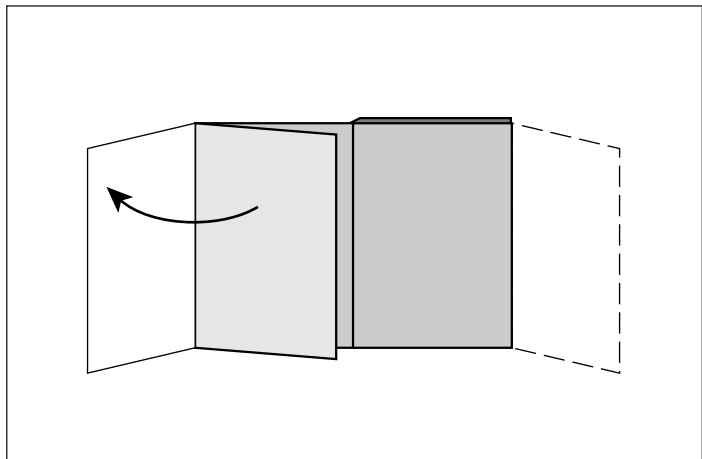




S a f e t y R e l a y s
S e r i e s U E 1 0 - 4 8




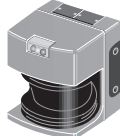
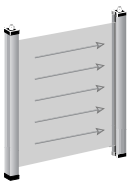





SICK



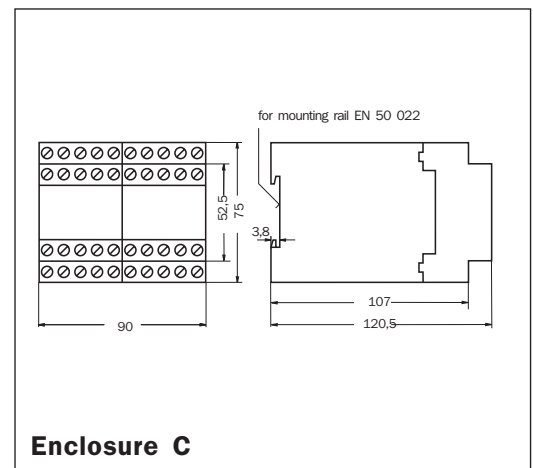
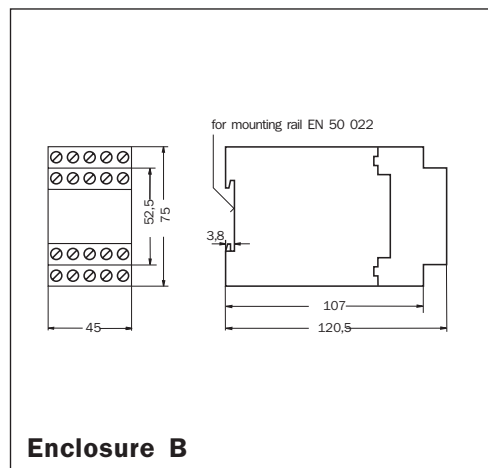
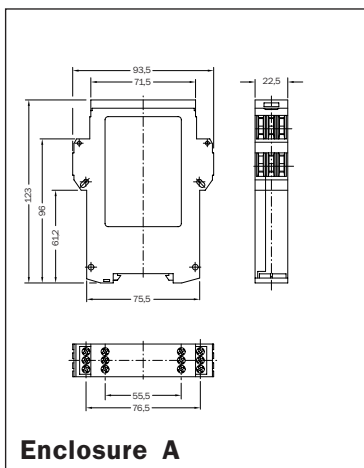
For technical details please unfold

Technical Details

Symbols used

Function	Modules
 Electrical locking (only for UE 45)	 Mechanical Safety Switches  Emergency Stop  Safety Scanner  Safety Light Curtain
 Mechanical locking, electromagnetic release (only for UE 44)	
 1 Normally open (NO) Input	
 1 Normally closed (NC) Input	
Type of Reset	
 Automatic Reset	
 Manual Reset	

Enclosure





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UE Safety Relays – secure connecting links to ancillary equipment

Machines and systems require numerous control elements. This catalogue provides information about Safety Relays in the UE series supplied by SICK.

These units are, in fact, *Universal Equipments*:

They save the designer work and are simple to incorporate. In addition they are well tried and tested and covered by all relevant licences and approvals. Furthermore, they require little space due to their compact Standard enclosure.

The product programme is just as versatile as the fields of application. On the penultimate page of this catalogue is a table depicting various features and associated devices.

Many units have a **External Device Monitoring (EDM)**

In virtually all cases, the Safety Relays have the function external device monitoring. By using this, the relay on the machine or system, connected to the UE, is monitored – if, for example, the contacts weld or melt.

All units – with one exception – are active

Only the UE 10-3 OS Safety Relay is passive (in other words, it requires no integral electrical power supply). This unit is used as a converter, converting solid state technology of opto-electronic safety devices to a volt free state for relay technology.

Increasing the number of outputs

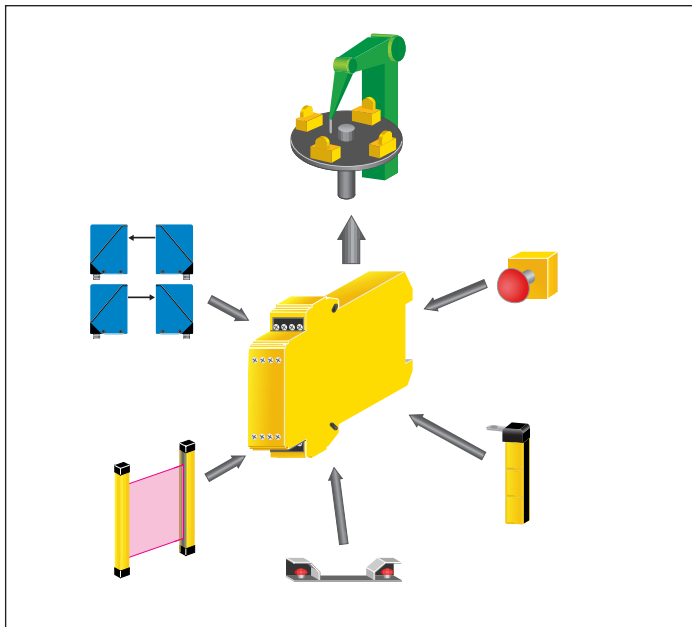
On many units (basic standard units) an add-on unit (UE 10-4 XT or UE 11-4 DX) can be connected to increase the quantity of switching outputs for these standard units.

Automatic Reset

Many of the units provide the choice of selecting automatic or manual resetting. In the case of automatic resetting, the output contacts are immediately triggered (activated) upon removing the causes for shutting down of the system.

Manual Reset

In the case of manual resetting, the output contacts are only activated following removal of the causes for shut down and after the reset button has been operated.



Using the **Emergency Stop function**

Safety relays for emergency stop applications expect normally closed input.

For **movable guards**

Many safety devices are suitable for connection to Safety switches – e.g. with movable guards.

For **testable sensors (Type 2)**

Testable sensors can be connected to UE 34-2 TS Safety Relays. Conse-

quently, cyclic testing is feasible.

Two-hand operation

The UE 42 HD safety relay allows the connection of a two-hand switch – each having a normally open and a normally closed contact.

Pressure mat operation

The UE 43-2 MT Safety Relay is used for monitoring short circuiting pressure mats (in 4-wire technology).

Monitoring of synchronisation time

Most units have a synchronisation time monitoring system: It controls the brief period of time in which the two input circuits are closed (e.g. for switches on safety doors). This function is only accomplished with the execution of a given sequence (with channel 1 preceding channel 2).

Simultaneous monitoring

Units having a simultaneous monitoring facility control the closing times of both input circuits. With this the two circuits are closed within a certain time span (UE 42-2 HD, UE 42-3 DR and UE 42-3 DD).

UE Safety Relays resolve any interface problems

UE 10-3 OS Safety Relay for opto-electronic safety devices

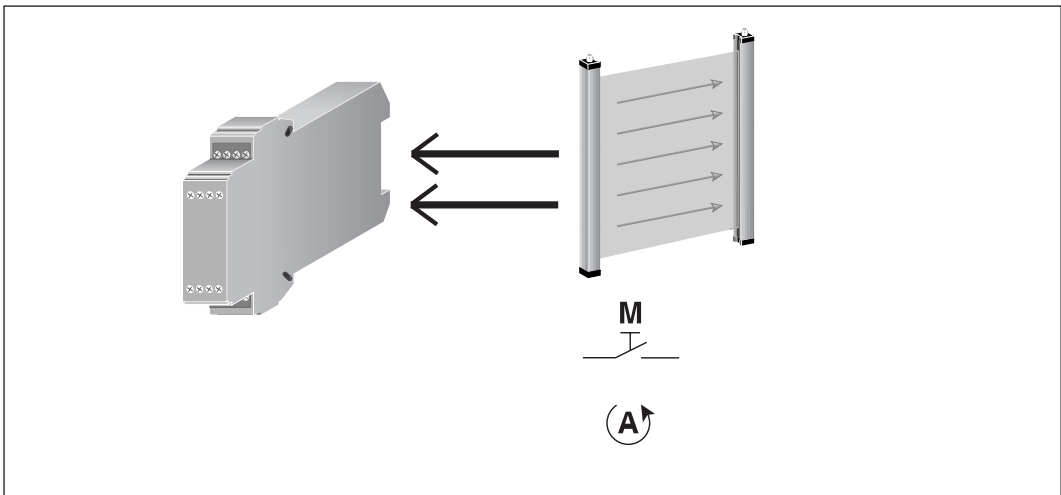
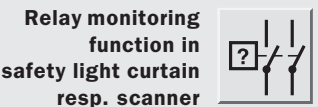
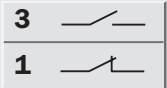
Application

The UE 10-3 OS safety relay serves as a processing module for:

- Safety Light Curtains with monitored semi-conductor outputs, integral relay monitoring and a restart inhibit
- Laser Safety Scanners with monitored semi-conductor outputs, integral relay monitoring and a restart inhibit

Features

- Outputs: 3 normally open, 1 normally closed
- 2 LEDs for relays K 1 and K 2
- Facility to increase the number of outputs using the contact expansion units UE 10-4 XT and UE 11-4 DX
- Option: Removable terminals
- Enclosure A (see Page 3), width: 22.5 mm



Function

The two outputs from the safety sensors (e. g. C 4000 Light Curtain) are connected to the UE 10-3 OS.

If the sensors are active (not triggered), the relays K 1 and K 2 are switched to an active (energised) mode (the LEDs for both relays illuminate):

The 3 electrical output contacts are closed and the signal output contact is in an open mode. The relay monitor of the OSSD units is to be wired with Y 1 and Y 2.

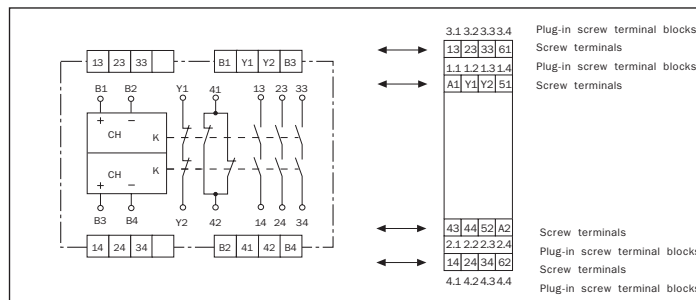
In triggering the safety device, relays K 1 and K 2 de-energise (inactive): The output contacts are open, and the signal contact is closed.

If a restart inhibit is needed, then this is to be installed in the sensor, for example in the C 4000.

External Device Monitoring (EDM)

If external device monitoring is needed, then this should be installed in the sensor, for example in the C 4000, a pair of normally closed contacts in the UE 10-3 OS is, however, part of this relay monitoring (Y 1 - Y 2).

The UE-10-3 OS **2** unit has screw terminals, the UE-10-3 OS **3** removable plug block terminals.



Circuit Wiring Diagram UE 10-3 OS

Technical Data

	min.	typ.	max.
Electrical supply	no electrical supply		
Response time			25 ms
Switch-on time	50 ms		
Outputs			
Contact arrangement	3 Normally open contacts (NO) 1 Normally closed contact – for signal use (NC)		
Type of contact	Positively guided		
Contact material	Silver alloy; gold plated		
Nominal switch circuit voltage		230 V AC/DC	
Continuous electrical current per contact			6 A
Total electrical current for all contacts			18 A
Fuse protection			6 A
Switching actions per hour			3600 c/h
Service life, mech.			10 x 10 ⁶
Operational Data			
Creepage and clearance distance between the electric circuits	to DIN VDE 0110-1 (4 kV)		
Voltage surge category	III		
Contamination rating			
externally	3		
internally	2		
Rated voltage	300 V AC		
Test voltage to DIN VDE 0110-1	2.21 kV		
Protective Type to DIN VDE 0470			
Enclosure	IP 40		
Terminals	IP 20		
Interference rating conforming to	EN 50 081-1		
Interference suppression conforming to	EN 50 082-2		
Ambient temperature	- 25 °C		+ 55 °C
Cross sections of connection/conductors			
fine stranded wire	1 x 2.5 mm ² or 2 x 0.5 mm ²		
single solid wire	1 x 2.5 mm ² or 2 x 0.74 mm ²		
Weight		0.2 kg	

Order List for UE 10

Type	Outputs		Connections		No electrical supply	Part No.
			Direct	Plug-in block terminals		
UE 10 -	3	OS	2		D0	6 024 917
UE 10 -	3	OS		3	D0	6 024 918

UE 10-4 XT and UE 11-4 DX Contact expansion units

Application

The contact expansion units UE 10-4 XT and UE 11-4 DX are used for

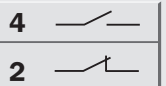
- Increasing the number of normally open contacts of a basic unit
- UE 11-4 DX with release time delay function

Features

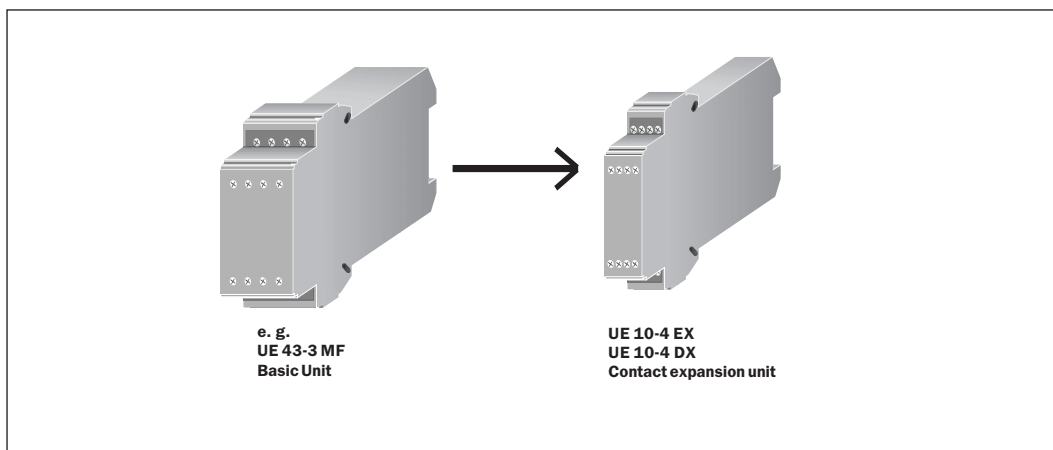
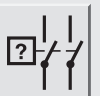
- Feedback circuit for external device monitoring function
- Outputs: 4 normally open, 2 normally closed
- 2 LEDs for relays K 1 and K 2
- Enclosure A (see Page 3), width: 22.5 mm



EN 60 204-1 As basic unit
EN 954-1 Category 1



Relay monitoring
function
in Basic Unit



Function

The supply voltage of the contact expansion unit is wired via an normally open output of a basic unit.

