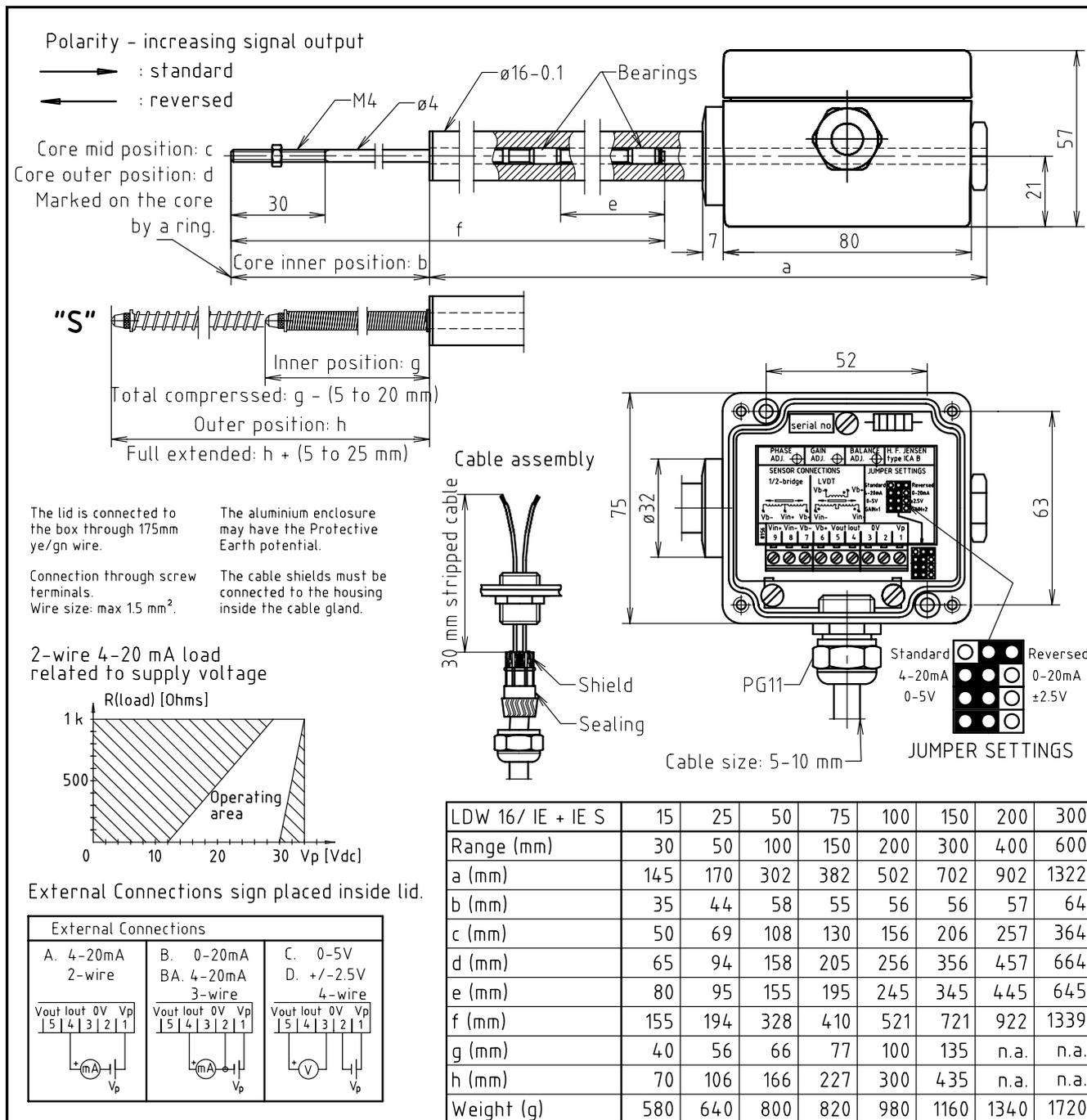


# DISPLACEMENT TRANSMITTER

## LDW 16/..IE - integrated electronics

## LDW 16/..IE S - springloaded movement



### DESCRIPTION

The LDW 16/ IE is a series of displacement transmitters based on the displacement sensor LDW 16 and the industrial signal conditioner ICA, containing an excitation oscillator, amplifier, a low-pass filter and output stage. The basic principle makes the measurement electronically contactless and the two teflon bearings in the bore liner offers excellent wear resistance (> 100 mio strokes). All outer surfaces are made of high corrosion resistant stainless steel, except for the Al-box with the signal conditioner. This together with a watertight laserwelded construction ensures compatibility to most environments. All connections are transient protected and a metal shieldbox covering all sensitive components ensures high electromagnetic compatibility. The product offers various calibrated output signals, configured by the user through the jumpers on the pc-board in the Al-box.

