# Emergency stop button with indication Smile Tina

Smile Tina is a compact emergency stop button to be used with Vital control module or Pluto Safety PLC.

**Faster installation with less risk of error**

Thanks to its small size and its centered mounting holes, Smile is easy to position and install. The M12 connectors speed up the connection and reduce the risk of connection error.

**Reduced downtime**

All Smile Tina offer extensive information about their status.

• A bright LED placed in the center of the push-button tells whether the push-button is pressed or not, and also whether the connection is interrupted before the device.
• All models are equipped with an information output that can be connected to, e.g., a PLC or a HMI, in order to know exactly which button has been pushed. Some models offer the StatusBus functionality thus offering all the advantages of serial connection while still getting status information from each device.

**Cost effective solution**

• Available with M12 connectors, Smile is very easy to connect in series, which saves cable length and installation time.
• Up to 10 Smile Tina can be connected to ONE input of a Pluto safety PLC. With a conventional 2 contact emergency stop button, two inputs would be necessary.
• The StatusBus functionality demands no extra communication module or extra cable.

# Technical data

| | |
|---|---|
| **Functional safety data** | |
| 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, PFHd: 4,66 $10^{-9}$ |
| **Power supply** | |
| Operating voltage | 24 VDC + 15 %, -25 % |
| Total current consumption | 47 mA (57 mA with max information output) |
| Information output | Max 10 mA |
| Time delay t (in/out) | t < 70 µs, EC/SC < 30 µs |
| Voltage when normal operation (protection OK) and 24 VDC supply voltage | Dynamic input: between 9 and 13 volt (RMS) |
| | Dynamic output: between 9 and 13 volt (RMS) |
| | Information output: ~23 VDC |
| **Protection class** | IP65 |
| **Ambient temperature** | Storage: -30...+70°C |
| | Operation: -10...+55°C |
| **Humidity range** | 35 to 85 % (with no icing or condensation) |
| **Housing material** | Polyamide PA66, Macromelt, Polybutylenterephthalate PBT, Polypropene PP, UL 94 V0 |
| **Contact material** | Silver alloy, gold plated |
| **Connectors** | Smile 10EA Tina: 5 pole cable, 1 m |
| | Smile 11x Tina: M12-5 pole male |
| | Smile 12x Tina: M12-5 pole male, M12-5 pole female |
| **Size** | 84 x 40 x 52 (L x W x H) - see Dimensions |
| **Weight** | ~65 g |
| **Colour** | Yellow base, red or black button |
| **Actuator force (E-stop button)** | 22 ± 4N |
| **Actuator travel** | ~4 mm to latch |
| **Mechanical life** | > 50.000 operations |
| **Mounting** | Two M5 hexagon socket screws, L ≥ 25 mm |
| | Hole centres: 44 mm |
| **LED on Smile Tina** | Green: Safety device OK, safety circuit OK |
| | Flashing red-green: Safety device OK, safety circuit previously interrupted |
| | Red: Button pushed, safety circuit interrupted |
| StatusBus LED indication | Double flash, red or green: Sensor waiting for an address. Red: Button pushed. Green: Button released |
| | Bursts of high freq. flash: Sensor identification |
| | Slow flash, 1 per 2 sec:  During addressing |
| | High frequency flash: Short circuit between pin 5 and dynamic signal (pin 2 or 3) |

# Dimensions



ø32

52

26
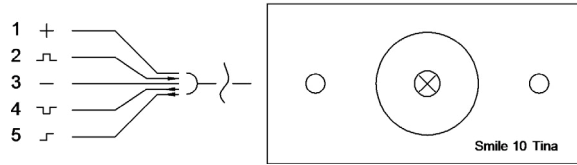
44

84

12.5

40

FOR M5 INTERNAL HEXAGON SCREW (2X)
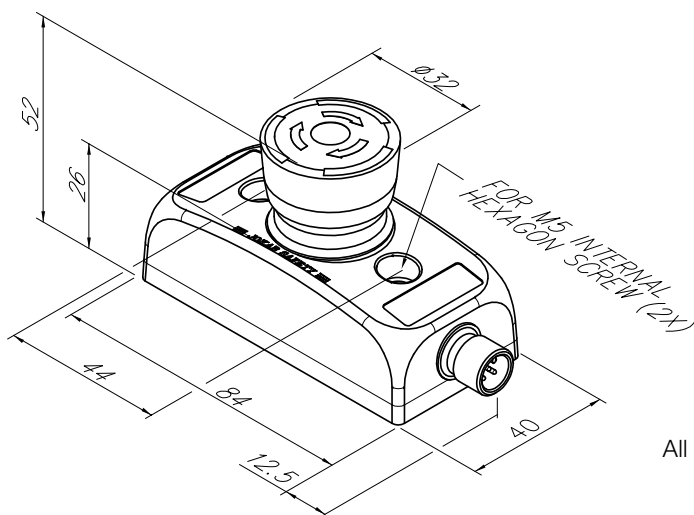
All dimensions in millimeters

