

Three-position device

JSHD4

JSHD4 is a three-position device used to allow a limited movement of the machine when the operator is in the dangerous area, for example during troubleshooting, test running and programming.

The operator pushes the larger black button to a middle position in order to allow a movement. In case of danger, the operator will either release the button or squeeze it to its bottom position and the machine will stop.

JSHD4 is available with different types of connectors for an optimal adaptation to the application. Some models offer additional top and front button to control a non-safe signal, for ex. move forward and/or backward.



Safety and protection

Cheat-safe hand recognition

All JSHD4 models comply with PLe/Cat 4. Some models offer an “anti-tamper” function: an extra signal indicate if the JSHD4 is held in the middle position by a human hand. A machine movement will be authorized only in presence of this signal and not if the device is held in run position by any other (fraudulent) mean.



Optimum interface

Ergonomic shape and operation

JSHD4 is ergonomic, both in respect of its shape, fitting to the hand, and the way the buttons are operated. JSHD4 is easy to operate using just the fingers (even with gloves), and the middle position provides a safe resting position.



Continuous operation

Safely inspect a running machine

JSHD4 allows the operators to safely inspect the manufacturing process without completely stopping the machine.

Applications and features

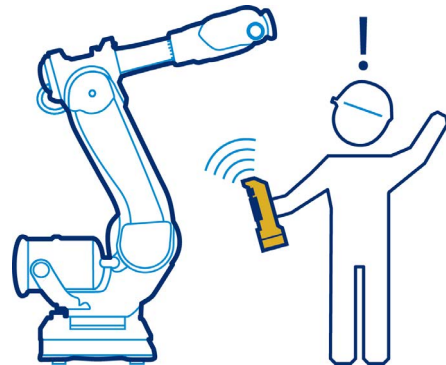
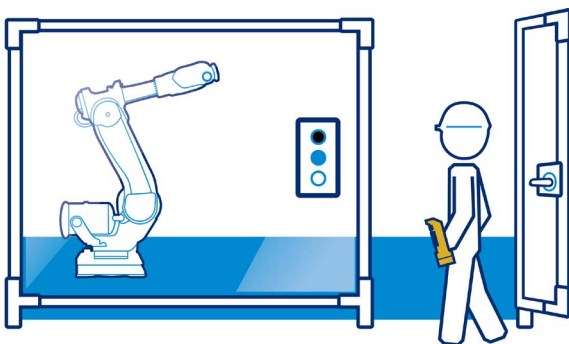
JSHD4

Applications

Safe troubleshooting, programming and testing

If the operator has to enter a risk area for troubleshooting or test running, it is extremely important that he/she is able to stop the machinery without having to rely on someone else pushing a stop button. In addition, no-one else should be able to start the machinery after it has been stopped by the operator. An operator who is under pressure must also be able to give a stop signal, whether in panic he/she pushes harder on the button or just releases it.

JSHD4 three-position control device can be used for troubleshooting, programming and test running in situations where no other protection is available or feasible. JSHD4 allows the operator to safely inspect the process without completely stopping the machine. The big black button has 3 distinct positions: released, pressed gently and pressed hard. The middle position allows the machine to run with limited speed or range, but when released or pressed hard the machine stops.



Features

Hand recognition for protection against tampering

An optional “anti-tamper” function sends an extra signal to indicate if the JSHD4 is held by a human hand or not. By using this, the safety level is increased, and the risk of manipulation or bypass of the safety function is reduced. It is no longer possible to expose the operator to danger by trying to lock the three-position control device in run mode.

Ergonomic design

JSHD4 is ergonomic, both in respect of its shape, fitting to the hand and the way the buttons are operated. It is easy to operate the device by using just the fingers (even with gloves), and the middle position provides a secure resting position.

Additional top and front buttons for non-safe signals

The two additional buttons can be used for e.g. start/stop, up/down or forward/back. Internally the device is duplicated. The three-position function itself is built up of two completely independent three-position buttons which feels as one button for the user.

