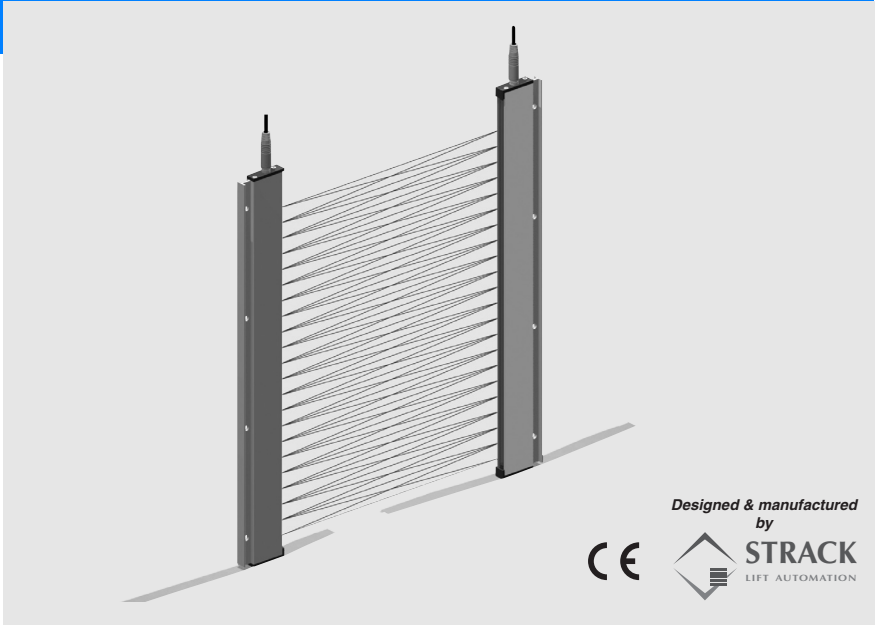


Ultra-flat multi-beam sensor for elevators

F3E

- Ultra-flat 9 mm shape for easy design-in in elevator constructions
- Highest ambient light immunity (200,000 lux) for installations with direct sunlight exposition
- Triple crossing resolution maintained close to zero distance
- Robust aluminum housing
- Ray failure toleration
- Test input
- Built-in amplifier (operation with 10-30 VDC)
- Fulfills requirements of EN81-70



Ordering Information

| Pitch | Detection area | channels | Number of optical axis | Connection | Output | Model number |
|--------|----------------|----------|------------------------|----------------------|-----------------------|--------------|
| 120 mm | 1800 mm | 16 | 46 | 5 m pre-wired | potential-free output | F3E-16-T1 5M |
| | | | | M8 Connector (4-pin) | | F3E-16-T6 |
| 40 mm | 1800 mm | 46 | 136 | 5 m pre-wired | | F3E-46-T1 5M |
| | | | | M8 Connector (4-pin) | | F3E-46-T6 |

Features

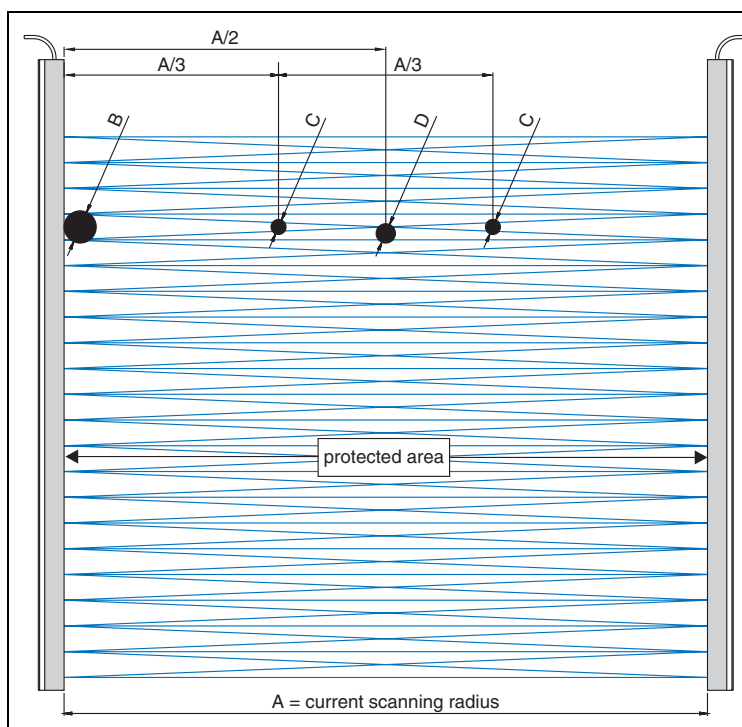
High reliability and flexibility:

Test input: Function of multi-beam sensor can be tested by transmitter cut off on test signal. A subsequent receiver cut off can be monitored by control unit.

