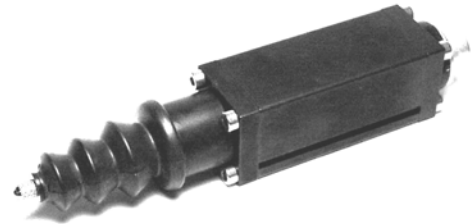


## Inductive Displacement Transducer

### Series **SM320**



- Stroke up to 15mm
- Integral electronic circuit
- Protection class IP66
- Accuracy 0,5% or 0,25%

#### Construction and operating principle:

A nickel iron core will be moved linear inside of a coil form. The displacement of the core leads to a inductance variation in both coils. The integral electronic circuit convertes the variation into a signal proportional to the displacement.

#### Standard measuring stroke:

5 mm	10 mm	15 mm
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#### Technical data:

Accuracy	< 0,5% or 0,25%
Temperature drift	< 0,01% / °C
Measurement frequency	800 Hz
Temperature range	-20°C to +85°C
Resistance to shock	250g SRS 20-2000Hz
Resistance to vibration	20g rms (50g peek)
Protection class	up to 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.

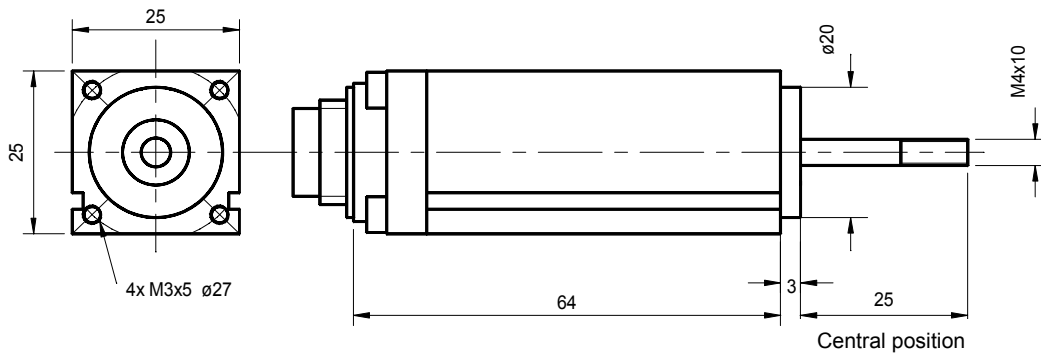
#### Standard versions:

Type	output	Supply voltage $U_R$ *	signal**	mid
SM321	0 .. 20 mA	20 .. 32 V	increasing	10 mA
SM322			decreasing	
SM323	4 .. 20 mA	20 .. 32 V	increasing	12 mA
SM324			decreasing	
SM325	± 10 V	±13 .. ±16 V	increasing	0 V
SM326			decreasing	
SM327	0..10 V	20 .. 32 V	increasing	5 V
SM328			decreasing	

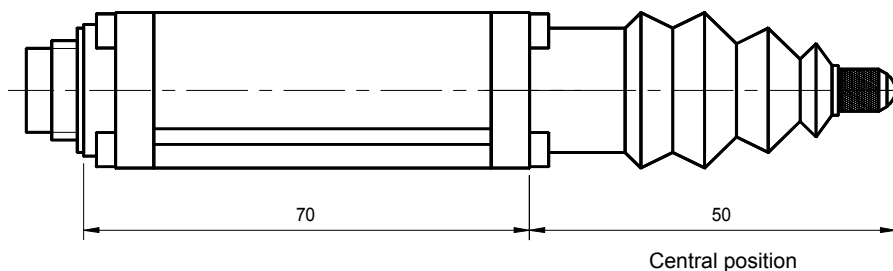
\* Pole reversal protection

\*\* Increasing signal by moving the plunger in the direction towards the plug

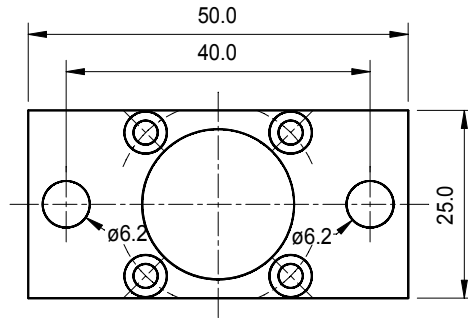
#### Dimensions in mm:



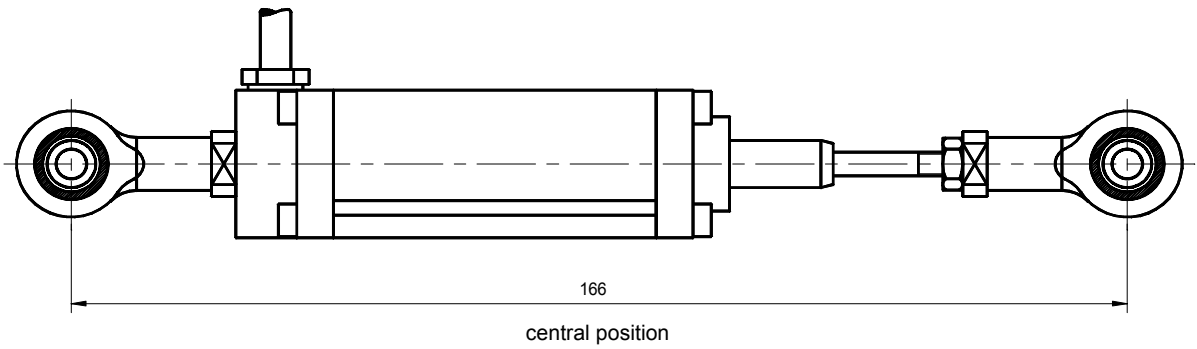
#### Gauge with bellow, plug (.BS)



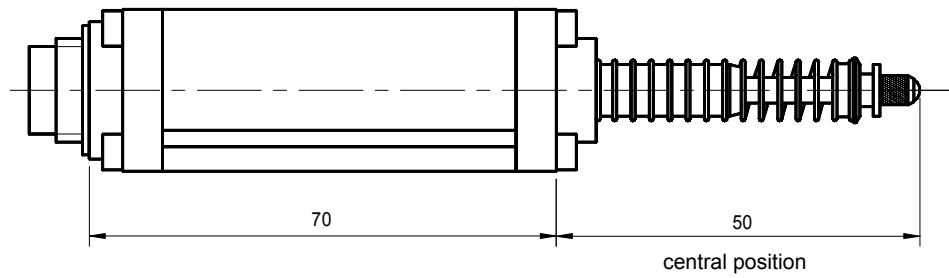
**Front plate (.L)**  
Aluminium 3mm  
black anodized



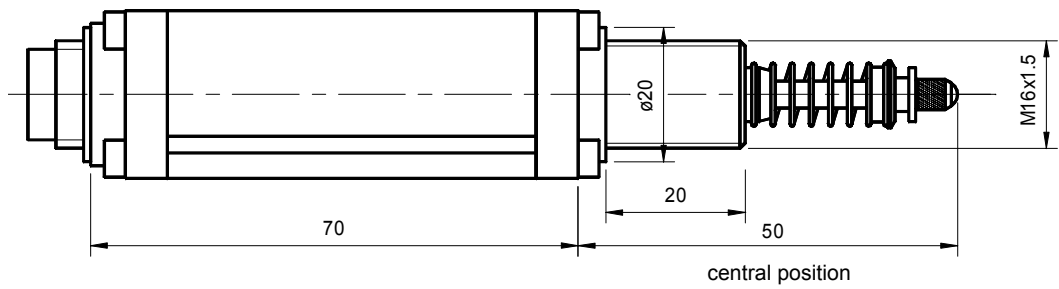
**ball joint with guided and captivated plunger, ball joint on end of case, cable exit (.FGHK1)**



