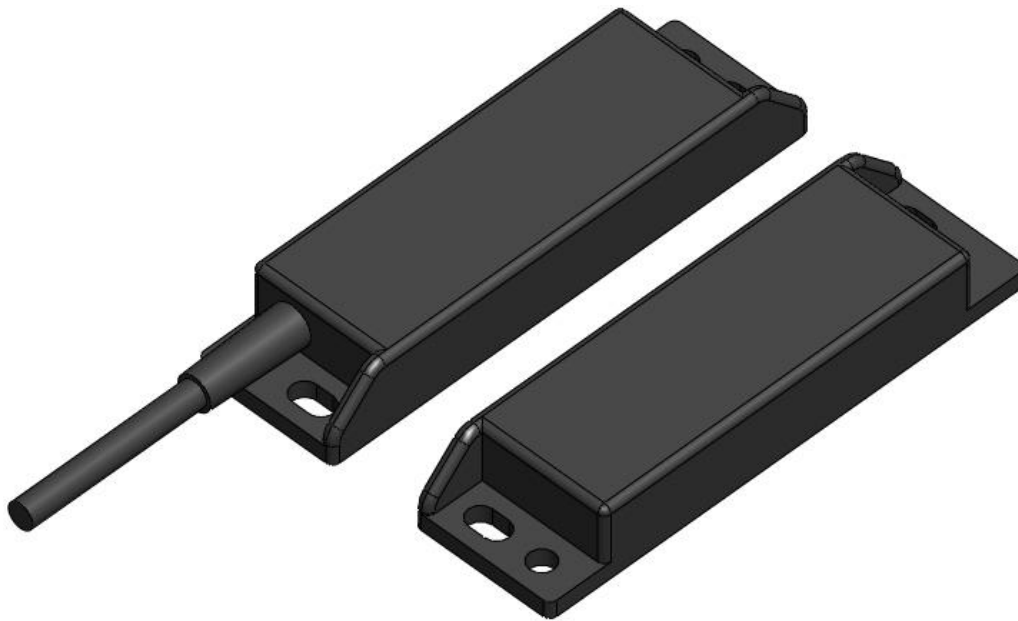


Original instructions

JSNY7

Magnetic switch



Read and understand this document

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1 Introduction

Scope

The purpose of these instructions is to describe the magnetic switch JSNY7 and to provide the necessary information required for assembly, installation, checks and adjustments after installation, and maintenance. The instructions also include information necessary to connect JSNY7 to a safety circuit.

Audience

This document is intended for authorized installation personnel.


Prerequisites

It is assumed that the reader of this document has knowledge of the following:

- Basic knowledge of ABB/Jokab Safety products.
- Knowledge of safety devices and safety locks.
- Knowledge of machine safety.

Special notes

Pay attention to the following special notes in the document:

 **Warning!** Danger of severe personal injury!
An instruction or procedure which, if not carried out correctly, may result in injury to the technician or other personnel.

Caution! Danger of damage to the equipment!
An instruction or procedure which, if not carried out correctly, may damage the equipment.

NB: Notes are used to provide important or explanatory information.

2 Overview

General description

The magnetic switch JSNY7 is designed to operate in dirty industrial environments and is certified to the highest level of safety regulation when working together with a suitable ABB/JOKAB SAFETY safety relay or Safety-PLC Pluto. The magnetic switch is small and resistant to both dirt and water, and has no dust collecting cavities making it useful in environments where hygiene is paramount. The small size of the switch makes it easy to position and hide on gates and hatches.

Safety regulations

 **Warning!**

Carefully read through this entire manual before using the device.

The devices shall be installed by a trained electrician following the Safety regulations, standards and the Machine directive.

Failure to comply with instructions, operation that is not in accordance with the use prescribed in these instructions, improper installation or handling of the device can affect the safety of people and the plant.