Ray failure toleration: As soon as one channel is not switching for more than 60 seconds, the F3E identifies a defect and deactivates this channel. The sensor then functions normally again showing the defect channel by a red error LED.

Easy parameterization: By test input of transmitter a parameterization of L-ON/D-ON operation and shading of LED areas is possible. No complicated programming or remote control needed

Potential free output: The F3E provides a wear-free electronic relay output for highest connection flexibility and life-time.



High resolution is realized by *triple crossing of light beams*.

Automatic sensitivity control ensures steady and optimum light power. Even when sensors are operated in dirty environment or at highest distances, no adjustment is necessary. Sensitivity control ensures that the high resolution is maintained at small distances close to "zero".

Min. size of recognized objects:

| Pitch | B | D | C |
|--------|--------|-------|-------|
| 120 mm | 125 mm | 65 mm | 45 mm |
| 40 mm | 45 mm | 35 mm | 18 mm |

Rating/Specifications

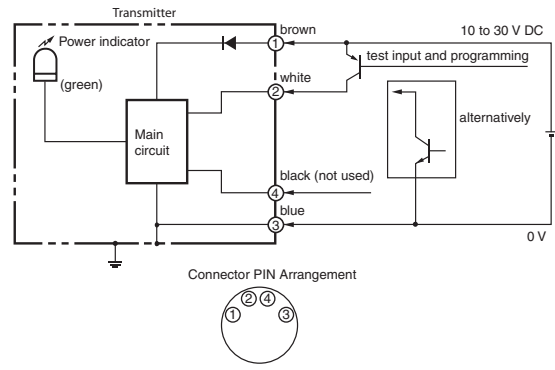
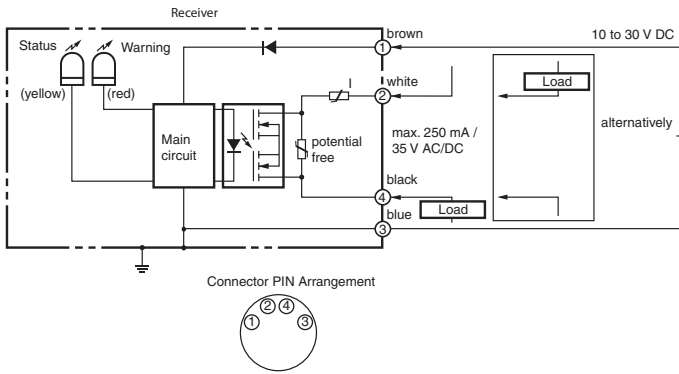
| Item/Type | F3E-16-T[..] | F3E-46-T[..] |
|---|---|--------------------|
| Rated sensing distance | 0-5 m | |
| Number LEDs | 16 | 46 |
| Number of optical axis | 46 | 136 |
| Resolution | 120 mm | 40 mm |
| Vertical detection area ¹ | 20-1820 mm | |
| Response time | max. 110ms (signal interruption) | |
| Light source (wave length) | Infrared LED (880 nm) | |
| Power supply voltage | 10-30 VDC | |
| Current consumption | max. 120 mA / pair | max. 240 mA / pair |
| Control output | Wearless potential free output, 35 V AC/DC max., 150mA max. at 20°C, 100mA max. at 60°C, D-ON (parameterization by emitter test input), max. leakage at open contact 0,001mA, contact resistance 4/12 Ohm | |
| Test input / light emission stop function | 110 ms max. response time | |
| Ambient light immunity ² | 200.000 lux | |
| Ambient temperature | -20...+60°C (operation) ³ , -40...+70 (storage) | |
| EMC conformity/standards | 73/23/EWG; 89/336/EWG; 95/16/EG; EN81-1; EN81-2; EN12015; EN12016; EN61000-6-x | |
| Protective degree | IP54 | |
| Connection methods | Pre-wire type (5 m PVC cable), M8-4-PIN | |
| Indicator LEDs | Emitter: power indicator (yellow); Receiver: output indicator (yellow), output indicator (red) | |
| Error status indication | Red LED blinking: unstable operation, contamination, max. exceeding sensing distance Red LED ON + yellow LED ON: beam channel defect | |
| Dimension ¹ | 2070x40,7x9 mm | 2000x40,7x9 mm |
| Weight | 880g (connector version), 1040g (cable version) | |
| Material | Case | Aluminum |
| | Cable | PVC |

