

- **Contactless, robust sensor system**
- **Differential transformer (LVDT) with integral electronic circuit**
- **Calibrated current or voltage output signals :  
0 to 20 mA or 4 to 20 mA or 0 to 10 V or  $\pm 10$  V**
- **Protection class IP 66**

### Construction and operating principle

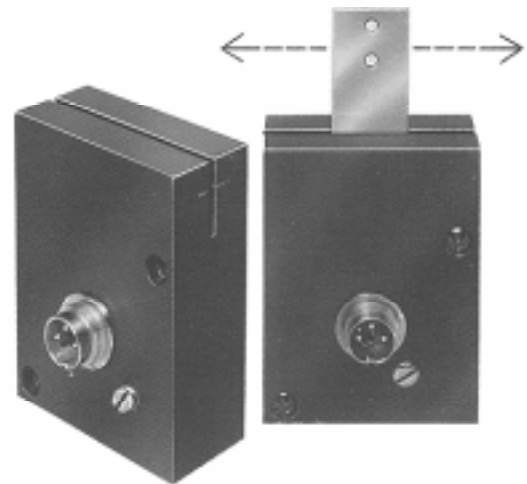
The inductive slot transducer contains two coil systems facing each other but separated by an air gap. The electro-magnetic coupling between these two coil systems is modified by a measuring lug that passes through the air gap. The lug is to be fixed to the actuator whose linear travel is to be measured.

The coil system and the associated electronic circuits (oscillator, demodulator, amplifier and current output source) are encapsulated in an anodised light alloy housing. The encapsulation ensures positiv protection against vibration, shock, humidity, oil and corrosive matter. A round plug is provided for the electrical connection. The sensitivity (gain) of the output signal can be adjusted within  $\pm 10$  % by means of a trimmer potentiometer which is located behind a sealing screw cap. This allows to compensate the influence of particular mounting conditions or the use of non-standard measuring lugs.

Ex-work calibration is carried out with a standard copper lug of 1 mm thickness and of 22 mm width which is supplied with each unit. Alternatively, measuring lugs from other highly conductive or ferritic materials can also be used but require re-calibration of the transducer.

### Technical data

- Supply voltages  $V_s$  : 21.5 VDC to 32 VDC or (prot'd against reverse polarity)  $\pm 13$  to  $\pm 16$  VDC
- Linearity : 0.5 %
- Measuring frequency :  $\leq 100$  Hz
- Lateral sensitivity :  $\leq 1$  % / mm
- Stability :  $< 0.1$  % in 24 h
- Temperatur drift :  $< 0.01$  % / K
- Operating temperature range : - 10 °C to + 80 °C
- Storage temperature range : - 30 °C to + 80 °C
- Resistance to shock : 20g SRS at 20 to 2000 Hz
- Resistance to vibration : 3g rms at 20 to 2000 Hz
- Protection grade : IP 66



### Current output

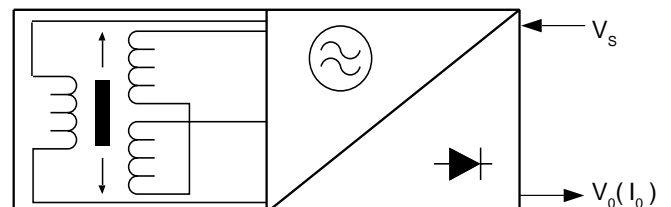
- Current signal : 0...20 mA or 4...20 mA
- Supply current  $I_s$  : 60 mA max.
- Load resistance  $R_L$  : 0...500  $\Omega$
- Ripple :  $< 0.005$  mA<sub>p-p</sub>
- Dependence on  $R_L$  :  $< 0.001\%$  for  $\Delta R_L = 200 \Omega$
- Dependence on  $V_s$  :  $< 0.05\%$  for  $\Delta V_s = 1$  V
- Maximum output current : 25 mA

### Voltage output

- Voltage signal :  $\pm 10$  VDC, 0...10 VDC
- Supply current  $I_s$  : 50 mA max.
- Permissible load  $R_L$  : 2 k $\Omega$  (short-circuit proof)
- Ripple :  $< 5$  mV<sub>p-p</sub>
- Dependence on  $V_s$  :  $< 0.05\%$  for  $\Delta V_s = 1$  V

**Note:** Unless otherwise stated, all values are valid at +20°C ambient temperature and 30 VDC or  $\pm 15$  VDC supply voltage, starting 10 minutes after switch-on.

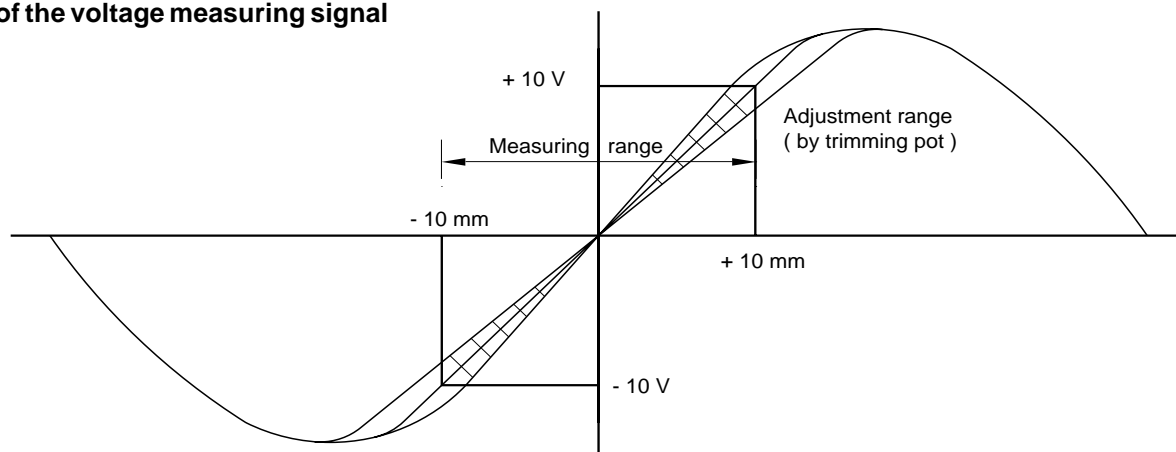
### Basic block diagram



### Note :

Several lugs can travel through the slot of the transducer, one after the other, but in order to eliminate ambiguity the measuring signal should only be evaluated when a single lug is located within the measurement range.

