

Replacement Wiring

If using the ST9400 to replace other Honeywell Programmers, the equivalent wiring terminations are shown in the tables below.

ST6200/ST6300/ST6400	L	N	1	2	3	4		
ST9400	L	N	1	2	3	4		

ST699/ST799	L	N	3	4	5	6	7	8
ST9400	L	N	4	2	not connected	3	1	not connected

ST7100	L	N	3	4	5	6	7	8
ST9400	L	N	not connected	2	4	not connected	1	3

ST7000A	L	-	2	3	4			
ST9400 (see notes 1, 2)	L	N	1	3	4			

Notes: (1) A permanent mains supply must be provided for the ST9400 Programmer.
(2) ST9400 must be configured as a Mini-Programmer

Replacing Other Manufacturers' Time Controls

ST9400 Programmers will mount directly onto many existing manufacturers' back-plates, without the need for re-wiring. However, they are also supplied complete with a wiring back-plate, should this not be the case.

Refer to Honeywell for wiring conversion diagrams. (see Wiring Guide document EN3H2393 Issue 12)

Completion Checklist for Installation

1. Check unit powers up correctly, and that the display does not remain blank.
2. Set Heating and Hot Water operating modes to **AUTO** and switch Heating and Hot Water on and off using the **OVERRIDE** buttons, to ensure the system is operating correctly.
3. Check the factory-set day, date, and time are correct and adjust if necessary. Refer to the User Guide for details.
4. If required, enter Installer Mode and adjust Installer Parameters to match the lifestyle and needs of the User. Remember to make a note of these parameter changes in the Configuration Data section of the User Guide.
5. Explain the operation of the product to the User and help them to set their Heating and Hot Water programmes. There are 3 built-in profiles that can be used as a basis for typical User programmes.
6. Explain when the User should contact someone to arrange a Service Visit.
7. Write the date of installation, your name and telephone number in the space provided in the User Guide, in the section 'Boiler & System Service Log'
8. Remember to leave the User Guide and Installation Instructions with the User and remind them to keep them in a safe place. This forms part of a Home Information Pack.
9. If you have configured the product as a Mini-Programmer, ensure that you tick the appropriate box on the Contents page of the User Guide, and complete the appropriate Configuration Guide section.

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ST9400A & ST9400C Programmer INSTALLATION INSTRUCTIONS



Introduction

ST9400 is an Electronic Programmer which provides accurate time control for central heating systems with separate programmes for heating and hot water. ST9400A is a 1-day version and ST9400C is a 7-day version.

ST9400 is suitable for replacing a wide range of Programmers on the market, and is a direct replacement for Honeywell ST6400 Programmers without the need for re-wiring.

ST9400 Programmers can be combined with other Honeywell controls such as Room Thermostats, Cylinder Thermostats, Wiring Centres and Zone or Diverting Valves to form a fully automatic central heating control system.

Specification

Power Supply: 230V~, 50...60Hz, 10W

Switch Action: 2 x SPDT

Switch Rating: 230V~, 50...60Hz, 3(3)A

Factory set clock

Power Reserve: lifetime battery

Programmes/Settings: permanently stored in NV RAM

Approvals: Conforms to protection requirements of Directives 2006/95EC and 89/336EC

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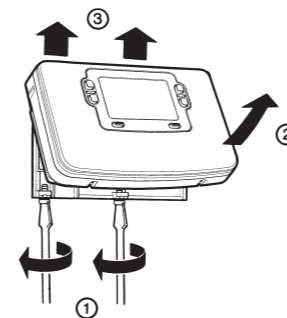
Mounting

If the ST9400 is replacing an existing ST6400 then the existing wall-plate and wiring may be used, subject to any required electrical checks.

The Programmer should be mounted at a level where the display can be seen clearly, (1.2 to 1.5m from the floor) and the ambient temperature is within the range of 0 to 40°C. The ST9400 is for use in normal domestic environments.

CAUTION

Isolate power supply and make safe before wiring the unit to prevent electric shock and equipment damage. Installation should be carried out by a qualified electrician or competent heating engineer.

