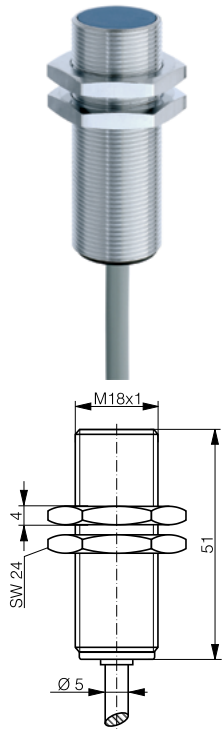


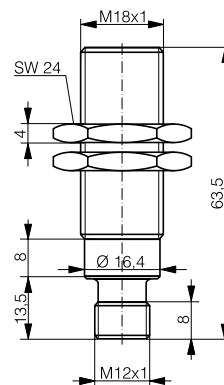
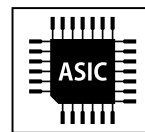
| HOUSING | OPERATING DISTANCE | MOUNTING         | ✓ Long sensing range                             | ✓ Exceptional price performance ratio |
|---------|--------------------|------------------|--|---------------------------------------|
| M18     | 10 mm              | Quasi-embeddable | ✓ Outstanding accuracy and temperature stability | ✓ Current/voltage output              |
|         |                    |                  | ✓ Resolution in $\mu\text{m}$ range              | ✓ IP67                                |



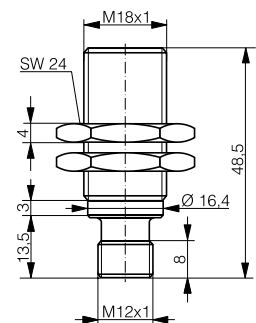
DW-AD-509-M18-390



DW-AD-509-M18-320



DW-AS-509-M18-390



DW-AS-509-M18-320

| DETECTION DATA                      |   | INTERFACE    |       |
|-------------------------------------|---|--------------|-------|
| Sensing distance ( $S_d$ )          | 10 mm   | IO-Link      | ✗     |
| Repeat accuracy (IEC 60947-5-2)     | $\pm 0.2$ mm  | MTTF (@40°C) | 551 y |
| Static resolution* (@0.67· $S_d$ )  | $\leq 0.25$ $\mu\text{m}$                           |              |       |
| Dynamic resolution* (@0.67· $S_d$ ) | $\leq 1.24$ $\mu\text{m}$                           |              |       |
| Temperature drift of $S_d$          | $\leq 5\%$ (0... +70°C)<br>$\leq 10\%$ (-25... 0°C) |              |       |
| Standard target                     | 30 x 30 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 the sensor bandwidth limit.

| 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)    | $\leq 10$ mA  | Sensing face material         | PBTP                     |
| Max. load at voltage output    | $\leq 15$ mA  | Max tightening torque         | 25 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 <sup>1</sup> |
| Bandwidth                      | 500 Hz  | Enclosure rating              | IP 67                    |
| Time delay before availability | 20 ms   | Weight (cable / connector)    | see page 2               |
| Recovery time                  | 20 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  $U_B=20\text{...}30\text{VDC}$ ,  $T_A=23^\circ\text{C} \pm 5^\circ\text{C}$ .

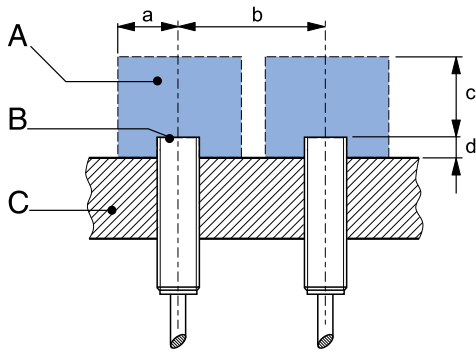
<sup>1</sup>Maximum temperature according to UL: 70°C.

## CORRECTION FACTORS

|              |   |        |      |          |      |       |      |                           |      |
|--------------|---|--------|------|----------|------|-------|------|---------------------------|------|
| Steel FE 360 | 1 | Copper | 0.31 | Aluminum | 0.34 | Brass | 0.44 | Stainless S. V2A 1 / 2 mm | 0.72 |
|--------------|---|--------|------|----------|------|-------|------|---------------------------|------|

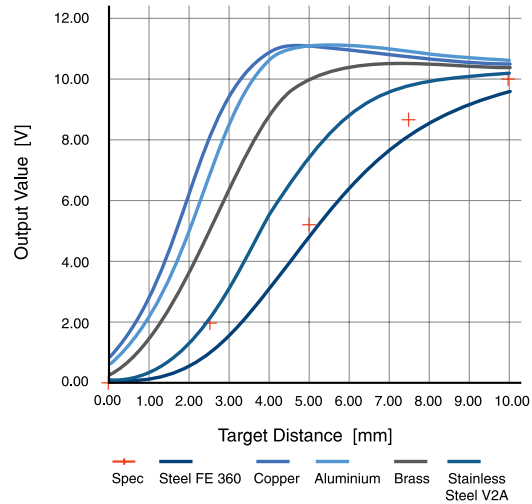
Note: the operating distance of the sensor must be multiplied by the correction factor of the material. For example, the operating distance on Aluminum is  $S_{n,Al} = S_n \times CF_{Al}$ . In case of embeddable mounting, the distance is multiplied by the additional correction factor of the support, thus  $S_{n,Al} = S_n \times CF_{Al} \times CF_{emb,Al}$ .

## INSTALLATION CONDITIONS



|                     |                |
|---------------------|----------------|
| A : metal free zone | a : 19 mm      |
| B : sensing face    | b : 24 mm      |
| C : support         | c : 30 mm      |
|                     | d : steel 4 mm |

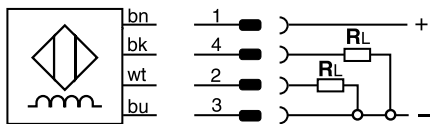
## RESPONSE DIAGRAM



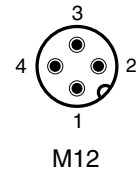
Note: additional installation information can be found in the glossary of the Contrinex General Catalog.

|                |                          |                   |                |                          |                     |
|----------------|--------------------------|-------------------|----------------|--------------------------|---------------------|
| Output voltage | s = 0 mm                 | 0 V / -0.0 +0.4 V | Output current | s = 0 mm                 | 4 mA ± 0.8 mA       |
|                | s = S <sub>d</sub> /2 mm | 5.2 V ± 0.4 V     |                | s = S <sub>d</sub> /2 mm | 12.3 mA ± 0.8 mA    |
|                | s = S <sub>d</sub> mm    | 10.0 V ± 0.4 V    |                | s = S <sub>d</sub> mm    | 20 mA ± 0.8 mA      |
|                | s > S <sub>d</sub> mm    | 10...12 V ± 0.4 V |                | s > S <sub>d</sub> 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 |
|-------------|-------------------|------------------|----------------------|----------------------|--------|
| 330-020-382 | DW-AD-509-M18-320 | PUR, 2 m, 4 wire | 4...20 mA            | 0...10 V             | 115 g  |
| 330-020-385 | DW-AD-509-M18-390 | PUR, 2 m, 4 wire | 4...20 mA            | 0...10 V             | 130 g  |
| 330-020-395 | DW-AS-509-M18-320 | M12 4-pin        | 4...20 mA            | 0...10 V             | 49 g   |
| 330-020-396 | DW-AS-509-M18-390 | M12 4-pin        | 4...20 mA            | 0...10 V             | 56 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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