# Connection

## Smile 10 Tina

5-pole wired

1 ) +24 VDC
2 ) Dynamic signal input
3 ) 0 V
4 ) Dynamic signal output
5 ) Information output[1]

1  +
2  ⊓
3  —
4  ⊔
5  ⅃

Smile 10 Tina

## Smile 11 Tina

M12-5 pole male

1 ) +24 VDC
2 ) Dynamic signal input
3 ) 0 V
4 ) Dynamic signal output
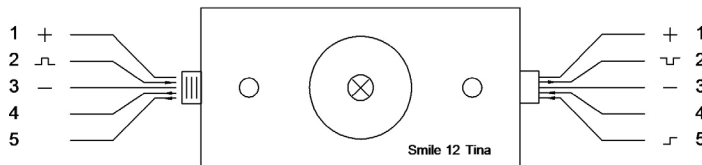5 ) Information output[1 and 2]

1  +
2  ⊓
3  —
4  ⊔
5  ⅃

Smile 11 Tina
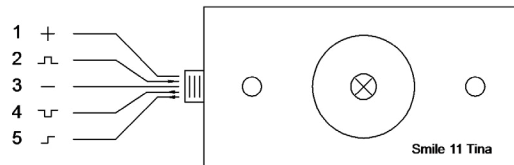
Colors according to
ABB standard cable:  1 ) Brown
2 ) White
3 ) Blue
4 ) Black
5 ) Grey

## Smile 12 Tina

Input
M12-5 pole male

1 ) +24 VDC
2 ) Dynamic signal input
3 ) 0 V
4 ) Not used
5 ) Not used

1  +
2  ⊓
3  —
4
5

Smile 12 Tina

+  1
⊔  2
—  3
4
⅃  5

Output
M12-5 pole female

1 ) +24 VDC
2 ) Dynamic signal output
3 ) 0 V
4 ) Not used
5 ) Information output[1]

Note: Shielded cable is recommended between this unit and the rest of the safety circuit.

The information channel output shall **<u>never</u>** be used for the safety purpose(s).