After applying the supply voltage to terminals A 1 and A 2, the relays K 1 and K 2 are switched to an energised state (the LEDs for both relays illuminate): The 4 normally open contacts are closed and the signal circuit (for external device monitoring) is open.

If the normally open contact(s) of the basic unit are open with opened external device monitoring, (e. g. by activating the Emergency Stop switch), the relays K 1 and K 2 de-energise: The normally open contacts open, and the signal circuit closes.

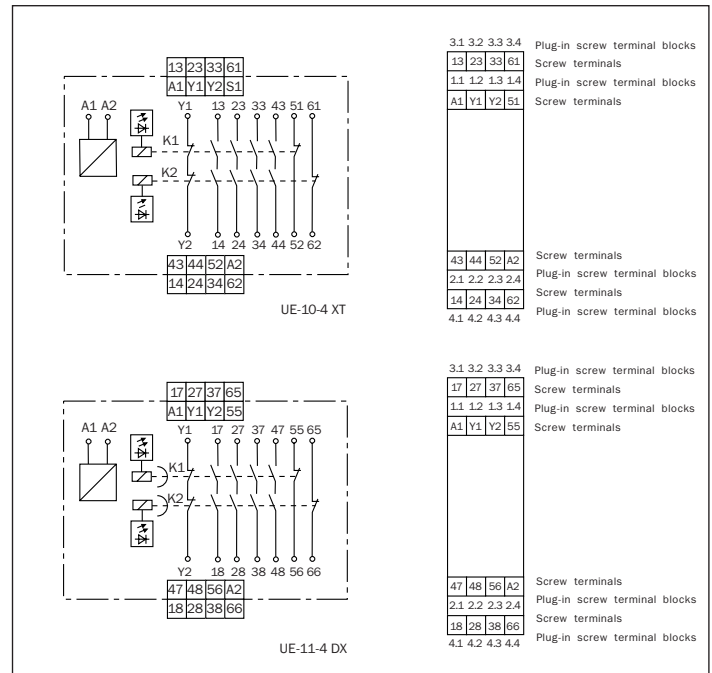
The external device monitoring Y 1 - Y 2 prevent restarting/re-energising of basic unit when K 1 and K 2 do not de-energise.

The function of UE 11-4 DX ...

... corresponds to that of UE 10-4 XT. However, the unit additionally has (depending upon the type) fixed off-delay times: 0.5 s, 1 s, 2 s and 3 s. They are achieved by means of capacitors, so that even in the event of a power failure the release delay in each case is fully accomplished. The delay cannot be prematurely cancelled. Only after the cyclic operation do the relays K 1 and K 2 return to their nominal rest position.

Stop Category 1 is, as a rule, effected with the use of release delayed units.

The units ... XT **2** and ... DX **2** have screw terminals, the units ... XT **3** and ... DX **3** have removable plug-in block terminals.



Circuit Wiring Diagram

Technical Data

	min.	typ.	max.
Electrical supply			
Supply voltage	20.4 V	24 V	26.4 V AC/DC
Power consumption			3.5 VA
AC			2.1 W
DC			
Residual wave (ripple) in DC mode			2.4 V _{SS}
Nominal frequency in AC mode	50 Hz		60 Hz
Ready time			
with Reset button monitoring		80 ms	
without Reset button monitoring		600	
Response time			
for Emergency Stop			40 ms
during interruptions in the supply voltage			100 ms
Switch-on time	50 ms		
Synchronisation time		500 ms	
Standby time (only for AC)	500 ms		

Outputs

Contact arrangement	4 Normally open contacts (NO) 2 Normally closed contact – for signal use (NC)		
Type of contact	Positively guided		
Contact material	Silver alloy; gold plated		
Nominal switch circuit voltage		230 V AC/DC	
Continuous electrical current per contact			6 A
Total electrical current for all contacts			18 A
Fuse protection			6 A
Switching actions per hour			3600 c/h
Service life, mech.			10 x 10 ⁶

Operational Data

Creepage and clearance distance between the electric circuits	to DIN VDE 0110-1 (4 kV)		
Voltage surge category	III		
Contamination rating			
externally	3		
internally	2		
Rated voltage	300 V AC		
Test voltage to DIN VDE 0110-1	2.21 kV		
Protective Type to DIN VDE 0470			
Enclosure	IP 40		
Terminals	IP 20		
Interference rating conforming to	EN 50 081-1		
Interference suppression conforming to	EN 50 082-2		
Ambient temperature	- 25 °C		+ 55 °C
Cross sections of connection / conductors			
fine stranded wire	1 x 2.5 mm ² or 2 x 0.5 mm ²		
single solid wire	1 x 2.5 mm ² or 2 x 0.74 mm ²		
Weight		0.2 kg	

Safety Relays UE 10/11 range

Order List for UE 10

Type	Outputs		Connections		Electrical supply 24 V AC/DC	Part No.
			Direct	Removable terminals		
UE 10 -	4	XT	2		D2	6 024 919
UE 10 -	4	XT		3	D2	6 024 920

Order List for UE 11 (with delay facility)

Type	Outputs		Connections		Electrical supply 24 V DC	Delay s	Part No.
			Direct	Removable terminals			
UE 11 -	4	DX	2		D3	0.5	6 024 921
UE 11 -	4	DX	2		D3	1	6 024 922
UE 11 -	4	DX	2		D3	2	6 024 923
UE 11 -	4	DX	2		D3	3	6 024 924
UE 11 -	4	DX		3	D3	0.5	6 024 925
UE 11 -	4	DX		3	D3	1	6 024 926
UE 11 -	4	DX		3	D3	2	6 024 927
UE 11 -	4	DX		3	D3	3	6 024 928

UE 34-2 TS Safety Relay for testable Type 2 sensors

Application

The UE 34 safety relay is used as a processing module for

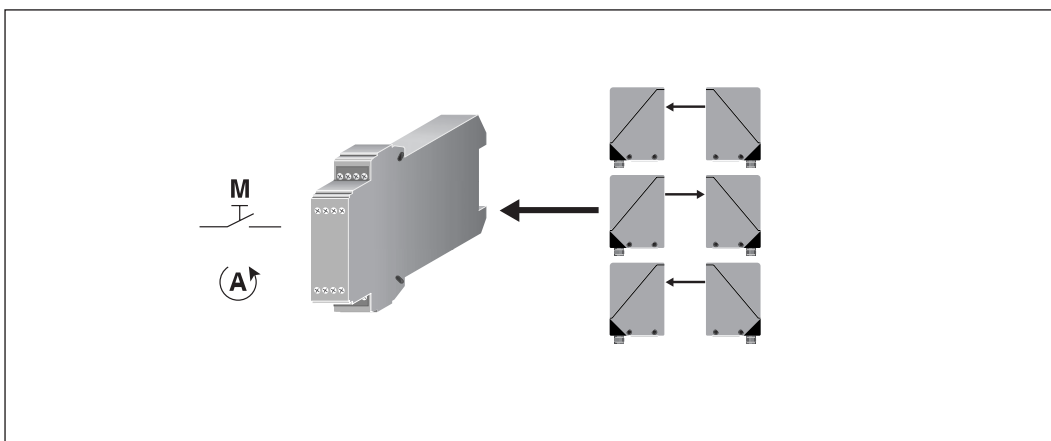
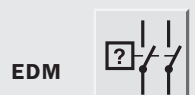
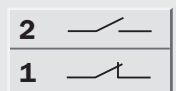
- Testable Type 2 sensors
- Control systems in accordance with EN 60 204 respectively EN 954-1 (Category 3)

Features

- Dual-channel actuation system having
 - Cross circuit short detection
 - Override facility
 - Cyclic testing
 - Time monitoring
- Outputs: 2 Normally open, 1 Normally closed
- Feedback connection for monitoring function of the sensor
- 4 LEDs for electrical supply, standby, protected zone free and override
- Manual Restart
- Automatic Restart
- Facility to increase the number of outputs using the contact expansion units UE 10-4 XT and UE 11-4 DX
- Enclosure A (see Page 3), width: 22.5 mm



EN 60 204-1 Stop Category 0
EN 954-1 Category 3



Function

After applying the supply voltage to the terminals A 1 - A 2 a self diagnostic test is carried out. If this is satisfactory, the unit is in its standby mode, and the LED OUTPUT illuminates yellow. If the self diagnostic test is unsatisfactory, then this leads to the program being aborted and restarted. Further procedure is dependent upon the results of self diagnostic testing, the operating mode set and external wiring / selected mode.

The unit compares the input signals (from the sensors) Y 12 and Y 13 with the output signals to Y 41 and Y 42. The LED INPUT indicates harmonisation.

Respective of the selected function, the output contacts of the UE 34 close either automatically when the inputs are energised (operation without restart inhibit) or remain open (non-energised), until the reset button is activated and released again (restart inhibit). As an electrical release circuit, there are 2 normally open contacts (NO) and 1 normally closed contact (NC) available (LED OUTPUT yellow).

Modes of operation

The following modes of operation can be selected by means of a function selector switch on the back face of the unit (no longer accessible when installed):

- Pulse direction testing mode (pos./neg. pulse)
- Manual or Automatic reset mode

Override

The override can be activated by way of the input X 1. As a result, the unit can be overridden (LED OVR illuminates yellow). Activation is effected by means of the output circuit of an independent unit, which results in that relays K 1 and K 2 do not de-energise during override if the sensors are temporarily inactive.

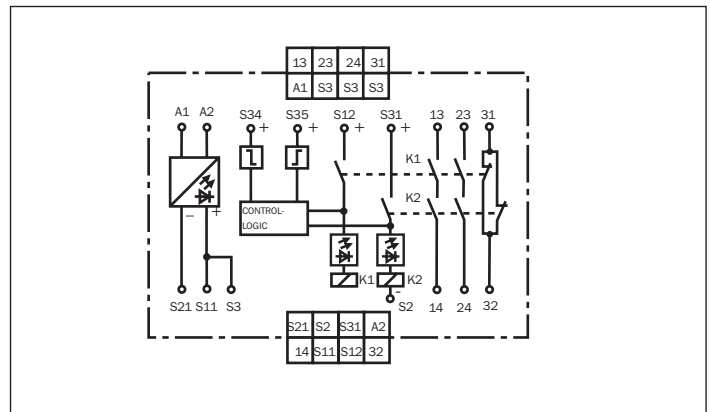
Manual Reset

The Reset button is connected to the terminals S 33 - S 34. Start after activation and release of the reset switch.

Automatic Reset

Bridge connection between terminals S 33 and S 34.

The UE 34-2 TS **2** unit has screw terminals, the UE 34-2 TS **3** unit has removable plug-in block terminals.



