Actuator 2 relays

Description

By means of internal relays, this device executes the controls received from the central unit or the probe. It is needed to control loads such as motorised valves, pumps and electric radiators.

It has two independent relays which can be used to control two distinct loads with ON/OFF function and to control a single load with open/close function.

To manage open/close loads the actuator must be configured with the logical interlock of the two relays and contact C1 must be considered for the opening control and contact C2 for the closing control.

Front view
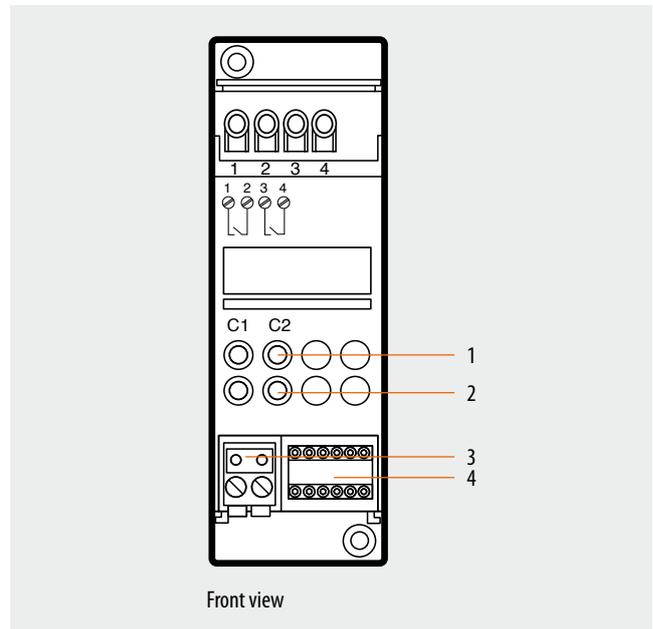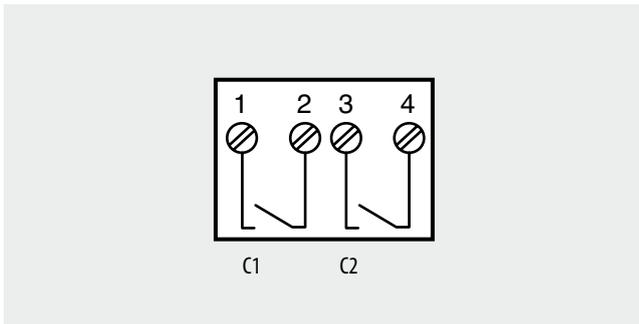
Technical data

- Power supply from SCS BUS: 27 Vdc
- Operating power supply with SCS BUS: 18 – 27 Vdc
- Maximum absorption relays activated individually): 25.5 mA
- Absorption (relays activated with interlock): 14 mA
- Absorption in stand-by: 9 mA
- Current load of individual relays: 6 A (resistive) e.g. electric radiators
  2 A (inductive) e.g. solenoid valves, pumps
- Maximum power consumption: 1.7 W
- Operating temperature: 5 – 40 ℃
- Size: 2 DIN modules

Legend

1. C1 clamps 1 - 2 relay forcing pushbutton
   C2 clamps 3 - 4 relay forcing pushbutton
   The forcing pushbuttons do not operate if the OFF configurator is connected to the ZB1 or the ZB2 configurator sockets.
2. Yellow LEDs for notification of activation of the corresponding relays.
3. Configurator socket.
4. Removable clamp for BUS connection SCS.

Configuration

The item must be configured by connecting the two configurators identifying the actuator address and the number of the zone they belong to the **ZA** and **ZB** sockets. In practical terms, the operation is the same as the one performed for the probe, during the definition of the zone.

