SFS 33-01

Safety Sequential Circuit

BG geprüft

24 V DC

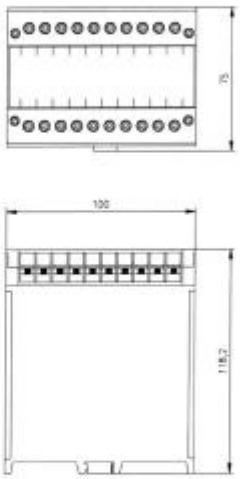
BWS Typ 4

Features

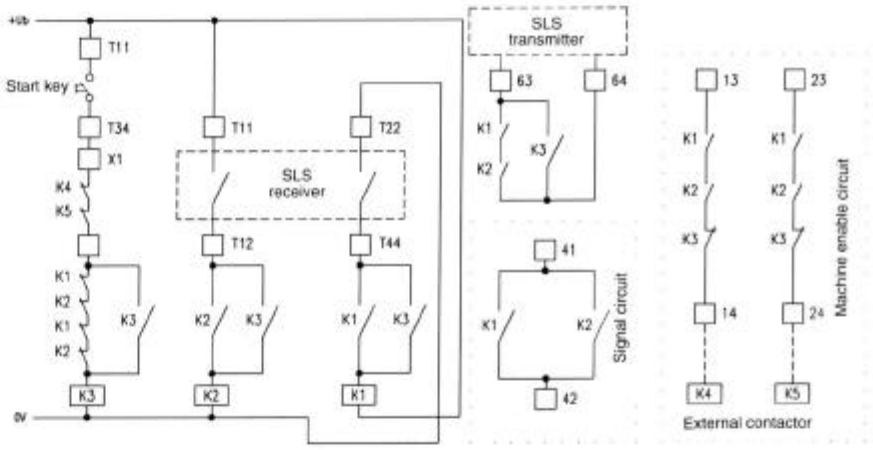
- Emergency STOP safety circuit according to prEN 50100-1.
- Shock hazard protection according to VDE 0106 part 100 and VBG 4.
- Cross shorting safeguard
  - through integrated optical coupler
  - a device which checks whether a short circuit exists between the control leads from the relay output of the SLS receiver and the sequential circuit.
- Detachable terminal strips allow devices to be exchanged quickly.
- EC declaration of conformity for safety components according to EC machine directive appendix II,C.

CE ISO 9001 IEC 801...

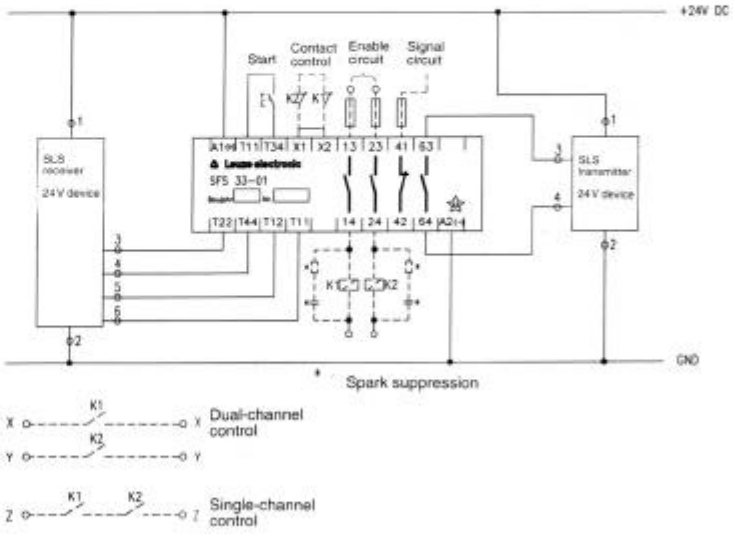
Dimensioned drawings



Basic circuit diagram



Electrical connection



We reserve the right to make changes.

Specifications

Operating voltage U_B	24 V DC (incl. residual ripple)
Voltage range	0.85 to 1.15 U_B
Power consumption	approx. 2 VA
Contact complement	3 NO, 1 NC
Contact type	positive action relays
Supply voltage fuse	max. 5 A, semi time-lag
Leakage and sparking distances	DIN VDE 0110 (01.89)
Ambient temperature (oper./storage)	- 25 °C ...+ 60 °C
Switching voltage	max. 250 V AC / 60 V DC

Switching characteristics	Switching voltage	max. swtch current	cos φ	f	Switching cycle
at ambient temp. of + 60 °C	230 V AC	6.82 A	1	0.2 Hz	100,000
	230 V AC	2.27 A	1	0.2 Hz	500,000
	28 V DC	2.00 A	resistive load	0.5 Hz	2 Mio

General

The safety sequential circuit SFS 33-01 is the first downstream control element offering the possibility for connection of a safety light barrier transmitter and receiver such as the SLS 78/R. The SFS 33-01 is a component of the remote-operating safety equipment (BWS) system and disconnects the current circuit from the master control elements if the beam of the safety light barrier is interrupted. The locking functions: Start inhibit and re-start inhibit are integated in the SFS 33-01. The contact elements of the SFS 33-01 are configured as positive acting contacts for which the mechanical interlock function prevents the enable contact from closing in the event of a welded contact.

The SFS 33-01is fitted with a terminal for a safety monitoring function. This is capable of controlling the status of the master control element of the hazardous movement (motor contact or similar). Redundancy is achieved as a result of the dual enable contacts and their interactive monitoring function. A control signal can only be read out if the enable contacts are in agreement. The SFS 33-01 monitoring routine is executed on a cyclical basis with every switching process, and tests the device functions. The safety sequential circuit SFS 33-01 is in compliance with future requirements of prEN 50100-1 and EN 292-1 Appendix A.

Remarks

Functional characteristics

For operation, the supply voltage must be applied at terminals A1 and A2. A voltage of 24 V DC is available at terminal T11. T12 and T22 are connected to T11 and T44 via the NO contact of the safety light barrier receiver in accordance with the terminal plan. The contact paths 13-14, 23-24 and 63-64 are open, contact path 41-42 is closed. Transmitter activation, which is connected at the contact path 63-64, is not active. The receiver is not able to respond.

To start the device, T11 must be jumpered with T34 by means of a NO contact (start key). The contact path 63-64 is closed and the transmitter is active. If the light barrier is aligned and the light path is uninterrupted, the receiver switches on. The start-up test routine is now complete.

After releasing the start key, the enable paths 13-14 and 23-24 are closed. The contact path 41-42 is opened and contact 63-64 remains closed.

If the light barrier beam is interrupted, the receiver switches off. The machine enable circuits: contact paths 13-14 and 23-24 are interrupted and the work process is stopped. The contact path 63-64 is open, the contact path 41-42 is closed.

Order guide

Safety sequential circuit

SFS 33-01

Accessories (available separately):