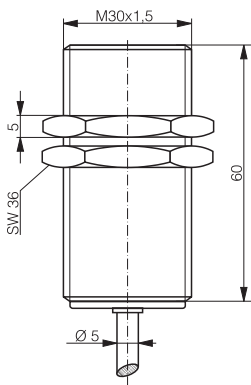
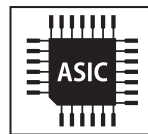
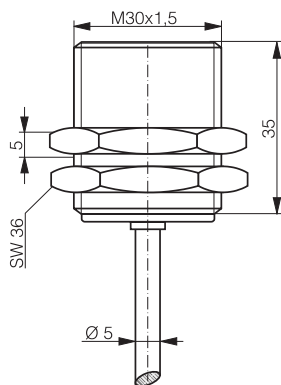


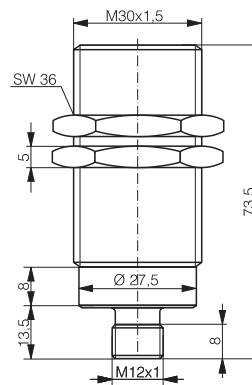
HOUSING	OPERATING DISTANCE	MOUNTING	✓ Long sensing range ✓ Outstanding accuracy and temperature stability ✓ Resolution in $\mu\text{m}$ range	✓ Exceptional price-performance ratio ✓ Current or voltage output ✓ IP67
M30	20 mm	Quasi-embeddable		



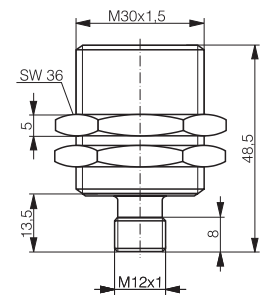
DW-AD-509-M30-390



DW-AD-509-M30-320



DW-AS-509-M30-390



DW-AS-509-M30-320

DETECTION DATA		INTERFACE	
Sensing distance ( $S_d$ )	20 mm	IO-Link	✗
Repeat accuracy (IEC 60947-5-2)	$\pm 0.02$ mm	MTTF (@40°C)	546 y
Static resolution* (@0.67· $S_d$ )	$\leq 0.41$ $\mu\text{m}$		
Dynamic resolution* (@0.67· $S_d$ )	$\leq 1.55$ $\mu\text{m}$		
Temperature drift of $S_d$	$\leq 5\%$ (0... +70°C) $\leq 10\%$ (-25... 0°C)		
Standard target	60 x 60 x 1 mm <sup>3</sup> , FE360		

\*Static resolution is measured when the target is moving at 20 Hz. Dynamic resolution when the target is moving at 1 kHz.

ELECTRICAL DATA		MECHANICAL DATA	
Supply voltage range ( $U_B$ )	15...30 VDC	Mounting	Quasi-embeddable
Residual ripple	$\leq 20\%$ $U_B$	Housing material	Chrome-plated brass
Power consumption (no-load)	$\leq 12$ mA	Sensing face material	PBTP
Max. load at voltage output	$\leq 15$ mA	Max tightening torque	70 Nm
Max. load at current output	0.4k $\Omega$ ( $U_B=15\text{V}$ ) / 1k $\Omega$ ( $U_B=30\text{V}$ )	Ambient operating temperature	-25...+70°C
Bandwidth	200 Hz	Enclosure rating	IP67
Time delay before availability	20 ms	Weight (cable / connector)	see page 2
Recovery time	50 ms	Shock and vibration	IEC 60947-5-2 / 7.4
Short-circuit protection	✓		
Voltage reversal protection	✓		
Cable length max.	$\leq 300$ m		

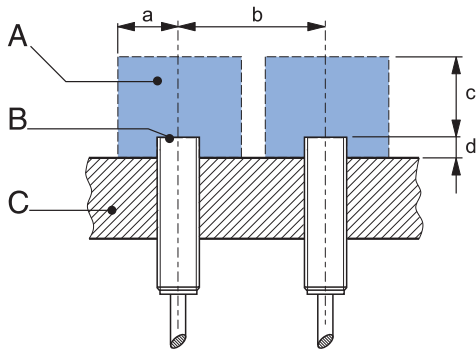
Note: all data measured according to IEC 60947-5-2 standard with  $U_B=20 \dots 30\text{VDC}$ ,  $T_A=23^\circ\text{C} \pm 5^\circ\text{C}$ .

