

# Safety modules





# Our modules

## Control of safety devices

### Introduction

#### The AWAX range : 26XXL, 27XXL and 45XXL2

Offering a complete solution, these modules may control mechanical switches, emergency stops and the BTI non stand alone switches with ACOTOM process. These modules can be supplied with 24Vac and dc or 85~265Vac with only one input. The user can choose either automatic or manual reset mode by means of a dip-switch. These modules use our **DLC** technology and dispose of **8A 250 Vac** or 50Vdc contacts.

#### The CO13XXL range

Developed especially to control emergency stops, this module can be supplied with 24Vac/dc or 85~265 Vac.

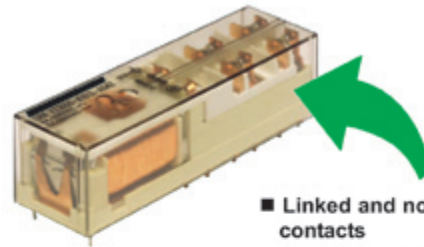
#### Special purpose modules

New digitally based technological process has been used in order to obtain several extra safety functions at a really competitive price. Examples : a safe speed controller (Speedtronic N), a timing module (Timtronic XXL) with a variator (Exeltronic XXL) or a two-hands control device (COM3C) .

#### Interlocking system

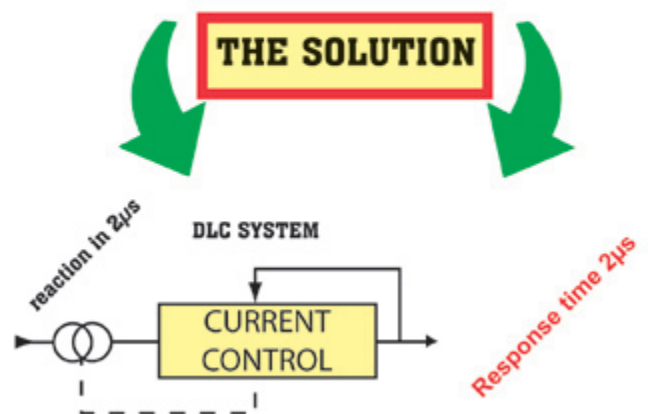
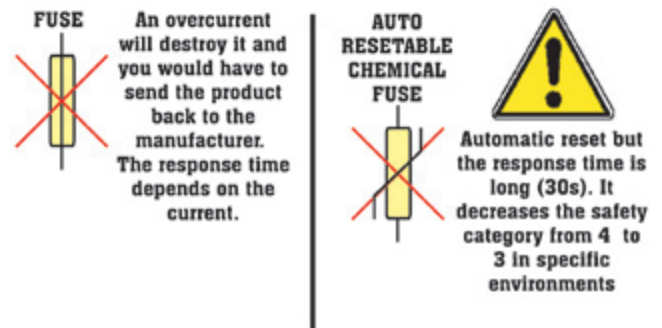
A solution for interlocking consists of a safety contactor (C4CK), a safety switch of cat. 3 with a key (AMX5CK) and a locked when unenergized interlocking device. This system can work independently or by means of the key transfer between C4CK and AMX5CK. The C4CK module can be used also to over pass the safety of a defined area, thanks to the captive key.

### A modern technology



- Linked and non overlapping contacts
- 8A 240Vac or 50Vdc
- Complies with EN50205
- Waterproof components

#### → New relays



The response time of our DLC process provides the safety category 4 even in hard environments.



# The AWAX modules

## AWAX26XXL

**Small but strong**



4 lines 8A/250V

- automatic or manual validation by dip switch
- current limitation device
- quick reaction time
- compatible with all switches with 2"O" and light curtains
- plugs in terminals

## AWAX27XXL

**The management of the emergency stops and access in category 4 with only one module**



- plugs in terminals
- width 45 mm
- independent dual channel for emergency stops and switches
- 2 automatic or manual validation zones adjustable by dip-switch
- 8 safety lines 8A/250V



# AWAX 26XXL et AWAX 27XXL

## Polyvalent safety modules

- ➔ Low consumption inputs
- ➔ Control of switches with Acotom® process
- ➔ Control of mechanical safety systems (grip switch, foot switch...)
- ➔ Dip switch to choose reset mode (automatic/manual)
- ➔ DLC system
- ➔ Dual area control (Awax27XXL)
- ➔ Power supply 24Vac/dc
- ➔ 22,5 mm or 45 mm housing
- ➔ Plug-in terminals

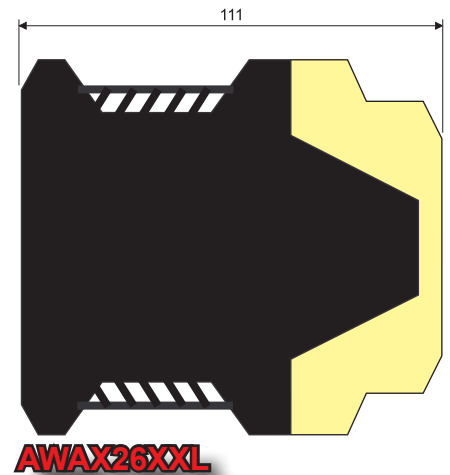
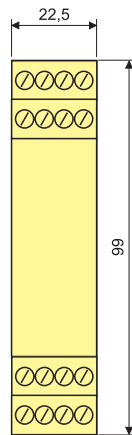
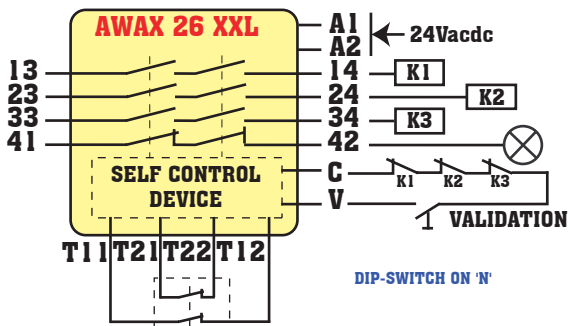


### Safety category

AWAX26XXL : category 4 PLe according to ISO13849-1  
 AWAX27XXL : category 4 PLe according to ISO13849-1  
 EN 292, EN 418, EN 1088, EN 60204-1