Ordering information

JSHD4



AA, AH, AJ - Cable gland



AB, AK - Cannon connection



AC, AD - M12 connection



AE - M12 with E-stop



AL - Cable gland and holder for Eva (used with JSM54)

Choose top part, bottom part and anti-tamper

Top part Buttons and LEDs	Bottom part Feature	ID	Connection	Anti-tamper	Type	Order code
JSHD4-1	Use your own cable	AA	Cable gland and 5 screw connections		JSHD4-1-AA	2TLA019995R0000
No LEDs No buttons	Cost effective and quick connection	AC	M12-5 male		JSHD4-1-AC	2TLA019995R0100
	Holder for Eva (used with JSM54)	AL	Cable gland and 10 screw connections		JSHD4-1-AL	2TLA019995R4700
JSHD4-2	Cost effective and robust	AB	Cannon 12 male pins		JSHD4-2-AB	2TLA019995R0200
LEDs Front button Top button	Cost effective and quick connection	AD	M12-8 male	x	JSHD4-2-AD	2TLA019995R0300
				x	JSHD4-2-AD-A	2TLA019995R0500
	Use your own cable, simplified connection	AH	Cable gland and 10 screw connections	x	JSHD4-2-AH	2TLA019995R0800
				x	JSHD4-2-AH-A	2TLA019995R0900
	Use your own cable, full pin connection	AJ	Cable gland and 16 screw connections	x	JSHD4-2-AJ	2TLA019995R1000
				x	JSHD4-2-AJ-A	2TLA019995R1100
	Replacement of old units*	AK	Cannon 12 male pins		JSHD4-2-AK	2TLA019995R4800
	Holder for Eva (used with JSM54)	AL	Cable gland and 10 screw connections	x	JSHD4-2-AL	2TLA019995R4900
				x	JSHD4-2-AL-A	2TLA019995R5000
JSHD4-3	Cost effective and robust	AB	Cannon 12 male pins		JSHD4-3-AB	2TLA019995R1200
LEDs No buttons	Cost effective and quick connection	AD	M12-8 male	x	JSHD4-3-AD	2TLA019995R1300
				x	JSHD4-3-AD-A	2TLA019995R1500
	E-stop	AE	M12-8 male		JSHD4-3-AE	2TLA019995R1600
	Use your own cable, simplified connection	AH	Cable gland and 10 screw connections	x	JSHD4-3-AH	2TLA019995R2000
				x	JSHD4-3-AH-A	2TLA019995R2100
	Use your own cable, full pin connection	AJ	Cable gland and 16 screw connections	x	JSHD4-3-AJ	2TLA019995R2200
				x	JSHD4-3-AJ-A	2TLA019995R2300
	Replacement of old units*	AK	Cannon 12 male pins		JSHD4-3-AK	2TLA019995R5100
	Holder for Eva (used with JSM54)	AL	Cable gland and 10 screw connections	x	JSHD4-3-AL	2TLA019995R5200
				x	JSHD4-3-AL-A	2TLA019995R5300
JSHD4-4	Cost effective and robust	AB	Cannon 12 male pins		JSHD4-4-AB	2TLA019995R2400
LEDs Front button	Cost effective and quick connection	AD	M12-8 male	x	JSHD4-4-AD	2TLA019995R2500
				x	JSHD4-4-AD-A	2TLA019995R2700
	Use your own cable, simplified connection	AH	Cable gland and 10 screw connections	x	JSHD4-4-AH	2TLA019995R3000
				x	JSHD4-4-AH-A	2TLA019995R3100
	Use your own cable, full pin connection	AJ	Cable gland and 16 screw connections	x	JSHD4-4-AJ	2TLA019995R3200
				x	JSHD4-4-AJ-A	2TLA019995R3300
	Replacement of old units*	AK	Cannon 12 male pins		JSHD4-4-AK	2TLA019995R5400
	Holder for Eva (used with JSM54)	AL	Cable gland and 10 screw connections	x	JSHD4-4-AL	2TLA019995R5500
				x	JSHD4-4-AL-A	2TLA019995R5600
JSHD4-5	Cost effective and robust	AB	Cannon 12 male pins		JSHD4-5-AB	2TLA019995R3400
LEDs Top button	Cost effective and quick connection	AD	M12-8 male	x	JSHD4-5-AD	2TLA019995R3500
				x	JSHD4-5-AD-A	2TLA019995R3700
	Use your own cable, simplified connection	AH	Cable gland and 10 screw connections	x	JSHD4-5-AH	2TLA019995R4000
				x	JSHD4-5-AH-A	2TLA019995R4100
	Use your own cable, full pin connection	AJ	Cable gland and 16 screw connections	x	JSHD4-5-AJ	2TLA019995R4200
				x	JSHD4-5-AJ-A	2TLA019995R4300
	Replacement of old units*	AK	Cannon 12 male pins		JSHD4-5-AK	2TLA019995R5700
	Holder for Eva (used with JSM54)	AL	Cable gland and 10 screw connections	x	JSHD4-5-AL	2TLA019995R5800
				x	JSHD4-5-AL-A	2TLA019995R5900