Circuit Wiring Diagram UE 34-2 TS

LED	Function
SUPPLY	Electrical supply on, unit in standby mode
READY	Protected zone free (Output circuit closed)
OSSD	Override
OVR	

Technical Data

	min.	typ.	max.
Electrical supply			
Supply voltage	20.4 V	24 V	26.4 V AC/DC
Power consumption AC DC			3.5 VA 2.1 W
Residual wave (ripple) in DC mode			2.4 V _{SS}
Nominal frequency in AC mode	50 Hz		60 Hz
Ready time with Reset monitoring without Reset monitoring		80 ms 600	
Response time for Emergency Stop during interruptions in the supply voltage			40 ms 100 ms
Switch-on time	50 ms		
Synchronisation time		500 ms	
Standby time (only for AC)	500 ms		

Outputs

Contact arrangement	2 Normally open contacts (NO) 1 Normally closed contact – for signal use (NC)		
Type of contact	Positively guided		
Contact material	Silver alloy; gold plated		
Nominal switch circuit voltage		230 V AC/DC	
Continuous electrical current per contact			6 A
Total electrical current for all contacts			18 A
Fuse protection			6 A
Switching actions per hour			3600 c/h
Service life, mech.			10 x 10 ⁶

Operational Data

Creepage and clearance distance between the electric circuits	to DIN VDE 0110-1 (4 kV)		
Voltage surge category	III		
Contamination rating externally internally	3 2		
Rated voltage	300 V AC		
Test voltage to DIN VDE 0110-1	2.21 kV		
Protective Type to DIN VDE 0470 Enclosure Terminals	IP 40 IP 20		
Interference rating conforming to	EN 50 081-1		
Interference suppression conforming to	EN 50 082-2		
Ambient temperature	- 25 °C		+ 55 °C
Cross sections of connection / conductors fine stranded wire single solid wire	1 x 2.5 mm ² or 2 x 0.5 mm ² 1 x 2.5 mm ² or 2 x 0.74 mm ²		
Weight		0.2 kg	

Order List for UE 34

Type	Outputs		Connections		Electrical supply 24 V DC	Part No.
			Direct	Removable terminals		
UE 34 -	2	TS	2		D3	6 024 929
UE 34 -	2	TS		3	D3	6 024 930

UE 42-2 HD Safety Relay for two hand operation

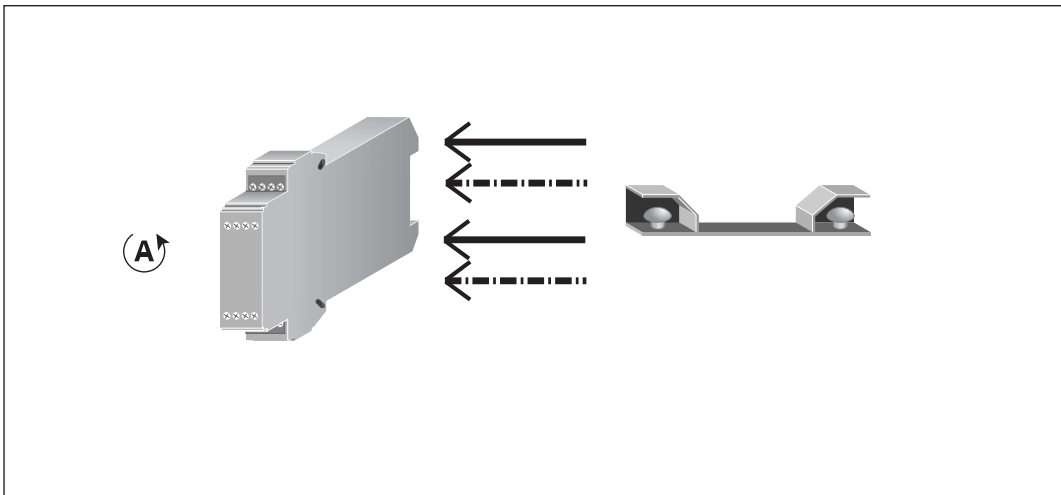
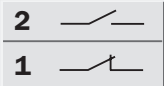
Application

The UE 42-2 HD safety relay is used as a monitoring module for:

- Two hand controls with Type III C requirements to EN 574 and to EN 954-1, Category 4
- Two hand control switches each with 1 NC/NO contacts

Features

- Cross circuit short detection
- Outputs: 2 normally open contacts, 1 normally closed contact
- 3 LEDs for supply voltage, relay K 1 and relay K 2
- Automatic Restart
- Facility to increase the number of outputs using the contact expansion units UE 10-4 XT and UE 11-4 DX
- Enclosure A (see Page 3), width: 22.5 mm



Function

The UE 42-2 HD is self monitoring and conforms to EN 574 Type III C. The prerequisite for release of the outputs is that the two inputs (e. g. through a two hand operated control start) are activated within 0.5 s.

After applying the supply voltage to the terminals A 1 - A 2, the LED illuminates for indicating the presence of electrical voltage. Simultaneous activation of the two start buttons S 1 and S 2 closes the two output circuits. Release – even by just one of the switches – opens the circuits.

A restart is only possible if both switches have returned to their nominal start position (in the case of two hand operated switches: when both have been released) and the feedback circuit is closed. The contacts of the contactor monitoring (Y 1 - Y 2) may only open after operating the switches, otherwise the relays remain inactive. LEDs indicate the switching status of the relays.

External Device Monitoring (EDM)

The UE 42 takes over the external device monitoring. The normally closed contacts of the external relays are connected to terminals Y 1 - Y 2, wired in series.

Automatic Reset

The UE 42-2 only has Automatic Reset, effected by means of the external device monitoring at terminals Y 1 - Y 2.

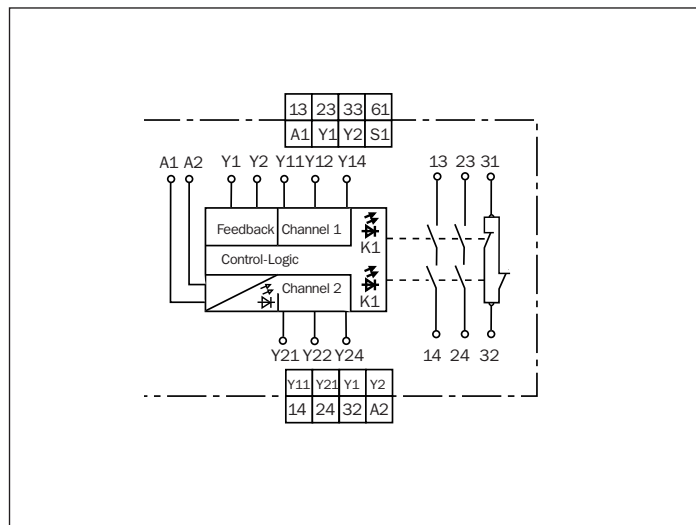
Cross circuit short detection

When operating in the dual-channel mode, the unit monitors the input circuits for cross circuit shorts or short circuiting to earth.

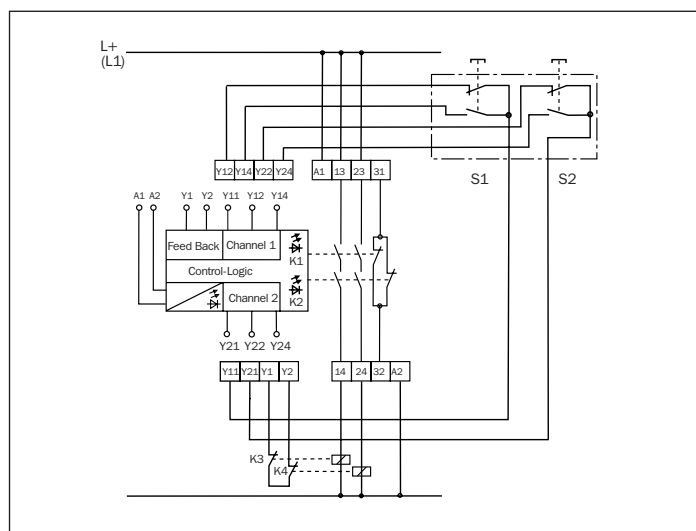
Simultaneous time monitoring

For higher levels of safety, it is possible to monitor the closing times of both inputs: The two switches are to be activated within 0.5 s.

The UE 42-2 HD **2** has screw terminals, the UE 42-2 HD **3** has removable plug-in block terminals.



Circuit Wiring Diagram UE 42-2 HD



Two hand control with Automatic Reset

UE 42-3 DD Safety Relay for Safety switches

Application

The UE 42-3 DD safety relay is used as a processing module for:

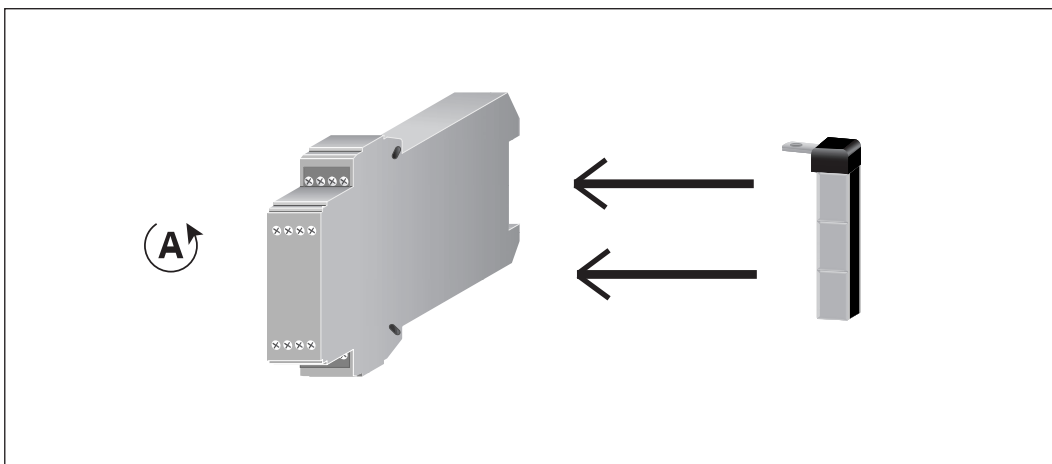
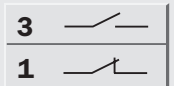
- Two switches, each with 1 normally closed contact
- One switch having 2 normally closed contacts
- Control systems in accordance with EN 60 204 respectively EN 954-1 (Category 4)

Features

- Dual-channel activation with cross circuit short detection
- Outputs: 3 normally open contacts, 1 normally closed contact
- 3 LEDs for supply voltage, relay K 1 and relay K 2
- Automatic Restart
- Facility to increase the number of outputs using the contact expansion units UE 10-4 XT and UE 11-4 DX
- Enclosure A (see Page 3), width: 22.5 mm



EN 60 204-1 Stop Category 0
EN 954-1 Category 4



Safety Relays UE 42 DD range

Function

After applying the supply voltage to terminals A 1 - A 2 the LED illuminates to indicate the presence of electrical voltage. By closing the input circuit (e. g. closing the movable guard) the outputs are activated: The 3 normally open output circuits close and the signal circuit (normally closed) opens.

Activation of the relay interrupts the electrical supply of relays K 1 and K 2. The normally open contacts open and the signal normally closed circuit closes.

External Device Monitoring (EDM)

The UE 42 takes over external device monitoring. The normally closed contacts of the external relays are connected to terminals Y 1 - Y 2, wired in series.

Automatic Reset

The UE 42-3 has an Automatic Reset, effected by means of the external device monitoring at terminals Y 1 - Y 2.

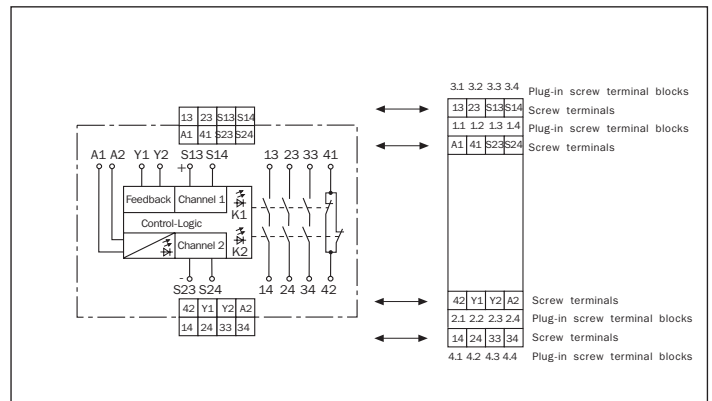
Cross circuit short detection

When operating in the dual-channel mode, the unit monitors the input circuits for cross circuit shorts or short circuiting to earth.

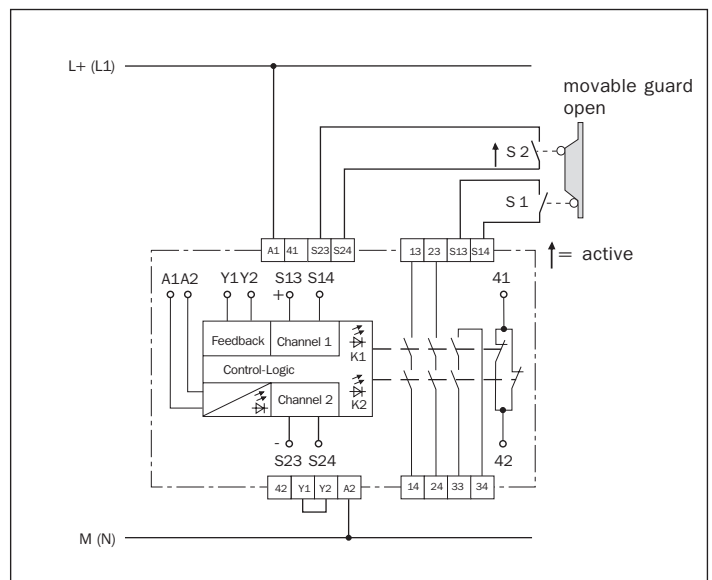
Simultaneous monitoring

For higher levels of safety it is possible to monitor the closing times of both inputs: The two switches (2 normally open contacts) are to be activated within 1.5 s. In so doing, the sequence is irrelevant.

The UE 42-3 DD **2** has screw terminals, the UE 42-3 HD **3** has removable plug-in block terminals.



