

# Wireless Programmable Room Thermostat

## Model: RF901

Consists of *Thermostat RF90T* and *Receiver RF90S*

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User Guide 06490310001 Iss A

## Installation Guide

### 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. Installing the *Digistat Receiver*

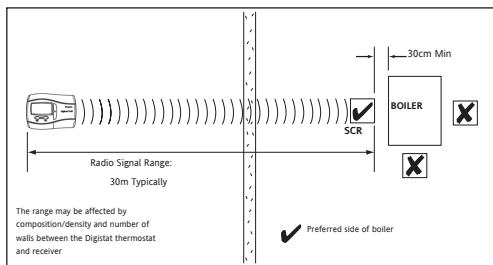
##### 1a. Location of the receiver

###### Location

The *Digistat 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 receiver 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 receiver is mounted on the wall nearest the final location of the *Digistat Thermostat* room thermostat and not less than 30cm from the boiler side panel.

**Warning: Installing the receiver too close to the metal side panel or mains cables may interfere with the radio signal.**

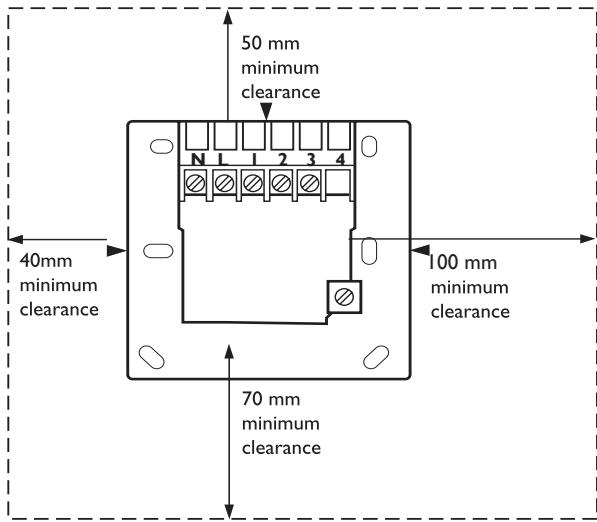


(Fig 1)

### 1b. Installation of the wallplate

Fixing (minimum wallplate clearances shown below)

- i. 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.
- ii. Fix the wallplate, terminals at the top, either direct onto the flat wall using wall plugs and no 6 x 1" wood screws or on a flush-mounting single conduit box using M3.5 x 14 screws.

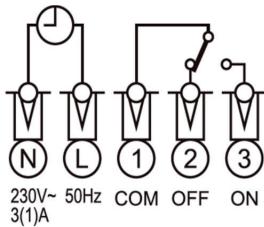


(Fig 2)

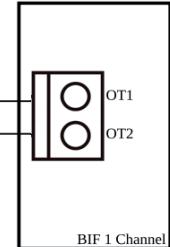
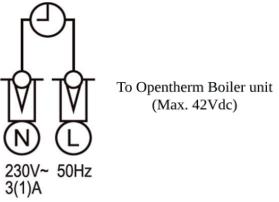
### 2. Wiring

This product is double insulated and does not require an earth connection. The receiver should be wired to the combi boiler or central heating wiring using the correct type of cable or flex. The receiver 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.

#### Relay Output



#### Opentherm Output



(Fig 3)

## If your boiler supports OpenTherm please follow these instructions:

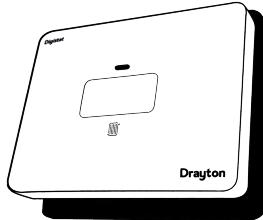
Remove the OpenTherm cables from the existing controller or thermostat. Connect the cables to the OpenTherm terminals OT1 and OT2 on the *Digistat*. Polarity is not important.

Wire L and N from a separate supply with a 3A fuse.

Note that when connected to an OpenTherm boiler, Installer Options 06 Valve Protection and 08 Application Type are not available. The following options will appear in the Installer Options list:

10 Upper CH water set point	30-80°C	Default 70°C
11 Lower CH water set point	10-25°C	Default 10°C
12 Set DHW temp	45-70°C	Default 60°C

- Replace the front cover of the receiver by locating the two latches at the top and then fasten the two screws at the bottom. As soon as the *Digistat* receiver has power it will be ready for automatic pairing with the *Digistat RF Thermostat*. Before pairing it is possible to test the wiring to the boiler by pressing the button on the receiver. The boiler will fire for 1 hour or until the button is pressed again.

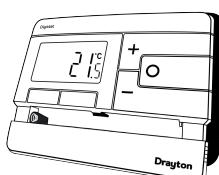


(Fig 4)

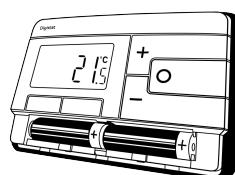
## 4. Automatic pairing

When the *Digistat* receiver is powered and the *Digistat* Thermostat has batteries inserted both will automatically pair. While this short process is ongoing the receiver LED will flash green/amber and the thermostat will display the word SCAN.