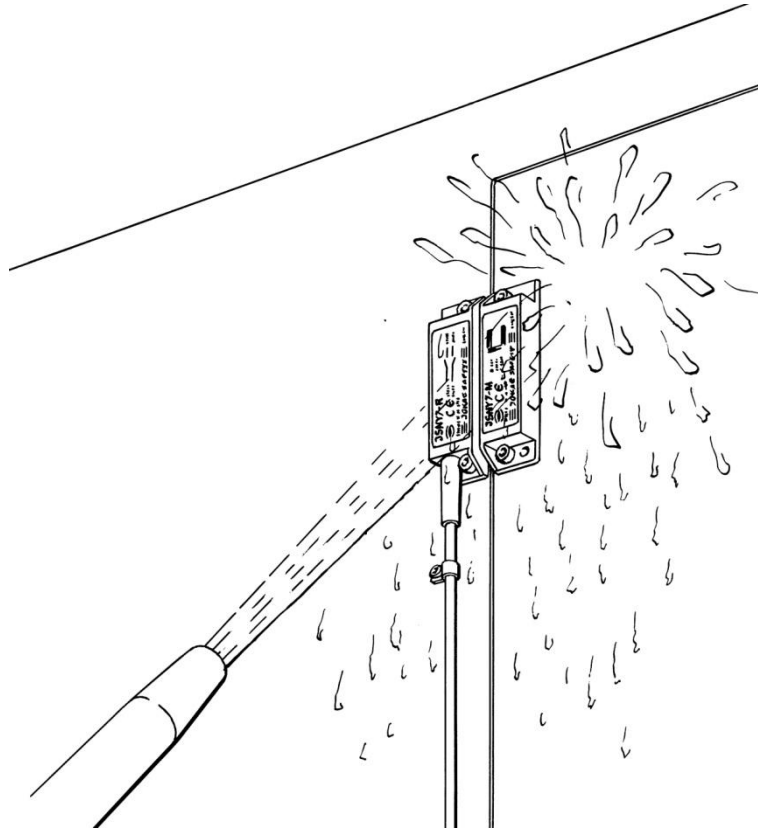
For installation and prescribed use of the product, the special notes in the instructions must be carefully observed and the technical standards relevant to the application must be considered.

In case of failure to comply with the instructions or standards, especially when tampering with and/or modifying the product, any liability is excluded.

Function description

The magnetic switch has one closing and one opening contact. Both contacts have to be monitored. The contacts may be monitored by any of the safety relays in the RT-series such as the RT6, RT7 or RT9, or by the safety-PLC Pluto.

To avoid unauthorised operation of the JSNY7 switch it is only possible to actuate the JSNY7R with the coded magnet, JSNY7M. Other magnets, screwdrivers and tools have no effect on the switch contacts.



JSNY7 is resistant to both dirt and water.

3 Connections

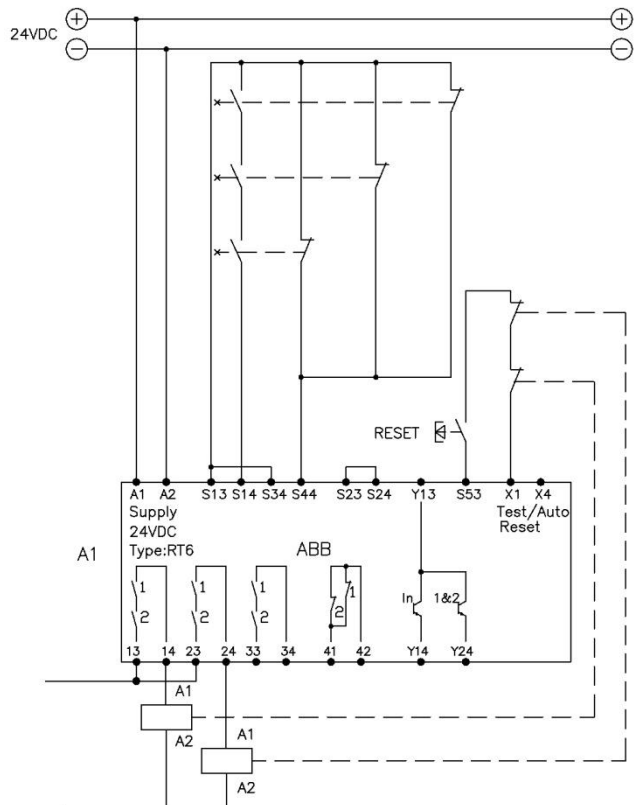
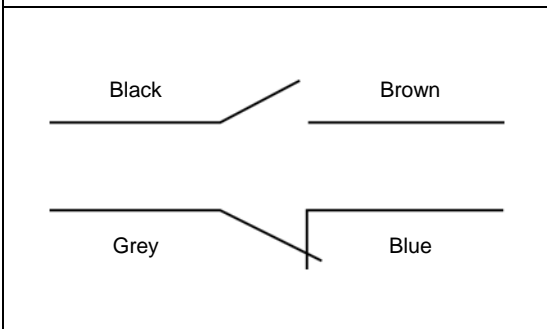
JSNY7 electrical connections

