

# Application examples

## C6701

### Application

The C 6701 safety combination can be used in EMERGENCY STOP circuits according to EN 418 and in safety circuits according to EN 60 204-1 (11.98), e.g. in movable guards and safety gates. Depending on the external circuit elements, safety category 4 according to DIN EN 954-1 or SIL 3 according to IEC 61508 can be achieved.

### Functions and connections

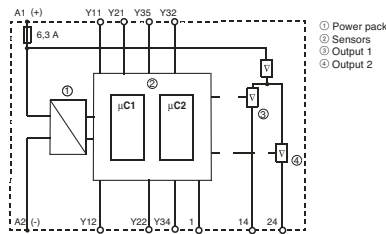
The C 6701 safety combination has two reliable solid-state outputs. Three LEDs indicate the operating state and the function. When the device is put into operation it runs through a self-test to test the correct functioning of the internal electronics. All internal circuit components are monitored for faults cyclically during operation. The EMERGENCY STOP button and/or the position switches or light arrays are connected to terminals Y11, Y12 and Y21, Y22. The ON button is connected in series with the NC contacts of the external actuators to the supply voltage L+ (24 V DC) and to terminal Y34. The cascading input 1 is connected either via a safe output or directly to the supply voltage L+ (24 V DC). External actuators or loads can be switched via safe outputs 14, 24. It must be ensured that the actuators or loads and the C 6701 electronic safety combination have the same frame potential. Paralleling outputs 14 and 24 to increase the load current is not permissible. If electronic sensors (e.g. light-array monitoring) are used, in single-channel operation, Y35 must be connected to L+ (24VDC). For autostart operation, Y32 must be connected directly to L+ (24VDC) and Y34 must be connected to it via NC contacts of the external actuators.

**⚠ Use a power pack to IEC 60536 safety class III (SELV or PELV) for power supply!**

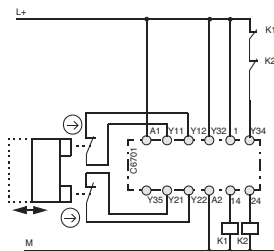
### Terminal marking

Supply voltage	A1	L/+
	A2	M
Inputs	Y11, 12	Channel 1 EMERGENCY STOP or position switch
	Y21, 22	Channel 2 EMERGENCY STOP or position switch
	Y35	With / without cross circuit detection
	Y32	Autostart switch
	Y34	ON button, feedback loop
Input	1	Cascading input
Outputs	14, 24	Safe solid state outputs

### Internal circuit



### Safety gate monitoring, two channel, autostart Category 4/SIL 3



① Sensor circuits open; Cross circuit between the sensors; Short circuit of sensors to frame  
 ② Only when using circuit variant with "cross circuit detection".

### Operation

LEDs			Operation			
POWER	RUN	FAIL	PS	E-STOP	ON	Outputs
☀	☀	●	ON	non activated	activated	on
☀	●	☀		activated <sup>1)</sup>	non activated	off
☀	●	●		non activated	non activated	off
☀	●	☾ flashes	on start up self test approx. 7 sec.			
Fault						
☀	●	☾ flashes	Defect in the electronic Change in terminal assignment during operation Short circuit to 24V <sup>2)</sup>			off
●	●	●	No supply voltage			

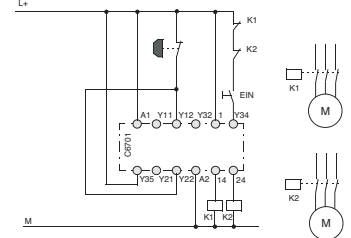
### Fault clearance

1. Switch supply voltage off.
2. Clear fault or replace device.
3. Switch supply voltage back on.

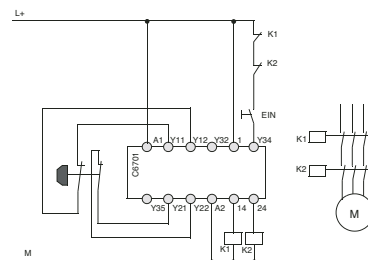
### Cable length

for 2 x 1.5mm<sup>2</sup> max. 2000m total cable length for 150nF/km sensors

### EMERGENCY STOP, single channel, monitored start Category 2/SIL 1



### EMERGENCY STOP, two channel, monitored start with additional ON button category — Category 4/SIL3



### Light array monitoring, two channel, autostart category, Category 4/SIL3

