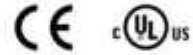
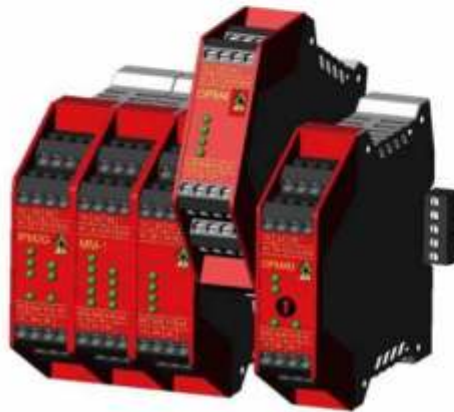


# Modus - Plug and Expand Safety Control Modules for Safety Switches

## Expandable Safety Modules for use with Interlock Switches and Rope Switches



- Pluggable and expandable Modules - 35mm rail pluggable system
- Satisfy up to EN 954-1 Cat.4
- SIL 3 EN61508
- Dual channel NC inputs for use with all Safety Interlock Switches
- Compact 22mm enclosures - DIN rail mounting
- Add Switch Input Modules easily – no programming
- Add Output Switching Modules easily – no programming
- Manage Machine Stop hierarchy by grouping inputs
- High operational life
- Monitored or Auto reset
- LED diagnostics
- Time delayed output Module



For monitoring an installation by PC, PLC or Text Display, an RS485 interface is integrated within the Modus system.

The MODUS 'Plug and Expand' relay system is ideal for the prevention of dangerous states at small, middle and large installations.

For these applications you often have to consider various requirements and tasks regarding the safety function. If several emergency stop or interlock switches simultaneously have to be supervised some parts of the machine may have to stop immediately while others have to stop with delay. In a few cases of danger you have to stop only one part of the installation while the other functions can continue.

The solution for all these applications is MODUS, the modular Plug & Play Safety System.

The Master Module itself is a complete safety monitoring relay with 2 dual-channel input contacts and 3 force guided safety output contacts, like a traditional Safety Relay.

Later individual expansion is possible at anytime by adding (plugging) either additional input modules (for connection of extra switches) or additional output modules (for the addition of output switching circuits).

Modus grows according to your installation - just insert a new input or output module and the installation runs.

The system is self-configuring with no programming and the highest safety category EN954-1 Cat. 4 and SIL3 EN61508 is maintained at all times.

Input Modules can be grouped to enable designated sub-sections of the machine safety function to be shut off e.g.

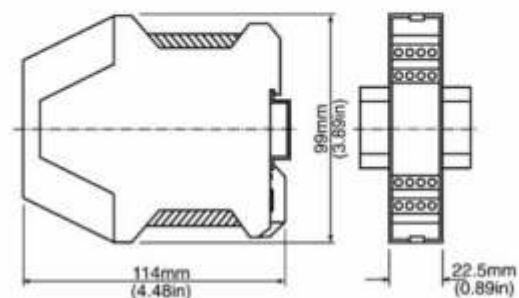
- |                                 |   |
|---------------------------------|---|
| Group 1 E-Stops (Rope switches) | Power off all Drives                        |
| Group 2 Tongue switches         | Power off Drives in Group 2 Guard area only |
| Group 3 Non Contact switches    | Power off Drives in Group 3 Guard area only |

The modules communicate with each other via a bus connection within the 35mm DIN-rail.

The system can be integrated with a PLC or Computer by a serial communication interface which offers a perfect diagnostic and fault detection.

All you have to learn:

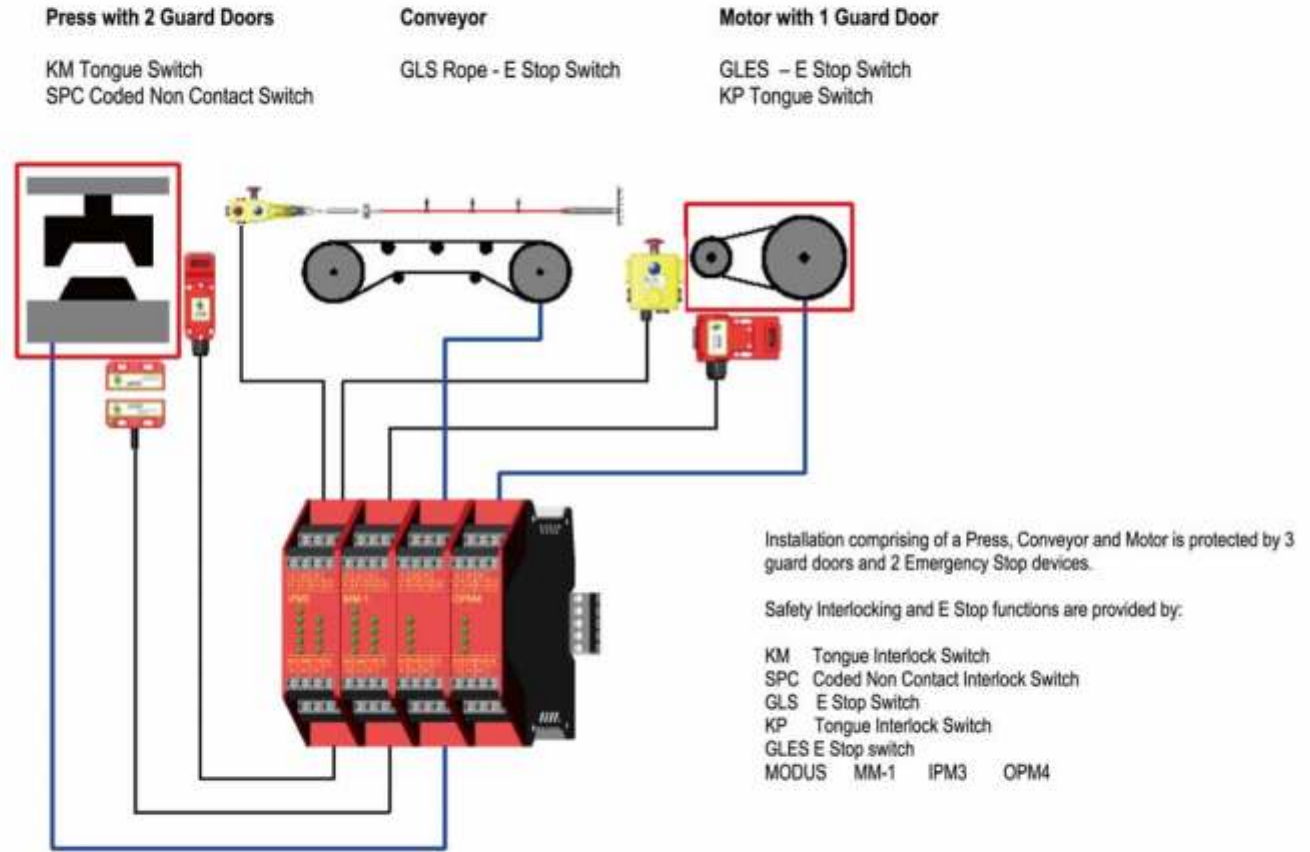
1. Plug switch input modules to the left of the Base module.
2. Plug relay output modules to the right of the Base module.
3. If desired specify the end of a group with connection cable.
4. Configuration is automatic.



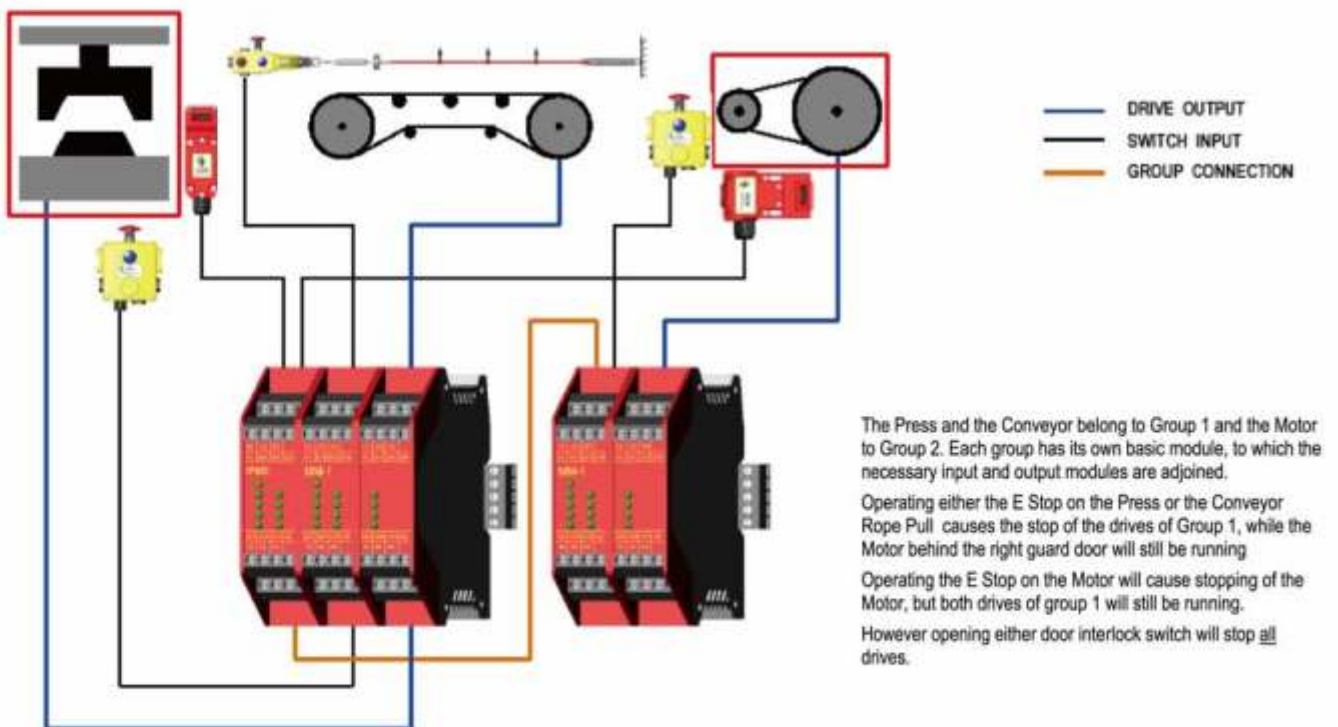
# Modus - Plug and Expand Safety Control Modules for Safety Switches

