

# F3S-TGR-CL SERIES

Safety light curtains



- » Comprehensive body, hand and finger protection
- » **Reliable, versatile, flexible**
- » No software, no programming

# Total consistency – across the board

*All-new Omron F3S-TGR-CL safety light curtains provide comprehensive body, hand and finger protection, making them suitable for the widest possible range of applications in packaging and general industry. F3S-TGR-CL safety light curtains can be configured to suit different applications precisely, yet they are very simple to engineer, install and set-up.*

### Engineered for efficiency

The comprehensive range of F3S-TGR-CL safety light curtains meets Type 2 and Type 4 safety applications, complying with EN 61496 and EN ISO 13849-1. There are standard models to suit the majority of applications, with advanced models offering further functionality. And every single unit in the range is designed in exactly the same way. This total consistency saves time at every stage, cutting costs with absolutely no compromise on security.

### Global support on your doorstep

Developed with the benefits of uniquely comprehensive applications expertise, F3S-TGR-CL safety light curtains are available across Europe on short lead times. Omron engineers can advise on precisely the right configuration for your application, working with your team to ensure total security. And wherever your machine is used, Omron's local network will provide post-installation support and advice. It's a package for total peace-of-mind at all times.

### Benefits without compromise

**Specification has never been simpler:** F3S-TGR-CL safety light curtains have the same feature-set across the range, and every model comes with a standard connector and mounting brackets. Both engineering and use are simplified, with cost benefits for you and your customer.

**No programming – ever:** All F3S-TGR-CL safety light curtains are set up in exactly the same way using integrated dip-switches. There are no special tools to use (or lose), no programming to change or update, no menus to translate or adapt. It's safety you just plug-in and use.

**Train once, use many:** Because these safety curtains use the same parameters whatever the application, all staff can be trained once – and once only. Designers rely on the same

features, production engineers use the same layouts, installation technicians use the same set-ups. It's that simple.

### Solutions for safe investment:

F3S-TGR-CL safety light curtains are fully compatible with all previous Omron TGR F3S-TGR-SB safety sensors and work with the full range of Omron TGR safety sensor accessories.

### Consistency in every application

- Consistent ordering, engineering, configuration
- The same design parameters - always
- Global support wherever you are
- Comprehensive range to meet all needs
- EN ISO 13849-1 certified



Finger protection



Hand protection



Body protection



## Versatile muting for broader applications

Automated production systems can be protected using fixed guards, but where material goes in and out of a danger zone, muting can aid efficiency without affecting operator safety. A full range of muting options is available with F3S-TGR-CL safety light curtains using standard Omron accessories. They can be fully integrated so there's no need for standalone muting sensors, while standard connectors and dip-switch set-up means the curtains can be fitted and configured easily.

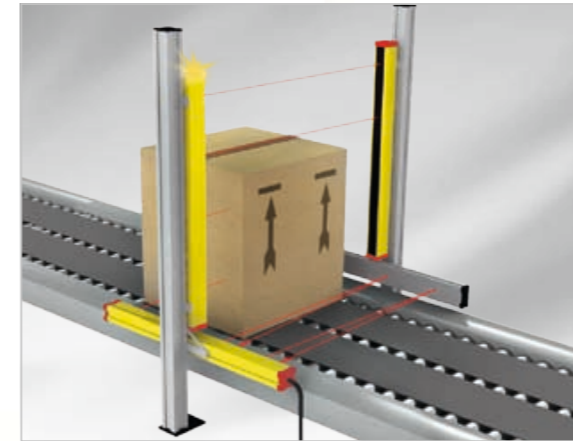
### Palletiser safety with integrated muting

An F3S-TGR-CL safety system with a muting activator enables automated muting when a package on a conveyor breaks the beams. The F3S-TGR-CL safety system incorporates an active side and a passive reflecting side with pre-installed mirrors. When the package has passed the curtain, the beams are reactivated. Functionality is the same whether used in a Type 2 or Type 4 safety application, in T-, L- or X-shape muting in active-active or active-passive setup.

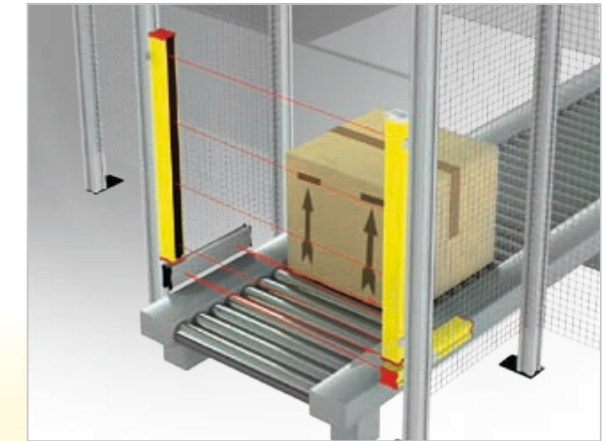
### Mute to suit your application

With integrated LEDs for alignment, muting and override on every curtain, set-up really could not be simpler. T-, L- and X-shape muting can be selected, depending on the application, so that products on conveyors can be safely moved in and out of dangerous areas. All muting actuators perfectly fit our F3S-TGR-CL safety sensor range. T-, L- and X-shape is available in active-active for long range and active-

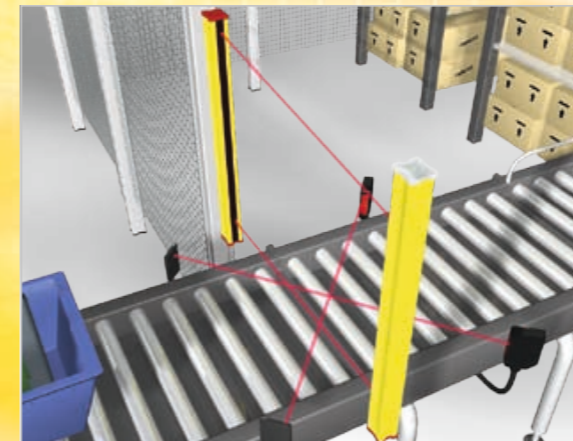
passive for short range applications. The integrated muting lamp shows when the muting facility is activated, so that safety is neither compromised – nor complicated.



