

# One- and two-hand devices

## Safeball™

Safeball™ is an ergonomic control device used for safe start and stop of machine cycles. Usually two Safeball™ are used together to form a two-hand control.

Safeball™ consists of a spherical ball containing two embedded push button switches, one on each side of the ball. Both buttons must be pressed in order to start and operate the machine. The risk of unintentional activation is thereby minimized and the device is simple and ergonomic to use.

When two Safeball™ are used in a two-hand device application, the operator must press all four push buttons simultaneously in order to operate the machine. If one or more of the buttons are released, a stop signal is given to the machine.



### Optimum interface

#### Ergonomic design

The design of Safeball™ allows for comfort of use for all hand sizes and a great variety in gripping positions. And there is no need for shrouding top covers to prevent defeat, as there is for two-hand devices with standard push buttons.

#### Flexible mounting

With the JSM C5 mounting bracket, Safeball™ can be orientated in the most ergonomic position for the operator.



### Safety and protection

#### Unique design

The unique design of Safeball™ combines the highest level of safety with the best ergonomics.

#### Highest safety level

Safeball™ provides the operator with a dual switching function and short-circuit supervision in each hand.

# Applications and features

## Safeball™

### Applications

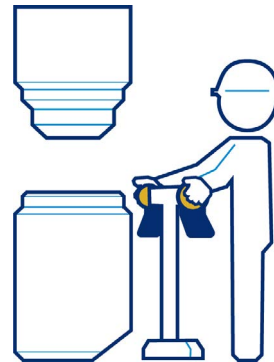
#### One-hand control device

One Safeball™ can be used as an ergonomic “hold to run” button, i.e. the movement is allowed as long as both push buttons on Safeball™ are pressed, usually when the operator cannot reach the hazardous area with his/her free hand, or on less dangerous machines. Safeball™ is a very practical one-hand control device since it is very easy to locate and activate.



#### Two-hand control device

A two-hand control device is often used for machines with manual loading or unloading. The operator uses the two-hand control device to safely start a machine cycle. A two-hand control must be used with a safety control device that makes sure that both buttons are pressed simultaneously, i.e. both hands are on the control and therefore outside the dangerous zone, in order to start the dangerous movement. Using two Safeball™, it is easy to realize a custom two-hand device.



### Features

#### Mounting methods

Safeball™ can be mounted in many different ways. It can be mounted on a table, on the machine, on a support or wherever suitable for ergonomic reasons. Safeball™ can be mounted in a fixed position or on a tilting and/or rotating support when used with a JSM C5. This flexibility in mounting enhances ergonomics and minimizes work-related musculoskeletal disorders.

When two Safeball™ are used as a two-hand device, no shrouding top cover is necessary to prevent defeat, as it is for two-hand devices with push buttons, since it is very difficult to push all 4 push buttons of the two Safeball™ with e.g. a hand and an elbow.

#### Highest level of safety

When used as a two-hand control device, a safety controller for two-hand devices must be used, like an appropriate Sentry safety relay or a Pluto programmable safety controller. The safety controller monitors that all four push buttons (i.e. on each side of both Safeball™) are pressed within 0.5 second, in order to detect e.g. a short circuit or fraud, like a rubber band around one device. Safeball™ is certified to comply with type III C according to EN 574+A1:2008.

#### JSTD25

The JSTD25 control stations are pre-built two-hand devices utilizing the good ergonomics of Safeball™. They can be used as fixed devices that are easy to install, or as mobile devices. All models are equipped with shields to protect the buttons from accidental operation, and also protect from damage if the device is dropped on the floor when used as mobile device. All versions meet EN 574 and EN ISO 13849-1.



# Ordering information

## Safeball™



2TLC01004F0201

Safeball™



2TLC172086F0201

JSTD25F



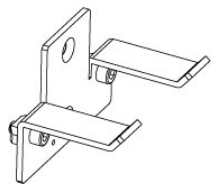
2TLC172088F0201

JSTD25K



2TLC172194F0201

JSMC5



2TLC172195F0201

JSMC7

### Safeball™ JSTD1

Types of switches	Cable length	Type	Order code
1 NO + 1 NC	2 m	JSTD1-A	2TLA020007R3000
	0.2 m	JSTD1-B	2TLA020007R3100
	10 m	JSTD1-C	2TLA020007R3200
2 NO	0.2 m	JSTD1-E	2TLA020007R3400

### Two-hand control devices JSTD25

Extra feature	Connector male	Type	Order code
None	M12-5	JSTD25F	2TLA020007R6000
	M12-8	JSTD25H	2TLA020007R6300
Pre-mounted Smile 10 EA emergency stop button	M12-8	JSTD25K	2TLA020007R6900

### Accessories

Description	Type	Order code
Mounting bracket for JSTD1 with orientation possibility (ball joint)	JSM C5	2TLA020007R0900
Suspension shelf for JSTD25F/H/K	JSM C7	2TLA020007R1200
Protection coat for Safeball	Safeball coat	2TLA020007R1900