## SPECIFICATIONS

<b>Linear ranges</b>	30 to 600 mm – see table.
<b>Supply voltage</b>	12-30 V <sub>DC</sub> , 4 mA <sub>DC</sub> + output signal current.
<b>Supply voltage rejection</b>	min. 86 dB between 12 and 30 V <sub>DC</sub> .
<b>Non-linearity</b>	< 0.5 %.
<b>Output signals and load</b>	Selected by jumpers beside the terminals.
- A	4-20 mA <sub>DC</sub> , 2-wire, R <sub>L</sub> : see diagram, C <sub>L</sub> < 1 μF.
- B	0-20 mA <sub>DC</sub> , 3-wire, R <sub>L</sub> < 700 Ω, C <sub>L</sub> < 1 μF.
- BA	4-20 mA <sub>DC</sub> , 3-wire, R <sub>L</sub> < 700 Ω, C <sub>L</sub> < 1 μF.
- C	0-5 V <sub>DC</sub> , 4-wire, R <sub>L</sub> > 5 kΩ, C <sub>L</sub> < 1 μF.
- D	± 2.5 V <sub>DC</sub> , 4-wire, R <sub>L</sub> > 20 kΩ, C <sub>L</sub> < 1 μF.
<b>Load resistance rejection</b>	< 0.1 % for max ΔR <sub>L</sub> .
<b>BALANCE adjustment</b>	± 10 % of FSO.
<b>PHASE adjustment</b>	0 - 180 degrees.
<b>GAIN adjustment</b>	± 10 % of signal output.
<b>Response time (0-100 %)</b>	6 msec.
<b>Output ripple</b>	< 0.05 % of FSO.
<b>Temperature range</b>	-25 °C to +85 °C.
<b>Temperature coefficient</b>	< 0.05 %/°C of FSO.
<b>Transducer material</b>	
- amplifier housing	Box of AlSi12 - Cable glands of brass.
- coil housing	Austenitic stainless steel AISI 316.
- core	Ferritic stainless steel Sandvik 18.0.2.
<b>Electrical connections</b>	Screw terminals max. 1.5 mm <sup>2</sup> , cable ø5 to ø10 mm.
<b>Electromagnetic immunity</b>	According to EN 50082-2 (generic industrial standard)
<b>Electromagnetic emission</b>	According to EN 50081-1 (generic industrial standard)
<b>Protection class</b>	IP65.
<b>Cable length</b>	max 250 m.

## INSTALLATION

To minimize wear, make sure that there is no bending of the transmitter core when mounting. The coil housing is easily placed with one or two mounting blocks, MBO 16. NOTE! The anodized MBO 16 does not provide GND connection. The core rod ends with a M4 thread for easy attachment and it is marked at 3 positions indicating the nominal mid, inner and outer positions to ease mechanical installation and calibration. Before installation remove the yellow cap holding the core. A laserwelded stopring inside the bore liner prevents the core from falling out during installation. Check the jumper setting according to the application and connect the transmitter following the *External Connections* sign. Use only shielded cables for connection. The cable shield should be connected inside the transmitter cable gland and to the EMC-reference of the associated electronics.

## ADJUSTMENT

The transmitter is factory calibrated with reference to the requested output signal and type sign, and followed by a *Certificate of Accuracy*. Calibration should be checked after service performed by the user or according to a user maintenance procedure. The output signal can be changed by moving the jumpers on the PCB. Calibration is within 2 %. To recalibrate, place core in its mid-position. Adjust BALANCE to the 50 % output signal value (0 V<sub>DC</sub> in the D-configuration). Move the core to an inner position and adjust to largest output with PHASE. Adjust to 0 % or 100 % output signal value with GAIN. Check output with core in opposite position and repeat if necessary. A new offset can now be chosen with BALANCE. Output signal polarity is changed with the *standard/reversed* jumper placed next to the terminals.

## ORDERING INFORMATION

LDW 16/x IE x x



S: Spring loaded core movement. Please see datasheet 3.4.2 for dimensions.

A/B/BA/C/D: Factory output configuration for "Certificate of Accuracy".

Range/2 in mm. (Corresponds the basic ± stroke sensor principle).