Emergency stop buttons
Smile, INCA, EStrong and Compact

Emergency stop buttons are used to safely stop dangerous machine functions.

ABB offers a wide range of emergency stop buttons for external mounting or panel mounting, with plastic or metal housing and for different types of connections.
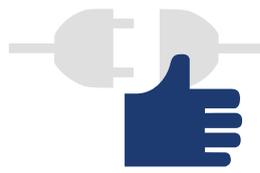
Easy to install

Compact size
Models with a compact and appealing housing saves space and makes it easy to place.

Quick installation
Quick and easy installation of models with features such as centered mounting holes, removable terminal blocks and M12 connectors.

Serial connection
Tina models save cable length and installation time with serial connection.

Optimum interface

Highly adaptable
Several models to choose between depending on position, installation and function.

Reliable in extreme conditions
Robust models and models in stainless steel for use in demanding environments.

Continuous operation

LED diagnostics
Models with integrated LED diagnostics reduce downtime when troubleshooting.

Models and application
Emergency stop buttons

Models for external mounting

Smile

Smile is a small and easy to install emergency stop button. Its size allows mounting in reduced spaces, and its centered mounting holes makes it especially easy to mount on aluminum extrusions (e.g. Quick-Guard fencing system). Smile is available with M12 connectors or cable.

Smile has an integrated LED in the button that shows the status and simplifies error tracking.

The standard models of Smile have 2 contacts and can be used with safety controllers from all brands. Smile Tina models belong to the ABB DYNlink solution, with the advantages of serial connection using only one channel and still reaching Cat. 4/PL e.

Compact

Compact emergency stop buttons offer a robust enclosure with a high IP rating that fulfill the demands in severe and humid environments, such as food and beverage industry. Compact can be fitted with a Tina adapter for use in a DYNlink solution (Tina 2A, Tina 2B or Tina 3A).

EStrong

EStrong is an emergency stop button designed to provide a robust unit in exposed and severe environments. The unit has a stainless steel enclosure with IP69K rating that withstands high pressure and high temperature wash-down. It is therefore ideally suited for industries with special demands, such as food processing or chemical industry.

Models for panel mounting

INCA

INCA is an emergency stop button for panel mounting, designed for installation in 22.5 mm holes. Its removable terminal block facilitates connection and exchange.

INCA has an integrated LED in the button that shows the status and simplifies error tracking.

The standard model of INCA has 2 contacts and can be used with safety controllers from all brands. INCA Tina models belongs to the ABB DYNlink solution, with the advantages of serial connection using only one channel and still reaching Cat. 4/PL e.

Smile Reverse

Smile Reverse is identical to the regular Smile emergency stop button besides from being reversed in order to be mounted on the back side of a panel. Smile Reverse has an IP65 housing that makes it suitable in panels where moisture and dust may occur.

Smile Reverse has an integrated LED in the button that shows the status and simplifies error tracking.

The standard model of Smile Reverse has 2 contacts and can be used with safety controllers from all brands. The Smile Reverse Tina model belongs to the ABB DYNlink solution, with the advantages of serial connection using only one channel and still reaching Cat. 4/PL e.

Application

Emergency stop buttons are used to safely stop a dangerous machine function in order to prevent an accident, or minimize the consequences of an accident. An emergency stop should be a complement to other safety devices, and not a replacement for them.
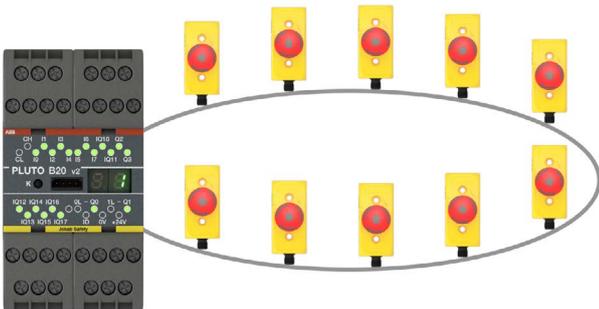
Features
Emergency stop buttons

Communication features

DYNlink

Emergency stop buttons with Tina in their name belong to the DYNlink solution, which enables serial connection using only one channel and still reaching Cat. 4/PL e. DYNlink devices must be used with Vital safety controller or Pluto program-mable safety controller. Up to 30 DYNlink devices can be connected in series to Vital and up to 10 can be connected to each input on Pluto.

