Sensor series DOI with 2-wire electronics

Characteristics

The DOI series are long-stroke, pressure-resistant transducers with an integrated conditioning electronics. The transducer body is made from stainless steel. The potted conditioning electronics sits in the transducer flange. The sleeved core moves contactless over the transducer's body rod.

The sensing technique is based on the eddy-current principle. Eddy-current is induced in the sleeved (aluminium) core. The resulting losses are sensed by the inducing coil system inside the transducer's main body rod and converted into a position-proportional signal of 4 ... 20 mA output signal in the +24 VDC (+20 ... +30 VDC, stabilised and filtered) 2-wire loop. The 2-wire loop configuration is of low noise-susceptibility.

The sensor signal can be acquired by an external meter or control (400 Ohm max. load) at floating level. The electronics is reverse polarity protected. Avoid over-voltage as it may damage the device.

The sensor system is designed for low linearity and temperature drift.

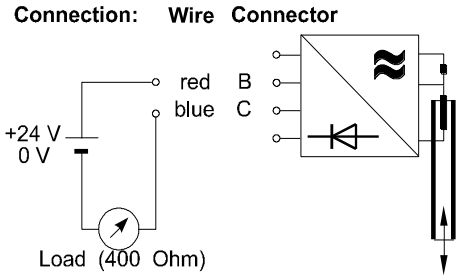
Scope of delivery

The transducer is supplied with sleeved core and (depending on version) a mating connector.

Installation and connection

Installation and operation require care to prevent personal harm or equipment damage. Only instructed staff should handle, install, and set the transducer in operation. Please check for mechanical compatibility before installation. Read this manual carefully.

Transducer		Signal
Wire	Connector	
red	B	Supply +24 VDC
blue	C	Supply 0 VDC
	E	Shielding



Use a shielded cable and connect as per table on the right. Connect the cable shield at acquisition but not at sensor side.

The transducer is pre-adjusted ex-works (at +24 VDC and ambient temperature +20 ... +30°C). Install sensor and sleeved core as specified Mount sleeved core as specified at position "k" if no re-adjustment is performed on transducer installation. Upon installation determine actual zero output which may slightly vary with supply voltage (typically -0,03% per Volt supply voltage deviation from 24 VDC). Allow electronics warm up for adjustment and measurements.

Adjustment

Remove the flange cover plate. For zero (null) adjustment, put sleeved core at position "k". Adjust output to 4 mA by trimmer "Z". Move sleeved core to end position (full stroke or desired stroke) and adjust output to 20 mA by trimmer "G".

A finer adjustment can be done taking into account the individual transducer's linearity curve (from the test record, giving non-linearity in % of the 16 mA-full scale related to full stroke shown).