Drayton
by Schneider Electric

Digistat +2/+3Si
Digistat+2RFSi
Digistat+3RFSi

Programmable Room Thermostat

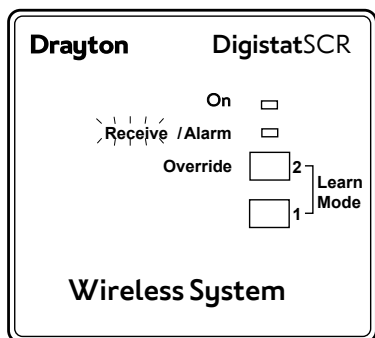## Model: RF703/22111/RF704/ 22110/22102/22103/ 22104/22105

CE

Technical Helpline Tel: 0333 7000 622
Website: www.draytoncontrols.co.uk
Email: customer.care@draytoncontrols.co.uk

User Guide 06490278001 Iss A

Installation Guide

RF PRODUCT ONLY
INSTALLATION OF SCR (RF Models only)

Drayton   DigistatSCR

On
Receive / Alarm
Override   2
             1   Learn Mode

Wireless System

If you do not have the knowledge to install the SCR safely then you must arrange for a competent electrician to install it for you. Wiring must conform to the current IEE regulations.

Prior to commencing the installation you must ensure the mains supply is switched off.

Installation Instructions

Read all installation and commissioning instructions before proceeding.
Do not switch on until ready to commission.

The system wiring must be able to be fully disconnected from the mains supply by a switch incorporated in the fixed wiring having a contact separation of at least 3mm on both poles. Fused at 3A.
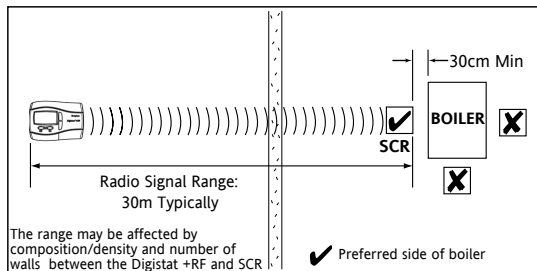
Location
The Digistat SCR (receiver) should be mounted in a convenient position, close to the boiler or central heating system wiring centre. (Care should be taken not to mount the SCR in a position where it is surrounded by metal objects or mains voltage cable, as this may interfere with the radio signal).

For the best performance install in an open space, at least 30cm distance from any metal objects including wall boxes and boiler housing.

It is recommended that the SCR is mounted on the wall nearest the final location of the Digistat +RF room thermostat and not less than 30cm from the boiler side panel.
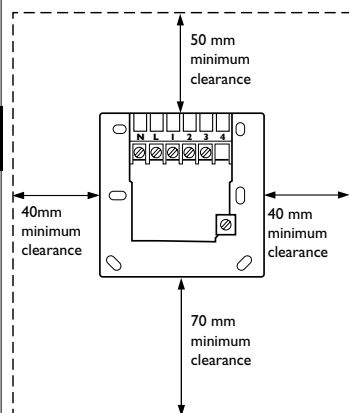
Warning: Installing the SCR too close to the metal side panel or mains cables may interfere with the radio signal.

Radio Signal Range:
30m Typically

The range may be affected by composition/density and number of walls between the Digistat +RF and SCR
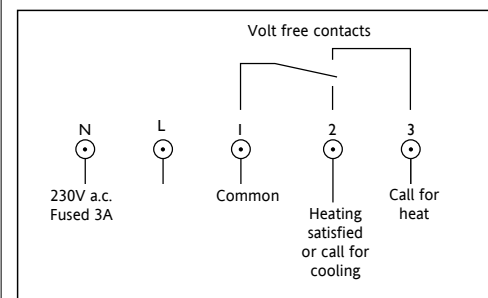
✔ Preferred side of boiler

Fixing (minimum wall plate clearances shown)

1. Loosen the securing screws, remove the wallplate, and if surface wiring is to be used, snap out the cable entry strip on the bottom edge of the wallplate with a pair of pliers.

