Original instructions

HD5-B-901 (CustomerSolution)

Three position enabling device with safe AS-i slave

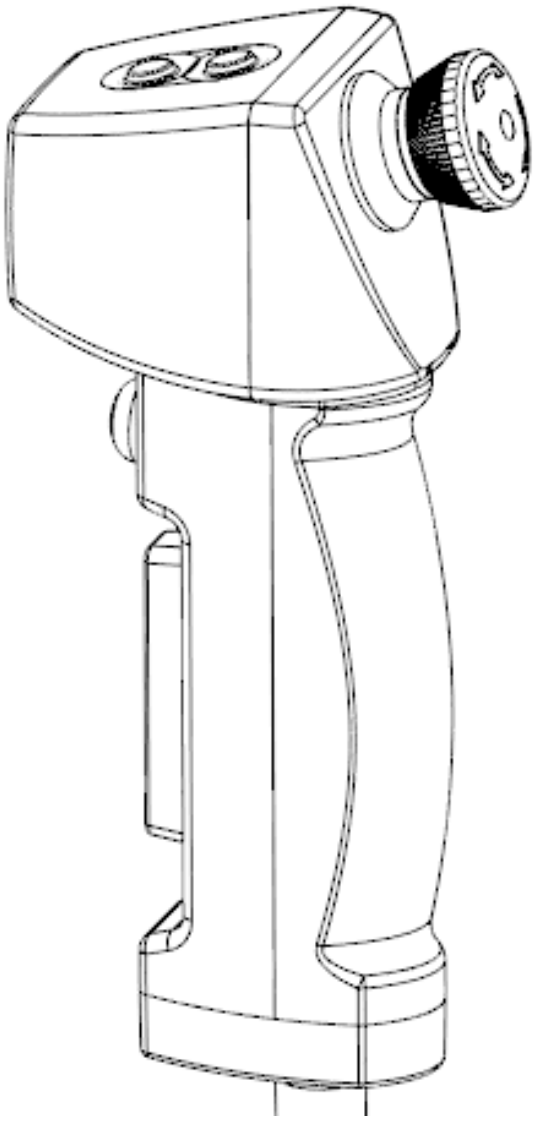

ABB AB JOKAB SAFETY, Varlabersvägen 11, SE-43439 Kungsbacka
www.abb.com/lowvoltage

Read and understand this document

Please read and understand this document before using the products.

Please consult your ABB JOKAB SAFETY representative if you have any questions or comments.

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Several examples of applications that require special attention are listed below. These examples are not intended to be an exhaustive list of all the possible applications of the products and they should not be understood as meaning that products are suitable for the potential uses specified:

Use outside, use where there is the possibility of chemical exposure or electrical interference, or use under conditions not specified in this document.

Nuclear power control systems, incineration plants, railway installations, aviation systems, medical technology, gaming machines, vehicles, and industrial plants are subject to special industry or official regulations.

Facilities, machines, and equipment that may pose a danger to life or property.

Please observe and follow all prohibitions on the use of the products.

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PERFORMANCE DATA

Due to the fact that efforts have been made to ensure the accuracy of the information contained in this manual, ABB JOKAB SAFETY assumes no responsibility for errors or omissions and reserves the right to make changes and improvements without giving notice.

The performance data contained in this document is to provide the user with guidance when assessing usability and does not constitute a warranty-related assurance. The data may relate to test results from ABB/JOKAB SAFETY. The user must compare this with the actual situation in which the application is taking place. The current performance is covered by the ABB JOKAB SAFETY warranty and limitations of liability.

Table of contents

1. INTRODUCTION

Purpose

The purpose of this operating manual is to describe the HD5-B-xxx three position enabling device and to provide the information necessary for planning, assembly, maintenance, and operation.

Target group

This document is aimed at planners, as well as specialist staff working in assembly and maintenance. In addition, this operating manual is aimed at users who have received training and authorization, from the operator of the facility, in relation to these devices, how to handle them, and the hazards they pose.

Prerequisites

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

- Basic knowledge of ABB JOKAB SAFETY products
- Knowledge of the AS-i Bus system
- Knowledge of safety products
- Knowledge of safety control devices with functions relevant to safety
- Knowledge of related facilities

Special instructions

Please pay attention to the following special instructions in this document:

	**Attention!**	**Danger of personal injury!** Failure to follow instructions or work sequences properly may result in personal injury.
	**Caution**	**Risk of damage to the equipment!** Failure to follow instructions or work sequences properly may result in damage to the equipment.
	**Note**	Notes are used to provide important or explanatory information.

2. OVERVIEW

Product description

The “HD5-B-xxx” is a three position enabling device with integrated AS-i technology. It operates in standard-addressing mode, in accordance with the V.3.0 specification. (See “AS-i data” section)

The “HD5-B-xxx” enabling device is designed to be connected to the AS-i Safety-Bus and is available in a range of configurations, which can be equipped with a maximum of two safe and one unsafe slaves.