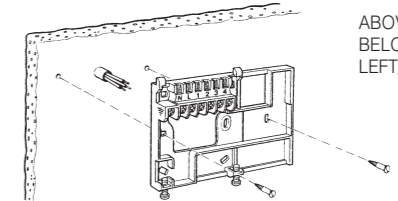


To remove the unit from the wall-plate, slacken the two securing screws at the bottom of the ST9400 and hinge the unit up to separate the two halves.

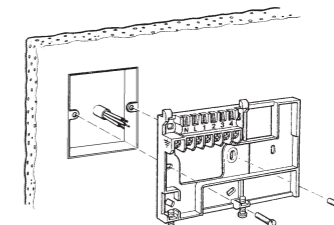
Mounting Options

RECOMMENDED CLEARANCE DISTANCES:

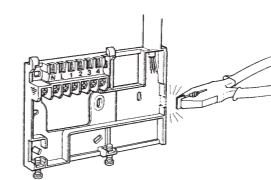
ABOVE WALLPLATE: 110mm
BELOW WALLPLATE: 100mm
LEFT/RIGHT OF WALLPLATE: 10mm



a. Surface mounting concealed wiring



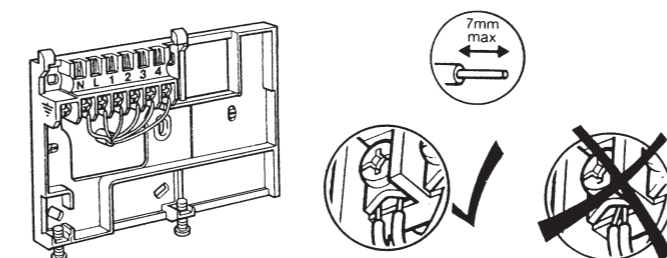
b. Flush switchbox
Fixing holes are spaced to suit BS4662 requirements



c. Surface mounting with surface wiring in mini trunking

Ensure the mounting surface is supporting and fully covers the wiring wall-plate.

Wiring



ALL WIRING MUST BE IN ACCORDANCE WITH I.E.E. REGULATIONS. THIS UNIT IS FOR FIXED WIRING ONLY.

A switch, having contact separation of at least 3mm in all poles (formerly Class 'A'), must be incorporated in the fixed wiring as a means of disconnecting the supply.

The unit is a Class II (double insulated) device. A parking terminal is provided for external earth continuity.

The system must be appropriately fused. A fuse rated at no more than 3 Amps should be installed.

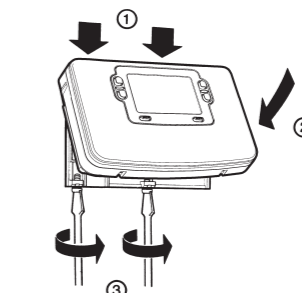
The unit has 4 knockouts for surface wiring, care must be taken to ensure that the cable or mini-trunking completely fills the knockout hole without leaving any gaps.

Final Assembly

Clip the unit onto the hinges on the top of the wallplate and hinge down into position. Tighten the two securing screws using a screwdriver.

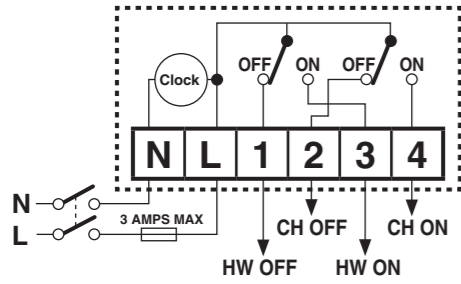
Switch on the power – the unit will now be operating according to the built-in programme. Note : the ST9400 is supplied with a factory set clock for faster installation .

Refer to ST9400 User Guides for programming details.

