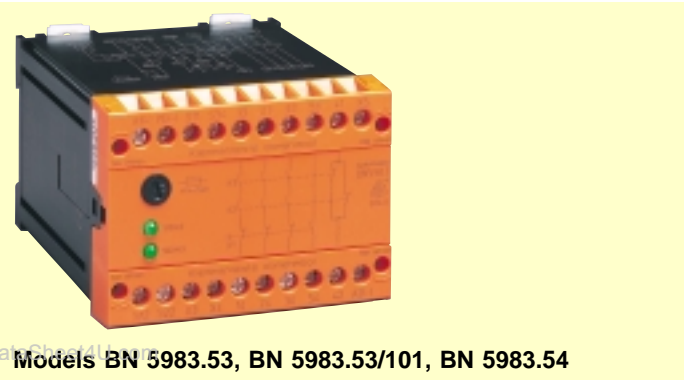
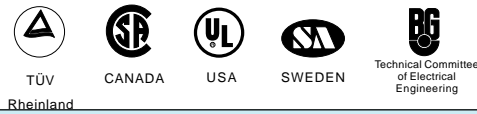


Type BN 5983  
safemaster



Models BN 5983.53, BN 5983.53/101, BN 5983.54



## Features

- Category 3
- Contacts
  - .53 – 3 N/O, 1 N/C,
  - 1 N/O 200ms delayed release on reset
  - .53/101 – 3 N/O, 1 N/C,
  - 1 N/O 1 sec delayed release on reset
  - .54 – 3 N/O, 1 N/C, 1 N/O
- Removable terminal strips for fast replacement
- Front mounted auxiliary supply fuse
- AC or 24V DC auxiliary supply options
- Single channel or dual channel operation
- Manual or automatic reset

## Description

Emergency Stop Relay Type BN 5983 complies fully with the requirements of the Standard Specifications referred to on page 3 of this Publication. The unit is housed in a compact 100mm wide case suitable for DIN rail mounting and is available in a wide range of auxiliary voltages. BN 5983.53/101 has a one second delay on reset, a useful feature when using this relay as a combined Emergency Stop/gate monitor. These relays are extensively used and specified by the UK/European automotive industry.

## Circuit Connections

Relay BN 5983 operates on the principle described on page 6 of this catalogue. The OFF and the EMERGENCY STOP buttons are connected in series between terminals S11 and S12/S22. The On/Reset button is connected between terminals S12 and X4. The auxiliary supply is connected to terminals A1(+) and A2(-). The circuits to be tripped may be connected to terminals 13-14, 23-24 and 33-34. Remote signalling circuitry, if applicable, is connected to terminals 41-42, 53-54. For additional security an insulation monitoring relay may be connected to monitor terminal PE(-) to ground. (Relay details on request). This relay is suitable for category 3 applications.

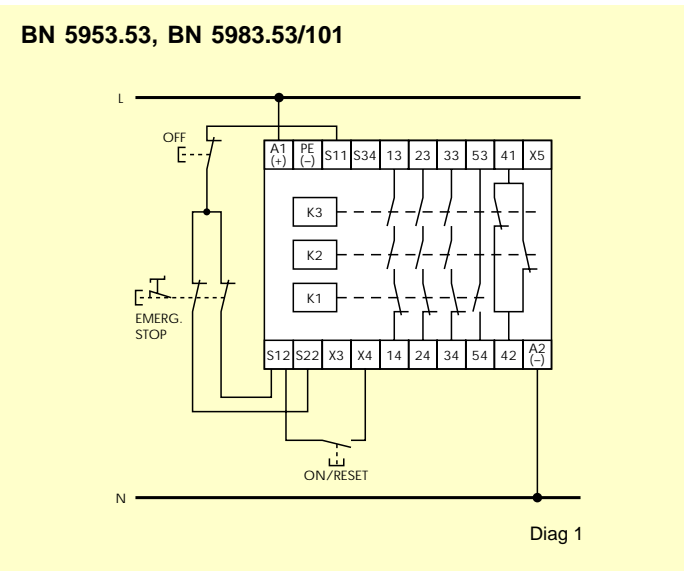
## Special Note

It is recommended that redundancy is carried through to the EMERGENCY STOP button by using a dual contact button as shown. If a single contact button is used then terminals S12 and S22 should be bridged (category 2 applications only).

