U S E R G U I D E

CAVIUS
RF RELAY
I N T E R F A C E

Model no.: 9004

CE UK CA

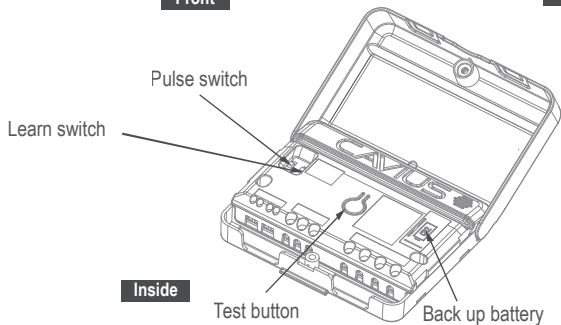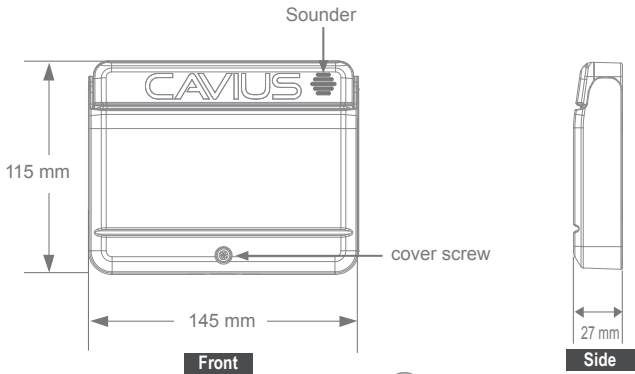## CONTENTS

1. PRODUCT FEATURES AND SPECIFICATIONS

Model: 9004 . Mains powered relay interface with RF interconnect

The 9004 relay interface is primarily intended to enable a connection between an external system or devices and the CAVIUS wireless family.

- Electrical Rating: 230 VAC, 50 Hz, 1.8 W
- Battery Life: 1-year life in battery mode without mains power, and up to 10-years normal life with mains power.
- Replacement Battery: Duracell CR2 or Procell PCCR2
- Relay Contacts rating: 250 VAC @ 5 Amps or 30 VDC @ 5 Amps
- Trigger I/P voltage: 3 to 30 V DC
- Low Battery : A short beep will sound out every 48 seconds for 30 days.
- Red LED for RF Learn Mode / Alarm / Fault
- Green LED for mains power on.
- Test button is used to setup wireless interconnect, and test.
- Wireless Radio Frequency: 868.65 MHz
- Wireless Interconnect: up to 32 units
- Operating Temperature Range: 0°C to 40°C
- Humidity Range: 0% to 90% RH, non-condensing
- Latched or Pulsed relay output (user selectable), see Section 2, Figure 2.

Features

FIGURE 1

Sounder

115 mm

145 mm

27 mm

cover screw

Front

Side

Pulse switch

Learn switch

Inside

Test button

Back up battery

4

2. OPERATIONAL

The 9004 RF relay can be RF interlinked with other CAVIUS Wireless Family alarms. The maximum number of alarms that can be interlinked within a house group is 32 units. The wireless distance between interlinked alarms depends on the house layout and they should always be tested after installation. It is not advisable to install alarms with a separation of more than 10 m. **Please note:** These must be alarms from the CAVIUS Wireless Alarm Family.

The 9004 Relay provides a set of Normally Closed (NC) and Normally Open (NO) change over contacts. This enables Cavius smoke and heat alarms to trigger auxiliary devices such as Telecare Systems, strobe lights, sounders, fire alarm panels, activate emergency lights, shut down air conditioners or release magnetic door holders. Third party devices such as sprinkler flow switches or fire panels can also be connected to the trigger input to cause the Cavius alarms to sound when activated.

This relay has 2 selectable modes of operation.
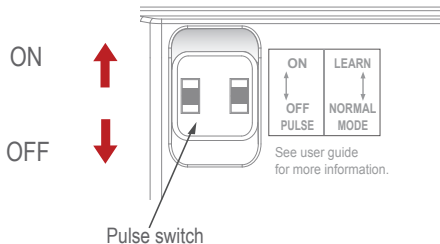Select the mode of operation using PULSE switch (See Figure 2).

