

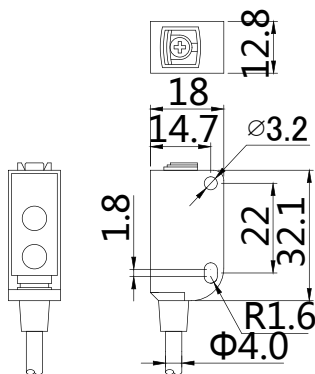


Features :

- 200mm, Background suppression, DC4-wire discrete output;
- Cable & connector versions;
- Q31, plastic housing;
- VDE safety class: III;
- Ingress protection: IP65



Dimensioned drawing



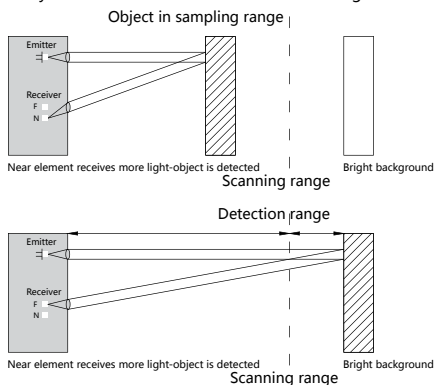
Model No.

| Sensing range | Sn: 10-200mm |
|-------------------|-----------------|
| NPN Light/Dark-on | FQ31-H02N-P31P2 |
| PNP Light/Dark-on | FQ31-H02P-P31P2 |

Background suppression

Background suppression sensors were developed to reach a defined detection range for any object, regardless of its brightness, color, or other characteristics such as the brightness of the background. The following figure illustrates the functional principle of a background suppression sensor. The light emitted by the emitter is directed by the lens and hits the object. If the object is located within the detection range, a portion of the reflected light, bundled by the receiver lens, is mapped to the

As the object's distance increases, this light spot moves in the direction of the far element (F). At the detection range limit, one half of the light spot is on the near element, the other on the far element and the sensor registers "off". If the object moves further away, the light only hits the far element and the sensor still registers "off".



Technical data

| | | |
|------------------------------|---------------------|---------------------------------------|
| Electrical data | Operating voltage | 10-30V DC |
| | Switching frequency | 1000Hz |
| | Light type | Red light 650nm |
| | Response time | <2ms |
| | Load current | 100mA |
| | Power-up delay | <300ms |
| | Adjustment | Single-turn potentiometer |
| Environment | Blind distance | <1cm |
| | Light immunity | <5000Lux. |
| | Ambient temperature | -25...55°C |
| Mechanical data | Ambient humidity | 35-85% |
| | Housing material | ABS |
| | Lens material | PMMA |
| Electrical connection | Operating indicator | Yellow: output / Green: power supply |
| | Connectors | PVC cable / 2m; 4*0.25mm ² |
| Accessories | Accessories | NO |
| | | (to be ordered separately) |

Wiring



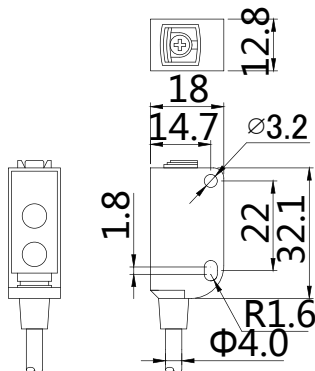


Features :

- Diffuse type,DC4-wire discrete output;
- Cable & connector versions;
- Q31,plastic housing;
- VDE safety class:III;
- Ingress protection:IP65



Dimensioned drawing

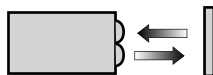


Model No.

| Sensing range | Sn: 110 mm | Sn: 350 mm |
|-------------------|------------------|------------------|
| NPN Light/Dark-on | FQ31-T011N-P31P2 | FQ31-T035N-P31P2 |
| PNP Light/Dark-on | FQ31-T011P-P31P2 | FQ31-T035P-P31P2 |
| Sensing range | Sn: 800 mm | |
| NPN Light/Dark-on | FQ31-T08N-P31P2 | |
| PNP Light/Dark-on | FQ31-T08P-P31P2 | |

Background suppression

Diffuse type sensors



Diffuse reflection type photoelectric sensor principle and the principle of mirror reflection type photoelectric sensor is the same, but it doesn't take reflective lenses. The light emitted by the transmitter directly sends back receiver by the analyte. Receiver estimates detection of objects reflected back to the light rays, the positioning of objects is not very strict. When object under test enters into effective light rays area, output state changes. The detection range depends on object under test size, shape, color and surface properties.