StatusBus

StatusBus is a simple and cost effective way to collect the status information of emergency stops and safety sensors. The StatusBus functionality is available with some DYNlink de-vices and allows to collect the status of each individual safety device, even when connected in series. A Pluto programmable safety controller must be used to read the StatusBus informa-tion, and a single input on Pluto can collect the status of up to 30 safety devices. The devices are connected using standard cable and M12-5 connectors. No specific bus cable or extra communication module is necessary.
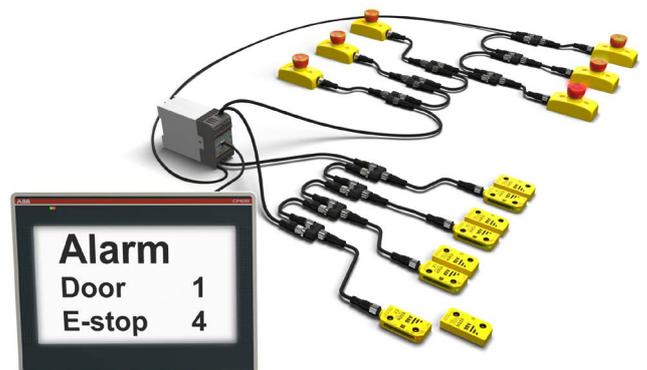
AS-i

Smile is available in a model compatible with the AS-i safety bus. Smile AS-i can be used with any AS-i monitor. AS-i is a bus system that offers a very simple connection of up to 31 safety devices to one monitor according to PL e and makes it easy to move, remove and add safety devices. When Smile AS-i is used with Pluto programmable safety controller, no other AS-i master or monitor is necessary, and no specific knowledge of AS-i is required.

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Ordering information
Emergency stop buttons

Smile 10 EA Tina

Smile 11 EC Tina

Smile 12 EA

ABB Compact emergency stop shroud

EStrongZ and EStrongZ LED

Smile 11 EAR

INCA 1

External mounting

Description	Type of safety signal	Connection type	Feature	Type	Order code
Compact size Plastic housing IP65	DYNlink	1 m cable from bottom	Status LED	Smile 10 EA Tina	2TLA030050R0400
		1 x M12-5 male	Status LED	Smile 11 EA Tina	2TLA030050R0000
		1 x M12-5 male	Status LED, StatusBus	Smile 11 EC Tina	2TLA030050R0900
		2 x M12-5 male	Status LED	Smile 12 EA Tina	2TLA030050R0200
	AS-i	1 x M12-4 male	Status LED	Smile 11 EA AS-i	2TLA030052R0000
	2 NC	1 m cable from bottom	Status LED	Smile 10 EA	2TLA030051R0400
		1 m leads from bottom	-	Smile 10 EK	2TLA030051R0600
		1 x M12-5 male	Status LED	Smile 11 EA	2TLA030051R0000
		2 x M12-5 male	Status LED	Smile 12 EA	2TLA030051R0200
Plastic housing IP66, IP67 and IP69K	2 NC*	2 x M20 conduits	-	CEPY1-1002 (Compact)	1SFA619821R1002
			With shroud	CEPY1-2002 (Compact)	1SFA619821R2002
Metal housing IP67 and IP69K	2 NO + 2 NC	3 x M20 conduits	Status LED	EStrongZ LED	2TLA050220R0222
			-	EStrongZ	2TLA050220R0020

* Can be adapted to DYNlink with Tina

Panel mounting

IP rating	Depth	Connection type	Type of safety signal	Feature	Type	Order code
IP65	26 mm	1 x M12-5 male	DYNlink	Status LED	Smile 11 EAR Tina	2TLA030050R0100
			2 NC	Status LED	Smile 11 EAR	2TLA030051R0100
Button IP65, connector IP20	53 mm	Removable terminal block	DYNlink	Status LED	INCA 1 Tina	2TLA030054R0000
				Status LED, StatusBus	INCA 1 EC Tina	2TLA030054R1400
			2 NC	Status LED	INCA 1	2TLA030054R0100

