

**SAFETY RELAY
YRB-0131-241**



MAIN FEATURES

- For safety light curtains and access control barriers with symmetric (such as Safetinx YBB and YCA models) or asymmetric outputs
- Safety Integrity Level (SIL) 3 according to IEC/EN 61508
- Claimed Level (SIL CL) 3 according to IEC/EN 62061
- Performance Level (PL) e and category 4 according to EN/ISO 13849-1
- Safety category 4 according to EN 954-1
- Certified TÜV, CE and UL
- Output: 3 N.O. safety contacts / 1 N.C. monitoring contact
- Manual or automatic restart
- LED indicator for channel 1, 2 and power supply
- 22.5 mm wide, DIN-rail-mountable housing

APPLICATION AREA

This safety relay is a SIL 3, PL e and category 4 device, designed for the protection of people and machines. It can be used in applications together with:

- Electro-sensitive protective equipment type 4 (light curtains and access control barriers)

TECHNICAL DATA

INPUT

Nominal voltage U_N	24 VDC
Voltage range	0.9 ... 1.1 U_N
Nominal consumption	DC approx. 1.7 W
Min. off-time	250 ms
Control voltage on S11 at U_N	22.5 VDC
Control current typ. over S12, S22	35 mA at U_N
Min. voltage on S12, S22 when relay is activated	21 VDC
Short-circuit protection	Internal PTC
Overvoltage protection	Internal VDR

OUTPUT

Contacts	3 N.O. safety contacts 1 N.C. contact ATTENTION! N.C. contact can only be used for monitoring
Operating delay (typ.) at U_N : manual restart	20 ms
automatic restart	350 ms
Release delay (typ.) at U_N : disconnecting supply	20 ms
disconnecting S12, S22	15 ms
Contact type	positively driven
Nominal output voltage	250 VAC (DC: see Diagram 1)
Switching of low loads (contact 5 μ Au)	≥ 100 mV
Thermal current I_{th}	≥ 1 mA
	max. 8 A per contact (see Diagram 2)
Switching capacity (according to IEC/EN 60947-5-1)	
to AC 15: N.O. contacts	3 A / 230 VAC
N.C. contacts	2 A / 230 VAC
to DC 13: N.O. contacts	4 A / 24 VDC
N.C. contacts	4 A / 24 VDC
to DC 13: N.O. contacts	8 A / 24 VDC > 25 x 10 ³
	ON: 0.4 s OFF: 9.6 s

GENERAL DATA

Electrical contact life at 5 A, 230 VAC $\cos \varphi = 1$	> 1.5 x 10 ⁵ switching cycles
Permissible operating frequency	max. 1200 operating cycles/h
Short-circuit strength:	max. fuse rating
line circuit breaker	10 A gL IEC/EN 60947-5-1 B 6 A
Ambient temperature range	-15 ... +55 °C (+5 ... +130 °F)
EMC	according to IEC/EN 61000-4-2 to 5
Degree of protection:	Housing
Terminals	IP 40 IEC/EN 60529 IP 20 IEC/EN 60529
Wire connection	according to DIN 46228-1/-2/-3/-4

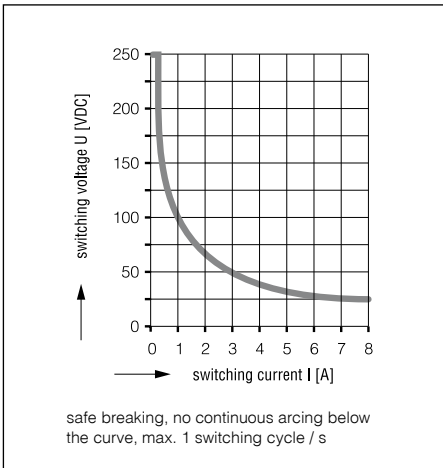


Diagram 1: limit curve for arc-free operation under resistive load

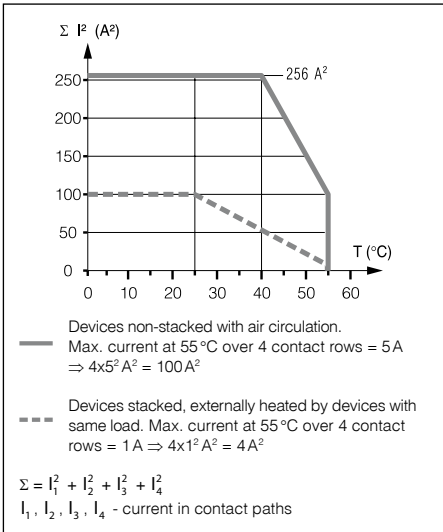
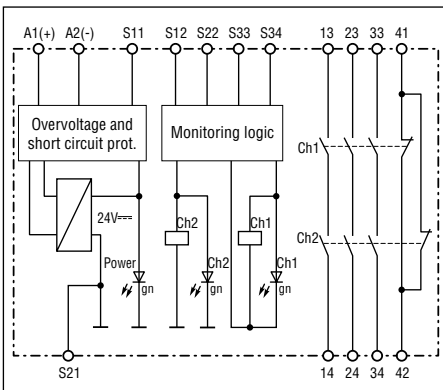