There are two three-position enabling switches, which are both operated using one button providing a high level of safety. The contacts are only closed in the middle position and are opened both when the button is released and when it is pressed down further into the third and final position. Closing the contacts always requires the contacts to be released. (See Functional description)

The signals from the three-position enabling switches and the emergency stop button (if the device is equipped with this) are detected by the integrated electronics and transmitted to the AS-i safety monitor via the safe slave.
Signals used to provide haptic or visual feedback are transmitted from additional integrated command buttons and sensors to the AS-i logic and from the AS-i logic to the enabling device via a third, unsafe slave.

The enabling device is connected to the AS-i Bus in the usual way using a fixed spiral-cable or via a M12 connector built into the device.

If you have any questions regarding the existing configurations or the possibilities for a configuration adapted to your needs, please contact ABB JOKAB SAFETY.

Application area

The enabling device is used in machines and facilities to provide protection to people, who, because of their work (e.g. maintenance or installation work), move through danger zones in which other forms of protection for users is neither possible nor practical.
Performing a risk assessment is essential for choosing protective devices. This should be done by the manufacturer of the machine.

Caution!

Please note that failure to comply with the provisions and restrictions contained in this operating manual, (e.g. in relation to the duty cycle, temperature etc.), may lead to loss of functionality of the enabling device and to unintended machine stoppage.
If a shutdown has occurred, the enabling device will become functional again once the values drop below the limits. However, there may still be damage to the electronics and a reduction in service life.

Safety regulations

Attention!

Read the manual carefully and in full before using the device.

The enabling device may only be installed by specialist personnel, in compliance with regulations for AS-i networks, the applicable regulations and standards, and the enclosed data sheet.

Failure to comply with the instructions, or a use that is not in accordance with the specified instructions, as well as the improper installation or operation of the device, may adversely affect the safety of the user and the facility.

A safety logic unit, configured in accordance with the specified use of the product, is required to monitor (evaluate the signals) of the enabling device, allowing the product to be used the specified way.

All liability is excluded if the instructions are not complied with, especially in cases of interference with or modifications to the product.

3. Functional description

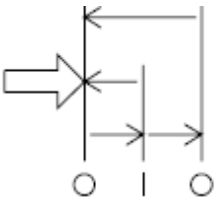
Enabling button

The enabling button works in accordance with the three-position principle. This allows for operators to be protected if the button is released or fully pressed down (e.g. if cramping).

An enabling button with three positions transmits signals, which:

- When activated, allow the machine or equipment to be initiated using a separate start control and
- When deactivated, initiate a stop function which prevents the machine or equipment from starting

Two three-position enabling switches are operated and analyzed redundantly to create a two-channel architecture.



- The symbol for a three-position enabling switch identifies the three positions (OFF, ON, OFF) using O and I, the movement direction from left to right, as well as the possible ways to move the switch.
- An important feature of the three-position enabling switch is that when shifting back from position 3, the ON position is not actuated, i.e. the contacts remain open.

The three positions function as follows:

- Position 1 (O): OFF mode (enabling button has not been pressed, contact is open)
- Position 2 (I): ON mode
  (Enabling button has been pressed as far as the release position, contact is closed)
- Position 3 (O): OFF mode (enabling button has been fully pressed down, contact is open).

When released, the three-position enabling switches always go back to position 1, regardless of whether they were in position 2 or 3.

Notice on operation

To ensure a correct and safe operation, the enabling button must be pressed in the middle

with two fingers

or three fingers

Emergency stop button

The built-in emergency stop button is providing an emergency stop function for stopping hazardous functions and removing power to them.
The emergency stop button has two forcibly-guided normally closed contacts.

Note on safe actuation!

To allow for the emergency stop button to operate safely, we recommend to use and assembly our holders, designed especially for this enabling device.
Detailed description of this is to be found in the accessories section.

Attention!

Particular caution should be exercised in relation to enabling devices that are connected, as standard, using a connector. Be aware of the following items:

- The correct function of the emergency stop must be check monthly!
- The emergency stop function must always be available and functional, and should have priority over all other functions and operations in all operating modes of the machine without affecting any facilities which are designed to release trapped persons.
- No start command (whether intentional, unintentional or unexpected) should be able to affect working processes that were stopped by initiating the emergency stop function until the emergency stop function has been reset manually.
- If it is possible to remove emergency stop buttons (e.g. portable programming devices) or shut down sections of a machine, it must be ensured that operational and non-operational emergency stop buttons are not mixed up.

Feedback on the functioning of the emergency stop button

- Feedback LED integrated into the push button of the emergency stop button
  - Red LED can be controlled in a user-defined way via the AS-i Bus

Attention!

