



# FAL BGS series

M18 LASER with adjustable background suppression



## features

- M18 Photoelectric sensor Background Suppression with Laser emission
- Models in Class I and Class II Laser emission power
- Axial and Right angle optic materials
- Sensing distance adjustment by trimmer
- Collimated Light spot
- Complete protection against electrical damages
- Nichel brass housing



Cylindrical M18  
LASER

## web contents

- Application notes
- Photos
- Catalogue / Manuals



## code description

FA L W / B P - 1 E 77

|                        |    |                                            |
|------------------------|----|--------------------------------------------|
| series                 | FA | M18 Cylindrical photoelectric sensor       |
| emission               | L  | Laser emission                             |
| background suppression | S  | Background Suppression (Laser Class 1)     |
|                        | W  | Background Suppression (Laser Class 2)     |
| output                 | 0  | Lo/Do selectable output                    |
|                        | B  | Complementary output (NO+NC)               |
| NPN / PNP output       | N  | NPN output                                 |
|                        | P  | PNP output                                 |
| housing                | 1  | Axial version Metallic housing             |
|                        | 3  | Right Angle (90°) version Metallic housing |
| plug                   | E  | Connector M12 4 pins                       |
| version                | 77 | Special version (Anti Reflex)              |

## available models

| model                  | distance (mm) | laser class | optical     | output selectable (LO/DO) |            | complementary output (NO+NC) |              |
|------------------------|---------------|-------------|-------------|---------------------------|------------|------------------------------|--------------|
|                        |               |             |             | NPN                       | PNP        | NPN                          | PNP          |
| background suppression | 30...100      | 1           | axial       | FALS/0N-1E                | FALS/0P-1E | FALS/BN-1E                   | FALS/BP-1E   |
|                        | 30...80       |             | right angle | FALS/0N-3E                | FALS/0P-3E | FALS/BN-3E                   | FALS/BP-3E   |
|                        | 30...150      | 2           | axial       | FALW/0N-1E                | FALW/0P-1E | FALW/BN-1E                   | FALW/BP-1E   |
|                        | 30...130      |             | right angle | FALW/0N-3E                | FALW/0P-3E | FALW/BN-3E                   | FALW/BP-3E   |
|                        | 30...120      |             | axial       | -                         | -          | FALW/BN-1E77                 | FALW/BP-1E77 |
|                        | 30...100      |             | right angle | -                         | -          | FALW/BN-3E77                 | FALW/BP-3E77 |