1) Information output: 0 V when button pressed.
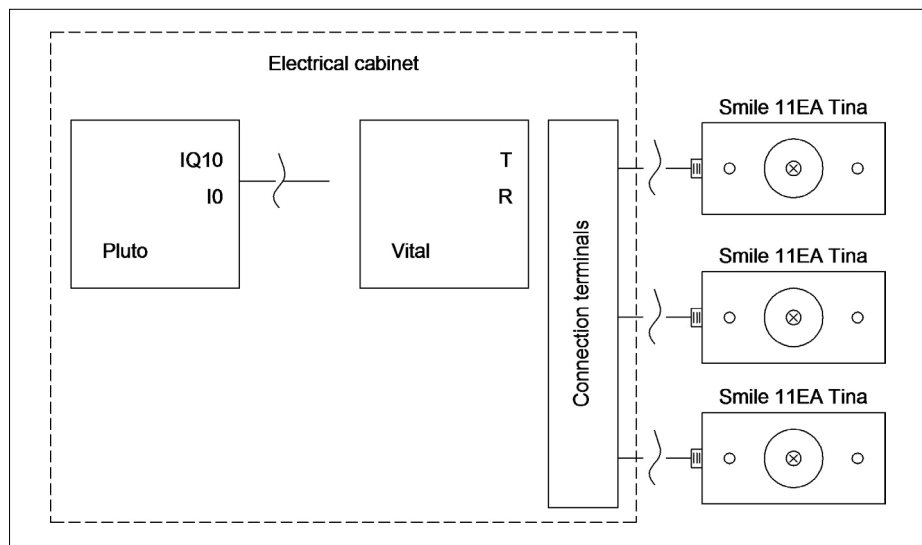   When the button is not pressed, the level depends on the input signal on pin 2. See manual.
2) If the device has address 0, pin 5 is an information output. If the address is 1 to 30, pin 5 is a StatusBus I/O.
   The address is 0 at delivery. Use Pluto safety PLC or Fixa addressing unit for the addressing. See manuals.
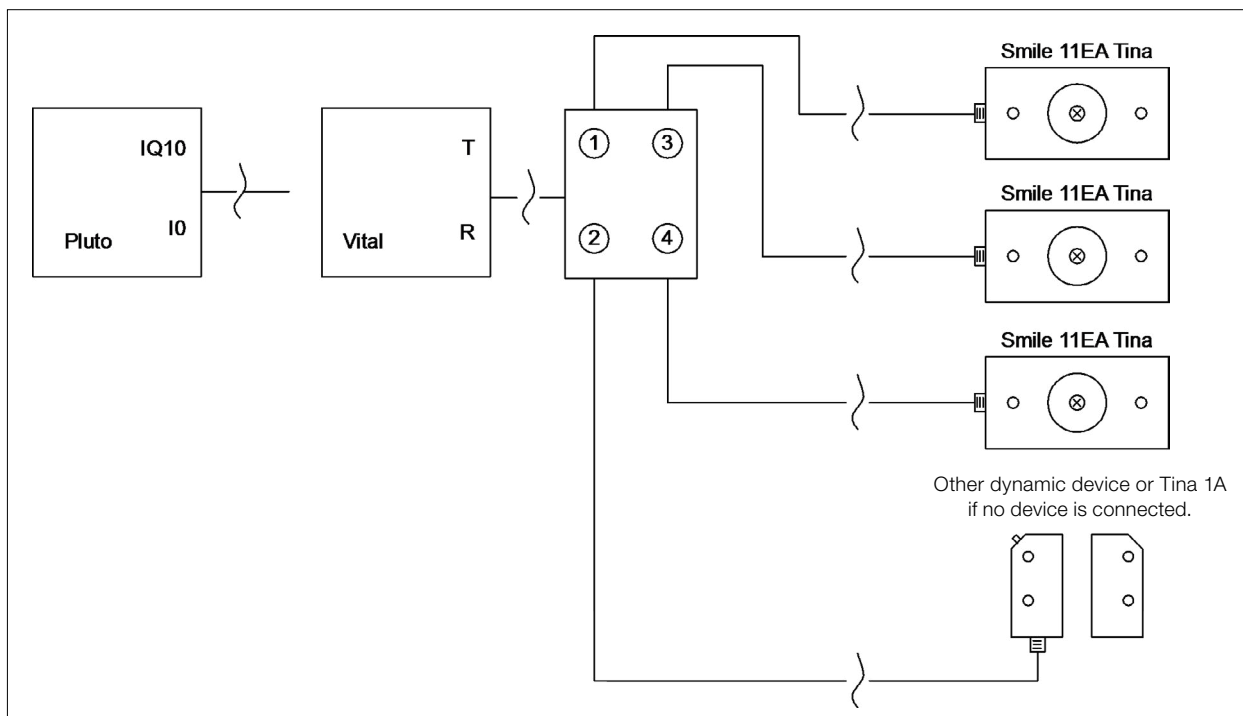
# Connection examples
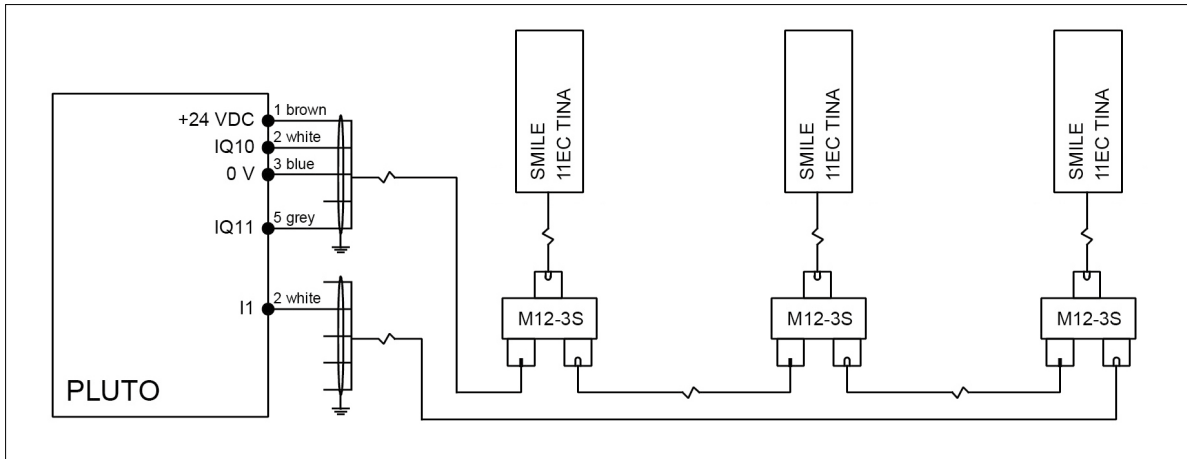
## Smile 12 EA Tina
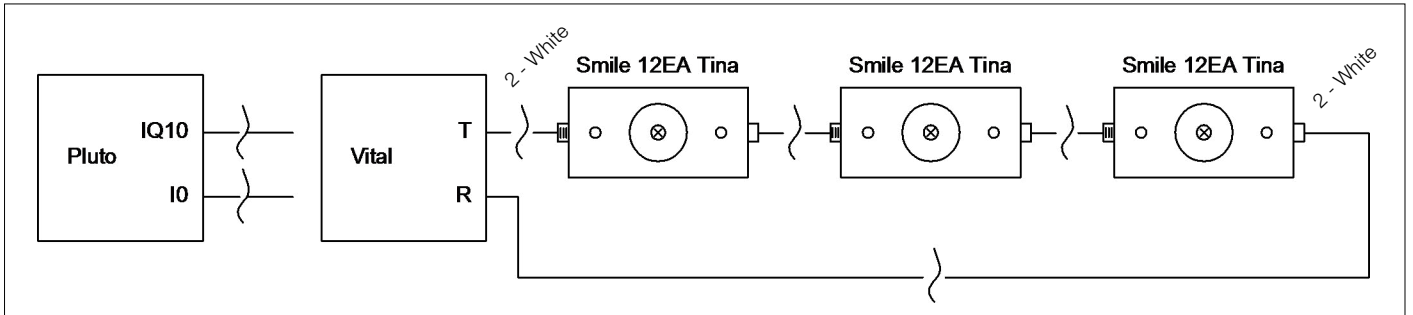


