



# FAL

## FAL4/BN-2A

Photo.M18,Laser  
emiss.,NPN-NO+NC,Cable,Diffuse  
M18 PHOTOELECTRIC SENSORS DC LASER EMISSION

## OVERVIEW

- Complete range of M18 sensors with 10...30 Vdc power supply
- Axial and radial optic with flat surface
- Visible red laser emission models
- IP67 protection degree
- Metallic or plastic housing
- Sensitivity adjustment available for all models
- Total protection against any type of electric damages
- Approvals: CE and cULus listed



## TECHNICAL FEATURES

### Detection properties

|                          |          |
|--------------------------|----------|
| Nominal sensing distance | 200mm    |
| Thermal drift of Sr      | ≤10% Sr  |
| Repeat Accuracy          | 5%       |
| Sensitivity adjustment   | Teach-in |

## Application

|                    |                                                           |
|--------------------|-----------------------------------------------------------|
| Function Principle | Diffuse reflection (short distance, $\leq 200\text{mm}$ ) |
|--------------------|-----------------------------------------------------------|

|       |                                                    |
|-------|----------------------------------------------------|
| Notes | (focalized 100mm) white target 90% Kodak 200x200mm |
|-------|----------------------------------------------------|

|                |            |
|----------------|------------|
| Optic position | Radial 90° |
|----------------|------------|

## Outputs

|             |           |
|-------------|-----------|
| Output type | NPN NO+NC |
|-------------|-----------|

|                 |       |
|-----------------|-------|
| Output Function | NO+NC |
|-----------------|-------|

|                     |       |
|---------------------|-------|
| Switching frequency | 800Hz |
|---------------------|-------|

|               |                   |
|---------------|-------------------|
| Response time | 625 $\mu\text{s}$ |
|---------------|-------------------|

## Electrical data

|                   |            |
|-------------------|------------|
| Operating Voltage | 10...30VDC |
|-------------------|------------|

|                        |                    |
|------------------------|--------------------|
| No-Load supply current | $\leq 30\text{mA}$ |
|------------------------|--------------------|

|              |                     |
|--------------|---------------------|
| Load current | $\leq 100\text{mA}$ |
|--------------|---------------------|

|                 |                      |
|-----------------|----------------------|
| Leakage current | $\leq 10\mu\text{A}$ |
|-----------------|----------------------|

|                     |                                               |
|---------------------|-----------------------------------------------|
| Output voltage drop | $\leq 2\text{V}@I_{\text{load}}=100\text{mA}$ |
|---------------------|-----------------------------------------------|

|                    |             |
|--------------------|-------------|
| Max ripple content | $\leq 10\%$ |
|--------------------|-------------|

|                |                                                                                            |
|----------------|--------------------------------------------------------------------------------------------|
| LED indicators | Green power supply/yellow (LightON $E_G \geq 2$ )/yellow flashing (LightON $1 < E_G < 2$ ) |
|----------------|--------------------------------------------------------------------------------------------|

|                                |                     |
|--------------------------------|---------------------|
| Time delay before availability | $\leq 200\text{ms}$ |
|--------------------------------|---------------------|

|                          |                                        |
|--------------------------|----------------------------------------|
| Short-circuit protection | Short circuit (autoreset), Overvoltage |
|--------------------------|----------------------------------------|

|                                |                                                  |
|--------------------------------|--------------------------------------------------|
| Reverse Polarity Protection    | Polarity inversal, Impulsive voltage             |
| Emission                       | LASER Red (650nm) class1                         |
| Interference to external light | 3000lux (incandescent lamp), 10000lux (sunlight) |

Mechanical data

|                       |                                 |
|-----------------------|---------------------------------|
| Dimensions            | M18 x 1/L=93,5mm                |
| Housing material      | PBT/ PC cable exit              |
| Weight                | 50g                             |
| Connections           | 2m PVC cable                    |
| Active Head Material  | Glass / PC                      |
| Tightening torque     | 1Nm                             |
| Operating temperature | -15°C...+ 55°C (Without freeze) |
| Diameter/Dimension    | M18                             |

Test/Approvals

|                       |                                                |
|-----------------------|------------------------------------------------|
| Approvals             | CE cULus                                       |
| EMC compatibility     | EN 60947-5-2                                   |
| Shocks and vibrations | Vibration IEC 60068-2-6 / Shock IEC 60068-2-27 |
| Degree of protection  | IP67                                           |