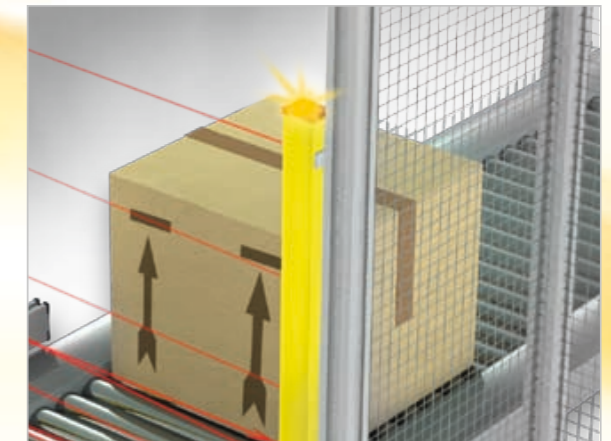
**T-Shape muting:** Bi-directional muting allows reliable detection of boxes passing into and out of the danger-zone. Boxes don't need to be aligned on the conveyor so there are no timing restrictions.



**L-Shape muting:** When materials exit the danger zone, two sensors enable the muting function. Installation time is reduced, and there are no time constraints when boxes are not aligned on the belt.



**X-Shape muting:** If pallets are not evenly packed, or if there are small gaps between the products – for example, on pallets loaded with bottles - time-controlled X-shaped muting will maintain safety without complex installation requirements.



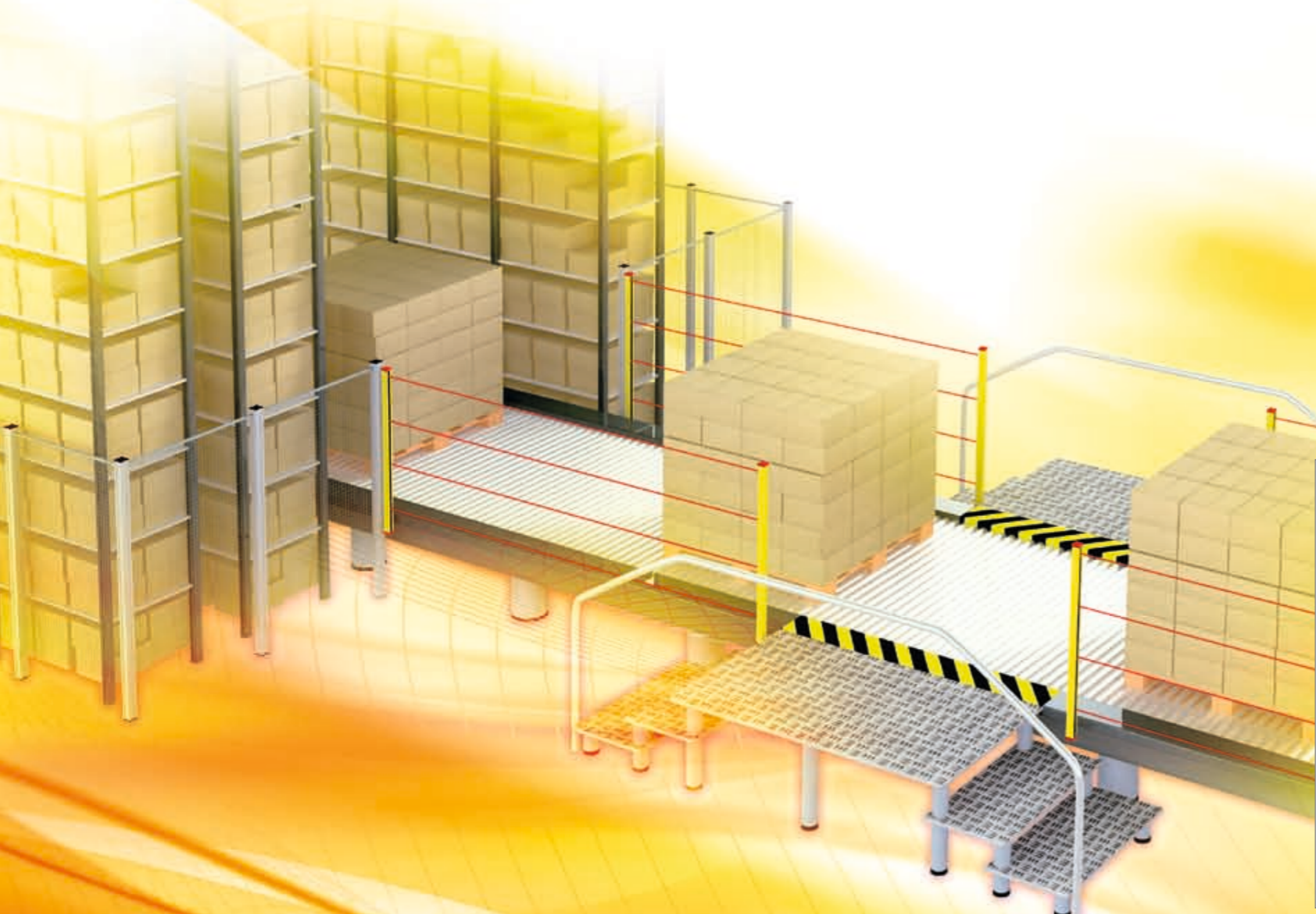
**Integrated muting lamp:** The muting lamp is installed close to the muted section to indicate when muting has been activated, warning operators against entering the danger zone. The integrated lamp means installation is straightforward, while LED technology ensures a long working life.

## Body, hand and finger protection in long- and short-range applications

These safety light curtains are designed for use in the widest range of packaging and industrial applications. Two-, three- and four-beam models give protected heights from 500 to 1200 mm for complete flexibility in machine design. An extended operating range of up to 50 m makes the curtains suitable for full-body protection of operators working with conveyor systems, while 14 mm finger protection can be used for heavy press brakes and similar equipment.

### Automated conveyors

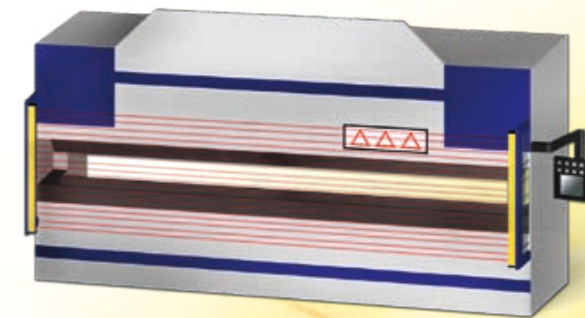
Crossing-stations within automated conveyor systems must be protected so that workers can safely move from one part of a warehouse or production line to the other. With a 50m operating range, F3S-TGR-CL safety light curtains can be used to provide reliable protection, even in environments where visibility is less than perfect.



