Original instructions

INCA-1

Emergency stop for enclosure installation

INCA-1S

Safety stop for enclosure installation

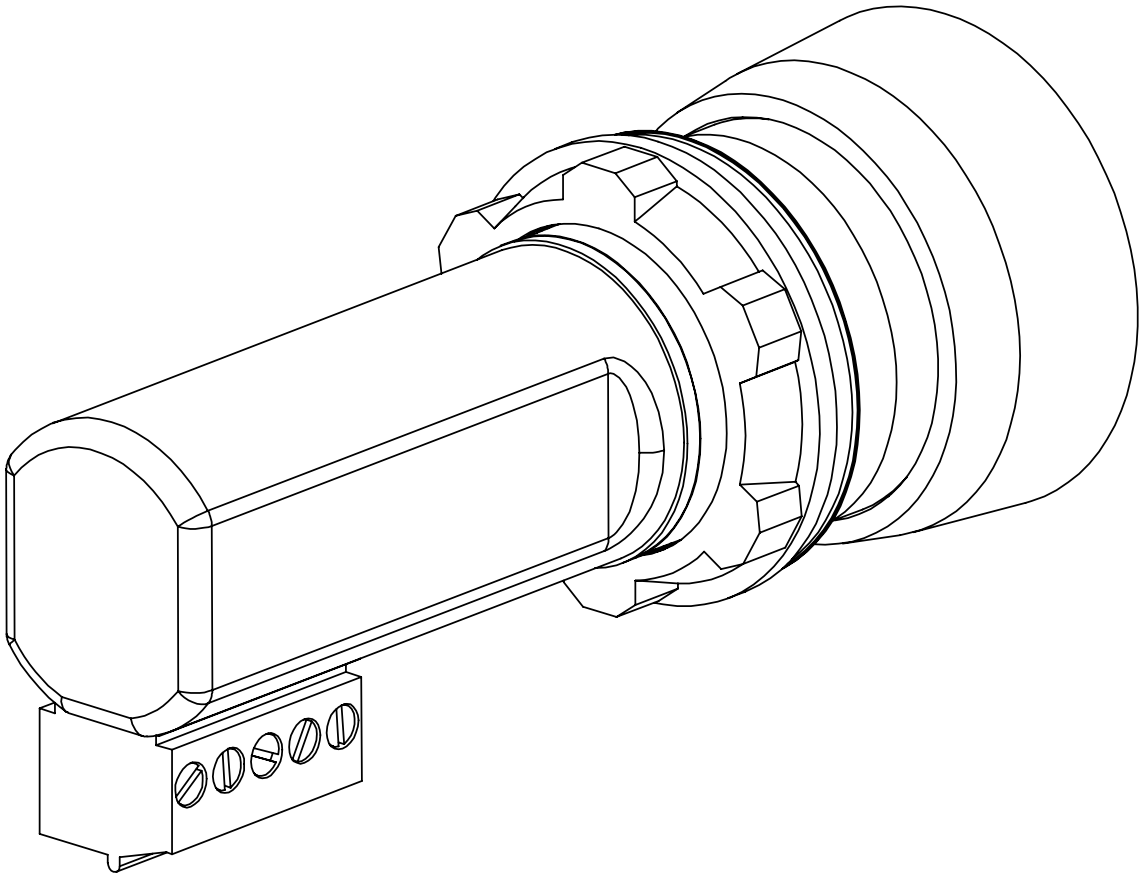


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www.abb.com/jokabsafety

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Table of Contents

1 Introduction 4

Scope 4

Audience 4

Prerequisites 4

Special notes 4

2 Overview 5

General description 5

Safety regulations 5

3 Connections 6

Connection examples 6

4 Installation and maintenance 7

Installation precautions 7

Maintenance 7

5 Operation 8

LED indication 8

6 Model overview 9

Accessories 9

7 Technical data 10

Dimensions 11

8 EC Declaration of conformity 12

1 Introduction

Scope

The purpose of these instructions is to describe the emergency stop INCA 1and safety stop INCA-1S, and to provide the necessary information required for installation and operation.

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 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

INCA 1is an emergency stop device designed for installation in a 22.5 mm slot in an apparatus enclosure.

There is an INCA-1S with black stop button, which is intended for use as a safety stop.

⚠ **Warning!** The emergency stop INCA normally needs to be complemented with other safety functions such as interlocking guards etc. Refer to risk analysis.

NB: The emergency stop (INCA-1) should **not** be used as normal stop of the machine, only in case of emergency.

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.

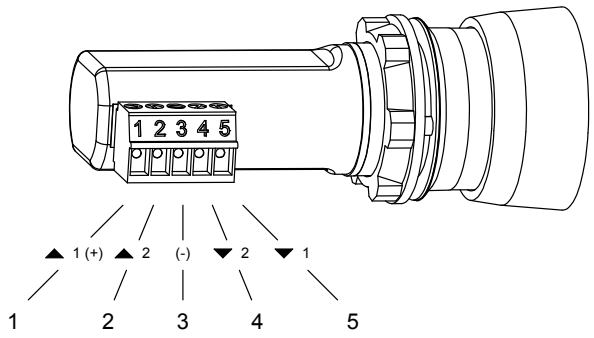
Failure to comply with instructions, operation that is not in accordance with the use prescribed in these instructions, improper installation or handling of the device can affect the safety of people and the plant.

