Extracts from the original instructions

BSR23
Sentry safety relay

[EN] The complete original instructions can be found at:
[SE] Den kompletta bruksanvisningen i original finns på:
[DE] Die komplette Originalbetriebsanleitung ist zu finden unter:
[IT] Le istruzioni originali complete si trovano qui:
[FR] La notice originale intégrale est disponible sur:
[ES] La versión original de las instrucciones está disponible en:
www.abb.com/jokabsafety

Product description

BSR23 is a safety relay with basic monitoring functions for 1- and 2-channel sensors and equivalent contacts for expansion of safety modules.

Installation

WARNING: The product must be installed by a trained electrician following applicable safety regulations, standards and the machine directive.

CAUTION: The safety relay shall be attached on a 35 mm DIN rail in an enclosure that has at least protection class IP54.

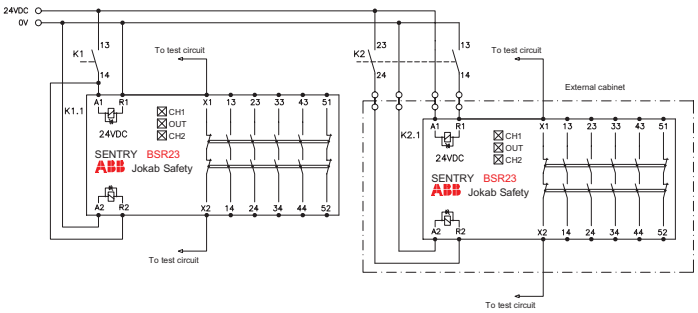
CAUTION: Make sure there is at least 5 mm distance between the safety relay and other Sentry safety relay units to prevent uncontrolled heating.

CAUTION: Make sure there is at least 10 mm distance between the safety relay and other non-Sentry safety relay units to prevent uncontrolled heating.

CAUTION: Make sure there is at least 50 mm distance above and below the safety relay and other units for correct air flow in the venting holes of the safety relay.

Connection

WARNING: The safety relay and the sensor device for monitoring must be connected to SELV/PELV power supply.



LED indication

CH1/OUT/CH2	Indication	Procedure for correction
off/off/off	No channel is activated or no voltage to A1/A2.	Check input A1 to R1 and R2 to A2. Measure A1/A2 voltage.
green/off/off	+24 VDC is not connected to R2 or 0 V is not connected to A2.	Check R2 and A2 connections.
off/off/green	+24 VDC is not connected to A1 or 0 V is not connected to R1.	Check A1 and R1 connections.
green/green/green	Relay is activated	

Technical data

Measurements	
Height/width/depth	120 mm/22.5 mm/120 mm
Power supply	
Power supply type	PELV/SELV
Operating voltage	+24 VDC +15 %, -20 %
Consumption	2x2.5 W
Required fuse	Rated max. 4 A, install in the +24 VDC power supply
Relay output specification	
Maximum operating switching voltage	250 VAC
Overvoltage category	II
NO contact	
AC load (AC15, AC1), rated operational voltage, current 1/2/3/4 contact(s)	250 VAC, 5 A/5 A/4.6 A/4 A
DC load (DC13, DC1), rated operational voltage, current 1/2/3/4 contact(s)	+24 VDC, 6 A/5.6 A/4.6 A/4 A
Required fuse	6.3 A gG, 1 kA short circuit protection (6 A according to UL248)
NC contact	
AC load (AC15, AC1), rated operational voltage/current	250 VAC/0.5 A
DC load (DC13, DC1), rated operational voltage/current	+24 VDC/2 A
Required fuse	4 A gG, 1 kA short circuit protection (4 A according to UL 248)
Connection block and wire properties	
Maximum screw torque	0.8 Nm
Solid conductor, minimum	1 x 24 AWG (0.2 mm^2), 2 x 24 AWG (0.2 mm^2)
Solid conductor, maximum	1 x 12 AWG (3.31 mm^2), 2 x 16 AWG (1.31 mm^2)
Conductor with crimp sleeve, minimum	1 x 24 AWG (0.2 mm^2), 2 x 24 AWG (0.2 mm^2)
Conductor with crimp sleeve, maximum	1 x 12 AWG (3.31 mm^2), 2 x 16 AWG (1.31 mm^2)
Wire strip length	6-7 mm
Maximum response time	
Delay at power on	40 ms
Response time at deactivation	20 ms
Electrical operations life time	
Load $\Sigma Ith^2 \leq 64$, AC1, AC15	160 000 operations
Load $\Sigma Ith^2 \leq 64$, DC1, DC13	100 000 operations
Mechanical operations lifetime	
10^7 operations	

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Environmental data	
Protection class, safety relay	IP20
Protection class, enclosure	At least IP54
Ambient temperature range for operation within specified operation range	-10°C – +55°C
Humidity range for operation	25 % ≤ Rh ≤ 90 %, non-condensing and without icing
Suitable for use at ≤ 2000 metres above sea level.	
Standard compliance and approvals	
Functional safety standard compliance	EN 61508:2010, up to SIL3 EN ISO 13849-1:2008, up to PL e/ Cat.4 EN 62061:2005, up to SILCL3 EN 61511-1:2003
Approvals	CE, TÜV SÜD, cULus
Declaration of conformity	Can be found at: www.abb.com/jokabsafety
Information for use in USA/Canada	
Intended use	Applications according to NFPA 79
Power source	A suitable isolating source in conjunction with a fuse in accordance with UL 248
Fuse	The fuse shall be rated max. 4 A and be installed in the +24 VDC power supply to the device in order to limit the available current.

Maintenance

⚠ **WARNING:** The safety functions and mechanics shall be tested every year to confirm that the safety functions work properly.

⚠ **WARNING:** Repair and exchange of parts of the safety relay is not permitted since it may accidentally cause permanent damage to the product, imparing safety of the device which in turn could lead to serious injury to personnel. In case of breakdown or damage to the product contact ABB Jokab safety to replace the safety relay with a similar product.