Once paired the receiver LED will be solid green and the thermostat display will show the words PAIR REC for 3 seconds, before displaying current time and temperature.



(Fig 5)



(Fig 6)

- The *Digistat* is now installed and will automatically start to control room temperature.

## INSTALLER OPTIONS

To make changes to the default Installer Options shown below, enter the Installer Options menu by pressing the settings button for 3 seconds. This allows access to the User Menu 01, the Advanced User Settings Menu 02, the Installer Settings 03, and Service Interval Settings 04. Use the + and - buttons to scroll to Installer Options and press O to select. You can exit the menu by pressing until you have returned to the home screen. In the Installer Options menu (Fig 8), scroll through the options using the + and - buttons and press O to select. Scroll through the different settings using the + and - buttons and press O to select and save. (Fig 9 shows Option 02 OFF).



(Fig 8)



(Fig 9)

### (Option 01) Partial Sight Assistant

When enabled, audible tones indicate when the setpoint is more than, less than or equal to the current room temperature when a user manually adjusts the setpoint using the + button:

Setpoint > room temperature - single high tone per 0.5°C increase

Setpoint = room temperature - double tone

Setpoint < room temperature - single low tone per 0.5°C decrease

### (Option 02) Frost Protection

The *Digistat* will switch on the heating if the temperature falls to 5°C and maintains a temperature of 7°C even when in OFF mode.

### (Option 03) Minimum Setpoint Limit

Change minimum setpoint temperature. After any changes to setpoint limits, all setpoints in AUTO, MANUAL, BOOST and HOLIDAY modes will be modified to conform accordingly.

### (Option 04) Maximum Setpoint Limit

Change maximum setpoint temperature. After any changes to setpoint limits, all setpoints in AUTO, MANUAL, BOOST and HOLIDAY modes will be modified to conform accordingly.

### (Option 05) Optimum Start

When enabled, this uses current ambient temperature, the next scheduled setpoint and heat gain data captured by the device to adjust the thermostat setpoint early, so the ambient temperature is at the required level when the next event starts.

### Delayed Start

When enabled, this uses current ambient temperature, current event setpoint and heating characteristics of the environment to delay implementation of the setpoint if the ambient temperature is already close to it, therefore saving energy.

### (Option 06) Valve Protection Time

In some hydronic heating systems it may be required to protect the valve by operating it for a given time. When enabled, this maintenance feature ensures that each relay output is operated for at least one (1) minute each week.

## INSTALLER OPTIONS - *continued*

### (Option 07) Sensor Fault Function

In the event of a sensor fault, central heating output is reduced to 30% by turning heating ON for 3 minutes, then OFF for 7 minutes.

### (Option 08) Application Type

Select the central heating system energy type.

### (Option 09) System Capability

Select the flow capability of the heating system.

### (Option 13) Installer Settings Lock

When enabled, installers can lock the installer settings menu until a 3 digit code is entered. If the code is forgotten while device is locked, please call the Technical Helpline.

### (Option 20) Reset (Service Interval settings are NOT reset)

Reset the *Digistat* to its original factory settings.

Note that resetting the thermostat will lose the pairing with the receiver. The receiver will also need to be reset before attempting to pair again. To reset the receiver press the receiver button for 15 seconds until the LED flashes green/amber.

### (Si Option 01) Si Status

Enable or disable Service Interval Mode.

### (Si Option 02) Si Type

Select effect imposed on the heating when service is due.

### (Si Option 03) Service Due Date

Set date when next service is due.

### (Si Option 04) Warning

Select no. of days before service due date.

### (Si Option 05) Service Due Alarm

Enable or disable the audible service due alarm.

### (Si Option 06) Si Boost

Enable or disable the Service Boost feature (5 boosts).

### (Si Option 07) Password Reset

Change the 4 digit PIN. If you forget your Si password, please call the Technical Helpline.

### Technical Data

<b>Power supply</b>	230VAC +/-10%, 50Hz
<b>Switch type &amp; rating</b>	3(1)A at 24~230V/50Hz
<b>Min. recommended current</b>	SPDT (voltage free contacts) 10mA@24VAC (inductive)
<b>Ambient temperature (receiver)</b>	Operating 0°C to 45°C Storage - 20°C to 65°C
<b>Ambient temperature (thermostat)</b>	Operating 0°C to 40°C Storage - 20°C to 65°C
<b>Ambient humidity (non condensing)</b>	20% to 80%, 90% non-condensing
<b>Temperature range</b>	5°C to 30°C
<b>Rated impulse voltage</b>	4KV
<b>Ball pressure test</b>	75°C
<b>Disconnection means</b>	1B
<b>Automatic action</b>	100,000 cycles
<b>Operating Frequency</b>	2402-2480 MHz
<b>Radio Frequency</b>	433.92 MHz
<b>Max RF Power transmitted (Bluetooth)</b>	+10dBm
<b>Pollution situation</b>	Degree 2
<b>Protection level</b>	IP30
<b>Wiring</b>	Designed for fixed wiring only, to comply with IEE wiring regulations
<b>Energy Class</b>	V = 3% using OpenTherm connection
<b>Relevant EC Directives:</b>	2014/53/EU (RED) 2011/65/EU (RoHS) 2012/19/EU (WEEE)
<b>Standards:</b>	EN 60730-1 EN 60730-2-7 EN 60730-2-9 ESTI EN 300 328 ESTI EN 301 489 EN 50581 EN 15500