Connection example:

Three JSNY7 connected to RT6 safety relay.

NB: Safety components drawn in released position.

NB: To reach highest level of safety only one magnetic switch should be connected to the safety relay.



4 Installation and maintenance

The JSNY7 is very easy to install as it only consists of two units. After you have carefully measured out where to place JSNY7-R and JSNY7-M, fasten them with screws and connect the cable to the appropriate safety relay.

Minimum safety distance

When using interlocking guards without guard locking to safeguard a hazard zone, the minimum allowed safety distance between the guarded opening and the hazardous machine must be calculated. In order to ensure that the hazardous machine motion will be stopped before it can be reached, the minimum safety distance is calculated according to EN ISO 13855 ("Positioning of safeguards with respect to the approach speeds of parts of the human body").

The minimum safety distance is calculated according to the formula:

$$S = (K \times T) + C$$

Where

S = minimum safety distance (mm)


K = approach speed of a human body; 1600 mm/s

T = the total time from opening of the guard until the hazardous machine movement has stopped, i.e. including control system reaction times and other delays (s)

C = a safety distance taken from Table 4 or Table 5 of EN ISO 13857:2008, if it is possible to push fingers or a hand through the opening towards the hazard before a stop signal is generated

NB: In some cases, T might be reduced by the opening time of the guard until the opening size permits access of the relevant parts of the body. Refer to EN ISO 13855 for further details and EN ISO 13857 for specified values.

Installation precautions

 **Warning!** All the safety functions must be tested before starting up the system.

Maintenance

 **Warning!**

The safety functions and the mechanics shall be tested regularly, at least once every year to confirm that all the safety functions are working properly (EN 62061:2005).

In case of breakdown or damage to the product, contact the nearest ABB/Jokab Safety Service Office or reseller. Do not try to repair the product yourself since it may accidentally cause permanent damage to the product, impairing the safety of the device which in turn could lead to serious injury to personnel.

5 Model overview

Type	Article number	Description
JSNY7R-3	2TLJ020023R0000	JSNY7 magnetic switch with 3 m cable.
JSNY7R-6	2TLJ020023R0100	JSNY7 magnetic switch with 6 m cable.
JSNY7R-10	2TLJ020023R0200	JSNY7 magnetic switch with 10 m cable.
JSNY7M	2TLJ020024R0000	JSNY7 coded magnet.

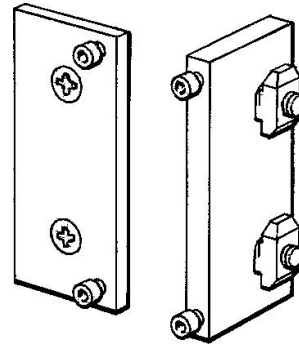
Accessories

Note that all brackets come with nuts and screws for use with ABB/Jokab Safety Quick-Guard fencing system. For further information, contact your local ABB/Jokab Safety sales office.

