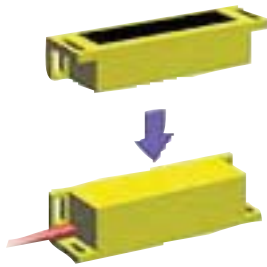
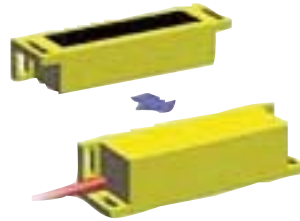


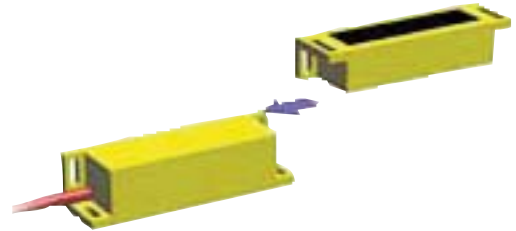
HIGH-TECH NON CONTACT SAFETY SWITCH



8 mm



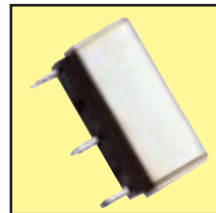
10 mm



7 mm

Armoured
relays with linked
contacts

More
than 3 500 000
operations at 3A



High
switching capacity,
long life
expectancy,
resistant to magnetic
fields

THE RISK

HOW TO CHOOSE THE SAFETY PRODUCT

1. RISK EVALUATION

Departure point of the risk estimation

- S** Gravity of the lesion
S1 : light lesion (reversible)
S2 : serious lesion (irreversible, including death)
- F** Frequency and exposition length
F1 : Rare to rather frequent and/or short exposition time
F2 : Frequent to continuous and/or long exposition time
- P** Possibility of avoiding the dangerous phenomenon
P1 : Possibility under some conditions
P2 : Rarely possible

	B	1	2	3	4
S1	-	◆	↑	↑	↑
F1	-	◆	◆	↑	↑
P2	-	-	◆	◆	↑
F2	-	-	-	◆	↑
P2	-	-	-	-	◆

é Preferential category for the reference point

u Minimal safety which can be overdimensioned for the mentioned risk

2. WHICH APPLICATION?

Resetting Application	Automatic	Manual	Manual self-checked
Supervision of the moving parts	◆	↑	↑
Emergency stop	-	◆	↑
Device which can be bypassed	-	-	◆

If the access allows a partial penetration of the body such as a trap, so the automatic reset mode can be used. If the body can enter totally in the dangerous area, only the manual controlled reset is used.

In the case of the dangerous area is big, we recommend you to use the **VALTRONIC** in association with **AWAX** in impulsive reset mode in order to guarantee a perfect adequation and a maximum safety.

FROM THE EUROPEAN STANDARDS TO THE INTERNATIONAL STANDARDS

STANDARDS FOR SAFETY PRODUCTS

EN 292 (ISO 12100 , part 1 and 2):

ISO 12100-1:2003 defines the basic terminology and the methodology used for the machine safety.

The information inside this standard are made for the conception.

EN 60204-1 (CEI 60204-1):

The application of this standard is for the electrical and electromechanical devices of both single machine and a group of machines working together. It defines the electrical safety.

EN 1088 (ISO 14119):

This standard defines the principles to be applied to the conception of locking and interlocking devices.

EN 954-1 (ISO 13849-1):

This standard defines five safety categories for the control devices allocated to safety tasks on the machine. It defines elements to be able to comply with the demands of the standard 89/392/CEE.

EN 574 :

This standards defines the safety demands for a two-hand controller and the recommended combinations of functional characteristics for three kinds of commands.

It defines neither the kind of command which should be used with a specific application, nor the distance between the two-hand controller and the dangerous area.

It indicates how to avoid cheating, but also explains the results of defaults and the methods to estimate a two-hand controller using a programmable logic controller.

EN 418 (ISO 13850):

This international standard specifies the functional demands and the conception principles for emergency stop equipment, regardless the type of energy used to control the command. It is applied to all the machines except :

- the machines for which the add of the emergency stop device wouldn't reduce the risk
- the portable machines hold in the hand and the hand-guided machines

GENERAL MACHINE SAFETY STANDARDS

EN 294 (ISO 13852):

Distance of safety to prevent the reach to the risky areas by the upper extremity.

