



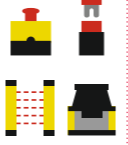
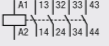
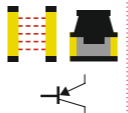



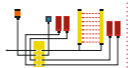


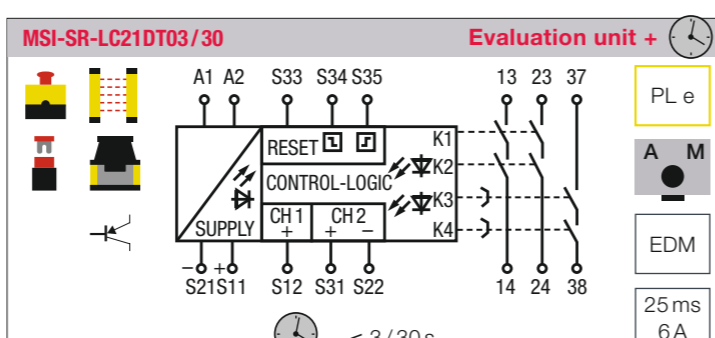
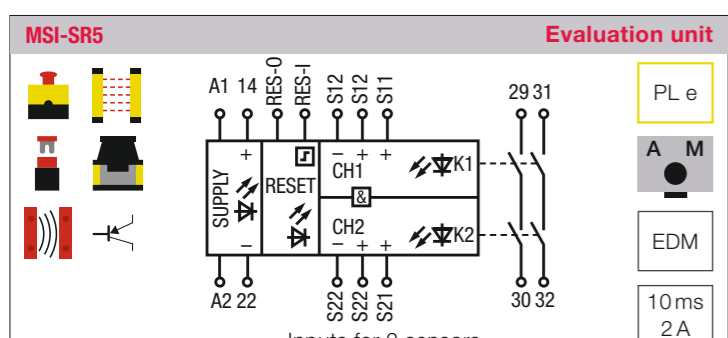
