

Muting Controller for Safety Single Beam

F3SP-U1P

- High functionality (two independent muting functions, override function, automatic and manual reset).
- Category 2.
- Muting lamp included.
- Double output safety relay.
- 7 segment display for status of the control unit and trouble shooting.
- Easy to install.

Muting controller for one, two, three or four Safety Single Beam.



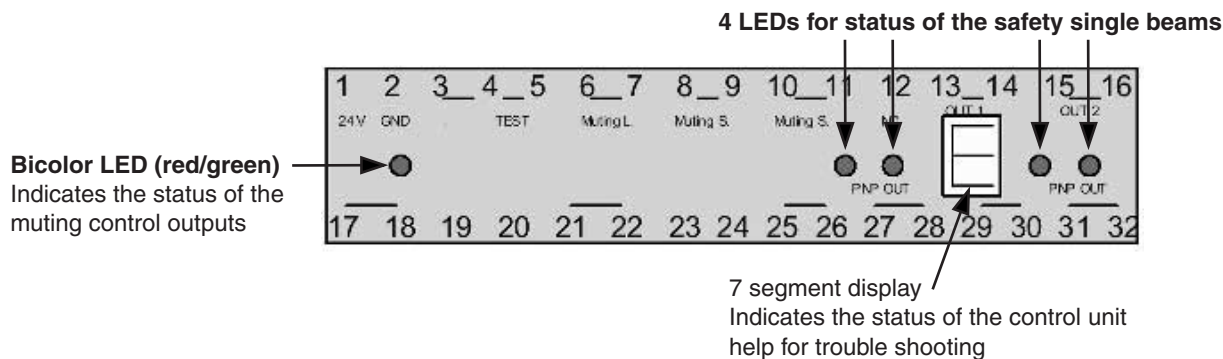
List of Models

Description	Model
Muting Controller for Safety Single Beam E3FS	F3SP-U1P-TGR

Rating / performance

	F3SP-U1P-TGR
Power supply voltage	24 VDC $\pm 10\%$
Power consumption	8 W max. (incl. muting lamp, excl. E3FS)
Output contacts	2 NO 3,15 A (protected by fuses)
Indicators	7 segment display for status of the control unit and trouble shooting, 4 LEDs for status of the single beams, one bicolor LED for the status of the control output.
Enclosure rating	IP20
Terminal	32 screw terminals (2,5 mm ²)
Response time	≤ 30 ms
Ambient temperature	Operating: -10 °C + 55 °C
Housing material	Polycarbonate (UL V-0)
Weight	0,6 kg

Description Front Panel

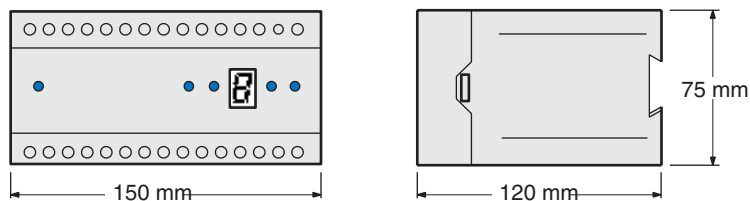


Function

To use the E3FS as a safety device category 2 the single beam need to be connected to the control unit F3SP-U1P-TGR. F3SP-U1P-TGR performs periodic tests every 27 ms. It will manage the operation of up to four sets of E3FS to pro-

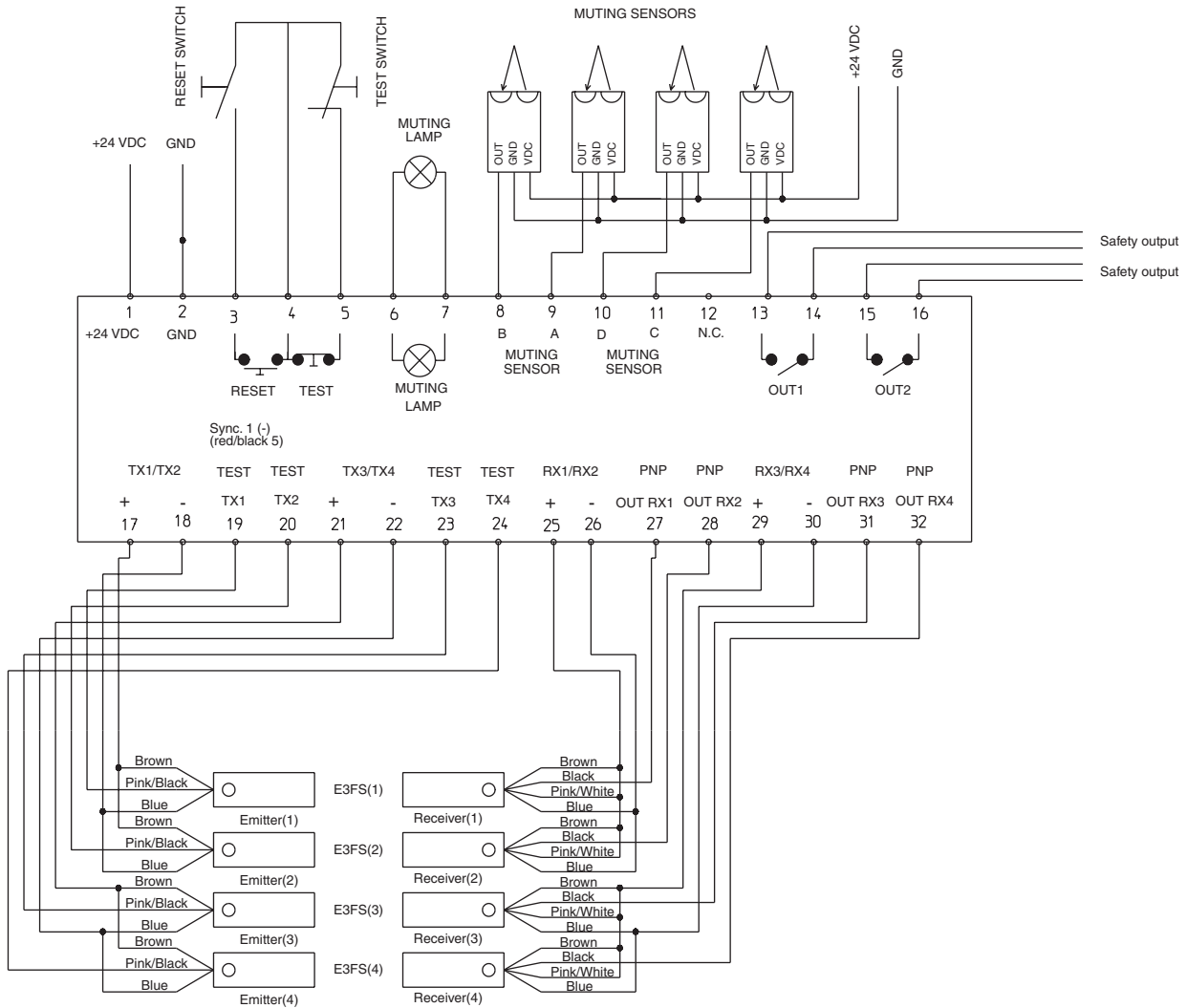
duce an intelligent, adaptable and safety protective circuit with an optical resolution as the application requires. It can be used to mute all or some of the safety device light beams for a controlled period of time.