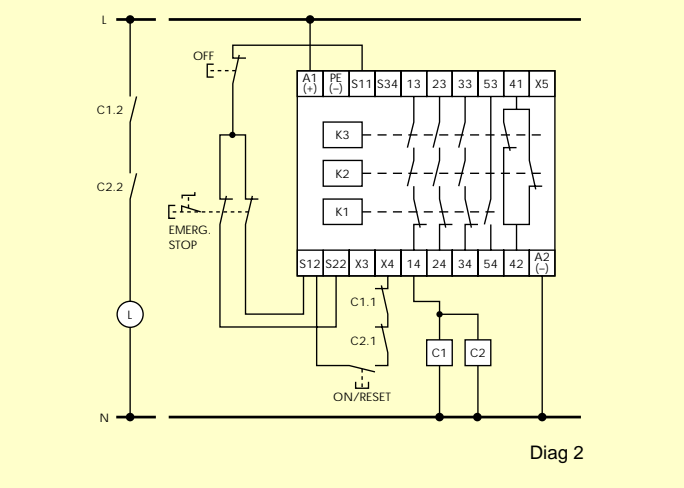
## Indication

The relay is equipped with two green LEDs. When illuminated they indicate the healthy condition of circuits K2 and K3.

## Typical Schematic Diagram



**BN 5983.53 with External Contactors**  
This diagram shows how external contactors with positive guided contacts C1 and C2 may be used to reinforce the switching capacity of BN 5983 with continued redundancy.



# Emergency Stop Relay/Safety Gate Monitor



**Type BN 5983**  
**safemaster**

## Additional Information

If additional switching contacts are required then Relay BN 5983 may be used with extension module Type BN 3081 (diag. 7). Should a delayed release contact be required then BN 5983 may be used with time delay modules BG 7925 / IL 7824 / IN 7824 / BA 7924 (see below). Model BN 5983 and /101 may be used with protective guards/screens, but for this application reference is made to the dedicated gate monitors Model BD 5985 - BN 5986 shown on page 53 - 54.

Gold plated contacts are available as an optional extra should very low switching currents be required.

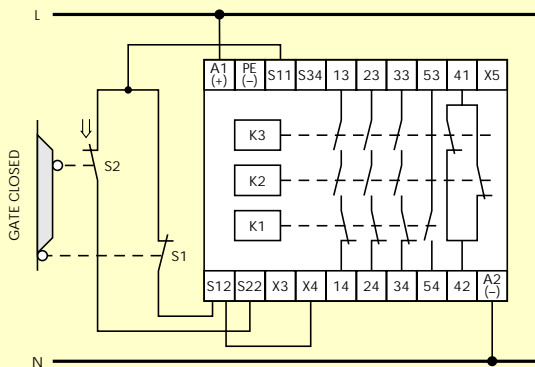
If single channel high voltage AC pushbutton control is required (Risk Level 2) terminals S11, S12 - S22 should be linked and the Emergency Stop pushbuttons connected in series with terminal A1. (see also BN 5930/204).