2. Fix the wallplate, terminals at the top, either direct onto the flat wall using wall plugs and no 6 x1" wood screws or on a flush mounting single conduit box using M3.5 x 14 screws. Minimum wallplate clearances are shown.

3. Complete the wiring to the SCR wallplate in accordance with the relevant diagram, to comply with current IEE wiring regulations.

4. Place the SCR onto the wallplate and tighten the securing screws.
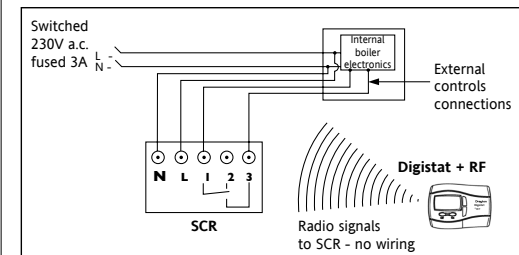
SCR wallplate clearances

50 mm minimum clearance

40mm minimum clearance

40 mm minimum clearance

70 mm minimum clearance

Electrical

Volt free contacts

N   L   l   2   3
230V a.c.   Common   Call for
Fused 3A   Heating   heat
                  satisfied
                  or call for
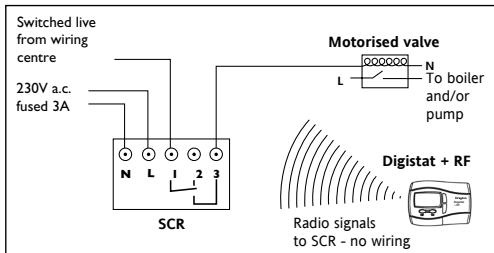   cooling

This product is double insulated and does not require an earth connection. The SCR should be wired to the combi boiler or central heating wiring using the correct type of cable or flex. The SCR should be wired in to replace hard wired room or programmable thermostats shown on the system or boiler wiring diagrams. Always check other manufacturers instructions for compatibility.

Combi boiler basic wiring layout

Switched 230V a.c. fused 3A

Internal boiler electronics

External controls connections

N L l 2 3

Digistat + RF

SCR   Radio signals to SCR - no wiring

Zone control basic wiring layout

Switched live from wiring centre

230V a.c. fused 3A

Motorised valve
N
L   To boiler and/or pump

N L l 2 3

SCR

Digistat + RF

Radio signals to SCR - no wiring

COMMISSIONING THE 'WIRELESS SYSTEM' (RF models only)
Standard for all models

IMPORTANT: MULTIZONE INSTALLATIONS ONLY
If more than one 'wireless system' is fitted within the same property. ie. for controlling 2 or more zones (multi-zone) it is essential that the Digistat RF units are matched correctly to the relevant SCR. This is easily achieved by commissioning each Digistat and SCR in turn.

1. Install (see installation instructions) and turn power on to the SCR (receiver). If a separate programmer is fitted, ensure that it is switched on. The red LED should come on.

2. Push the 'override' button on the SCR once. The green LED should also come on. Check to see if the boiler and/or motorised valve are working.

3. To enter 'learn' mode push the button marked 1 followed by 2 (OVERRIDE) and hold both depressed together. The red LED should flash for 2 seconds and then go out signifying the SCR is in learn mode. Release both buttons.

4. The red and green LED's should both now be on.

5. Take the Digistat RF and hold it within sight of the SCR (no closer than one metre.

6. Remove the battery cover and fit the batteries.

7. The Digistat RF should now display the actual room temperature. If the unit has been stored in a cold place, it may take time to warm up.

8. As soon as the batteries are fitted, the red LED on the SCR should flash for 7 seconds and then go out.
The green LED may be on or off depending on the room temperature at the time of commissioning.

9. If the red LED remains on, remove the batteries on the Digistat RF, check the battery positions are correct, and once the display has faded, repeat steps 6 to 8.

10. Increase the 'SET' temperature on the Digistat RF by pressing the + button until a flame symbol appears, in the left hand segment of the display.