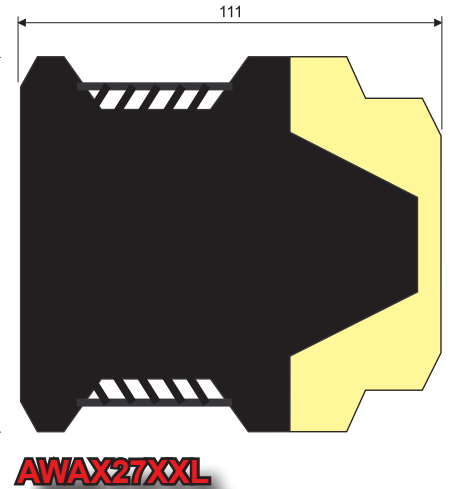
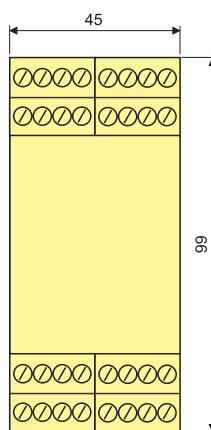
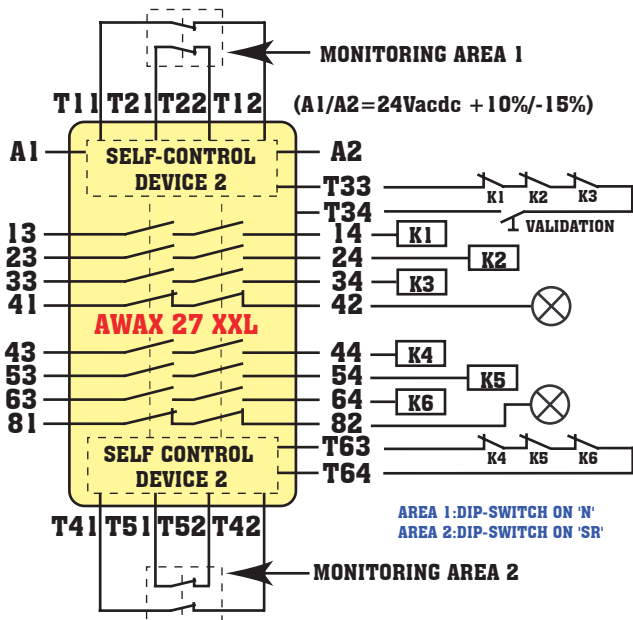
### Dimensions

### Wiring diagram



**AWAX26XXL**

**Cat.4**



**AWAX27XXL**

### Advice

These safety modules are able to control up to 30 switches when there is an external power supply.

**Cat.4**



# AWAX 45XXL2

## Safety module with 85/265V power supply

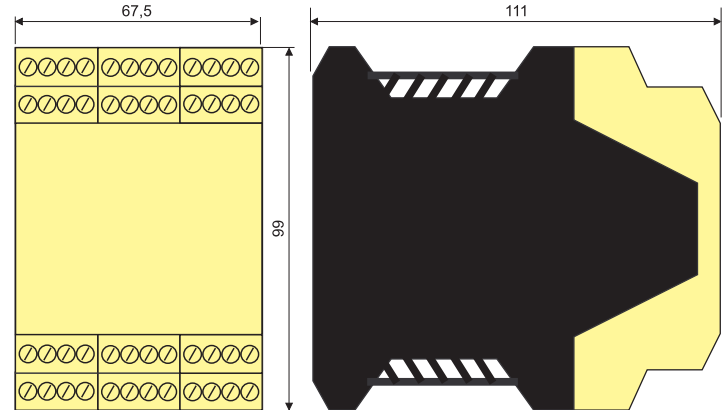
- Low consumption input
- Control of switches with Acotom process
- Control of mechanical switches
- DLC system
- Plug-in terminals
- Dip switch to choose the reset mode (automatic/manual)
- 85~265Vac power supply
- 67.5 mm housing



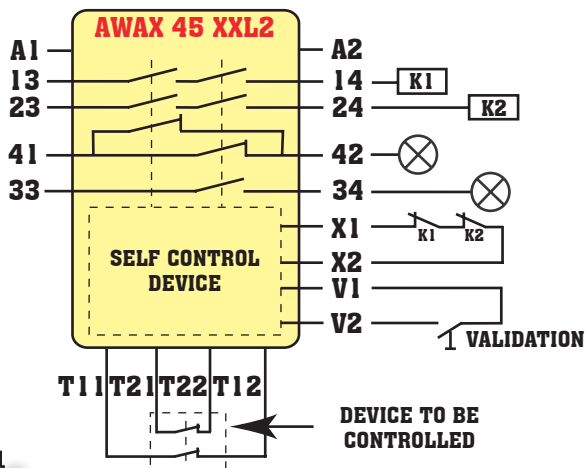
### Safety category

AWAX45XXL2 : category 4 PLe according to ISO13849-1  
EN 292, EN 418, EN 1088, EN 60204-1

### Dimensions



### Wiring diagram



**Cat.4**

### Advice

This module can control up to 30 safety switches with an external supply.





# C013XXL

## Emergency stop control

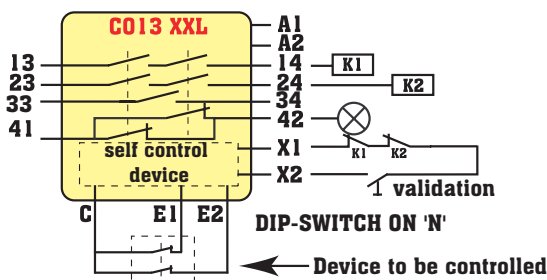
- Control of emergency stops buttons
- Control of mechanical switches
- Control of interlocking devices
- Independent supply inputs to avoid in-rush current
- Internal electrical protection, auto-resetting
- Plug-in terminals
- Dip-switch to choose the reset mode
- 24Vac/dc or 85~265Vac power supply
- 22,5 mm (24V) or 45mm (85~265V) housing

### Safety category

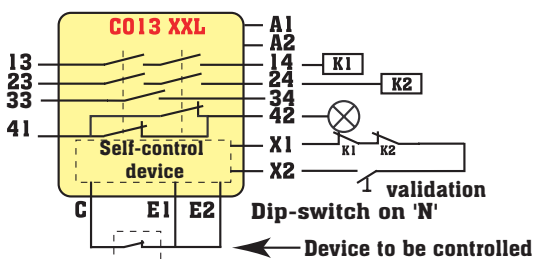
Single channel wiring : category 2 PLc according to ISO13849-1

