



G9SP	Feature	M1SCOM
Software-based standalone controllers	<b>DESIGN AND USAGE</b>	Software based standalone or master unit
PL e, SIL3, Category 4	<b>SAFETY CERTIFICATION</b>	PL e, SIL3, Category 4
N10S: 10 inputs, 4 outputs N10D: 10 inputs, 16 outputs- N20S: 20 inputs, 8 outputs	<b>INPUT/OUTPUT</b>	8 inputs, 4 single or 2 pairs OSSD outputs, 4 Test Outputs
Ethernet, Serial (RS-232C)	<b>CONNECTIVITY</b>	ETHERCAT, Ethernet IP, ModBus TCP, PROFINET
GUI and memory cassette for program transfer	<b>PROGRAMMING AND CONFIGURATION</b>	GUI and memory cassette for program transfer with Remote adjustments
2 expansion I/O units; optional units for additional standard I/O signals	<b>EXPANSION CAPABILITIES</b>	Up to 14 expansions to the Master Units
Basic diagnostic capabilities through GUI and memory cassette	<b>DIAGNOSTICS AND MONITORING</b>	Detailed status and fault monitoring via LEDs and fieldbus communication
0 to 55°C	<b>ENVIRONMENTAL ROBUSTNESS</b>	-10 to 55°C
DIN rail mounting with IP20 protection	<b>MOUNTING AND INSTALLATION</b>	DIN rail mounting with IP20 protection
Omron Configuration Tool for design, verification**, and standardization**	<b>PROGRAMMING SOFTWARE</b>	** MOSAIC Safety Designer for intricate safety system design and management
*Reconfigurable, memory cassette transfer of settings**	<b>SPECIAL FEATURES</b>	** Complex safety architectures via Expansion units, compact design
24VDC power supply	<b>POWER SUPPLY</b>	24VDC power supply
N10S: 76 MM X 86 MM X 85 MM N10D: 120 MM X 130 MM X 85MM N20S: 120 MM X 130 MM X 85 MM	<b>PHYSICAL DIMENSIONS(H*W*D)</b>	108 mm x 45 mm x 114.5 mm
I/O-42/24 I/O-20/80	<b>MAX INPUTS/OUTPUTS</b>	128 DIGITAL INPUTS 32 OSSD OUTPUTS .



*Your future's safe!*



**Safety Controller  
G9SP**

**MOSAIC  
M1SCOM**

## Additional Inputs



### MIx / MI12T8 / MAX

#### Input expansion units

##### MIB

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*

##### MA2, MA4

2 (MA2) or 4 (MA4) independent isolated analogue channels (500 V)  
Each channel can supply 24V DC up to 30 mA  
Each channel can detect a 4-20 mA current or a 0-10V voltage (selectable via software)

## Additional Outputs



### MOx / MO4L HC S8 / MO4L

#### Output expansion units

##### MO2

2 pairs OSSD safety outputs (PNP 400 mA)  
2 inputs for Start/Restart interlock and EDM  
2 status outputs (PNP 100 mA). *See note 2*

##### MO4

4 pairs OSSD safety outputs (PNP 400 mA)  
4 inputs for Start/Restart interlock and EDM  
4 status outputs (PNP 100 mA). *See note 2*

##### MO4L HC S8 POWER

4 single OSSD safety outputs or 2 pairs (PNP 2,0 A for each channel, total current 8 A)  
4 inputs for Start/Restart interlock and EDM  
8 status outputs (PNP 100 mA). *See note 2*

##### MO4L

4 single OSSD safety outputs or 2 pairs (PNP 400 mA)  
Up to 4 inputs for Start/Restart interlock and EDM. *See note 1*  
Up to 4 status outputs (PNP 100 mA). *See note 1 and 2*

## Speed Monitoring



### MVx

#### Speed monitoring expansion units

Safety speed monitoring (up to PL e) for: zero speed control, maximum speed control, speed range control, direction control

##### MV0

Inputs for 2 proximity switches

##### MV1

Inputs for 1 incremental encoder and 2 proximity switches (TTL, HTL o SIN/COS)

##### MV2

Inputs for 2 incremental encoders and 2 proximity switches (TTL, HTL o SIN/COS)

## Safety Relays



### MOR4 / MOR4 S8 / MRx

#### Safety relay output expansion 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 (240 VAC 6 A)  
2 NC contacts for EDM Feedback

##### MR8

8 safety relays with guided contacts  
8 NO + 4 NC contacts (240 VAC 6 A)  
4 NC contacts for EDM Feedback

##### MOR4

4 safety relays with guided contacts  
4 NO contacts (250 VAC 6 A)  
It is possible to select two different configurations via MSD:  
- 4 independent single channel outputs  
- 2 dual channel outputs  
4 inputs for Start/Restart interlock and EDM

##### MOR4S8

As MOR4, with 8 status outputs (PNP 100 mA)

## Communication



INDUSTRY  
4.0  
ready

### MBx

#### Field-bus interface units

Profibus DP  
DeviceNET  
CANopen  
EthernetIP  
EtherCAT  
Profinet  
Modbus RTU  
Modbus TCP  
CC-Link  
USB

### MCT

#### Mosaic bus transfer

Interface unit allowing the connection of remote expansions via proprietary MSC bus

##### MCT1

1 connection interface (1 I/O)

##### MCT2

2 connections interface (2 I/O)

## Additional Inputs/Outputs



### MI8Ox

#### Input/Output expansion units

##### MIBO2

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). *See note 2*  
4 test outputs (for short-circuits monitoring)

##### MIBO4

8 digital inputs  
up to 4 inputs for Start/Restart interlock and EDM. *See note 1*  
4 single OSSD safety outputs or 2 pairs (PNP 400 mA)  
4 status outputs (PNP 100 mA). *See note 1 and 2*  
4 test outputs (for short-circuits monitoring)

## Additional Status Outputs



### MOSx

#### Status output expansion units

##### MOS 8

8 status outputs (PNP 100 mA)  
*See note 2*

##### MOS16

16 status outputs (PNP 100 mA).  
*See note 2*

##### Note 1:

*The total number of feedback inputs + status outputs must be not greater than 4. Example: If 3 feedback inputs are used, only one status output can be used*

##### Note 2:

*Safety Level of status outputs:  
SIL 1 - SILCL 1 - PL c*