## Dimensions



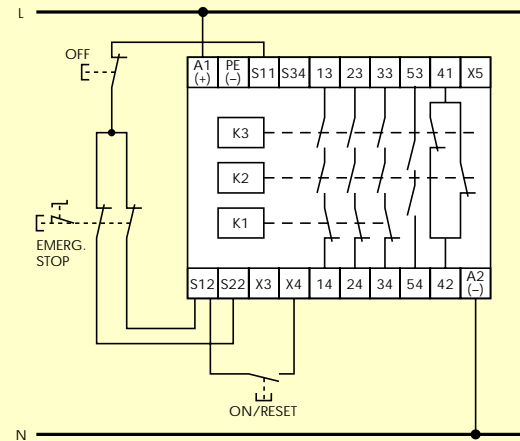
## Schematic Diagram

**BN 5983.53 or /101** used as a safety gate monitor with auto reset



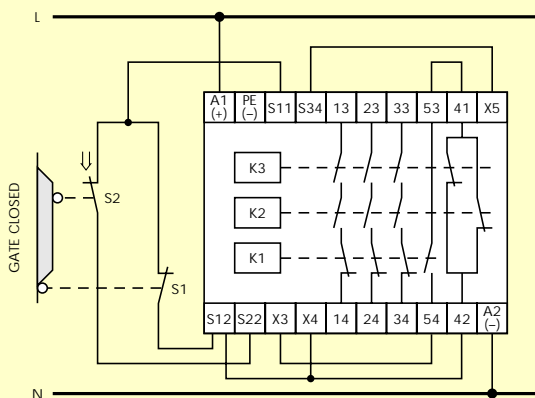
Diag 3

**Version BN 5983.54**



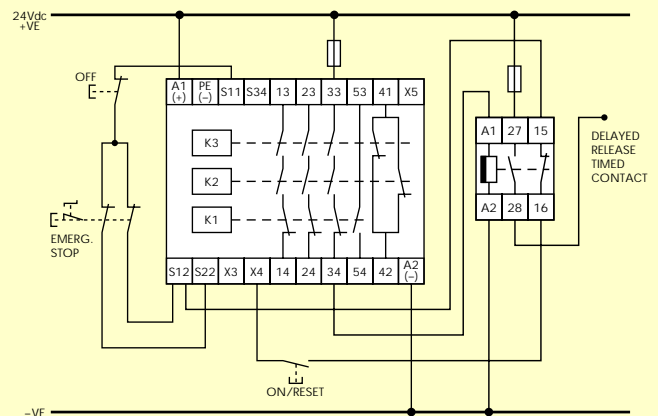
Diag 5

**BN 5983.53** used as a safety gate monitor with infinite time delay between S12 and S22 closing.



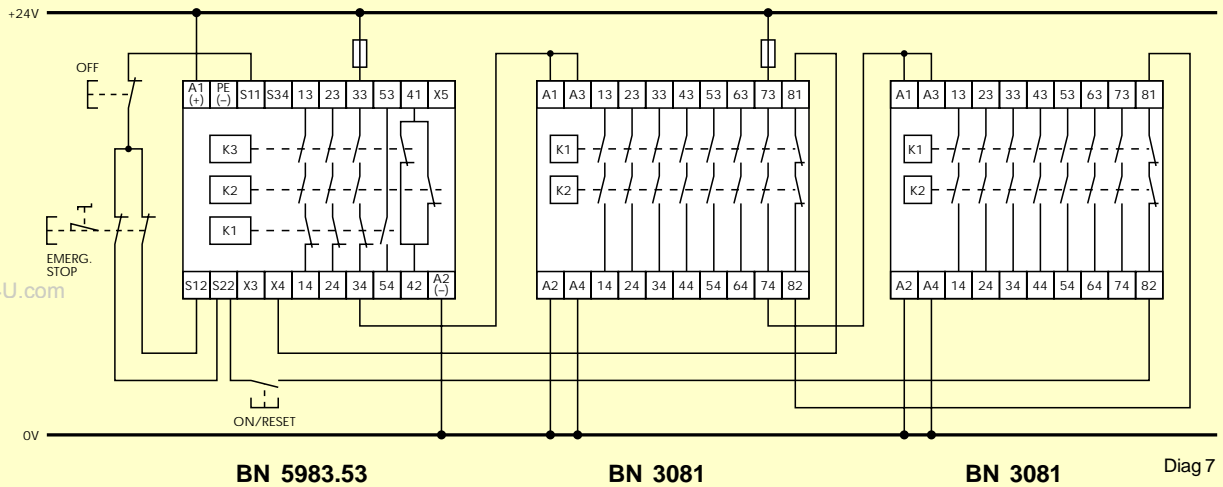
Diag 4

**BN 5983.53** with additional delayed release safety timer IL 7824, IN 7824, BA 7924



Diag 6

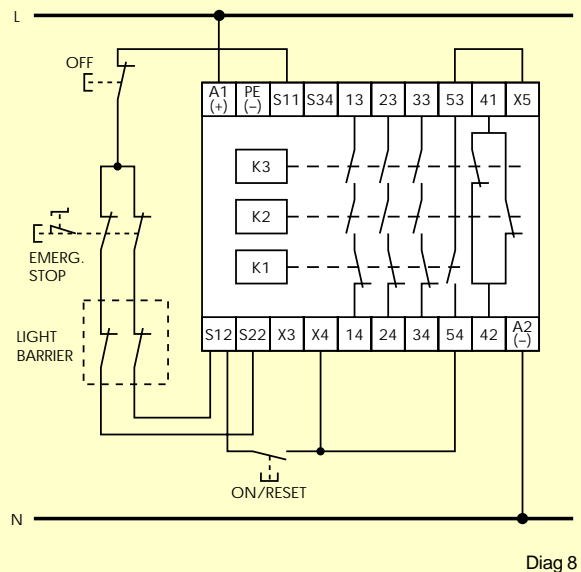
## BN 5983 with BN 3081 Extension modules



## Specifications

Nominal Voltage (Vn)	24,48,110,127,230V ac or 24V dc (To be Specified)
Burden	<5VA ac/3W 24V dc
Voltage Tolerance	0.8-1.1 Vn ac. 0.8-1.2 Vn dc
Frequency	50 to 60Hz $\pm 5\%$
Control Voltage	24V dc (S11)
Min. return voltage	18-5V dc (S12/S22)
Contacts	.53 3N/O, 1N/C plus 1 N/O 200ms delayed release, on reset .53/101 version 1 sec delayed release on reset .54 3N/O, 1 N/C, 1N/O
Max Switching Capacity	10A ac ( $\cos \phi 1 - 0.7$ ) 10A dc see page 84
Continuous Current Rating	see page 84