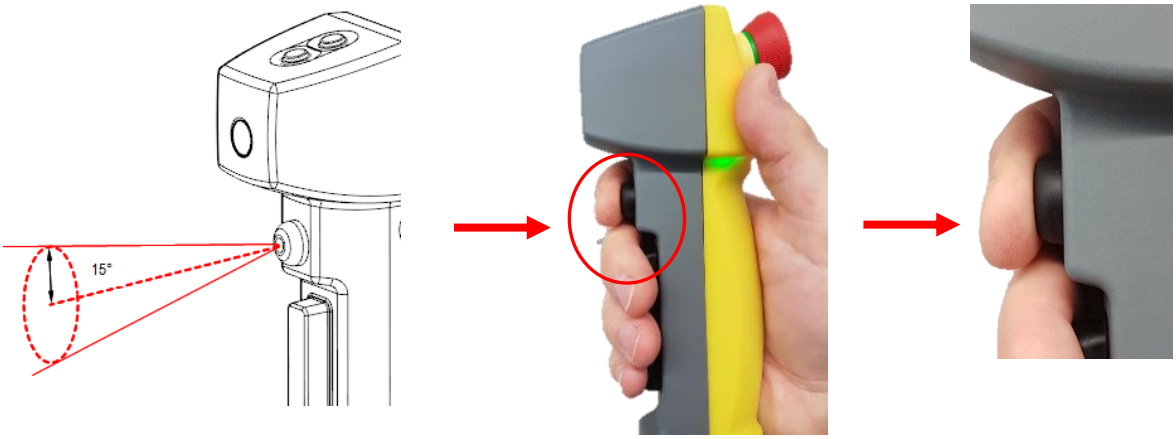
The controls for the feedback LED are independent from the emergency stop button function.
The programmer is solely responsible for their signaling function.
ABB JOKAB SAFETY does not accept any liability for damages of any kind caused by signaling that is not logical, and the resulting misjudgments and errors by users.

Additional button No. 1

This button is built-in as standard and is located above the enabling button in the front area. Its optimized ergonomic shape, as well as the tactile button beneath it, ensures it can be operated easily and safely. This is usually done using the index finger.

Note on actuation!

The button must be actuated by pressing it down vertically, to an angle of between 0° and 15°. If the angle is exceeded when actuating the switch, there is a possibility that the switch contact may be damaged, and the switching cycles specified in the technical data will not be achieved.



Additional buttons No. 3 and No. 4

These buttons are installed on the grey housing. They can be controlled in a user-defined way via the AS-i Bus.
Additional labelling of the buttons is an option for custom configurations.

Signal LED

The high-intensity LEDs are installed in the housing in such a way that they can easily be perceived even in the normal ambient light in the workplace.
The controls are user-defined and can be controlled in a user-defined way via the AS-i Bus.

Home position detector

A sensor, which can be implemented in the housing of the enabling device can recognize when the enabling device has been hung-up in the specially-designed holder. (This holder is available as an accessory).
The signal from the sensor is transmitted via the AS-i Bus.

Attention!

This signal is not failsafe and shall never be used for safety purposes.

Assist light (flashlight)

This function acts as an assist light to illuminate work spaces for short periods in which the ambient light is not sufficient.
The controls are user-defined and can be controlled in a user-defined way via the AS-i Bus.
When using these, you must comply with the following:

Notice on duty cycle

- **On time = 60%, max. 15 min., ambient temperature ≤ 35°C**
- **On time = 40%, max. 10 min., ambient temperature > 35°C**
- Calculation
  - On-time percentage = (on time/on time + off time) x 100
  - On time = (D%/100- D%) x off time
  - Off time = (100-D%/D%) x duty cycle

Caution! Increased heat build-up

Compliance with the requirements is absolutely vital, due to the additional heat generated by the assist light!
If the specified limits are exceeded, the possibility that the AS-i electronics may be damaged cannot be ruled out.

Attention! Hazards arising from glare

Avoid looking directly into the lens of the assist light. Looking directly into the lens, and the glare effect which may result from this, can sometimes impair vision, which may cause irritation, adverse effects, or even accidents.

Vibration

A signaling device integrated into the housing of the enabling device, which can be controlled in a user-defined way via the AS-i Bus, shall draw attention to an occurrence by causing the handheld enabling device to vibrate.

Notice on duty cycle

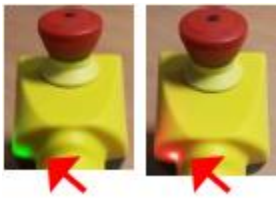
- **On time = 40%, max. 3 min.**
- Recommended pulsed operation ➔ “On” 150 ms ➔“Off” 250 ms ➔ “On” 150 ms....
- Calculation
  - On-time percentage = (on time/on time + off time) x 100
  - On time = (D%/100- D%) x off time
  - Off time = (100-D%/D%) x duty cycle

Attention!

The user must be informed the manufacturer or operator of the system about function and if necessary, instructed in order to detected potential hazards arising from the function.
Due to ignorance and possibly the following shock there is a risk of accident!

Status LED for AS-i Bus

One green and one red LED will inform you, about the status of the slave on the AS-i Bus.
The LEDs are positioned in a way that means they are not directly visible when the enabling device is placed in the holder intended for this purpose.
They are positioned in this way so that these signals are not confused with those from the signal LEDs.