Circuit Wiring Diagram UE 42-3 DD



Movable guard with Automatic Reset, without external device monitoring

UE 42-3 DR Safety Relay for Safety switch

Application

The UE 42-3 DR safety relay is used as a logic link for:

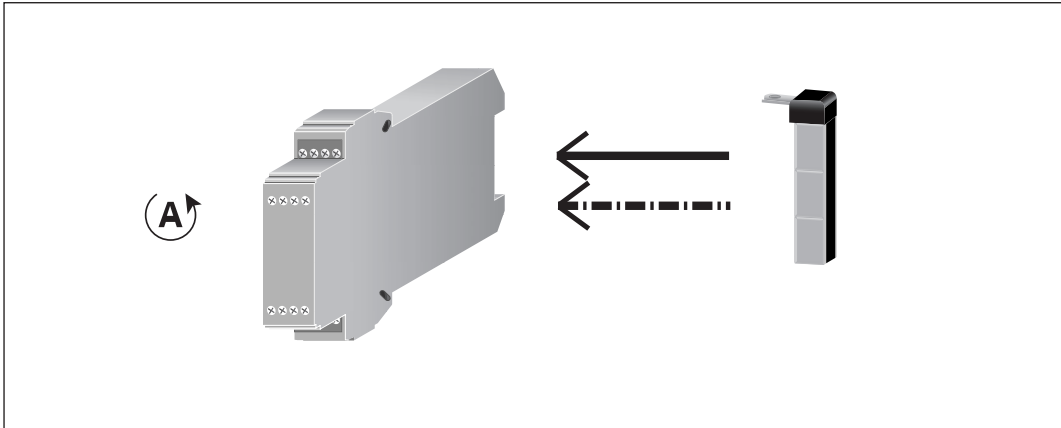
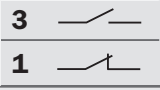
- A safety switch equipped with 1 normally closed / 1 normally open, e. g. movable guard
- Control systems to EN 60 204 respectively EN 954-1 (Category 4)

Features

- Dual-channel activation with cross circuit short detection
- Outputs: 3 normally open contacts, 1 normally closed contact
- 3 LEDs for supply voltage and relays K 1 and K 2
- Automatic Reset
- Facility to increase the number of outputs using the contact expansion units UE 10-4 XT and UE 11-4 DX
- Enclosure A (see Page 3), width: 22.5 mm



EN 60 204-1 Stop Category 0
 EN 954-1 Category 4



Function

After applying the supply voltage to terminals A 1 - A 2 the LED illuminates to indicate the presence of electrical voltage. By closing the input circuit (e. g. closing the safety door) the output is activated: The 3 normally open contacts close and the normally closed contacts open.

Activation of the relay interrupts the electrical supply of relays K 1 and K 2. The normally open contacts open and the normally closed contact closes.

External Device Monitoring (EDM)

The UE 42 takes over external device monitoring. The normally closed contacts of the external relays are connected to terminals Y 1 - Y 2, wired in series.

Automatic Reset

The UE 42-3 has an Automatic Reset, effected by means of external device monitoring at terminals Y 1 - Y 2.

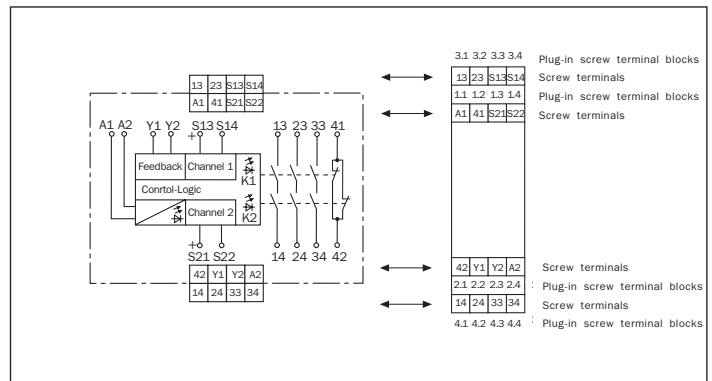
Cross circuit short detection

When operating in the dual-channel mode, the unit monitors the input circuits for cross circuit shorts or short circuiting to earth.

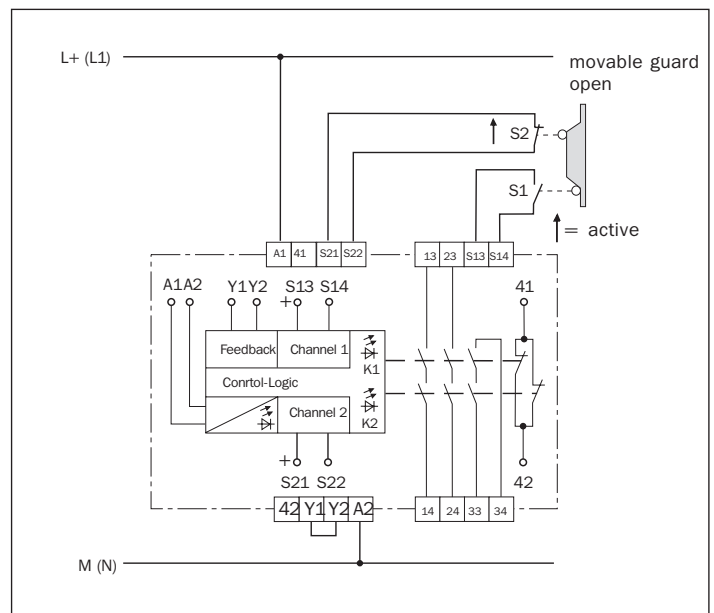
Simultaneous monitoring

For higher levels of safety it is possible to monitor the closing times of both inputs: The two switches (1 normally open contact / 1 normally closed contact) are to be activated within 300 s. In so doing, the sequence is irrelevant.

The UE 42-3 DR **2** has screw terminals, the UE 42-3 DR **3** has removable plug-in block terminals.



Circuit Wiring Diagram UE 42-3 DR



Movable guard with Automatic Reset, without external device monitoring

Technical Data

	min.	typ.	max.
Electrical supply			
Supply voltage	20.4 V	24 V	26.4 V AC/DC
Power consumption AC DC			3.5 VA 2.1 W
Residual wave (ripple) in DC mode			2.4 V _{SS}
Nominal frequency in AC mode	50 Hz		60 Hz
Ready time with Reset monitoring without Reset monitoring		80 ms 600	
Response time for Emergency Stop during interruptions in the supply voltage			40 ms 100 ms
Switch-on time	50 ms		
Synchronisation time		HD: 0.5 s DD: 1.5 s, DR: 300 s	
Standby time (only for AC)	500 ms		

Outputs

Contact arrangement	3 (2) Normally open (NO) contacts DD, DR, (HD) 1 Normally closed (NC) contact – for signal use DD, DR, HD		
Type of contact	Positively guided		
Contact material	Silver alloy; gold plated		
Nominal switch circuit voltage		230 V AC/DC	
Continuous electrical current per contact			6 A
Total electrical current for all contacts			18 A
Fuse protection			6 A
Switching actions per hour			3600 c/h
Service life, mech.			10 x 10 ⁶

Operational Data

Creepage and clearance distance between the electric circuits	to DIN VDE 0110-1 (4 kV)		
Voltage surge category	III		
Contamination rating externally internally	3 2		
Rated voltage	300 V AC		
Test voltage to DIN VDE 0110-1	2.21 kV		
Protective Type to DIN VDE 0470 Enclosure Terminals	IP 40 IP 20		
Interference rating conforming to	EN 50 081-1		
Interference suppression conforming to	EN 50 082-2		
Ambient temperature	- 25 °C		+ 55 °C
Cross sections of connection/conductors fine stranded wire single solid wire	1 x 2.5 mm ² or 2 x 0.5 mm ² 1 x 2.5 mm ² or 2 x 0.74 mm ²		
Weight		0.2 kg	

Order List for UE 42

Type	Outputs		Connections		Electrical supply 24 V AC/DC	Part No.
			Direct	Removable terminals		
UE 42-	2	HD	2		D2	6 024 878
UE 42-	2	HD		3	D2	6 024 881
UE 42-	3	DD	2		D2	6 024 887
UE 42-	3	DD		3	D2	6 024 888
UE 42-	3	DR	2		D2	6 024 885
UE 42-	3	DR		3	D2	6 024 886

UE 43-2 CP and CZ Safety Relays

Manual or Automatic Reset

Application

The UE 43-2 CP and UE 43-2 CZ safety relays are used as a monitoring module for

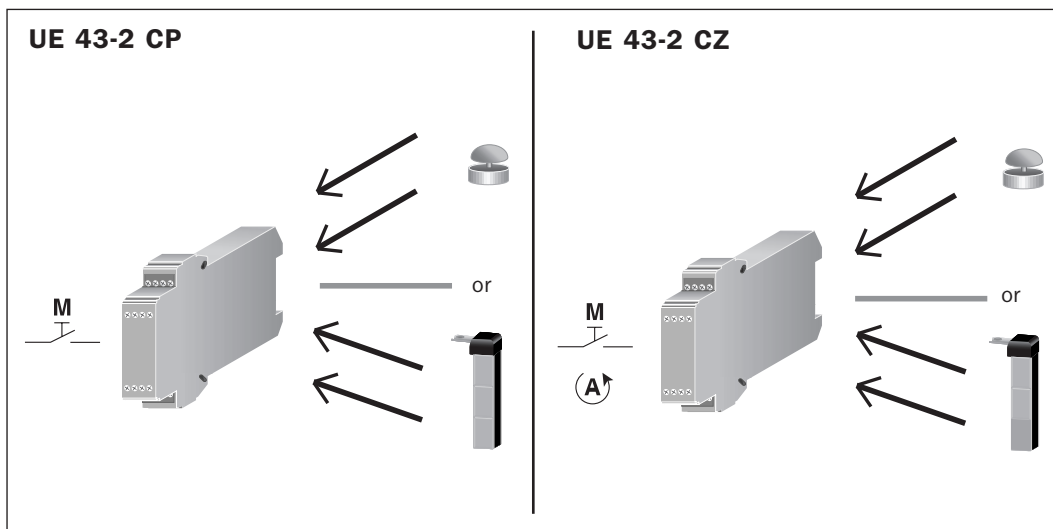
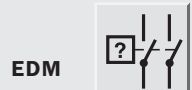
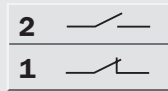
- Emergency Stop switches
- Safety switches
- Control systems in accordance with EN 60 204 respectively EN 954-1 (Category 4)

Features

- 1 or 2 channel activation with cross circuit short detection
- Outputs: 2 normally open contacts, 1 normally closed contact
- Restart inhibit and external device monitoring
- 3 LEDs for supply voltage, relay K 1 and K 2
- Manual Restart
- Automatic Restart (only UE 43-2 CZ)
- Facility to increase the number of outputs using the contact expansion units UE 10-4 XT and UE 11-4 DX
- Enclosure A (see Page 3), width: 22.5 mm



EN 60 204-1 Stop Category 0
EN 954-1 Category 4



Function

After applying the supply voltage to terminals A 1 - A 2 the LED illuminates to indicate the presence of electrical voltage. Release is effected as selected – Automatically or by Manual Reset: The 2 normally open output contacts close and the normally closed output contact opens.

Activation of the relay interrupts the electrical supply of relays K 1 and K 2. The normally closed circuits open and the signal circuit closes.

Cross circuit short detection

When operating in the dual-channel mode, the unit monitors the input circuits for cross circuit shorts or short circuiting to earth.

UE 43-2 CP

For *Manual Reset* a button is connected to the terminals S 33 - S 34.

Start after activation and release of the reset switch.

UE 43-2 CZ

For *Automatic Reset* a link wire connection is to be made to the terminals S 33 - S 34.

For *Manual Reset* a button is connected to the terminals S 33 - S 34.

Start after activation of the reset switch.

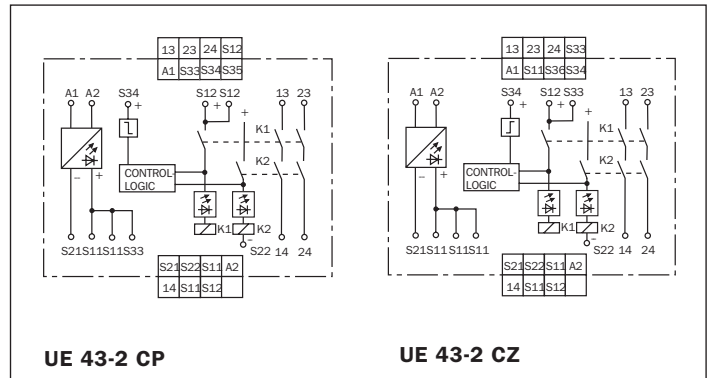
External Device Monitoring (EDM)

The UE 43-2 takes over external device monitoring. The normally closed contacts of the external relays are connected in series via the Reset circuit (S 33 - S 34).

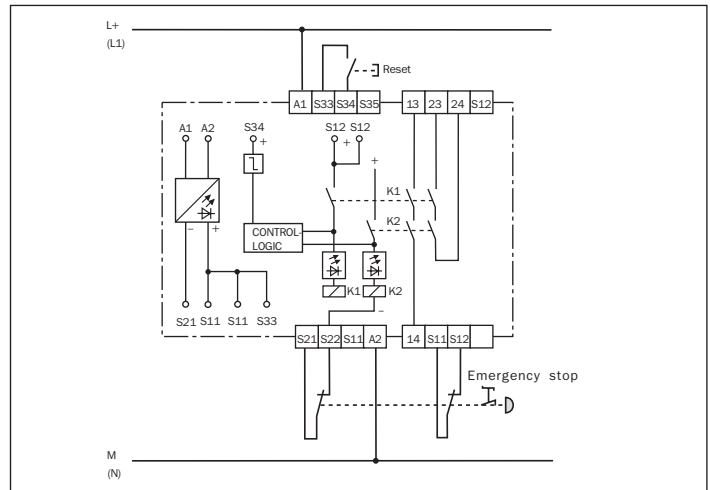
Synchronisation time monitoring

For higher levels of safety, it is possible to monitor the closing times of both inputs: The two switches are activated within 0.5 s. If channel 2 closes prior to channel 1, then synchronisation time monitoring will not be activated.

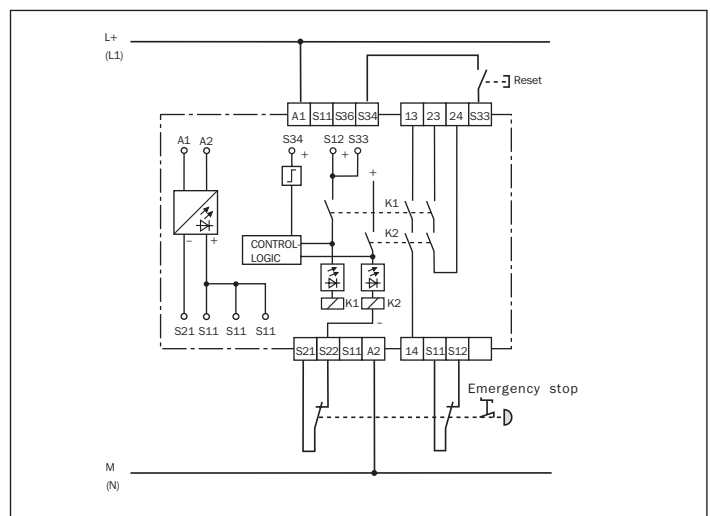
The UE 43-2 CP **2** and UE 43-2 CZ **2** units have screw terminals, the UE 43-2 CP **3** and UE 43-2 CZ **3** units have removable plug-in block terminals.



