Emergency stop with indication
Smile

Smile - small and cost effective E-stop
In order to fulfill the need for a small and easy to install E-stop, Smile has been developed. The size of the device makes it possible to be installed wherever you want. With M12 connection/s or cable and centralised mounting holes Smile is very easy to install, especially on aluminium extrusions. Smile is available for E-stops in both dynamic and static safety circuits i.e. for interfacing to Vital/Pluto and Safety relays. Each version is available with either one or two M12 connections or cable. At the top of Smile, a LED shows the current status as: green = protection OK, red = this emergency stop has been pressed and if the LED is off, an emergency stop earlier in the circuit has been actuated. Smile is also available with black push button and is used as a safety stop. See section on safety stops.

Smile emergency stop comes in five different versions:
1. Smile 10 EA has a 1m cable connected through the base of the unit.
2. Smile 10 EK has four 1m connecting leads through the base of the unit. No LED.
3. Smile 11 EA has a 5-pole M12 connector on one end of the unit.
4. Smile 12 EA has two 5-pole M12 connectors, one on each end of the unit.
5. Smile 11 EAR has one 5-pole M12 connector at one end of the unit.

Smile 11 EA adapted for AS-i
The Smile 11 EA also comes in a version adapted for direct attachment to the AS-i bus.

Approvals:

Application:
- To stop a machine or a process

Features:
- Emergency push button up to PL e/Cat. 4 acc. to EN ISO 13849-1
- With LED info in push button
- Robust
- IP65
- Available as safety stop (black push button)
- Available for AS-i

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11/7  2TLC172001C0202 | ABB Safety Handbook
Smile Connection examples

Smile 10 EA connected to either Pluto or a safety relay with LED indication. The connection cable exits from underneath.

Single channel - Safety category 1.  
Dual channel - Safety category 4.

Smile 11 EA connected to either Pluto or a safety relay with LED indication. Connection via M12 connector.

Single channel - Safety category 1.  
Dual channel - Safety category 4.

Smile 12 EA connected to either Pluto or a safety relay with LED indication. Connection via M12 connector + termination.

Single channel - Safety category 1.  
Dual channel - Safety category 4.

Smile 10 EA / 11 EA / 12 EA connected to either Pluto or a safety relay without LED indication.

Single channel - Safety category 1.  
Dual channel - Safety category 4.
Smile
Connection examples

Smile 12 EA connected to either Pluto or a safety relay with LED indication. Connection via M12 connectors. Reconnection to the Pluto/safety relay is made via a separate cable. You can also use JST2 as a termination device after Smile12EA (C).

Dual channel series connection - Safety category 3.

Smile 12 EA and 11 EA connected to either Pluto or safety relay with LED indication. Connection via M12 connectors. Note that there is no termination connector as the Smile 11EA (C) completes the circuit without the need for a termination connector (JST2) or return cable.

Dual channel series connection - Safety category 3.

LED Indication for the connection example above, where two Smile 12 EA and one Smile 11 EA are connected in series, is showed in the following table (applies for all Smile).

A = Smile 12EA  R = Released
B = Smile 12EA  P = Pressed
C = Smile 11EA  G = Green light
               Rd = Red light
               B = Blank, no light

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<th>E-Stop Button status</th>
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## Technical data – Smile

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### Note.
There are other versions for dynamic technology (with Tina).

#### Impact resistance (half sinusoidal)
- max. 150 m/s², pulse width 11 ms, 3-axis, as per EN IEC 60068-2-27

#### Vibration resistance (sinusoidal)
- max. 50 m/s² at 10 Hz, 10 cycles, 3-axis, as per EN IEC 60068-2-6

#### Climate resistance
- **Damp heat, cyclical**
  - 96 hours, +25 °C / 97%, +55 °C / 93% relative humidity, as per EN IEC 60068-2-30
- **Damp heat, sustained**
  - 56 days, +40 °C / 93% relative humidity, as per EN IEC 60068-2-78
- **Dry heat**
  - 96 hours, +70 °C, as per EN IEC 60068-2-2
- **Cooling**
  - 96 hours, -40 °C, as per EN IEC 60068-2-1
- **Salt mist**
  - 96 hours, +35 °C in a chemical solution with NaCl, as per EN IEC 60068-2-11

#### Level of safety
- **EN ISO 13849-1**
  - Up to PL e/Cat. 4 depending upon system architecture
- **EN 62061**
  - SIL 3 depending upon system architecture
- **IEC/EN 61508-1...7**
  - SIL 3

#### PFH<sub>0</sub>
- 1.6×10⁻¹⁰

#### Colour
- Yellow, red and black

#### Weight
- Approx. 65 grams

#### Size
- Length: 84 mm + M12 contact(s)
- Width: 40 mm
- Height: 52 mm

#### Material
- Polyamide PA66, Macromelt, Polybutylenterephthalate PBT, Polypropylene PP, UL 94 V0

#### Ambient temperature
- -10°C to +55°C (operation), -30°C to +70°C (stock)

#### Protection class
- IP65

#### Actuating force
- 22 ± 4 N

#### Actuator travel
- Approx. 4 mm to latch

#### Mechanical life
- > 50,000 operations

#### Mounting
- Two M5 recessed hexagon head screws, L ≥25 mm.
- Hole cc: 44 mm

### LED on E-Stop
- **Green**: Safety device OK, Safety circuit OK
- **Off**: Safety circuit is previously interrupted.
- **Red**: This button is pressed, and the safety circuit is interrupted.

#### Operating voltage (LED)
- 17-27 VDC ripple ±10%
  - (LED supply voltage)

#### Current consumption (LED)
- 15 mA

#### Material, contacts
- Silver alloy gold plated

#### Min current
- 10 mA 10 VDC/ 10 VAC

#### Max current
- 2 A 24 VDC

### Accessories
- **Emergency Stop Sign S DK FIN**, 32.5 mm
- **Emergency Stop Sign EN F D**, 32.5 mm
- **Emergency Stop Sign (blank)**, 32.5 mm
- **JST2 termination for Smile 12**
- **Smile side shield**
- **2TLA030054R0700**
- **2TLA030054R0800**
- **2TLA030054R1000**
- **2TLA030051R1300**
- **2TLA030054R1100**

#### Conformity

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**Smile side shield**

**Sign for emergency stop**

**Termination device JST2**