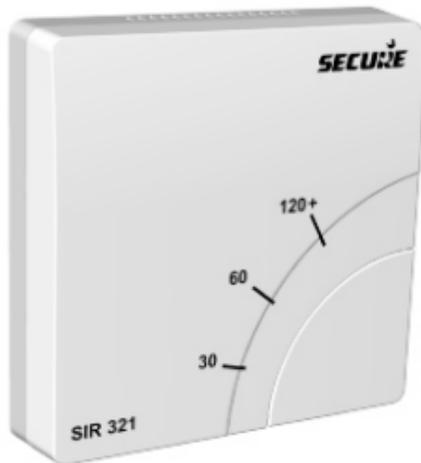


# ***SECURE***

## **SIR 321**

### **RF Countdown Timer**



## **Installation and User Instructions**

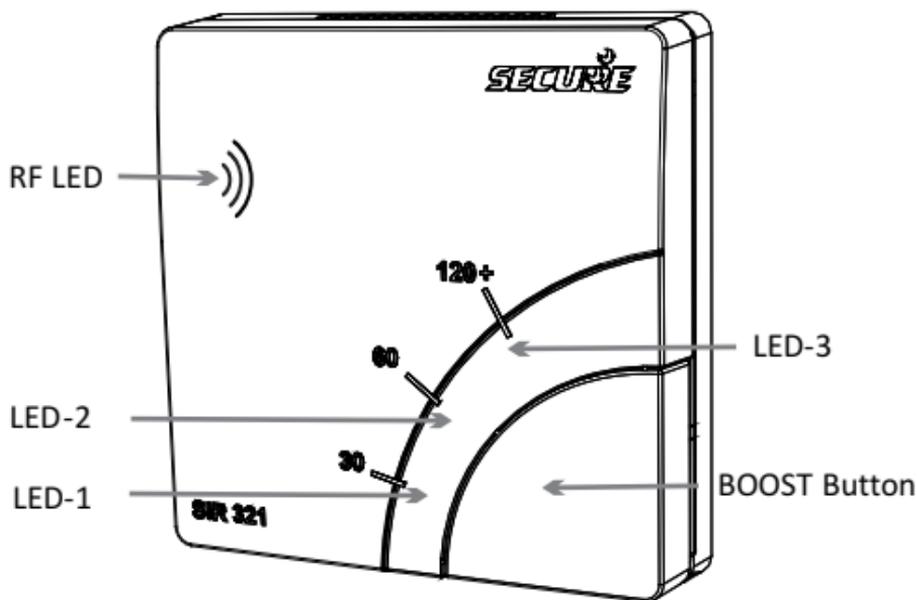
## SIR 321

SIR 321 is a Z-Wave<sup>®</sup> countdown timer that can be used to control immersion heater elements or other electrical appliances rated up to 3 kW.

SIR 321 uses Z-Wave<sup>®</sup> radio frequency technology to communicate with network controllers from Secure or other manufacturers. It is a mains-powered device that can also act as a network repeater.

**INSTALLATION AND CONNECTION SHOULD ONLY BE CARRIED OUT BY A SUITABLY QUALIFIED PERSON AND IN ACCORDANCE WITH THE CURRENT EDITION OF THE IET WIRING REGULATIONS.**

**WARNING: ISOLATE MAINS SUPPLY BEFORE COMMENCING INSTALLATION AND ENSURE THE UNIT IS PROPERLY EARTHED.**



The LEDs become operational when the unit is powered up.

## User Instructions

To operate the unit press the BOOST button repeatedly until the indicator light for the required BOOST period is illuminated (see table below).

Model	1 <sup>st</sup> time button press	2 <sup>nd</sup> time button press	3 <sup>rd</sup> time button press	4 <sup>th</sup> time button press
SIR 321	30min (½ hour)	60min (1 hour)	120min (2 hour)	off

When BOOST is active the indicator lights count down, showing the duration of the BOOST period remaining (see table below).

Model	LED - 1 on	LED - 1 & 2 on	LED - 1, 2 & 3 on
SIR 321	5min to 30min left	31min to 60min left	61min to 120min left

LED -1 will flash slowly when 5 minutes of the boost period remains and will flash at a faster rate when 1 minute remains. At the end of the boost period SIR will automatically switch off the connected appliance.

SIR 321 can also run a timer from 1 minute to 24 hours, under Z-Wave<sup>®</sup> control. The RF LED shows network and joining status (see STEP-5 for details).