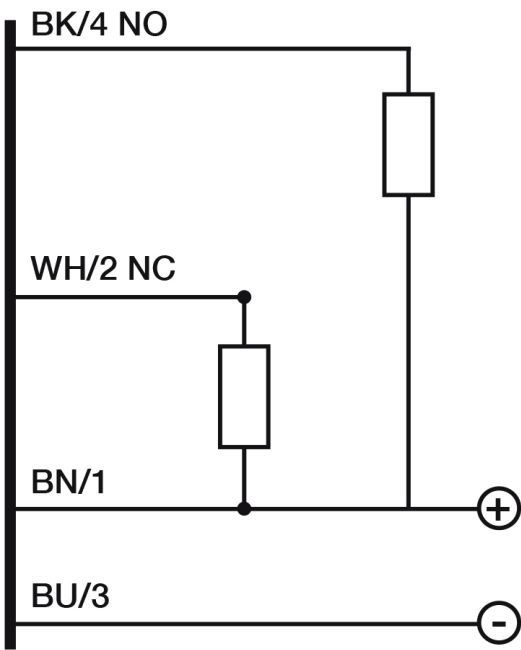
Accessories

||
||
||

|                       |                                  |
|-----------------------|----------------------------------|
| Supplied Accessories  | nuts M18 x 1, screwdriver        |
| Generical Data        |                                  |
| Dimensions            | M18 x 1/L=93,5mm                 |
| Operating Temperature | - 15°C...+ 55°C (Without freeze) |
| Mechanical Protection | IP67                             |

