Original instructions

INCA-1
Emergency stop for enclosure installation

INCA-1S
Safety stop for enclosure installation
Read and understand this document

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- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this document.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

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1 Introduction

Scope
The purpose of these instructions is to describe the emergency stop INCA 1 and 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 1 is 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

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

<table>
<thead>
<tr>
<th>LED on button</th>
<th>Indication</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td></td>
<td>Safety device OK. Safety circuit closed.</td>
</tr>
<tr>
<td>OFF</td>
<td></td>
<td>Safety circuit interrupted (when an emergency stop actuator is pressed down, all following units in the safety circuit lose the LED function).</td>
</tr>
<tr>
<td>Red</td>
<td></td>
<td>Safety device actuator pressed down. Safety circuit interrupted.</td>
</tr>
</tbody>
</table>
6  Model overview

<table>
<thead>
<tr>
<th>Type</th>
<th>Article number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INCA 1</td>
<td>2TLA030054R0100</td>
<td>Emergency stop, red button, 5-pin connection block</td>
</tr>
<tr>
<td>INCA 1S</td>
<td>2TLA030054R0300</td>
<td>Safety stop, black button, 5-pin connection block</td>
</tr>
</tbody>
</table>

**Accessories**

<table>
<thead>
<tr>
<th>Type</th>
<th>Article number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow surround</td>
<td>2TLA030054R0400</td>
<td>Yellow surround for emergency stop button.</td>
</tr>
<tr>
<td>Emergency stop sign</td>
<td>2TLA030054R0500</td>
<td>Ø22.5 mm, Swedish, Danish, Finnish</td>
</tr>
<tr>
<td>Emergency stop sign</td>
<td>2TLA030054R0600</td>
<td>Ø22.5 mm, English, French, German</td>
</tr>
</tbody>
</table>

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 article number beginning with 2TLJ is fully compatible with the ABB branded product with article number beginning with 2TLA.
## 7 Technical data

### Manufacturer

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

### Power supply

<table>
<thead>
<tr>
<th>Operating voltage (LED)</th>
<th>17-27 VDC ±10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current consumption (LED)</td>
<td>15 mA</td>
</tr>
<tr>
<td>Minimum current (switches)</td>
<td>10 mA 10 VDC/10 VAC</td>
</tr>
<tr>
<td>Maximum current (switches)</td>
<td>2 A 24 VDC</td>
</tr>
</tbody>
</table>

### General

<table>
<thead>
<tr>
<th>Protection class</th>
<th>IP65, connector IP20</th>
</tr>
</thead>
</table>
| Ambient temperature | Storage: -30...+70°C  
Operation: -10...+55°C |
| Housing material | Polyamide PA66, Macromelt, polybutyleneterephthalate 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/s², pulse width 11 ms, 3-axis (as per EN IEC 60068-2-27) |
| Vibration resistance (half sinusoidal) | Max. 50m/s² at 10 Hz, 10 cycles, 3-axis (as per EN IEC 60068-2-6) |

### Climate resistance

<table>
<thead>
<tr>
<th>Damp heat, cyclical</th>
<th>96 hours, +25°C / 97%, +55°C / 93% relative humidity, as per EN IEC 60068-2-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damp heat, sustained</td>
<td>56 days, +40°C / 93% relative humidity, as per EN IEC 60068-2-78</td>
</tr>
<tr>
<td>Dry heat</td>
<td>96 hours, +70°C, as per EN IEC 60068-2-2</td>
</tr>
<tr>
<td>Cooling</td>
<td>96 hours, -40°C, as per EN IEC 60068-2-1</td>
</tr>
<tr>
<td>Salt mist</td>
<td>96 hours, +35°C in a chemical solution with NaCl as per EN IEC 60068-2-11</td>
</tr>
</tbody>
</table>
Safety / Harmonized Standards

Conformity

<table>
<thead>
<tr>
<th>European Machinery Directive 2006/42/EC</th>
</tr>
</thead>
</table>
| CE  

EN ISO 13849-1

<table>
<thead>
<tr>
<th>Performance level: Up to PL e, category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>B_max: 6 050</td>
</tr>
</tbody>
</table>

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, Anmnd 2A)

We ABB AB
JOKAB SAFETY
Varlabergsvägen 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
Emergency stop device Smile, versions 10EA, 10EAK, 11EA, 12EA, 11EAR
Emergency stop device INCA 1
Emergency stop wire Stop Line
Emergency stop wire JSNY10

Certificate
11-SKM-CM-0103
11-SKM-CM-0103

Certification body
Inspecta Sweden AB
Box 36100
SE-104 35 Stockholm
Sweden

Used harmonized standards

Jesper Kristensson
PRU Manager
Kungsbacka 2012-06-03

www.abb.com
www.jokabsafety.com

Original

ABB AB / JOKAB SAFETY Varlabergsvägen 11, SE-434 39 Kungsbacka, Sweden
www.abb.com/jokabsafety