* See document [2TLC010007L0201](#) for information about replacement

Cables and connectors

JSHD4



M12-C61

2TLC172651F0201



M12-C61HE



M12-C334

2TLC172631F0201



HK20S4

Cable with connectors

Connector	Female/male	Length	Special feature	Type	Order code
M12-5	Female	6 m		M12-C61	2TLA020056R0000
			Harsh environment, halogen free	M12-C61HE	2TLA020056R8000
		10 m		M12-C101	2TLA020056R1000
			Harsh environment, halogen free	M12-C101HE	2TLA020056R8100
	Female + male	20 m		M12-C201	2TLA020056R1400
		0.3 m		M12-C0312	2TLA020056R5800
		0.06 m		M12-C0612	2TLA020056R6300
		1 m		M12-C112	2TLA020056R2000
		3 m		M12-C312	2TLA020056R2100
		6 m		M12-C612	2TLA020056R2200
		10 m		M12-C1012	2TLA020056R2300
		16 m		M12-C1612	2TLA020056R5400
		20 m		M12-C2012	2TLA020056R2400
M12-8	Female	6 m		M12-C63	2TLA020056R3000
		10 m		M12-C103	2TLA020056R4000
		20 m		M12-C203	2TLA020056R4100
	Female + male	0.06 m		M12-C0634	2TLA020056R6400
		1 m		M12-C134	2TLA020056R5000
		3 m		M12-C334	2TLA020056R5100
Cannon	Female	5 m		HK5	2TLA020003R4700
		10 m		HK10	2TLA020003R4800
		20 m		HK20	2TLA020003R4900
		1.6 m	Spiral cable	HK16S4	2TLA020003R5000
		3.2 m	Spiral cable	HK32S4	2TLA020003R5200
		4 m	Spiral cable	HK40S4	2TLA020003R3500
		6 m	Spiral cable	HK60S4	2TLA020003R3600
		8 m	Spiral cable	HK80S4	2TLA020003R5300

Separate cables and connectors

Description	Type	Order code
Connectors		
M12-5 pole female, straight	M12-C01	2TLA020055R1000
M12-5 pole male, straight	M12-C02	2TLA020055R1100
M12-8 pole female, straight	M12-C03	2TLA020055R1600
M12-8 pole male, straight	M12-C04	2TLA020055R1700
12-pole female cannon connector for JSHD4	JSHK0	2TLA020003R0300

Cable with 5 conductors

10 m cable with 5 x 0.34 shielded conductors	C5 cable 10 m	2TLA020057R0001
50 m cable with 5 x 0.34 shielded conductors	C5 cable 50 m	2TLA020057R0005
100 m cable with 5 x 0.34 shielded conductors	C5 cable 100 m	2TLA020057R0010
200 m cable with 5 x 0.34 shielded conductors	C5 cable 200 m	2TLA020057R0020
500 m cable with 5 x 0.34 shielded conductors	C5 cable 500 m	2TLA020057R0050