Double channel wiring : category 3 PLe according to ISO13849-1

### Wiring diagram



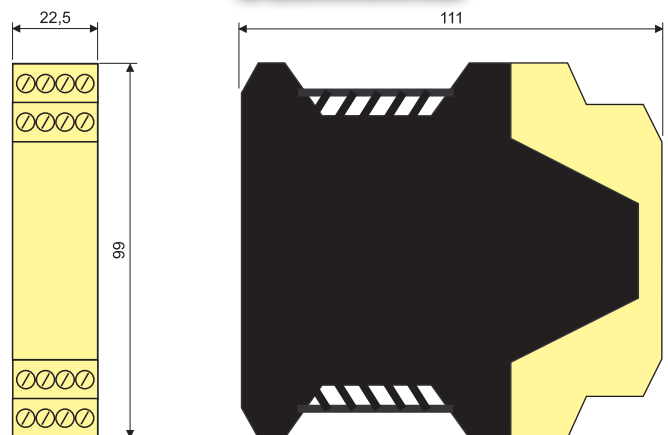
**Cat.3**



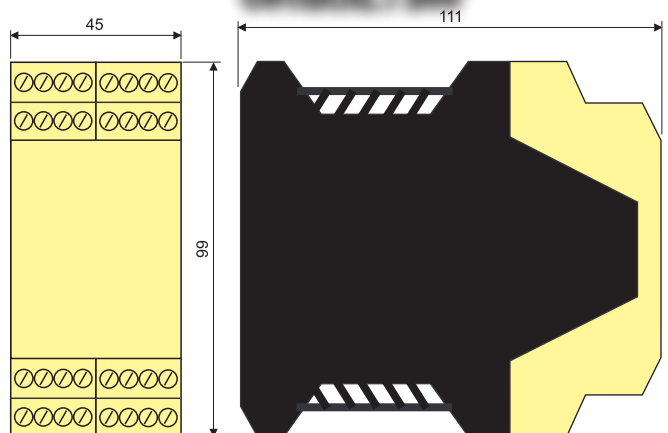
**Cat.2**



### Dimensions



**C013XXL / 24V**



**C013XXL / 85-265V**

### Application

An economic solution to control emergency stop buttons with one or two channels. The independent low consumption input improves the reliability of the switches connected to this module.

# COM3C

## Two-hand control device

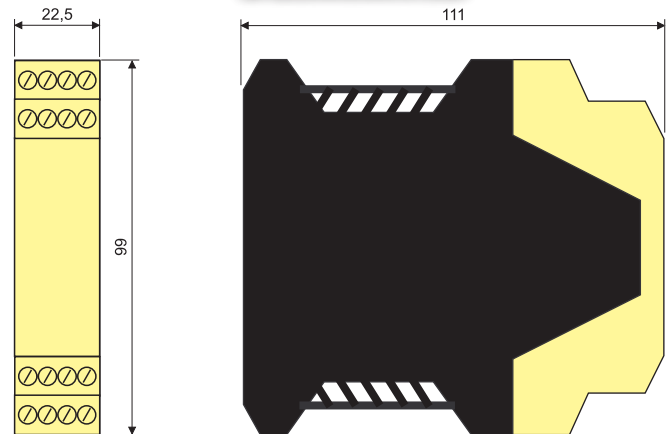
- Control of 2 buttons 1NO+1NC
- Desynchronism between buttons : 0,4 sec.
- 2NO + 1NC output contacts
- Test input (position switches, contactors)
- DLC short-circuit monitoring
- Plug-in terminals
- 24Vac/dc supply
- 22,5 mm housing

### Safety category

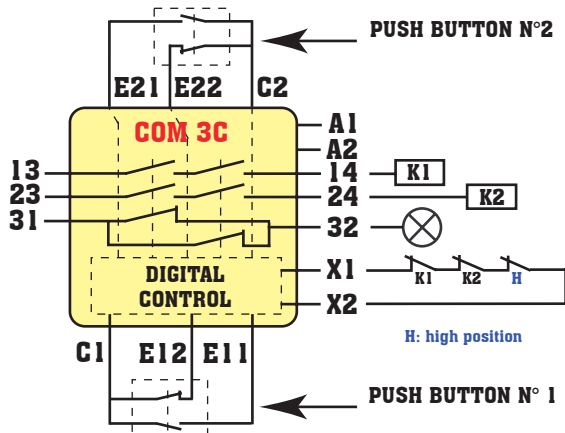
COM 3C : TYPE IIC according to EN 574



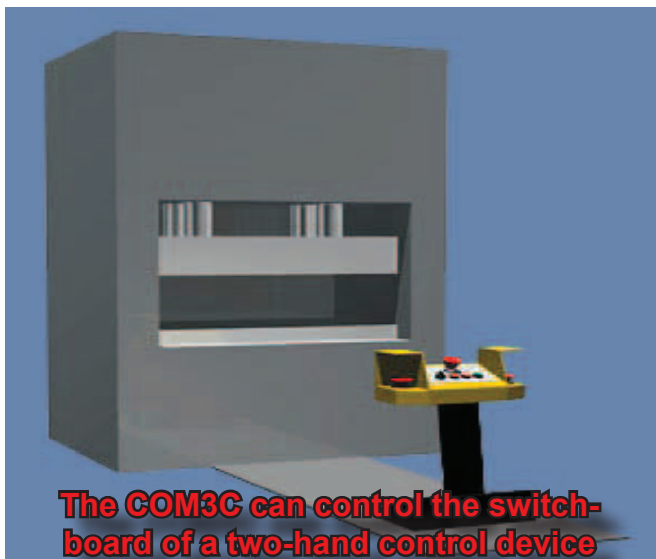
### Dimensions



### Wiring diagram



### Type IIC



The COM3C can control the switchboard of a two-hand control device

This module offers a new digital system allowing to keep a constant delay between the two push buttons (400 ms). It makes this module compatible even with high-speed presses and allows to improve the productivity.

### Advice

A two hand control device type IIC designed for a high work frequency in a 22,5 mm housing.

# SPEEDTRONIC N

## Safespeed safety module for interlocking monitoring

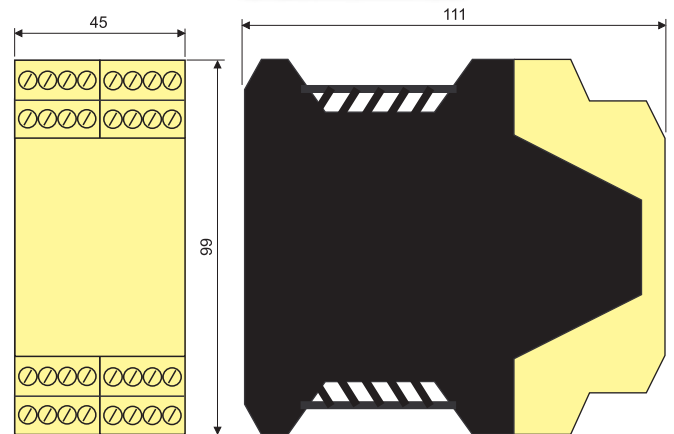
- Complies with the frequency variator
- Monitors the 3 phase motors
- PLC output
- 4 lines 8A/250V (3NO+1NC)
- Nominal motor voltage up to 3x690V
- Remanence voltage adjustable from 20mV to 700mV
- Activation time adjustable from 2 to 7s
- No mechanical accessory needed
- No intervention on the engine