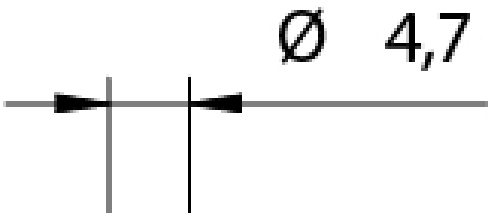
# CONNECTIONS

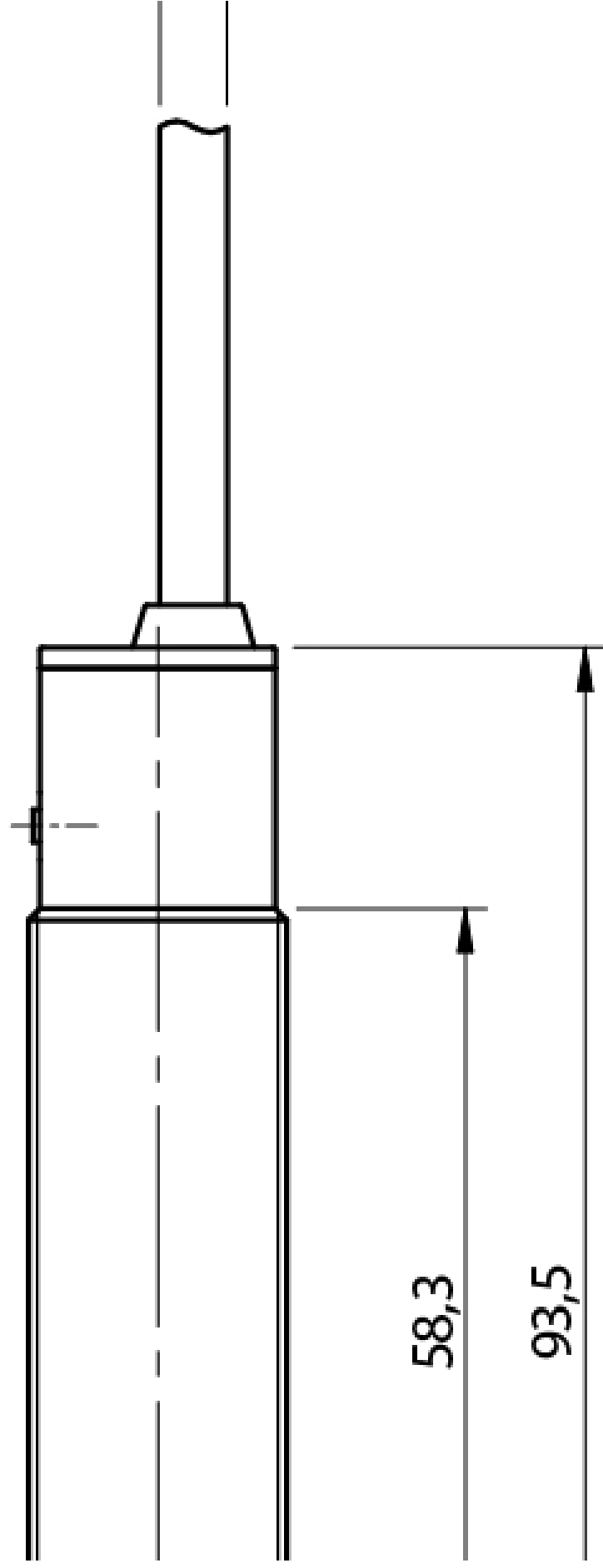
Eletrical diagram

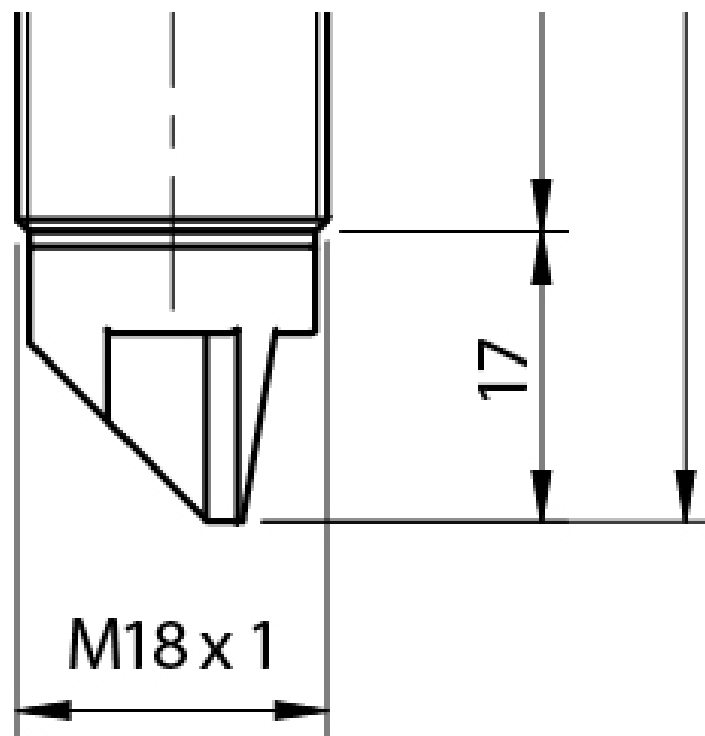


# OTHERS

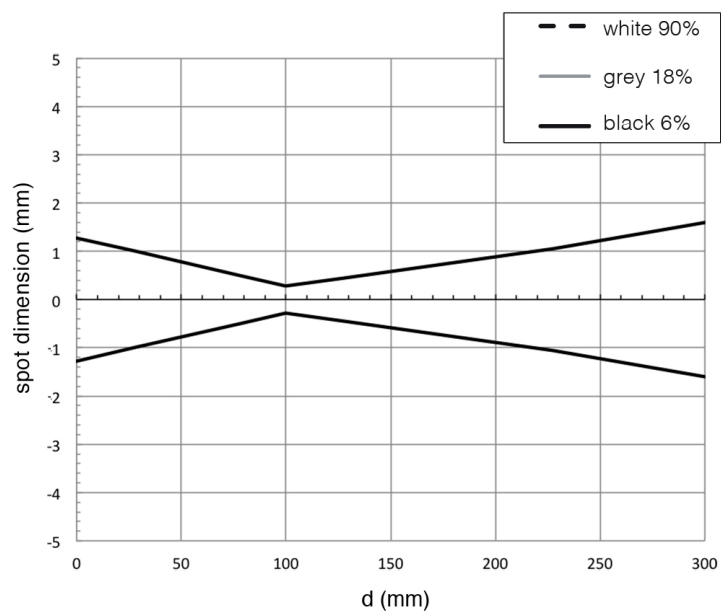
Dimensions







Response curves



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