AS-i (green)	Fault (red)	Description
Off	Off	No power supply to AS-i
ON	Off	Normal operation
Off	ON	AS-i communication disrupted
Flashing	ON	No data exchange because address = 0
alternating flashing	alternating flashing	Peripheral error
Off	Flashing	Recognizes double addresses (ABB version only)

Connection with AS-i Network

Fixed connection

In this version, the connection is achieved using a two-core cable. The enabling device is delivered with this already firmly attached. This version of connection is particularly recommended if a configuration of the enabling device with an integrated emergency stop button is being used.

Note on the connection cable!

If the enabling device is connected using a spiral cable and more than three HD5-B-xxx are used on an AS-i cable, you must reduce the AS-i cable by 12m per device

Attention!

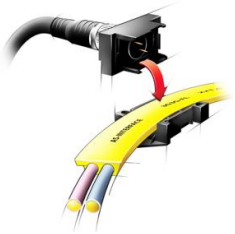
Please note, if an emergency stop button is implemented in the enabling device and the connection becomes deconnected, additional measures can required, as described in
Section 3 **“Functional description, emergency stop button”**.

4. Installation

General

The connection of the enabling device to the machine must only be carried out by specialist personnel who are qualified in this field, in accordance with the regulations for AS-i networks, the applicable guidelines and standards, as well as the data sheet enclosed with the product.

Attention should be paid to existing or preset addressing (delivery state) of the enabling device. If necessary, it should be adjusted before integrating it into the AS-i network!



The connection to the AS-i network uses a two-core connection cable.
A suitable contact according to the connection methods to the AS-i network should be established

It is recommended to follow the procedure shown in the picture on the right, using an M12 connector.
Normally, the M12 connector should be attached to Pin1 (AS-i +) and Pin 3 (AS-i -).

Please ensure

in accordance to the national electrical codes, the separate laying of cable that serve the power supply (control and main circuits) and the cable that serve to transmit control signals!
The connection cable of this device must be laid in the area for control signals!

All functions, especially those relevant to safety, shall be checked and tested to ensure they are working properly before commissioning takes place.
If this is not done, the possible property damage or personal injury can occur!

Installing the holder

At mounting the specific holder “HD5-M-xxx” please ensure that the enabling device hang up completely in the holder.
The Position should selected in view of ergonomic and safety relevant aspects.

More Information in Section 10 “Accessories”

5. Commissioning

The enabling device should only be commissioned by specialist personnel who have been trained to work with the machine.
It is always important to make sure that the operation of the device is not tampered with and ensure the intended use (see scope of application) is complied with.

Attention!

Other protective measures must be taken in order to protect other people in the same or adjacent hazardous area.

Functional Test

At first commissioning after installation, a functional test based on the application case must be carried out in accordance with current guidelines for the case of application and the relevant harmonized standards.

6. Review, maintenance and cleaning

The enabling device itself does not require any maintenance in addition to regular functional testing and cleaning.

The emergency stop safety functions must to check monthly. All other safety functions and mechanisms must be tested regularly, at least once a year, to confirm that all of the safety functions are working as they should.
Depending on the application, machine manufacturers may stipulate requirements for shorter maintenance intervals. If this is the case, such requirements should be given priority.
As a general rule, it is recommended to document all maintenance work.

To ensure that command buttons continue to function in the long term, it is advisable to regularly wash them with a soft cloth and a standard (soap-based) multi-purpose cleaner.

Caution!

The degree of protection for the enabling device specified in the data sheet should be complied with during cleaning.

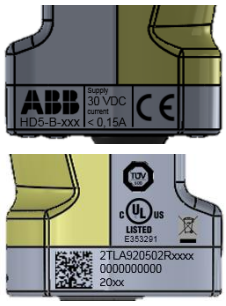
The operating surfaces are made out of soft, elastic and very thin material designed to be hard wearing. Using abrasive cleaning agents or sharp-edged tools can weaken or penetrate the surface, which results in the protection class being lost in a relatively short space of time. (Dirt and moisture may penetrate the housing)
The use of cleaning agents containing solvents should be avoided. This is not only to protect the surfaces, but also to protect the health of employees.

Attention!

If the device doesn´t have functionality or the device has become damaged, the device must immediately be put out of service. Please get in touch with your regular contact for maintenance work or your nearest ABB JOKAB SAFETY customer service or dealer. Do not attempt to repair the product yourself. Any attempt to interfere with the device will result in a loss of warranty. There is also a possibility of the product becoming damaged, affecting its safety and how it functions, which may lead to serious injury.

Product data

If you have any queries regarding the product or ordering spare parts, you can find the item number right on the base of the enabling device. You can also find further data in the QR-code, which, can be read using a smartphone with a QR-code scanner app.



7. Disposal

We kindly ask you to think about the environment to recycle the device as electrical waste once it reaches the end of its service life.
Please comply with currently applicable disposal requirements.