Dimensions



Connections

with four safety single beam E3FS



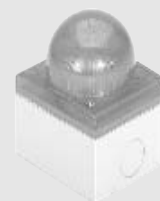
Note: Before connecting this unit please read carefully precautions in the instruction manual.

Muting Controller for Safety Single Beam

F3SP-U3P-TGR


Muting controller for one or two Safety Single Beam.

- High functionality (two independent muting functions, override function, automatic and manual reset).
- Category 2.
- Only 22,2 mm width
- Double output safety relay.
- 6 LED for status and diagnostics.
- Detachable terminals for easy installation.
- Controls 1 or 2 safety sensors.
- TÜV approved.




List of Models

Controller

Description	Model
 Muting Controller for Safety Single Beam E3FS	F3SP-U3P-TGR

Accessories

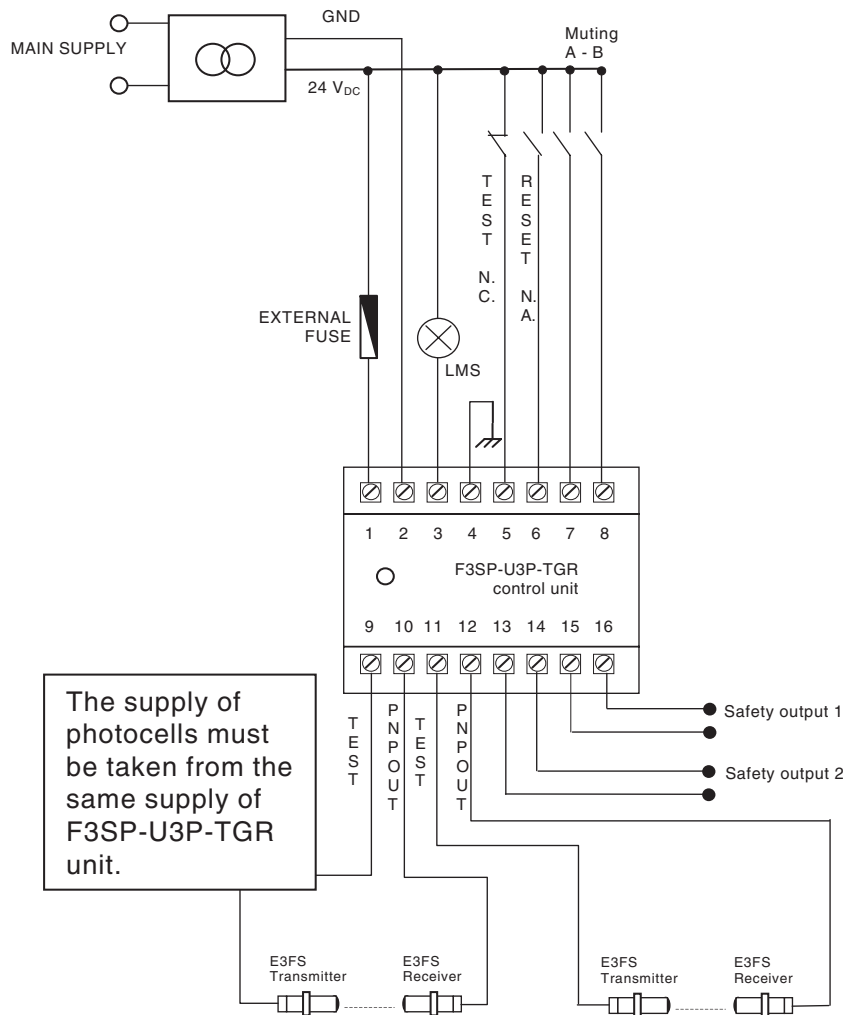
Description	Model
 Muting lamp	F39-A11

Rating / performance

	F3SP-U3P-TGR
Power supply voltage	24 VDC ±10%
Power consumption	420 mA max.
Output contacts	2 NO 2.5 A (protected by fuse), 115 V AC max.
Indicators	6 LED for status and diagnostics
Enclosure rating	IP20
Terminal	16 screw terminals, detachable blocks with '4' screws each
Response time	≤ 30 ms
Ambient temperature	Operating: -10 °C + 55 °C
Housing material	Plastic, DIN rail mounting
Weight	0,3 kg

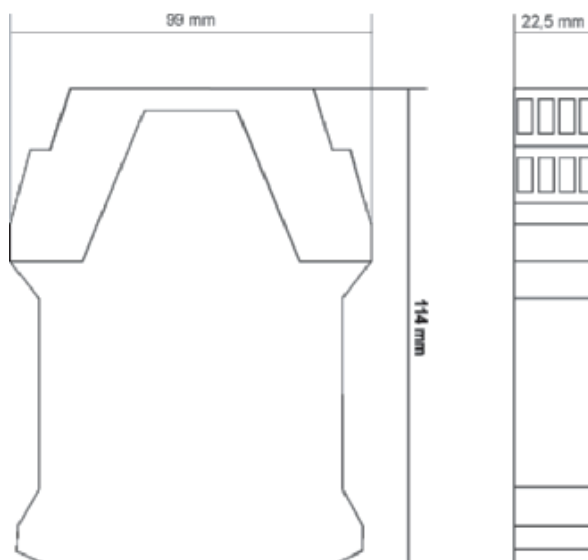
Wiring Example

Connection of 2 safety PES to the control unit.