¹ other sizes available on request

² Measured at angle of 20°

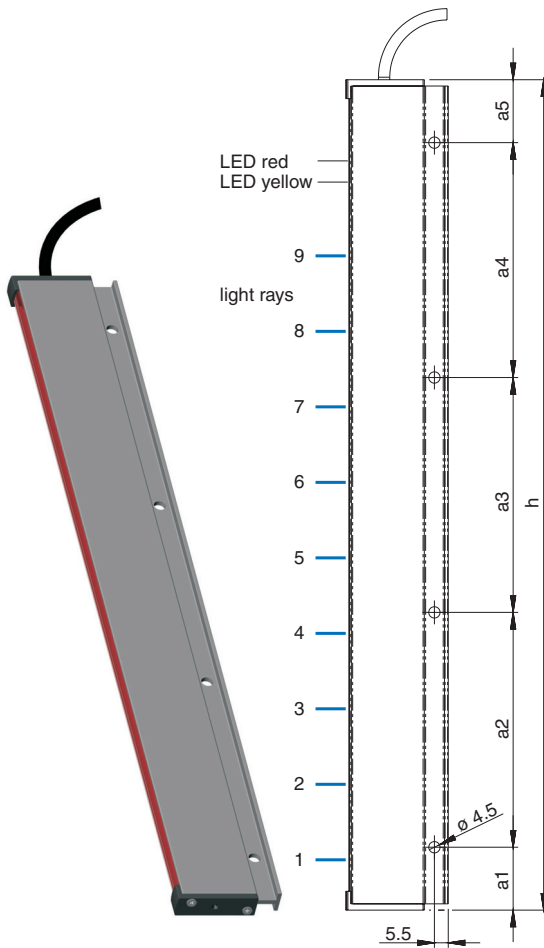
³ No icing and condensation

Output circuits

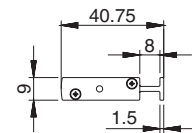


Dimensions

Mounting strap fixation





| Dimension | F3E-16... | F3E-46... |
|-----------|-----------|-----------|
| a5 | 25 mm | 25 mm |
| a4 | 690 mm | 650 mm |
| a3 | 640 mm | 650 mm |
| a2 | 690 mm | 650 mm |
| a1 | 25 mm | 25 mm |
| h | 2070 mm | 2000 mm |



