

# Smart Dupline® Solid State Relay output module Type SH2SSTRI424

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- 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 SSTR I 4 24**

smart Dupline  
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%                              | Power on delay  | Typ. 4 s  |
| Rated operational power         | 400 mW  | Power off delay | 1 s   |
| Protection for reverse polarity | Yes   |                 |   |

## Dupline® Specifications

|                                 |        |
|---------------------------------|--------|
| <b>Voltage</b>                  | 8.2 V  |
| <b>Maximum Dupline® voltage</b> | 10 V   |
| <b>Minimum Dupline® voltage</b> | 5.5 V  |
| <b>Maximum Dupline® current</b> | 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

|   |   |   |                            |
|---|---|---|----------------------------|
| <b>Installation category</b>                  | Cat. II   | <b>Connection</b>                         |                            |
| <b>Dielectric strength</b>                    |   | Terminal                                  | 10 Screw-type              |
| Power supply to Dupline®                      | 500V pulse 1.2/50µS<br>500V AC for 1 minute   | Cable cross-section area                  | max. 1.5 mm <sup>2</sup>   |
| Power supply to output and Dupline® to output | 6 kV pulse 1.2/50µs<br>4 kV AC for 1 minute   | Tightening torque                         | 0.4 Nm / 0.8 Nm            |
| <b>Address assignment</b>                     | Automatic: the controller recognises the module through the SIN (Specific Identification Number) that has to be inserted in the UWP 3.0 tool. | <b>Housing</b>                            |                            |
| <b>Environment</b>                            |   | Dimensions                                | 2 DIN module               |
| Degree of protection                          |   | Material                                  | Noryl                      |
| Front   | IP 50   | <b>Weight</b>                             | 150 g                      |
| Screw terminal                                | IP 20   | <b>Approvals</b>                          | cURus according to UL60950 |
| Pollution degree                              | 2 (IEC 60664-1, par. 4.6.2)   | <b>CE Marking</b>                         | Yes                        |
| Operating temperature                         | -20° to +50°C (-4° to 122°F)  | <b>EMC</b>                                |                            |
| Storage temperature                           | -50° to +85°C (-58° to 185°F)   | Immunity                                  | EN 61000-6-2               |
| Humidity (non-condensing)                     | 20 to 80% RH  | - Electrostatic discharge                 | EN 61000-4-2               |
| <b>LED's indication</b>                       |   | - Radiated radiofrequency                 | EN 61000-4-3               |
| Power LED                                     | 1 green   | - Burst immunity                          | EN 61000-4-4               |
| Dupline® LED                                  | 1 yellow  | - Surge                                   | EN 61000-4-5               |
| Output LED                                    | 4 red   | - 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 UWP 3.0 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 UWP 3.0 tool when creating the system configuration.

Used channels: 4 output channels.

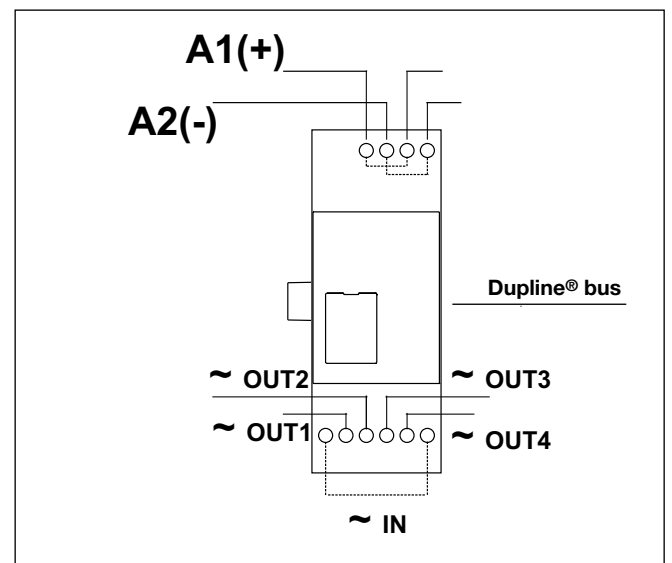
## LEDs Indication

**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