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.

3 Connections

Electrical connections - INCA



INCA
5-pin connection block

1) Input 1 (+24 VDC for LED function)
2) Input 2
3) 0 VDC (for LED function)
4) Output 2
5) Output 1

Caution!

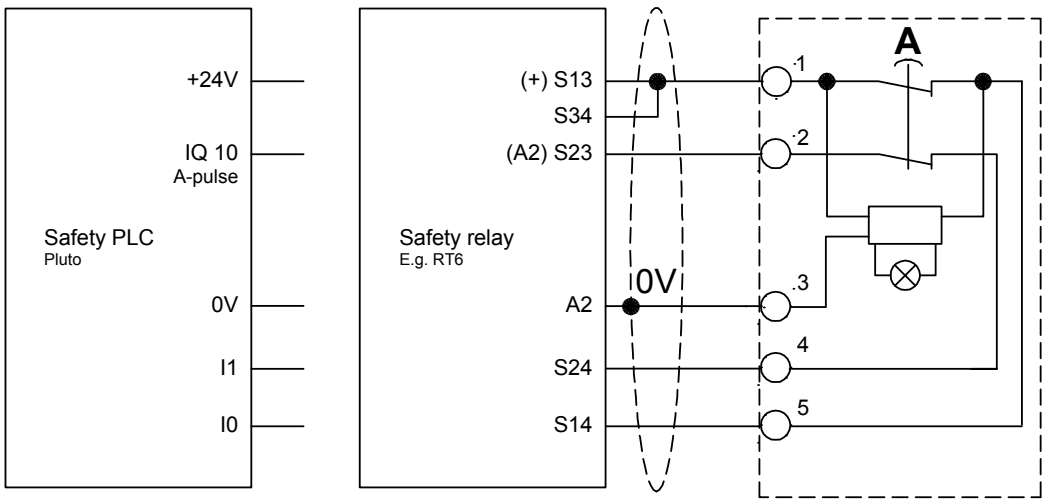
When connected to an ABB/Jokab Safety safety relay (such as an RT6 or RT9) and voltage (+) is supplied from the output S13, a maximum of three INCA units may be connected in series. This must be done with caution (especially in warm environments) as this affects the heat generation within the safety relay.

If more than three units are connected in series, voltage (+) should be supplied from another source (e.g. A1).

Connection examples

Connection example – INCA-1

INCA connected to safety-PLC Pluto or safety relay RT6. Dual channel connection with indication.



4 Installation and maintenance

Installation precautions

First mount INCA in the apparatus enclosure slot and then attach and fasten the M22 nut. Finally, attach the connection block.

⚠ **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.

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 Operation

LED indication

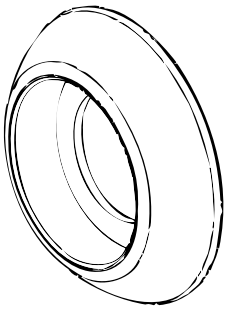
LED	Indication	Description
LED on button	Green	Safety device OK. Safety circuit closed.
	OFF	Safety circuit interrupted (when an emergency stop actuator is pressed down, all following units in the safety circuit lose the LED function).
	Red	Safety device actuator pressed down. Safety circuit interrupted.

6 Model overview

Type	Article number	Description
INCA 1	2TLA030054R0100	Emergency stop, red button, 5-pin connection block
INCA 1S	2TLA030054R0300	Safety stop, black button, 5-pin connection block

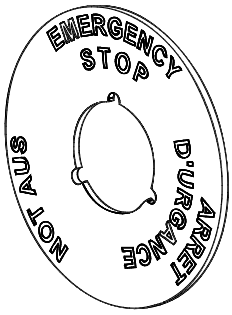
Accessories

Type	Article number	Description
Yellow surround	2TLA030054R0400	Yellow surround for emergency stop button.
Emergency stop sign	2TLA030054R0500	Ø22.5 mm, Swedish, Danish, Finnish
Emergency stop sign	2TLA030054R0600	Ø22.5 mm, English, French, German



Yellow surround for emergency stop button

Article number:
2TLA030054R0400



Emergency stop sign
Ø22.5 mm

Article number:
S, D, F: 2TLA030054R0500
E, F, G: 2TLA030054R0600

The Jokab Safety branded product with articlenumber beginning with 2TLJ is fully compatible with the ABB branded product with articlenumber beginning with 2TLA.