11. The red LED on the SCR should flash for 7 seconds. This confirms that the radio signal is being sent and received. After 7 seconds the red LED should go out and the green one come on.

12. Check to confirm that the boiler and/or motorised valves are working.

13. Decrease the 'SET' temperature on the Digistat RF by pressing the - button until the flame symbol disappears.

14. The red LED on the SCR should flash for 7 seconds. After 7 seconds both the red and green LEDs should go out. Check that the boiler and/or motorised valve have powered down.

15. Place the Digistat RF in the chosen operating position, (see Digistat RF location section) and repeat steps 10 to 14. Once you have confirmed the system operates correctly, fit and secure the Digistat RF to the wall (see installation instructions).
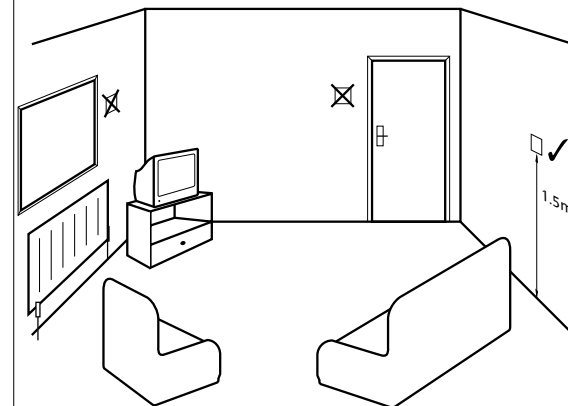
During normal operation the red LED on the SCR will flash for 7 seconds each time a radio signal is received from the Digistat RF. This will occur approximately every 5 minutes.

The green LED on the SCR denotes a call for heat (ON).

Once system has been successfully commissioned, buttons 1 and 2 on the SCR should not be pressed simultaneously, unless a replacement Digistat RF od SCR is fitted.

Location
Room Thermostat

1.5m

Care should be taken to mount the thermostat in a position which is not subject to direct sunlight or draughts. Preferably it should be mounted on an inside wall about 1.5m (5ft) above the floor in a position where it can respond to room temperature but away from the direct influence of radiators or other appliances giving off heat.
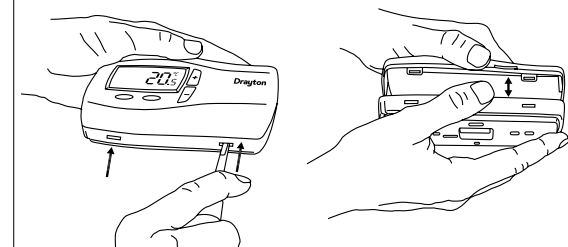
Signal Strength (RF Models)
Before fixing the *Digistat+RF* to the wall it is recommended to first check the signal strength from that location.
To do this, remove the batteries, press and hold the '+' button whilst refitting the batteries, the display will show 'rF' which indicates that the *Digistat+RF* is continuously sending an OFF signal to the SCR (receiver). Leave the *Digistat+RF* in position and return to view the SCR. If the red LED is continuously flashing, this indicates a good signal. If the red LED is not flashing, this indicates a poor signal and you need to reposition the *Digistat+RF* until the red LED is flashing. When the signal strength has been confirmed remove the batteries to cancel the test and follow the installation instructions.

Before Installation
If you do not have the knowledge to install the thermostat safely then you must arrange for a competent electrician to install it for you. Wiring must conform to the current IEE regulations.
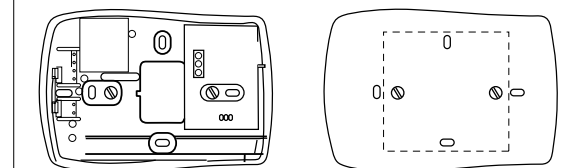
Prior to commencing the installation you must ensure the mains supply is switched off.

