SH2MCG24

Smart-Dupline® generator

▶ Benefits

- **Integrated system.** Dupline® is the brand name for Carlo Gavazzi's 2-wire bus system.
- **Cost reduction.** The use of a bus system is a proven way to reduce installation costs – especially when the distance between I/O points are extensive.
- **High noise immunity.** Can run next to power cables.
- **Scalability.** New modules can be progressively integrated into the system according to the application needs.
- **Modularity.** The system is composed by many modules, powered by the bus, so that each installation can be precisely and easily sized.
- **Fast and easy installation.** Completely free topology, no special cable required, no screen or twist. It can go for 2 km and even further with repeaters*.
  Note: the maximum length of the Dupline line may vary depending on the combination of the cable size and type, the number or type of the connected devices and the distribution of the devices on the line.
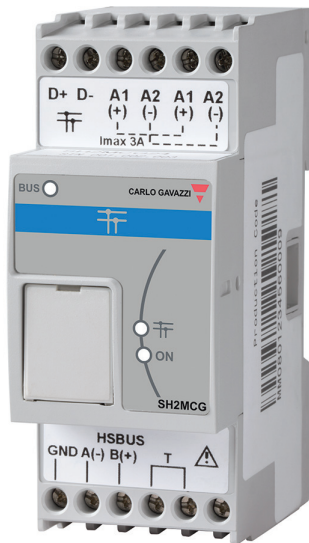
▶ Description

The master channel generator SH2MCG24 provides the channel generator output drive for one Smart Dupline® network in a smart-house system controlled by the Sx2WEB controller.
Each SH2MCG24 must have an address that has to be programmed using the Sx tool.

▶ Applications

Smart Dupline® is a bus system that offers unique solutions for a wide range of applications in home and building automation, industrial automation, water distribution, energy management, railway systems and many other areas.
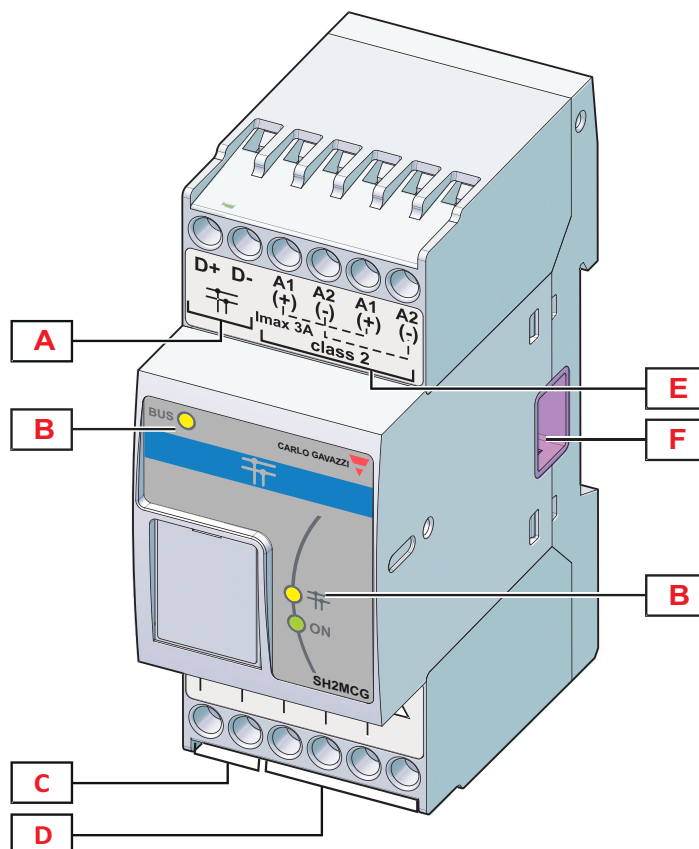
▶ Main features

- Transmit digital and analogue data collected from the wide ranges of modules.
- Data are sent to the controller Sx2WEB24 that elaborates them according to the programmed logic.
- Up to 7 SH2MCG24 can be connected on the same network, taking into consideration the sum of SH2MCG24, SH2DUG24 and SH2WBU230x.
- Connection to Sx2WEB24 via internal bus or terminals via the high speed bus.

Structure

| Element	Component	Function
A	Dupline bus	Connection to smart Dupline® modules
B	Information LED	Indicating the following status: Green LED: Power supply Yellow LEDs: Dupline® bus and HS bus communication
C	HS bus	HS bus connection
D	HS bus termination	Termination for HS bus
E	Power supply	Power supply connection block (IN, left/OUT, right) (Min./Max. screws tightening torque: 0.4 Nm / 0.8 Nm)
F	Local bus port (left side and right side)	Left side: connecting the Sx2WEB24, SH2MCG24, SH2W-BU230N, SH2DUG24, Dupline modules. Right side: connecting the SH2MCG24, SH2WBU230N, SH2DUG24, Dupline modules.