Type	Article number	Description
JSM D4E	2TLJ040033R1800	Fitting for hinged door (2 fittings are needed for a full JSNY7)
JSM D4G	2TLJ040033R3300	Fittings for sliding door.



JSM D4E
Fitting for hinged door
Article number: 2TLJ040033R1800



JSM D4G
Fittings for sliding door
Article number: 2TLJ040033R3300

6 Technical data

Manufacturer

Address ABB AB / JOKAB SAFETY
Varlabergsvägen 11
SE-434 39 Kungsbacka
Sweden

Electrical characteristics

Max. supply voltage 30 VDC
Max. switch current 100 mA

General

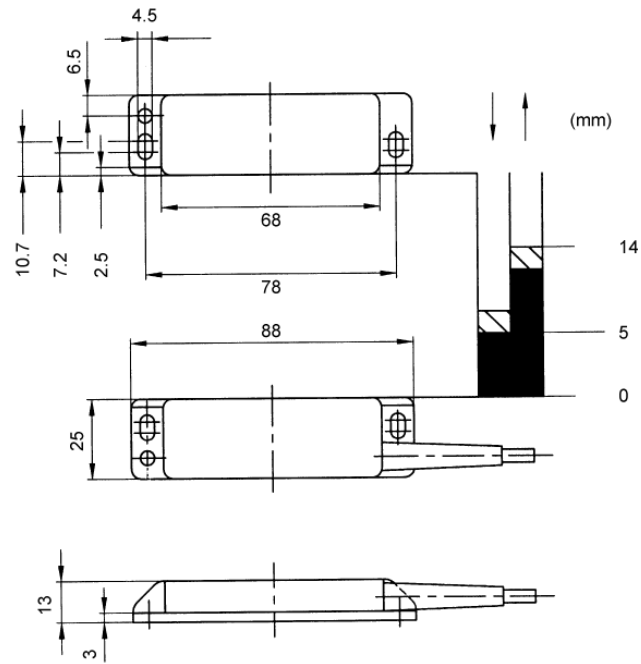
Protection class IP67
Ambient temperature -5...+70°C (movable)
-20...+70°C (fixed)
Size See drawing
Weight Coded magnet: 32 g
Sensor with 3 m cable: 133 g
Material Enclosure/cover: PA 6 (UL94-VO)
Colour Black
Contacts 1 NO + 1 NC
Connection Cable Ø4.5, 4x0.25 mm², 3 meter ; PVC
(Other lengths upon request)
Fixing Body: 2 x M5
Actuator: 2 x M5
Mechanical life 3 x 10⁸ switch operations, depending on load
Max. switching frequency 1 Hz
Switching point Min. switch-on point: 5 mm
Max. switch-off point: 14 mm

Safety / Harmonized standards

Conformity European Machinery Directive 2006/42/EC
CE
EN ISO 12100-1:2003+A1:2009, EN ISO 12100-2:2003+A1:2009, EN 954-1:1996/EN ISO 13849-1:2008, EN 1088+A2:2008, EN 60204-1:2006+A1:2009, GS-ET 15
EN ISO 13849-1 B_{10d}: 30,000,000
Certifications Inspecta

Dimensions

JSNY7 dimensions



NB: All measurements in millimetres.

7 EC Declaration of conformity



EC Declaration of conformity

(according to 2006/42/EC, Annex 2A)

We ABB AB
JOKAB Safety
Varlabergsvägen 11
SE-434 39 Kungsbacka
Sweden

declare that the safety components of ABB AB manufacture with type designations and safety functions as listed below, is in conformity with the Directive

2006/42/EC

Authorised to compile the technical file

ABB AB
JOKAB Safety
Varlabergsvägen 11
SE-434 39 Kungsbacka
Sweden

Product

Magnetic switch JSNY7

Used harmonized standards

EN ISO 12100-1:2010, EN ISO 13849-1:2008, EN 1088+A2:2008, EN 60204-1:2006+A1:2009

Jesper Kristensson
PRU Manager
Kungsbacka 2012-05-14

www.abb.com
www.jokabsafety.com

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