1.Remove the front cover using a flat screwdriver and separate from back plate (Fig 1).
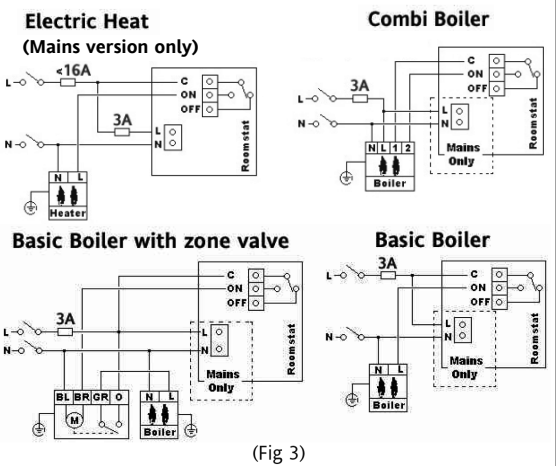

(Fig 1)

2. Fix the back plate directly onto the wall using suitable wall plugs and screws or mount over existing wall box (Fig 2).
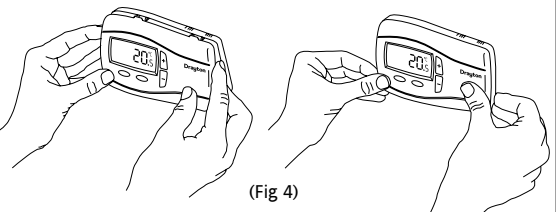

(Fig 2)

3. Complete the wiring according to the connection suggestions shown (Fig 3). For Basic Boiler, Basic Boiler with Zone Valve and Combi Boiler applications Digistat with battery or mains suppy are suitable.

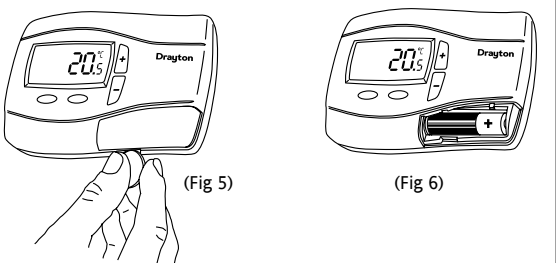(**For Electric Heat application use Digistat with mains suppy only).**
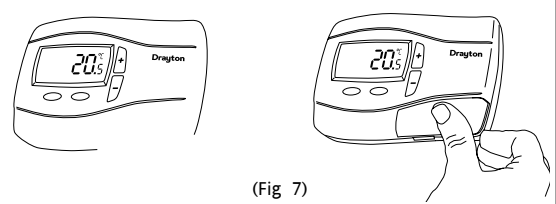
<u>**WIRING (Not RF Models)**</u>

Electric Heat
(Mains version only)

Combi Boiler

Basic Boiler with zone valve

Basic Boiler

(Fig 3)

4. Replace the front cover by locating in position and pushing fully onto the back cover (Fig 4).

(Fig 4)

5. Remove the battery cover using a coin (Fig 5). **Battery models only.**
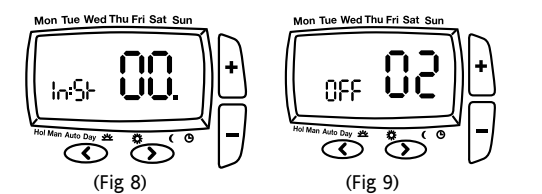6. Install the 2 AA batteries provided (Fig 6). **Battery models only.**

(Fig 5)   (Fig 6)

7. Replace battery cover (Fig 7). **Battery models only.**

(Fig 7)

8. The Digistat is now installed and will automatically start to control the room temperature.

INSTALLER OPTIONS

If you wish to change any of the Installer Options as shown below, enter the Installer Option Menu from Auto mode by pressing < and + simultaneously for 5 seconds.
Pressing < and + again for 5 seconds will exit the Menu and return to Auto mode.
Once the Installer Options screen has been selected (Fig 8), the < and > buttons allow you to scroll through the Menu (shown below). The + and - allow you to change values. Once a value has been changed pressing > before exiting the Menu will save the new setting. (Fig 9 shows Option 02 OFF).