Cable with 8 conductors

50 m cable with 8 x 0.34 shielded conductors	C8 cable 50 m	2TLA020057R1005
100 m cable with 8 x 0.34 shielded conductors	C8 cable 100 m	2TLA020057R1010
200 m cable with 8 x 0.34 shielded conductors	C8 cable 200 m	2TLA020057R1020
500 m cable with 8 x 0.34 shielded conductors	C8 cable 500 m	2TLA020057R1050



M12-C01

2TLC172651F0201

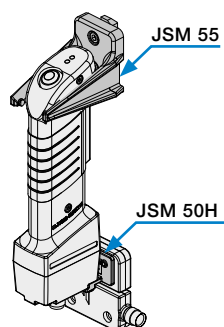


C5 cable

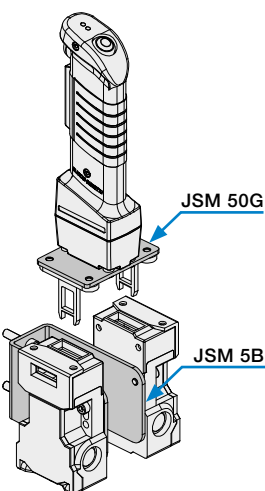
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Accessories

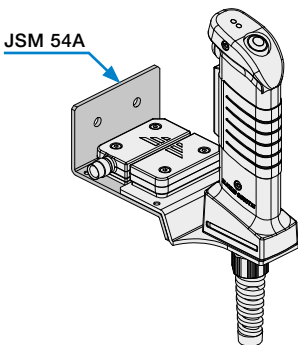
JSHD4



JSM 55 wall bracket and JSM 50H bracket for Eden



JSM 50G bracket for key switches and JSM 5B wall bracket for 2 pcs MKey5



JSM 54A wall bracket for Adam (and AL bottom part that has a holder for Eva)



JSHD4 protection coat

Brackets and bottom plates

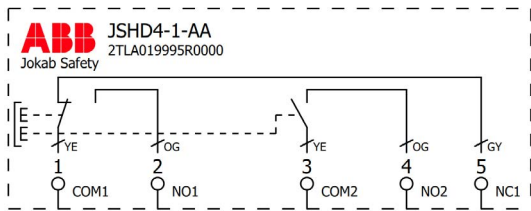
JSM 55 Wall bracket for three position device	JSM 55	2TLA040005R0500
JSM 5B Wall bracket for 2 pcs Mkey5 interlock switches	JSM 5B	2TLA040005R0700
JSM 54A Wall bracket for Adam. Used with AL bottom part that has a holder for Eva	JSM 54A	2TLA020205R2800
JSM 50G Bracket for key switches	JSM 50G	2TLA020205R6300
JSM 50H Bracket for Eden sensor	JSM 50H	2TLA020205R6400

Others

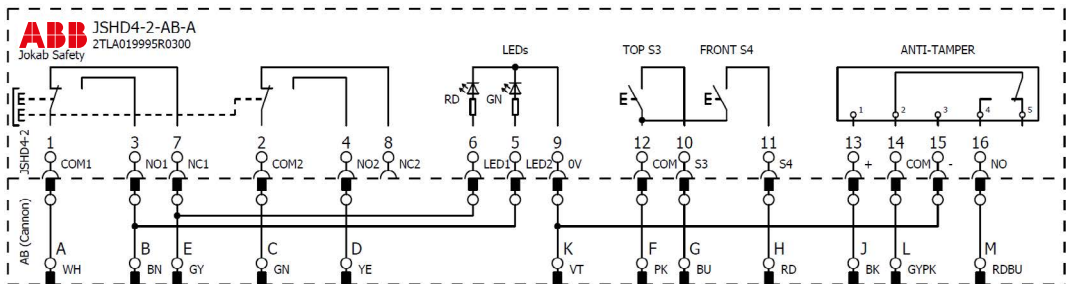
JSHD4 protection coat	JSHD4 Coat	2TLA020200R4600
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Electrical wiring diagrams

