

The OMRON logo is displayed in a bold, blue, sans-serif font. The letters are thick and rounded, with a consistent blue color throughout. The logo is centered horizontally within a light yellow rectangular background.

Automatización Eléctrica
Especialistas en Automatización

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Safety guard switching unit

The safety controller to support maintenance mode of machinery in the safe way.

- Two operation modes to support:
 - Auto switching for applications where machine and worker co-operate.
 - Manual switching for applications with limitation in operation like maintenance.
- Clear and transparent segmentation of safety functions by use of unique "AND" connection
- Clear LED diagnosis of all in- and output signals for easy maintenance
- PLe according to EN ISO 13849-1 and SIL 3 according to EN 61508.

Ordering information

Enabling grip switches

Contact form			Order code
Enabling switch	Monitor switch	Pushbutton switch	
Two contacts	1NC (grip output)	None	A4EG-C000041
Two contacts	None	Emergency stop switch (2NC)	A4EG-BE2R041
Two contacts	None	Momentary operation switch (2NO)	A4EG-BM2B041

Safety guard switching units

Safety outputs *1		Auxiliary outputs *2	Logical AND connection input	Logical AND connection output	Max. OFF delay time *3	Rated voltage	Terminal block type	Order code
Instantaneous	OFF-delayed *4							
2 (Semi-conductors)	2 (Semi-conductors)	6 (Semi-conductors)	1	1	15 s	24 VDC	Screw terminals	G9SX-GS226-T15-RT
							Spring-cage terminals	G9SX-GS226-T15-RC

*1 P channel MOS FET transistor output

*2 PNP transistor output

*3 The OFF-delay time can be set in 16 steps as follows:

T15: 0, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 1, 1.5, 2, 3, 4, 5, 7, 10 or 15 s

*4 The OFF-delayed output becomes an instantaneous output by setting the OFF-delay time to 0 s.

Specifications

Ratings of guard switching unit

Power input

Item	G9SX-GS226-T15-__	G9SX-EX-__
Rated supply voltage	24 VDC	

Inputs

Item	G9SX-GS226-T15-__
Safety input	Operating voltage: 20.4 VDC to 26.4 VDC, internal impedance: approx. 2.8 kΩ
Feedback/reset input	
Mode selector input	

Outputs

Item	G9SX-G9SX-GS226-T15-__
Instantaneous safety output	P channel MOS FET transistor output
OFF-delayed safety output	Load current: 0.8 A DC max.
Auxiliary output	PNP transistor output Load current: 100 mA max.
External indicator outputs	P channel MOS FET transistor outputs Connectable indicators <ul style="list-style-type: none"> • Incandescent lamp: 24 VDC, 3 W to 7 W • LED lamp: 10 to 300 mA DC

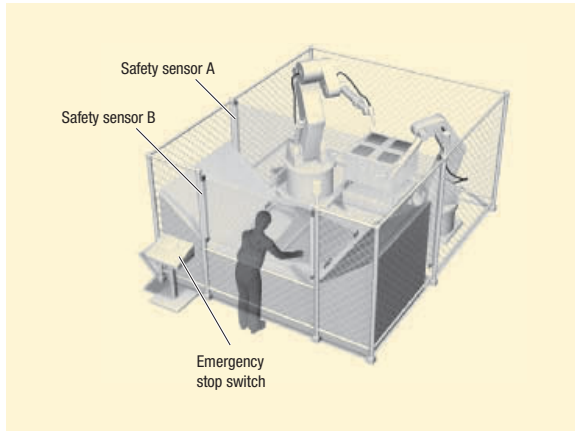
Application example

Automatic switching mode

Worker is loading and unloading the machine manually. When loading is finished, robot cycle is started manually by the worker. When robots return to their home position, loading cycle is selected automatically.

Loading condition: Safety sensor B is not active, safety sensor A is active because the robots are not allowed to move to the loading area while the worker loads the machine. So the worker is safe because safety sensor A is active.

Robot work condition: Safety sensor B is active, safety sensor A is not active because the worker is not allowed to move to the loading area when the robots work. So the worker is safe because safety sensor B stops the machine if he moves to the loading area.



Manual switching mode

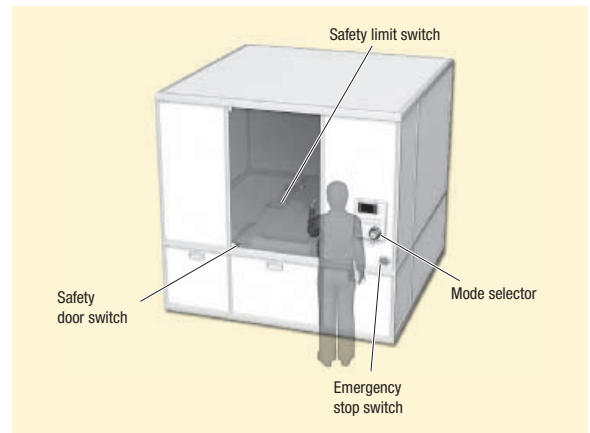
Worker has to do maintenance in this machine. While maintenance, it is necessary to move the machine in a limited way. The worker has to select automatic mode or manual mode manually by using the mode selector switch.

Operation steps:

- 1) Select maintenance mode by using the mode selector
- 2) Open the door to do the maintenance while the machine still is able to operate in a limited way (monitoring of limited movement by using the safety limit switch).
- 3) Close the cover after finishing maintenance
- 4) Select automatic mode by using the mode selector

E-Stop conditions:

- a) open the door while not in maintenance mode
- b) the machine actuates the limit switch (breaks the limit).
- c) the Enabling grip switch A4EG is actuated to stop the machine in emergency condition.





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