## Smile 11 EA Tina



## Smile 11 EA Tina and Tina 4A



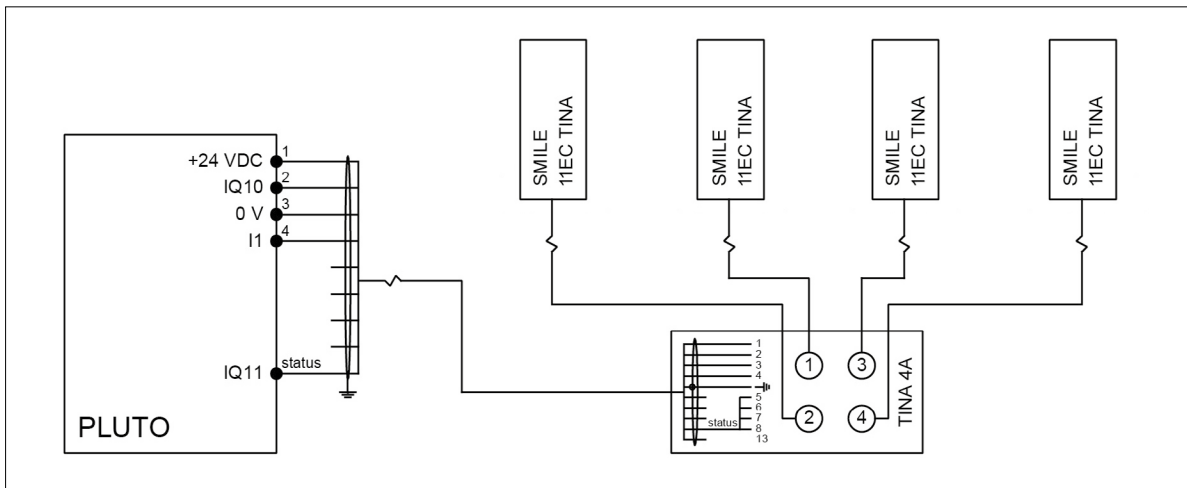Other dynamic device or Tina 1A if no device is connected.

# Connection examples

With the StatusBus functionality. Each device should have a unique address between 1 and 30.