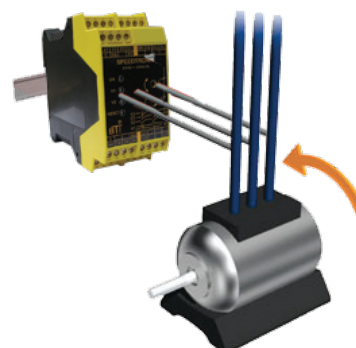
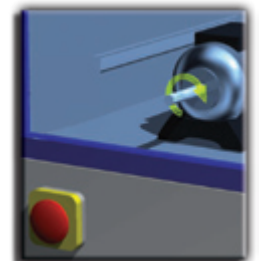
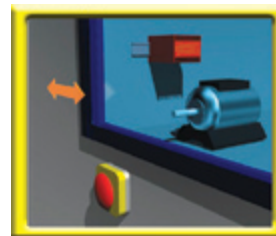
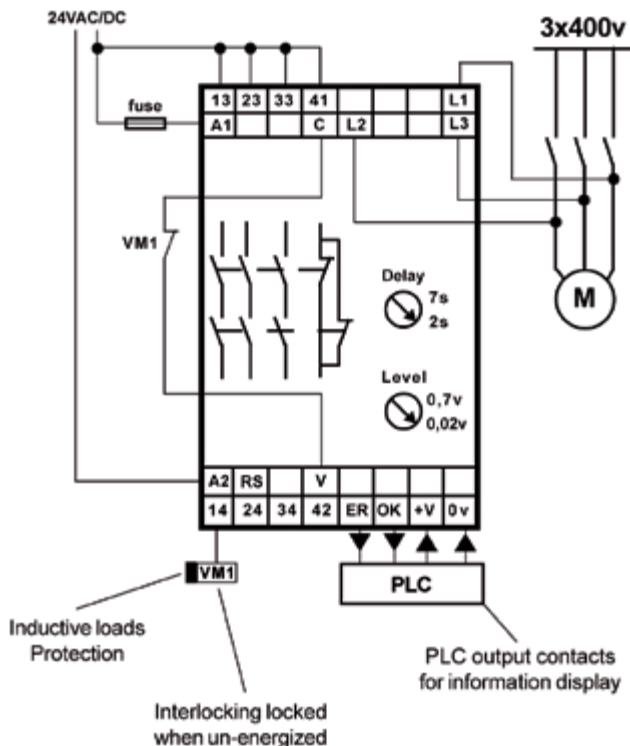
### Safety category

Category 4 PLe according to ISO 13849-1

### Dimensions



### Wiring example



**PL4e**





# EXELTRONIC XXL

## Safety timing module for interlocking control

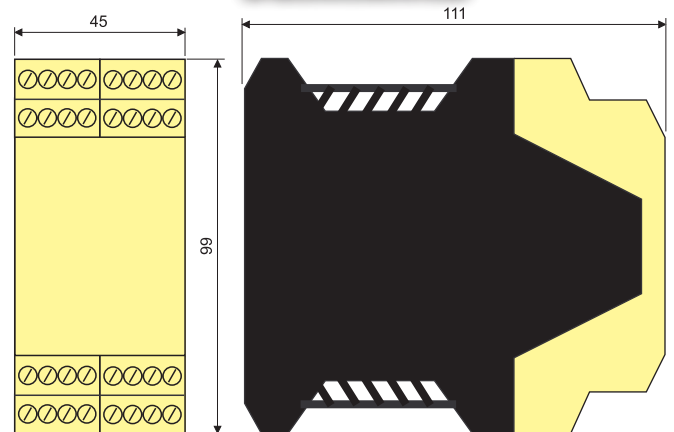
- Activation by a dual channel pushbutton with 2 contacts NC
- Short-circuit monitoring of input
- Compatible with safety switches fitted with Acotom process
- Instantaneous 3 NO contacts for engine control or heating resistances of single- or Three-phase motors
- 2NO+1NC delayed contacts
- Adjustable timing setting (from 0 to 999s)
- Power supply : 24Vac/dc



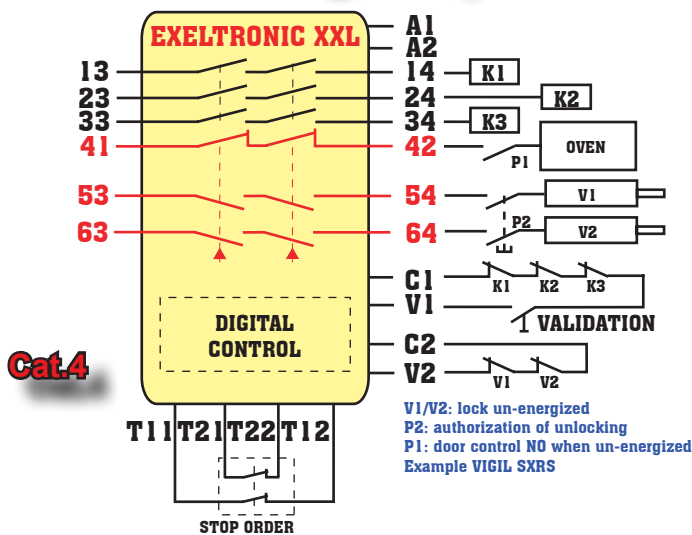
### Safety category

EXELTRONIC XXL(V) : category 4 PLe according to ISO13849-1

### Dimensions



### Wiring example

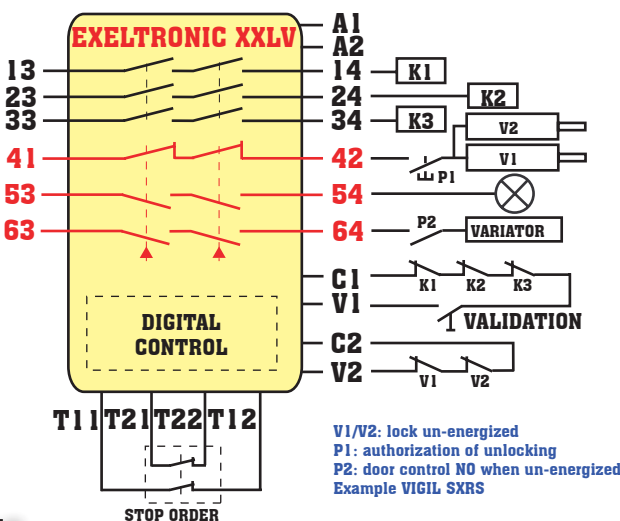


Cat.4

This unit incorporates a self-monitoring system of category 4, a digital timing circuit and a reset system. EXELTRONIC XXL controls all the safety gates of a machine. Connected to Anatom safety switch and an interlocking device, it provides an economical safety solution.

### Application

The unit is to stop the machine and maintain the deceleration of an engine by means of a frequency variator. Then after a determined time, you can unlock the door securely.