## technical specification

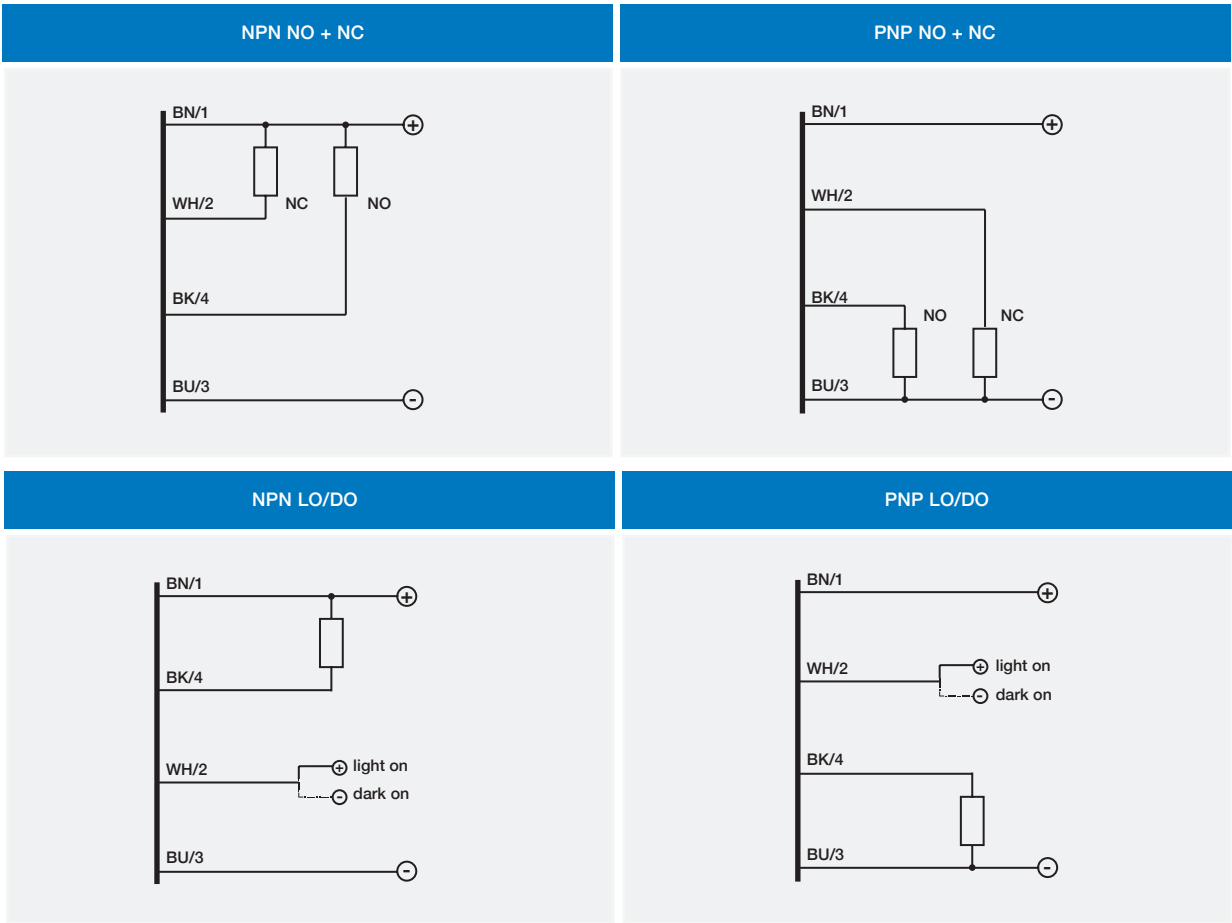
according to IEC EN 60947-5-2

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|                                  | axial                                                          |  | radial     |  | axial       |  | radial      |           |
|----------------------------------|----------------------------------------------------------------|--|------------|--|-------------|--|-------------|-----------|
|                                  | FALS/**_**                                                     |  | FALS/**_** |  | FALW/**_**  |  | FALW/**_**  |           |
|                                  |                                                                |  |            |  |             |  |             |           |
| nominal sensing distance         | 25...100 mm                                                    |  | 25...80 mm |  | 25...150 mm |  | 25...130 mm |           |
| sensing range (Sd)               | 30...100 mm                                                    |  | 30...80 mm |  | 30...150 mm |  | 30...130 mm |           |
| emission                         | red laser diode (650 nm)                                       |  |            |  |             |  |             |           |
| Laser Protection Class EN60852-1 | 1                                                              |  |            |  | 2           |  |             |           |
| adjustment                       | trimmer (270°)                                                 |  |            |  |             |  |             |           |
| hysteresis                       | 10 %                                                           |  |            |  |             |  |             |           |
| repeatability                    | 10 %                                                           |  |            |  |             |  |             |           |
| operating voltage                | 10...30 Vdc                                                    |  |            |  |             |  |             |           |
| ripple                           | ≤ 10 %                                                         |  |            |  |             |  |             |           |
| no-load current                  | ≤ 40 mA                                                        |  |            |  |             |  |             |           |
| output current                   | 100 mA                                                         |  |            |  |             |  |             |           |
| leakage current                  | ≤ 10 µA (Vdc max)                                              |  |            |  |             |  |             |           |
| output voltage drop              | 2 V max. IL = 100 mA                                           |  |            |  |             |  |             |           |
| output type                      | NPN or PNP; NO + NC or LO/DO selectable                        |  |            |  |             |  |             |           |
| switching frequency              | 1.5 kHz                                                        |  |            |  |             |  |             |           |
| power on delay                   | 250 ms                                                         |  |            |  |             |  |             |           |
| power supply protections         | polarity reversal, transient                                   |  |            |  |             |  |             |           |
| output protection                | short cirrcuit (auto reset), over voltage pulses               |  |            |  |             |  |             |           |
| temperature range                | - 10°C...+ 50°C                                                |  |            |  |             |  |             |           |
| temperature drift                | 10 % Sn                                                        |  |            |  |             |  |             |           |
| max. Capacitive Load             | 500 nF                                                         |  |            |  |             |  |             |           |
| protection degree                | IP67 (EN60529) <sup>(1)</sup>                                  |  |            |  |             |  |             |           |
| external light interference      | 15,000 lux (incandescent lamp)                                 |  |            |  |             |  |             |           |
| EMC                              | in conformity with the EMC Directive according to EN 60947-5-2 |  |            |  |             |  |             |           |
| LED indicator                    | yellow (output sate)                                           |  |            |  |             |  |             |           |
| housing material                 | nickel plated brass                                            |  |            |  |             |  |             |           |
| optic materials                  | PMMA ABS                                                       |  | glass ABS  |  |             |  | PMMA ABS    | glass ABS |
| exit plug                        | grilamid (PA 12)                                               |  |            |  |             |  |             |           |
| tightening torque                | 40 Nm (metallic)                                               |  |            |  |             |  |             |           |
| weight                           | 60 g                                                           |  |            |  |             |  |             |           |

