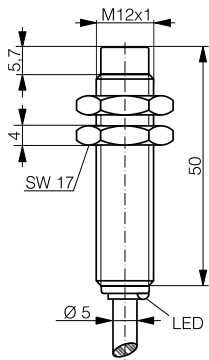
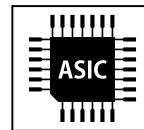
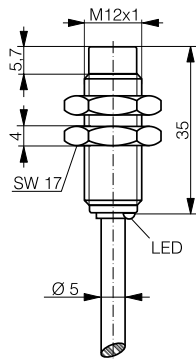


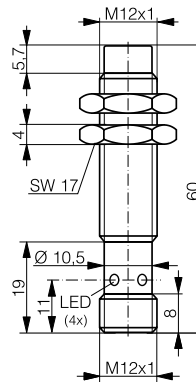
| HOUSING | OPERATING DISTANCE | MOUNTING       | ✓ Long operating distance<br>✓ Exceptional price-performance ratio<br>✓ Excellent accuracy | ✓ IP 67<br>✓ IO-Link v1.1 |
|---------|--------------------|----------------|--|---------------------------|
| M12     | 10 mm              | Non-embeddable |  |                           |



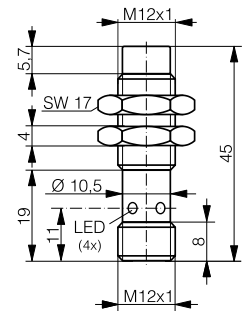
DW-AD-51x-M12



DW-AD-51x-M12-120



DW-AS-51x-M12



DW-AS-51x-M12-120

| DETECTION DATA                       |                                       | INTERFACE                       |   |
|--------------------------------------|---------------------------------------|---------------------------------|---|
| Rated operating distance ( $S_n$ )   | 10 mm                                 | Indicator LED, yellow           | Sensing state ( $0 \leq s \leq 0.8 S_r$ ) |
| Assured operating distance ( $S_a$ ) | $\leq (0.81 \times S_n)$ mm           | Indicator LED, yellow, blinking | Sensing state ( $0.8 S_r < s \leq S_r$ )  |
| Repeat accuracy                      | $\leq 0.3$ mm                         | IO-Link                         | ✓   |
| Hysteresis                           | $3\% S_r < \text{Hyst} \leq 15\% S_r$ | MTTF (@40°C)                    | 1073 y                                    |
| Temperature drift                    | $\leq 10\% S_r$                       |                                 |   |
| Standard target                      | 30 x 30 x 1 mm <sup>3</sup> , FE360   |                                 |   |

Note:  $0.9S_n \leq S_a \leq 1.1S_n$ .

| ELECTRICAL DATA                |                 | MECHANICAL DATA               |                          |
|--------------------------------|-----------------|-------------------------------|--------------------------|
| Supply voltage range ( $U_B$ ) | 10...30 VDC     | Mounting                      | Non-embeddable           |
| Residual ripple                | $\leq 20\% U_B$ | Housing material              | Chrome-plated brass      |
| Output current                 | $\leq 200$ mA   | Sensing face material         | PBTP                     |
| Output voltage drop            | $\leq 2.0$ VDC  | Max tightening torque         | 10 Nm                    |
| Power consumption (no-load)    | $\leq 10$ mA    | Ambient operating temperature | -25...+70°C <sup>1</sup> |
| Residual current               | $\leq 0.1$ mA   | Enclosure rating              | IP 67                    |
| Switching frequency            | $\leq 400$ Hz   | Weight (cable / connector)    | see page 2               |
| Short-circuit protection       | ✓               | Shock and vibration           | IEC 60947-5-2 / 7.4      |
| Voltage reversal protection    | ✓               |                               |                          |
| Cable length max.              | $\leq 300$ m    |                               |                          |

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

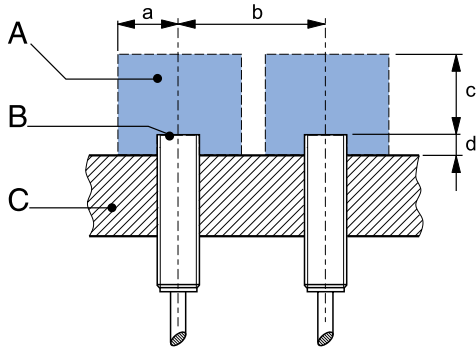
Note: all data measured according to IEC 60947-5-2 standard with  $U_B=20...30$ VDC,  $T_A=23$  °C  $\pm$  5 °C.