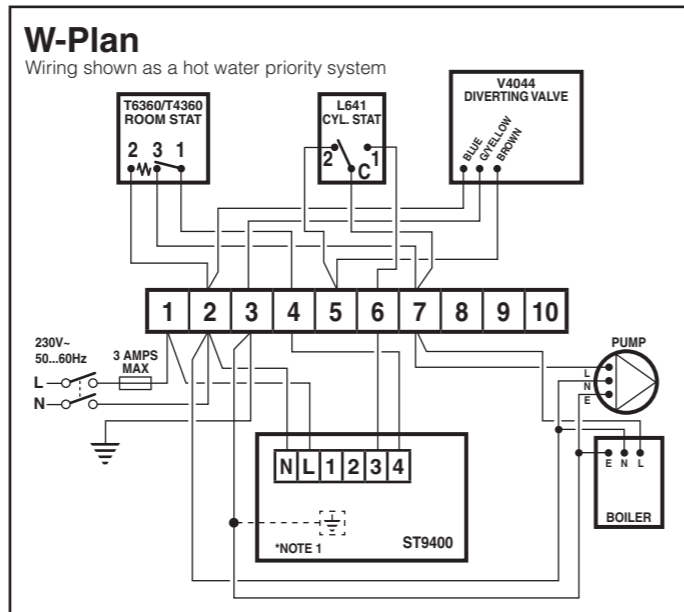
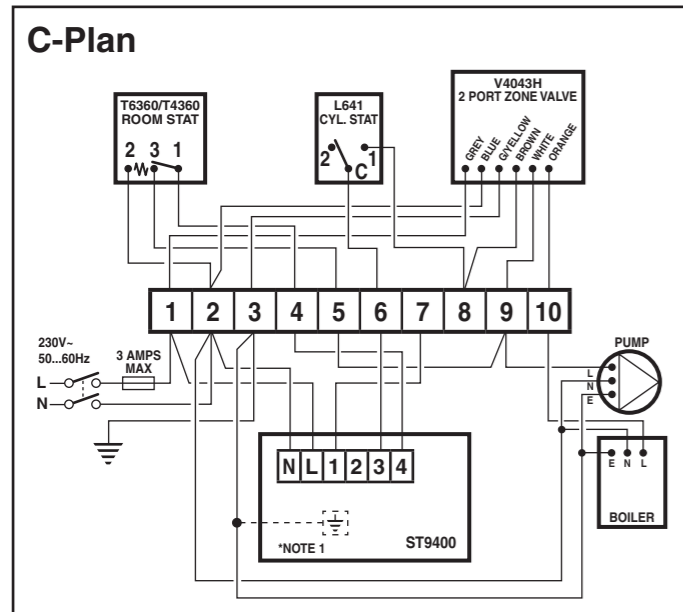
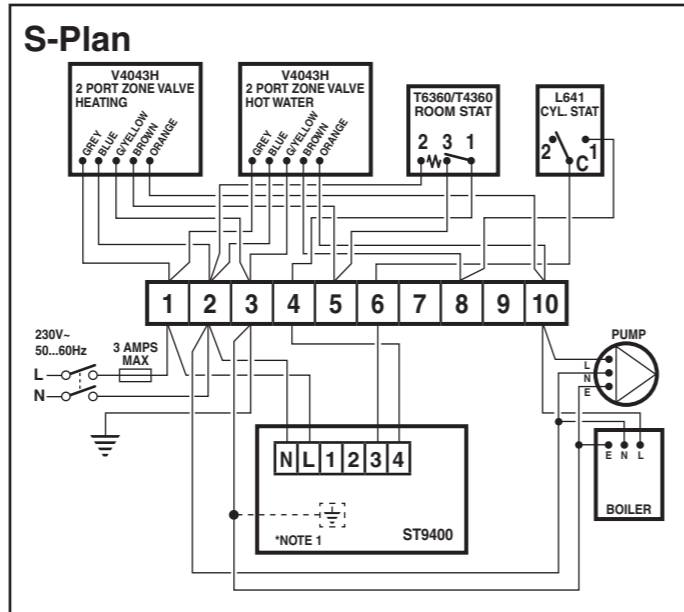
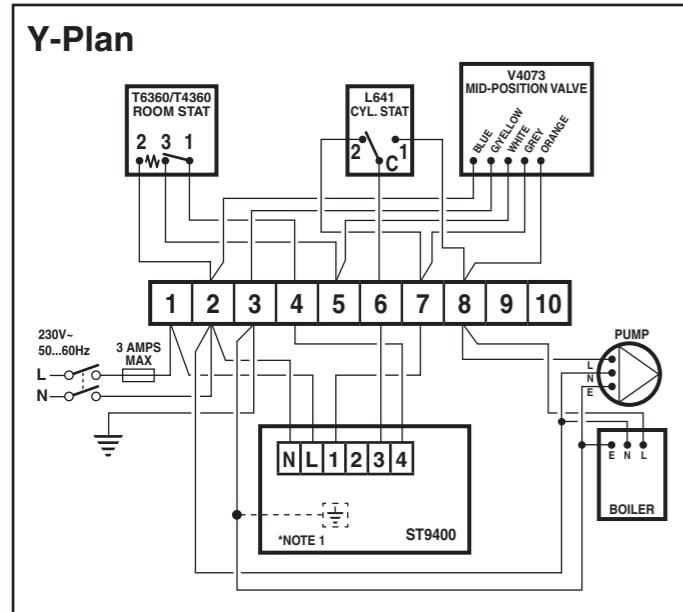