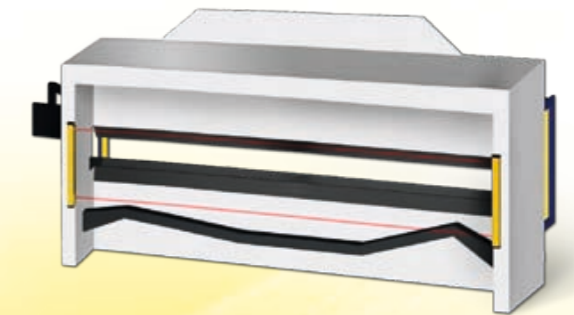
### Press brakes and metal forming

Traditionally, 14 mm resolution safety light curtains are used to provide finger protection at the front of presses, with the back secured by a fixed guard. The Omron F3S-TGR-CL range of curtains can be used on both sides of a press, providing secure and efficient protection, with easy access for the operator: as with all F3S-TGR-CL models, integration is simple because both units use the same installation and mounting

methods. A fully integrated single- and double-break function on the 14 mm and 35 mm models enhances efficiency in various press applications.



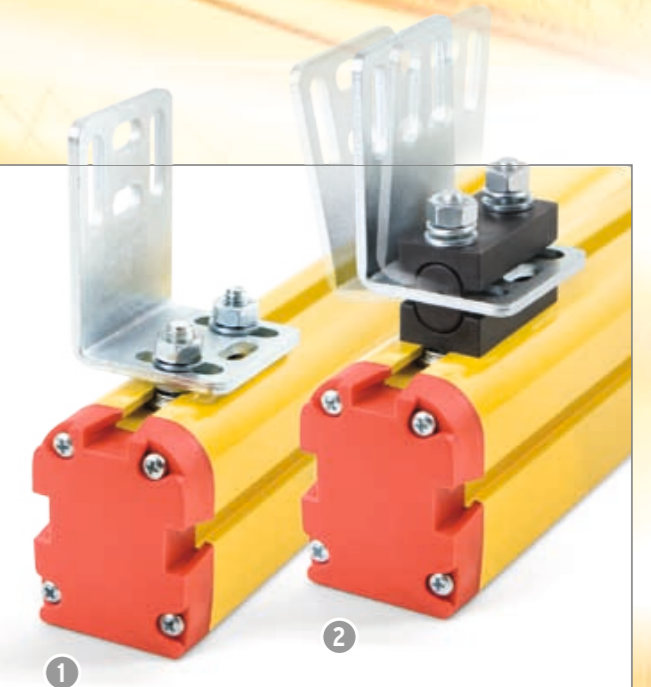
Front using 14 mm finger-protection system



Back with two-beam body-protection system when distance to the danger zone is big enough

### Mounting

F3S-TGR-CL system has three rails for mounting. Standard brackets coming with the product (1) or adjustable mounting brackets as accessories (2) offer flexibility in mounting and adjusting as well as rigidity for minimum maintenance.



## Special functions for enhanced efficiency

The versatility and simplicity of F3S-TGR-CL safety light curtains makes them suitable for an exceptionally wide range of applications, from simple hand/finger protection on a standalone machine to time-controlled protection of several pieces of equipment within an automated production area. Yet no matter what the application, the same methodology means operatives and maintenance personnel follow exactly the same procedures – in total security.

### Pre-reset

In automated industrial applications, where nesting of machines is common, care needs to be taken when individual machines are started.

Person A in the picture below is clearing the machine after a problem. Person B has already finished work and leaves the section. If Person B now restarts the machine, the situation will be dangerous for Person A since the robot will start moving. Using pre-reset function, a reset of the safety system is only possible by first activating the pre-reset pushbutton (1) before leaving the section (2) and resetting the safety system from outside (3).



Local pre-reset pushbutton inside the machine that needs to be pressed before the safety system can be reset