Circuit Wiring Diagram UE 43-2 C



UE 43-2 CP: Dual-channel Emergency Stop application, cross circuit shorts monitored, with Manual Reset and Reset button monitoring



UE 43-2 CZ: Dual-channel Emergency Stop application, cross circuit shorts monitored, with Manual Reset

Technical Data

	min.	typ.	max.
Electrical supply			
Supply voltage	20.4 V	24 V	26.4 V AC/DC
Power consumption AC DC			3.5 VA 2.1 W
Residual wave (ripple) in DC mode			2.4 V _{SS}
Nominal frequency in AC mode	50 Hz		60 Hz
Ready time with Reset monitoring without Reset monitoring		80 ms 600 ms	
Response time for Emergency Stop during interruptions in the supply voltage			40 ms 100 ms
Switch-on time	50 ms		
Synchronisation time		500 ms	
Standby time (only for AC)	500 ms		

Outputs

Contact arrangement	2 Normally open contacts (NO) 1 Normally closed contact – for signal use (NC)		
Type of contact	Positively guided		
Contact material	Silver alloy; gold plated		
Nominal switch circuit voltage		230 V AC/DC	
Continuous electrical current per contact			6 A
Total electrical current for all contacts			18 A
Fuse protection			6 A
Switching actions per hour			3600 c/h
Service life, mech.			10 x 10 ⁶

Operational Data

Creepage and clearance distance between the electric circuits	to DIN VDE 0110-1 (4 kV)		
Voltage surge category	III		
Contamination rating externally internally	3 2		
Rated voltage	300 V AC		
Test voltage to DIN VDE 0110-1	2.21 kV		
Protective Type to DIN VDE 0470 Enclosure Terminals	IP 40 IP 20		
Interference rating conforming to	EN 50 081-1		
Interference suppression conforming to	EN 50 082-2		
Ambient temperature	- 25 °C		+ 55 °C
Cross sections of connection / conductors fine stranded wire single solid wire	1 x 2.5 mm ² or 2 x 0.5 mm ² 1 x 2.5 mm ² or 2 x 0.74 mm ²		
Weight		0.2 kg	

Order List for UE 43-2 C

Type	Outputs		Connections		Electrical supply 24 V AC/DC	Part No.
			Direct	Removable terminals		
UE 43-	2	CP	2		D2	6 024 889
UE 43-	2	CP		3	D2	6 024 890
UE 43-	2	CZ	2		D2	6 024 891
UE 43-	2	CZ		3	D2	6 024 892

UE 43-2 MF and MT Safety Relays

Manual or Automatic Reset

Application

The 43-2 MT and MF safety relays are used as a monitoring module for

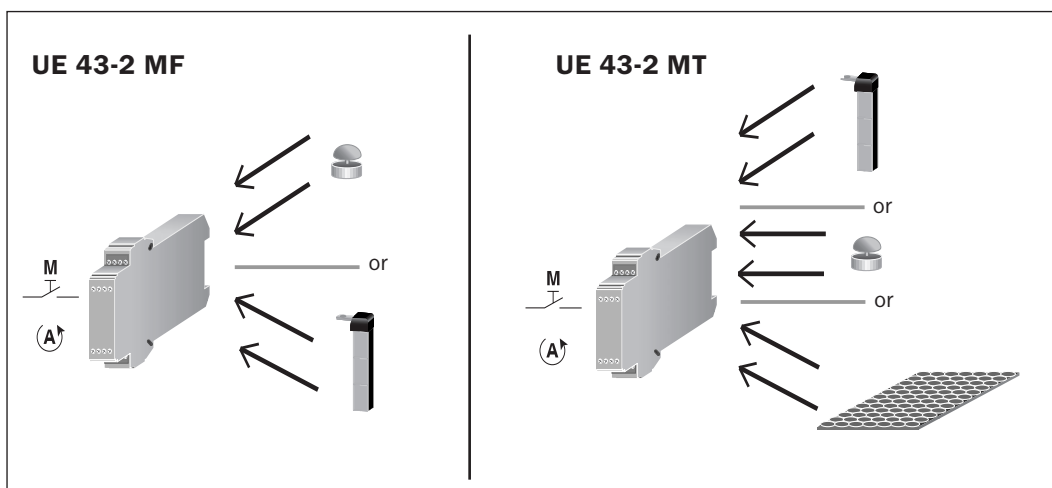
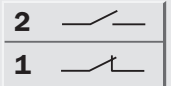
- Emergency Stop switches
- Safety switches
- Control systems in accordance with EN 60 204 respectively EN 954-1 (Category 4)

Features

- Single- or dual-channel activation with cross circuit shorts detection
- Outputs: 2 normally open contacts, 1 normally closed contact
- 3 LEDs for supply voltage, relays K 1 and K 2
- Manual Restart
- Automatic Restart
- Facility to increase the number of outputs using the contact expansion units UE 10-4 XT and UE 11-4 DX
- Enclosure A (see Page 3), width: 22.5 mm



EN 60 204-1 Stop Category 0
EN 954-1 Category 4



Safety Relays UE 43-2 M range

Function

After applying the supply voltage to terminals A 1 - A 2 the LED illuminates to indicate the presence of electrical voltage. By closing the input circuit (e. g. closing the movable guard) the output is activated: The 2 normally open contacts close and the normally closed circuit opens.

If the safety device is activated, the electrical supply of the relays K 1 and K 2 is interrupted. The normally open contacts open and normally closed contacts close.

Manual Reset

For *Manual Reset* a button is connected to the terminals S 33 - S 34.

Start after activation and release of the reset switch.

Automatic Reset

For *Automatic Reset* a link wire connection is made between S 35 - S 12.

Cross circuit short detection

When operating in the dual-channel mode, the unit monitors the input circuits for cross circuit shorts or short circuiting to earth.

Simultaneous time monitoring

For higher levels of safety, it is possible to monitor the closing times of both inputs: The two switches are activated within 0.5 s. If channel 2 closes prior to channel 1, then synchronisation time monitoring will not be activated.

External Device Monitoring (EDM)

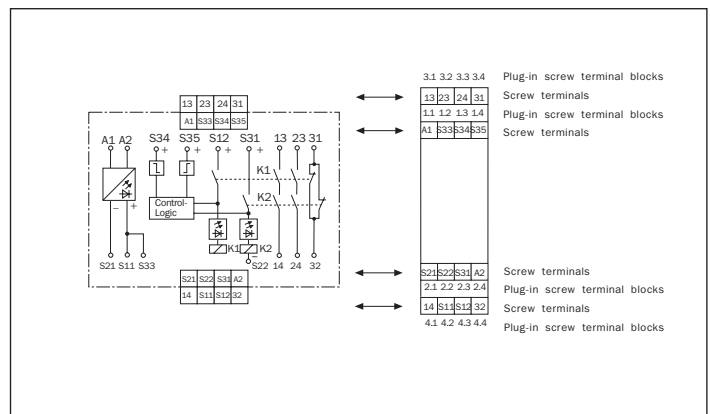
The UE 43-2 takes over external device monitoring. The normally closed contacts of the external relays are connected in series via the Reset circuit (S 33 – S 34).

The operation of UE 43-2 MT ...

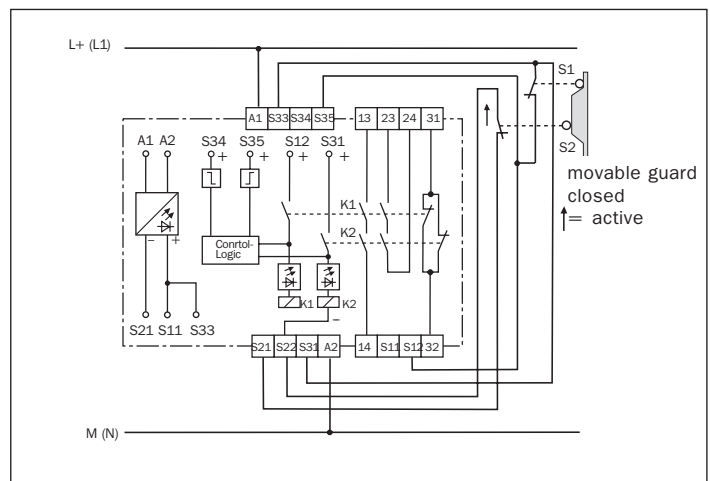
... corresponds to that of UE 43-2 MF, but pressure mats or pressure switch rails can be connected using 4-wire technology (without monitoring resistance).

The UE 43-2 MF **2** and UE 43-2 MT **2** units have screw terminals,

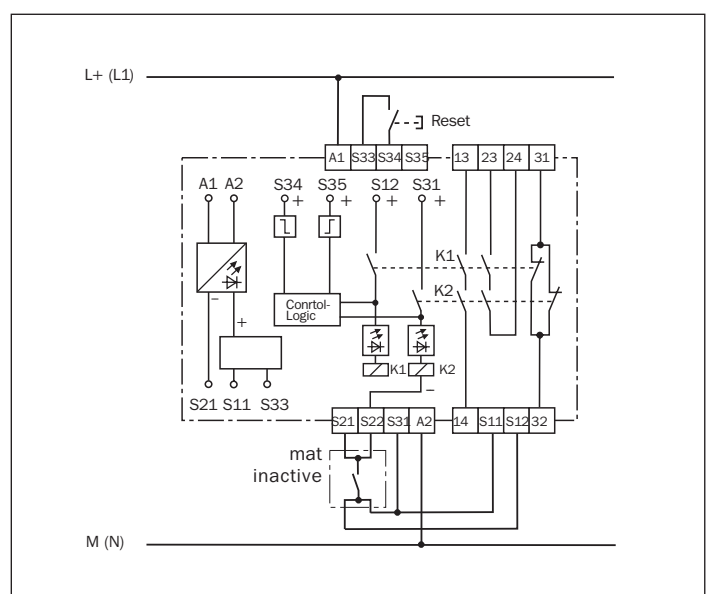
the UE 43-2 MF **3** and UE 43-2 MT **3** units have removable plug-in block terminals.



Circuit Wiring Diagram UE 43-2 M



Movable guard with Automatic Reset, without external device monitoring



Guarding with pressure mat and with Manual Reset, without external device monitoring

UE 43-3 MF Safety Relays

Manual and Automatic Reset

Application

The 43-3 MF safety relays serves as a monitoring module for

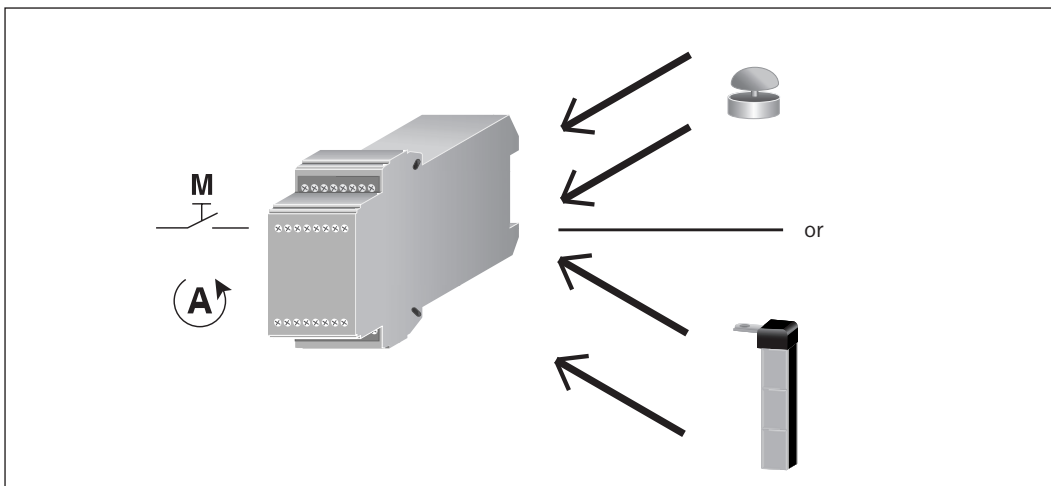
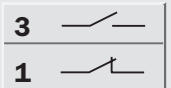
- Emergency Stop switches
- Safety switches
- Control systems in accordance with EN 60 204 respectively EN 954-1 (Category 4)

Features

- Single- or dual-channel activation with cross circuit shorts detection
- Outputs: 3 normally open contacts, 1 normally closed contact
- 2 Relays with positively guided contacts
- 3 LEDs for supply voltage and relays K1 and K 2
- Facility to increase the number of outputs using the contact expansion units UE 10-4 XT and UE 11-4 DX
- Enclosure B (see Page 3), width: 45 mm



EN 60 204-1 Stop Category 0
EN 954-1 Category 4



Function

After applying the supply voltage to terminals A 1 - A 2 the LED illuminates to indicate the presence of electrical voltage. By closing the input circuit (e. g. closing the movable guard) release is effected: The 3 normally open contacts close, and the normally closed contact opens.

Activation of the switch or the Emergency Stop interrupts the electrical supply of relays K 2 and K 3. The normally open contacts open and the normally closed contact closes.

Manual Reset

For *Manual Reset* a switch is connected to the terminals Y 13 - Y 12 .

Start after activation and release of the reset switch.

Automatic Reset

For *Automatic Reset*, a link wire connection is made between Y 14 - Y 12.