EN811 (ISO 13853):

Distance of safety to prevent the reach to the risky areas by the lower limb.

EN349 (ISO 13854):

The minimum distance to foresee the crushing of the human body's parts.

EN1050 (ISO 14121):

Principles for the risk estimation.

EN999 (ISO 13855):

Positioning of the protection devices in comparison to the speed of approach of the human body's parts.

FROM EN954-1 TO ISO 13849-1

The new standard EN ISO 13849-1 adds to the present EN954-1 the specific conditions for the programmable electronic systems including the software when used for the safety. It also refers to EN1050, EN61508-4 and EN ISO 12100-1:2003.


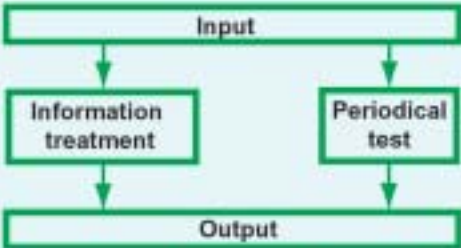
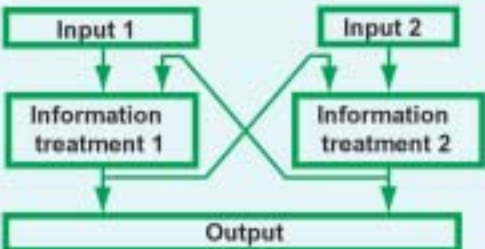
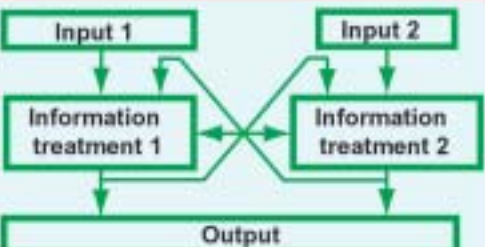
HOW TO CHOOSE THE SAFETY PRODUCT

3. ESTIMATION OF THE RISK

Categories	Principles	Summary of requirements	System behaviour
B	Selection of components	The components are in accordance with the safety standards.	The occurrence of a fault can lead to the loss of the safety function.
1		Same as category B but well-tried components and well-tried safety principles must be used.	The occurrence of a fault can lead to the loss of the safety function but the probability is lower than B.
2	Structure of the safety	Same as category 1 but the safety function must be checked at suitable time intervals by the machine control system.	The occurrence of a fault can lead to the loss of the safety function but the fault is detected to each control.
3		Same as category 1 but a single fault does not lead to the loss of the safety function.	The safety function is guaranteed except in case of accumulation of undetected faults.
4		Same as category 1 but a single fault does not lead to the loss of the safety function. This single fault should be detected during or before the next demand upon the safety function. An accumulation of faults does not lead to the loss of the safety function.	The safety function is always performed.

THE RISK

4. OUR ANSWER

Synoptic of the safety function	Example of components
	<ul style="list-style-type: none"> * 2SSR24V, 2SSR24BX, 3SSR24V, 4SSR24BX, 5SSR24BX, 7SSR24V, OPTO2S * The mechanical safety switches * The magnetic switches with safety soft strip (reed contact) in association with its safety module
	<ul style="list-style-type: none"> * One or several BOSTER * Several ANATOM6S with an AWAX * The mechanical safety switches in association with its safety module * The magnetic switches with safety soft strip (reed contact) in association with its safety module
	<ul style="list-style-type: none"> * One or several AMX3, AMX4, AMX5, * One or several VIGIL SXR * Several ANATOM78S, EPINUS, TRITHON, OPTOPUS, M18 * Several mechanical or magnetic switches (limited quantity) with safety soft strip (reed contact) in association with its safety module
	<ul style="list-style-type: none"> * One or several AMX4, AMX5, BOSTER * One or several VIGIL SXRS * One or several VIGIL SXR in series with a safety module * A mechanical or magnetic switch with safety soft strip (reed contact) in association with its safety module