The appliance can be switched off by cancelling the boost period, using any of the following methods:

1. If the BOOST button has just been pressed, wait for three seconds and then press it again. The indicator lights should all turn OFF.
2. Press the BOOST button repeatedly, until ALL the indicator lights have turned OFF.
3. Press and hold in the BOOST button until ALL the indicator lights have turned OFF.

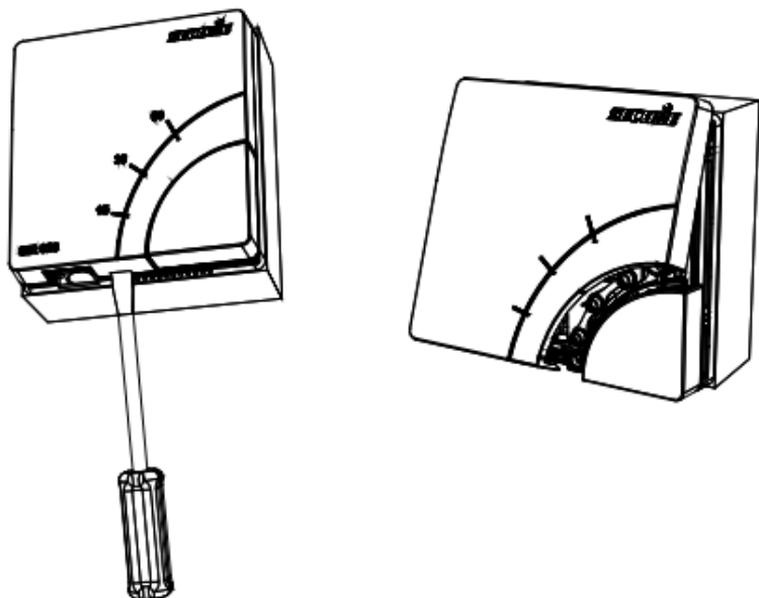
## Installation

A means of disconnection from the supply, having at least 3mm contact separation in both poles, must be incorporated in the fixed wiring. We recommend a separate fused circuit from the consumer unit (24-hour supply) protected by a 15A HRC fuse or, preferably a 16A MCB. In some cases immersion heater failure can damage the SIR. Installation of a 100mA RCD will provide additional protection for the unit. If the SIR is to be connected to a ring main then the spur feeding the controller should be protected in the same way. The SIR is NOT suitable for mounting on an unearthed metal surface.

THE SIR UNIT SHOULD BE KEPT IN ITS SEALED PACK UNTIL ALL DUST AND DEBRIS HAVE BEEN CLEARED AWAY PRIOR TO MAKING CONNECTIONS.

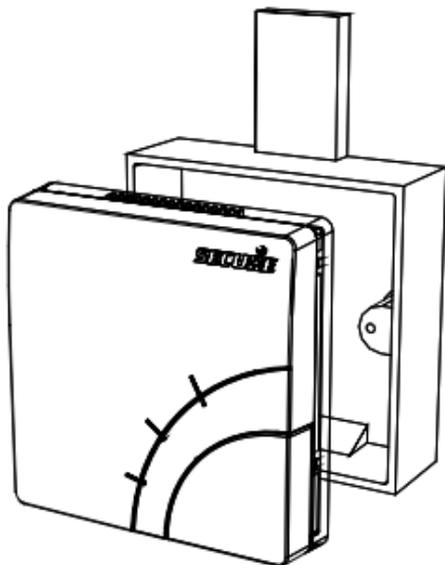
## STEP-1 Unpack unit and remove front cover

Take the SIR out of its packaging and then remove the front cover gently, using a slotted screwdriver in the notch, as shown in the picture below:



## STEP-2 Preparing SIR for surface wall mounting

SIR is suitable for mounting directly on to any surface mounted single-gang moulded box having a minimum depth of 25mm for UK, or 35mm for Continental Europe. Cable entry can be made through the most convenient cut-out.

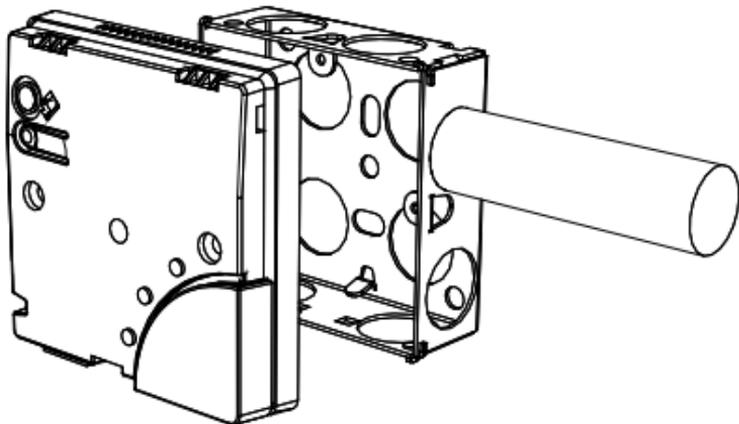


Remove cut-outs before fixing the box. Where appropriate, drill the box to provide close-fitting entry for cables and heat-resistant flexible cords. Take care to remove sharp edges.

