

# 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

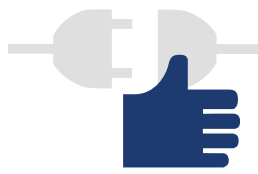
Models with a compact and appealing housing saves space and makes it easy to place.

#### 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 belong 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.



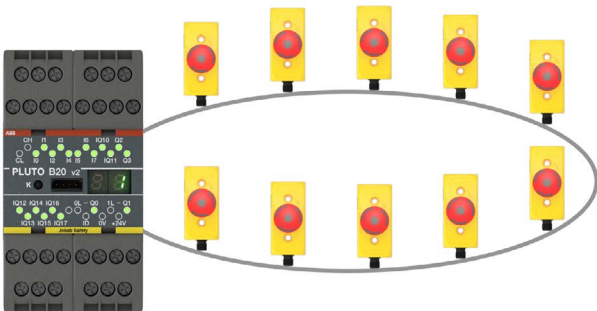
# Features

## 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 programmable 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.



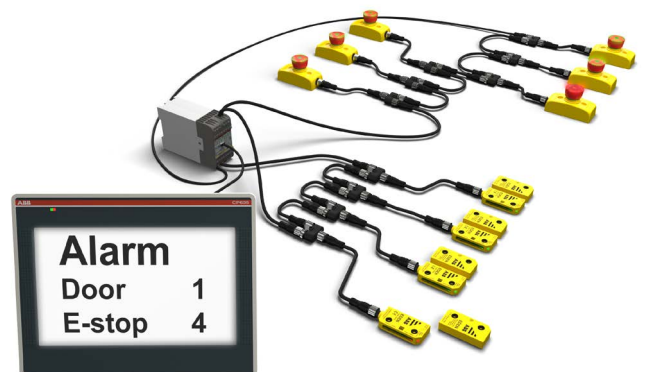
#### AS-i

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.



#### 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 devices 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 information, 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.



# Ordering information

## Emergency stop buttons



2TLC172863F0201

Smile 10 EA Tina



2TLC172857F0201

Smile 11 EC Tina



2TLC172187F0201

Smile 12 EA



ABB Compact emergency stop shroud



2TLC172858F0201

EStrongZ and EStrongZ LED

### 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	
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



2TLC172861F0201

Smile 11 EAR



2TLC172383F0201

INCA 1

# Accessories

## Emergency stop buttons



M12-3S

2TLC17203AV0201



Tina 8A

2TLC172471F0201



E-sign 22.5

2TLC172906F0201

### Connection accessories

Description	Type	Order code
<b>Connection accessories</b>		
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

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
				M12-C0312	2TLA020056R5800
	Female + male	0.3 m		M12-C00612	2TLA020056R6300
				M12-C112	2TLA020056R2000
		1 m		M12-C312	2TLA020056R2100
				M12-C612	2TLA020056R2200
		3 m		M12-C1012	2TLA020056R2300
			Angled female connector	M12-C1012V2	2TLA020056R6700
16 m		M12-C1612	2TLA020056R5400		
		M12-C2012	2TLA020056R2400		



M12-C61

2TLC172951F0201



M12-C61HE

2TLC010003F0201

### 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-C01

2TLC172857F0201



C5 cable










2TLC010039F0201

<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

# Technical data

## Emergency stop buttons

### Technical data

<b>Approvals</b>	
Smile, INCA	Inspecta 
Smile Tina, INCA Tina	TÜV NORD 
Smile AS-i	TÜV NORD <b>Inspecta</b> 
EStrong	 
Compact	   
<b>Conformity</b>	
Smile, INCA	<b>CE</b> 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	<b>CE</b> 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 13850:2008
Smile AS-i	<b>CE</b> 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	<b>CE</b> 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	<b>CE</b> 2006/42/EC - Machinery EN 60947-1:2007, EN 60947-5-1:2004, EN 60947-5-5:1997+A1:2005
<b>Functional safety data</b>	
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	$PFH_D = 4,66 \times 10^{-9}$
Smile AS-i	$PFH_D = 1,69 \times 10^{-9}$
EStrong	$B10_d = 1\,500\,000$
Compact	$B10_d = 50\,000$