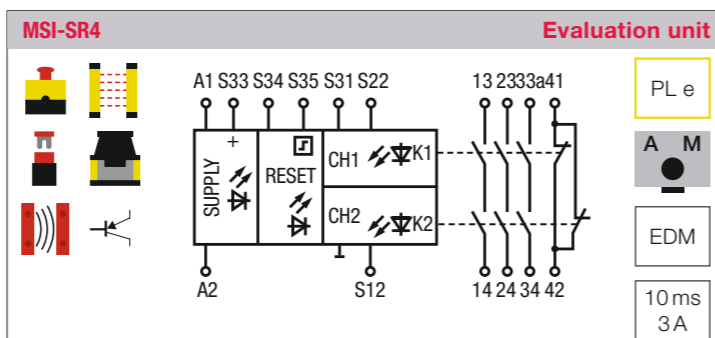
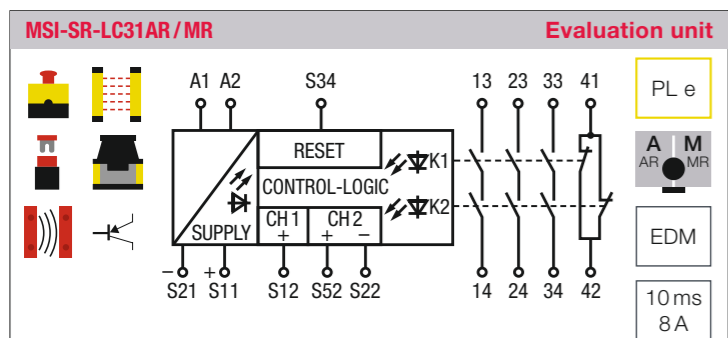
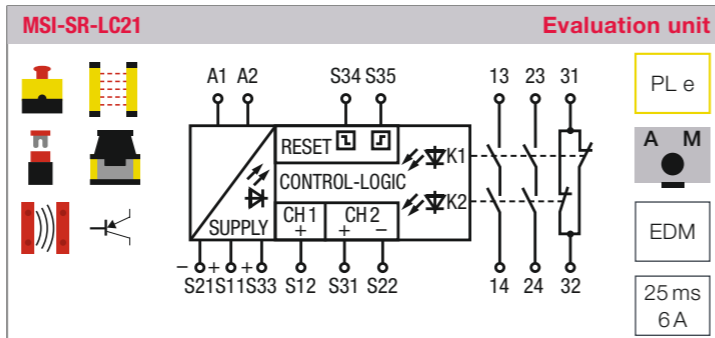
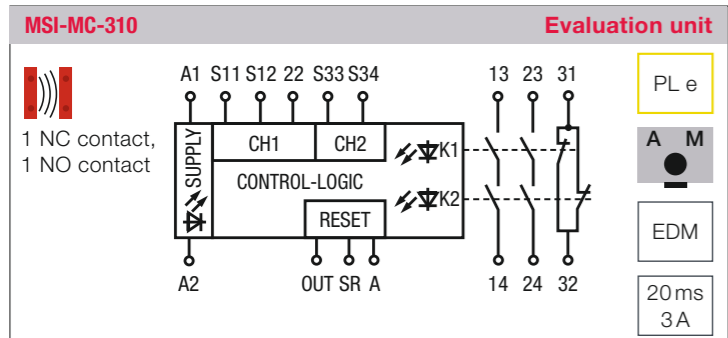
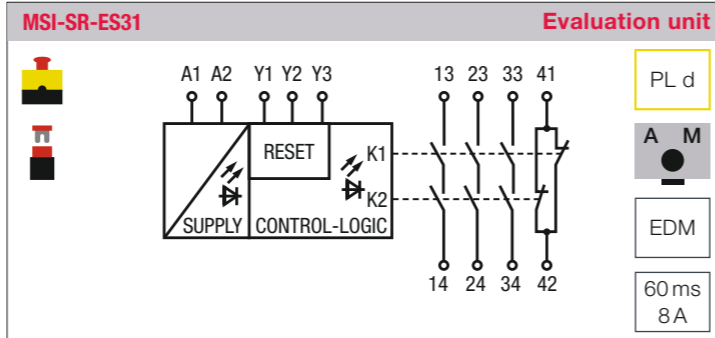
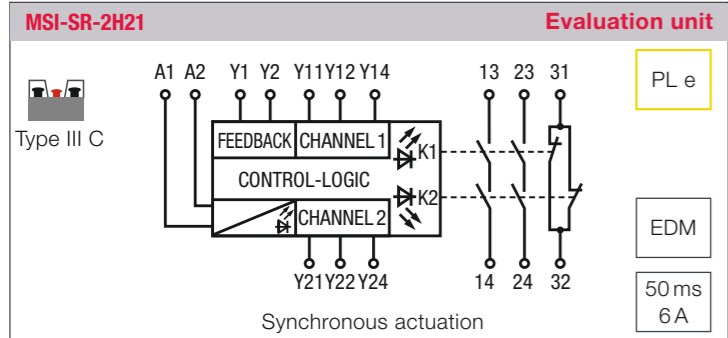
THE RIGHT SAFETY RELAY AT A GLANCE