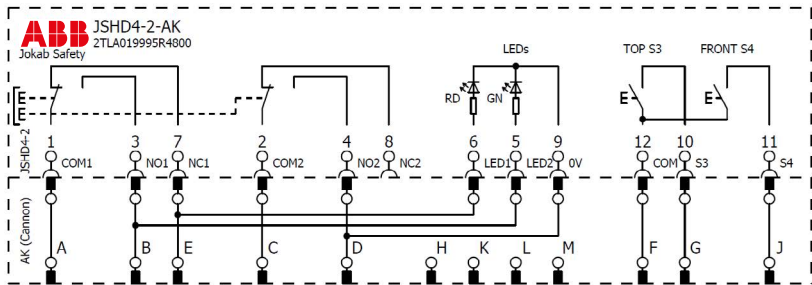
Examples with JSHD4-1 and JSHD4-2 models



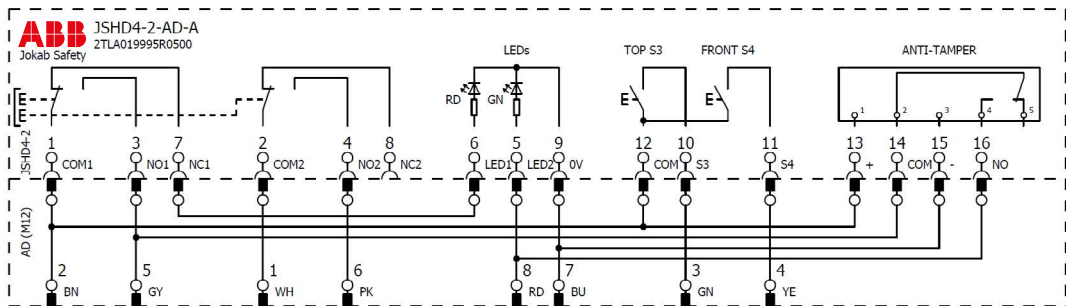
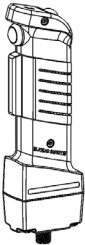
JSHD4-1-AA, cable gland and 5 screw connections on JSHD4-1



JSHD4-2-AB-A, Cannon 12 pins



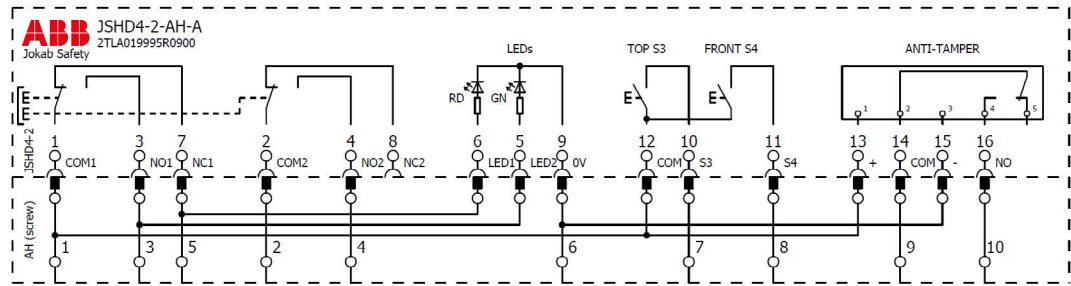
JSHD4-2-AK, Cannon 12 pins



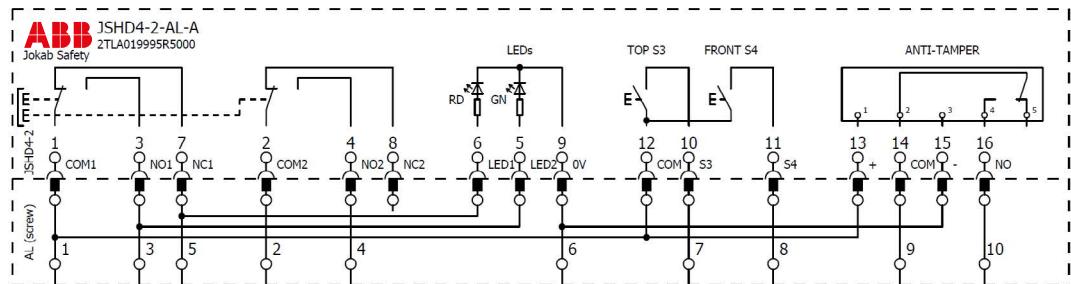
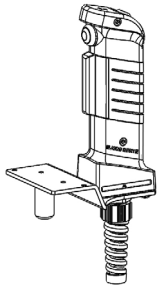
JSHD4-2-AD-A, M12-8