Cat.4



# TIMTRONIC XXL

## Digital timing module

- Activation by the opening of a NO contact
- Reset to zero each time the contact closes (LED lit off)
- Flashing LED during timing
- Closing of contacts after timing
- Adjustable timing from 0 to 999s
- 2 NO delayed lines 8A/250V
- 1 NC delayed line 8A/250V
- Power supply : 24Vac/dc
- 22,5 mm housing

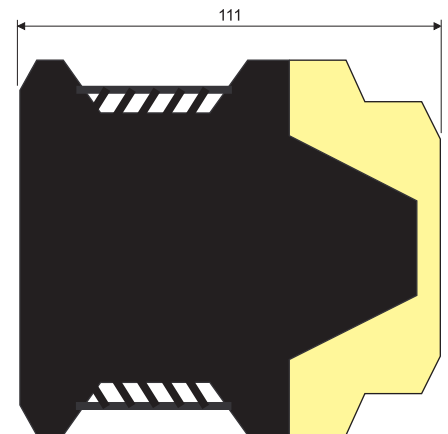
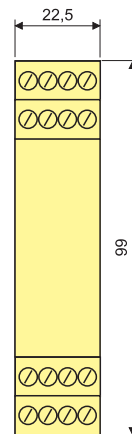
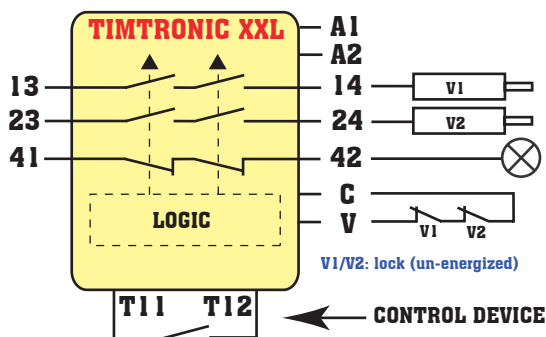


### Safety category

TIMTRONIC XXL : category 3 according to EN 954-1

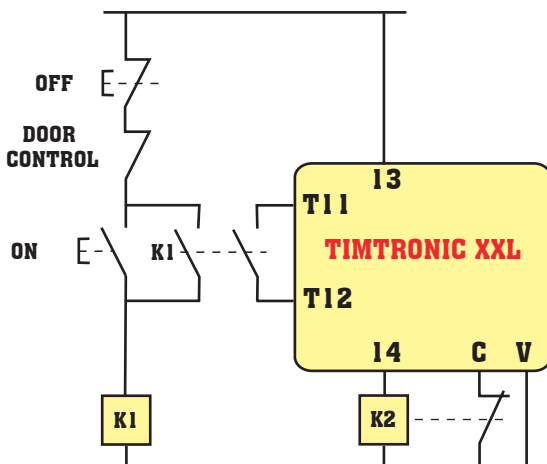
### Dimensions

### Wiring diagram



Cat.3

### Operation mode



Rising time drift in case of failure which guarantees the access locking.

### Application

With the Timtronic you can stop the machine and the door will unlock after a chosen delay time.

Cat.2



# C4TN

## Time delay module for the command of energisation with 2 ranges of timing

**A: 1/22 s**  
**B: 0.1/2.2 s**

This time-delay device is used to timing the start or the stop of a machine, by integrating two timing possibilities in a smart 22,5 mm housing (ISO13849-1, SIL3 and cat4 PLe).

Choice of delaying mode (on operate / on release)

- 2 safety outputs 8A/250v
- 1 NC auxiliary output
- 1 test loop

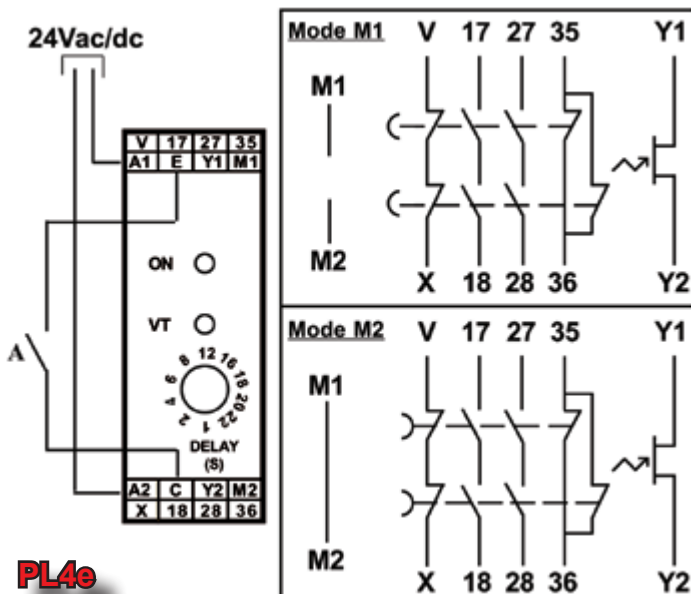
It meets the requirements of industries for which a machine must either, not be instantly activated, or stopped instantly, like frequency variators. C4TN allows to keep the device energized, from 1 to 22 secondes. Other applications are available thanks to the 2 operations modes:

- Mode1 : time delaying to operate/start
- Mode 2 : time delaying to stop

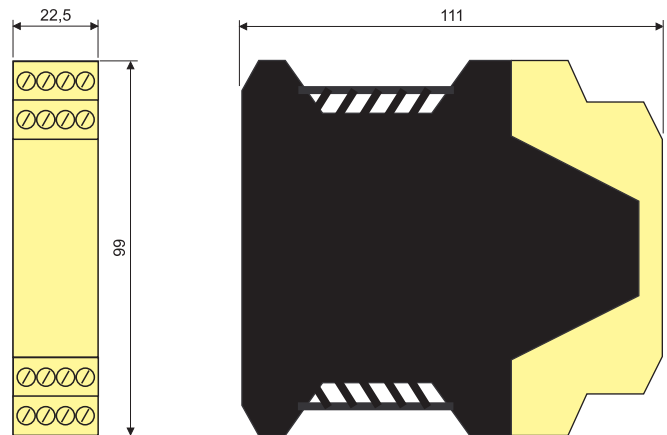
### Safety category

Cat4 PLe according to ISO 13849-1

### Wiring diagram



### Dimensions





# C4CK

## Safety contactor with a locking device

### Version A

- Key locked and turned : 4NO+1NC 8A/250V
- Key removed : 4NC+1NO 8A/250V

### Version B

- Key locked and turned : 4NC+1NO 8A/250V
- Key removed : 4NO+1NC 8A/250V

### Versions A and B

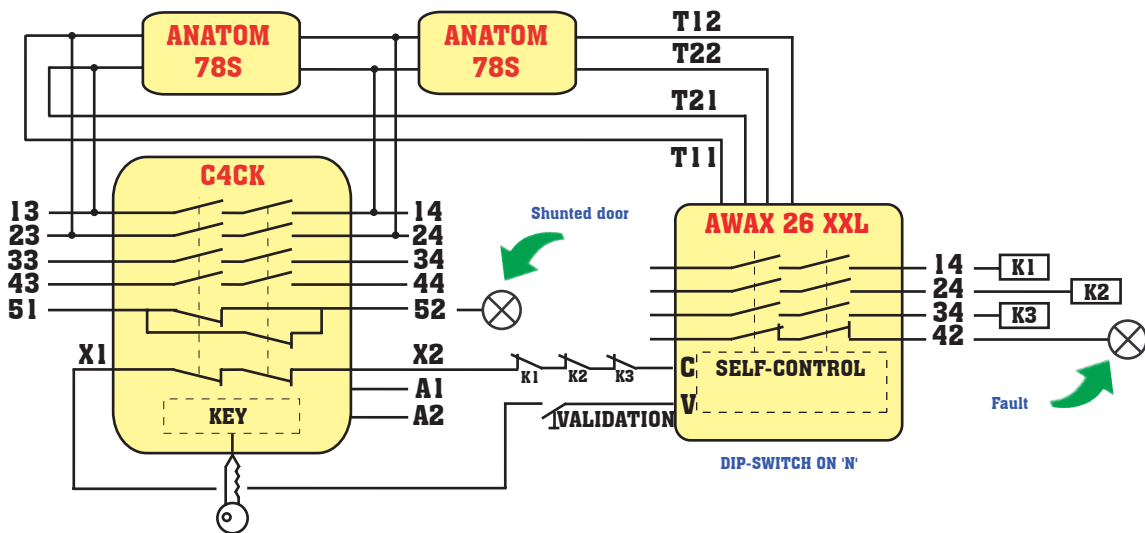
- 1 line for cyclical test and 2 LEDs
- Can work in association with the safety switch AMX5CK



### Safety category

-C4CK : category 4 PLe according to ISO13849-1 with a safety module (ex : AWAX26XXL)

### Wiring diagram



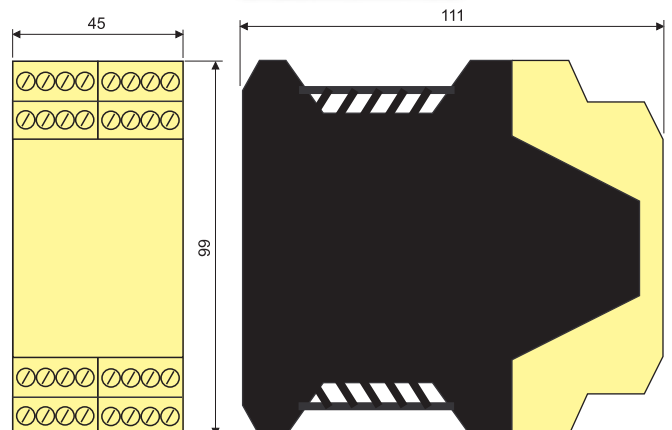
Cat.3

### Application

\* The keyed module allows to monitor the safety condition, depending or not of the switches status (key locked or removed), for mainly maintenance purposes.

\* Interlocking system with the switch AM5CK.

### Dimensions





# C4SX

## Safety extension module

- Extension of the number of safety contacts
- Non overlapping, linked contacts of A class
- 4 contacts NO + 1 contact NC 8A/250V + 1 test line
- Plug-in terminals
- Power supply : 24Vac/dc or 85~265Vac

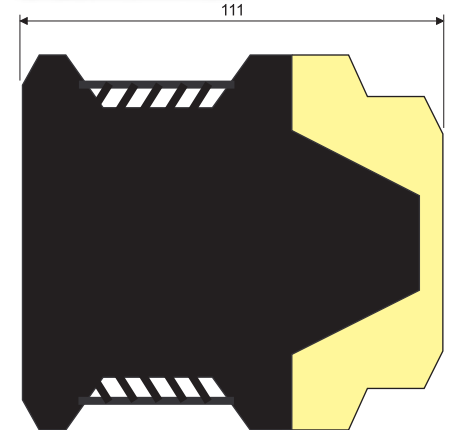
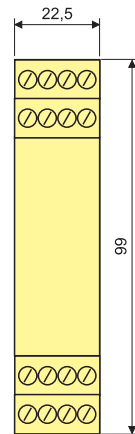
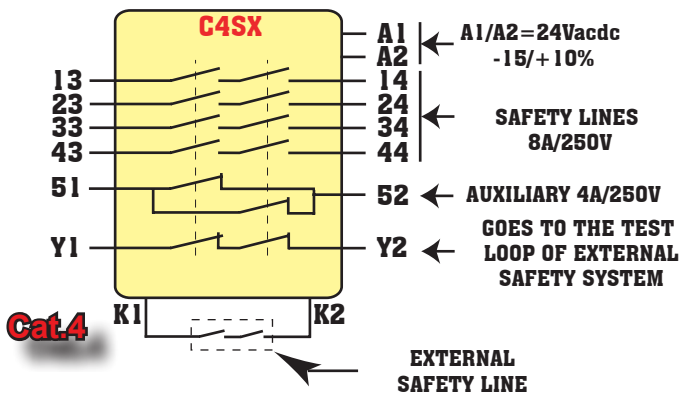


### Safety category

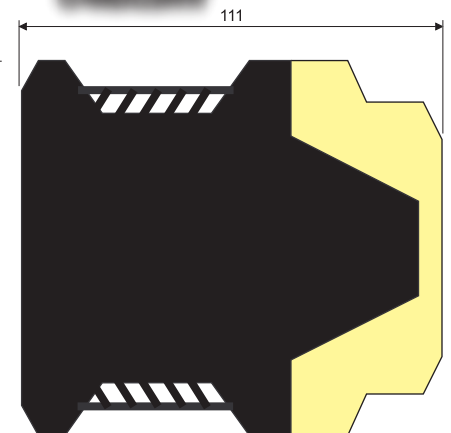
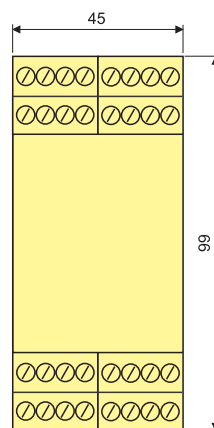
C4SX : category 4 PLe according to ISO13849-1 in connection with a safety module

### Dimensions

### Wiring diagram



**C4SX/24V**



**C4SX/85-265V**

In connection with a safety module (ex. AWAX26XXL), it enables to increase the number of safety lines while maintaining the safety category.

### Operation mode

The activation is done by the closing of a NO line (K1/K2) coming from a safety device.

### Application

Six additional safety lines 8A/250V in a 22,5 mm housing only. The safety category 4 of the safety module is maintained. Example : Awax26XXL+C4SX->cat.4 according to EN954-1.