F3SP-U3P-TGR

Dimensions

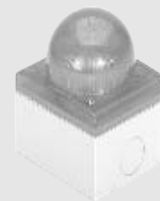
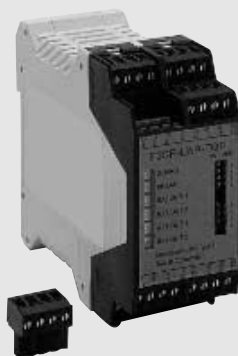


Muting Controller for Safety Single Beam

F3SP-U5P-TGR


Muting controller for one, two, three or four Safety Single Beam.

- High functionality (two independent muting functions, override function, automatic and manual reset).
- Category 2.
- Only 45 mm width
- Double output safety relay.
- 6 LED for status and diagnostics.
- Detachable terminals for easy installation.
- Controls 1, 2, 3 or 4 E3FS sensors
- TÜV approved




List of Models

Controller

Description	Model
 Muting Controller for Safety Single Beam E3FS	F3SP-U5P-TGR

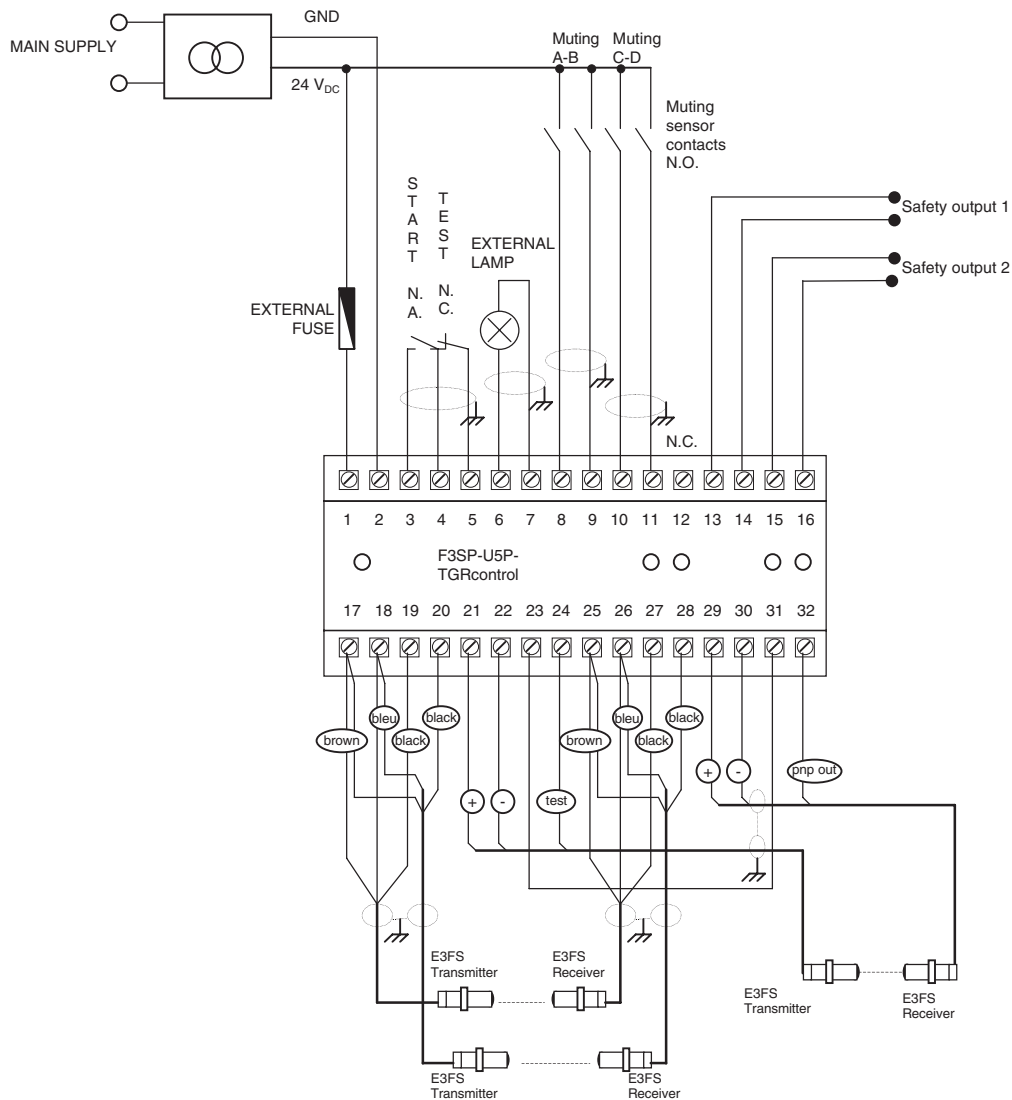
Accessories

Description	Model
 Muting lamp	F39-A11

Rating / performance

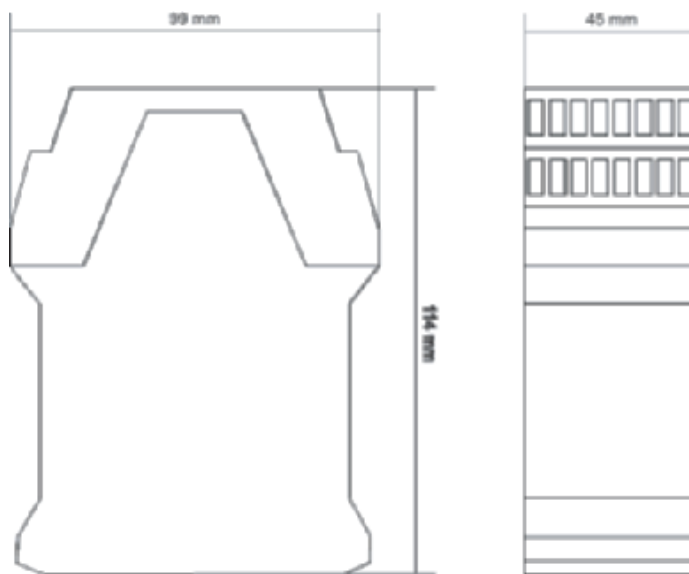
	F3SP-U5P-TGR
Power supply voltage	24 V DC ±10%
Power consumption	420 mA max.
Output contacts	2 NO 2.5 A (protected by fuse), 250 V AC max.
Indicators	6 LED for status and diagnostics
Enclosure rating	IP20
Terminal	32 screw terminals (1,5 mm ²), detachable blocks with '4' screws each
Response time	≤ 30 ms
Ambient temperature	Operating: -10 °C + 55 °C
Housing material	Plastic, DIN rail mounting
Weight	0,3 kg

Wiring Example



F3SP-U5P-TGR

Dimensions

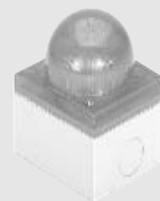


Muting Controller for Safety Light Curtain

F3SP-U2P

- High functionality (two independent muting functions, override function, automatic and manual reset).
- Category 2 or 4 depending on safety light curtain.
- Muting lamp included.
- Double output safety relay.
- 7 segment display for status of the control unit and trouble shooting.
- Easy to install.