Safety light curtain for easy access, for example by a forklift truck

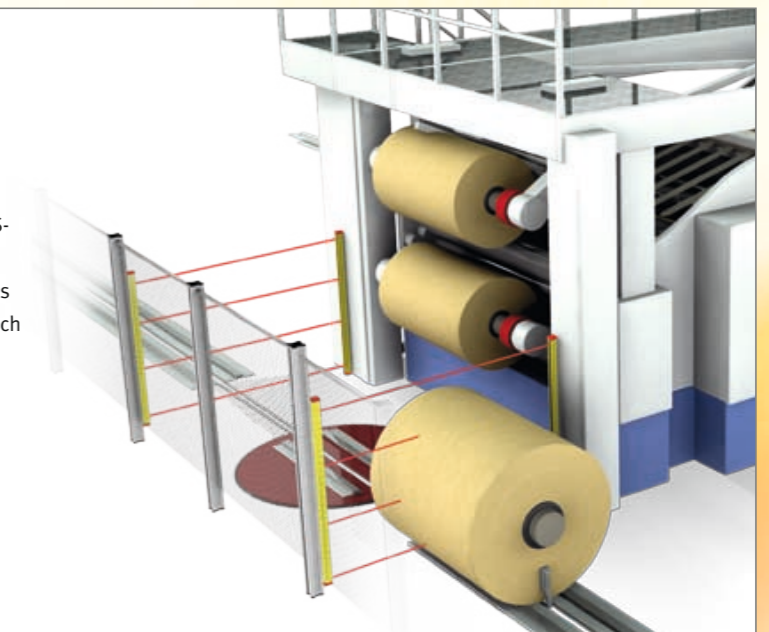


Reset pushbutton to acknowledge and start

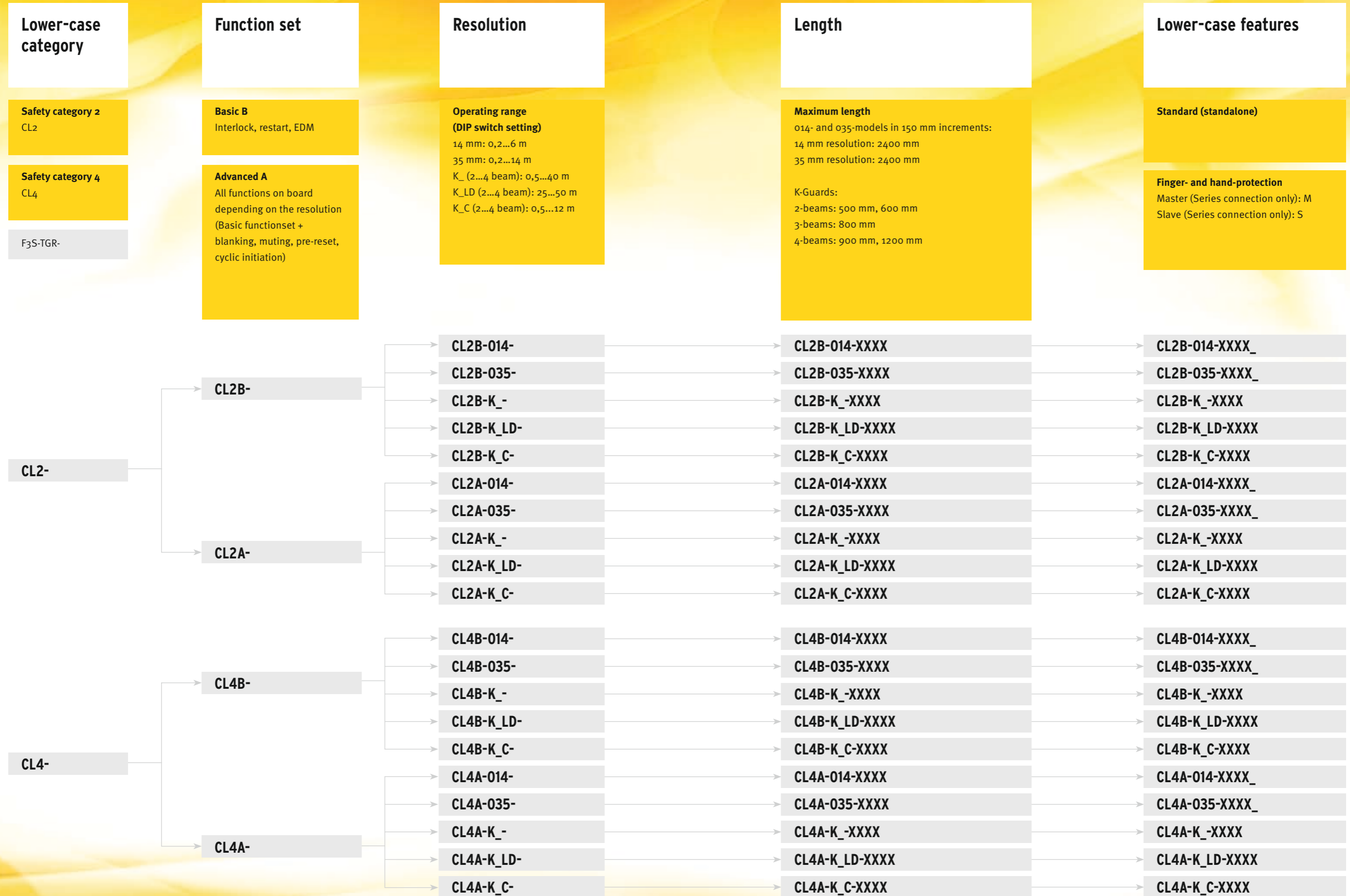


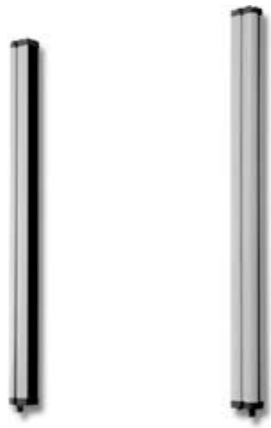
### Partial muting

While other systems offer “all or nothing” muting, Omron F3S-TGR-CL models are entirely flexible, allowing just some of the beams to be muted. This can protect operators in applications where products or accessories are changed automatically, such as this roll-changer. A four-beam system is used to protect workers: the three lower beams are muted, the top beam remaining active to protect workers while rolls are moved.



# F3S-TGR-series in five simple steps





### Multi-beam, finger- and hand protection safety sensor

The multi-beam sensors are available in Category 2 (PL c) and Category 4 (PL e) with integrated muting function. The finger- and hand protection models are available in Category 2 (PL c) and Category 4 (PL e) with integrated safety control functions.

- Type 2/Type 4 sensor complying with EN 61496-1
- Family concept in wiring and mounting

**Multi-beam models**

- Sensing distance up to 50 m
- DIP-switch setup for muting, pre-reset, interlock function and optical coding
- Muting function and muting lamp integrated

**Finger- and hand protection models**

- Sensing distance up to 0.2 m...6 m (14 mm) and 0.2 m...14 m (35 mm)
- DIP-switch setup for blanking, interlock function, muting and optical coding
- Floating blanking and Fixed blanking supported

**Ordering information multi-beam safety sensor**

**Long-range active/active systems**

**F3S-TGR-CL2\_-K\_ (Type 2)**

| Number of optical axes | Sensing distance | Beam pitch | Feature set*1 | Order code              |
|------------------------|------------------|------------|---------------|-------------------------|
| 2                      | 0.5 m ... 40 m   | 500        | Advanced      | F3S-TGR-CL2A-K2-500     |
| 2                      | 0.5 m ... 40 m   | 500        | Basic         | F3S-TGR-CL2B-K2-500     |
| 3                      | 0.5 m ... 40 m   | 400        | Advanced      | F3S-TGR-CL2A-K3-800     |
| 3                      | 0.5 m ... 40 m   | 400        | Basic         | F3S-TGR-CL2B-K3-800     |
| 4                      | 0.5 m ... 40 m   | 300        | Advanced      | F3S-TGR-CL2A-K4-900     |
| 4                      | 0.5 m ... 40 m   | 300        | Basic         | F3S-TGR-CL2B-K4-900     |
| 4                      | 0.5 m ... 40 m   | 400        | Advanced      | F3S-TGR-CL2A-K4-1200    |
| 4                      | 0.5 m ... 40 m   | 400        | Basic         | F3S-TGR-CL2B-K4-1200    |
| 2                      | 25 m ... 50 m    | 500        | Advanced      | F3S-TGR-CL2A-K2-500-LD  |
| 2                      | 25 m ... 50 m    | 500        | Basic         | F3S-TGR-CL2B-K2-500-LD  |
| 3                      | 25 m ... 50 m    | 400        | Advanced      | F3S-TGR-CL2A-K3-800-LD  |
| 3                      | 25 m ... 50 m    | 400        | Basic         | F3S-TGR-CL2B-K3-800-LD  |
| 4                      | 25 m ... 50 m    | 300        | Advanced      | F3S-TGR-CL2A-K4-900-LD  |
| 4                      | 25 m ... 50 m    | 300        | Basic         | F3S-TGR-CL2B-K4-900-LD  |
| 4                      | 25 m ... 50 m    | 400        | Advanced      | F3S-TGR-CL2A-K4-1200-LD |
| 4                      | 25 m ... 50 m    | 400        | Basic         | F3S-TGR-CL2B-K4-1200-LD |