Technical data

| | | |
|------------------------------|---------------------|--------------------------------------|
| Electrical data | Operating voltage | 10-30V DC |
| | Switching frequency | 500Hz |
| | Light type | Infrared light 880nm/Red light 650nm |
| | Response time | <2ms |
| | Load current | 100mA |
| | Power-up delay | <300ms |
| | Adjustment | Single-turn potentiometer |
| Environment | Light immunity | <5000Lux. |
| | Ambient temperature | -25...55°C |
| | Ambient humidity | 35-85% |
| Mechanical data | Housing material | ABS |
| | Lens material | PMMA |
| | Operating indicator | Yellow:output/Green:power supply |
| Electrical connection | Connectors | PVC cable/2m;4*0.18mm ² |
| Accessories | Accessories | NO |
| | | (to be ordered separately) |

Wiring



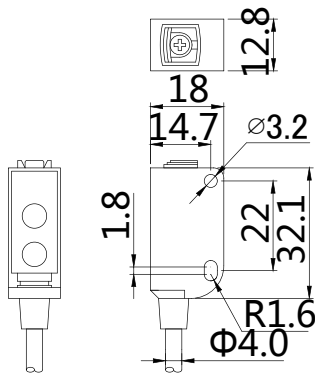


Features :

- Retro-reflective,DC4-wire discrete output;
- Cable & connector versions;
- Q31,plastic housing;
- VDE safety class:III;
- Ingress protection:IP65



Dimensioned drawing

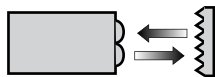


Model No.

| Sensing range | Sn: 2 m | Sn: 4 m |
|-------------------|----------------|----------------|
| NPN Light/Dark-on | FQ31-R2N-P31P2 | FQ31-R4N-P31P2 |
| PNP Light/Dark-on | FQ31-R2P-P31P2 | FQ31-R4P-P31P2 |

Background suppression

Retro-reflective sensors



Retro-reflective sensor put transmitter and receiver encapsulated into same shell, in the opposite install aspect, the light emitted by the reflector is reflected through the reflector back to the receiver.

When the beam is occlusion, generate a switch changes.

Technical data

| | | |
|------------------------------|---------------------|--------------------------------------|
| Electrical data | Operating voltage | 10-30V DC |
| | Switching frequency | 500Hz |
| | Light type | Infrared light 880nm/Red light 650nm |
| | Response time | <2ms |
| | Load current | 100mA |
| | Power-up delay | <300ms |
| | Adjustment | Single-turn potentiometer |
| Environment | Blind distance | No photosensitivity/<25cm |
| | Light immunity | <5000Lux. |
| | Ambient temperature | -25...55°C |
| Mechanical data | Ambient humidity | 35-85% |
| | Housing material | ABS |
| | Lens material | PMMA |
| Electrical connection | Operating indicator | Yellow:output/Green:power supply |
| | Connectors | PVC cable/2m;4*0.18mm ² |
| Accessories | Accessories | FR-Q51 |
| | | (to be ordered separately) |

Wiring



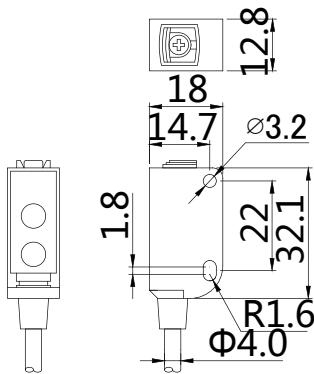


Features :

- Through-beam,Emitter/receiver set,DC4-wire discrete output;
- Cable & connector versions;
- Q31,plastic housing;
- VDE safety class:III;
- Ingress protection:IP65



Dimensioned drawing



Model No.

| | |
|-------------------|----------------|
| Sensing range | Sn: 5 m |
| Transmitter | FQ31-L5D-P51P2 |
| NPN Light/Dark-on | FQ31-L5N-P31P2 |
| PNP Light/Dark-on | FQ31-L5P-P31P2 |

Background suppression

Through-beam sensors



Through-beam photoelectric sensors has independent transmitters and receivers,structure two are separated from each other,the emitter(E)directly transmitted to the receiver(R).At the time of installation,must be bothaligned establish light path. No matter any objectblocking the light,the voltage of the receiver drops,switch changes.

Technical data

| | | |
|------------------------------|---------------------|---|
| Electrical data | Operating voltage | 10-30V DC |
| | Switching frequency | 500Hz |
| | Light type | Infrared light 880nm/Red light 650nm |
| | Response time | <2ms |
| | Load current | 100mA |
| | Power-up delay | <300ms |
| | Adjustment | Single-turn potentiometer |
| Environment | Light immunity | <5000Lux. |
| | Ambient temperature | -25...55°C |
| | Ambient humidity | 35-85% |
| Mechanical data | Housing material | ABS |
| | Lens material | PMMA |
| | Operating indicator | Yellow:output/Green:power supply |
| Electrical connection | Connectors | PVC cable/2m;4*0.18mm ² /2*0.25mm ² |
| | Accessories | Accessories NO (to be ordered separately) |

Wiring