Muting controller for one or two Safety Light Curtain.



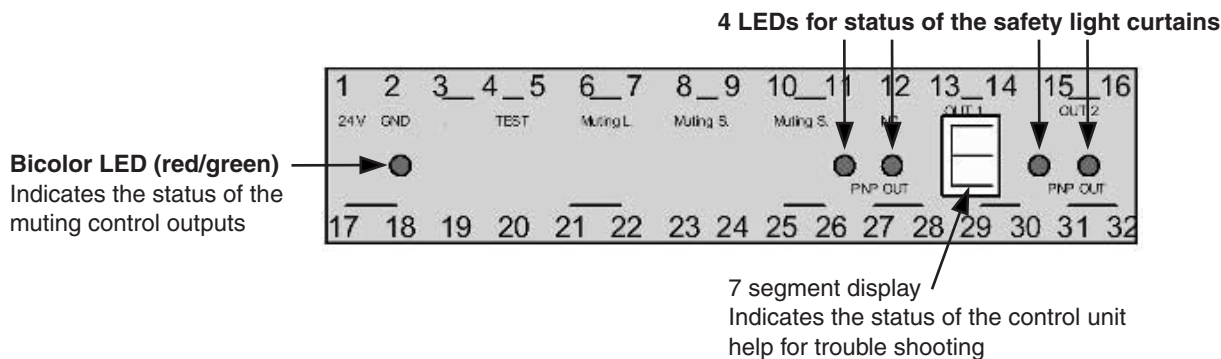
List of Models

Description	Model
Muting Controller for Safety Light Curtain F3S-B, F3SN and F3SH	F3SP-U2P-TGR

Rating / performance

	F3SP-U2P-TGR
Power supply voltage	24 VDC \pm 10%
Power consumption	8 W max. (incl. muting lamp, excl. safety light curtains)
Output contacts	2 NO 3,15 A (protected by fuses)
Indicators	7 segment display for status of the control unit and trouble shooting, 4 LEDs for status of the single beams, one bicolor LED for the status of the control output.
Enclosure rating	IP20
Terminal	32 screw terminals (2,5 mm ²)
Response time	\leq 18 ms
Ambient temperature	Operating: -10 °C + 55 °C
Housing material	Polycarbonate (UL V-0)
Weight	0,6 kg

Description Front Panel

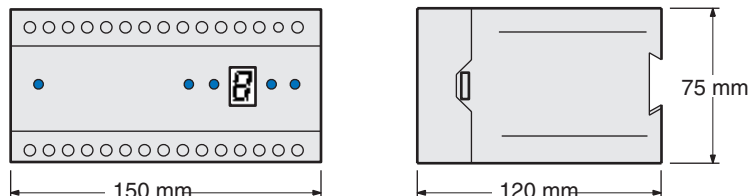


Function

The muting control unit F3SP-U2P-TGR complies with all category 4 safety requirements, conforming to IEC 61496-1. It can be connected to one or two OMRON safety light curtains F3SN-A and F3SH-A (type 4) or F3S-B (type 2) to realise the muting function. This function enables a product passing the safety light curtain to enter into or exit from a hazardous zone.

But prevents a person to enter into this zone. In addition this control unit offers the double muting function with two independent safety light curtains. This enables a product to enter and to exit a hazardous area. An override function can be used to force the system, if an object need to be removed, which has gathered in front of the safety light curtain.