8. Operation

The following points should provide you with examples of applications as well as the behavior of control and signaling devices.
User-defined statuses that are provided from machine/equipment manufacturer, must be documented.
These are a part of this “original operating manual for HD5-B-xxx”.

Attention!

You can find further explanations and warnings relating to the below functions in Section 3. “Functional description”

Three-position enabling switch

Position 1 - “idle status” or “stop status”:

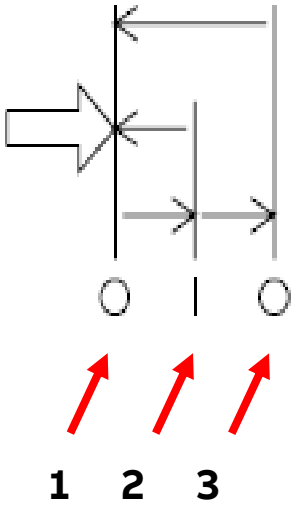
- Switch in off position, i.e. not pressed down
- Process initiation not permitted
- Until the button is put into the middle position (position 2 “operating status”)

Position 2 - “operating status”:

- Button pressed down, moved into middle position
- Signal sent to the controls, start process
- The process stops when the button is put into its end position (position 3, “stop status”)

Position 3 - “Stop status”:

- Button has been moved into the third and final position
- Signal sent to the controls, stop process
- The button must be put into “idle mode” (position 1) before it can be put back into “operating mode” (position 2).



Emergency stop button

The emergency stop button shall initiate an emergency stop function thereby removing energy to the hazardous functions in the event of emergency.

The holders specifically developed for this enabling device allow for the emergency stop button to be pressed when the enabling device is placed there.
The feedback LED integrated into the actuator cap of the emergency stop button or the enabling button housing also offers a range of different possibilities for signaling as part of its functions.

Attention!

You can find further explanations and warnings relating to the below functions in Section 3. “Functional description”

Additional buttons 1 to 4

The functionality of the additional buttons is user-defined and can be used, for example, for a start/stop function for individual movements etc.

Signal LEDs

The controls for the LEDs can be controlled in a user-defined way via the AS-i Bus.
They usually signal when the process is approved and whether the enabling button is ready.

Home position detector

This function, in conjunction with the HD5-M-001 holder, provides information as to whether the enabling device is in its holder.

Assist light (flashlight)

This can be turned on in a way that is defined by the user, so that the work areas can light up for a short, selected length of time.

Caution!

Please pay attention to the instructions in ***section 3. "Functional description"***

Vibration

One application of this function is when using the enabling device for setting up the machine/equipment, to be made aware of processes that have been initiated but are not within the user's direct line of sight and therefore pose a hazard.

Caution!

Please pay attention to the instructions in ***section 3. "Functional description"***

9. Model overview

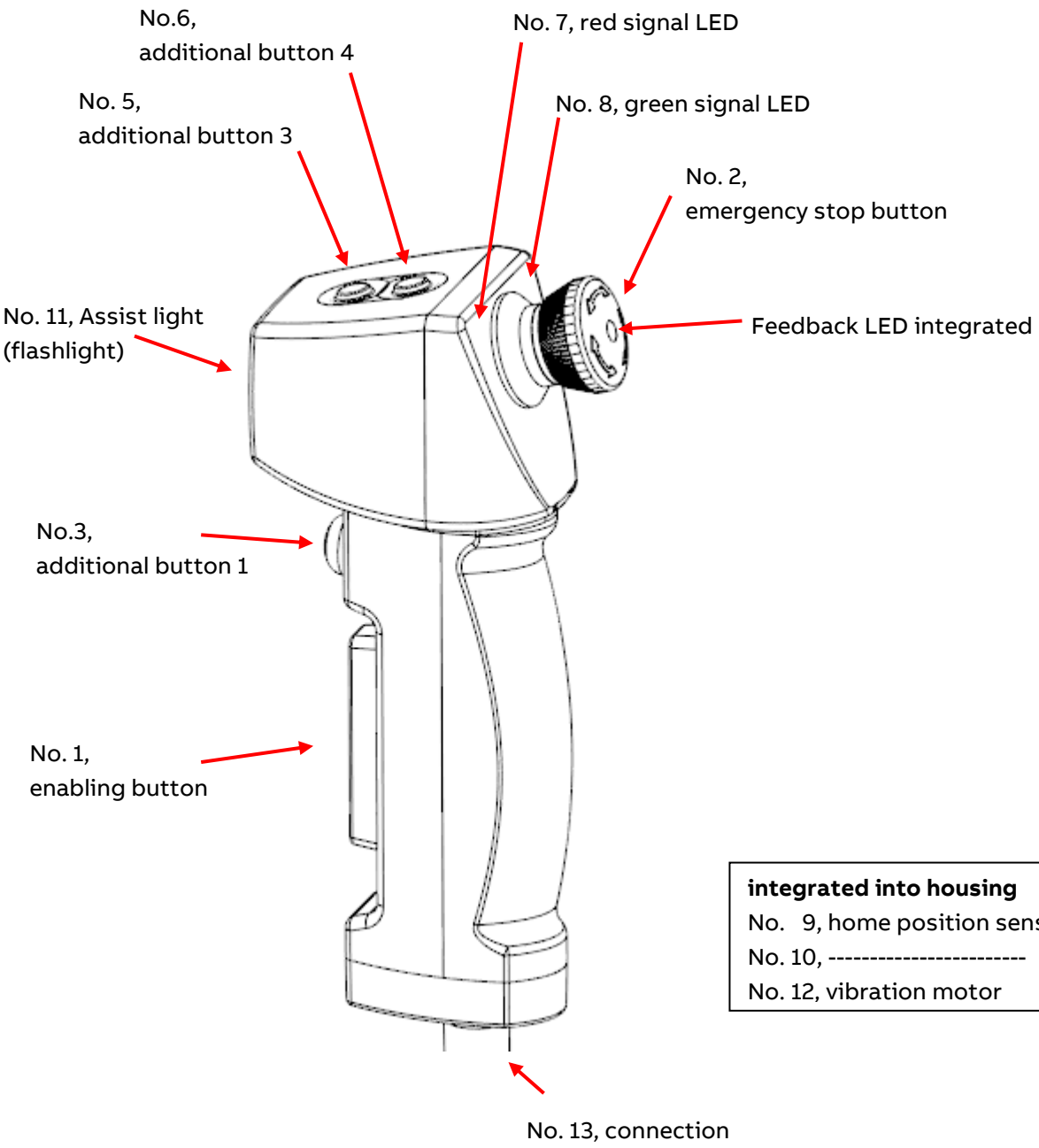
HD5-B-xxx enabling device with integrated AS-i technology are described below.