Diagram 2: total current limit curve



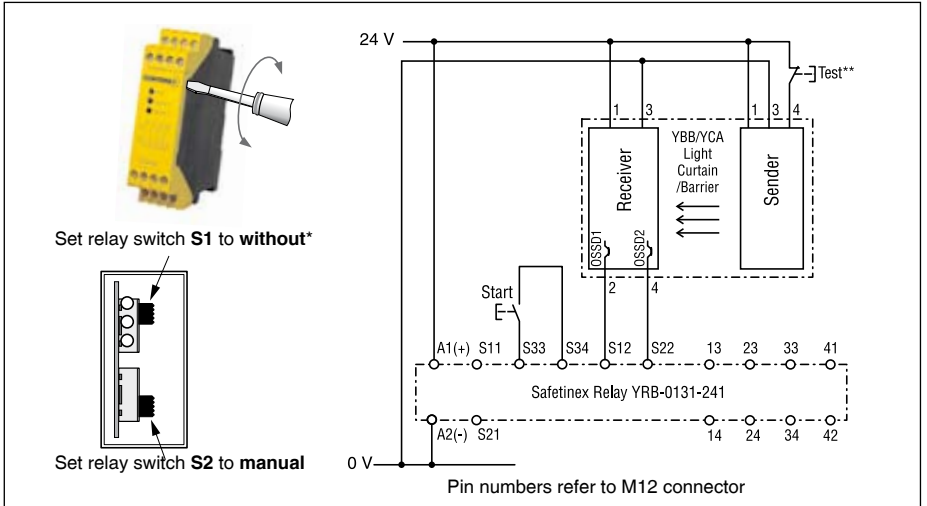
Relay block diagram

Housing material	thermoplastic, meets UL 94V-0
Mounting	on DIN rail IEC/EN 60715
Weight	220 g
Housing dimensions (W x H x D)	22.5 x 90 x 118 mm

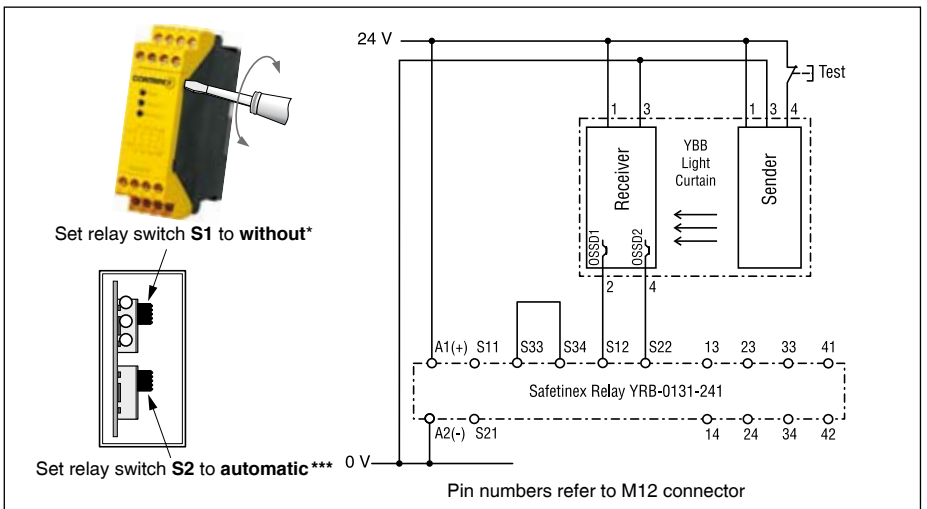
PART REFERENCE

Safety relay	YRB-0131-241
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MANUAL RESTART MODE (Channel 1)



AUTOMATIC RESTART MODE (Channel 1)



- * Position of switch S1:
 - With symmetric outputs on light curtains or access control barriers (such as Safetinx YBB and YCA models), set switch S1 to "without".
 - With asymmetric outputs on light curtains or access control barriers, set switch S1 to "with".
- ** Test button is only applicable for YBB models.
- *** Automatic restart is **not allowed** for YCA access control devices.