### Shape of the voltage measuring signal



### Order code format

IS 6 20 A 01

Measuring lug :  
01 = standard copper  
02 = to specification

Output signal :

- A = 0 to 20 mA
- B = 4 to 20 mA
- C = 0 to 10 V
- D =  $\pm 10$  V

Measuring stroke (mm)

60 mm housing width

Model : Inductive Slot Transducer

## Electrical connections on the plug

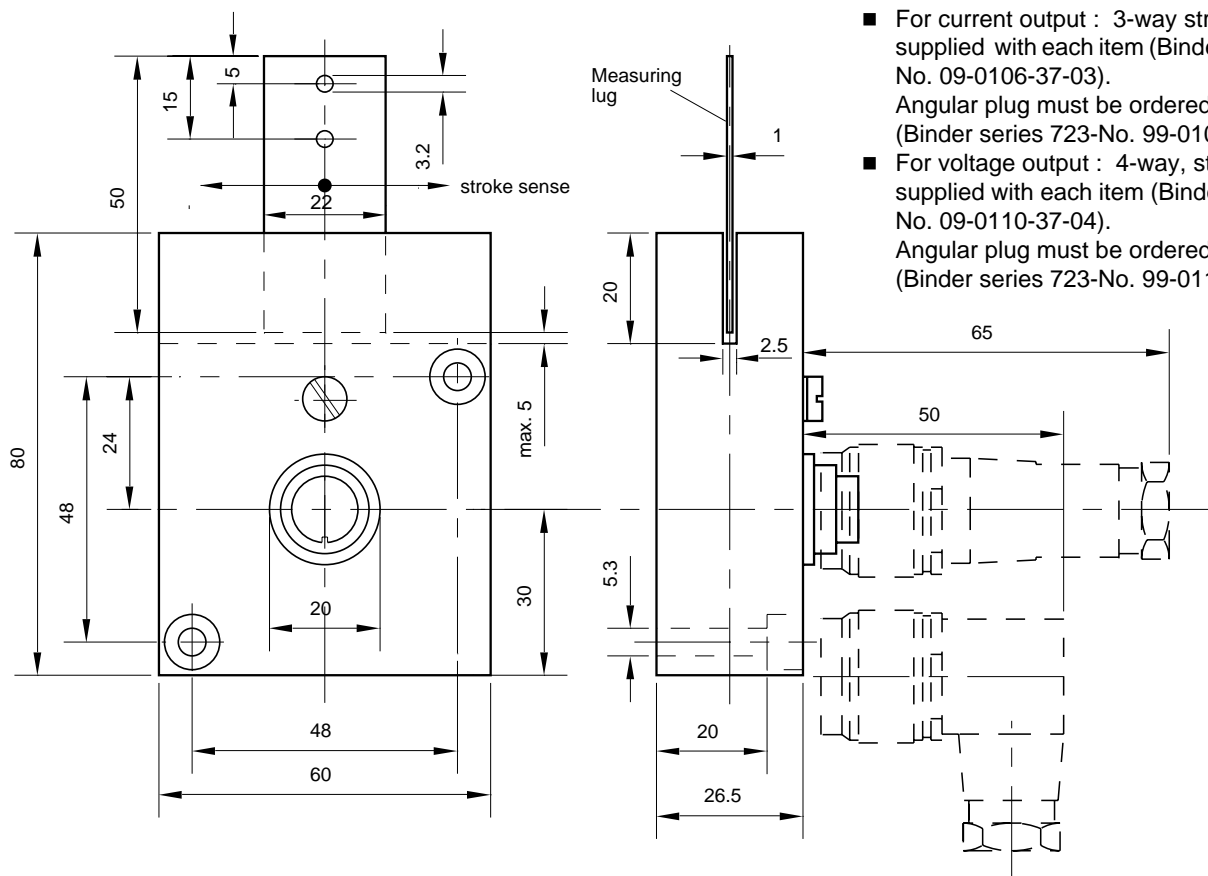
IS 620 A or B (current signal)

$$\begin{aligned} 1 &= +V_s \\ 2 &= -V_s (0V) - I_o \\ 3 &= +I_o (\text{output}) \end{aligned}$$

IS 620 C or D (voltage signal)

$$\begin{aligned} 1 &= +V_s \\ 2 &= 0V \text{ (common)} \\ 3 &= -V_s \\ 4 &= +V_o \text{ (output)} \end{aligned}$$

### Dimensions in mm



## Mating plugs

- For current output : 3-way straight plug is supplied with each item (Binder series 723-No. 09-0106-37-03).  
Angular plug must be ordered separately (Binder series 723-No. 99-0106-77-03)
- For voltage output : 4-way, straight plug is supplied with each item (Binder series 723-No. 09-0110-37-04).  
Angular plug must be ordered separately (Binder series 723-No. 99-0110-77-04).