**F3S-TGR-CL4\_-K\_ (Type 4)**

| Number of optical axes | Sensing distance | Beam pitch | Feature set*1 | Order code              |
|------------------------|------------------|------------|---------------|-------------------------|
| 2                      | 0.5 m ... 40 m   | 500        | Advanced      | F3S-TGR-CL4A-K2-500     |
| 2                      | 0.5 m ... 40 m   | 500        | Basic         | F3S-TGR-CL4B-K2-500     |
| 3                      | 0.5 m ... 40 m   | 400        | Advanced      | F3S-TGR-CL4A-K3-800     |
| 3                      | 0.5 m ... 40 m   | 400        | Basic         | F3S-TGR-CL4B-K3-800     |
| 4                      | 0.5 m ... 40 m   | 300        | Advanced      | F3S-TGR-CL4A-K4-900     |
| 4                      | 0.5 m ... 40 m   | 300        | Basic         | F3S-TGR-CL4B-K4-900     |
| 4                      | 0.5 m ... 40 m   | 400        | Advanced      | F3S-TGR-CL4A-K4-1200    |
| 4                      | 0.5 m ... 40 m   | 400        | Basic         | F3S-TGR-CL4B-K4-1200    |
| 2                      | 25 m ... 50 m    | 500        | Advanced      | F3S-TGR-CL4A-K2-500-LD  |
| 2                      | 25 m ... 50 m    | 500        | Basic         | F3S-TGR-CL4B-K2-500-LD  |
| 3                      | 25 m ... 50 m    | 400        | Advanced      | F3S-TGR-CL4A-K3-800-LD  |
| 3                      | 25 m ... 50 m    | 400        | Basic         | F3S-TGR-CL4B-K3-800-LD  |
| 4                      | 25 m ... 50 m    | 300        | Advanced      | F3S-TGR-CL4A-K4-900-LD  |
| 4                      | 25 m ... 50 m    | 300        | Basic         | F3S-TGR-CL4B-K4-900-LD  |
| 4                      | 25 m ... 50 m    | 400        | Advanced      | F3S-TGR-CL4A-K4-1200-LD |
| 4                      | 25 m ... 50 m    | 400        | Basic         | F3S-TGR-CL4B-K4-1200-LD |

**Short-range active/passive systems**

**F3S-TGR-CL2\_-K\_C (Type 2)**

| Number of optical axes | Sensing distance | Beam pitch | Feature set*1 | Order code            |
|------------------------|------------------|------------|---------------|-----------------------|
| 2                      | 0.5 m ... 12 m   | 500        | Advanced      | F3S-TGR-CL2A-K2C-500  |
| 2                      | 0.5 m ... 12 m   | 500        | Basic         | F3S-TGR-CL2B-K2C-500  |
| 3                      | 0.5 m ... 8 m    | 400        | Advanced      | F3S-TGR-CL2A-K3C-800  |
| 3                      | 0.5 m ... 8 m    | 400        | Basic         | F3S-TGR-CL2B-K3C-800  |
| 4                      | 0.5 m ... 7 m    | 300        | Advanced      | F3S-TGR-CL2A-K4C-900  |
| 4                      | 0.5 m ... 7 m    | 300        | Basic         | F3S-TGR-CL2B-K4C-900  |
| 4                      | 0.5 m ... 7 m    | 400        | Advanced      | F3S-TGR-CL2A-K4C-1200 |
| 4                      | 0.5 m ... 7 m    | 400        | Basic         | F3S-TGR-CL2B-K4C-1200 |

**F3S-TGR-CL4\_-K\_C (Type 4)**

| Number of optical axes | Sensing distance | Beam pitch | Feature set*1 | Order code            |
|------------------------|------------------|------------|---------------|-----------------------|
| 2                      | 0.5 m ... 12 m   | 500        | Advanced      | F3S-TGR-CL4A-K2C-500  |
| 2                      | 0.5 m ... 12 m   | 500        | Basic         | F3S-TGR-CL4B-K2C-500  |
| 3                      | 0.5 m ... 8 m    | 400        | Advanced      | F3S-TGR-CL4A-K3C-800  |
| 3                      | 0.5 m ... 8 m    | 400        | Basic         | F3S-TGR-CL4B-K3C-800  |
| 4                      | 0.5 m ... 7 m    | 300        | Advanced      | F3S-TGR-CL4A-K4C-900  |
| 4                      | 0.5 m ... 7 m    | 300        | Basic         | F3S-TGR-CL4B-K4C-900  |
| 4                      | 0.5 m ... 7 m    | 400        | Advanced      | F3S-TGR-CL4A-K4C-1200 |
| 4                      | 0.5 m ... 7 m    | 400        | Basic         | F3S-TGR-CL4B-K4C-1200 |

\*1. Feature set: Basic: Manual/automatic restart, coding  
Advanced: Basic + Muting + Pre-reset

**Ordering information finger- and hand protection safety sensor**

| Safety category | Feature set*2 | Resolution | Length           | Order code        |
|-----------------|---------------|------------|------------------|-------------------|
| 2               | Basic         | 14 mm      | 150 mm...2400 mm | F3S-TGR-CL2B-014- |
|                 |               | 35 mm      |                  | F3S-TGR-CL2B-035- |
|                 | Advanced      | 14 mm      |                  | F3S-TGR-CL2A-014- |
|                 |               | 35 mm      |                  | F3S-TGR-CL2A-035- |
| 4               | Basic         | 14 mm      | 150 mm...2400 mm | F3S-TGR-CL4B-014- |
|                 |               | 35 mm      |                  | F3S-TGR-CL4B-035- |
|                 | Advanced      | 14 mm      |                  | F3S-TGR-CL4A-014- |
|                 |               | 35 mm      |                  | F3S-TGR-CL4A-035- |

\*2. Feature set: Basic: Manual/automatic restart, coding  
Advanced: Blanking functions + Muting + Pre-reset

