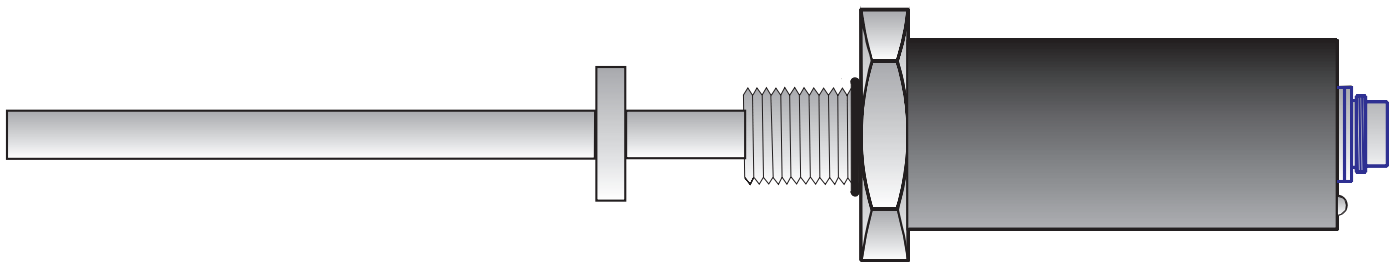


- Measuring strokes from 100 to 1500 mm
- Robust, contactless design
- Infinite resolution
- Definite repeatability
- Measuring signals 0(4) to 20 mA, ± 10 V or 0 ... 10 V
- Protection grade IP 67
- Working temperature -20°C ... +80°C
- Pressure proof up to 300 bar



Construction and operating principle

The MAGNOSENS Transducer use the magnetostrictive technology to generate an output signal that is proportional to a linear displacement of a movable positioning ring containing several magnets. A wave guide is located in a stainless steel tube.

The transit time a voltage spike takes from the starting point (zero) to the magnet and back again is proportional to the distance to be measured. The electronic circuit located in the cylindrical head converts the transit time into an analogue output signal.

Standard measuring strokes

100 / 200 / 300 / 400 / 500 / 750 / 1000 / 1500

Standard types

Type	Output signal	Supply voltage	Mid-point at
MWA 112	0 - 20 mA	21.5 - 32 VDC	10 mA
MWA 114	4 - 20 mA	21.5 - 32 VDC	12 mA
MWA 116	± 10 V	± 13 - ± 16 VDC	0 V
MWA 11B	0 - 10 V	21.5 - 32 VDC	5 V

The output signal is always increasing when the positioning ring travels to the rod end.

Technical data

- Supply voltages V_S
 - symmetrical : ± 13 VDC to ± 16 VDC
 - unsymmetrical : 21.5 VDC to 32 VDC
- Supply current : ≤ 150 mA
- Linearity depending on measuring stroke
 - 100 - 300 mm : ± 0.3 mm
 - 300 - 1500 mm : ± 0.1 % F.S.
- Measuring rate depending on measuring stroke
 - 100 - 1000 mm : 1 kHz
 - > 1000 mm : 0.5 kHz
- Temperature drift : ≤ 0.01 % / °C
- Operating temperature range : - 20 °C to + 80 °C
- Storage temperature range : - 25 °C to + 80 °C
- Resistance to shock : 20g SRS 20 -2000 Hz
- Resistance to vibration : 3g rms 20 - 2000 Hz
- Protection class : IP 67
(with connector BI 723M)
- Mass : 0.4 kg + 0.02 kg per 100 mm
- **Current output signal : MWA 112 and 114**
 - Load resistance : 0 to 500 Ω
 - Ripple : < 0.005 mA_{P-P}
 - Dependence on R_L : < 0.001 % for $\Delta R_L = 200 \Omega$
 - Dependence on V_S : < 0.05 % for $\Delta V_S = 1 V$
 - Max. output current : 25 mA
- **Voltage output signal : MWA 116 and 11B***
 - Permissible load : ≥ 2 KΩ (short-circuit proof)
 - Ripple : 5 mV_{P-P}
 - Dependence on V_S : 0.05 % for $\Delta V_S = 1 V$

* Residual output voltage: 0,1 VDC

Order code format

MWA 1 16 / 1500 A02*

Only for mechanical or electrical deviations from data sheet.

Measuring stroke

Output signal :

2 = 0 - 20 mA

4 = 4 - 20 mA

6 = ± 10 V

B = 0 - 10 V (V_s unsymmetr.)