Features

General

Material	Noryl
Dimensions	2-DIN module
Weight	150 g
Protection grade	Front: IP50; Screw terminal: IP20
Dielectric strength	Power supply to Dupline®: 500 V AC for 1 min. (IEC60664-1, TAB. A.1)
Fail-safe condition	If the SH2MCG24 loses the communication with the Sx2WEB24, the Dupline® output will be switched off. In this situation all the modules connected to the bus will go into the fail-safe output status individually programmed with the Sx tool.
Terminal	12 screw-type; Section: 1.5 mm² maximum; Torque: 0.4-0.8 Nm
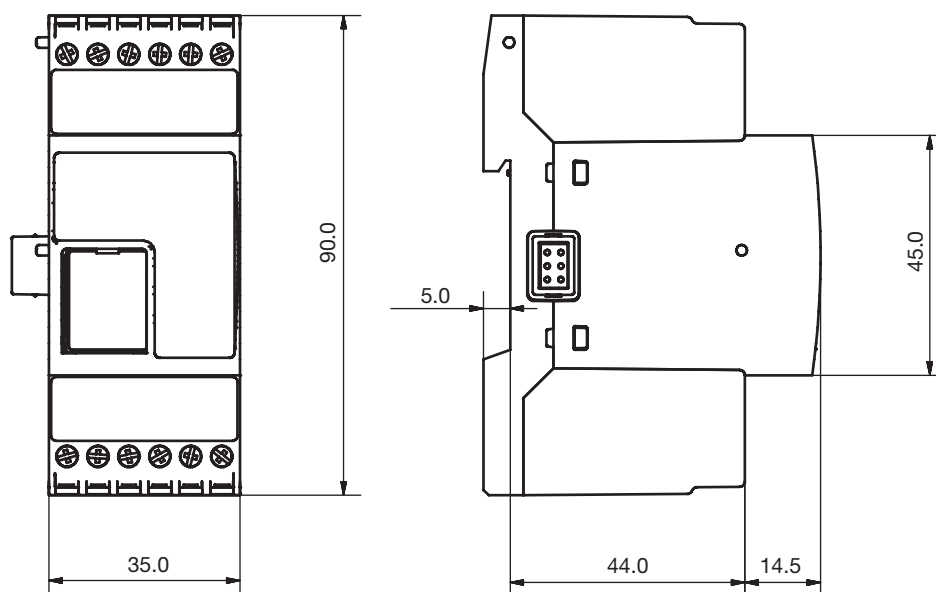
Environmental

Operating temperature	-20° to +50°C (-4° to 122°F)
Storage temperature	-50° to +85°C (-58° to 185°F)
Humidity (non-condensing)	20 to 80% RH

▶ **Compatibility and conformity**

Electromagnetic compatibility (EMC) - immunity	EN 61000-6-2 Electrostatic discharge: EN 61000-4-2 Radiated radiofrequency: EN 61000-4-3 Burst immunity: EN 61000-4-4 Surge: EN 61000-4-5 Conducted radio frequency: EN 61000-4-6 Power frequency magnetic fields: EN 61000-4-8 Voltage dips, variations, interruptions: EN 61000-4-11
Electromagnetic compatibility (EMC) - emissions	EN 61000-6-3 Conducted and radiated emissions: CISPR 22 (EN55022), cl. B Conducted emissions: CISPR 16-2-1 EN55016-2-1) Radiated emissions: CISPR 16-2-3 (EN55016-2-3)
Approvals	CE c(UL)us LISTED

▶ **Power Supply**

Power Supply	Overvoltage cat. II (IEC 60664-1, par. 4.3.3.2); Rated operational voltage: 15 to 24 VDC ± 20%
Operational voltage range	10 to 30 VDC (ripple included)
Rated operational power	6.5 W
Protection for reverse polarity	Yes
Connection	2xA1 (+) and 2xA2 (-)- (2 pairs of terminals internally connected)
Power on delay	Typ. 4 s
Power off delay	1 s

▶ **Dupline®**

Voltage	8.2 V
Maximum Dupline® voltage	10 V
Minimum Dupline® voltage	4.5 V
Maximum Dupline® current	450 mA @ 25°; 350 mA @ 40°
Terminal	D+ and D- Note: The Dupline® bus is located on the upper connector and also on the local bus connector on the right side of the module.
Addressing	The address of the SH2MCG24 is defined in the Sx tool, and then assigned to it by the Sx2WEB24 according to the SIN.

▶ **HS Bus**

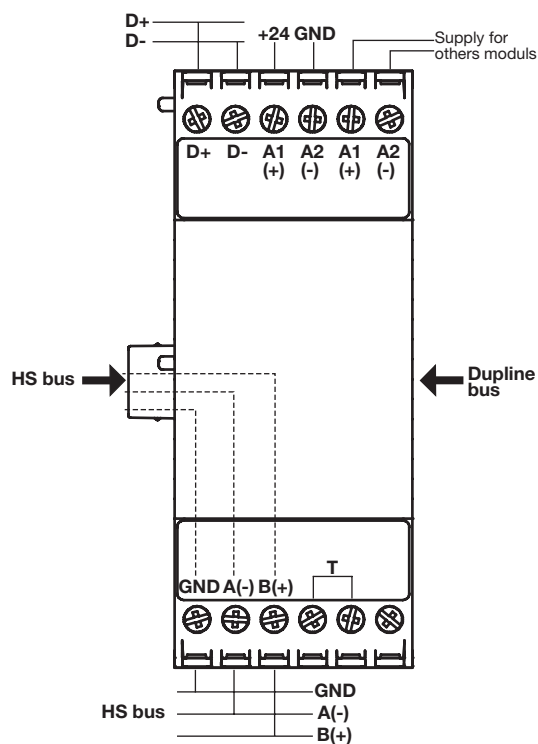|	
Bus type	RS485 high speed bus
Protocol	Internal proprietary protocol
Number of slave	Maximum 7
Connection	By local bus (left and right connectors) or terminals GND, A(-), B(+). T1, T2: termination inputs. They have to be short-circuited on the last module of the network. See wiring diagrams.

Connection Diagrams

Fig. 1 *Wiring diagram*

Note: Terminals T, these two terminals must be short-circuited in the last module of the network.

References

Further reading

Information	Document	Where to find it
Sx2WEB installation guide	System manual	www.gavazziautomation.com/UWP3.0_SYSTEM_ENG.pdf
Sx2WEB software manual	Sx tool manual	www.gavazziautomation.com/UWP3.0_TOOL_ENG.pdf

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