## Applications:

A. Monitoring of 3 guard doors and 2 emergency stop buttons, interruption of 3 drives.



B. Monitoring of 2 guard doors and 3 emergency stop buttons, interruption of 3 drives, grouping in 2 groups with higher-level stop switch



# Modus - Plug and Expand Safety Control Modules for Safety Switches

## Expandable Safety Modules for use with Interlock Switches and Rope Switches

### MM-1 Basic Module

Basic unit with 2 Dual Channel Safety Inputs for connection of switches, 3NC Safety Outputs and signal and communication functions. Extendable with all MODUS modules.



Safety Category 4  
2NC Safety Inputs (Dual NC/NC)  
3 RelayOutputs  
6 Semi-conductor Monitoring Outputs  
Short circuit and earth fault monitoring  
Diagnostic LED's  
Manual or Automatic activation  
RS 485 interface

Operating Voltage: 24V.dc +/- 10%  
Relay Outputs : 250V.ac 8A. AC12  
24V.dc 3A. DC13

### IPM2G Input Module

Standard input module with 2 Dual Channel Safety Inputs for connection of switches, 2 monitoring outputs, diagnostic LED's and MODUS bus connection. Outputs for establishing Safety Groups.



Safety Category 4  
2NC Safety Inputs (Dual NC/NC)  
2 Semi-conductor Monitoring Outputs  
Short circuit and earth fault monitoring  
Diagnostic LED's  
Output Group Connection  
Only in combination with Basic Module MM-1  
MODUS Bus connection

### IPM3 Input Module

Input module with 3 Dual Channel Safety Inputs for connection of switches, 3 monitoring outputs and diagnostic LED's.



Safety Category 4  
3NC Safety Inputs (Dual NC/NC)  
3 Semi-conductor Monitoring Outputs  
Short circuit and earth fault monitoring  
Diagnostic LED's  
Only in combination with Basic Module MM-1  
MODUS Bus connection

### OPM4 Output Module

Standard output module with 3NC 1NO Safety Relay Outputs. Only in combination with Basic Module MM-1 MODUS Bus connection



Stop Category : 0  
Safety Category: 4  
3NC 1NO RelayOutputs  
Diagnostic LED's

Relay Outputs : 250V.ac 8A. AC12  
24V.dc 3A. DC13

### OPM4D Output Module

Output module with 4 Delayed Safety Relay 2 1 Semi-conductor Monitoring Output Only in combination with Basic Module MM-1 MODUS Bus connection



Stop Category : 1  
Safety Category: 4  
4NC RelayOutputs – Delayed – variable 1-30s.  
Diagnostic LED's

Relay Outputs : 250V.ac 8A. AC12  
24V.dc 3A. DC13

| Sales Number   | Type  | Supply Voltage |
|----------------|-------|----------------|
| Basic Module   |       |                |
| 181001         | MM-1  | 24V.dc         |
| Input Modules  |       |                |
| 181002         | IPM2G | MODBUS         |
| 181003         | IPM3  | MODBUS         |
| Output Modules |       |                |
| 181010         | OPM4  | MODBUS         |
| 181011         | OPM4D | MODBUS         |

**MODUS is still growing contact**  
[www.idemsafety](http://www.idemsafety) for details