**Specifications**

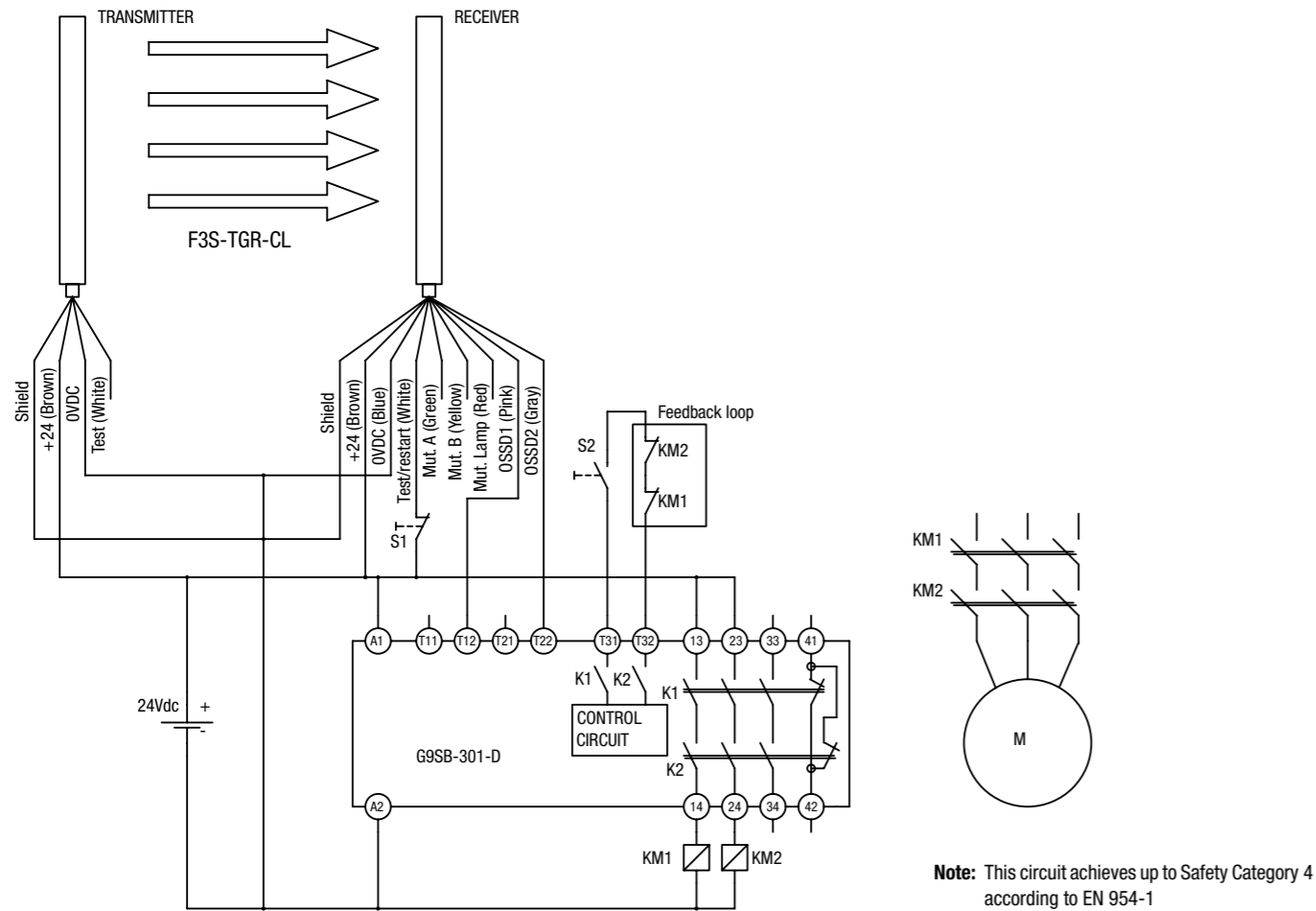
**Multi-beam safety sensor**

| Item   | F3S-TGR-CL2_-K_  | F3S-TGR-CL4_-K_                         |
|--|--|---|
| Sensor Type  | Type 2   | Type 4                                  |
| Operating range  | F3S-TGR-CL_-K_-LD: 0.5 m ... 40 m<br>F3S-TGR-CL_-K_-LD: 25 m ... 50 m<br>F3S-TGR-CL_-K2C-500: 0.5 m ... 12 m<br>F3S-TGR-CL_-K3C-800: 0.5 m ... 8 m<br>F3S-TGR-CL_-K4C-900: 0.5 m ... 7 m |   |
| Beam pitch   | F3S-TGR-CL_-K2_-500: 2 beams, 500 mm<br>F3S-TGR-CL_-K3_-800: 3 beams, 400 mm<br>F3S-TGR-CL_-K4_-900: 4 beams, 300 mm<br>F3S-TGR-CL_-K4_-1200: 4 beams, 400 mm                            |   |
| Effective aperture angle acc. EN 61496-2 (2006) for distances <3 m | Within ±5°   | Within ±2.5°                            |
| Light source   | Infrared LED (880 nm), Power dissipation <3 mW, Class 1 per EN 60825-1   |   |
| Supply Voltage   | 24 VDC±20%, according EN/IEC60204 able to cover a drop of voltage of at least 20 ms  |   |
| OSSD   | 2 PNP transistor outputs, load current 2x250 mA max  |   |
| Test functions   | Self test (after power ON and during operation)  |   |
| Safety-related functions   | All versions: Auto reset/ interlock with manual reset, EDM (external device monitoring)<br>Advance version only: Muting and Pre-reset function   |   |
| Response time  | < 13 ms  |   |
| Ambient temperature  | Operating: -10°C...+55°C, Storage: -25°C...+70°C (no icing, no condensation)   |   |
| Degree of protection   | IP 65 (IEC 60529)  |   |
| Materials  | Case: Painted Aluminium, Front window: Acrylic Lexan, Cap: ABS, mounting brackets: cold rolled steel   |   |
| Size (cross section)   | 37x48 mm   |   |
| Suitable for safety control systems                                | Cat. 2 (EN954-1), PL c (EN ISO 13849-1)  | Cat. 4 (EN954-1), PL e (EN ISO 13849-1) |
| MTTFd, DC  | MTTFd = 450 years, DC = high, MTTR = 8 hours   |   |
| PFH, Proof test interval   | PFHd = 2,5*10 <sup>-9</sup> , Proof test interval: every 20 years  |   |

**Finger- and hand safety protection sensor**

| Item  | F3S-TGR-CL2_-0_  | F3S-TGR-CL4_-0_                         |
|---|--|---|
| Sensor Type   | Type 2   | Type 4                                  |
| Operating range: short setting                                      | F3S-TGR-CL_-014: 0.2 m... 3 m; F3S-TGR-CL_-035: 0.2 m... 7 m   |   |
| Operating range: long setting                                       | F3S-TGR-CL_-014: 3 m... 6 m; F3S-TGR-CL_-035: 7 m...14 m   |   |
| Beam pitch (center)   | 14 mm resolution: 7.5 mm<br>35 mm resolution: 18 mm  |   |
| Detection capability  | 14 mm resolution: 14 mm non-transparent<br>35 mm resolution: 35 mm non-transparent   |   |
| Effective aperture angle acc. EN 61496-2 (2006) for distances < 3 m | Within ±5°   | Within ±2.5°                            |
| Light source  | Infrared LED (880 nm), Power dissipation <3 mW, Class 1 per EN 60825-1   |   |
| Supply Voltage  | 24 VDC±20%, according EN/IEC60204 able to cover a drop of voltage of at least 20 ms  |   |
| OSSD  | 2 PNP transistor outputs, load current 2x250 mA max  |   |
| Test functions  | Self test (after power ON and during operation)  |   |
| Safety-related functions  | All versions: Auto reset/ interlock with manual reset, EDM (external device monitoring)<br>Advance version only: Blanking, Muting and Pre-reset function |   |
| Response time   | ON to OFF: 14 ms...103 ms  |   |
| Ambient temperature   | Operating: -10°C...+55°C, Storage: -25°C...+70°C (no icing, no condensation)   |   |
| Degree of protection  | IP 65 (IEC 60529)  |   |
| Materials   | Case: Painted Aluminium, Front window: Acrylic Lexan, Cap: ABS, mounting brackets: cold rolled steel   |   |
| Size (cross section)  | 37x48 mm   |   |
| Suitable for safety control systems                                 | Cat. 2 (EN954-1), PL c (EN ISO 13849-1)  | Cat. 4 (EN954-1), PL e (EN ISO 13849-1) |
| MTTFd, DC   | MTTFd = 450 years, DC = high, MTTR = 8 hours   |   |
| PFH, Proof test interval  | PFHd = 2,5*10 <sup>-9</sup> , Proof test interval: every 20 years  |   |