Mounting thread :

1 = M 18 x 1,5

2 = 16 UNF $\frac{3}{4}$ "

Analogue output signal

*The applicable A-No. is specified after the definition of the deviation when ordering. No A-No. is given for standard versions as defined in this data sheet.

Electrical connections on the plug

Output, 3-way (3 PS)	
Current signal MWA 112 and 114	Voltage signal MWA 11B
1 = + V_s 2 = $V_s(0V) - I_o$ 3 = + I_o (output)	1 = + V_s 2 = - V_s (0V) 3 = + V_o (output)

Output, 4-way (4 PS)	
Voltage signal : MWA 116 (± 10 VDC)	
1 = + V_s 2 = 0 V_s (common) 3 = - V_s 4 = + V_o (output)	

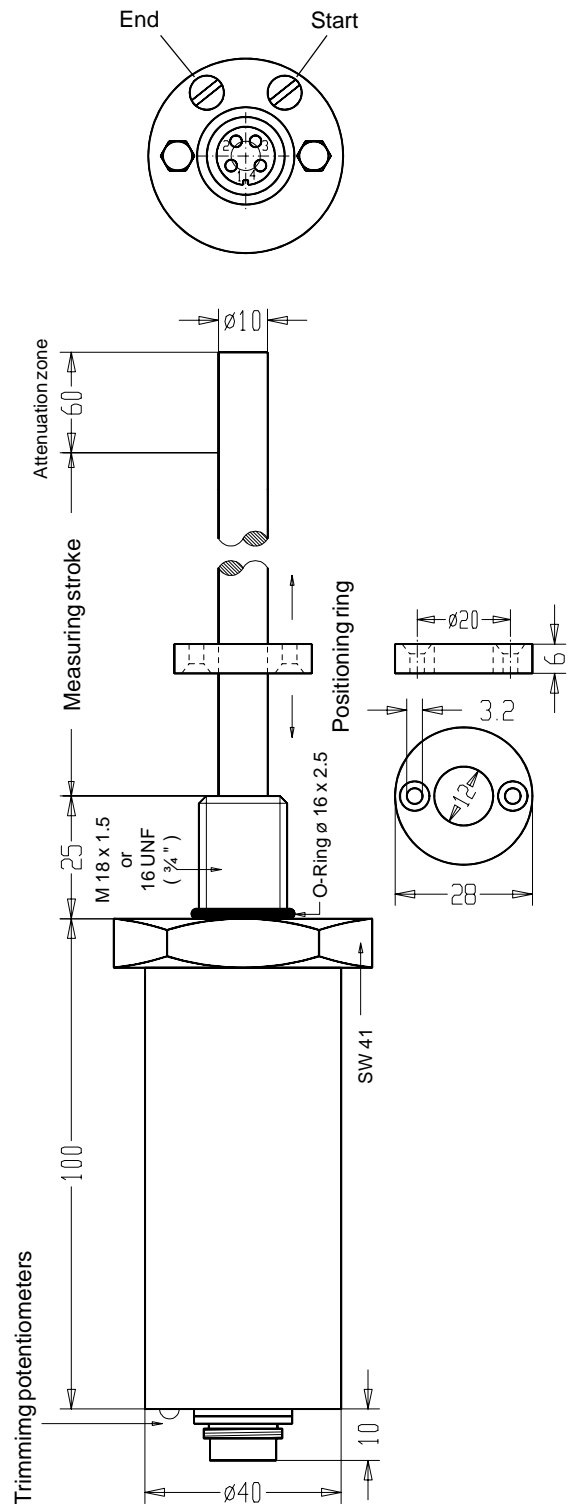
Mating plugs

- Socket BI 723 M/3 PS or 4 PS (IP 66), metal case with ground-connected outer ring, must be ordered separately.
- All plug contacts are gold-plated.

Adjustment of measuring stroke

Both start and end-point can be adjusted within the range of 15% F.S. via two trimming potentiometers located in the rear of the head. An adjustment instruction is supplied with each item.

Dimensions in mm



Two screws M3 x 12 to DIN 7991 for the fixing of the magnet and one nut M18 x 1.5, are supplied with each item. All pieces are in stainless steel.

Note : MAGNOSENS Transducers must be properly screened against magnetic and electro-magnetic fields.