# Cables and connectors

## Safeball™



M12-C61

2TLC172951F0201



M12-C61HE

2TLC010008F0201



M12-C334

2TLC172931F0201

### Cable with connectors

Connector	Female/male	Length	Special feature	Type	Order code
M12-5	Female	6 m		M12-C61	2TLA020056R0000
		10 m	Harsh environment, halogen free	M12-C61HE	2TLA020056R8000
				M12-C101	2TLA020056R1000
		20 m	Harsh environment, halogen free	M12-C101HE	2TLA020056R8100
			M12-C201	2TLA020056R1400	
	Female + male	0.3 m		M12-C0312	2TLA020056R5800
		0.06 m		M12-C00612	2TLA020056R6300
		1 m		M12-C112	2TLA020056R2000
		3 m		M12-C312	2TLA020056R2100
		6 m		M12-C612	2TLA020056R2200
		10 m		M12-C1012	2TLA020056R2300
			Angled female connector	M12-C1012V2	2TLA020056R6700
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-C00634	2TLA020056R6400
		1 m		M12-C134	2TLA020056R5000
		3 m		M12-C334	2TLA020056R5100

### Separate cables and connectors

Description	Type	Order code
<b>Connectors</b>		
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



M12-C01

2TLC172657F0201



C5 cable


2TLC010008F0201

<b>Cable with 5 conductors</b>		
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
<b>Cable with 8 conductors</b>		
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

# Technical data

## Safeball™

### Technical data

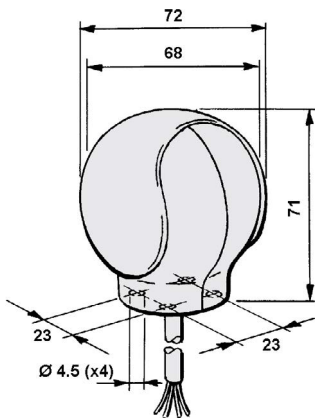
Approvals	<b>Inspecta</b> 
Conformity	<b>CE</b> 2006/42/EC - Machinery EN ISO 12100:2010, EN 574+A1:2008
Functional safety data	
EN/IEC 61508:2010	Up to SIL3, depending on system architecture
EN/IEC 62061:2005+A1:2013	Up to SILCL3, depending on system architecture
EN ISO 13849-1:2008	Up to Cat. 4, PL e, depending on system
Mechanical data	
Operating force	Approx. 2N
Life, mechanical	> 1 x 10 <sup>6</sup> operations at max 1 Hz
Connection cable	
JSTD1-A	PVC-cable, 4 x 0.75 mm <sup>2</sup> , L = 2 m
JSTD1-B, JSTD1-E	Wires, 4 x 0.75 mm <sup>2</sup> , L = approx. 0.2 m
JSTD1-C	PVC-cable, 4 x 0.75 mm <sup>2</sup> , L = 10 m
Protection class	IP67. Not intended for use under water
Ambient temperature	-25°C to +50°C (operating)
Material JSTD1	Polypropylene
Weight JSTD1	
With 2 m cable	0.2 kg
With 10 m cable	0.7 kg
With 4 x 0.2 m wires	0.1 kg

### More information

For more information, e.g. the complete technical information, see product manual for: Safeball [2TLC172182M0201](#)

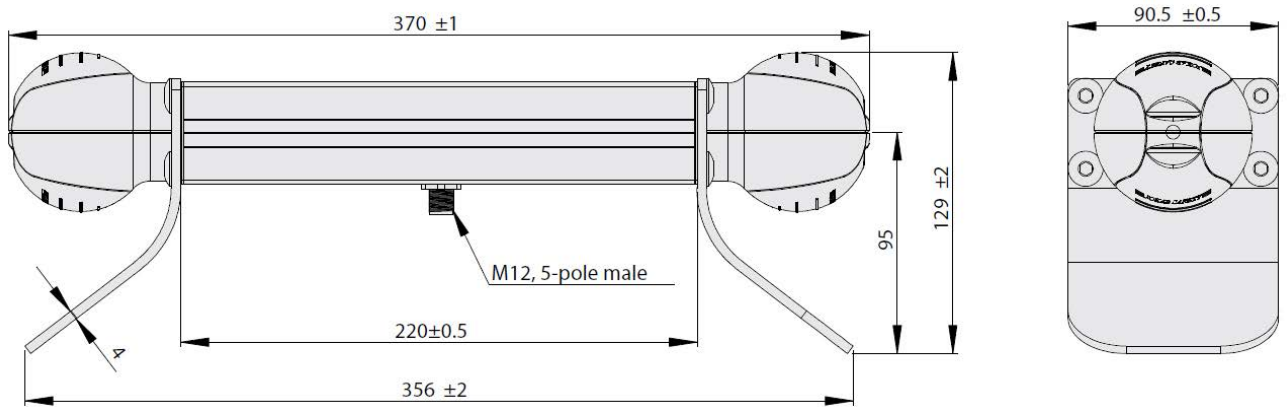
# Dimension drawings Safeball™

## Safeball™



All dimensions in mm

## JSTD25F



All dimensions in mm

# Contact us

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