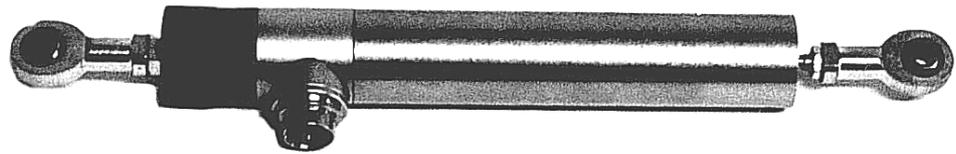


# Inductive Displacement Transducer

## Series ISM40



- Universally applicable transducer
- Stroke up to 200mm
- Integral electronic circuit
- Gauge version with return spring possible
- Protection 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 an inductance variation in both coils. The integral electronic circuit converts the variation into a signal proportional to the displacement.

### Standard measuring stroke:

20 mm	40 mm	70 mm	100 mm
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### Technical data:

Accuracy	< 0,5% or 0,25%
Temperature drift	< 0,01% / °C
Temperature range	-20°C to +85°C
Frequency limit	800Hz
Resistance to shock	250g SRS 20-2000Hz
Resistance to vibration	20g rms (20g peek)
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
ISM401	0 .. 20 mA	20 .. 32 V	increasing	10 mA
ISM402			decreasing	
ISM403	4 .. 20 mA	20 .. 32 V	increasing	12 mA
ISM404			decreasing	
ISM405	± 10 V	±13 .. ±16 V	increasing	0 V
ISM406			decreasing	
ISM407	0..10 V	20 .. 32 V	increasing	5 V
ISM408			decreasing	

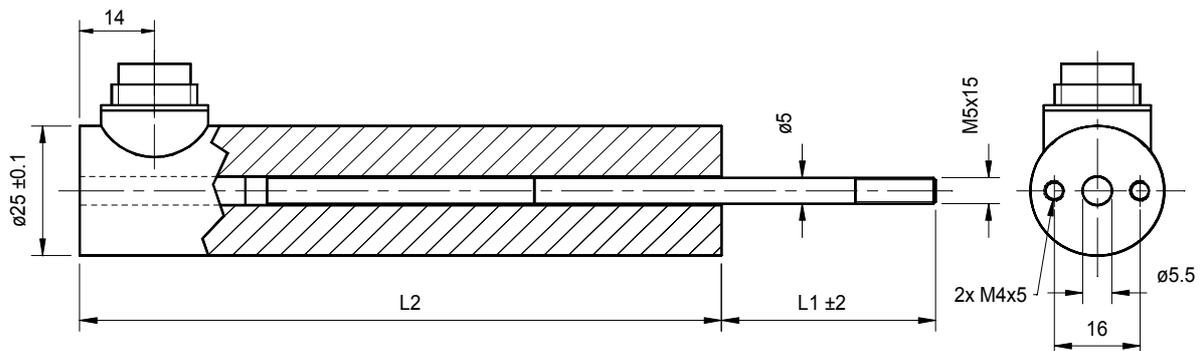
\* Pole reversal protection

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

### Standard-dimensions and masses:

stroke mm	L1 mm	L2 mm	transducer	plunger
20	40	110	210g	15g
40	50	140	240g	19g
70	65	200	310g	25g
100	80	250	380g	31g

L1 = plunger in central position





### Current output (ISM401..404):

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 $\Delta U_B = 1V$

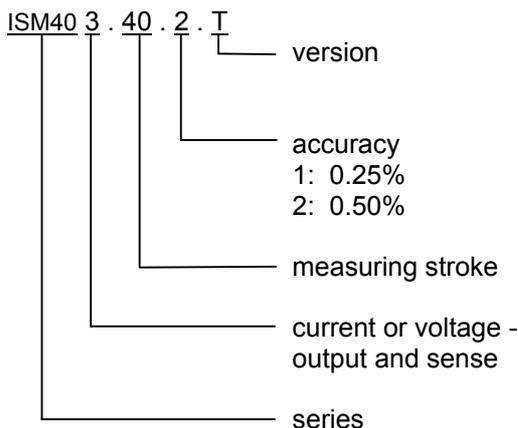
### Voltage output (ISM405..408):

Output signal	$\pm 10$ VDC
Supply current $I_B$	max. 50 mA
Permissible load $R_L$	$\geq 2$ kΩ (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:

External and internal tube	Stainless steel
Plunger	Stainless steel
Core	Stainless nickel iron alloy
Connector housing	Nickel plated brass
Connector contacts	Gold plated brass
Spring	Stainless spring steel

### Order code



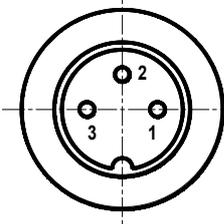
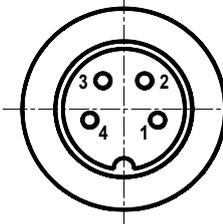
Order codes for customer specified versions will be named at plant.

### For example: ISM403.40.2.T

gauge series 40, output 4-20 mA (increasing), 40mm measuring stroke, accuracy 0.5%

### Electrical connections on plug

(View to the plug at transducer)

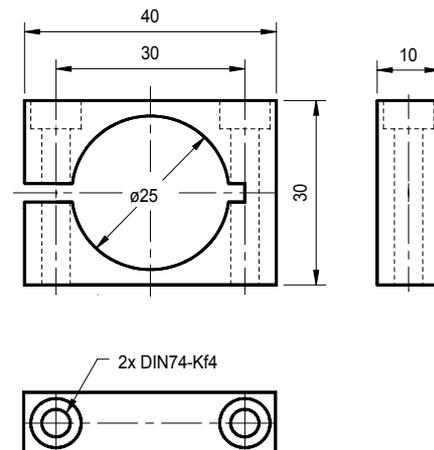
3-channel output / 1 / 2 / 3 / 4 / 7 / 8	4-channel output / 5 / 6
	
1: + $U_B$ 2: - $U_B$ (0V) 3: $I_A$ / $U_A$ (output)	1: + $U_B$ 2: 0V 3: - $U_B$ 4: $U_A$ (output)

### Special versions and accessories:

Version T	Gauge with return spring
Version K	With Pg9-fastener + cable
Version FGH	With 2 ball joints M5
Version G	With 1 ball joint M5 at plunger
SM906.400	Mounting block

### mounting block ISM906.400

(incl. 2 mounting screws M4x35 DIN912 VA)



### Mating plugs

IP40: ISM901.400.(3/4)

Metal case  
(must be orderd separately)

IP66: ISM901.402.(3/4)

Metal case with outer ring connected to ground  
(must be orderd separately)