| SENSOR | | RELAY | | | | | |
|---|--------------------|---------------------------------|--|-----------------------|---------------------------|-----------------------------------|----------------------|
| Type | Outputs | Restart Manual/ automatic | Contacts NO contact / NC contact | Release time t_R | Switch- ing current | Performance Level/ category | Product |
|  • Two-hand control device type III C | 2x 1 NC/1 NO | M / A | 2 / 1 | 50 ms | 6 A | PL e / 4 | MSI-SR-2H21 |
|  • E-Stop buttons • Safety switches | 1 NC or 2 NC | M / A | 3 / 1 | 60 ms | 8 A | PL d / 3 | MSI-SR-ES31 |
| | | M / A | 2 / 1 | 25 ms | 6 A | PL e / 4 | MSI-SR-LC21 |
| | | - / A | 3 / 1 | 10 ms | 8 A | PL e / 4 | MSI-SR-LC31AR |
| | | M / - | 3 / 1 | 10 ms | 8 A | PL e / 4 | MSI-SR-LC31MR |
| | 1 NC / 1 NO | M / A | 2 / 1 | 20 ms | 3 A | PL e / 4 | MSI-MC310 |
| | 2 NC | M / A | 3 / 1 | 10 ms | 3 A | PL e / 4 | MSI-SR4 |
| | 2x 2 NC | M / A | 2 / 0 | 10 ms | 2 A | PL e / 4 | MSI-SR5 |
|  • Safety proximity sensors (magnetic) | 2 NC | M / A | 2 / 1 | 25 ms | 6 A | PL e / 4 | MSI-SR-LC21 |
| | | - / A | 3 / 1 | 10 ms | 8 A | PL e / 4 | MSI-SR-LC31AR |
| | | M / - | 3 / 1 | 10 ms | 8 A | PL e / 4 | MSI-SR-LC31MR |
| | | M / A | 3 / 1 | 10 ms | 3 A | PL e / 4 | MSI-SR4 |
| | 1 NO | M / A | 2 / 1 | 20 ms | 3 A | PL e / 4 | MSI-MC310 |
|  • Safety sensors with electronic outputs (OSSD): – Safety light curtains – Safety laser scanners – Safety switches, e.g. with RFID technology | 2 OSSDs | M / A | 2 / 1 | 25 ms | 6 A | PL e / 4 | MSI-SR-LC21 |
| | | - / A | 3 / 1 | 10 ms | 8 A | PL e / 4 | MSI-SR-LC31AR |
| | | M / - | 3 / 1 | 10 ms | 8 A | PL e / 4 | MSI-SR-LC31MR |
| | | M / A | 3 / 1 | 10 ms | 3 A | PL e / 4 | MSI-SR4 |
| | 2x 2 OSSDs | M / A | 2 / 0 | 10 ms | 2 A | PL e / 4 | MSI-SR5 |