Electrical wiring diagrams

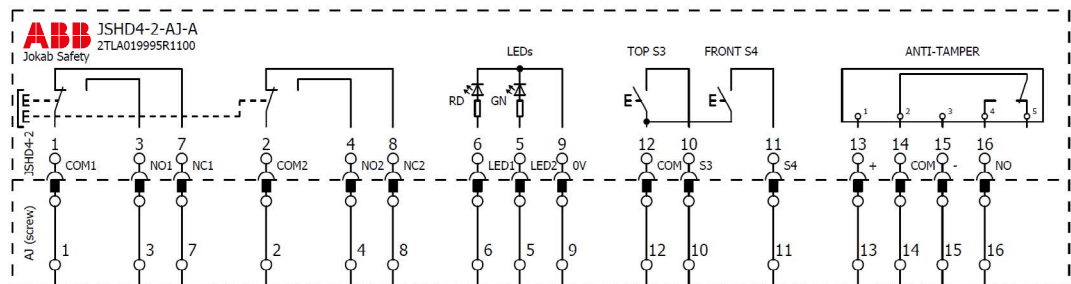
Examples with JSHD4-1 and JSHD4-2 models



JSHD4-2-AH-A, cable gland and 10 screw connection



JSHD4-2-AL-A, cable gland and 10 screw connection



JSHD4-2-AJ-A, cable gland and 16 screw connection

Technical data and dimension drawings

JSHD4

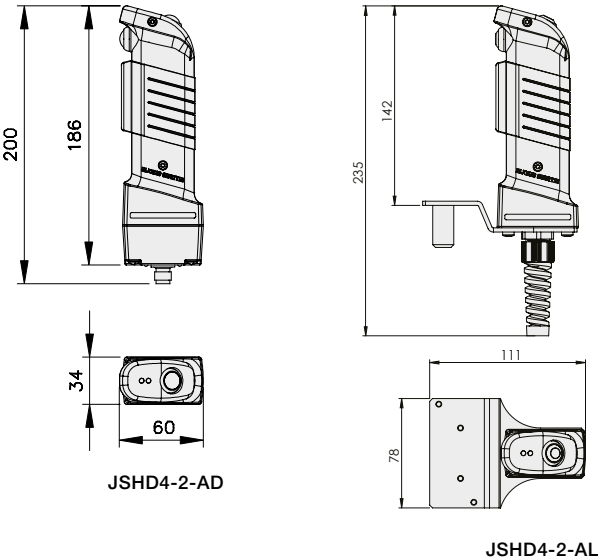
Technical data

Approvals	Inspecta  
Conformity	CE 2006/42/EC - Machinery EN ISO 12100:2010, EN 60204-1:2007+A1:2009, EN ISO 13849-1:2016
Functional safety data	
EN ISO 13849-1:2016	Up to PL e (depending on number of operations per year) B_{10d}: 2 000 000 to middle position, 968 000 to bottom position
Electrical data	
Current allowed, three-position button	Per channel: Maximum +30 VDC, 20 mA, (Minimum +10 VDC, 8 mA)
Current allowed, extra button	Maximum 500 mA
Operation force	Approx. 15 N for three-position buttons (ON) Approx. 45 N for three-position buttons (OFF) Approx. 2.5 N for top/front push button
Mechanical data	
Operating temperature	- 10 ...+50 °C
Protection class	IP65
Mechanical life	1 000 000 cycles to middle position
Weight	Approx. 0.2 kg without cable

More information

Fore more information, e.g. the complete technical information, see product manual for: JSHD4 [2TLC172072M0201](#)

Dimension drawing



All dimensions in mm

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