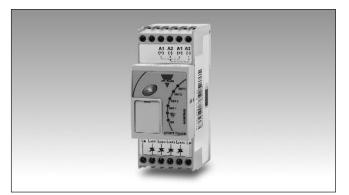# Smart Dupline®
Solid State Relay output module
Type SH2SSTRI424

CARLO GAVAZZI

- 4 triac outputs
- 2-DIN housing
- LED indication for power supply, Dupline® bus, output1, output2, output3, output4
- Connection to other cabinet modules via local bus
- Control of 24-230 Vac loads such as valves for temperature adjustment

Product Description

This is a four-solid-state-relay output module for DIN mounting.
The outputs are normally OFF. When an activation command is received from the Dupline® bus, the output turns ON and remains ON until the OFF command is received. Thanks to the internal bus, the SH2SSTRI424 modules can be connected one next to the other without the need for wiring the Dupline® bus.

Ordering Key

SH2 SSTRI 4 24

smart-house
2-DIN housing
Triac output
Number of outputs
Power supply

Type Selection

Housing	Mounting	Outputs type	Supply: 15 to 30VDC
2 DIN	DIN-rail	4 triac	**SH2SSTRI424**

Input Specifications

Key Pad	For local ON/OFF switching

Output Specifications

Output	Triac

Maximum current (230 or 24VAC)	4 active outputs	2 active outputs	1 active output
Temperature: 50°C	400mA for each output	500mA for each output	600mA
Temperature: 40°C	500mA for each output	700mA for each output	800mA
Temperature: 30°C	700mA for each output	900mA for each output	1000mA

Supply Specifications

Power supply	Overvoltage cat. II (IEC 60664-1, par. 4.3.3.2)	Connection	2xA1 (+) and 2xA2 (-)- (2 pairs of terminals internally connected)
Rated operational voltage	15 to 24 VDC ± 20%		
Rated operational power	400 mW	**Power on delay**	Typ. 4 s
Protection for reverse polarity	Yes	**Power off delay**	1 s

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Dupline® Specifications

Voltage	8.2 V
Maximum Dupline® voltage	10 V
Minimum Dupline® voltage	5.5 V
Maximum Dupline® current	1.1 mA

The Dupline® bus is present on the internal bus: the modules can be connected one next to the other without the need of wiring the Dupline® bus. See "Wiring diagram".

General Specifications

Installation category	Cat. II
Dielectric strength	
Power supply to Dupline®	500V pulse 1.2/50µS 500V AC for 1 minute
Power supply to output and Dupline® to output	6 kV pulse 1.2/50µs 4 kV AC for 1 minute
Address assignment	Automatic: the controller recognises the module through the SIN (Specific Identification Number) that has to be inserted in the Sx tool.
Environment	
Degree of protection	
Front	IP 50
Screw terminal	IP 20
Pollution degree	2 (IEC 60664-1, par. 4.6.2)
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
LED's indication	
Power LED	1 green
Dupline® LED	1 yellow
Output LED	4 red

Connection	
Terminal	10 Screw-type
Cable cross-section area	max. 1.5 mm^2
Tightening torque	0.4 Nm / 0.8 Nm
Housing	
Dimensions	2 DIN module
Material	Noryl
Weight	150 g
Approvals	cURus according to UL60950
CE Marking	Yes
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
Emission	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)

Mode of Operation

Working mode
If the SH2SSTRI424 is connected to the Dupline® bus and the bus is working properly, the output module is in STANDARD mode and the green LED is ON. It enters LOCAL mode if the push button is pressed. In LOCAL mode the module doesn't accept any command from the bus and the green LED will be flashing. The relay can go back to STANDARD mode only when the bus is ok and after one of the following events: 1) As soon as the Dupline® bus returns 2) After a timeout of 1 minute after a button press 3) After a power cycle.

Pushbutton
The push button is used for local switching ON/OFF of the outputs, without needing to connect the bus for test purposes.
Bus connected
With a short pulse, the user enters LOCAL mode and the green LED will be flashing: at the same time all the outputs will be switched ON, if at least one of them is OFF. If all the outputs are ON they will be switched OFF.
Bus not connected or faulty
If the bus is not connected or faulty, the push button overwrites the fail- state status of the outputs: if at least one output is OFF, all of them will be switched ON. If

both the outputs are ON they will be switched OFF. Should all the outputs be configured for the safe-state recycle status, then a short pressure will reset the timer and revert to the original status of the outputs.

Fail/safe condition
The output status of the outputs, when the Dupline® bus is not connected or faulty, is programmed via the Sx tool and the user can choose between the following options:
1. Outputs always OFF
2. Outputs always ON
3. The two outputs maintain the status they had before the disconnection

4. The two outputs run in a cycle with programmable on and off periods: the user can set both the off and on period from 1 to 255 minutes.
The factory setting is outputs always OFF.

Coding/Addressing
No addressing is needed since the module is provided with a specific identification number (SIN): the user has only to insert the SIN number in the Sx tool when creating the system configuration.
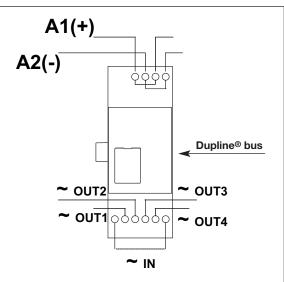Used channels: 4 output channels.

LEDs Indication

Red LED: 4 output LEDs.
Output1: ON if output1 active, OFF if output1 OFF.
Output2: ON if output2 active , OFF if output2 OFF.
Output3: ON if output3 active, OFF if output3 OFF.
Output4: ON if output4 active, OFF if output4 OFF.

Green LED: Power status.
ON: Supply ON
OFF: Supply OFF
Flashing: LOCAL MODE active

Yellow LED: if the Dupline® bus is working properly, it is always ON.
If there is a fault on the bus it will be flashing.
It is OFF if the bus is OFF or not connected.

Wiring Diagrams

Dimensions