Custom versions

- Type name: HD5-B-901
- Item number: 2TLA920502R0001 / 2TLA920502R0002

Position number	Function	Additional information
1	Enabling button	
2	Emergency stop button	Feedback LED integrated into emergency stop button
3	Additional button 1	
4	----------	
5	Additional button 3	
6	Additional button 4	
7	Red signal LED	
8	Green signal LED	
9	Home position detector	only possible with the HD5-M-001 holder
10	----------	
11	Assist light (flashlight)	
12	Vibration	
13	Permanent connection	2x0.75mm² spiral cable

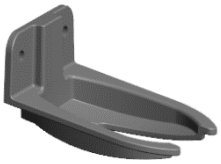
Information on positions



integrated into housing
No. 9, home position sensor
No. 10, ----------
No. 12, vibration motor

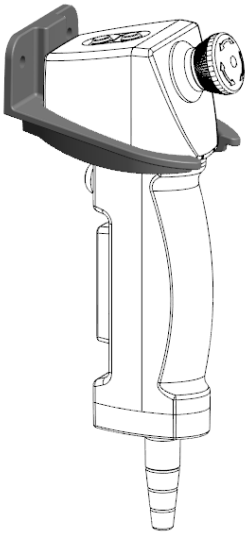
10. Accessories

Active holder, “HD5-M-001”



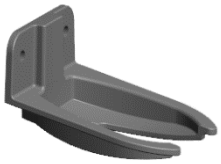
The holder has been developed especially for the HD5-x-xxx enabling. Information on this is detailed in the list below:

- Holds the enabling device securely
- In emergencies, it is possible to press the emergency stop button even when the enabling device is hung up
- Activation of the home position detector (see section 3 “functional description”)
- High breaking strength
- Resistant to almost all cleaning fluids
- Shape created in accordance with hygienic design principles



- Type name: HD5-M-001
- Item number: 2TLA920509R0001

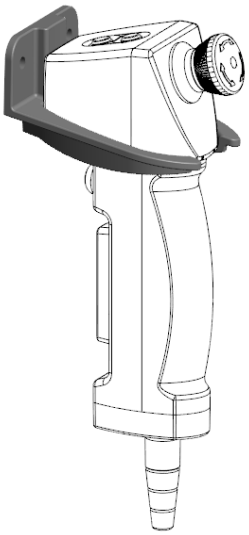
Passive holder, “HD5-M-002“



This holder functions in the same way and has the same properties when it comes to holding the enabling device as the holder “HD5-M-001”, however the home position detector is not activated when the enabling device is hung up.