# SOLID STATE RELAY

## Safety control unit for light curtains !!

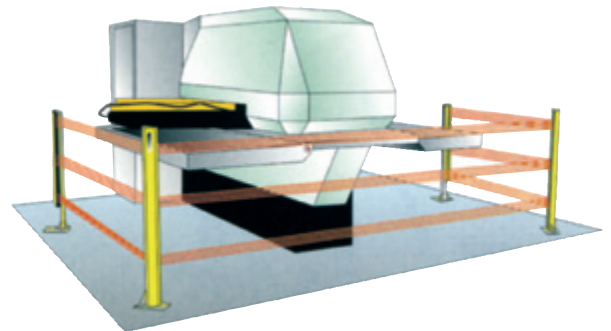
### Advantages

- Plug-in terminals
- Contact 8A / 250V
- Cyclical tests

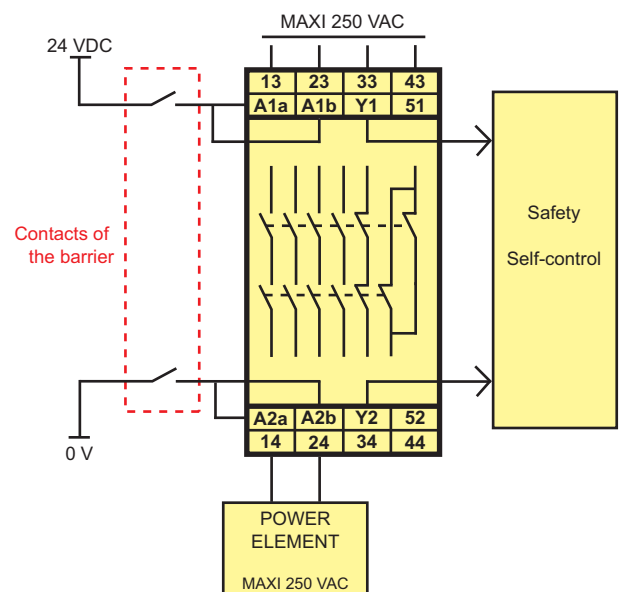
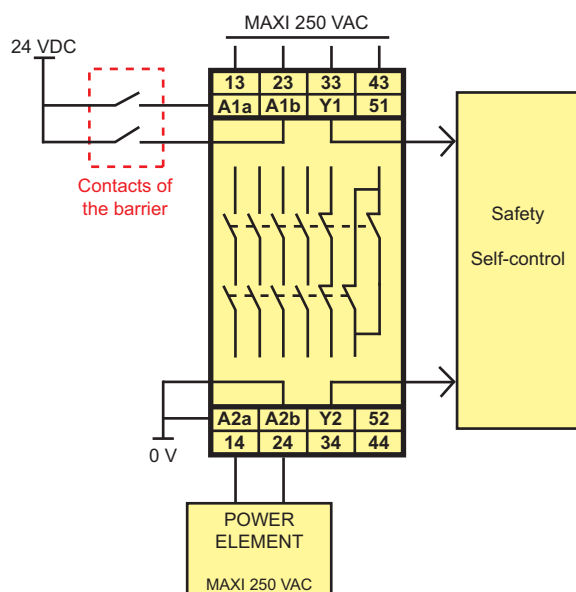
### Applications

- Safety interface for light barriers with static output
- Extension of safety contacts

**C5SX**



## Wiring example for category 4 according to EN954-1



# VALTRONIC

## Protection of operators in death zones

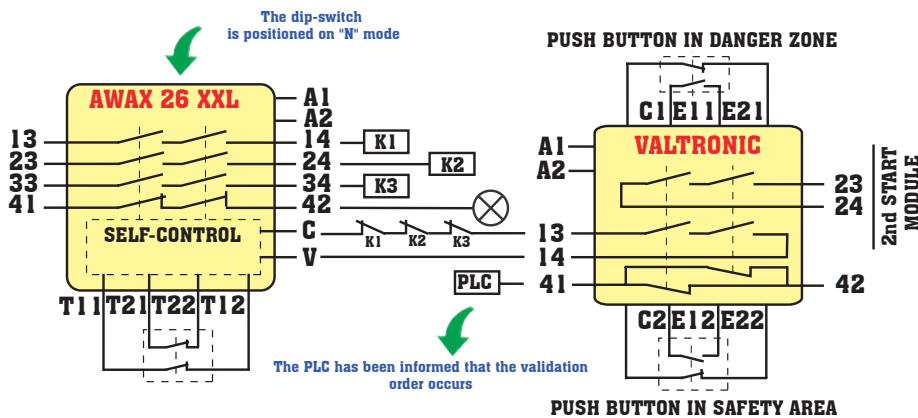
- Protection of an operator placed in a death zone
- 2 independent lines of command to activate up to 2 safety systems & 1 NC auxiliary line
- Pushing on 2 buttons of which 1 is priority
- Delaying time adjustable by font wheel setting
- Delaying time: 0, 2, 4, 6, 8, 12, 16, 18, 20, 22s
- Power supply : 24V



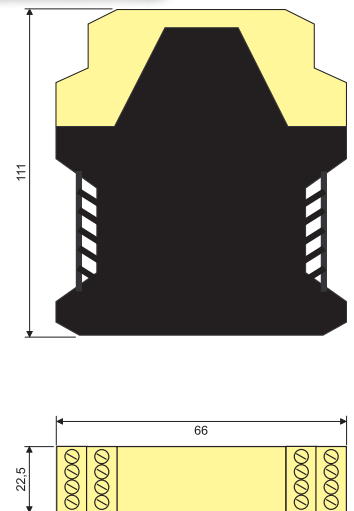
### Safety category

VALTRONIC : Category 4 PLe according to ISO13849-1. The safety category depends of the system to reset.

### Wiring diagram

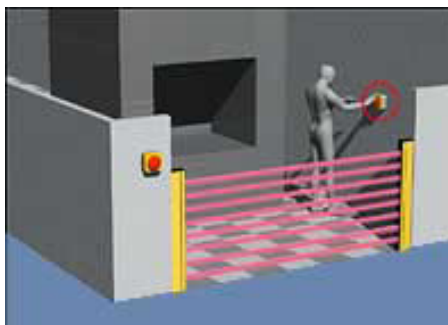


### Dimensions

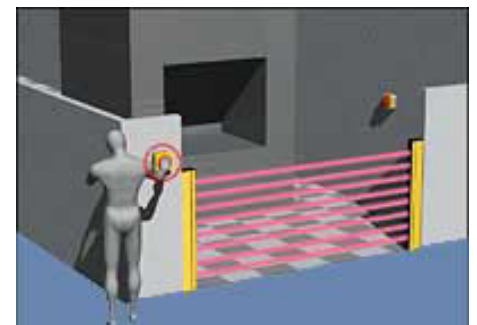
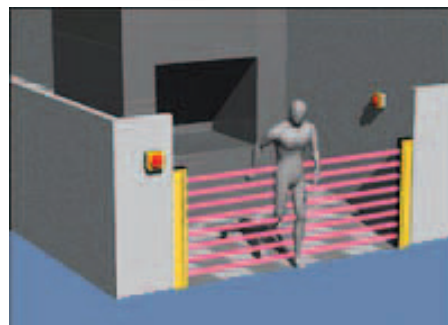