Cross circuit shorts detection

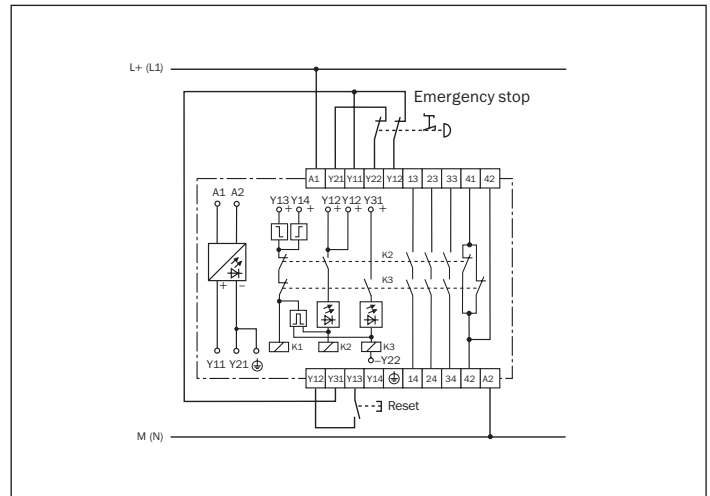
When operating in the dual-channel mode, the unit monitors the input circuits for cross circuit shorts or short circuiting to earth.

Synchronisation time monitoring

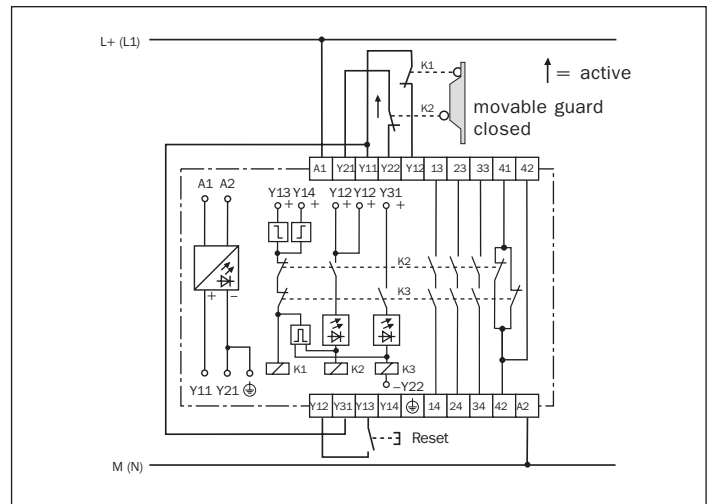
For higher levels of safety, it is possible to monitor the closing times of both inputs: The two switches (1 closing / 1 opening) are activated within 0.5 s. If channel 2 closes prior to channel 1, then synchronisation time monitoring is not activated.

External device monitoring (EDM)

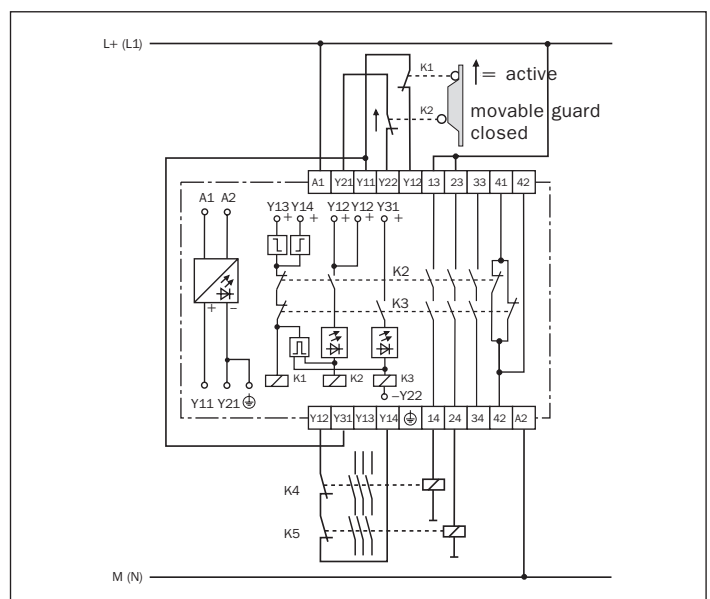
The UE 43-3 takes over external device monitoring via the Reset circuit.



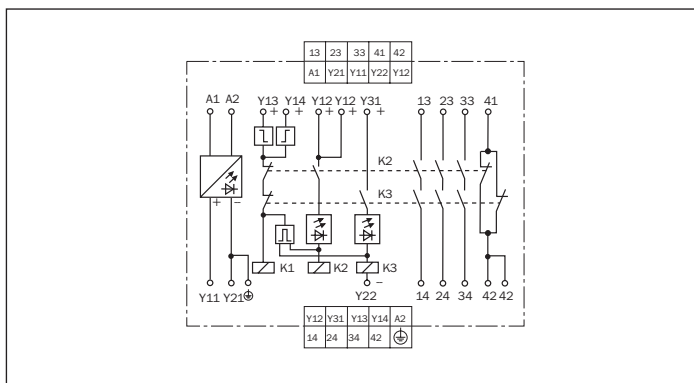
Emergency Stop switching with Reset monitoring



Movable guard with Manual Reset



Movable guard with Automatic Reset



Circuit Wiring Diagram UE 43-3 MF

UE 43-6 MF Safety Relays

Manual and Automatic Reset

Application

The 43-6 MF safety relay is used as a processing module for:

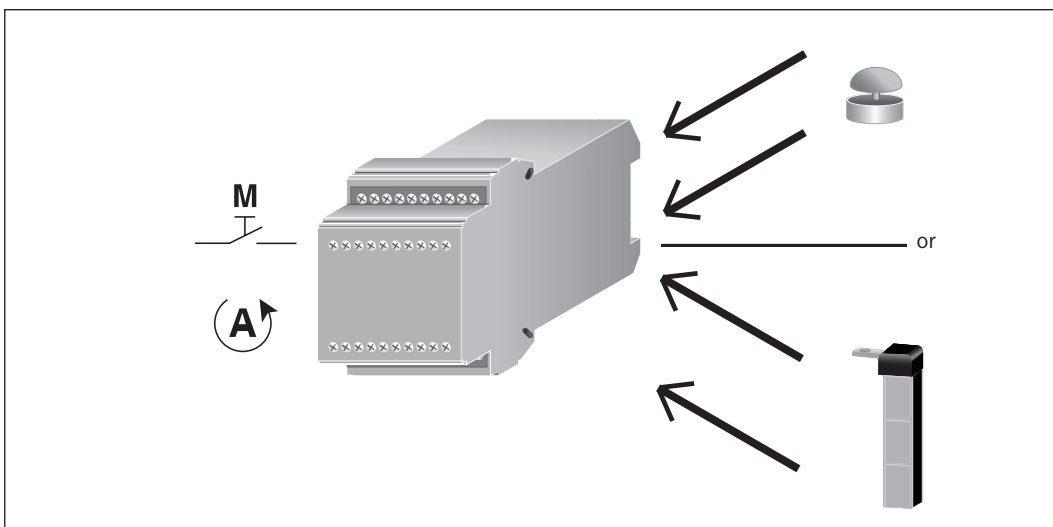
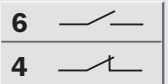
- Emergency Stop switches
- Safety switches
- Control systems in accordance with EN 60 204 respectively EN 954-1 (Category 4)

Features

- Single or dual-channel activation with cross circuit shorts detection
- Outputs: 6 normally open contacts, 4 normally closed contacts
- 3 LEDs for supply voltage and relays K 2 and K 3
- Facility to increase the number of outputs using the contact expansion units UE 10-4 XT and UE 11-4 DX
- Enclosure C (see Page 3), width: 90 mm



EN 60 204-1 Stop Category 0
EN 954-1 Category 4



Function

After applying the supply voltage to terminals A 1 and A 2, the LED for the electrical supply illuminates. By closing the input circuit (e. g. closing the movable guard) the output is activated: The 6 normally open contacts close and the 4 normally closed contacts open.

Activation of the relay interrupts the electrical supply of relays K 2 and K 3. The normally open contacts open and the normally closed contacts close.

Manual Reset

For *Manual Reset* a button is connected to the terminals S 33 - S 34.

Start after activation and release of the reset switch.

Automatic Reset

For *Automatic Reset* a link wire connection is made between S 34 - S 12.

Cross circuit shorts detection

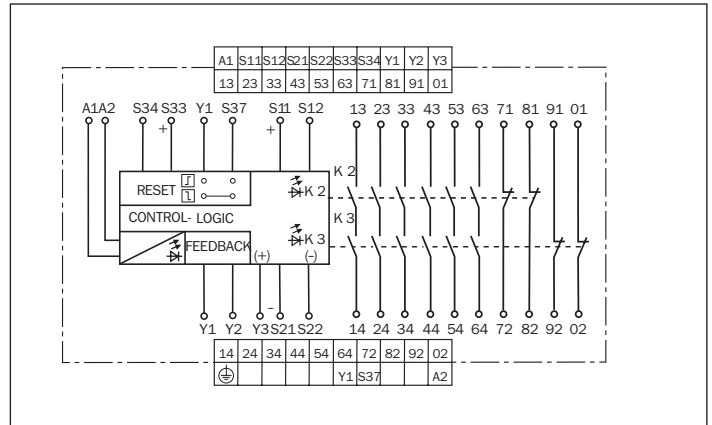
When operating in the dual-channel mode, the unit monitors the input circuits for cross circuit shorts or short circuiting to earth.

Synchronisation time monitoring

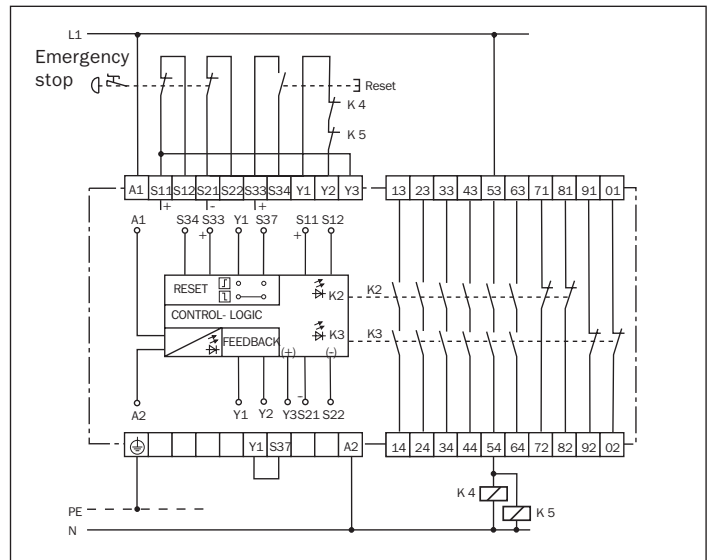
For higher levels of safety, it is possible to monitor the closing times of both inputs: The two switches (2 closing contacts) are activated within 0.5 s. If channel 2 closes prior to channel 1, then synchronisation time monitoring will not be activated.

External Device Monitoring (EDM)

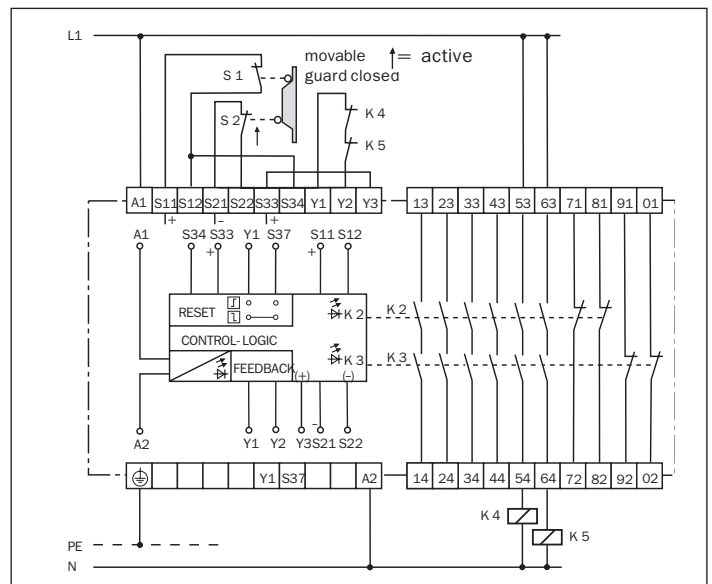
The UE 43-6 takes over external device monitoring by means of Y 1 - Y 2.