A probe and an actuator belonging to the same zone will require the same numeric configurators in the **ZA** and **ZB** sockets. On the front of the two-relay actuator are five sockets dedicated to the configurators:

ZA, **ZB1**, **N1**, **ZB2**, **N2**. The configuration sockets are distributed on the two relays in the following way:

ZA ZB1 Relay 1 zone address
N1   Relay 1 progressive zone address
ZA ZB2 Relay 2 zone address
N2   Relay 2 progressive zone address

The two relays on the device are independent, and may be used to activate two separate loads with ON/OFF function, such as: pumps, on/off type motorized valves, and electric radiators. The diagram shows the correspondence between the configurator sockets and the relay contacts.

configurator	**ZA**		1	C1 contact
socket	**ZB1**			RL1
RL1	**N1**		2	

configurator	**ZA**		3	C2 contact
socket	**ZB2**			RL2
RL2	**N2**		4	

The operation of one of the two relays may be excluded. To do this, connect the OFF configurator to the socket corresponding to **ZB1** or **ZB2**. The two relays may also be used to control a single load with OPEN/CLOSE function, such as, for example, solenoid valves with opening and closing control. For the management of these loads, it will be necessary to configure the actuator with logic relay interlocking, connecting the same numeric configurator both to **ZB** and **N**, therefore **ZB1=ZB2** and **N1=N2**. In using the contacts, consider contact C1 for the opening control and C2 for the closing control. A relay configured in zone **00** operates as a circulation pump actuator; for this function, the two relays cannot be configured as interlocked.
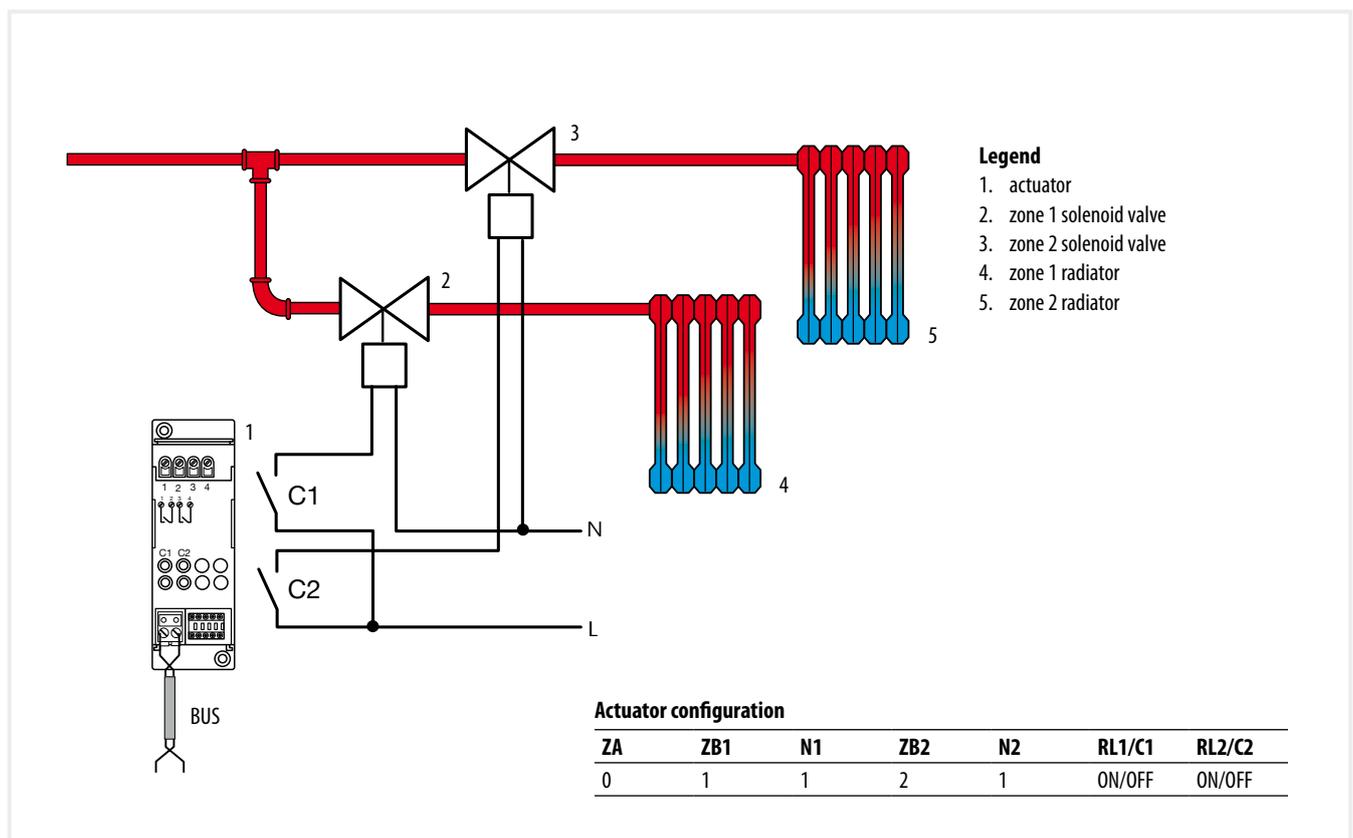
Actuator 2 relays