	What is it	Select between				Default
Installer Options	01 Partial Sight Assistant	OFF	ON			ON
	02 Frost Protection	ON	OFF			ON
	03 Low Set Point C	5	High Limit			5
	04 High Set Point C	Low Limit	30			30
	05 Optimum Start	OFF	Delayed Start	Optimum Start		OFF
	06 Valve Protection Time (Mins)	OFF	5	4	3 2 1	OFF
	07 Sensor Fault Function	OFF	ON			OFF
	08 Application Type	Gas	Electric	Oil	Heat Pump	Gas
	09 System Capability	Fast Flow	Normal/Slow Flow			Fast Flow
	13 Installer Settings Lock	OFF	ON			OFF
Service Internal Options	20 Reset	NO	YES			NO
	01 Si Status	OFF	ON			OFF
	02 Si Type	Reduced Comfort	Heating OFF	No Effect		Reduced Comfort
	03 Si Due Date	YY/MM/DD				
	04 Si Warning	0	99			30
	05 Si Due Alarm	OFF	ON			OFF
	06 Si Boost	OFF	ON			OFF
	07 Si Password Reset	Select 4-digit PIN				0000

# User Guide

The Drayton *Digistat* thermostat is a universal thermostat with 24 hour, 5-2day or 7day program types and up to 8 time/temperature events per day and can also be used as a simple room thermostat.

## Clock Setting

Your *Digistat* is fitted with a “real-time clock”, which is pre-set at the factory; you will not have to alter the time settings. A special feature of this real-time clock is it will automatically change over during the GMT/BST summer/winter change-over, removing the need to manually alter the clock at these times.

## General Operation

Programmable thermostats do not have “On” and “Off” times like traditional timers. They offer temperature control both day and night and you simply select which temperatures you require at each point in the day.

With the unit in “Auto Mode” (the calendar icon is visible at the bottom of the screen) the temperature can be changed for a short time by using the + and – buttons. Changing the temperature in this way will keep the *Digistat* set to your new temperature until the next pre-programmed event (at which time it will revert to programmed temperature). The temperature you are setting will flash on the screen. Once temperature is set, the unit will revert to showing the room temperature again. The  indicator will show on the screen if the unit is calling for heat.

## Programming the Digistat

Your *Digistat* comes with the following settings pre-programmed for your convenience and is suitable for those working out of the house during a typical 9-5 pattern. When the 5-2day program type is selected the pre-set temperatures will be different Mon-Fri and Sat-Sun, as per the tables below:

### Pre-set Program 1 (24h, 5-2day weekdays, or 7day):

Event	1	2	3	4	(5)*	(6)	(7)	(8)
Time	06:30	08:30	16:30	22:30				
Temperature	20°C	16°C	21°C	OFF				

### Pre-set Program 1 (5-2day weekend):

Event	1	2	3	4	(5)*	(6)	(7)	(8)
Time	07:00	09:00	16:00	23:00				
Temperature	20°C	18°C	21°C	OFF				

\*To add these additional time periods manually (max. 8 per day) please refer to the steps to the right.

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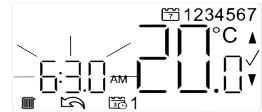
Hereby, Schneider Electric Controls UK Ltd, declares that *Digistat RF901* is in compliance with Directive 2014/53/EU. The declaration of conformity may be consulted at [www.draytoncontrols.co.uk](http://www.draytoncontrols.co.uk)

## Setting up Times/Temperatures on the Digistat

- With the product operating as normal in Auto Mode, press  once. Use + and – to select the day or set of days you want to adjust the times and temperatures for. Press O to confirm.



- The time on the display will now be flashing as shown, use + and – to adjust the first period start time. Press O to confirm.



- Once the time has been set the temperature on the display will now be flashing, use + and – to adjust the temperature for the first time period. Press O to confirm.



- Move to the next time and temperature periods and adjust as needed, confirming the changes by pressing O. The new schedule will be saved pressing O when the word SAvE is flashing.



- In Pre-set Program 1 you will have 4 time periods available, to add more (max. 8 per day) press + when you see the SAVE option on-screen and time period 5 at the bottom of the screen, to scroll to the Add option. Press O to add time period then adjust time and temperature as required.



- To exit press  to go back until you return to the home screen.



## All done!

You have completed the quick start and the unit is now set correctly to follow your required timings. For further user information surrounding the thermostat and the app control please use the website where you can download full user instructions.



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