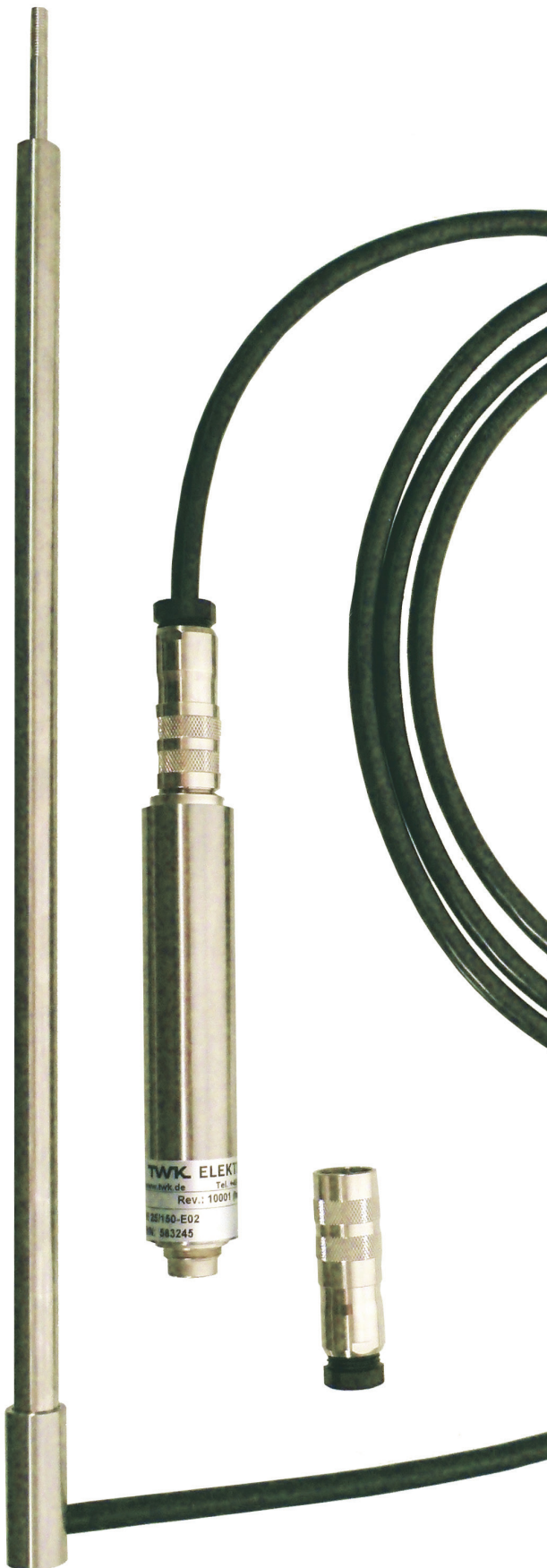


# Inductive displacement measurement system model series IE25P with programmable analogue interface

Document No.: IE 12781 AE  
Date: 23.05.2013



- Contactless, wear-free sensor system
- Analogue interface
- Measuring range programmable
- Measuring range up to 200 mm
- Stainless steel design
- Gauge type with return spring up to 100 mm
- Protection class IP 66

## Design

The system consists of an inductive linear transducer without integrated electronics, e.g. IW 10 or IW 120 and a cylindrical electronics module. Both parts are jointly calibrated in the factory and bear the same serial number. They must not be exchanged with other parts from the same model series

## Linear transducers IW 10/X and IW 120/x

The linear transducer can be designed as a gauge type with return spring. It is available for measuring strokes from 2 to 200 mm. Electrical connection is carried out via a connector. A detailed description of the IW10 linear transducers is in data sheet IW10278. The IW 120 linear transducers are described in greater detail in data sheet 10214.

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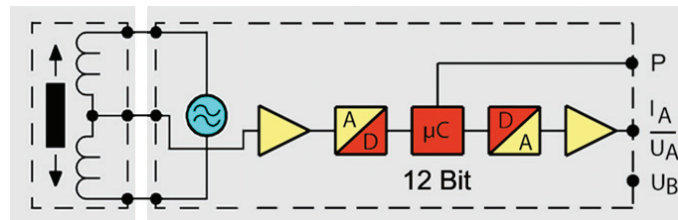
with programmable analogue interface

### Technical data

#### Electronic module for IE25P

The module consists of a cylindrical stainless steel housing with an outside diameter of 25 mm. It contains the circuitry (oscillator and demodulator) required to supply the linear transducer and process its signals, as well as further signal conversion up to the programmable interface.