**Cat.4**

### Application



**Press the A button first the worker is in safety**

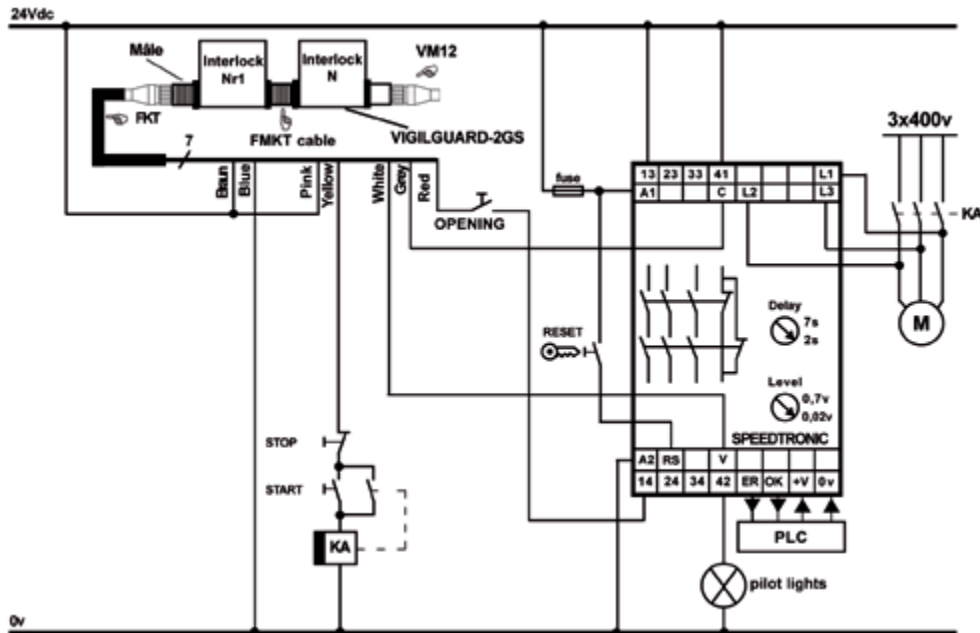


**The worker gets out from the zone and presses the B button. He must do it in scheduled time to reset the machine.**

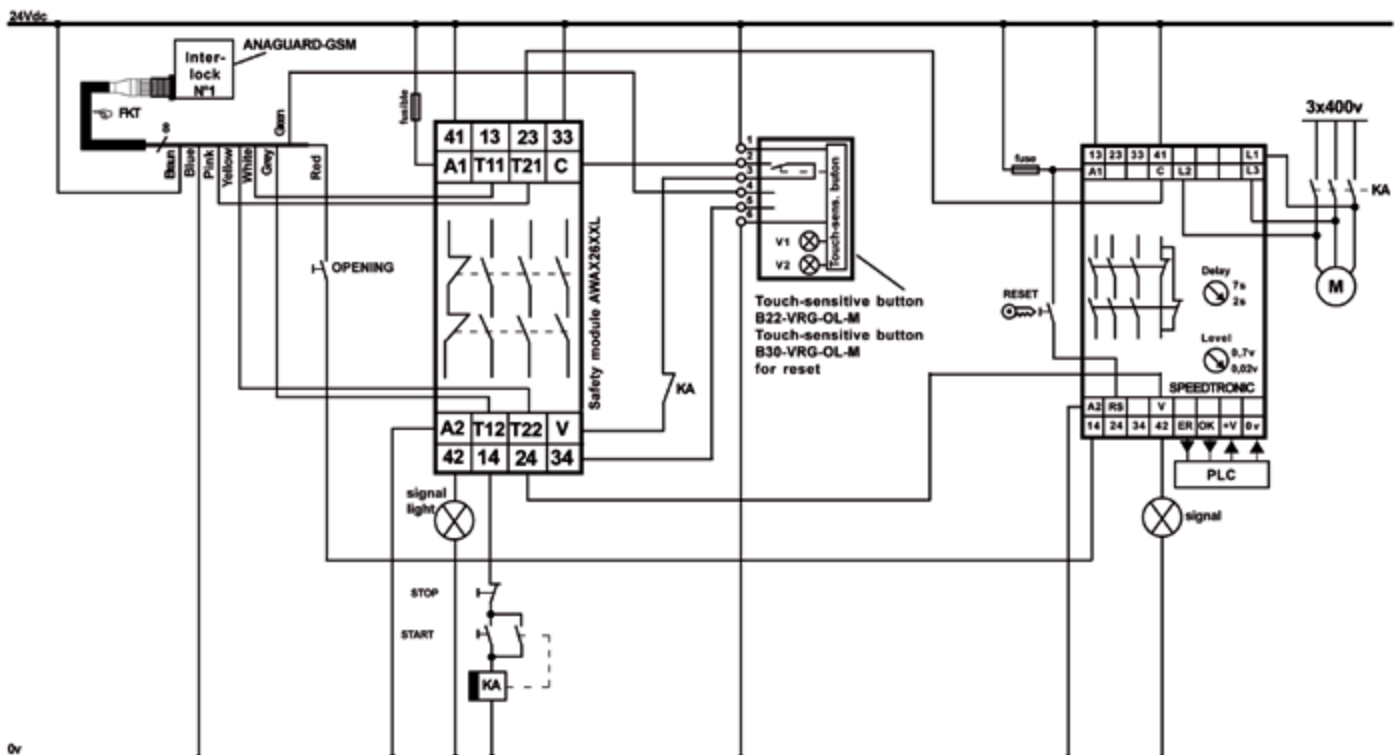


# WIRING DIAGRAM

## Speedtronic safespeed module to monitor VIGILGUARD stand - alone interlocking



## Speedtronic safespeed module to monitor ANAGUARD non - stand alone interlocking





# NOTES



# NOTES



# RISK ASSESSMENT

## Our experiences



Chemical / petrochemical industry  
BTI is certified INERIS 08ATEXQ404



## Our technological know how to your disposition

Founded in 1988 in the machine safety field.

BTI is the designer of the first multicoded, non contact and stand-alone safety switch with the original ACOTOM Process. Since 1993, Bti is offering you his collaboration, his expertise and engineering to:

- Determine and assess the risks of your machines
- Define together the risk assessment acc. to ISO 14121.
- Find together the best solution, the products, and the machines best practices.



Agrofood industry/pharmaceuticals/cosmetics  
BTI produces 316L St. Steel products

Choose the right partner

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The traceability is mandatory to fulfill the safety standards requirements