Ensure that the clamp is positioned the right way up i.e. the projections on the underside of the clamp should grip the cord in order to secure the cable firmly. The cable clamp screws must be adequately tightened up to 0.4Nm.

## For flush wall mounting

SIR can be mounted directly to any standard flush mounting single-gang wiring box with a depth of 25mm for UK (BS 4662), or 35mm for Continental Europe (DIN 49073). See pictures of gang boxes on page 23.



Clamp all surface wiring to the wall adjacent to the SIR, using trunking where appropriate. The flexible cable to the appliance should be passed through the cable entry hole in the bottom edge of the SIR, and secured under the cable clamp provided.

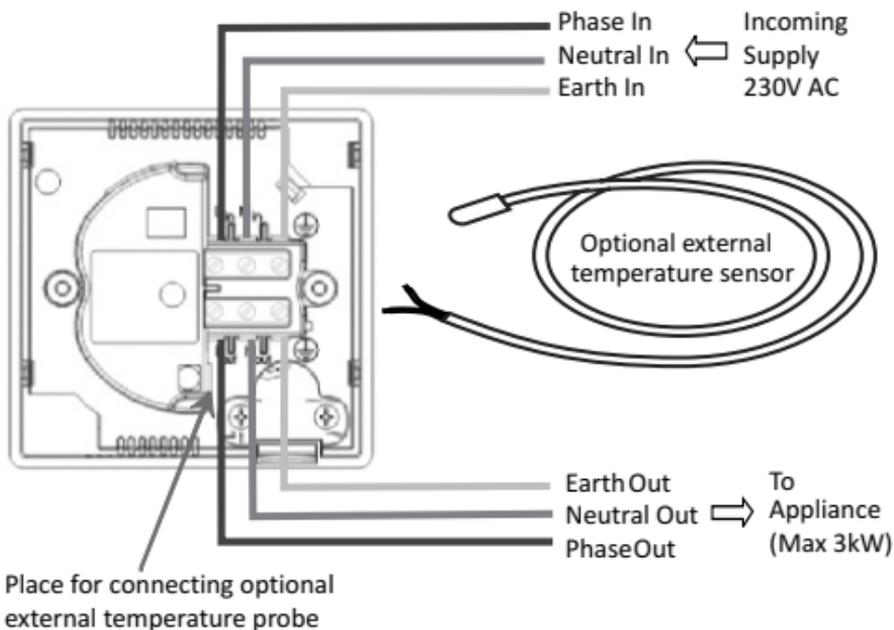
### **STEP-3 Making connections**

Use twin-and-earth cable with a maximum conductor size of  $2.5\text{mm}^2$  single conductor for the incoming supply to the SIR. Use a suitably rated three-core flexible cable to connect the SIR to the appliance to be switched. For appliances rated up to 2kW use minimum  $1.0\text{mm}^2$  flexible conductors. For appliances rated up to 3kW use minimum  $1.5\text{mm}^2$  flexible conductors. Heat resistant flexible cable must be used if connecting the SIR to an immersion heater.

L in	Live in
N in	Neutral in
⊕	Supply earth terminal
L out	Live out to appliance
N out	Neutral out to appliance
⊕	Appliance earth terminal

All un-insulated earth conductors must be sleeved and connected to the earth terminals on the back of the SIR. The supply earth conductor and appliance earth conductor must use the separate terminal connections provided.

Switch off the mains supply and then connect the conductors for the incoming supply and the appliance on the back of the unit, as shown on the next page. Connect the two leads from the optional external temperature sensor probe (if supplied) to 'H4' and '1' marked terminal. The probe wires do not have any polarity.



