modular safety integrated controller

short form
Key features

Mosaic is a safety hub able to manage all safety functions of a machinery or a plant.
Configurable and scalable.
Allows cost reductions and minimal wiring.

Mosaic can manage safety sensors and signals such as

Light curtains, photocells, laser scanners, emergency stops, electromechanical switches, guard-lock safety door switches, magnetic switches, RFID switches, safety mats and edges, two-hands controls, hand grip switches, encoders and proximities for safety speed control.

Advantages

Reducing the number of devices and wiring used and, therefore, the overall size of the project.
Speeding-up control panel construction.
Allows tamper-proof system configurations.

All logic is configured through a graphic interface. No more laborious wiring is needed as with traditional solutions.

A lower number of electromechanical components also means a better Performance Level and, therefore, a higher Safety Level.

The project report provides the actual values of PFH, DCavg and MTTFd according to EN 13849-1 and EN 62061.

MOSAIC
M0dular S4afety Integrated Controller

www.reersafety.com
**MBx**

*Field-bus units*
- MBP Profibus DP
- MBD DeviceNET
- MBC CANopen
- MBEI EthernetIP
- MBEI2B EthernetIP
- MBEC EtherCAT
- MBEI Profinet
- MBMR Modbus RTU
- MBEM Modbus TCP
- MBU USB
- MBCCL CC-Link

**MCT**

*Interface connection units*

- Interface module allowing the connection of remote expansions via the proprietary MSC bus
  - MCT1: 1 connection interface (1 I/O cable)
  - MCT2: 2 connection interface (2 I/O cables)

**MV0/MV1/MV2**

*Speed monitoring units*

Safety speed monitoring (up to PL e) for:
- Zero speed control
- Maximum speed control
- Speed range control
- Direction

- **MV0**: Input for 2 proximity switches
- **MV1**: Input for 1 incremental encoder and 2 proximity switches (TTL, HTL or SIN/COS)
- **MV2**: Input for 2 incremental encoders and 2 proximity switches (TTL, HTL or SIN/COS)

**MR2/MR4**

*Safety relay output units*

- **MR2**: 2 safety relays with 2 NO + 1 NC contacts
- **MR4**: 4 safety relays with 4 NO + 2 NC contacts

**MOR4/MOR4S8**

*Safety relay output units*

- **MOR4**: 4 safety relays with guided contacts
  - 4 NO contacts (250 VAC 6 A)
  - 4 inputs for Start/Restart interlock
  - It is possible to select two different configurations via MSD:
    - 4 independent single channel outputs
    - 2 dual channel outputs
- **MOR4S8**: As MOR4, with 8 status outputs (P)
Connect up to 14 expansion units to the Master unit

Master Units

Standard Master Unit
- 8 digital inputs
- 2 inputs for Start/Restart interlock and EDM
- 2 pairs OSSD safety outputs (PNP 400 mA)
- 2 status outputs (PNP 100 mA)
- 4 test outputs
  (for short-circuits monitoring)

Enhanced Master Unit
- 8 digital inputs
- 4 inputs for Start/Restart interlock and EDM
- 4 single (or 2 pairs) OSSD safety outputs (PNP 400 mA)
- 4 status outputs (PNP 100 mA)
- 4 test outputs
  (for short-circuits monitoring)

I/O

Features

Fieldbus inputs 8 32
Safety outputs 16 32
Status outputs 32 48
MSD Operators 64 128
Timer 32 48
Muting 4 8
Safety guard lock 4 8
Probes 16 32

* Features of the System composed by M1/M1S + 14 expansion units

New operators
- Timer and delay with longer limits.
- 2 steps restart.
- Multi-level thresholds for speed monitor, timers, etc. (comparators).
- New restart including signal for the push button light (flashing for restart request, off for other conditions).
MI8 8 digital inputs
  4 test outputs (for short-circuits monitoring)
MI16 16 digital inputs
  4 test outputs (for short-circuits monitoring)
MI12T8 12 digital inputs
  8 test outputs (for short-circuits monitoring)

Can manage up to 4 independent safety mats/edges

MO2/MO4
Output units
MO2
2 pairs OSSD safety outputs (PNP 400 mA)
2 inputs for Start/Restart interlock and EDM
2 status outputs (PNP 100 mA)
MO4
4 pairs OSSD safety outputs (PNP 400 mA)
4 inputs for Start/Restart interlock and EDM
4 status outputs (PNP 100 mA)

MO4L HC S8
High current output unit
4 single (or 2 pairs) OSSD safety outputs (PNP 2,0 A)
4 inputs for Start/Restart interlock and EDM
8 status outputs (PNP 100 mA)

MOS8/MOS16
Non-safety output units
MOS8 8 status outputs (PNP 100 mA)
MOS16 16 status outputs (PNP 100 mA)
Mosaic Safety Designer

Easy-to-use designer software included with M1 and M1S Master Units. Drag & Drop functionality allows to easily create all logic scenarios in a machine directive compliant environment.

Mosaic Safety Communication

Allows communication between the various units through a proprietary high-speed safety bus.

Mosaic Configuration Memory

Removable memory card. Ideal for saving Mosaic configuration data for subsequent transfer to a new device (without connecting to a PC) or for backup.

Built-in Monitor

User-friendly

Real-time monitor

Design validation

Simulation

Security password

Reports and log files

Project information

Mosaic Safety Communication

MCT

Remote Interface Units

Interface module allowing the connection of remote expansion units via the MSC safety bus.

MTB

Screw Terminal Blocks

Removable terminal blocks with screw contacts

MTBC

Clamp Terminal Blocks

Removable terminal blocks with clamp contacts
60 years of quality and innovation

Founded in Turin, Italy in 1959, ReeR distinguished itself for its strong commitment to innovation and technology.

A steady growth throughout the years allowed ReeR to become a point of reference in the safety automation industry at a worldwide level.

The Safety Division is in fact today a world leader in the development and manufacturing of safety optoelectronic sensors and controllers. ReeR is ISO 9001, ISO 14001 and BS OHSAS 18001 certified.

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