Accessories
Emergency stop buttons

M12-3S

Tina 8A

E-sign 22.5

Connection accessories

Description	Type	Order code
Connection accessories		
M12 Y-connector for serial connection of device with StatusBus functionality.	M12-3S	2TLA020055R0600
M12 Y-connector for serial connection of devices without StatusBus functionality.	M12-3A	2TLA020055R0000
Connection block for the serial connection of up to 4 DYNlink devices with 12-5 connectors.	Tina 4A	2TLA020054R0300
Connection block for the serial connection of up to 8 DYNlink devices with 12-5 connectors.	Tina 8A	2TLA020054R0500
Adaptation unit for DYNlink solution with M20 fitting. For e.g. Compact.	Tina 2A*	2TLA020054R0100
Adaptation unit for DYNlink solution, internal assembly. For e.g. Compact.	Tina 2B*	2TLA020054R1100
Adaptation unit for DYNlink solution with M20 fitting and M12 connector. For e.g. connecting Compact to Pluto/Vital.	Tina 3A*	2TLA020054R0200
Termination for Smile 12	JST2	2TLA030051R1300
Accessories		
Emergency stop sign, yellow, no text, for INCA (22.5mm)	E-Sign 22.5	2TLA030054R0900
Emergency stop sign, yellow, no text, for Smile (32.5mm)	E-Sign 32.5	2TLA030054R1000
Yellow surround for Inca	Surround for Inca	2TLA030054R0400
Yellow shroud for Compact	CA1-8053	1SFA619920R8053
Stainless steel cable gland, for EStrong	Gland M20x1.5	2TLA050040R0002
Stainless steel conduit plug, for EStrong	Conduit Plug M20x1.5	2TLA050040R0004
LED Green/Red 230 VAC, for EStrong	LED 230	2TLA050211R0003

* For more information about Tina adapter units, please see Pluto and Vital chapters.

Cable with connectors

M12-C61

M12-C61HE

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
		20 m		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

Separate cables and connectors

M12-C01

Description	Type	Order code
Connectors		
M12-5 pole female, straight	M12-C01	2TLA020055R1000
M12-5 pole male, straight	M12-C02	2TLA020055R1100
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

C5 cable

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Technical data
Emergency stop buttons

Technical data

Approvals	
Smile, INCA	Inspecta
Smile Tina, INCA Tina	TÜV NORD
Smile AS-i	TÜV NORD Inspecta
EStrong	
Compact	
Conformity	
Smile, INCA	CE 2006/42/EC - Machinery EN ISO 12100:2010, EN ISO 13849-1:2008/AC:2009, EN 60204-1:2006+A1:2008, EN ISO 13850:2008
Smile Tina, INCA Tina	CE 2006/42/EC - Machinery 2004/108/EC - EMC EN ISO 12100:2010, EN ISO 13849-1:2008, EN 62061:2005, EN 60204-1:2006+A1:2009, IEC 60664-1:2007, EN 61000-6-2:2005, EN 61000-6-4:2007, EN 60947-5-5:2005, EN ISO 13850:2006
Smile AS-i	CE 2006/42/EC - Machinery EN ISO 12100:2010, EN ISO 13849-1:2008/AC:2009,EN ISO 13849-2:2012, EN 60204-1:2007+A1, EN ISO 13850:2008, IEC 60947-5-5:2005
EStrong	CE 2006/42/EC - Machinery EN ISO 12100:2010, EN ISO 13850:2008, EN 60204-1:2006:+A1:2009, EN 60947-1:2007:+A1:2011, EN 60947-5-1:2004:+A1:2009, EN 60947-5-5:1997:+A1:2005
Compact	CE 2006/42/EC - Machinery EN 60947-1:2007, EN 60947-5-1:2004, EN 60947-5-5:1997+A1:2005
Functional safety data	
EN 61508:2010	Up to SIL3, depending on system architecture
EN 62061:2005	Up to SILCL3, depending on system architecture
EN ISO 13849-1:2008	Up to Cat. 4, PL e, depending on system architecture
Smile, INCA	$B10_d$ = 100 000
Smile Tina, INCA Tina	PFH_D = 4.66 x 10-9
Smile AS-i	PFH_D = 1.69 x 10-9
EStrong	$B10_d$ = 1 500 000
Compact	$B10_d$ = 50 000

Technical data
Emergency stop buttons

Technical data

Electrical data	
Operating voltage	
Smile, INCA	17-27 VDC +-10%
Smile Tina, INCA Tina	+24 VDC +15% -25%
Smile AS-i	+30 VDC from the AS-i bus. Tolerances 26.5 - 31.6 VDC
EStrong	230 VAC / +24 VDC (the LED is +24 VDC originally, but can be replaced with a 230 VAC accessory)
Compact	230 VAC / +24 VDC
Mechanical data	
Mechanical life	>50 000 operations
Operating temperature	
Smile, INCA	-10...+55°C
EStrong	-25...+80°C
Compact	-25...+70°C
Protection class	
Smile, INCA	IP65
EStrong	IP67, IP69K
Compact	IP66, IP67, IP69K
Weight	
Smile	65 g
INCA	45 g
EStrong	820 g
Compact	108 g, 124 g (with shroud)
Material	
Smile	Polyamide PA66, Macromelt, polybutylenterephthalate PBT, Polypropene PP, UL 94 V0
INCA	Polyamide PA66, Macromelt, polybutylenterephthalate PBT, Polypropene PP, UL 94 V0
EStrong	Stainless steel 316 housing
Compact	Polycarbonate