The following principle circuit diagram shows the overall structure. The function corresponds to that of inductive linear transducer IWP 250 according to data sheet IWE11259.



#### Electrical data

■ Supply voltage range UB:	21.5 to 30 VDC (protected against polarity reversal)
■ Current consumption:	60 mA typ. / 80 mA max.
■ Resolution:	12-bit
■ Linearity:	0.5 % or 0.25 % (full stroke)
■ Temperature drift:	< 0,01 %/°C
■ Stability:	< 0.1 % in 24 hours

#### Environmental data

■ Temperature range:	-10 °C to +80 °C
■ Storage temperature range:	-30 °C to +80 °C
■ Shock resistance:	250 g SRS 20-2000 Hz
■ Vibration resistance:	20 g rms (50 g peak) 20-2000 Hz
■ Protection class:	IP 66

#### Materials IE 25P

■ Outer and inner tube:	Stainless steel 1.4301
■ Plunger and probe:	Stainless steel 1.4305
■ Core:	Mu metal (NiFe)
■ Connector housing:	Brass, nickel-plated
■ Spring:	Stainless steel 1.4310

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**Electrical connection**

**Electrical connections on the connector**

(viewed towards the soldering side of the mating connector)

**Connection assignment - outputs A, B and C**

Pin	Wirte	Signal
1	Pink	+ U <sub>B</sub> (21,5 ... 32 VDC)
2	Brown	- U <sub>B</sub> (0 V)
3	White	Analogue output (0(4) ... 20 mA, 0 ... 10 V)
4	Grey	Analogue GND (connected to PIN 2)
5	Green	Multifunctional input 0 (MFP 0)
6	Yellow	Multifunctional input 1 (MFP 1)
7	-	Not used
8	-	Not used

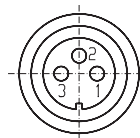
**Connection assignment - output D**

Pin	Wirte	Signal
1	Pink	+ U <sub>B</sub> (+13 ... +16 VDC)
2	Brown	- U <sub>B</sub> (-13 ... -16 VDC)
3	White	Analogue output (-10 ... +10 V)
4	Grey	Analogue GND
5	Green	Multifunctional input 0 (MFP 0)
6	Yellow	Multifunctional input 1 (MFP 1)
7	-	Not used
8	-	Not used

**Linear transducer electrical connection**

Pin	Signal
1	Coil end
3	Coil start
2	Coil centre

3-pin, socket  
(viewed towards the  
soldered side of the  
mating connector)



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**Programming**

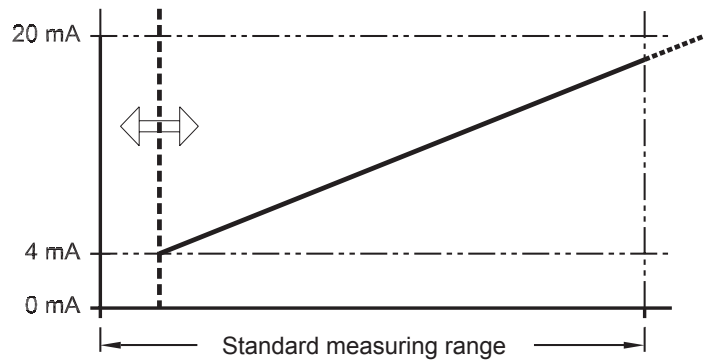
**Programming:**

It must generally be noted that both the new start and the end position always lie within the standard measuring range.

**Start of measuring range (zero point)**

Move the plunger mechanically to the desired start position. Connect multifunctional input contact 0 (MFP 0) to -UB or analogue GND\* for at least 2 seconds.

The measuring stroke and the output sense remain unchanged, unless the measuring stroke is so large that it is pushed out of the standard measuring range in the event of excessive start position displacement.



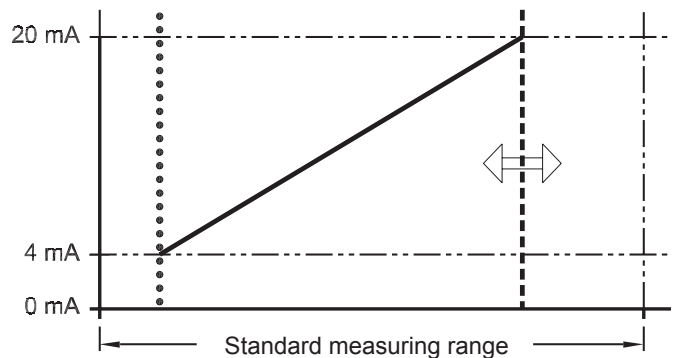
**End of measuring range (end value)**

Move the plunger mechanically to the desired end position. Connect multifunctional input contact 1 (MFP 1) to -UB or analogue GND\* for at least 2 seconds.