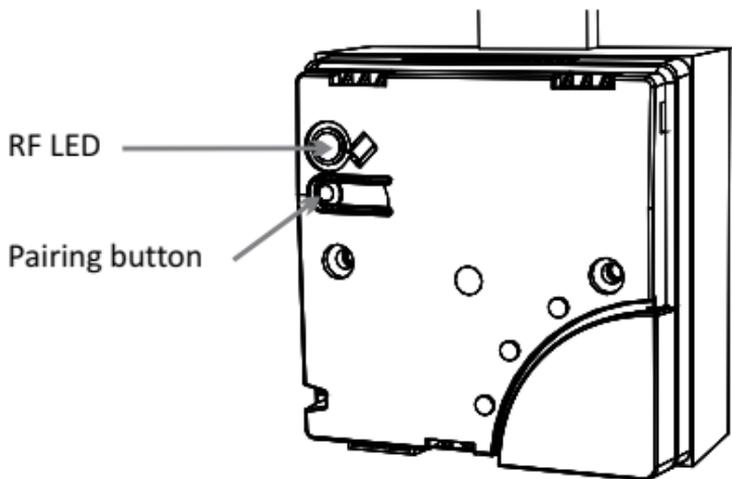
## STEP-4 Installing SIR on wall gang / flush wall box

Carefully offer the SIR to the moulded/metal box and secure using two screws. Take care not to damage the insulation or trap the conductors when fitting to flush wall box.

## STEP-5 Z-Wave® commissioning notes

To include the SIR onto a Z-Wave® network, first put the controller in inclusion mode (refer to controller installation instructions) and then press and hold the pairing button on the unit until the RF LED starts flashing at a fast rate. Then release the button.

On successful inclusion the RF LED will stop flashing.



To exclude the SIR from a network, put the controller in exclusion mode (refer to controller instructions) and then follow the sequence for inclusion, as above. After successful exclusion the RF LED will flash slowly.

Unit not signed on to network	RF LED slow flashing
RF inclusion/exclusion process	RF LED fast flashing
RF link lost to the controller	RF LED glow solid
RF network status is okay	RF LED off

For optimum RF communication, fit the unit above floor level, and at least 30cm away from metal objects and appliances such as: microwave oven, cooker, fridge/freezer, stainless steel sink, TV, set-top box (satellite/cable/Freeview), radio or computer (desktop/laptop/tablet).

Do not fit the unit within 100cm of RF devices, such as DECT cordless phones or Wi-Fi routers.

It may be necessary to relocate the unit if problems with communication occur.

Mobile phones should not be used or placed in the vicinity of this unit.

## STEP-6 Fitting front cover and final check

After fitting the mounting screws, fix the front cover back on. Offer the front cover on to the unit and make sure that it clicks securely in place.



Finally switch on the mains supply and check that the SIR switches the appliance on and off correctly.

### Z-Wave command classes support on SIR 321

Z-Wave Device Classes	Implemented Device Classes
Generic	Binary Switch
Specific	Not used
Basic	Routing Slave

Command Classes Supported	Description
Manufacturer Specific (V2)	Secure Controls (UK) Manufacturer ID, RF Module Serial Number
Version	Provides the version number of the software
Binary Switch	Binary Switch Set Binary Switch Get Binary Switch Report
Schedule	<p>Schedule Supported Get Schedule Set Schedule Get Schedule Remove Schedule State Get</p> <p>Schedule ID: 0x01 Supported CC : Binary Switch SET command Type of Schedule : Start now Duration type : Minutes Maximum schedule duration: 1440 minutes</p> <p><i>Note: No override and fallback mode is supported. The binary switch set command and pressing the BOOST button will over ride the schedule &amp; vice - versa.</i></p>

Basic	<p>Mapped to binary switch command class as follows :</p> <p>Basic Set: Binary Switch Set</p> <p>Basic Get: Binary Switch Get</p> <p>Basic Report: Binary Switch Report</p>
Association	<p>Two association groups are supported :</p> <p>Group-1: Nodes to receive Schedule report</p> <p>Group-2: Nodes to receive multilevel sensor report</p> <p>Each group contains maximum 4 nodes.</p> <p><i>Note: Group-2 is available only when external temp sensor is connected.</i></p>
Multilevel sensor	<p>Multilevel Sensor Get</p> <p>Multilevel Sensor Report</p>

**Note:** All command classes are version 1 unless otherwise stated.

# Configuration

Parameter name	Parameter No	Size in Bytes	Unit	Resolution	Min value	Max Value	Default value
Enable Fail safe timer	1	1	-	-	0	255	0
Temperature Scale	2	1	°C °F	- -	0 128	127 255	0 0
Temperature reporting intervals	3	2	Sec	1	1	65534	0
Delta configuration temperature reporting	4	2	°C °F	0.1 0.1	1 1	100 500	0 0
Temperature Cutoff	5	2	°C °F	0.1 0.1	1 320	1000 2120	0 0

*Note: -*

- 1. Entering out of range values will be ignored*
- 2. With ZERO default value, reporting & cut off temperature is disabled.*

## Service and Repair

SIR is NOT user serviceable. Please do not dismantle the unit. In the unlikely event of a fault occurring please contact a heating engineer or a qualified electrician.