**Smile 11 EC Tina and M12-3S** with StatusBus.



PLUTO

| +24 VDC | 1 brown |
| IQ10 | 2 white |
| 0 V | 3 blue |
| IQ11 | 5 grey |
| I1 | 2 white |

SMILE 11EC TINA — M12-3S

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**Smile 11 EC Tina and Tina 4A** with StatusBus.



PLUTO

| +24 VDC | 1 |
| IQ10 | 2 |
| 0 V | 3 |
| I1 | 4 |
| IQ11 | status |

SMILE 11EC TINA — TINA 4A

Note: Terminals 5, 6, 7 and 8 in Tina 4A must be connected to each other when the StatusBus functionality is used.

# Models and ordering information

| Type | Article number | Red button | Black button[1] | Reverse model | 1 m cable | 1 x M12-5 connector | 2 x M12-5 connectors | Information output | StatusBus functionality[2] |
|---|---|---|---|---|---|---|---|---|---|
| Smile 10 EA Tina | 2TLA030050R0400 | X | | | X | | | X | |
| Smile 11 EA Tina | 2TLA030050R0000 | X | | | | X | | X | |
| Smile 12 EA Tina | 2TLA030050R0200 | X | | | | | X | X | |
| Smile 11 EAR Tina | 2TLA030050R0100 | X | | X | | X | | X | |
| Smile 11 SA Tina | 2TLA030050R0500 | | X | | | X | | X | |
| Smile 11 EC Tina | 2TLA030050R0900 | X | | | | X | | X | X |
| Smile 11 SC Tina | 2TLA030050R1000 | | X | | | X | | X | X |

1 ) A Smile with black button shall not be used as emergency stop button. It is usually used as a stop button.
2 ) The StatusBus functionality can be used with Pluto safety PLC only, not with Vital 1.
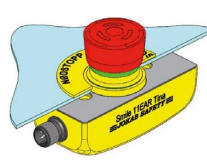  If the device has address 0, pin 5 is an information output. If the address is 1 to 30, pin 5 is a StatusBus I/O. The address is 0 at delivery.
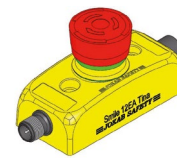  Use Pluto safety PLC or Fixa addressing unit for the addressing. See manuals.
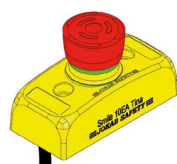


Smile 10 Tina



Smile 11 Tina



Smile 11 Tina
Reversed



Smile 12 Tina

| Type | Article number | Description |
|---|---|---|
| M12-3S | 2TLA020055R0600 | M12 Y-connector for serial connection of device with StatusBus functionality. |
| M12-3A | 2TLA020055R0000 | M12 Y-connector for serial connection of devices without StatusBus functionality. |
| Tina 4 | 2TLA020054R0300 | Connection block for up to 4 dynamic devices. |
| Tina 8 | 2TLA020054R0500 | Connection block for up to 8 dynamic devices. |
| M12-C61 | 2TLA020056R0000 | Straight M12-5 female connector with 6 m shielded cable. |
| M12-C101 | 2TLA020056R1000 | Straight M12-5 female connector with 10 m shielded cable. |
| M12-C201 | 2TLA020056R1400 | Straight M12-5 female connector with 20 m shielded cable. |
| M12-C112 | 2TLA020056R2000 | Straight M12-5 female + male connectors with 1 m shielded cable. |
| M12-C312 | 2TLA020056R2100 | Straight M12-5 female + male connectors with 3 m shielded cable. |
| M12-C612 | 2TLA020056R2200 | Straight M12-5 female + male connectors with 6 m shielded cable. |
| M12-C1012 | 2TLA020056R2300 | Straight M12-5 female + male connectors with 10 m shielded cable. |
| M12-C2012 | 2TLA020056R2400 | Straight M12-5 female + male connectors with 20 m shielded cable. |
| Emergency stop sign | 2TLA030054R0700 | Ø32.5 mm, Swedish, Danish, Finnish. For reversed Smile. |
| Emergency stop sign | 2TLA030054R0800 | Ø32.5 mm, English, French, German. For reversed Smile. |
| Smile side shield | 2TLA030054R1100 | Protection against involuntary activation of the emergency stop button. |
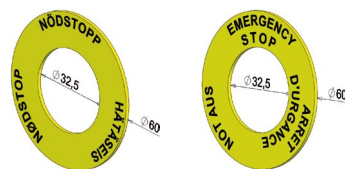


**Sign for emergency stop**



**Smile side shield**

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ABB

2TLC172091L0201