EDS Series Displacement Sensors – Installation and Operation Manual

Thank you for buying our robust elastomeric displacement sensor.

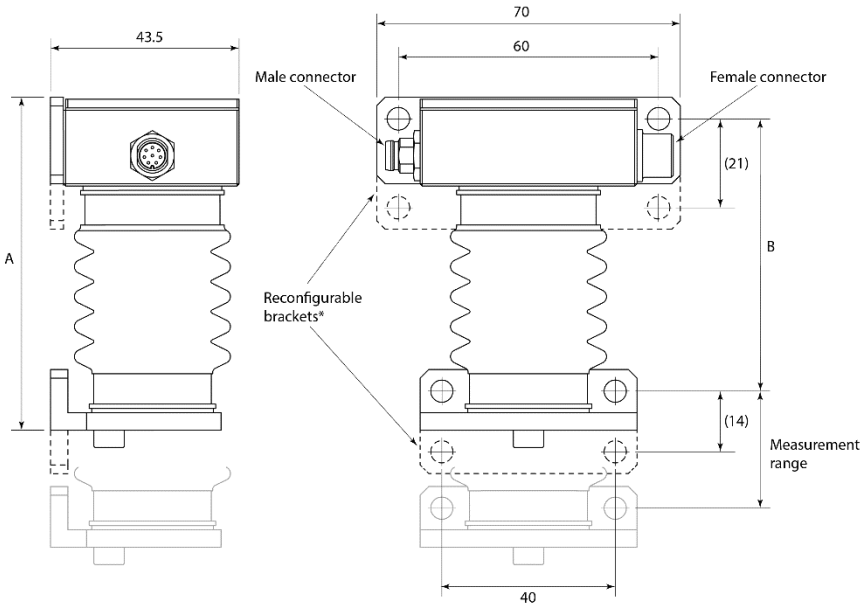
General Remarks

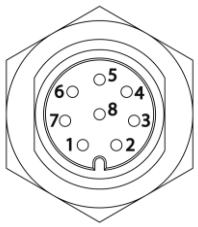
An ElastiSense EDS sensor may either be used as a standalone unit or as a part of a system together with other daisy chained sensors, which are controlled over a full duplex RS485 bus. The instruction provided here is limited to installation and operation of the sensor as a standalone unit.

When operated as standalone displacement sensor, the EDS requires a 24VDC supply and outputs an analogue current in the range of 4-20mA. The signal is linearly proportional to the displacement i.e. 4mA corresponds to 0mm and 20mA represents the maximum displacement of the sensor.

The sensor output can be customized to provide a voltage signal or a digital signal via RS485. Please contact us in case your application requires such modifications.

Technical specifications





M8 Male Connector, pin assignment for analogue operation:

Pin 1: +24VDC
Pin 2: GND
Pin 7: Analogue Out –
Pin 8: Analogue out +

Notes:

- *Brackets can be reconfigured for mounting convenience. Thread-locking adhesive is recommended.
- The female connector is not used for standalone operation
- Drawing is made at “Zero” stroke position (corresponding to dimensions A and B, as stated in the figure)

Model	EDS20	EDS50	EDS100	EDS200
Measurement range (mm)	20	50	100	200
Power supply	24V DC			
Analogue output	4 – 20mA (1 – 5V or 2 – 10V on request)			
Digital output	Integer value in nm transmitted on full duplex RS485 network			
Absolute accuracy	0.1% Full Scale			
Temperature Coefficient	< 0.01 % FS / °C			
Power consumption	< 100mA			
Update rate	Up to 10k samples/second			
Operating temperature	-20°C to 80°C (Other ranges on request)			
Operating humidity	5%RH to 80%RH			
Ingress protection	IP63 (Higher available on request)			
Dimension A (mm)	77	116	185	315
Dimension B (mm)	63	102	171	301

Handling

To avoid damage to your sensors, please refer to the images to the right.

Installation and connection

The sensor is delivered with an upper and a lower metal bracket with two mounting holes in each, as shown in the specification section. The brackets are prepared for M5 screws for mounting (not supplied). We recommend that a thread-locking product is used to prevent screws vibrating loose.

The sensor incorporates a highly stretchable strain gauge to measure displacement, and so operates by being “stretched”. It is therefore necessary to mount the sensor with the distance between the brackets holes being equal or greater than Dimension B shown in the table above. It is recommended that the sensor is installed at 1mm stroke to cater for installation tolerances ensuring that the sensor does not go below 0mm. STEP-files of the sensors at zero stroke are available on request.

A 24VDC supply voltage must be applied to the +24V and GND pins of the male M8 connector of the EDS sensor, as shown on page 1.

Please take precautions to prevent over stroke during operation, as this may affect the accuracy of the measurement and/or cause irreversible damage to the unit.

Warranty and Service

ElastiSense ApS products are warranted against defects in materials or workmanship. The warranty applies for two years or 10 million cycles, whichever comes first. The warranty excludes impact caused by strokes outside the rated measurement range. All faulty units must be shipped back to the manufacturer for all warranty claims. Any service repairs must be performed by an authorized ElastiSense ApS service partner. The unit contains no user serviceable components.