## Technical specifications

### Electrical

Purpose of control	Electronic timer (independently mounted)
Contact rating	13A resistive* 230V AC, suitable for loads up to 3kW
Control type	Micro-disconnection
Supply	230V AC, 50Hz only
Control action	Type 2B
Operation time limitation	Intermittent
Software class	Class A
Timing accuracy	( $\pm 5\%$ )
Timer boost period	Model SIR 321 - 30/60/120 minute, 1 minute to 24 hours via Z-Wave
Sensor temp. accuracy	$\pm 0.5^{\circ}\text{C}$ from $0^{\circ}\text{C}$ to $65^{\circ}\text{C}$ and $\pm 1^{\circ}\text{C}$ from $66^{\circ}\text{C}$ to $100^{\circ}\text{C}$ (optional external probe for SIR 321)
Sensor temp. range	$0^{\circ}\text{C}$ to $100^{\circ}\text{C}$ (optional external probe for SIR 321)

\* optionally 3A inductive

## Mechanical

Dimensions

85 x 85 x 19 mm (flush mount),  
85 x 85 x 44 mm (surface mount)

Case material

Thermoplastic, flame retardant

Ball pressure test

temperature

75°C

Mounting

Single-gang surface mount / flush  
box, minimum depth 25 mm (UK) /  
35 mm (Continental Europe)

## Environmental

Impulse voltage rating

Cat II 2500V

Enclosure protection

IP 30

Pollution degree

Degree 2

Operating temperature  
range

0°C to 35°C

## Compliance

Design standards

EN 60730-2-7, RoHS, CE



R&TTE

ETSI EN 300 220-2

ETSI EN 301 489-3



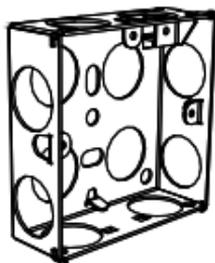
## Ordering information

SIR 321 RF Z-Wave® variant, 30 to 120 minute countdown timer with single push-button operation and 1-minute to 24-hour timer over RF. LED indicator lights. Suitable for loads up to 3kW at 230V AC.

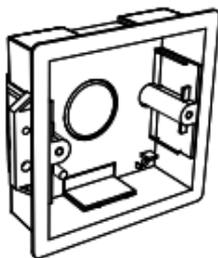
SIR 321 is suitable to install on illustrated types or any other similar type of wall gang / back boxes.

Optional accessory: SES 001, external temperature probe.

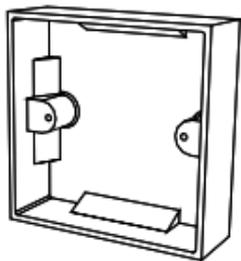
*UK*



Metal back box

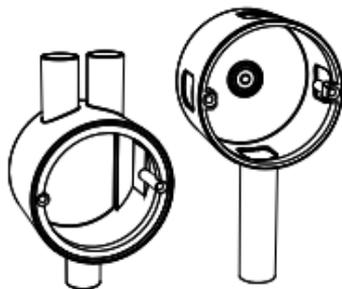


Single gang



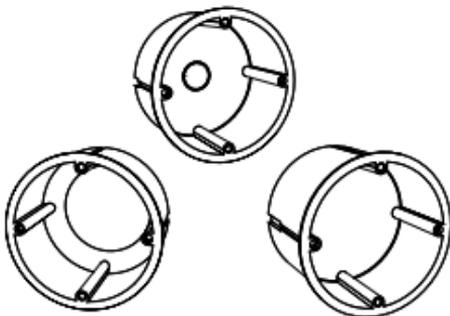
Surface mount

*Continental Europe*



Flush wall

*Germany*



Flush wall



**European Sales Office**

CEWE Instrument AB

Box 1006, 611 31 Nyköping

t: +46 8 600 80 60

e: [info@securetogether.eu](mailto:info@securetogether.eu)

[www.securetogether.eu](http://www.securetogether.eu)

**European Head Office**

Secure Controls (UK) Ltd.

Roman Farm Road

Bristol, BS4 1UP