

# Application examples C574

## Application

The safety relay C 574 can be used in EMERGENCY STOP devices as per EN 418, in safety circuits as per VDE 0113 Part 1 (06.93) and/or EN 60 204-1 (12.97), such as for monitoring safety gates, or in circuits with controlled stand-still requirement (STOP Category 1). Depending on the external circuitry, this device can be used to realize Safety Category 4 instantaneous release circuits and Safety Category 3 delayed release circuits according to DIN EN 954-1.

## Functions and connections

The C 574 safety relay possesses two delayed and two instantaneous release circuits (safety outputs) as NO contacts and one instantaneous signal output as NC contact. Five LEDs indicate the operating status and the functions.

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The redundant safety relays, the electronics and the operated motor contactors are tested for proper functioning when the EMERGENCY STOP button or the limit switch button is unlatched, and when ON circuit Y33, Y34 is closed.

On the C 574 (monitored start), the ON circuit Y33, 34 is checked for short circuit. This means that a fault is detected when Y33, 34 is closed before the EMERGENCY STOP button is closed.

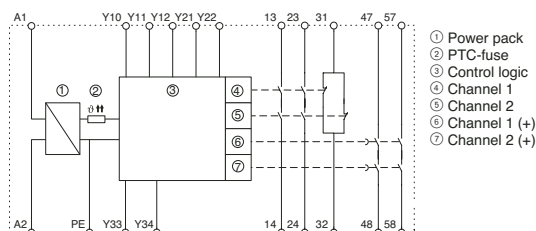
## Terminal marking

Supply voltage	A1 A2	L/+ N/-
Output	13, 14 23, 24 31, 32 47, 48 57, 58	Safety output 1, instantaneous Safety output 2, instantaneous Signal output, instantaneous Safety output 1, delayed (t) Safety output 2, delayed (t)

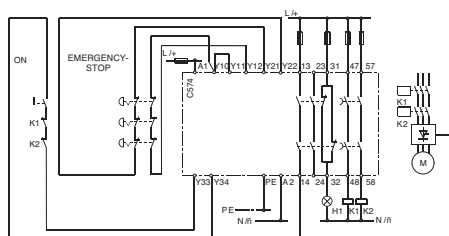
## Function Monitored Start

1-channel	ON pushbutton at Y33, 34	Jumper from Y11 to Y12 Jumper from Y21 to Y22 EMERGENCY STOP circuits at Y10, 11
2-channel		Jumper from Y10 to Y11 EMERGENCY STOP circuits at Y11, 12 and Y21, 22

## Internal circuit



## Monitored start for EMERGENCY STOP Safety category 3 and 4 acc. to EN 954-1



## Operation

LEDs					Operation			
POWER	Ch 1	Ch 2	Ch 1	Ch 2	PS	E-STOP	ON	Safety outputs
☀	☀	☀	☀	☀	ON	non activated	activated	closed
☀	●	●	●	●		activated delay time elapsed	non activated	open
☀	●	●	●	●		non activated	non activated	open
☀	●	●	☀	☀		activated delay time elapsed	non activated	FK 1 & 2 open, FK1(t) & FK2(t) closed
					Faults			
☀	☀	●	☀	●		Relay fusion-welded		open
☀	●	☀	●	☀		Motor cont. fusion-welded		
☀	●	●	●	●		Defect in electronic Short circuit in ON circuit		
●	●	●	●	●		Cross or ground faults in emergency trip circuit (min. fault current $I_{kmin} = 0.5A$ ; PTC fuse trips)		

## Fault clearance

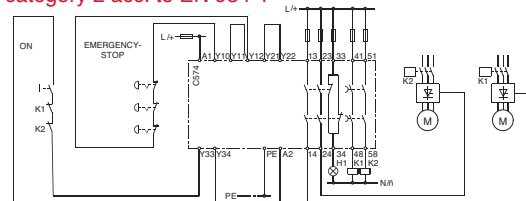
1. Switch supply voltage off.
2. Clear fault or replace device.
3. Switch supply voltage back on.

## Cable length

for 2 x 1.5 mm<sup>2</sup> 150nF/km max. 1000m total cable length for sensors and power supply lines)

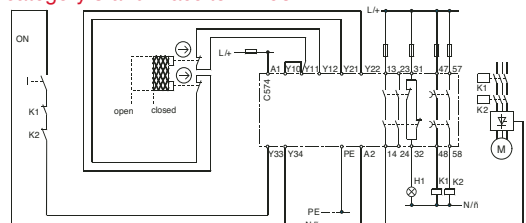
## Monitored start for EMERGENCY STOP

Safety category 2 acc. to EN 954-1



## Safety gate monitoring

Safety category 3 and 4 acc. to EN 954-1



## Safety gate monitoring

Safety category 2 acc. to EN 954-1

