



REER

Your future's safe!



MOSAIC

modular safety integrated controller

short form

A unique safety controller: modular, expandable and configurable

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
MOdular SAFETY Integrated Controller



SAFETY LEVEL

SIL 3

SIL 3 - SILCL 3
PL e - Cat. 4

Connect up to 14 expansion units to the Master Unit

communication



MBx MCT

speed monitoring



MV0 MV1 MV2

safety relays



MR2 MR4 MOR4 MOR4S8

Master Units



additional I/O



MI802 MI804

additional inputs



MA4 MI8 MI16 MI12T8

additional outputs



MO2 MO4 MO4L MO4L HC S8 POWER MOS8 MOS16

MBx

Field-bus units

MBP Profibus DP
MBD DeviceNET
MBC CANopen
MBE12B EthernetIP
MBEC EtherCAT
MBEP Profinet
MBMR Modbus RTU
MBEM Modbus TCP
MBU USB

MBCL CC-Link

new

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 guided contacts
2 NO + 1 NC contacts (250 VAC 6 A)
1 NC contacts for EDM feedback
MR4
4 safety relays with guided contacts
4 NO + 2 NC contacts (250 VAC 6 A)
2 NC contacts for EDM feedback

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 and EDM
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 (PNP 100 mA)

new

M1S

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)

M1

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)

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).

I/O

4 single (or 2 double) safety outputs (PNP 400 mA).
Status outputs can be converted in feedback inputs (up to 4 feedback input for the 4 single-channel outputs).
New footprint map for fieldbus modules.

Features*

	M1	M1S
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

MI802/MI804

Input/Output unit

MI802/MI804*
8 digital inputs
2 (*4) inputs for Start/Restart interlock and EDM
2 pairs (*4 single or 2 pairs) OSSD safety outputs (PNP 400 mA)
2 (*4) status outputs (PNP 100 mA)
4 test outputs (for short-circuits monitoring)

new

MA4

Analogue input unit

4 independent isolated analogue channels (500 V)
Each channel can supply 24 VDC up to 30 mA
Each channel can detect a 4-20 mA current or a 0-10 V voltage (selectable via software)
Individual channels can be paired-up to allow sensor reading redundancy

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)

MI8/MI16/MI12T8

Input units

MI8
8 digital inputs
4 test outputs (for short-circuits monitoring)
MI16
16 digital inputs
4 test outputs (for short-circuits monitoring)
MI12T8¹
12 digital inputs
8 test outputs (for short-circuits monitoring)

¹Can manage up to 4 independent safety mats/edges

new

MO4L

Output unit

4 single (or 2 pairs) OSSD safety outputs (PNP 400 mA)
4 inputs for Start/Restart interlock and EDM
4 status outputs (PNP 100 mA)

MO4L HC S8 POWER

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)

POWER

2A

MOS8/MOS16

Non-safety output units

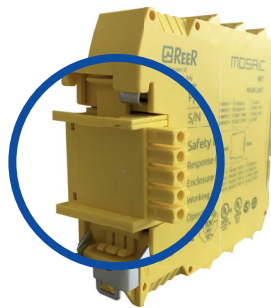
MOS8
8 status outputs (PNP 100 mA)
MOS16
16 status outputs (PNP 100 mA)



MCM

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



MSC

Mosaic Safety Communication

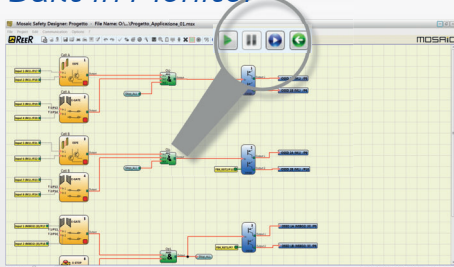
Allows communication between the various units through a proprietary high-speed safety bus

MSD

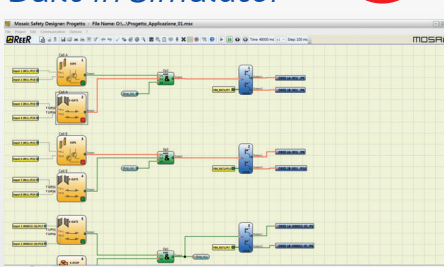
Mosaic Safety Designer

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.

Built-in Monitor



Built-in Simulator



new

Drag & Drop
User-friendly
Real-time monitor
Design validation
Simulation
Security password
Reports and log files
Project information

MTB

Screw Terminal Blocks

Removable terminal blocks with screw contacts



MCT

Remote Interface Units

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



MTBC

new

Clamp Terminal Blocks

Removable terminal blocks with clamp contacts





Your future's safe!

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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