<sup>(1)</sup> Protection guaranteed only with plug cable well mounted

electric diagrams of the connections



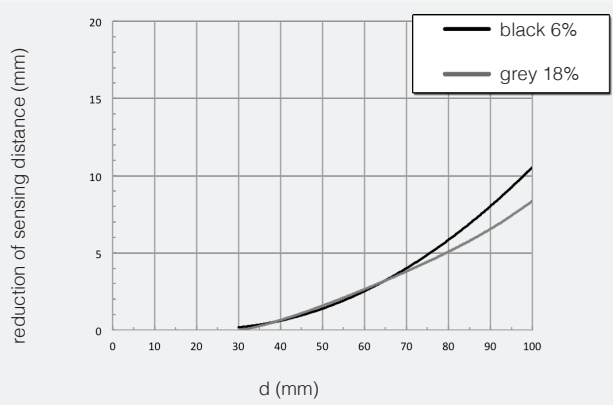
plug



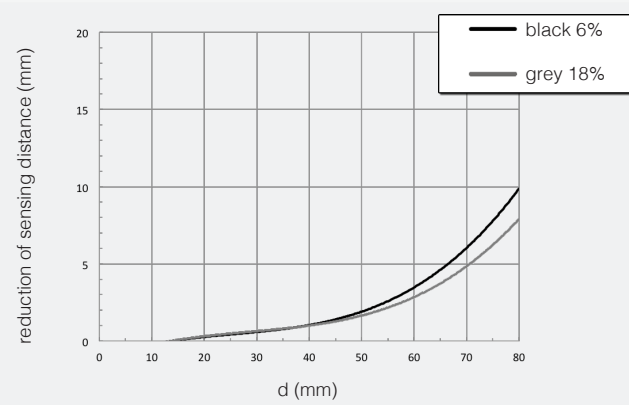


response diagram

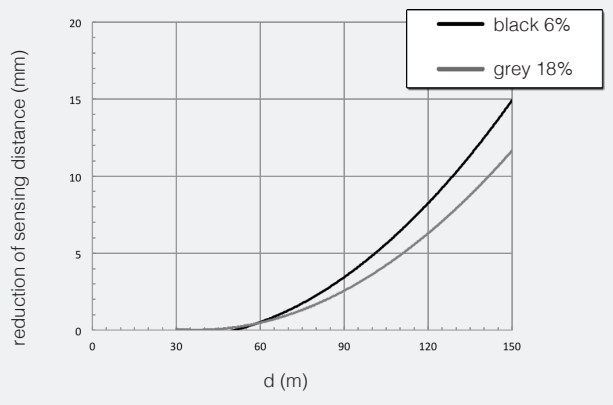
FALS/\*\*-1E reduction of sensing distance



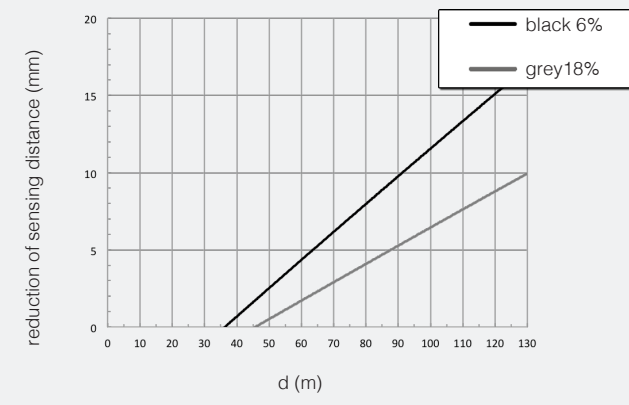
FALS/\*\*-3E reduction of sensing distance



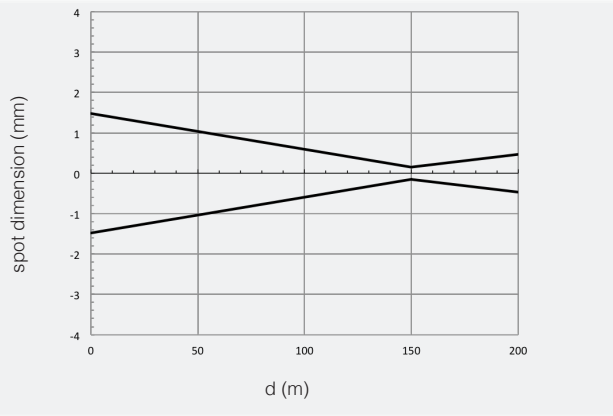
FALW/\*\*-1E reduction of sensing distance