FIGURE 2

Pulse OFF:

• Relay activates continuously
when the smoke and /or heat alarm
is in the alarm condition

ON

Pulse ON:

• Relay activates for approximately 5 seconds
when the smoke and /or heat alarm is in
the alarm condition

OFF

Pulse switch

LED indication

There are two LED that indicate the following.

Green

- **ON** – AC Power is Present
- **OFF** – AC Power is not Present

Red

The Red LED indicates the following conditions.

- **Learn mode condition:**
  Red LED on.

- **Alarm:**
  The Red LED will not illuminate if the relay is
  activated by RF alarms.

- **Trigger input detected:**
  The Red LED will flash every 0.5 seconds
  if a trigger input from an external device is
  detected. **Note:** The LED will not flash if the initiating device
  is a Cavius RF alarm, however the output relay will activate.

- **Battery fault:**
  In normal operation the red LED will flash every 48 seconds. If the battery is in a low voltage condition or
  faulty, the red LED will flash every 48 seconds and the sounder will chirp in time.
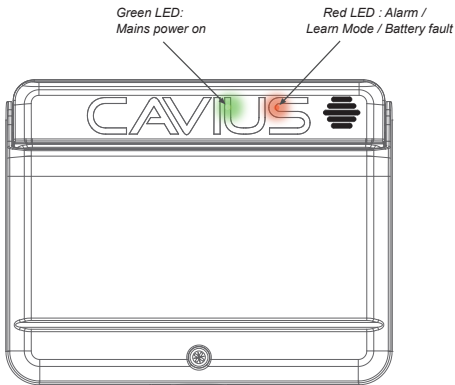

*Green LED:
Mains power on*

*Red LED : Alarm /
Learn Mode / Battery fault*

FIGURE 3

3. HOW TO SET UP RF RELAY AND CONNECT RF ALARMS

The Relay & all alarms that need to be connected in the house should be put into "Learn Mode" by sliding the switch on the inside of the relay (Figure 4) and back of the alarms to the "LEARN" position.

The red LED will illuminate to indicate that 'Learn Mode' has been selected.

Press and hold the test button on one device only, until it beeps and the LED flashes. This device will become the master and will start sending out a specific house code to the other RF device. See Figure 5.

As the other device receives the specific house code, they will also flash the LED light.

When the red LED light flashes on RF relay and all RF alarms, they are connected and **MUST BE SWITCHED OUT OF 'LEARN MODE'** and installed. See Figure 4.

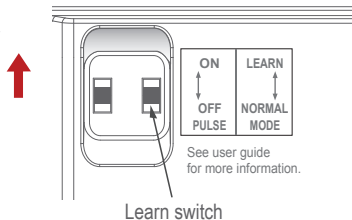Leaving the RF relay in learn mode for an extended time will reduce the battery life.

ON | LEARN
OFF | NORMAL
PULSE | MODE

See user guide for more information.
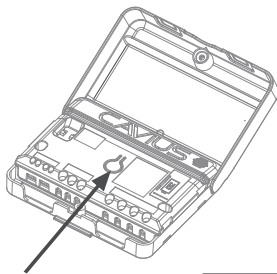
Learn switch

FIGURE 4

TEST Button

FIGURE 5

4. INSTALLATION INSTRUCTIONS

The 9004 RF relay must be on a circuit breaker and be installed in a suitable location according to local building regulations and codes of practice.

⚠ WARNING: Disconnect mains power before commencing work.

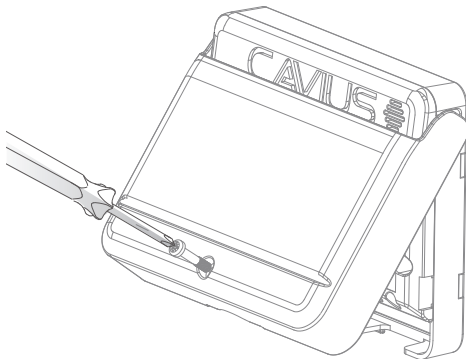**A.** Remove cover (cover screw) to allow access to wire connections. See Figure 6.
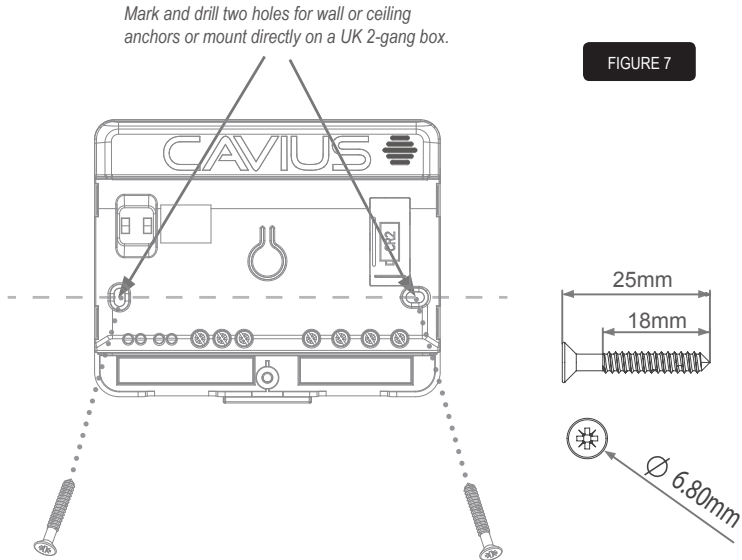