## CORRECTION FACTORS

Steel FE 360	1	Copper	0.28	Aluminum	0.32	Brass	0.4	Stainless S. V2A 1 / 2 mm	0.7
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Note: the operating distance of the sensor must be multiplied by the correction factor of the material. For example, the operating distance on Aluminum is  $S_{n,Al} = S_n \times CF_{Al}$ . In case of embeddable mounting, the distance is multiplied by the additional correction factor of the support, thus  $S_{n,Al} = S_n \times CF_{Al} \times CF_{emb,Al}$ .

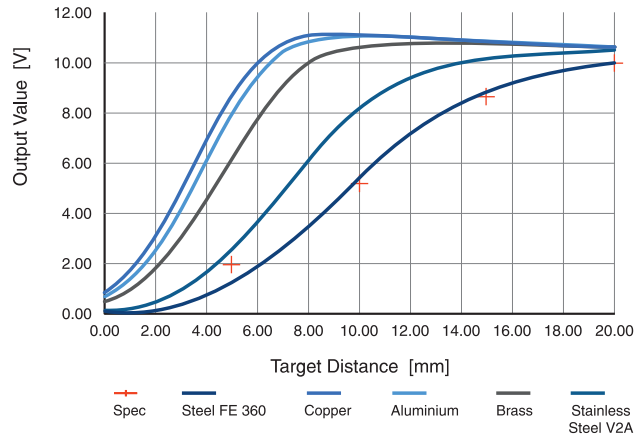
## INSTALLATION CONDITIONS



A : metal free zone	a : 35 mm
B : sensing face	b : 80 mm
C : support	c : 60 mm
	d : steel 4 mm

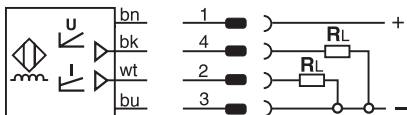
Note: additional installation information can be found in the glossary of the Contrinex General Catalog.

## RESPONSE DIAGRAM

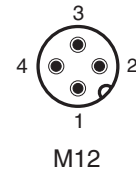


Output voltage	s = 0 mm	0 V / -0.0 +0.4 V	Output current	s = 0 mm	4 mA ± 0.8 mA
	s = $S_d/2$ mm	+5.2 V ± 0.4 V		s = $S_d/2$ mm	12.3 mA ± 0.8 mA
	s = $S_d$ mm	+10.0 V ± 0.4 V		s = $S_d$ mm	20 mA ± 0.8 mA
	s > $S_d$ mm	+10 ... 12 V ± 0.4 V		s > $S_d$ mm	+20 ... 23 mA ± 0.8 mA

## WIRING DIAGRAM



## PIN ASSIGNMENT



## AVAILABLE TYPES

Part number	Part reference	Connection	Output on pin 2 / wh	Output on pin 4 / bk	Weight
330-020-417	DW-AD-509-M30-320	PUR, 2 m, 4 wire	4...20 mA	0...10 V	190 g
330-020-418	DW-AD-509-M30-390	PUR, 2 m, 4 wire	4...20 mA	0...10 V	215 g
330-020-446	DW-AS-509-M30-320	M12 4-pin	4...20 mA	0...10 V	135 g
330-020-447	DW-AS-509-M30-390	M12 4-pin	4...20 mA	0...10 V	155 g

Note: part reference may include additional suffix to indicate a revision version or special version. Further information is available on request.

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