

Applications

Safety devices MS series are modules for emergency stop which have been developed for safety applications up to SIL 3 (EN 62061) and up to PLE (EN ISO 13849-1). They are suitable for the control of limit switches for safety gates and of safety magnetic sensors.

- 1 or 2 channels input
- Manual / Automatic Start
- 3NO safety contacts + 1NC contact for signalling
- Suitable for use with electromechanic devices (limit switches and safety sensors) and with optical barriers

They comply with the requirements of European Directives (Low Voltage, Machines and Electromagnetic Compatibility) and are conform to European and international standards.

Description

The polymeric housing for DIN rail mounting has a degree of protection IP40 (IP20 on terminal blocks) and it has standard dimensions 22.5 x 114 mm.

Casing

- Technopolymer IP40 (IP20 on terminal blocks)
- Standard dimension 22,5 x 114 mm.

Output contacts

- 3NO safety contacts + 1NC signalling contact

Electrical connection:

- IP20 terminal blocks
- 1 or 2 x 0,75... 1,5 mm²

LED indicators for status, supply and diagnostic

- Power
- Channel 1
- Channel 2

DIN rail mounting

Symbols

Example:

MS1A31	–	024
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Structure:

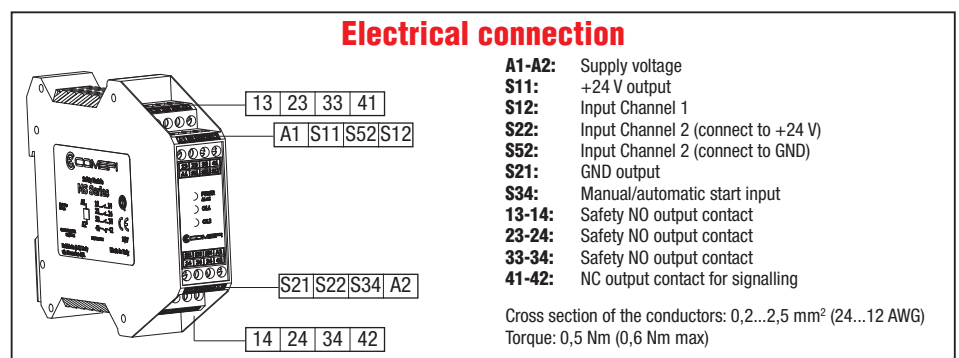
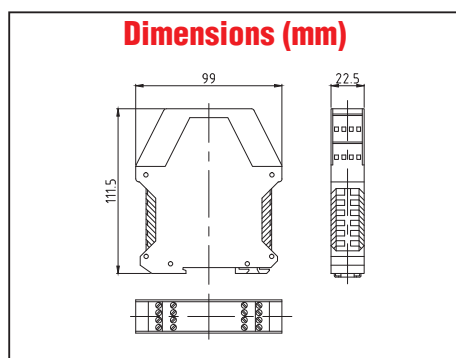
MS1A31	–	
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Tensione di alimentazione:

024: 24V AC/DC

120: 120V AC

230: 230V AC

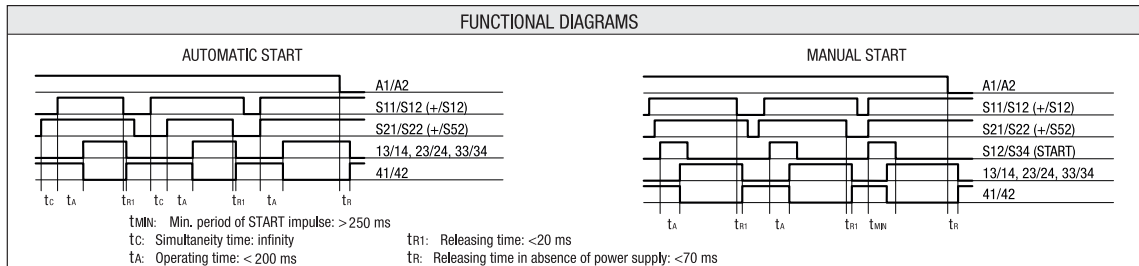


Safety modules - Technical Data

MS Series	
Standards	EN60947-1, EN60947-5-1, EN61000-6-2, EN61000-4, EN61326-3-1, EN60204-1, EN ISO 13849-1, EN ISO 12100-1, EN ISO 12100-2, EN62061, EN1037, EN60664-1, EN60529
Directives	2006/95/CE low voltage 2006/42/CE machinery 2004/108/CE electromagnetic CE - IMQ
Certifications - Approvals	CE - IMQ
Air temperature near the device	
– during operation	°C – 25 ... + 55
– for storage	°C – 25 ... + 55
Protection against electrical shocks (acc. to IEC 60536)	Class II
Degree of protection (according to IEC 60529 and EN 60529)	Casing IP40 - Terminal blocks IP20
Pollution degree	3 external, 2 internal
Safety integrity level (Sil CL) (according to EN IEC 62061)	Up to Sil 3
Performance level (PL) (according to EN ISO 13849-1)	Up to PLe
Safety category (according to EN ISO 13849-1)	Up to Cat 4
Mechanical durability	10 millions of operations
Electrical durability	100.000 operations
MTTFd	218 (for 24 Vac/dc) / 147 (for 120 Vac and 230 Vac)
Diagnostic coverage	H
PFHd	4,58 E ⁻¹⁰ (for 24 Vac/dc) / 6,61 E ⁻¹⁰ (for 120 Vac and 230 Vac)

Electrical Data

Rated insulation voltage U_i (acc. to IEC/EN 60947-1)	250 V (degree of pollution 3)
Rated impulse withstand voltage U_{imp} (acc. to IEC/EN 60947-1)	4 kV
Power supply	
Rated operating voltage U_N ($\pm 15\%$)	24 Vac/dc (10% max residual ripple in DC) - 120 Vac - 230 Vac
Rated power consumption	max 5 VA (ac) - max 2 W (dc)
Control circuit	
Protection against short circuits	Resistance PTC with intervention operating time >100ms, reset time >3s - $I_h=0,5A$
Input max resistance	50 Ω
Input max current	30mA



Output circuit

Utilization categories (according to EN 60947-1)	AC 15, $U_e = 230 V$, $I_e = 3 A$ / DC 13, $U_e = 24 V$, $I_e = 6 A$ (6 oper/minute)
Max switching voltage	240 Vac / 300 Vdc
Switching current range (per contact)	min 10 mA - max 6A (external protection fuse 6A F type)
Conventional free air thermal current I_{th}	6A (max current sum: 64A ²)
Max contact resistance	100 m Ω