Information on this is detailed in the list below:

- holds the enabling device securely
- in emergencies, it is possible to press the emergency stop button even when the tuning device is hung up
- high breaking strength
- Resistant to almost all cleaning fluids
- Shape created in accordance with hygienic design principles



- Type name: HD5-M-002
- Item number: 2TLA920509R0002

11. TECHNICAL DATA

Manufacturer	
Address	ABB AB JOKAB SAFETY Varlabergsvägen 11 SE-434 39 Kungsbacka Sweden
Power supply	
Operational voltage	30 VDC, AS-i Bus, tolerance 26 - 31,6 VDC
Overall power consumption	<150 mA
General	
Protection class	IP65
Ambient temperature for during operation	-10°C (no buildup of ice) up to +55°C (no direct sunlight)
Ambient temperature for storage	-20°C (no buildup of ice) up to +70°C (no direct sunlight)
Dimensions	See drawing in section 12 “dimensions”
Weight	approx. 200 g without connection cable
Material	Housing: Fiberglass reinforced plastic, PPH G30 Operating buttons: TPE
Actuating force enabling button	approx. 20 N, 1 ➔ 2 approx. 45 N, 2 ➔ 3
Actuating force additional buttons	approx. 3 N, additional buttons 1 and 2 approx. 7 N, additional buttons 3 and 4
Mechanical /electrical durability of enabling button	1 x 10^6 switching cycles, position 1 ➔ position 2 1 x 10^5 switching cycles, position 2 ➔ position 3
Mechanical reliability B_{10D}, enabling button	B_{10D} : 2 x 10^6, position 1 ➔ position 2 ➔ position 1 B_{10D} : 968,000, position 1 ➔ position 3 ➔ position 1
Mechanical /electrical durability of emergency stop button	5 x 10^4 switching cycles
Mechanical reliability B_{10d}, emergency stop button	B_{10D} : 250,000
Mechanical durability of additional button 1	2 x 10^6 switching cycles
Mechanical durability of additional buttons 2/3/4	5 x 10^4 switching cycles
Connection	Connection cable 2x0.75mm², PUR

Information for use in USA/Canada (UL)	
Ambient temperature for operation	-10°C (no buildup of ice) up to +50°C (no direct sunlight)
Enclosure	Type 1
Electrical supply	The device shall be supplied from an isolating transformer having a secondary overcurrent protective device that complies with UL 248 to be installed in the field rated max 4 Ampere. a) Max. 5 A for voltages 0-20 V (0-28.3 V peak), or b) 100/Vp for voltages of 20-30 V (28.3-42.4 V peak).
Supply Voltage HD5-B-xxx	26.0 to 31.6 VDC, supplied from Class 2 or LVLC
Overall Current consumption	< 150mA
For devices with field wiring leads smaller than AWG 26 following statement shall be provided on a separate sheet or on the device packaging:	Field wiring leads smaller than AWG 26 need to be terminated in a terminal block or similar connection device or shall be prepared by a wire termination.
Response time on the AS-i bus	
HD5-B-xxx	The enabling device meets the requirements of AS-Interface Safety-at-Work in all respects. An additional extension of the response time in the transition to the safe state is not carried out by this.
ABB AS-i Monitor Pluto *Response time on the AS-i bus* transistor output relay output *Response time on AS-i bus in case of error* transistor output relay output	 < 16,5 ms + programme-execution time < 20,5 ms + programme-execution time < 29 ms (with setting „Short stop time“) < 39 ms (with setting „Disturbance immunity“) < 33 ms (with setting „Short stop time“) < 43 ms (with setting „Disturbance immunity“)
 The response times refer exclusively to the AS-i monitor Pluto from the manufacturer ABB. When using an AS-i monitor from another manufacturer, the response times may differ.	
Further information on the profile and addressing, see chapter "AS-i configuration"	

Safety / Harmonized Standards	
2006/42/EC – Machines, 2014/30/EU – EMC, 2011/65/EU – RoHS2, 2015/863-RoHS3 EN ISO 12100-1:2010, EN ISO 13849-1:2015, EN 62061:2015 EN 60204-1:2006 + A1:2009,	
SILCL 3	PL e, category 4
UL/CSA 60947-5-1	
UL/CSA 60947-5-5	only for variants with an E-Stop is included
Certificates	
TÜV Süd	UL
AS-International Assoziation	CE

AS-i data

The enabling device with integrated AS-i technology contains up to three slaves, depending on the configuration.
The following bit description relates to functions that are generally possible, and is set out in detail in the data sheet enclosed with the product (or available from ABB), depending on the configuration.