7 Technical data

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

Power supply	
Operating voltage (LED)	17-27 VDC ±10%
Current consumption (LED)	15 mA
Minimum current (switches)	10 mA 10 VDC/10 VAC
Maximum current (switches)	2 A 24 VDC

General	
Protection class	IP65, connector IP20
Ambient temperature	Storage: -30…+70°C Operation: -10…+55°C
Housing material	Polyamide PA66, Macromelt, polybutylenterephthalate PBT, Polypropene PP, UL 94 V0
Contact material	Silver alloy, gold plated
Connectors	5-pin connection block
Size	See drawing
Weight	~ 45 g
Colour	Yellow base, red or black button
Actuator force (E-stop button)	22 +/- 4N
Actuator travel	~ 4 mm to latch
Mechanical life	> 50,000 operations
Impact resistance (half sinusoidal)	Max. 150 m/s^2, pulse width 11 ms, 3-axis (as per EN IEC 60068-2-27)
Vibration resistance (half sinusoidal)	Max. 50m/s^2 at 10 Hz, 10 cycles, 3-axis (as per EN IEC 60068-2-6)

Climate resistance	
Damp heat, cyclical	96 hours, +25°C / 97%, +55°C / 93% relative humidity, as per EN IEC 60068-2-30
Damp heat, sustained	56 days, +40°C / 93% relative humidity, as per EN IEC 60068-2-78
Dry heat	96 hours, +70°C, as per EN IEC 60068-2-2
Cooling	96 hours, -40°C, as per EN IEC 60068-2-1
Salt mist	96 hours, +35°C in a chemical solution with NaCl as per EN IEC 60068-2-11

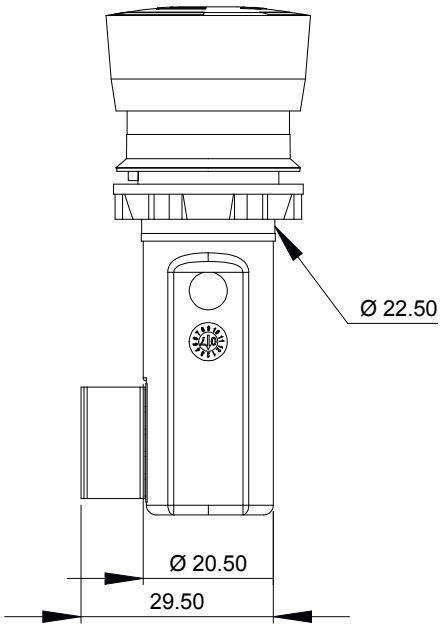
Safety / Harmonized Standards	
Conformity	European Machinery Directive 2006/42/EC CE EN ISO 12100:2010, EN ISO 13849-1:2008/AC:2009, EN 60204-1:2007+A1, EN ISO 13850:2008
EN ISO 13849-1	Performance level: Up to PL e, category 4 B_{10d}: 6 050
Certificates	Inspecta

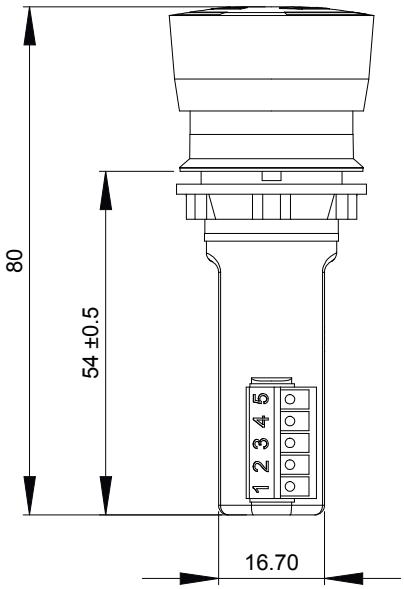
NB: A safety function with an emergency stop INCA 1 can achieve Cat. 4/PL e according to EN ISO 13849-1 only when a single INCA unit is connected to the control unit (safety-PLC or safety relay) in a dual channel configuration.

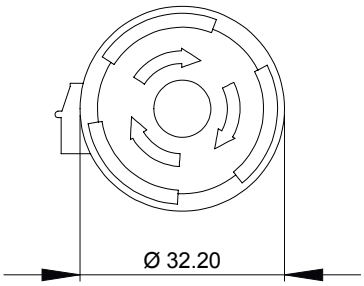
⚠ **Warning!** The maximum number of operations (cycles) for the emergency stop INCA is 6050 operations.

Dimensions

Dimensions - INCA







NB: All measurements in millimetres.

8 EC Declaration of conformity

EC Declaration of conformity

(according to 2006/42/EC, Annex2A)

We	ABB AB JOKAB SAFETY Varlabergsgatan 11 SE-434 39 Kungsbacka Sweden	declare that the safety components of ABB AB make with type designations and safety functions as listed below, is in conformity with the Directives 2006/42/EC 2006/95/EC
Authorised to compile the technical file		ABB AB JOKAB Safety Varlabergsgatan 11 SE-434 39 Kungsbacka Sweden

Product	**Certificate**
Emergency stop device Smile, versions 10EA, 10EAK, 11EA, 12EA, 11EAR	11-SKM-CM-0103
Emergency stop device INCA 1	11-SKM-CM-0103
Emergency stop wire Stop Line	
Emergency stop wire JSNY10	

Certification body	Inspecta Sweden AB Box 30100 SE-104 25 Stockholm Sweden
Used harmonized standards	EN ISO 12100:2010, EN ISO 13849-1:2008/AC:2009, EN 60204-1:2006+A1:2008, EN ISO 13850:2008

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Kungsbacka 2012-08-03

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