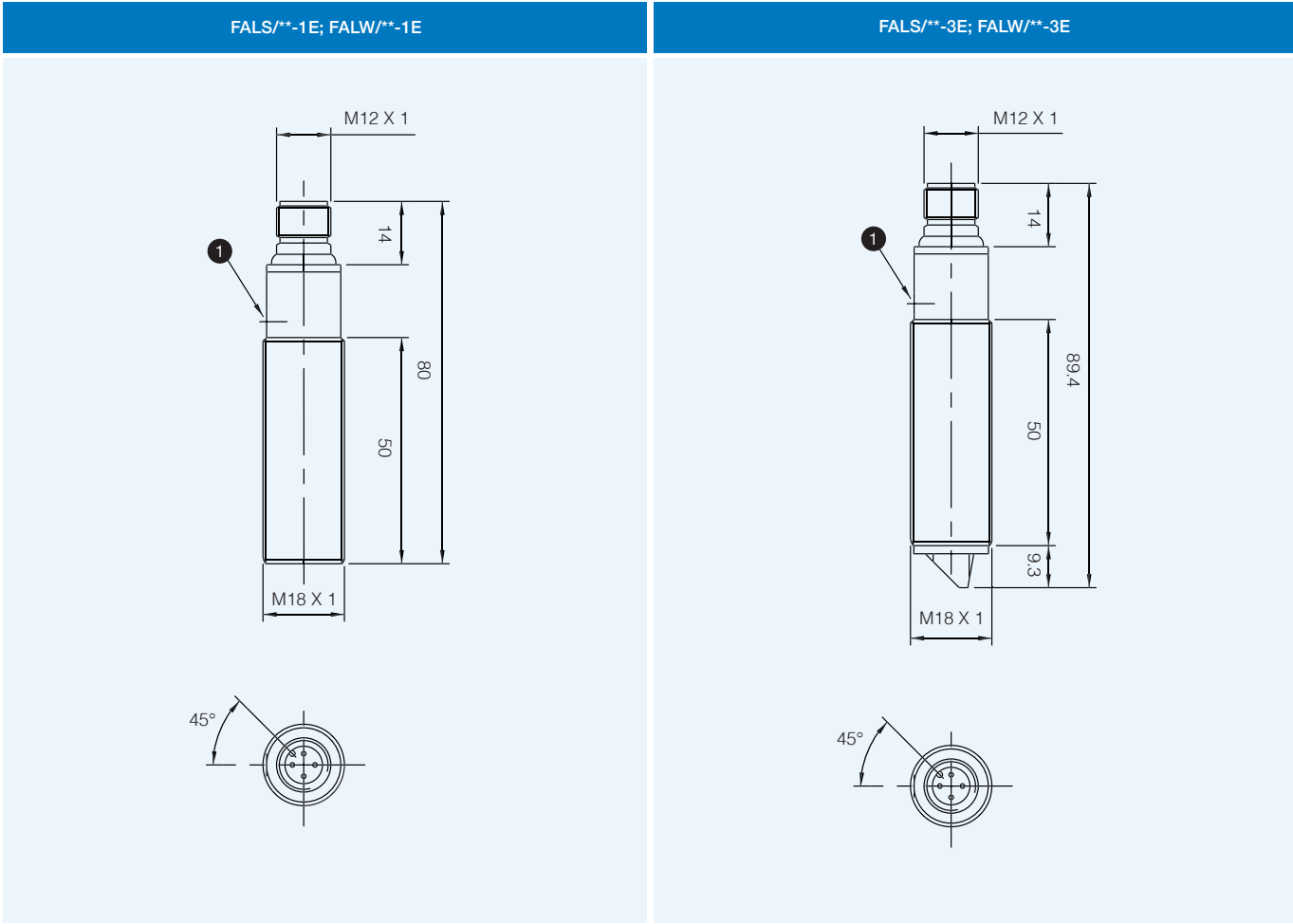
FALW/\*\*-3E reduction of sensing distance



FALS/\*\*-\*\* spot dimension



dimensions (mm)



1 Trimmer

dimensions (mm)

accessories included in all models