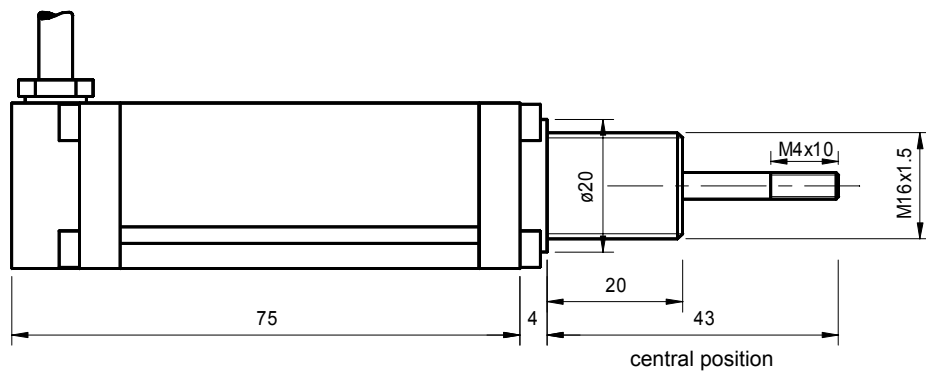
**gauge without bellow, plug (.ST)**



**gauge without bellow, mounting thread M16x1,5, plug (.MST)**



**mounting thread M16x1,5, cable exit, cable length 1m (.K1M)**



**Current output (SM321..324):**

Output signal	0..20 mA or 4..20 mA
Supply current $I_B$	max. 60 mA
Load resistance $R_L$	0..500Ω
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 (SM325..328):**

Output signal	±10 VDC
Supply current $I_B$	max. 50 mA
Permissible load $R_L$	≥ 2 kΩ (short-circuit proof)
Residual ripple	< 5 mV <sub>SS</sub>
Residual voltage SM327/328	max. 0,1VDC
Dependence on $V_s$	< 0,05% for $\Delta U_B = 1V$

**Materials:**

housing	anodized aluminium
plunger	stainless steel
core	stainless nickel iron alloy
Connector case	nickel plated brass
Connector contacts	gold plated brass

**Electrical connections on plug**

(view to the plug at transducer)

3-channel output 1, 2, 3, 4, 7, 8	4-channel output 5, 6
Cable colour 1: +U <sub>B</sub> red 2: -U <sub>B</sub> (0V) black 3: I <sub>A</sub> / U <sub>A</sub> (output) brown	Cable colour 1: +U <sub>B</sub> red 2: 0V orange 3: -U <sub>B</sub> black 4: U <sub>A</sub> (output) brown

**Option and accessories:**

version .B	with bellow
version .K	cable exit
version .M	mounting thread M16x1,5
version .T	gauge
SM906.320	mounting clamps

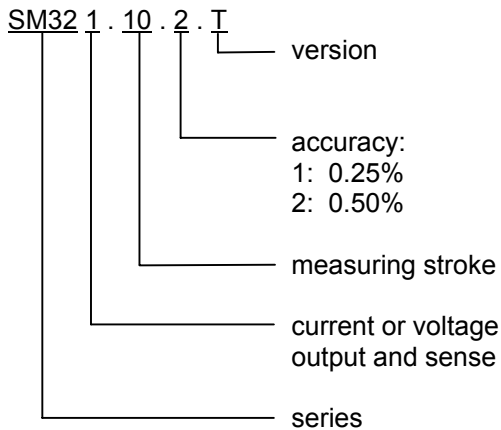
**Mating plugs:**

(must be orderd separately)

IP40: Binder Ser. 681 3PS/4PS  
Metal case

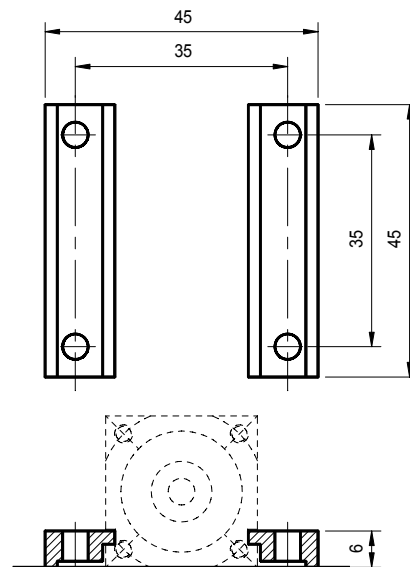
IP66: Binder Ser. 423M 3PS/4PS

**Order code**



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

**mounting clamps**  
SM906.320



Incl. 4 screws M4x12 DIN 912