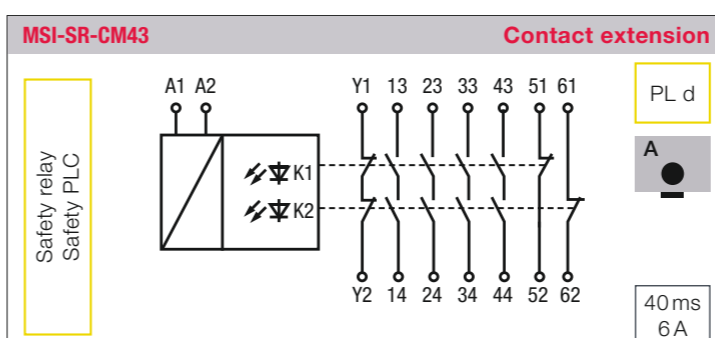
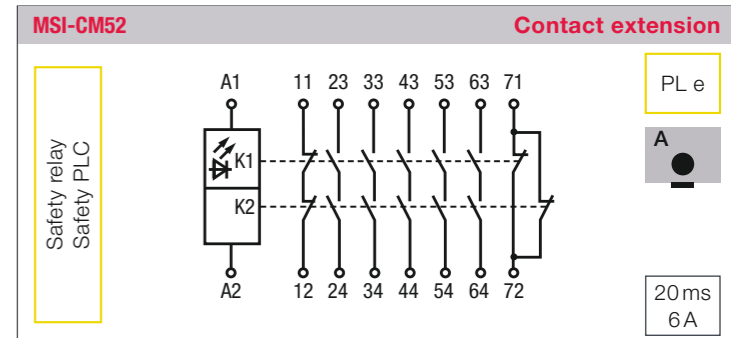
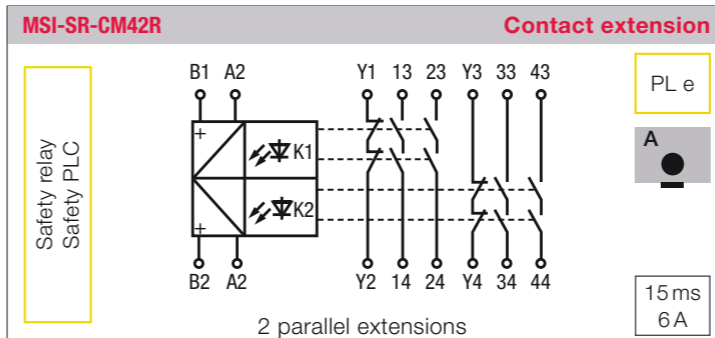
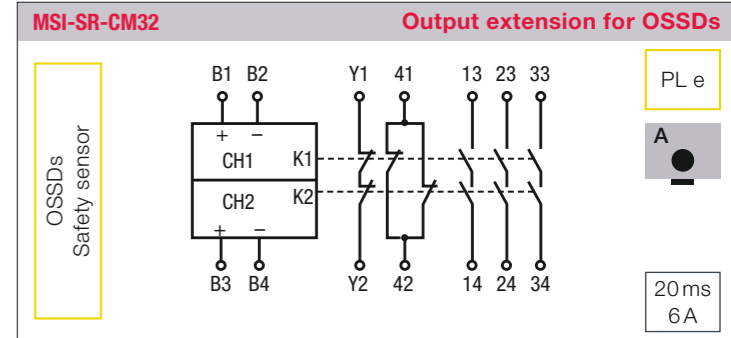
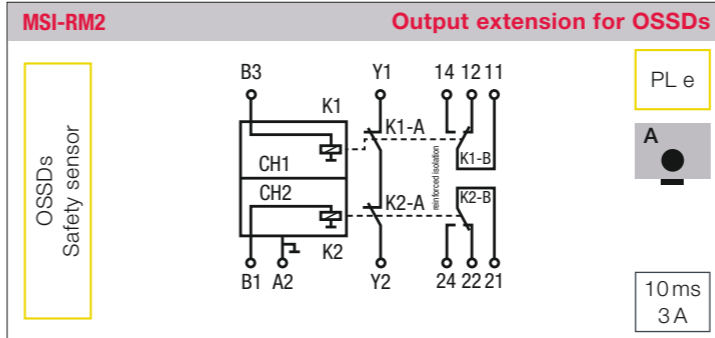
| SENSOR / APPLICATION | | RELAY / CONTACT EXTENSION | | | | |
|---|----------------------------------|---------------------------------|--|--|-----------------------------------|------------------------|
| Type | Outputs | Restart Manual/ automatic | Contacts NO contact / NC contact | Additional functions | Performance Level/ category | Product |
| Evaluation units with time function | | | | | | |
|  • E-Stop • Safety switches • Safety light curtains • Safety laser scanners | 2 NC or 2 OSSDs | M / A | 2 / - | 1 delayed contact 0,15 – 3 sec., PL d | PL e / 4 | MSI-SR-LC21DT03 |
| | | M / A | 2 / - | 1 delayed contact 1,5 – 30 sec., PL d | PL e / 4 | MSI-SR-LC21DT30 |
|  Contact extensions | | | | | | |
|  • Safety light curtains • Safety laser scanners • Safety switches (e.g. with RFID technology) | 2 OSSDs | - / A | 2 / 1 | | PL e / 4 | MSI-RM2 |
| | | - / A | 3 / 2 | | PL e / 4 | MSI-SR-CM32 |
|  • Safety relays • Safety control | Relay output or PNP output | - / A | 4 / 3 | | PL d / 3 | MSI-SR-CM43 |
| | | - / A | 5 / 2 | | PL e / 4 | MSI-CM52 |
| | | - / A | 2x (2/1) | | PL e / 4 | MSI-SR-CM42R |
| Evaluation units for periodic testing | | | | | | |
|  • Type 2 safety sensor, testable | PNP output | M / A | 2 / 2 | | PL c / 2 | MSI-TR1 |
| | | M / A | 2 / 2 | Filter time 130 ms | PL c / 2 | MSI-TR2 |
|  • SLS 46C: Type 4 safety sensor, testable | PNP output | M / A | 2 / 2 | | PL e / 4 | MSI-TRM |
| Muting controller (field module) | | | | | | |
|  Protective sensors, muting sensors, diffuse sensors, ... | - | M / - | OSSD outputs | Control of muting processes | PL e / 4 | MSI-MD-FB |

| | | | | | | | |
|--|--|--|--|--|---|--|--------------------------|
| | Two-hand control | | Safety solenoid switches | | Safety switches with electronic outputs (OSSDs) | | Restart automatic/manual |
| | E-Stop | | Protective sensors / safety light curtains | | Type 2 safety sensor, testable | | Time delay |
| | Safety switches and safety locking devices | | Safety laser scanners | | Type 4 safety sensor, testable | | |

Evaluation units



Output and contact extensions



For periodic testing