FIGURE 6

B. Mount in required location.

Mark and drill two holes for wall or ceiling anchors or mount directly on a UK 2-gang box.

FIGURE 7

25mm

18mm

∅ 6.80mm

C. After the cables are connected, press the Test button. Please re-install the module cover.

Wiring Instructions:

⚠️ **WARNING:** This product cannot be operated from power derived from a square wave, modified square wave or modified sine wave inverter. These type of inverters are sometimes used to supply power to the structure in 'off grid' installations, such as solar or wind derived power sources. These power sources produce high peak voltages that can damage the device.

⚠️ **IMPORTANT:** It is recommended that the module and alarms are connected to a dedicated circuit that is separately electrically protected. This helps minimise interference (EMI) on alarm interconnect line from CFL's, dimmers, LV transformers etc.

NOTE: The alarm has to be installed by a professional.

Make sure that AC power is turned off before starting the installation.

• This 9004 RF relay module will not detect smoke or heat and must be installed in conjunction with the specified alarms. Only connect to the specified models of smoke or heat alarm.

• The earth terminal connection provided is for termination purposes only and is NOT electrically connected within the sealed alarm / base units.

• This wireless module can only interconnect with compatible smoke alarms or relay. Interconnection with other brands may cause damage, result in electric shock, fire risk and void warranty.

• It is important that the relay be wired correctly to ensure correct operation. Incorrect wiring may cause damage.

Terminals on the module are marked as shown in figure 8:

MARKINGS

Output Relay

NO	Normally Open
C	Common
NC	Normally Closed

Input Trigger

SW	Switch Return
3V	Switch Feed

Voltage Trigger

0V	0V
+V	+3 V to +30 V

AC Mains

L	Live
N	Neutral
⏚	Earth
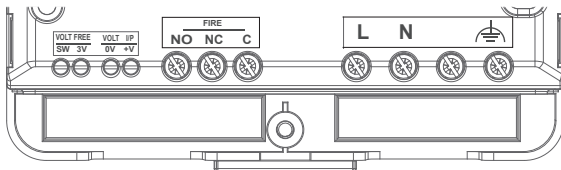
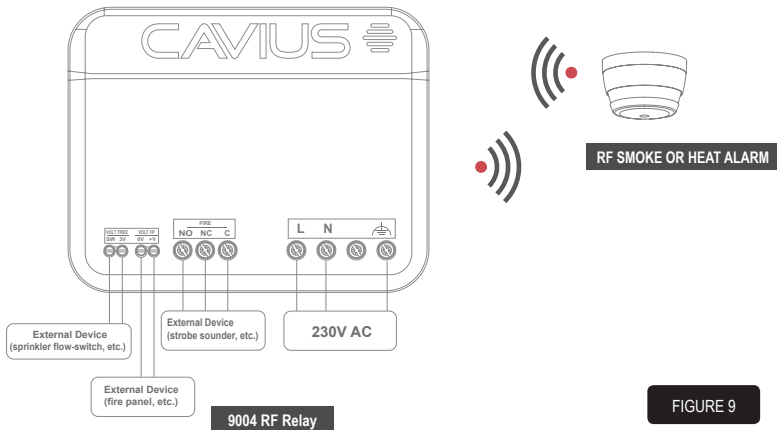

Tighten terminal screws 0.3 to 0.5 N.m.