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Configurator summary table:

Socket	Function	Configurator
ZA	zone address	0 – 9
ZB1	Zone address - ON/OFF contact management - Open/Close contact management - circulation pump mode - OFF zone	0 – 9 – OFF
N1	progressive zone number - Open/Close contact management - circulation pump progressive number	1 – 9
ZB2	Zone address - ON/OFF contact management - Open/Close contact management - circulation pump mode - OFF zone	0 – 9 – OFF
N2	progressive zone number - Open/Close contact management - circulation pump progressive number	1 – 9

Example 1
Configuration and connection of the 2-relay actuator, for the control of the solenoid valves (ON/OFF type) in two different zones (zone 1 and zone 2). The progressive zone number is 1.

Legend
1. actuator
2. zone 1 solenoid valve
3. zone 2 solenoid valve
4. zone 1 radiator
5. zone 2 radiator

Actuator configuration

ZA	ZB1	N1	ZB2	N2	RL1/C1	RL2/C2
0	1	1	2	1	ON/OFF	ON/OFF

Example 2

Configuration and connection of the 2-relay actuator, for the control of two electric radiators within the same zone (zone 4). The progressive zone numbers are 1 and 2.

Legend
1. actuator
2. electric radiators, zone 4

Actuator configuration

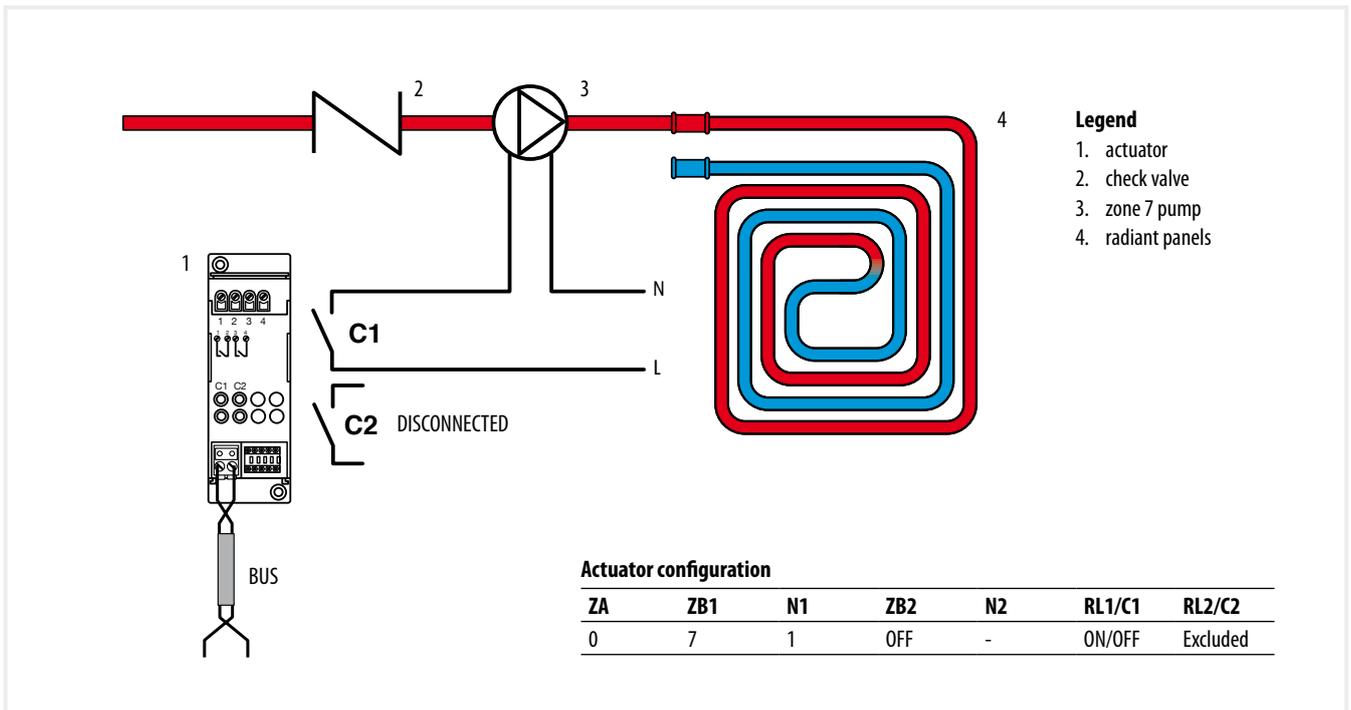| ZA	ZB1	N1	ZB2	N2	RL1/C1	RL2/C2
0	4	1	4	2	ON/OFF	ON/OFF
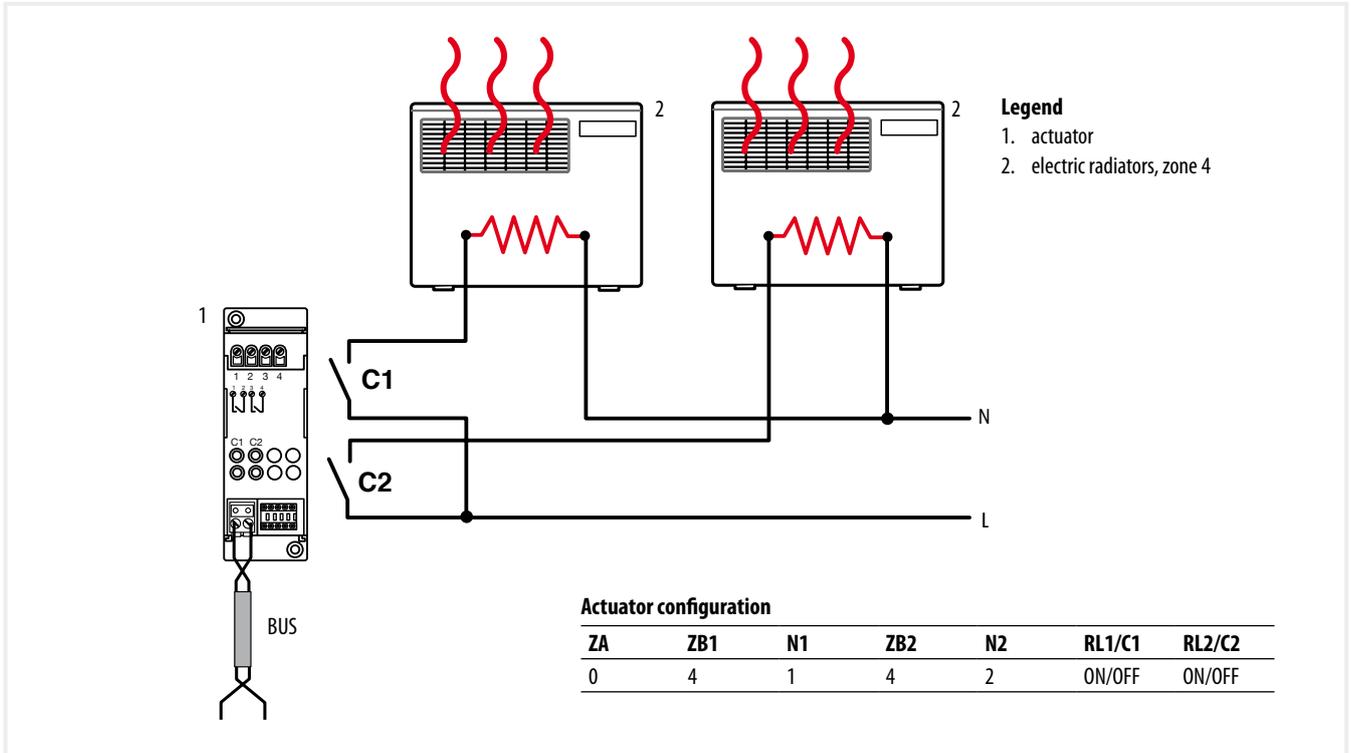
Example 3

Configuration and connection of the 2-relay actuator, for the control of a zone pump (in zone 7). The progressive zone numbers is 1. As relay RL2 is not used, it is excluded.