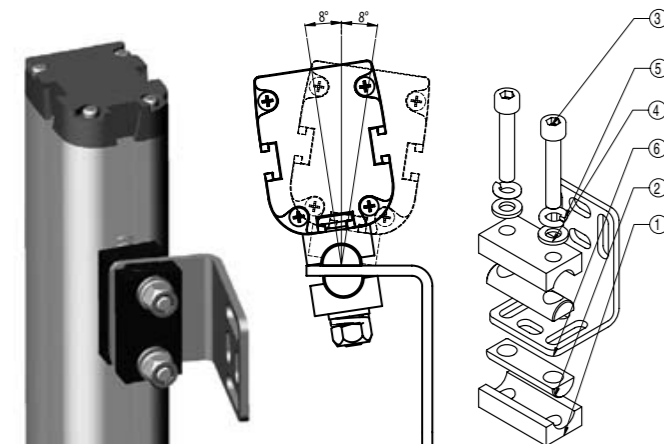
F3S-TGR-CL and GSB-301-D in manual reset



Standard cables

| Receiver Cables (M12-8pin, shielded, flying leads)    |                                |
|---|--------------------------------|
| F39-TGR-CVL-B-2-R                                     | Receiver Cable, 2 m length     |
| F39-TGR-CVL-B-5-R                                     | Receiver Cable, 5 m length     |
| F39-TGR-CVL-B-10-R                                    | Receiver Cable, 10 m length    |
| F39-TGR-CVL-B-15-R                                    | Receiver Cable, 15 m length    |
| F39-TGR-CVL-B-25-R                                    | Receiver Cable, 25 m length    |
| Transmitter Cables (M12-4pin, shielded, flying leads) |                                |
| F39-TGR-CVL-B-2-E                                     | Transmitter Cable, 2 m length  |
| F39-TGR-CVL-B-5-E                                     | Transmitter Cable, 5 m length  |
| F39-TGR-CVL-B-10-E                                    | Transmitter Cable, 10 m length |
| F39-TGR-CVL-B-15-E                                    | Transmitter Cable, 15 m length |
| F39-TGR-CVL-B-25-E                                    | Transmitter Cable, 25 m length |

Mounting bracket F39-TGR-ST-ADJ



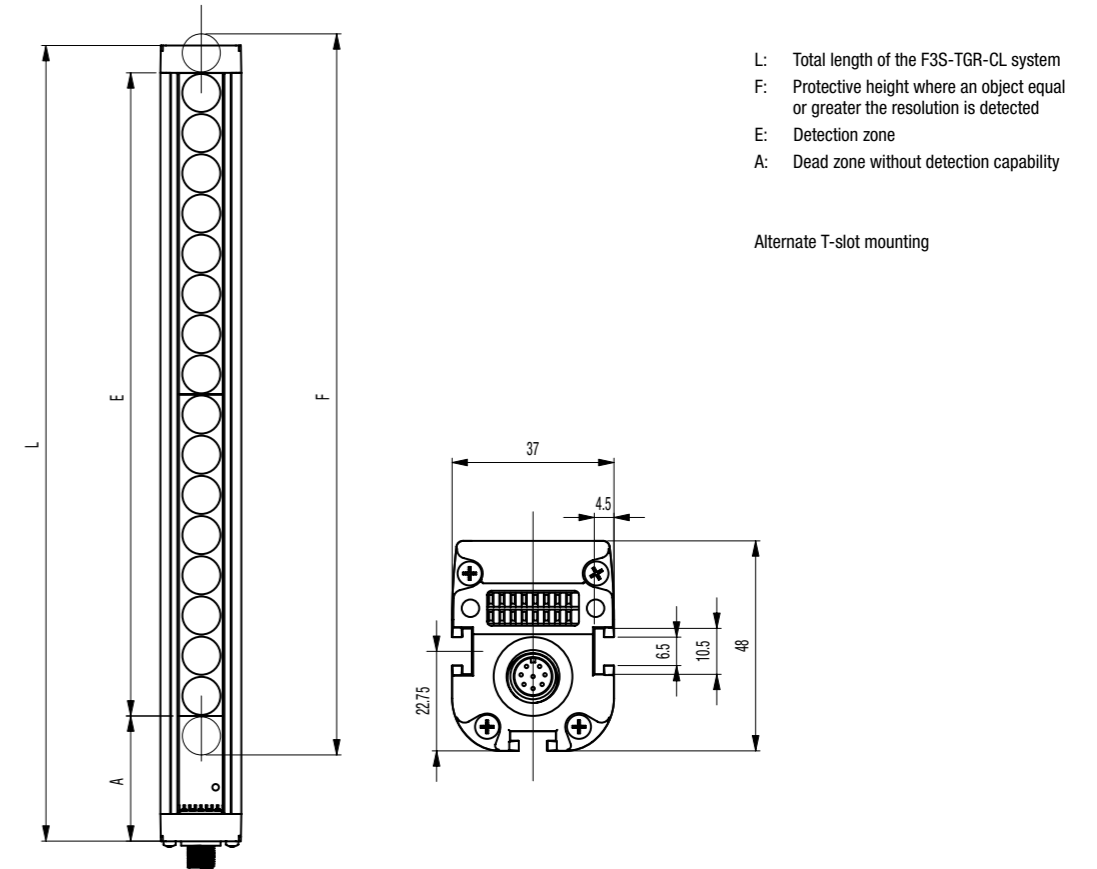
Wiring accessories (connectors and Y-connector cables)

| Type                |  |
|---------------------|--|
| F39-TGR-CT-B-R      | Connector M12, 8-pin, female for wiring            |
| F39-TGR-CT-B-E      | Connector M12, 4-pin, female for wiring            |
| F39-TGR-CT-W-R      | Connector M12, 8-pin, male for wiring              |
| F39-TGR-CT-W-E      | Connector M12, 4-pin, male for wiring              |
| F39-TGR-CVL-D-B-5-R | Cable for Sensor system and muting lamp connection |