The start of the measuring range and the output sense remain unchanged.

The measuring stroke changes accordingly on programming the end of the measuring range. The limit is 1/20 of the factory programming's measuring stroke. The resolution is also reduced on reducing the measuring stroke.

The resolution and linearity always refer to the full measuring stroke (see factory programming).

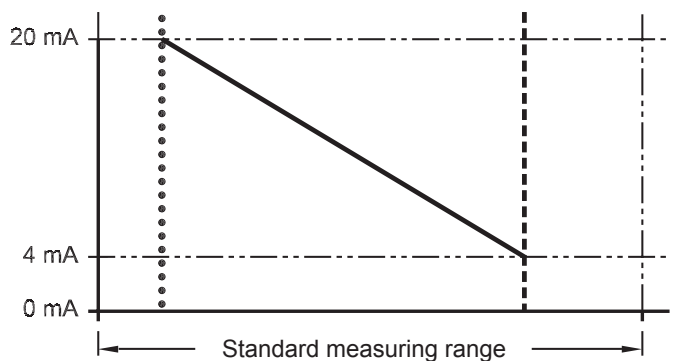


**Output sense reversal**

1) Reversal with simultaneous measuring stroke change by displacing the new end value past the zero point. To save the new position, MFP 1 must be connected to -UB or analogue GND\* for at least 2 seconds.

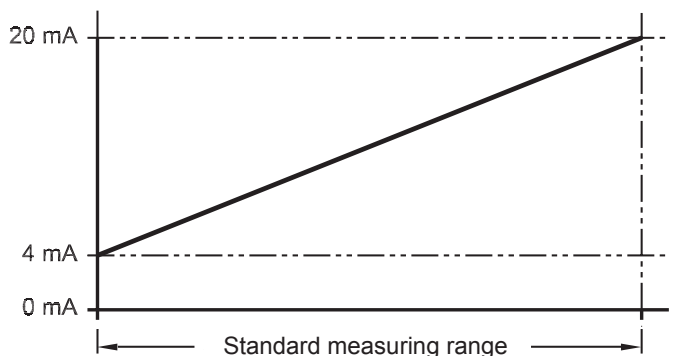
The zero point remains unchanged. Due to the fact that the end value and zero point have switched positions, the IWP then has a descending analogue output signal.

2) Reversal of the output sense with constant measuring stroke is also possible. To do this, the new end value is shifted to the position of the old zero point. The condition is that the new end value may deviate from the old zero point by less than 200 digits (< 1/20 of the factory programming measuring stroke). To save the output sense reversal, MFP 1 must be connected to -UB or analogue GND\* for at least 2 seconds. The new zero point is then in the position of the old end value and vice versa. The measuring stroke remains unchanged.



**Reinstatement of factory programming**

Simultaneously connect contacts MFP 0 and MFP 1 to -UB or analogue GND\* for at least 2 seconds. The factory programming is reinstated.

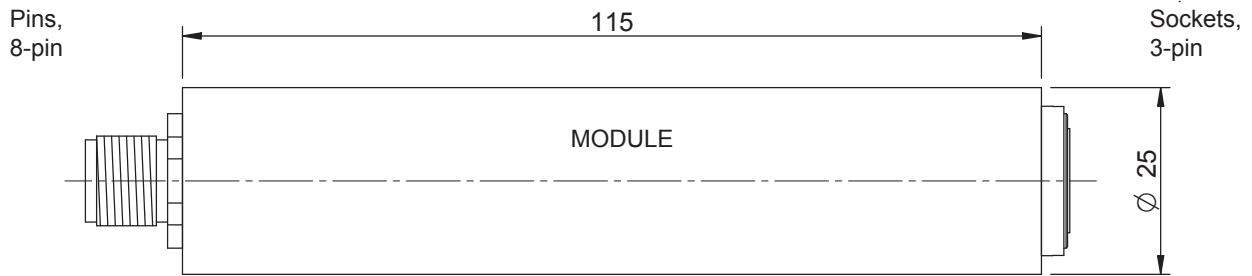


\* Depending on asymmetrical or symmetrical supply voltage.