Legend
1. actuator
2. check valve
3. zone 7 pump
4. radiant panels

Actuator configuration

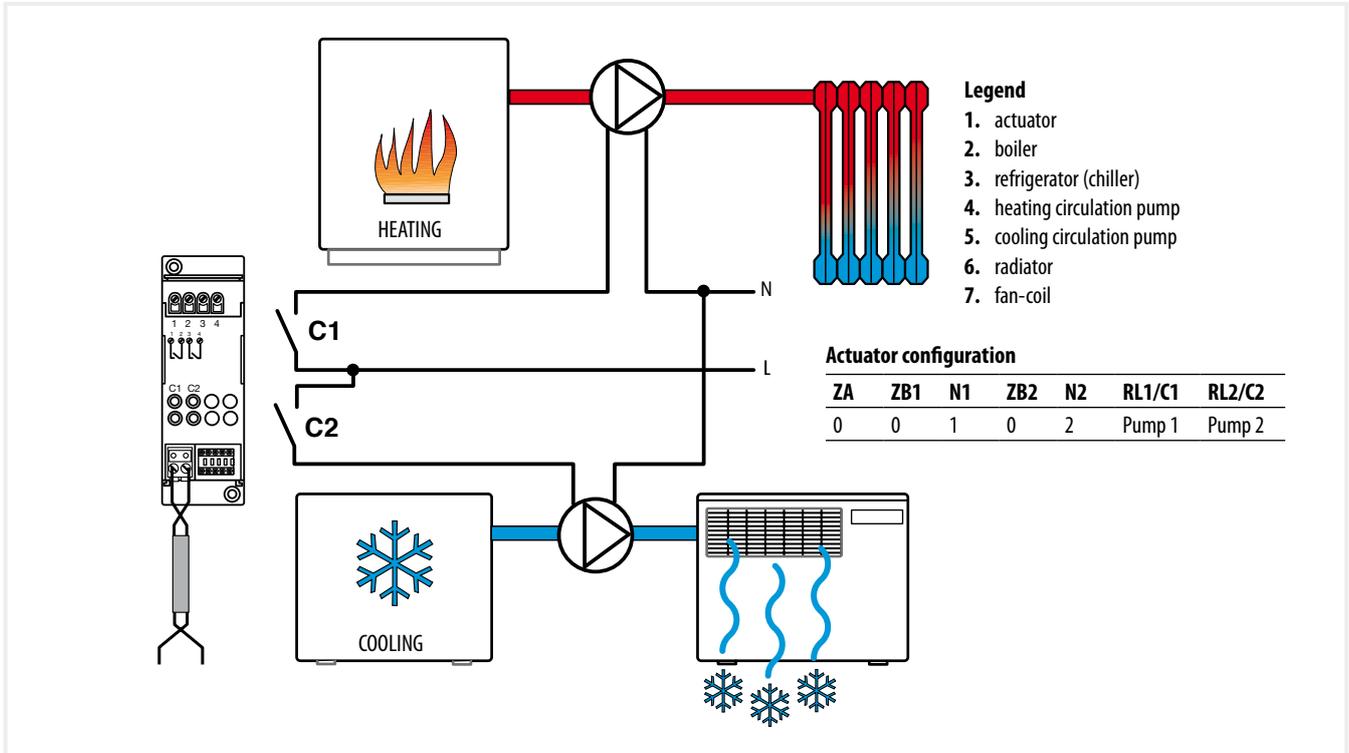| ZA	ZB1	N1	ZB2	N2	RL1/C1	RL2/C2
0	7	1	OFF	-	ON/OFF	Excluded

Example 4

Configuration and connection of the 2-relay actuator, for the control of two circulation pumps (zone 00). The progressive zone numbers are 1 and 2.

Legend
1. actuator
2. boiler
3. refrigerator (chiller)
4. heating circulation pump
5. cooling circulation pump
6. radiator
7. fan-coil

Actuator configuration

ZA	ZB1	N1	ZB2	N2	RL1/C1	RL2/C2
0	0	1	0	2	Pump 1	Pump 2

Example 5

Configuration and connection of the 2 interlocking relays actuator, for the control of a solenoid valve with opening and closing control in zone 16.

Legend
1. actuator
2. solenoid valve with open/close control
3. zone 16 radiator
4. zone 16 radiator

Actuator configuration

ZA	ZB1	N1	ZB2	N2	RL1/C1	RL2/C2
1	6	2	6	2	OPEN	CLOSE