WIRING CONNECTIONS

ST9400 Internal Wiring



Sundial Plan Wiring Diagrams



Alternative Wiring Connections for other Honeywell Room Thermostats

Y-Plan, S-Plan, and C-Plan Systems										
10-WAY WIRING STRIP	1	2	3	4	5	6	7	8	9	10
Honeywell T6360 ROOM-STAT		2		1	3					
Honeywell ELECTRONIC THERMOSTAT (BATTERY POWERED)				A	B					
Honeywell WIRELESS THERMOSTAT (RECEIVER UNIT)*	L	N		A	B					

W-Plan System										
10-WAY WIRING STRIP	1	2	3	4	5	6	7	8	9	10
Honeywell T6360 ROOM-STAT		2		1			3			
Honeywell ELECTRONIC THERMOSTAT (BATTERY POWERED)				A			B			
Honeywell WIRELESS THERMOSTAT (RECEIVER UNIT)*	L	N		A			B			

* Wireless thermostat receiver unit MUST have permanent mains power from fused spur to operate correctly

Notes

- The ST9400 is a Class II (double insulated) device. A parking terminal is provided for earth wiring continuity, if required.
- In the Sundial S-Plan, W-Plan, and Y-Plan wiring diagrams, connections are shown to basic boilers only. For wiring connections to Pump over-run boilers refer to Boiler manufacturers' instructions or to Honeywell for assistance.
- It is recommended that gravity circulation hot water systems are fitted with a suitable hot water control valve as shown in the Sundial C-Plan system. For systems installed without this valve, ST9400 can be configured as a Mini-Programmer. This is done within the Installer Mode (see page 3 for details). Refer to Honeywell for details of suitable wiring schematics.

ADDITIONAL PRODUCT FEATURES

Installer Mode

The ST9400 has a special Installer Mode where some features can be adjusted to suit user lifestyle or preferences – these are called installer Parameters, and are listed in the table below, along with a description of the options that are possible.