(Fig 8)   (Fig 9)

Installer Options	What is it	Select between		Default
01	Encrypted password	-	-	-
02	Freeze Protection	On	Off	On
04	Low Set Point °C	5	High Limit	5
05	High Set Point °C	Low Limit	32	32
06	Delayed Start (Energy saving feature)	On	Off	Off
10	Valve Protection	On	Off	Off
11	Valve Protection Time (Mins)	1	5	3
12	Application type	0	1	0
13	System Capability	0	1	0
14	Si reset	Yes	No	No
15	Si status	On	Off	Off
16	Si Type	0	2	0
17	Si due date	0	999	365
18	Si warning date	0	99	30
19	Si Audible alarm	On	Off	On
20	Si Boost	On	Off	On
21	Si Password	-	-	0000

(Option 01)
Encrypted password
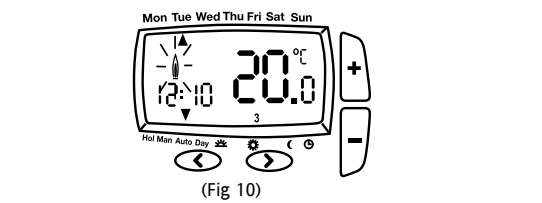If you forget your Si Password, please call the Technical Helpline.

(Option 02)
Freeze Protection
Freeze protection will switch on the heating if the room temperature falls to 5°C and will then control the temperature at 7°C even if the *Digistat* is in OFF mode.
The Freeze Protection default in ON.
To switch off the Freeze Protection mode enter the Installer Options Menu (Refer to Installer Options 02) and change to OFF. Press > to accept.

(Option 04 & 05)
Low and High Limit set points.
The user temperature set points defaults are High 32°C and Low 5°C, to change these limits enter the Installer Options Menu (Refer to Installer Options 04 & 05).

(Option 06)
Intelligent Delayed Start (Energy saving feature).
The Intelligent Delayed Start is an energy saving feature which automatically reduces the warm up time for the heating system. As the weather becomes milder, Intelligent Start will delay the heating start times so that fuel is not wasted bringing the room up to temperature earlier than necessary.
Note: Intelligent Delayed Start only applies in Auto mode. Intelligent Delayed Start default is in OFF mode.
To switch ON Intelligent Delayed Start enter the Installer Options Menu (Refer to Installer Option 06).
Note the Intelligent Delayed start option is not suitable for Hydronic underfloor application.
Ensure Installer option 06 is set to OFF before final commissioning for Hydronic underfloor application.

Special Note:

If the Intelligent delayed start feature is enabled, (Off changed to On in Installer option 06), please inform the end user of this feature.

The following special note has been added to the user instruction to explain the adjustment requirement:

When the delay period is operating indicated by the flame symbol flashing (Fig10), pressing any button returns the Digistat to auto mode allowing normal button operation until the next time/temperature event, when it will resume the delay start mode or follows the Holiday, Manual, Override or Off modes as selected. Changes to the installer options and pre-set programmes must be made with the flame symbol not flashing.

(Fig 10)

(Option 10)
Valve Protection
In some hydronic heating systems there may be a requirement to protect the valve by operating it once a day, for a given period, without bringing on the heating system.
If valve protection is selected the valve will be operated for a period as shown in Valve protection time (mins).
Valve protection time every day at 10.00am.
Valve protection default is OFF.
To enable the valve protection mode enter the Installer Options Menu (Refer to Installer Option 10).

(Option 11)
Valve Protection time (mins).
Valve protection time can be set between 1 and 5 minutes (default 3 minutes).
To change this once a day on time enter the Installer Options Menu (Refer to Installer Option 11).

(Option 12)
Application Type
Digistat can be used for different applications.
In the installer menu, select:
00 = Gas Boiler
01 = Oil Boiler

(Option 13)
System Capability
Adjust this setting to suit the heating system capability. In the installer menu, select:
00 = Fast - the house usually reaches setpoint in < 1 hour
01 = Slow - the house usually reaches setpoint in > 1 hour

NOTE: THE Si PASSWORD MUST BE ENTERED IN ORDER TO PROGRESS TO OPTION 14.