## CORRECTION FACTORS

|              |   |        |      |          |      |       |      |                           |      |
|--------------|---|--------|------|----------|------|-------|------|---------------------------|------|
| Steel FE 360 | 1 | Copper | 0.45 | Aluminum | 0.49 | Brass | 0.56 | Stainless S. V2A 1 / 2 mm | 0.77 |
|--------------|---|--------|------|----------|------|-------|------|---------------------------|------|

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 : 16 mm      d : steel 13 mm  
 B : sensing face      b : 45 mm  
 C : support      c : 30 mm

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

## IO-LINK FUNCTIONALITIES

|                    |                   |
|--------------------|-------------------|
| IO-Link version    | 1.1               |
| SIO mode           | Supported         |
| Process data       | 7-bit input       |
| Baudrate           | COM2 (38.4 kBaud) |
| Minimum cycle time | 10.4 ms           |
| ISDU               | Not supported     |



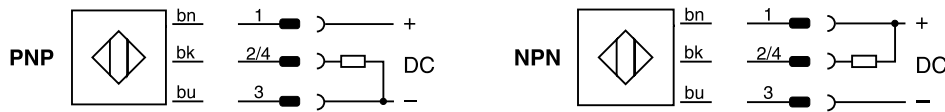
IO-Link files may be downloaded from

[www.contrinex.com/product-range/inductive-sensors/](http://www.contrinex.com/product-range/inductive-sensors/).

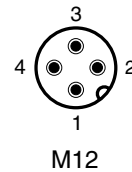
Select the product name to display the product page with corresponding downloads.

Alternatively, just click/scan the QR code on the left.

## WIRING DIAGRAM



## PIN ASSIGNMENT



## AVAILABLE TYPES

| Part number | Part reference    | Polarity | Connection       | Output on pin 2     | Output on pin 4 / bk         | Weight |
|-------------|-------------------|----------|------------------|---------------------|------------------------------|--------|
| 330-020-133 | DW-AD-511-M12     | NPN      | PVC, 2 m, 3 wire | -                   | Normally open (NO)           | 92 g   |
| 330-020-135 | DW-AD-512-M12     | NPN      | PVC, 2 m, 3 wire | -                   | Normally close (NC)          | 92 g   |
| 330-020-136 | DW-AD-511-M12-120 | NPN      | PVC, 2 m, 3 wire | -                   | Normally open (NO)           | 87 g   |
| 330-020-137 | DW-AD-512-M12-120 | NPN      | PVC, 2 m, 3 wire | -                   | Normally close (NC)          | 87 g   |
| 330-020-138 | DW-AD-513-M12     | PNP      | PVC, 2 m, 3 wire | -                   | Normally open (NO) / IO-Link | 92 g   |
| 330-020-142 | DW-AD-514-M12     | PNP      | PVC, 2 m, 3 wire | -                   | Normally close (NC)          | 92 g   |
| 330-020-143 | DW-AD-513-M12-120 | PNP      | PVC, 2 m, 3 wire | -                   | Normally open (NO) / IO-Link | 87 g   |
| 330-020-145 | DW-AD-514-M12-120 | PNP      | PVC, 2 m, 3 wire | -                   | Normally close (NC)          | 87 g   |
| 330-020-162 | DW-AS-511-M12     | NPN      | M12 4-pin        | -                   | Normally open (NO)           | 27 g   |
| 330-020-163 | DW-AS-511-M12-120 | NPN      | M12 4-pin        | -                   | Normally open (NO)           | 23 g   |
| 330-020-164 | DW-AS-512-M12     | NPN      | M12 4-pin        | Normally close (NC) | -                            | 27 g   |
| 330-020-165 | DW-AS-512-M12-120 | NPN      | M12 4-pin        | Normally close (NC) | -                            | 23 g   |
| 330-020-166 | DW-AS-513-M12     | PNP      | M12 4-pin        | -                   | Normally open (NO) / IO-Link | 27 g   |
| 330-020-167 | DW-AS-513-M12-120 | PNP      | M12 4-pin        | -                   | Normally open (NO) / IO-Link | 23 g   |
| 330-020-169 | DW-AS-514-M12     | PNP      | M12 4-pin        | Normally close (NC) | -                            | 27 g   |
| 330-020-170 | DW-AS-514-M12-120 | PNP      | M12 4-pin        | Normally close (NC) | -                            | 23 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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