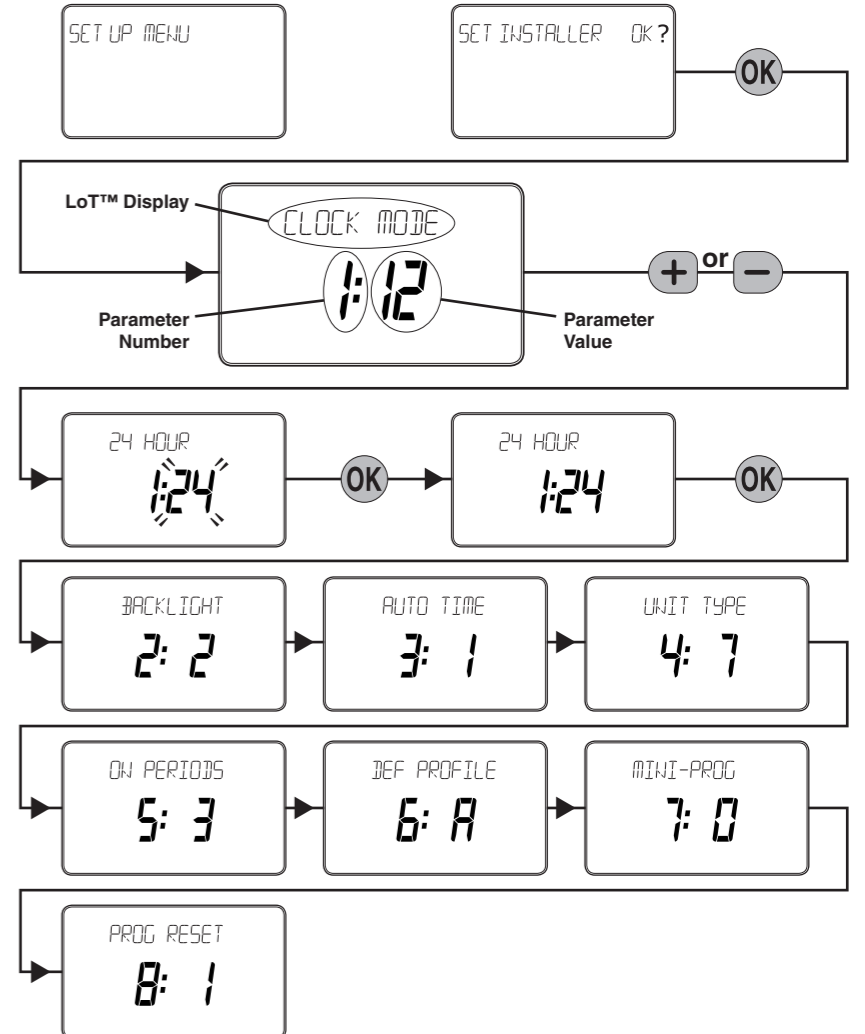
INSTALLER PARAMETER	Parameter Number	LoT™ Display Description	Default Value	Range of Values	Description [LoT™ Display Description]
24hr or am/pm clock display	1	CLOCK MODE	12	12, 24	12 = am/pm display, [AM-PM] 24 = 24hr display [24 HOUR]
Configure backlight operation (backlight consumes no additional energy)	2	BACKLIGHT	2	0, 1, 2	0 = off, [NO B-LIGHT] 1 = on if button pressed, [B-L DELAY] 2 = on continuously [B-LIGHT ON]
Enable/disable auto time change	3	AUTO TIME	1	0, 1	0 = disabled, [NO CHANGE] 1 = enabled [TIME CHANGE]
* 1-day or 5/2-day or 7-day operation	4	UNIT TYPE	7	1, 5, 7	1 = 1-day operation, [1-DAY] 5 = 5/2-day operation, [5-2 DAY] 7 = 7-day operation [7-DAY]
Number of ON/OFFs per day	5	ON PERIODS	2 (for ST9400A) 3 (for ST9400C)	2, 3	2 = 2 on/off per day, [2 PER DAY] 3 = 3 on/off per day [3 PER DAY]
Select default time programme	6	DEF PROFILE	A	A, b, C	A = standard, [PROFILE A] b = at home, [PROFILE B] C = economy [PROFILE C]
Configure Mini-Programmer	7	MINI-PROG	0	0, 1	0 = standard programmer, [NO M-PROG] 1 = Mini-Programmer [M-PROG ON]
** Reset all parameters	8	PROG RESET	1	0, 1	0 = do not reset [RESET OFF] 1 = default parameters [RESET ON]

* this parameter is NOT available on ST9400A, which is 1-day operation only.

** this parameter by default has a value of 1, unless you change any other parameter, when it will change to 0. Set it to 1 to reset all parameters back to defaults.

To Enter Installer Mode:

- Ensure the slider is in the RUN position, then press and hold the **OK** and **+** buttons together for 8 seconds. Ignore the 'NOT VALID' that is displayed for a few seconds. The message 'SET UP MENU' will show briefly, followed by 'SET INSTALLER OK?'
- Press the **OK** button to take you into the Installer Mode Parameter Menu.
- Parameter 1 is now available to change. This is to allow you to change the clock format from 12 hour AM/PM to 24 hour. At every step, the LoT™ Display will inform you what the parameter means and what option you have selected. The parameter number is shown on the display separated by a colon from the parameter value.
- You can change the parameter value by pressing the **+** or **-** buttons. At this point the description in the LoT™ Display will change and the parameter value will flash. If you press **OK** the value will stop flashing and will be saved for use.
- Press **OK** to move to the next parameter available for editing. The parameter number will change accordingly.
- Keep pressing **OK** to step around the list of parameters, and use **+** or **-** buttons to change the parameter value.
- Any parameter changes that have been confirmed with the **OK** button will be saved and used.



To Exit Installer Mode:

You can exit Installer Mode at any time by moving the slider to the next position and then back again to **RUN**.

Note: Installer Mode will exit automatically after 10 minutes if the slider is not moved.