Accessories

Cable connectors

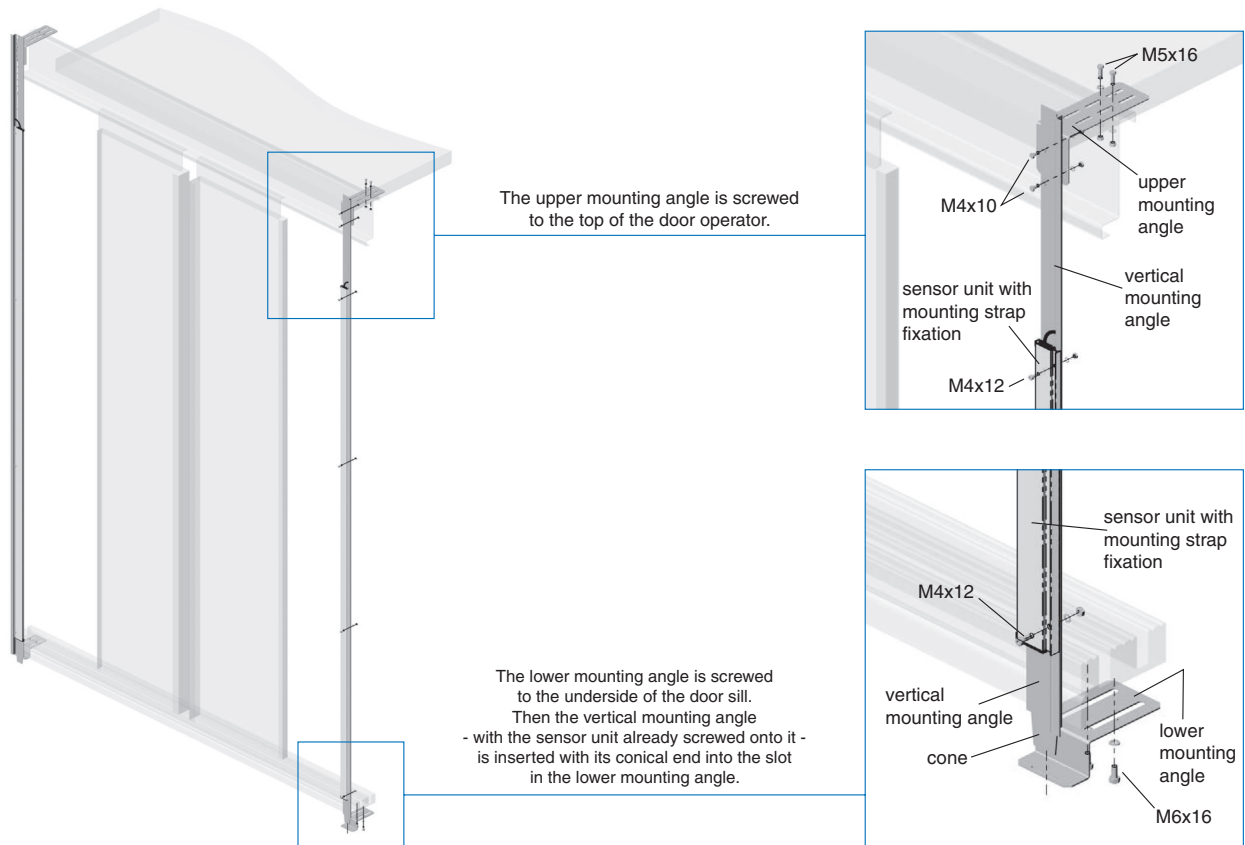
| | Type | Size | Cable Material | Poles | Length (m) | LED | Nut | Order reference |
|--|------------------------|------|----------------|-------|------------|-----|-------|-----------------|
|  | slim line straight | M8 | PVC | 4 | 5 | no | brass | XS3F-M421-405-A |
| | slim line angled | M8 | PVC | 4 | 5 | no | brass | XS3F-M422-405-A |
|  | robotic cable straight | M8 | PVC | 4 | 5 | no | brass | XS3F-M421-405-R |
| | robotic cable angled | M8 | PVC | 4 | 5 | no | brass | XS3F-M422-405-R |