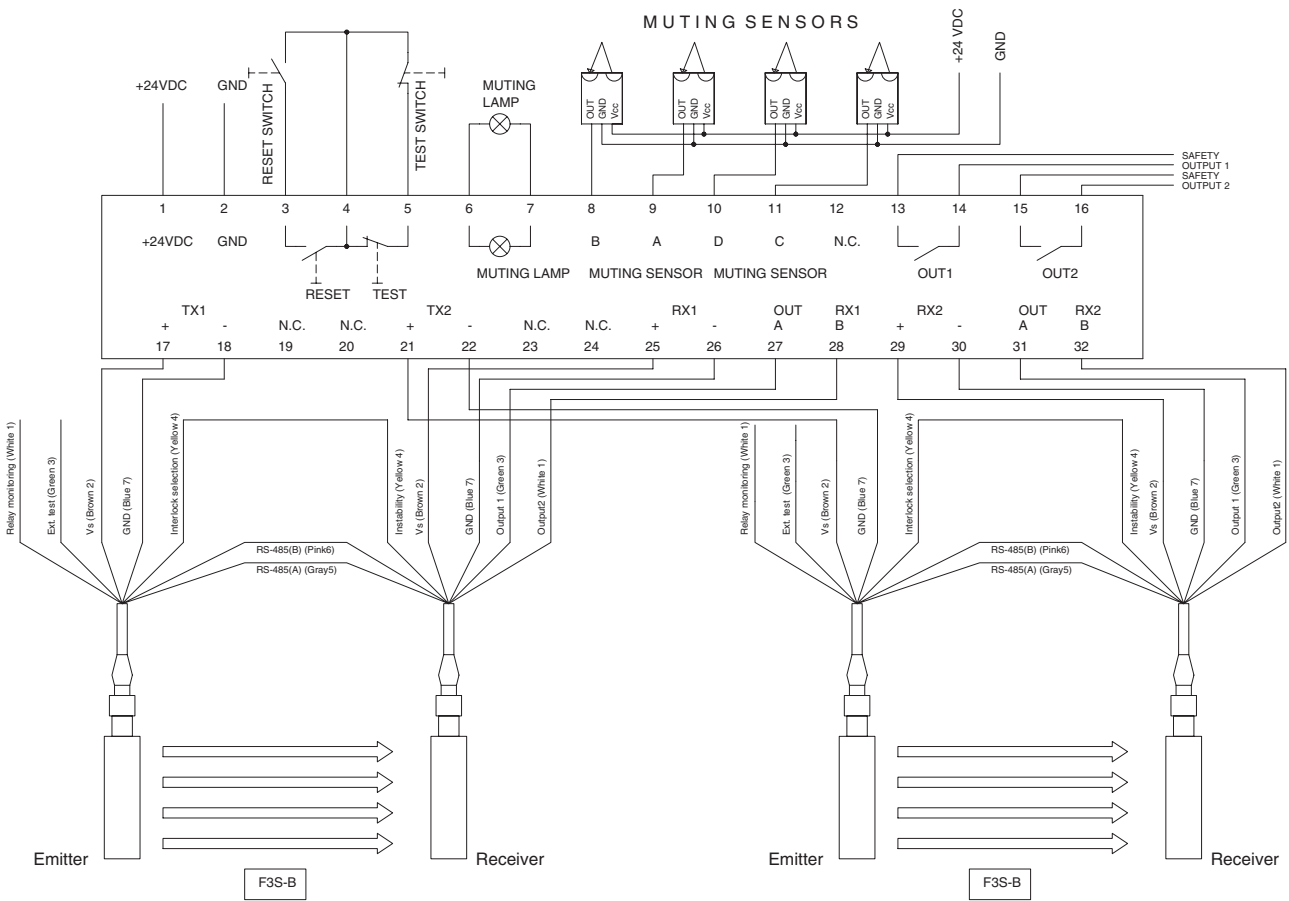
Dimensions



Connections

F3S-B and F3SP-U2P-TGR

Wiring diagram with 2 F3S-B

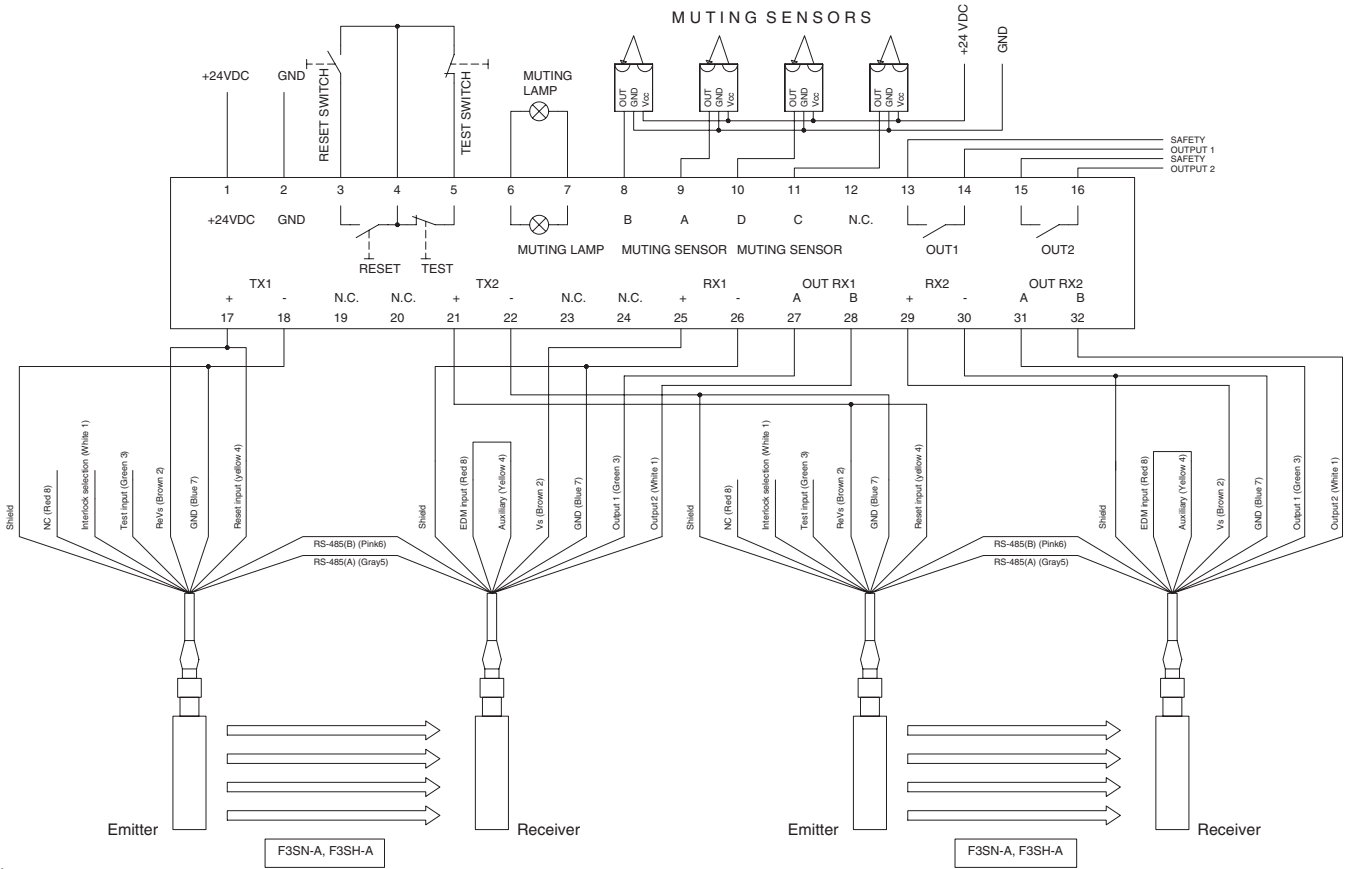


Note:
For use with 1 F3S-B safety light curtain connect terminal 29 to 31 and 32

Connections

F3SN-A and F3SP-U2P-TGR, Muting application
 Connection of two F3SN-A light curtains or two F3SH-A multi-beam sensors to the control unit F3SP-U2P-TGR with four muting sensors.

F3SN-A, F3SH-A function mode
 Automatic reset
 No external device monitoring
 No lockout reset



Note: For use with 1 F3SN-A, F3SH-A safety light curtain connect terminal 29 to 31 and 32.

F3SP-U2P

Muting Controller for Safety Light Curtain

F3SP-U4P


Muting controller for one or two Safety Light Curtain.