FIGURE 8

⚠ **WARNING**: Connecting the switch terminals to any other supply conductor may result in damage to the alarm, failure to operate or shock hazard and void the warranty of the alarm.

RELAY OPERATION
The RF relay may take a few seconds to operate when the smoke alarm or heat alarm is activated or reset. This is normal operation.

The wiring connecting the module with the external device is not supervised. Be sure to test the operation of all the devices controlling the module or controlled by the module. Devices controlled by the module can be tested by pushing the Test button on the relay and verifying that the controlled device responds in the desired manner.

Connecting to Auxiliary Devices, see Figure 9.

RF SMOKE OR HEAT ALARM

VOLT FREE
SW   0V

VOLT I/P
0V   +V

FIRE
NO   NC   C

L   N

External Device
(sprinkler flow-switch, etc.)

External Device
(strobe sounder, etc.)

External Device
(fire panel, etc.)

230V AC

9004 RF Relay

FIGURE 9

By installing the RF relay in this manner it will allow you to operate devices such as telecare systems, sounders, strobes, or any devices which do not exceed 250VAC @ 5 Amps.

When the RF relay is to be RF interconnected, the live and neutral connection must be made.
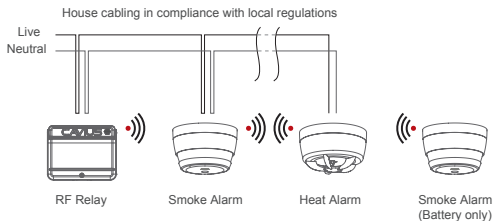See Figure 10.

FIGURE 10

House cabling in compliance with local regulations

Live
Neutral

RF Relay | Smoke Alarm | Heat Alarm | Smoke Alarm (Battery only)

To expand an existing RF interconnected system, connect a RF model to the RF system and then add additional RF relay at each new location. See Figure 11
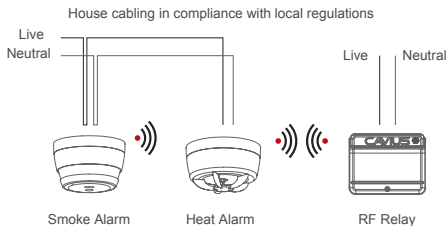
FIGURE 11

House cabling in compliance with local regulations

Live
Neutral

Live | Neutral

Smoke Alarm | Heat Alarm | RF Relay

5. TEST FUNCTION

After installation, test the RF relay and alarms to ensure they are operating correctly and are within range of each other.

Press the test button on the relay for two sets of sweeps and until the sounder stops. Release the button and this will send out the test signal to all connected alarms.

When the test signal is sent out, the relay will respond in two ways:

a. A single beep every 8 seconds indicates that the relay is connected and functioning.

b. Three short beeps every 8 seconds indicates a relay fault.

The test function will time out after 2 minutes, but can be stopped earlier by a short press of the test button on the relay.

After system tests are complete, close the cover and tighten the securing screw to limit access.
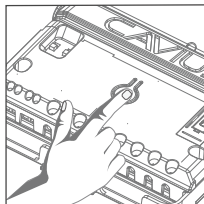
ENVIRONMENTAL PROTECTION

Waste electrical products should not be disposed of with household waste.

Please recycle where facilities exist. Check with your local authority or retailer for recycling advice
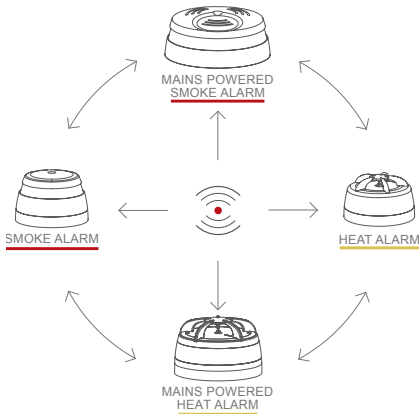
6. ADD EXTRA DEVICE

All CAVIUS interconnected alarms within the WIRELESS·)) can be added to the system as they run on same frequency and use the same data protocol.

Place all RF alarms & relay to be RF connected into 'Learn Mode' and repeat section 1. Always test connection to all devices by Test button (section 5).

WIRELESS·))
ALARM FAMILY

MAINS POWERED
SMOKE ALARM

SMOKE ALARM

HEAT ALARM

MAINS POWERED
HEAT ALARM