Custom versions HD5-B-901

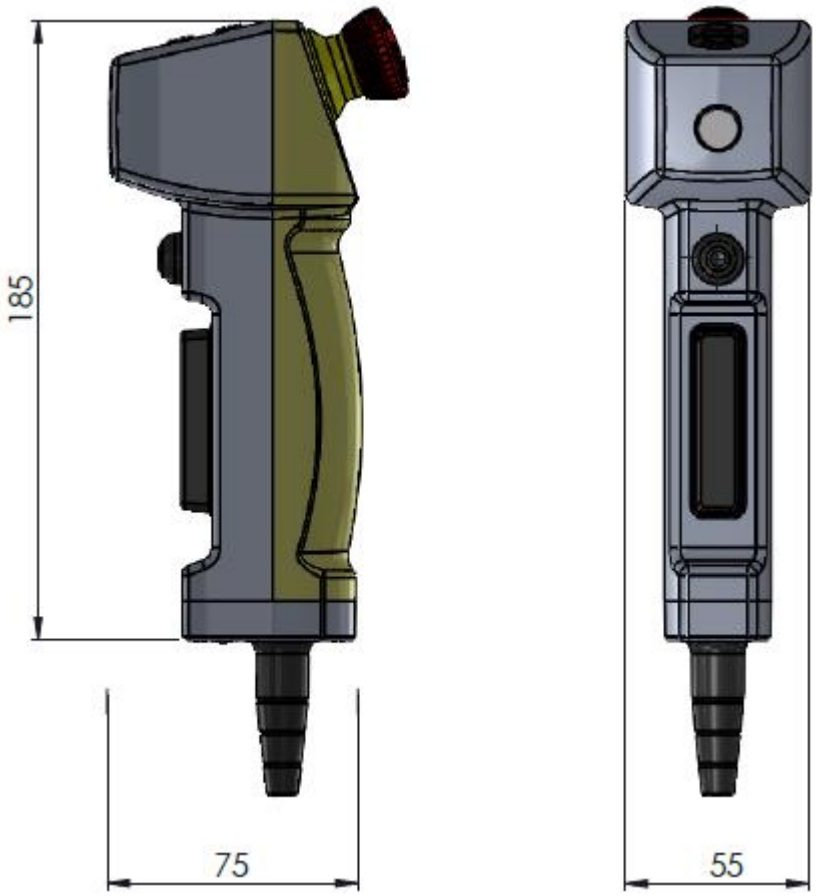
(up to 10 tuning devices may be used on one AS-i cable)

Slave	I/O type	Bit	Value	Description
S-7.B.1.E Address 01 upon delivery	Safe code1	D 0		emergency stop button
	Safe code1	D 1		
	Safe code2	D 2		
	Safe code2	D 3		
	Output Non safe	D 0	0	feedback LED in emergency stop button, OFF
			1	feedback LED in emergency stop button, ON
S-0.B.2.E Address 02 upon delivery	Safe code1	D 0		enabling button
	Safe code1	D 1		
	Safe code2	D 2		
	Safe code2	D 3		
S-7.0.3.E Address 03 upon delivery	Input Non safe	DI 0	0	additional button 1 (tab), *not* actuated
			1	additional button 1 (tab), actuated
		DI 1	0	home position sensor, enabling device *not* hung up in holder
			1	home position sensor, enabling device hung up in holder
		DI 2	0	additional button 3 (lift), *not* actuated
			1	additional button 3 (lift), actuated
		DI 3	0	additional button 4 (lower), *not* actuated
			1	additional button 4 (lower), actuated
	Output Non safe	DO 0	0	green signal LED, OFF
			1	green signal LED, ON
		DO 1	0	red signal LED, OFF
			1	red signal LED, ON
		DO 2	0	assist light (flashlight), OFF
			1	assist light (flashlight), ON
		DO 3	0	vibration alarm, OFF
			1	vibration alarm, ON

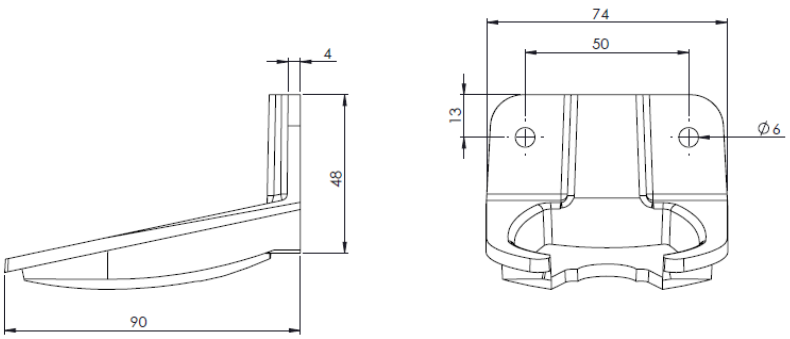
12. Dimensions

- All the dimensions are given in millimeters (mm)

3-position enabling device



Device specified Holder



13. 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, are in conformity with the Directives 2006/42/EC – Machines 2014/30/EU – EMC 2011/65/EU – RoHS2 2015/863 – RoHS3
Authorised to compile the technical file		ABB AB JOKAB SAFETY Varlabergsvägen 11 SE-434 39 Kungsbacka Sweden
Product Three position device, HD5-B-xxx		EC-Type ExaminationCertificate M6A 049833 0028 Rev.00
Notified Body		TÜV Süd Ridlerstrasse 65 80339 Munich Germany Notified Body No 0123
Used harmonized standards		EN ISO 12100-1:2010, EN ISO 13849-1:2015, EN ISO 13849-2:2012, EN 62061:2015, EN 60204-1:2006+A1:2009, EN 61000-6-2:2005, EN 61000-6-3:2007

Tobias Gentzell
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Kungsbacka 2019-03-08

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