- High functionality (two independent muting functions, override function, automatic and manual reset).
- Category 2 or 4 depending on safety light curtain.
- Only 45 mm width
- Double output safety relay.
- 6 LED for status and diagnostics.
- Detachable terminals for easy installation.
- Controls 1 or 2 safety light curtains
- TÜV approved




List of Models

Controller

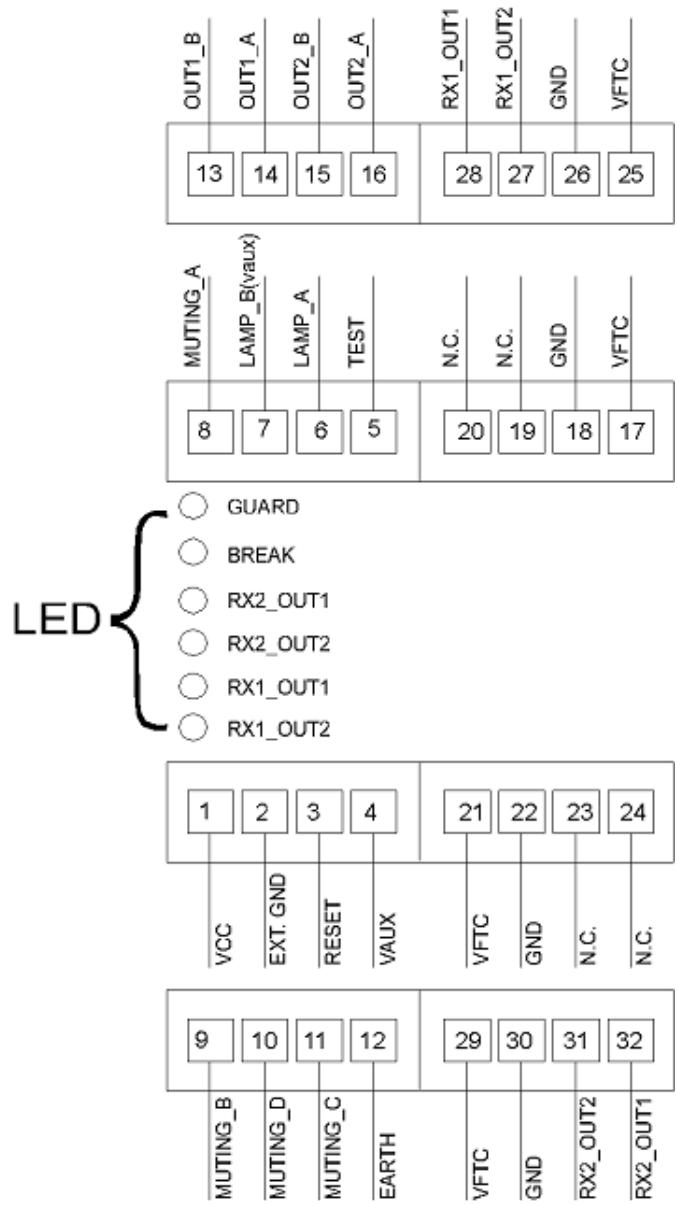
Description	Model
 Muting Controller for Safety Light Curtain F3S-B, F3SN and F3SH	F3SP-U4P-TGR

Accessories

Description	Model
 Muting lamp	F39-A11

Rating / performance

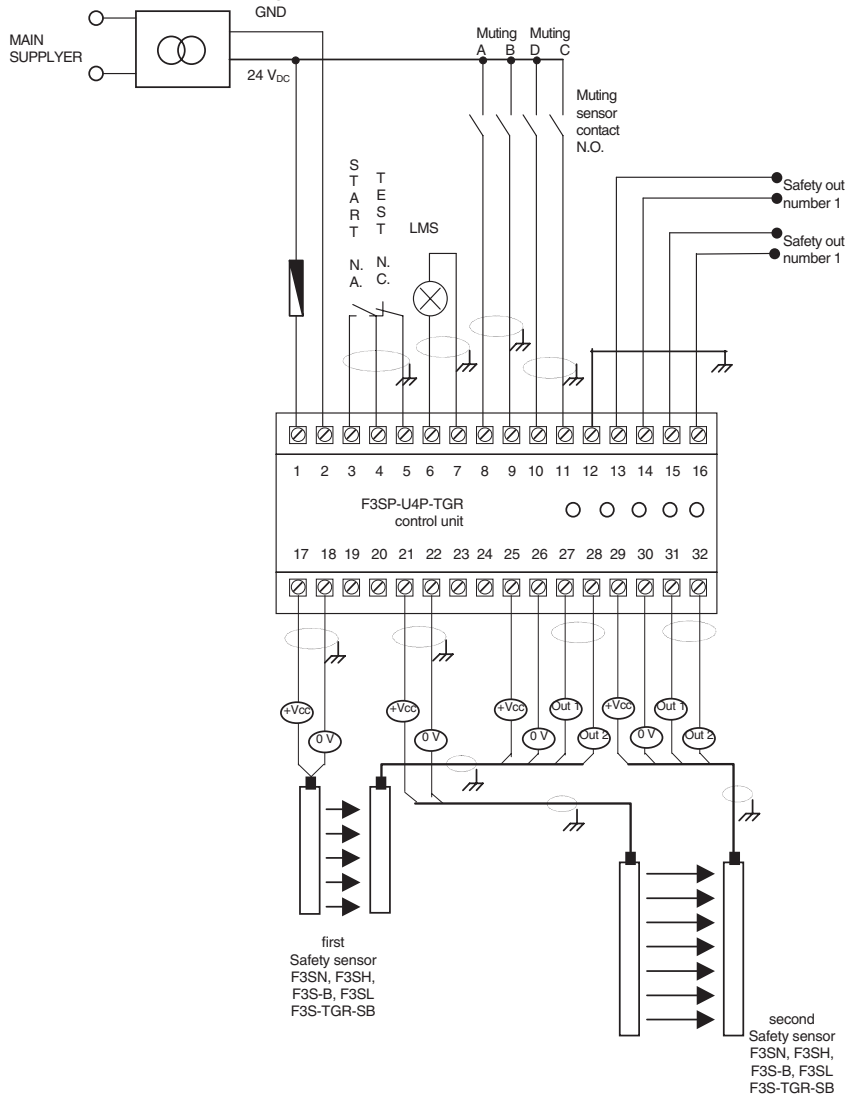
	F3SP-U4P-TGR
Power supply voltage	24 VDC ±10%
Power consumption	420 mA max. (excl. SLC power consumption)
Output contacts	2 NO 2,5 A (protected by fuse)
Indicators	6 LEDs for status and diagnostics.
Enclosure rating	IP20
Terminal	32 screw terminals (1,5 mm ²), detachable blocks with 4 screws each
Response time	≤ 30 ms
Ambient temperature	Operating: -10 °C + 55 °C
Housing material	Plastic, DIN rail mounting
Weight	0,6 kg