# Technical data

## Emergency stop buttons

### Technical data

<b>Electrical data</b>	
<b>Operating voltage</b>	
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
<b>Mechanical data</b>	
<b>Mechanical life</b>	>50 000 operations
<b>Operating temperature</b>	
Smile, INCA	-10...+55°C
EStrong	-25...+80°C
Compact	-25...+70°C
<b>Protection class</b>	
Smile, INCA	IP65
EStrong	IP67, IP69K
Compact	IP66, IP67, IP69K
<b>Weight</b>	
Smile	65 g
INCA	45 g
EStrong	820 g
Compact	108 g, 124 g (with shroud)
<b>Material</b>	
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

For more information, e.g. the complete technical information, see product manual for:

Smile [2TLC172097M0201](#)

INCA [2TLC172163M0201](#)

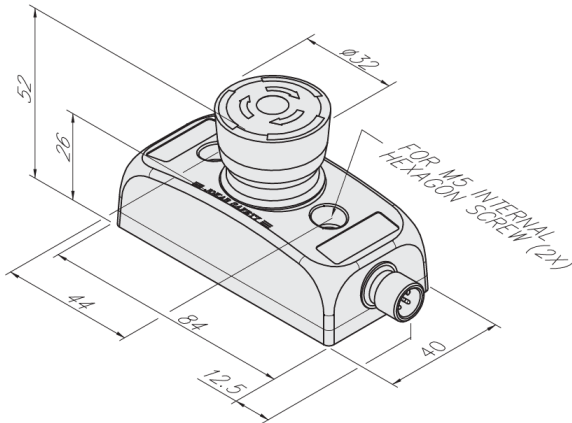
EStrong [2TLC172247M0201](#)

Compact [1SFC151005C0201](#)

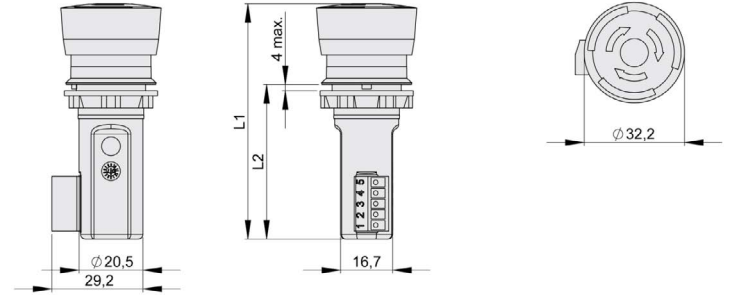
# Dimension drawings

## Emergency stop buttons

### Smile

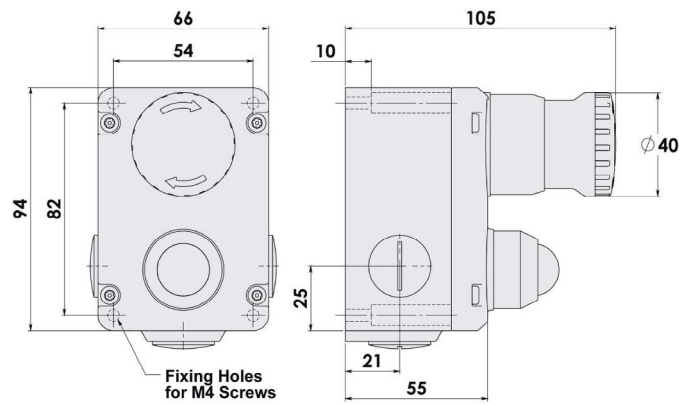


### INCA

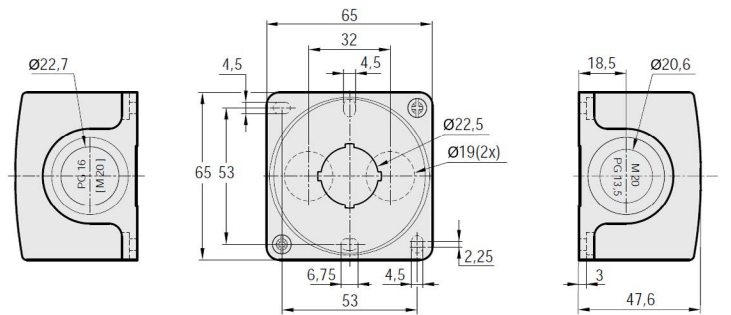


Type	L1 mm	L2 mm
INCA 1 EC Tina	75.5	49.5 ± 0.5
INCA 1	80	54 ± 0.5
INCA 1 Tina	80	54 ± 0.5

### EStrong



### Compact



All dimensions in mm



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