452000  
Email: [sales@rdpe.com](mailto:sales@rdpe.com)  
URL: [www.rdpe.com](http://www.rdpe.com)