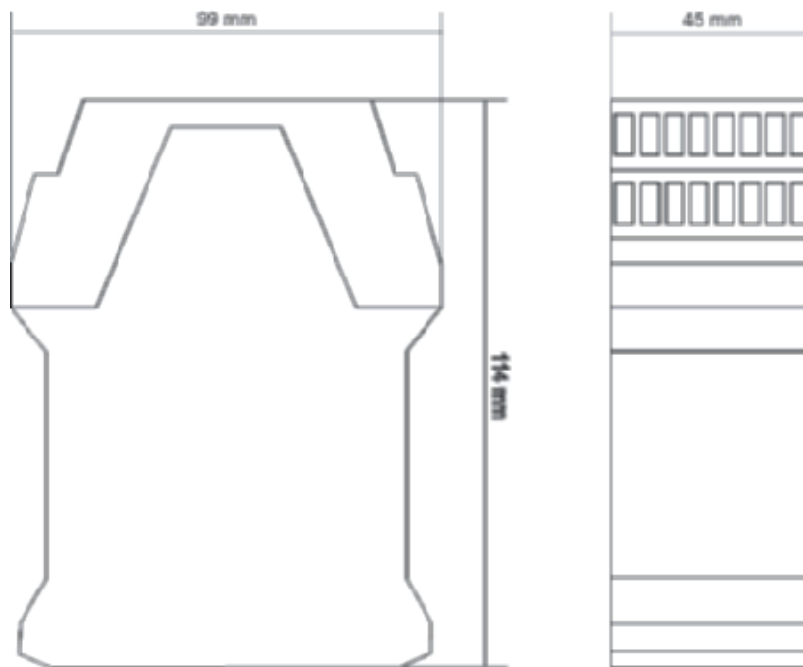
F3SP-U4P

Wiring Example

Control unit F3SP-U4P-TGR in a mixed configuration that allows the use of several OMRON safety light curtains and perimetrical guards.



Dimensions



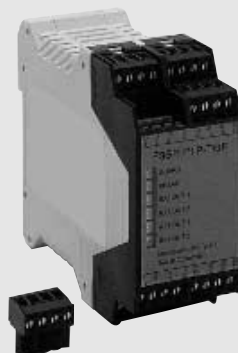
F3SP-U4P

PSDI Controller for Safety Light Curtain

F3SP-P1P-TGR

- High functionality
(4 operating modes: single break, double break, guard mode and manual reset).
- Suitable for automatic reinitiation by a safety light curtain
- Category 4.
- Double output safety relay.
- 6 LED for status and diagnostics.
- 45 mm width
- Mode select by Input.
- Detachable terminals for easy installation
- TÜV approved

Single/Double break controller (PSDI) for safety light curtain.



List of Models

Description	Model
PSDI Controller for Safety Light Curtain F3SN, F3S-B, F3S-TGR and F3SL	F3SP-P1P-TGR

Rating / performance

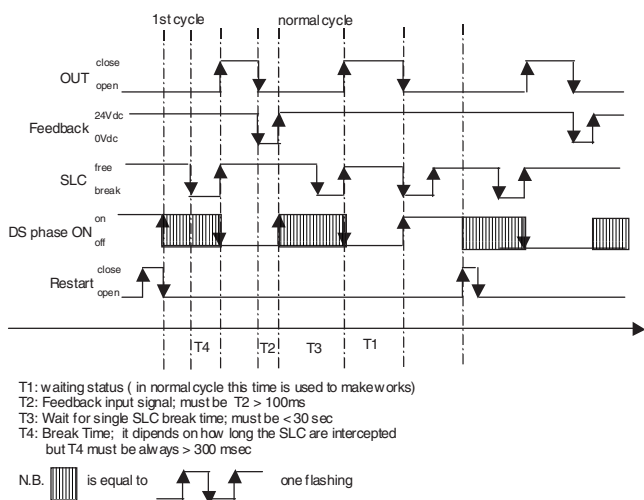
	F3SP-P1P-TGR
Power supply voltage	24 VDC \pm 10%
Power consumption	420 mA max. (excl. SLC power consumption)
Output contacts	2 NO 2,5 A (protected by fuses)
Auxiliary output	50 mA, 24 VDC, PNP for system status (DS ON)
Indicators	6 LEDs for status and diagnostics.
Enclosure rating	IP20
Terminal	32 screw terminals (1,5 mm ²), detachable blocks with 4
Response time	\leq 30 ms
Ambient temperature	Operating: -10 °C + 55 °C
Housing material	Plastic, DIN rail mounting
Weight	0,6 kg

Operation

The control electronic system is fitted inside the control unit. The 'core' of the device is made up of two microprocessors forming - as required by the standards - a system having "two independent channels". By means of the suitable hardware, they continuously control and check the connected SLC. The system is designed to realize application using the safety light curtain for reinitialisation of the machine. By using 2 setting inputs the unit can operate in

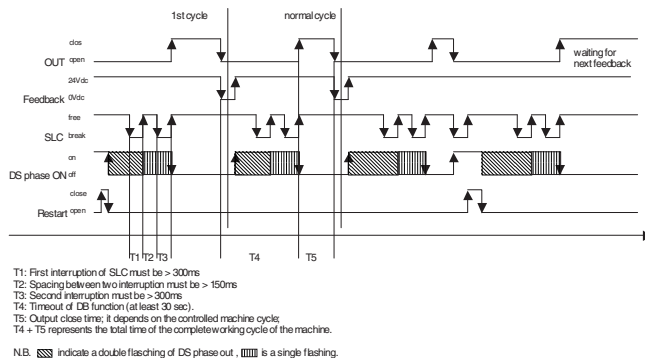
Single Break function

After initialisation the system will start a cycle of the machine after the sensor has been intruded once. The system monitors a feedback signal to identify the completion of the machine cycle and will wait for a time of 30s for the next intrusion. If this time is exceeded the system requires a new reset signal to restart the reinitialisation