Contact Life Mechanical	30 x 10 <sup>6</sup> operations
Contact Life Electrical	see page 84
Derated Capacity (for Heavy Inductive Loads)	AC15, 6A, 250V ac DC13, 6A, 24V dc
Min Switching Voltage & Current	10V, 15mA ac/dc
Max Switching Voltage	415V ac 250V dc
Max Switching Power	2500VA (AC1)/240W dc
Max Switching Frequency	6000 operations/hour
Max Loop Resistance	110 $\Omega$
Reaction times	S11/S12-S22 Dual Channel Operation Reset 200ms/1sec ESTOP <20ms
Operating Temperature	-15°C ... +55°C at 90% RH
Protection Class	Case IP40 Terminals IP20
Test Voltage	2.5KV 1 minute
Shock Loading	Amplitude 0.35mm Frequency 10-55Hz (5g @ 50Hz)
Enclosure Material	Thermoplastic Vo Rating UL94
Terminations	2 x 2.5mm <sup>2</sup> solid 2 x 1.5mm <sup>2</sup> stranded

## BN 5983.53 with link monitoring of the ON/Reset button for light barrier applications



## Fuse Rating

### Front mounted fuse rating

230V ac	- T32mA/250V	} 20 x 5mm Glass
110V ac	- T50mA/250V	
24V ac	- m250mA/250V	
24V dc	- m1A/250V	

## Information Required With Order

- Model type • Auxiliary supply
- Example: Emergency Stop Relay Type BN 5983.53  
Auxiliary Supply 230V 50Hz*