Circuit Wiring Diagram UE 43-6 MF



Emergency Stop with Manual Reset, with external device monitoring



Movable guard with Automatic Reset, with external device monitoring

Technical Data

	min.	typ.	max.
Electrical supply			
Supply voltage	20.4 V	24 V	26.4 V AC/DC
Power consumption			
AC			3.5 VA
DC			2.1 W
Residual wave (ripple) in DC mode			2.4 V _{SS}
Nominal frequency in AC mode	50 Hz		60 Hz
Ready time			
with Reset monitoring		80 ms	
without Reset monitoring		600	
Response time			
for Emergency Stop			40 ms
during interruptions in the supply voltage			100 ms
Switch-on time	50 ms		
Synchronisation time		500 ms	
Standby time (only for AC)	500 ms		

Outputs

Contact arrangement (depending on type)	2, 3 or 6 Normally open contacts (NO) – UE 43-2, -3, -6 1 or 4 Normally closed contact – for signal use (NC)		
Type of contact	Positively guided		
Contact material	Silver alloy; gold plated		
Nominal switch circuit voltage		230 V AC/DC	
Continuous electrical current per contact			6 A
Total electrical current for all contacts			18 A
Fuse protection			6 A
Switching actions per hour			3600 c/h
Service life, mech.			10 x 10 ⁶

Operational Data

Creepage and clearance distance between the electric circuits	to DIN VDE 0110-1 (4 kV)		
Voltage surge category	III		
Protective Type to DIN VDE 0470			
Enclosure	3		
internally	2		
Rated voltage	300 V AC		
Test voltage to DIN VDE 0110-1	2.21 kV		
Protective Type to DIN VDE 0470			
Enclosure	IP 40		
Terminals	IP 20		
Interference rating conforming to	EN 50 081-1		
Interference suppression conforming to	EN 50 082-2		
Ambient temperature	- 25 °C		+ 55 °C
Cross sections of connection / conductors			
fine stranded wire	1 x 2.5 mm ² or 2 x 0.5 mm ²		
single solid wire	1 x 2.5 mm ² or 2 x 0.74 mm ²		
Weight		0.2 kg /0.36 kg /0.8 kg	

Safety Relays UE 43-x M range

Order List for UE 43- 2 MF, UE 43 - 3 MF/MT, UE 43-6 MF

Type	Outputs		Connections		Electrical supply				Part No.		
					Direct	Removable	terminals	24 V AC/DC		24 V DC	24 V AC
UE 43-	2	MF	2			D2					6 024 893
UE 43-	2	MF		3		D2					6 024 894
UE 43-	2	MT	2				D3				6 024 895
UE 43-	2	MT		3			D3				6 024 896
UE 43-	3	MF	2				D3				6 024 897
UE 43-	3	MF	2					A0			6 024 898
UE 43-	3	MF	2						A1		6 024 899
UE 43-	3	MF	2							A2	6 024 900
UE 43-	3	MF	2							A3	6 024 901
UE 43-	6	MF	2				D3				6 024 902
UE 43-	6	MF	2					A0			6 024 903
UE 43-	6	MF	2						A1		6 024 904
UE 43-	6	MF	2							A2	6 024 905
UE 43-	6	MF	2							A3	6 024 906

UE 44-3 SL Safety Relay

with additional on-delayed output
for Safety switches with locking

Application

The UE 44-3 SL safety relay is used as a processing module for:

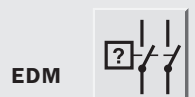
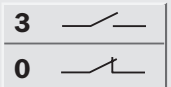
- Emergency Stop switches
- Safety switches
- Safety switches with mechanical locking
- Control systems in accordance with EN 60 204 respectively EN 954-1 (Category 4)

Features

- Cross circuit shorts detection
- 2 Relays having positively guided contacts
- 2 Normally open contacts (NO), 1 output with on-delay (NO)
- 3 LEDs for supply voltage and relays K 1 / K 2 and K 3 / K 4
- Facility to increase the number of outputs using the contact expansion units UE 10-4 XT and UE 11-4 DX
- Enclosure A (see Page 3), width: 22.5 mm



EN 60 204-1 Stop Category 0
EN 954-1 Category 4



Function

The supply voltage is applied to terminals A 1 / A 2. After a specified time, the relays K 3 and K 4 activate. The single circuit 37 - 38 closes.

After Reset, the relays K 3 and K 4 drop out. At the same time, the relays K 1 and K 2 activate and immediately close the output circuits 13 - 14 and 23 - 24. The input circuit is interrupted, which enables the relays K 1 and K 2 to de-energise. After a set time span, relays K 3 and K 4 activate and close the single output circuit 37 - 38.

The on-delay is necessary, in order, for example, to release the safety interlock.

The on-delay time depends on the application and is adjustable between 0.15 and 3 s (for units where the type ends with the digit “3”), or is adjustable between 1.5 and 30 s (for units where the type ends with the digit “30”).

Application: For Safety switches with mechanical interlocking (e. g. i 10-M 024)

Manual Reset

For *Manual Reset* a button is connected to terminals S 33 - S 34.

Start after activation and release of the reset switch.

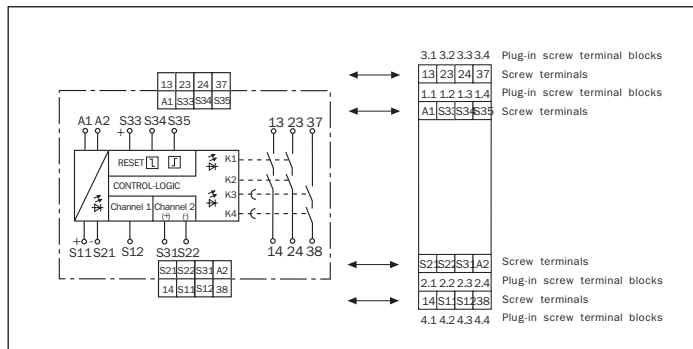
Automatic Reset

Instead of using a Reset button, connect a link wire between terminals S 35 - S 12.

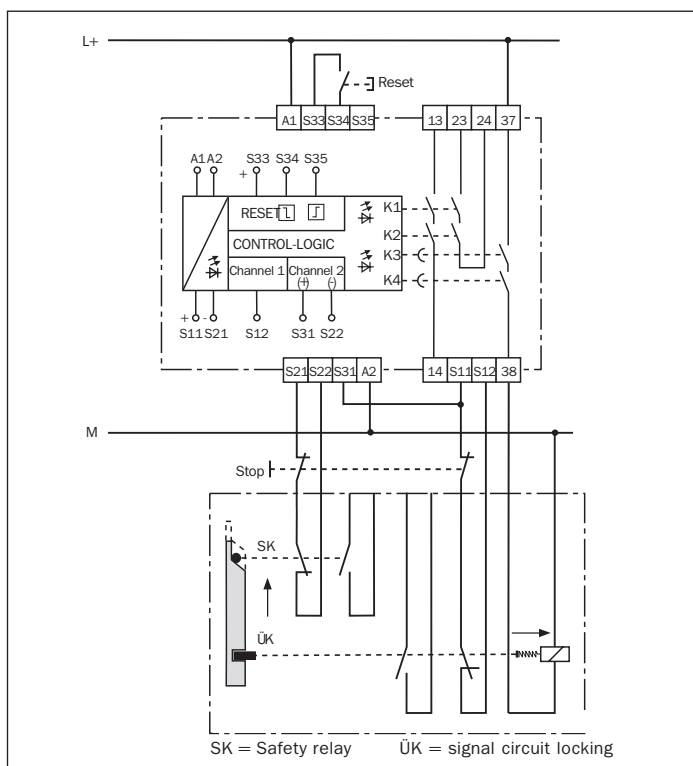
External Device Monitoring (EDM)

The unit also takes over external device monitoring. This is accomplished by means of the Reset connections.

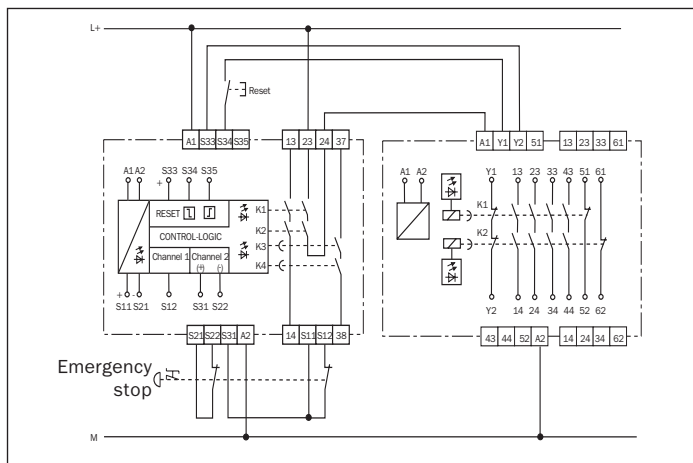
The UE 44-3 SL **2** has screw terminals, the UE 44-3 SL **3** has removable plug-in block terminals.



Circuit Wiring Diagram



Safety Switch with mechanical interlocking



Connection Diagram: Emergency Stop with Manual Reset and contact expansion unit UE 11-4 DX

UE 45-3 S1 safety relay with additional off-delayed output Stop Category 1 or Safety Switches with locking

Application

The UE 45-3 S 1 safety relay is used as a processing module for:

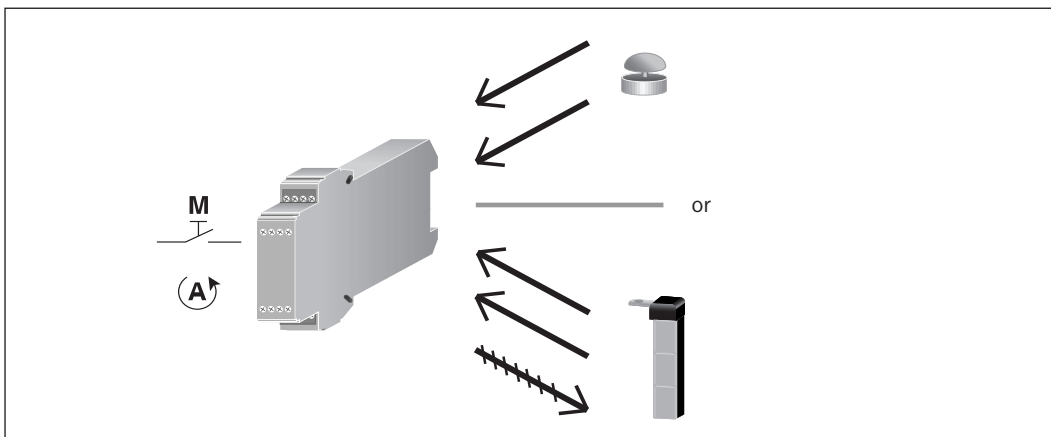
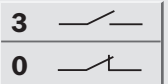
- Emergency Stop switch (Stop category 1)
- Safety switch
- Safety switch with electrical locking (machines with extended run-down times)
- Control systems in accordance with EN 60 204 respectively EN 954-1 (Category 4)

Features

- Cross circuit shorts detection
- 2 Relays with positively guided contacts
- 2 Safety outputs (NO), 1 delay output (NO)
- 3 LEDs for input/output, override, supply voltage
- Facility to increase the number of outputs using the contact expansion units UE 10-4 XT and UE 11 -4 DX
- Enclosure A (see Page 3), width: 22.5 mm



EN 60 204-1 Stop Category 1
EN 954-1 Category 4



Function

The supply voltage is applied to terminals A 1 and A 2. If the input circuit is closed and the Reset has been set, the relays K 1 and K 2 activate and close the output circuits 13 - 14 und 23 - 24 without delay. With these, the relays K 3 and K 4 (off-delayed) activate and close the single circuit 37 - 38. The input circuit is interrupted and causes the relays K 1 and K 2 to de-energise and the delayed de-energising of the relays K 3 and K 4 together with the delayed effect for the single circuit.

This de-energise delay is necessary in order, for example, to release the interlocking of the safety switch with locking, or for a limit switch, for example, in applications of the Stop Category 1.

The de-energise delay time depends upon the application, and is adjustable between 0.15 and 3 s (for units where the type ends with the digit "3"), or is adjustable between 1.5 and 30 s (for units where the type ends with the digit "30").

Application: for safety switches with electrical interlocking (e. g. i 10-E 024)

Manual Reset

For *Manual Reset*, a button is connected to the terminals S 33 - S 34.

Start after activation and release of the reset switch.

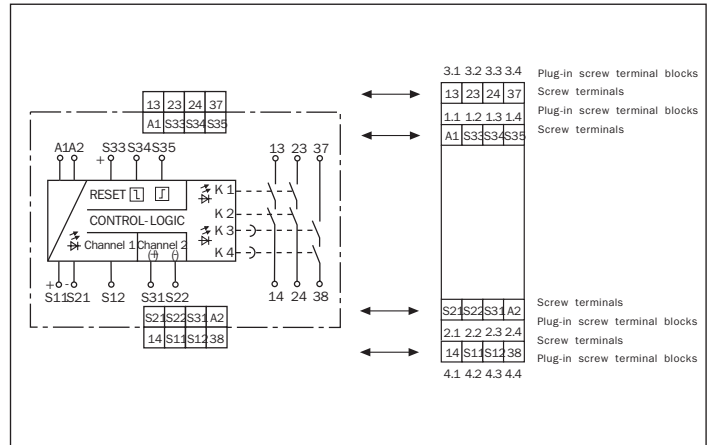
Automatic Reset

Instead of using a Reset button, connect a link wire between terminals S 35 - S 12.

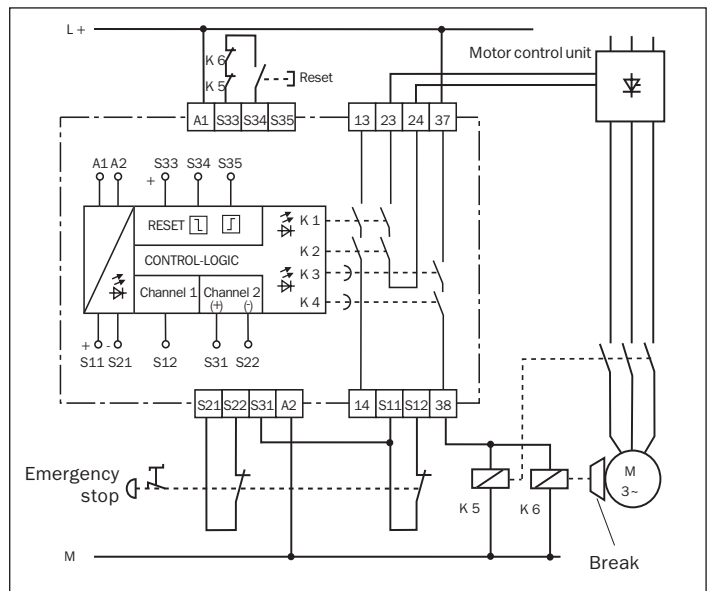
External Device Monitoring (EDM)

The UE 43-3 takes over external device monitoring via Reset connections.

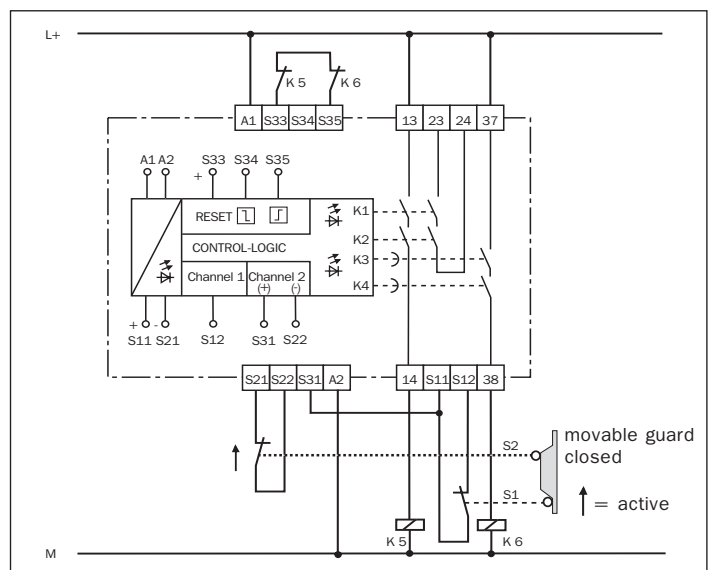
The UE 45-3 S 12 has screw terminals, the UE 45-3 S 13 has removable plug-in block terminals.