Safety relay units

| Family          | Type Name           | Configuration                           |                             |
|-----------------|---------------------|---|-----------------------------|
| G9SB            | G9SB-200-D          | DPST-NO                                 |                             |
|                 | G9SB-301-D          | 3PST-NO                                 |                             |
|                 | G9SA                | G9SA-301                                | 3PST-NO                     |
|                 |                     | G9SA-501                                | 5PST-NO                     |
| G9SA-321-T075   |                     | 3PST-NO, Time del. 7.5 s                |                             |
|                 | G9SA-321-T15        | 3PST-NO, Time del. 15 s                 |                             |
|                 | G9SA-321-T30        | 3PST-NO, Time del. 30 s                 |                             |
| G9SX            | G9SX-BC202-RT       | 2 Safe Outputs                          |                             |
|                 | G9SX-BC202-RC       | 2 Safe Outputs                          |                             |
|                 | G9SX-AD322-T15-RT   | 3 Safe Outputs, Time del. 15 s          |                             |
|                 | G9SX-AD322-T15-RC   | 3 Safe Outputs, Time del. 15 s          |                             |
|                 | G9SX-AD322-T150-RT  | 3 Safe Outputs, Time del. 150 s         |                             |
|                 | G9SX-AD322-T150-RC  | 3 Safe Outputs, Time del. 150 s         |                             |
|                 | G9SX-ADA222-T15-RT  | 2 Safe Outputs, Time del. 15 s          |                             |
|                 | G9SX-ADA222-T15-RC  | 2 Safe Outputs, Time del. 15 s          |                             |
|                 | G9SX-ADA222-T150-RT | 2 Safe Outputs, Time del. 150 s         |                             |
|                 | G9SX-ADA222-T150-RC | 2 Safe Outputs, Time del. 150 s         |                             |
|                 | DeviceNet Safety    | NE1A-SCPU01                             | 16 In, 8 Out, Safety Master |
|                 |                     | NE1A-SCPU02                             | 40 In, 8 Out, Safety Master |
|                 | Safety Controller   | NE1A-SCPU01L                            | 16 In, 8 Out                |
|                 |                     | NE1A-SCPU02L                            | 40 In, 8 Out                |
| Relay interface | F39-TGR-SB-R        | Relay interface for Semiconductor OSSDs |                             |

Dimensions



F3S-TGR-CL system data with 14 mm resolution

|             | 150 mm  | 300 mm  | 450 mm  | 600 mm  | 750 mm  | 900 mm  | 1050 mm | 1200 mm | 1350 mm | 1500 mm | 1650 mm | 1800 mm | 1950 mm | 2100 mm | 2250 mm | 2400 mm |
|-------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| L [mm]      | 217     | 364     | 511     | 658     | 805     | 952     | 1099    | 1246    | 1393    | 1540    | 1687    | 1834    | 1981    | 2128    | 2275    | 2422    |
| F [mm]      | 161     | 308     | 455     | 602     | 749     | 896     | 1043    | 1190    | 1337    | 1484    | 1631    | 1778    | 1925    | 2072    | 2219    | 2366    |
| E [mm]      | 147     | 294     | 441     | 588     | 735     | 882     | 1029    | 1176    | 1323    | 1470    | 1617    | 1764    | 1911    | 2058    | 2205    | 2352    |
| A [mm]      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      |
| Weight [kg] | 0.83 kg | 1.39 kg | 1.95 kg | 2.51 kg | 3.07 kg | 3.63 kg | 4.19 kg | 4.75 kg | 5.31 kg | 5.87 kg | 6.43 kg | 7 kg    | 7.55 kg | 8.11 kg | 8.67 kg | 9.24 kg |

F3S-TGR-CL system data with 35 mm resolution

|             | 150 mm  | 300 mm  | 450 mm  | 600 mm  | 750 mm  | 900 mm  | 1050 mm | 1200 mm | 1350 mm | 1500 mm | 1650 mm | 1800 mm | 1950 mm | 2100 mm | 2250 mm | 2400 mm |
|-------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| L [mm]      | 217     | 364     | 511     | 658     | 805     | 952     | 1099    | 1246    | 1393    | 1540    | 1687    | 1834    | 1981    | 2128    | 2275    | 2422    |
| F [mm]      | 182     | 329     | 476     | 623     | 770     | 917     | 1064    | 1211    | 1358    | 1505    | 1652    | 1799    | 1946    | 2093    | 2240    | 2387    |
| E [mm]      | 147     | 294     | 441     | 588     | 735     | 882     | 1029    | 1176    | 1323    | 1470    | 1617    | 1764    | 1911    | 2058    | 2205    | 2352    |
| A [mm]      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      | 59      |
| Weight [kg] | 0.83 kg | 1.39 kg | 1.95 kg | 2.51 kg | 3.07 kg | 3.63 kg | 4.19 kg | 4.75 kg | 5.31 kg | 5.87 kg | 6.43 kg | 7 kg    | 7.55 kg | 8.11 kg | 8.67 kg | 9.24 kg |

F3S-TGR-CL-K system data

| Model number          | Weight | Dimensions |        |        |        |
|-----------------------|--------|------------|--------|--------|--------|
|                       |        | F [mm]     | L [mm] | E [mm] | A [mm] |
| F3S-TGR-CL-K2C-500    | 2.3 kg | 518        | 682    | 500    | 59     |
| F3S-TGR-CL-K3C-800    | 3.2 kg | 818        | 982    | 400    | 59     |
| F3S-TGR-CL-K4C-900    | 4.1 kg | 918        | 1082   | 300    | 59     |
| F3S-TGR-CL-K4C-1200   | 4.9 kg | 1218       | 1382   | 400    | 59     |
| F3S-TGR-CL-K2-500     | 2.3 kg | 518        | 682    | 500    | 59     |
| F3S-TGR-CL-K3-800     | 3.2 kg | 818        | 982    | 400    | 59     |
| F3S-TGR-CL-K4-900     | 4.1 kg | 918        | 1082   | 300    | 59     |
| F3S-TGR-CL-K4-1200    | 4.9 kg | 1218       | 1382   | 400    | 59     |
| F3S-TGR-CL-K2-500-LD  | 2.3 kg | 518        | 682    | 500    | 59     |
| F3S-TGR-CL-K3-800-LD  | 3.2 kg | 818        | 982    | 400    | 59     |
| F3S-TGR-CL-K4-900-LD  | 4.1 kg | 918        | 1082   | 300    | 59     |
| F3S-TGR-CL-K4-1200-LD | 4.9 kg | 1218       | 1382   | 400    | 59     |



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