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Installation drawing

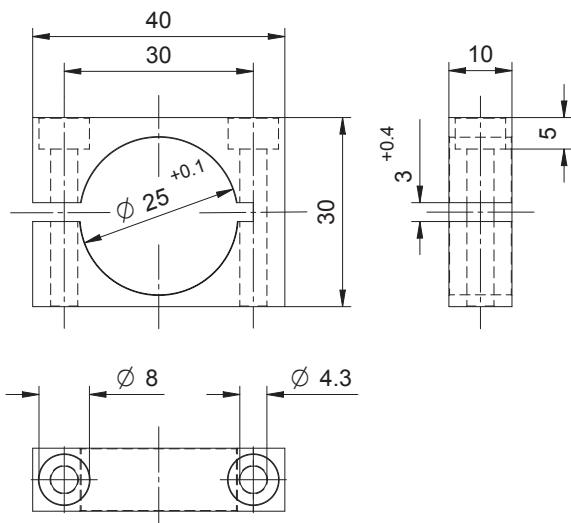
**Dimensions in mm**



Accessories (to be ordered separately)

**Dimensions in mm**

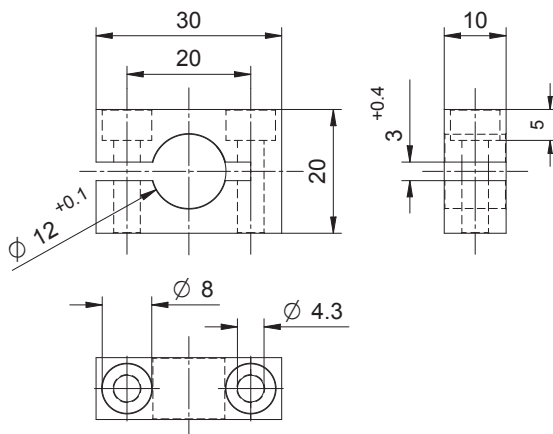
**MB 25 mounting block, nickel-plated**



2 Allen head screws M4 x 35 mm (DIN 912, A2) and 2 spring rings (DIN 127, A2) are included in the scope of delivery of the MB25.

Weight: Approx. 60 g

**MB 12 mounting block, nickel-plated**



2 Allen head screws M4x25 mm are included in the scope of delivery.

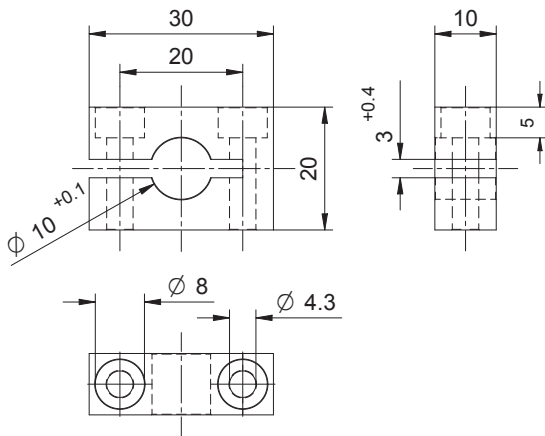
Weight: 36 g

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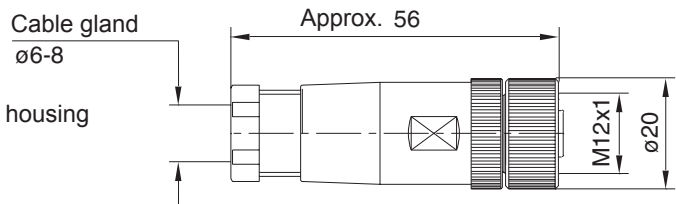
Accessories (to be ordered separately)

**MB 10 mounting block, nickel-plated**



**Mating connector M12x1, 8-pin, straight  
(to be ordered separately)**

- **Order No. STK8GS54:** Metal housing, screening on the housing



**Order number**

<b>IE 25P -</b>	<b>X</b>	<b>B</b>	<b>02</b>
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Electrical and / or mechanical variants

02 For series IW120 sensor

Interface:

- A 0 ... 20 mA
- B 4 ... 20 mA
- C 0 ... 10 V
- D -10 ... +10 V

Measuring stroke:

- X X = to be replaced with the calibrated measuring stroke, e.g. IE 25/60

IE 25P Inductive displacement measurement system model series IE 25P