Circuit Wiring Diagram UE 45-3 S1



Emergency Stop with Manual Reset with external device monitoring, Stop Category 1



Movable guard with Automatic Reset with external device monitoring

Technical Data

	min.	typ.	max.
Electrical supply			
Supply voltage	20.4 V	24 V	26.4 V AC/DC
Power consumption AC DC			3.5 VA 2.1 W
Residual wave (ripple) in DC mode			2.4 V _{SS}
Nominal frequency in AC mode	50 Hz		60 Hz
Ready time with Reset monitoring without Reset monitoring		80 ms 600	
Response time for Emergency Stop during interruptions in the supply voltage			40 ms 100 ms
Switch-on time	50 ms		
Synchronisation time		500 ms	
Standby time (only for AC)	500 ms		

Outputs

Contact arrangement UE 44-3 SL UE 45-3 S 1	3 Normally open contacts (NO), 1 Delay on 3 Normally open contacts (NO), 1 Delay off		
Type of contact	Positively guided		
Contact material	Silver alloy; gold plated		
Nominal switch circuit voltage		230 V AC/DC	
Continuous electrical current per contact			6 A
Total electrical current for all contacts			18 A
Fuse protection			6 A
Switching actions per hour			3600 c/h
Service life, mech.			10 x 10 ⁶

Operational Data

Creepage and clearance distance between the electric circuits	to DIN VDE 0110-1 (4 kV)		
Voltage surge category	III		
Contamination rating externally internally	3 2		
Rated voltage	300 V AC		
Test voltage to DIN VDE 0110-1	2.21 kV		
Protective Type to DIN VDE 0470 Enclosure Terminals	IP 40 IP 20		
Interference rating conforming to	EN 50 081-1		
Interference suppression conforming to	EN 50 082-2		
Ambient temperature	- 25 °C		+ 55 °C
Cross sections of connection/conductors fine stranded wire single solid wire	1 x 2.5 mm ² or 2 x 0.5 mm ² 1 x 2.5 mm ² or 2 x 0.74 mm ²		
Weight		0.2 kg	

Order List for UE 44 and UE 45

Type	Outputs		Connections		Electrical supply 24 V DC	Delay max. s	Part No.
			Direct	Removable terminals			
UE 44-	3	SL	2		D3	3	6 024 907
UE 44-	3	SL		3	D3	3	6 024 908
UE 44-	3	SL	2		D3	30	6 024 909
UE 44-	3	SL		3	D3	30	6 024 910
UE 45-	3	S1	2		D3	3	6 024 911
UE 45-	3	S1		3	D3	3	6 024 912
UE 45-	3	S1	2		D3	30	6 024 913
UE 45-	3	S1		3	D3	30	6 024 914

UE 48-2 OS Safety Relay

Automatic or Manual Reset

Application

The UE 48-2 OS safety relay is used as a processing module for:

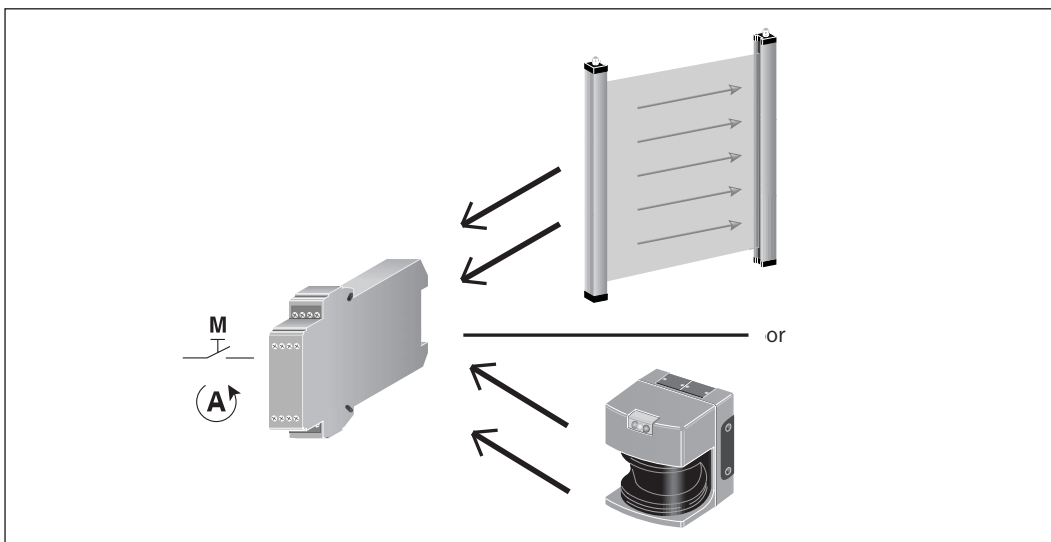
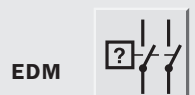
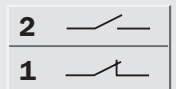
- Safety Light Curtain
- Safety Laser Scanner
- Units with 2 Safety Switch outputs (OSSD)

Features

- 2 Relays with positively guided contacts (2 normally open, 1 normally closed)
- 3 LEDs for supply voltage and relays K 1 and K 2
- Contact expansion units UE 10-4 XT and UE 11-4 DX can be connected (for increasing the number of outputs)
- Enclosure A (see Page 3), width: 22.5 mm



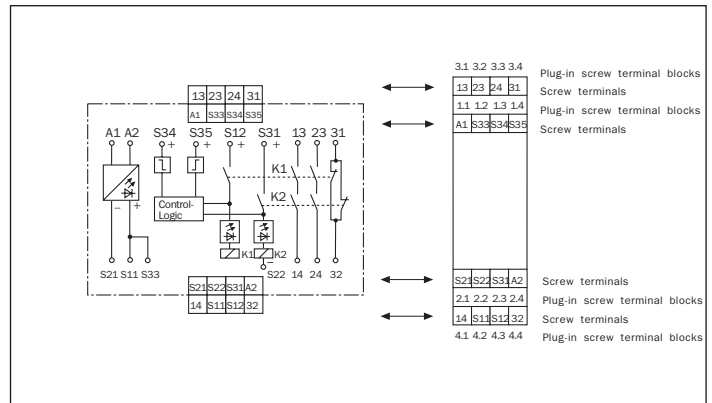
EN 60 204-1	Stop Category 0
EN 954-1	Category 4
EN 61 496	Type 2, 3, 4



Function

The inputs of the UE 48-2 OS are used for connecting the two channels of the sensors of type 2, 3 and 4, e. g. opto-electronic safety devices. These are verified for uniformity and control the output relay.

After applying the supply voltage to the terminals A 1 and A 2, the green LED illuminates for indicating the presence of the electrical supply. Release is effected as selected – automatically or by Manual Reset. Upon release of the safety device K 1 and K 2 switches off. The normally open contacts open and the normally closed circuit closes.



Circuit Wiring Diagram UE 48-2 OS

Manual Reset

Start after activation and release of the reset switch (S 33 - S 34)

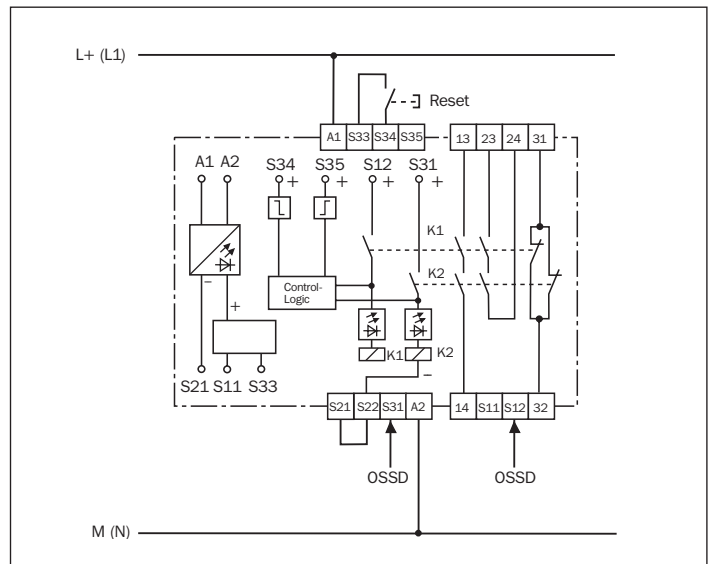
Automatic Reset

Make link wire connection between terminals S 35 - S 12.

External Device Monitoring (EDM)

The UE 48 takes over external device monitoring by means of the Reset circuit.

The UE 48 OS **2** unit with screw terminals, the UE 48 OS **3** unit with removable plug-in block terminals.



Operation with a Safety Light Curtain

Technical Data

	min.	typ.	max.
Electrical supply			
Supply voltage	20.4 V	24 V	26.4 V AC/DC
Power consumption			
AC			3.5 VA
DC			2.1 W
Residual wave (ripple) in DC mode			2.4 V _{SS}
Nominal frequency in AC mode	50 Hz		60 Hz
Ready time			
with Reset monitoring		80 ms	
Response time			
for OSSDs			25 ms
during interruptions in the supply voltage			100 ms
Switch-on time	50 ms		
Synchronisation time		500 ms	
Standby time (only for AC)	500 ms		

Outputs

Contact arrangement	2 Normally open contacts (NO) 1 Normally closed contact – for signal use (NC)		
Type of contact	Positively guided		
Contact material	Silver alloy; gold plated		
Nominal switch circuit voltage		230 V AC/DC	
Continuous electrical current per contact			6 A
Total electrical current for all contacts			18 A
Fuse protection			6 A
Switching actions per hour			3600 c/h
Service life, mech.			10 x 10 ⁶

Operational Data

Creepage and clearance distance between the electric circuits	to DIN VDE 0110-1 (4 kV)		
Voltage surge category	III		
Contamination rating			
externally	3		
internally	2		
Rated voltage	300 V AC		
Test voltage to DIN VDE 0110-1	2.21 kV		
Protective Type to DIN VDE 0470			
Enclosure	IP 40		
Terminals	IP 20		
Interference rating conforming to	EN 50 081-1		
Interference suppression conforming to	EN 50 082-2		
Ambient temperature	- 25 °C		+ 55 °C
Cross sections of connection/conductors			
fine stranded wire	1 x 2.5 mm ² or 2 x 0.5 mm ²		
single solid wire	1 x 2.5 mm ² or 2 x 0.74 mm ²		
Weight		0.2 kg	

Safety Relays UE 48 range

Order List for UE 48

Type	Outputs		Connections		Electrical supply 24 V DC	Part No.
			Direct	Removable terminals		
UE 48 -	2	OS	2		D3	6 024 915
UE 48 -	2	OS		3	D3	6 024 916

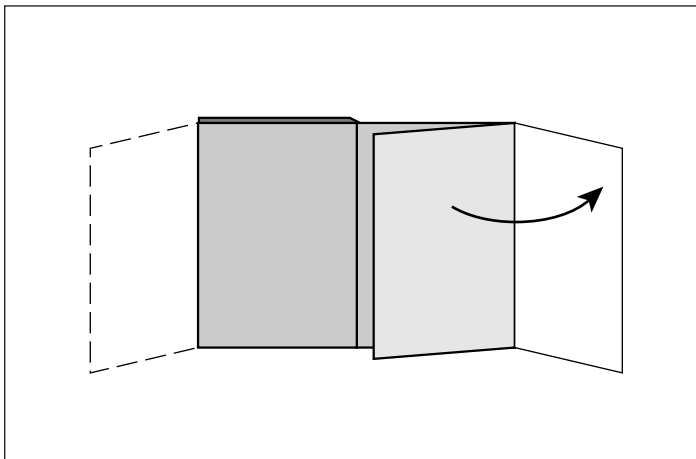
Applications

	UE 10-3 OS	UE 10-4 XT	UE 11-4 DX	UE 34-2 TS	UE 42-2 HD	UE 42-3 DR	UE 42-3 DD	UE 42-3 CP	UE 42-3 CZ	UE 43-2 MT	UE 43-2 MF	UE 43-3 MF	UE 43-6 MF	UE 44-3 SL	UE 45-3 S1	UE 48-2 OS
Basic unit	■			■	■	■	■	■	■	■	■	■	■	■	■	
Contact expansion unit		■	■													
Emergency Stop application								■	■	■	■	■	■	■	■	
Safety Switch (on movable guard)						■	■	■	■	■	■	■	■	■	■	
Two hand operation					■											
Pressure mat operation										■						
Opto-electronic safety device	■															■
Simultaneous monitoring					■	■	■									
Synchronisation time monitoring									■	■	■	■	■	■	■	■
Testable sensors				■												
Automatic Reset				■	■	■	■		■	■	■	■	■	■	■	■
Manual Reset				■			■	■	■	■	■	■	■	■	■	■

Standards

	EN 60 204-1	EN 954-1	EN 61 496	EN 574	EN 60 204-1	Stop Category
					EN 954-1	Safety Category
					EN 61 496	Safety Type
UE 10-3 OS	0	1	2, 3, 4			
UE 10-4 XT	0	*)				
UE 11-4 DX	1	*)				
UE 34-2 TS	0	3	2			
UE 42-2 HD	0	4		III C		
UE 42-3 DR	0	4				
UE 42-3 DD	0	4				
UE 42-3 CP	0	4				
UE 42-3 CZ	0	4				
UE 43-2 MT	0	4				
UE 43-2 MF	0	4				
UE 43-3 MF	0	4				
UE 43-6 MF	0	4				
UE 44-3 SL	0	4				
UE 45-3 S1	1	4				
UE 48-2 OS	0	4	2, 3, 4			

*) as basic unit



Safety Navigator: please unfold

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