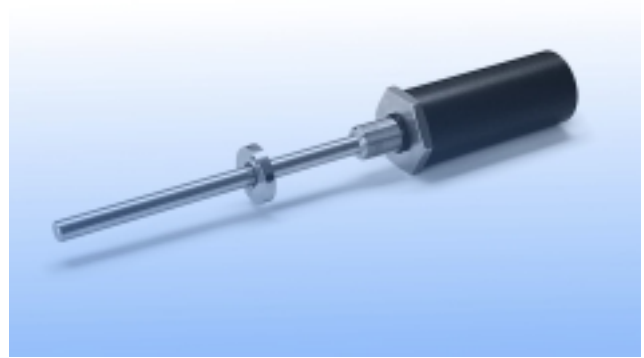


## Magnetostrictive Displacement Transducer

### Series SM70



- Measuring stroke up to 1500mm
- Pressure-resistant up to 300 bar
- Integrated electronic circuit
- Protection IP66
- Accuracy 0,1%

#### Construction and operating principle:

The transducer operates according to the principle of running time between two points of magnetostrictive waveguide. The measuring-point will be defined contactless by a magnetic ring. The distance between the ring and the initial point of the transducer will be measured.

#### Standard measuring stroke:

300	400	500	750	1000	1500
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#### Technical data:

Accuracy	< 0,5% or 0,25%
Temperature drift	< 0,01% / °C
Measurement Frequency	up to 1000mm: 1kHz above 1000mm: 0,5kHz
Frequency limit	800Hz
Temperature range	-20°C to +85°C
Resistance to shock	20g SRS 20-2000Hz
Resistance to vibration	3g rms
Mass	0,4kg + 0,02kg / 100mm
Protection class	IP66 *

\* with mounted mating plug BI423

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

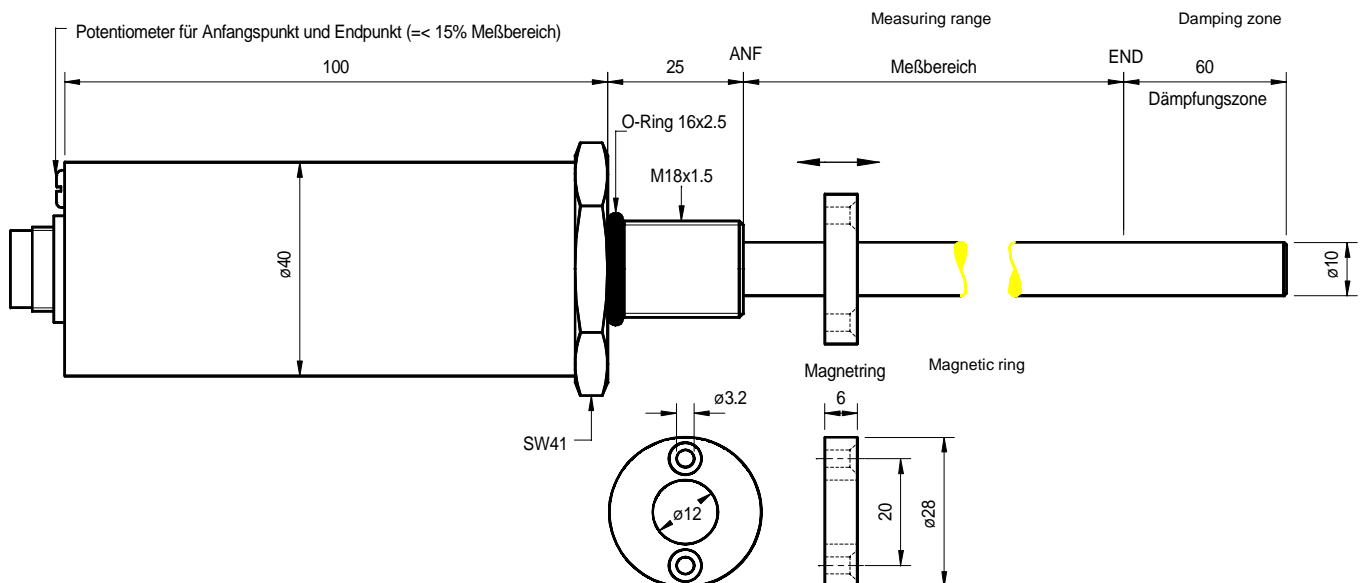
#### Standard versions:

Type	output	Supply voltage $U_B$ *	signal**	mid
SM701	0 .. 20 mA	20 .. 32 V	increasing	10 mA
SM702			decreasing	
SM703	4 .. 20 mA	20 .. 32 V	increasing	12 mA
SM704			decreasing	
SM705	± 10 V	±13 .. ±16 V	increasing	0 V
SM706			decreasing	
SM707	0..10 V	20 .. 32 V	increasing	5 V
SM708			decreasing	

\* Pole reversal protection

\*\* Increasing signal by moving the ring in the direction END to ANF (see drawing below)

Potentiometer for initial point and end point (= < 15% of measuring)



**Current output (SM701 .. 704):**

Output signal	0..20 mA or 4..20 mA
Supply current $I_B$	max. 120 mA
Load resistance $R_L$	0..500 $\Omega$
Residual ripple	< 0,005 mA <sub>SS</sub>
Dependence on $R_L$	< 0,001% for $\Delta R_L = 100\Omega$
Dependence on $V_s$	< 0,05% for $\Delta U_B = 1V$

**Voltage output (SM705 .. 708):**

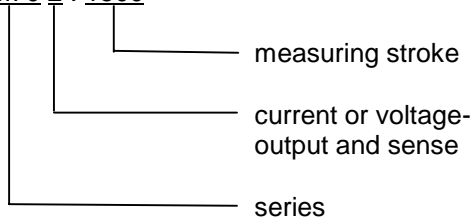
Output signal	$\pm 10$ VDC
Supply current $I_B$	max. 120 mA
Permissible load $R_L$	$\geq 2$ k $\Omega$ (short-circuit proof)
Residual ripple	< 5 mV <sub>SS</sub>
Residual voltage SM407/408	max. 0,1VDC
Dependence on $V_s$	< 0,05% for $\Delta U_B = 1V$

**Materials:**

Measuring tube	Stainless steel
Flange	Stainless steel
Housing	Aluminium black anodized
Connector contacts	Gold plated brass

**Order code**

SM70 2 . 1500



Order codes for customer specified versions will be named at plant.

**For example.: SM702.1500**

Transducer Series 70, output 0-20 mA  
1500 mm measuring stroke

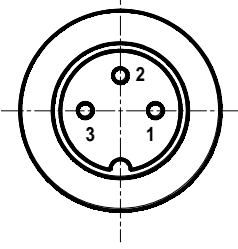
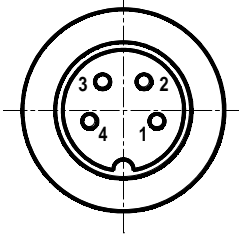
**additional versions:**

different measuring strokes

- different supply-voltage and output signals
- 
- 

**Electrical connections**

(View to the plug at transducer)

3-channel. output /1/2/3 /4/7/8	4-channel output /5 /6
	
1: + $U_B$ 2: - $U_B$ (0V) 3: $I_A$ / $U_A$ (output)	1: + $U_B$ 2: 0V 3: - $U_B$ 4: $U_A$ (output)

**Remark:**

By mounting the transducer SM70 pay attention of carefully shielding against electrical and magnetic fields

**Mating plugs:**

- IP40: Binder Ser. 681 3PS/4PS  
Metal case  
(must be orderd separately)
- IP66: Binder Ser. 423 3PS/4PS  
Metal case with outer ring connected to ground  
(must be ordered separately)

**Supply items**

Magnetic ring and mounting nut M18x1,5 are included

**Adjustment of measuring stroke**

The measuring stroke can be changed subsequently. The initial point and the end point can be changed with two potentiometers at the rear of the housing.

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