(Option 14)
Si Reset
In order to reset the 'Si' (Service) feature, select yes and then press the > button to confirm.

(Option 15)
Si Status
Enable or disable the Service mode.

(Option 16)
Si Type
Select between Reduced Comfort (rEdU), Switched off (oFF!) and No effect - warnings only (noEc).

(Option 17)
Si due date
Set the no. of days until the next boiler service is due, (Default 365 days).

(Option 18)
Si warning date
Set the no. of days required for the Si warning, (Default 30 days).

(Option 19)
Si Audible alarm
Enable or disable the service audible alarm.

(Option 20)
Si Boost
Enable or disable the Si Boost feature (5 boosts).

(Option 21)
Si Password
Set the password to restrict access to the service settings. Use the + / - to set the first digit then press > to move to the next digit, etc. After the 4th digit has been set, press the > button again to confirm - the password will flash for a few seconds.

Display Error code E1

When the display shows an error code (E1) this indicates a sensor fault and the heating system will remain Off. Please contact your local heating service engineer to replace your Digistat.

Technical Data

DIGISTAT+, DIGISTAT+RF ROOM UNIT	RF703, RF704, 22099, 22102, 22104, 22110	22103 22105
Power Supply:	2 x AA Size, 1.5V LR6 batteries	230V ac 50Hz
Switch Type & Rating: Relay version:	SPDT 16(2)A 230V a.c. Volt free	
Min. recommended current:	10mA@24V a.c. (inductive)	
Radio frequency: (RF version)	433 MHz	
Radio Signal Range: (RF version)	30m typically. The range may be affected by the composition / density and number of walls between the Digistat RF and SCR.	
Temperature Range:	5 to 30°C	
Control Accuracy:	+ 0.5K @ 20°C	
Ambient Temperature:	Operating 0°C to 40°C / Storage –20°C to 55°C	
Mounting:	Suitable for surface or conduit box mounting	
Wiring: Relay: RF:	Designed for fixed wiring only, to comply with current IET wiring regulations (BS7671). No wiring required	
Ball Pressure Test:	75°C	
Pollution Degree:	2	
Software version:	6712119 - Digistat+2/+3 Si Relay (Mains) 6712120 - Digistat+2/+3 Si Relay (Battery) 6712121 - Digistat+2/+3 Si RF	
Maximum Radiated Power:	+7.5dBm (5.6mW)	
Energy Class:	IV = 2% (According to EU 811/2013, 812/2013, 813/2013, 814/2013)	

DIGISTAT (SCR)	
Power Supply:	230V a.c.
Switch Type & Rating:	SPDT (voltage free) 2(1)A 230V a.c. or 24V a.c./d.c.
Wiring:	Designed for fixed wiring only, to comply with current IET wiring regulations (BS7671).
Reception Frequency:	433MHz

Relevant EU Directives:	2014/53/EU RED 2006/66/EC Battery Directive 2011/65/EU RoHS Directive 2012/19/EU WEEE
Applied Standards:	EN60730-1; EN60730-2-9 EN 300 220-2; EN 301 489-3

Recycling

Batteries, rechargeable or not, should not to be disposed of into ordinary household waste. Instead, they must be recycled properly to protect the environment and cut down the waste of precious resources.

Your local waste management authority can supply details concerning the proper disposal of batteries.

This product should not be disposed of with household waste. Please recycle the products where facilities for electronic waste exist. Check with your local authorities for recycling advice.

Hereby, Schneider Electric Controls UK LTD, declares that this Programmable Room Thermostat Wireless is in compliance with the essential requirements and other relevant provisions of RED-DIRECTIVE 2014/53/EU. Declaration of confirmity can be downloaded from: www.draytoncontrols.co.uk

Drayton

401Southway Drive
Plymouth
PL6 6QT
United Kingdom

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