Double Break function

After initialisation the system will start a cycle of the machine after the sensor has been intruded twice in a dedicated time period. The system monitors a feedback signal to identify the completion of the machine cycle and will wait for a time of 30s for the next intrusion. If this time is exceeded the system requires a new reset signal to restart the reinitialisation



Auto reset guard function

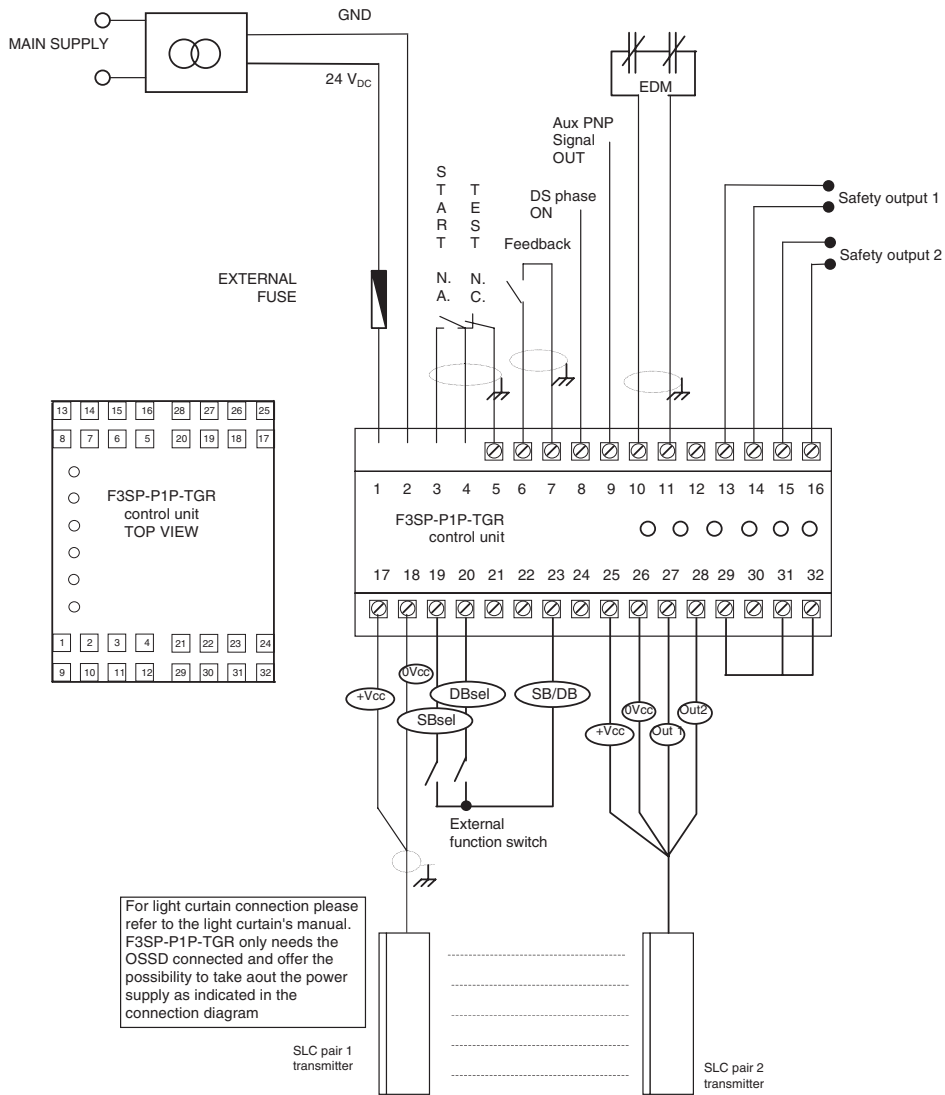
The system operates as a standard SLC controller in auto reset mode. A reinitialisation function is not obtained by the system.

Manual reset guard function

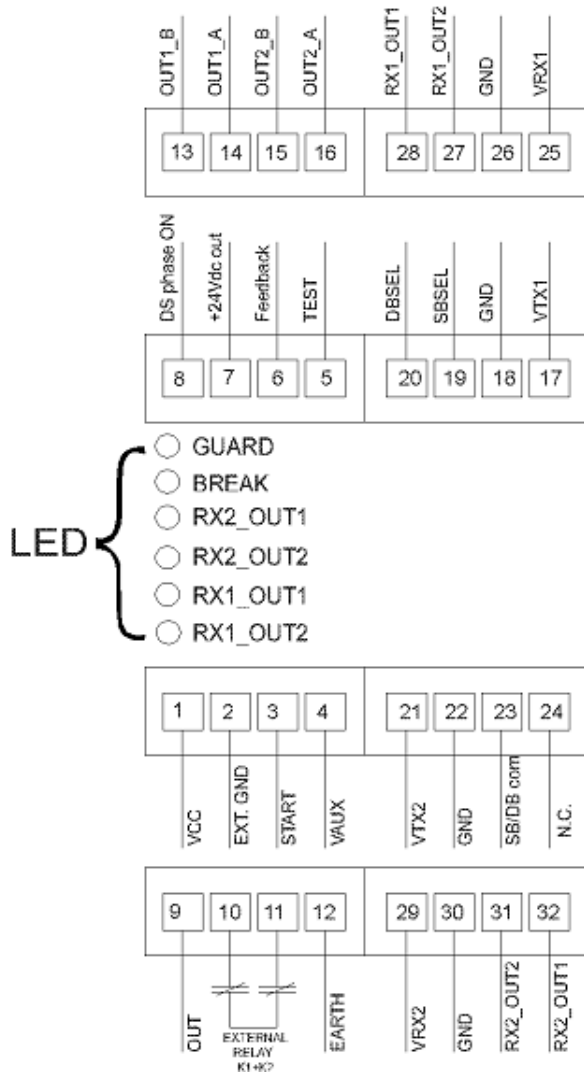
The system operates as a standard SLC controller in manual reset mode. A reinitialisation function is not obtained by the system.

Wiring Example

Control unit F3SP-P1P-TGR[®] in a configuration that allows the use of several OMRON safety light curtains.



Pin Overview



F3SP-P1P

Dimensions