Note: Complete portfolio of connector types see OMRON Accessory Datasheet

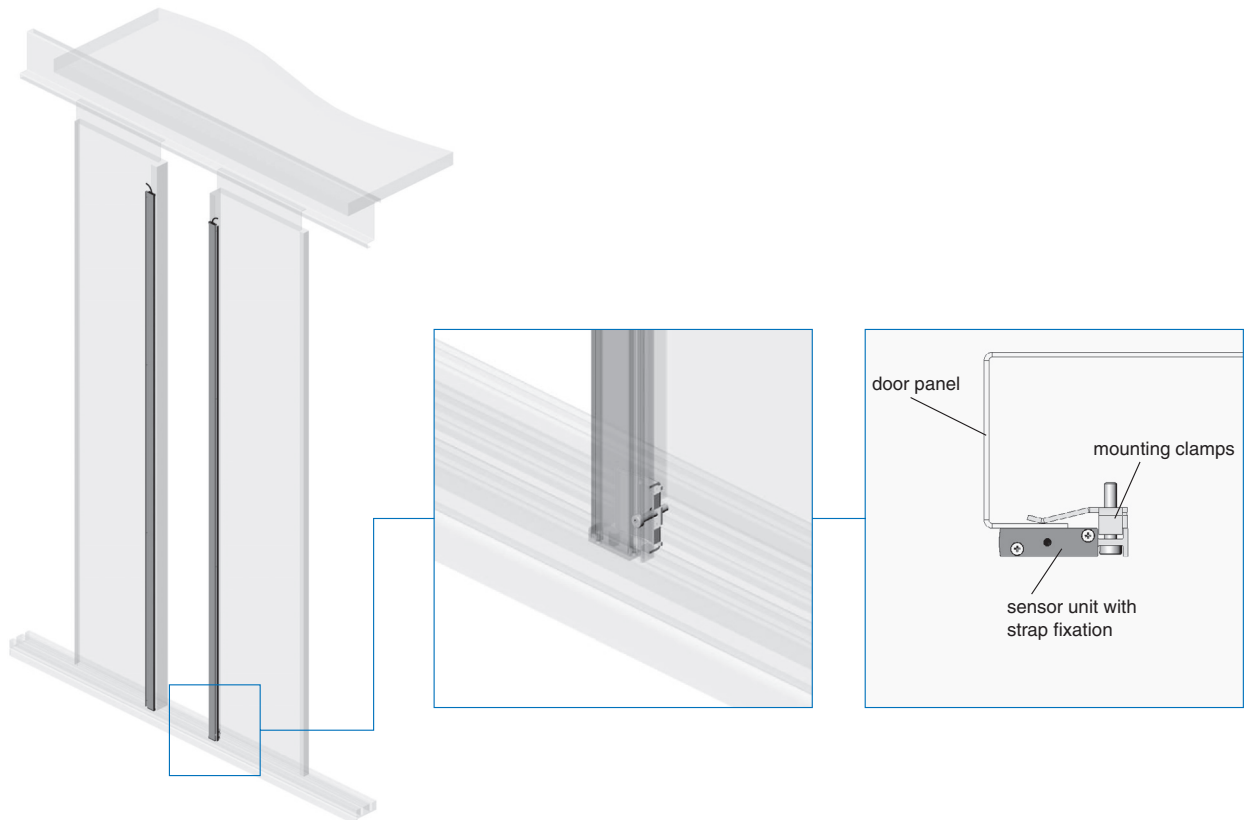
F3E-Accessories

| Item | Description | Order reference |
|------------------------|--|-----------------|
| F3E-Installation Kit S | Installation kit for stationary mounting on lift doors | F3E-IK-S |
| F3E-Installation Kit M | Installation kit for mounting to mobile doors panels | F3E-IK-M |
| F3E-Power supply | Power supply NTR 18/04 for operation with 240VAC/24DC | F3E-PS1 |

Installation Kit S



Installation Kit M



Precautions

⚠ WARNING

The F3E multi-beam sensor is not a safety component for ensuring the safety of people which is defined in EC directive (91/368/EEC) and covered by separate European standards or by any other regulations or standards.

Power Supply Voltage and Output Load Power Supply Voltage

Do not connect an AC power supply to the Sensor. If AC power (100 VAC or more) is supplied to the Sensor, it may explode or burn. Make sure that the power supply to the Sensor is within the rated voltage range. If a voltage exceeding the rated voltage range is supplied to the Sensor, it may explode or burn.

Operating Environment

Do not use the Sensor in locations with explosive or flammable gas. Make sure that the product is operated in accordance with IP54 standards.

Do not subject the multi-beam sensor to excessive shock when mounting.

When you use the multi-beam sensor in the vicinity of an inverter motor, be sure to connect the protective earth ground wire of the motor to earth. Failure to ground the motor may result in malfunction of the sensor.

Mounting the Sensor

Do not strike the Photoelectric Sensor with a hammer or any other tool during the installation of the Sensor.

Cleaning

Never use paint thinners or other organic solvents to clean the surface of the product

M8 Connector

Always turn OFF the power supply to the Sensor before connecting or disconnecting the metal connector. Hold the connector cover to connect or disconnect it.

Secure the connector cover by hand. Do not use pliers; otherwise the connector may be damaged.

If the connector is not connected securely, it may be disconnected by vibration or the proper degree of protection of the Sensor may not be maintained.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.