More information

Fore more information, e.g. the complete technical information, see product manual for:
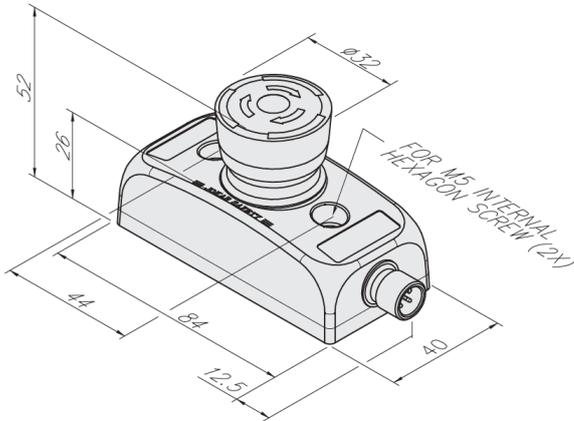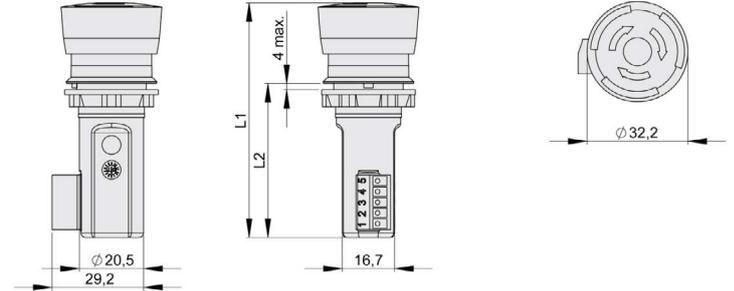Smile 2TLC172097M0201
INCA 2TLC172163M0201
Estrong 2TLC172247M0201
Compact 1SFC151005C0201

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Dimension drawings
Emergency stop buttons

Smile

INCA

Type	L1 mm	L2 mm
INCA 1 EC Tina	75.5	49.5 ± 0.5
INCA 1	80	54 ± 0.5
INCA 1 Tina	80	54 ± 0.5

EStrong

Fixing Holes
for M4 Screws
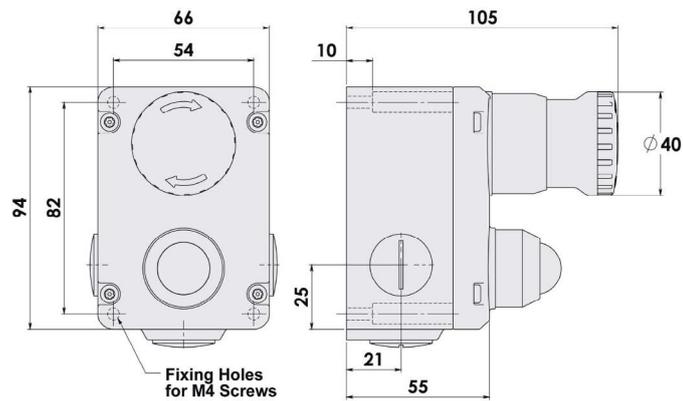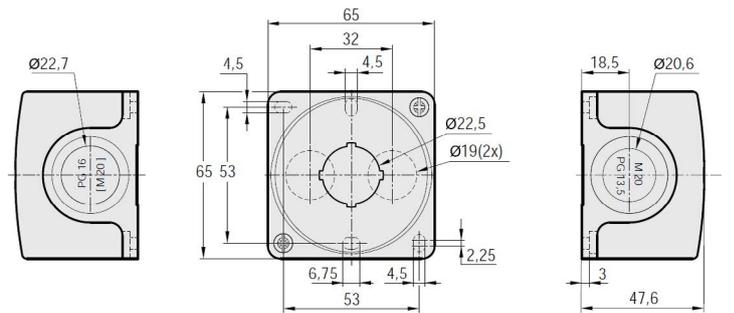
All dimensions in mm

Compact

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