

## CM921 WIRELESS PROGRAMMABLE THERMOSTAT

### PRODUCT SPECIFICATION SHEET




The **CM921** thermostat is designed to provide automatic time and temperature control of heating or cooling systems in villas and apartments.

It can be used as part of a system in conjunction with combi-boilers, oil-burners and gas fired boilers, circulation pumps, thermal actuators, zone valves and electric heating systems (<10A). In combination with other **CM921** room units and **HC60NG** receivers it can be used to control multi-zone applications (up to 4 zones).

The radio frequency controlled **CM921** system pack consists of a room unit **CMT921A** and a relay box **R6660D (HC60NG)**. No wiring to the room unit is required. The installer only needs to wire the relay box to the controlled device (e.g. boiler) and mount the room unit in a suitable location where RF communication is reliable. The **CM921** uses reliable RF communication technology in the 868MHz band.

The **CM921** extra large LCD display, dynamic text display and controls layout are identical to the **CM901** 'wired' thermostat. The unit is ideal for consumers who want reliable and precise temperature control from a modern looking, simple to program and easy-to-use product.

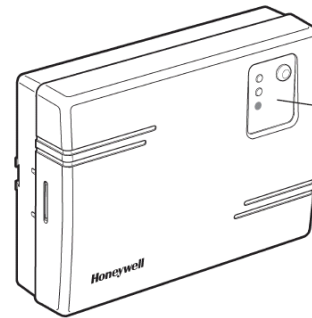
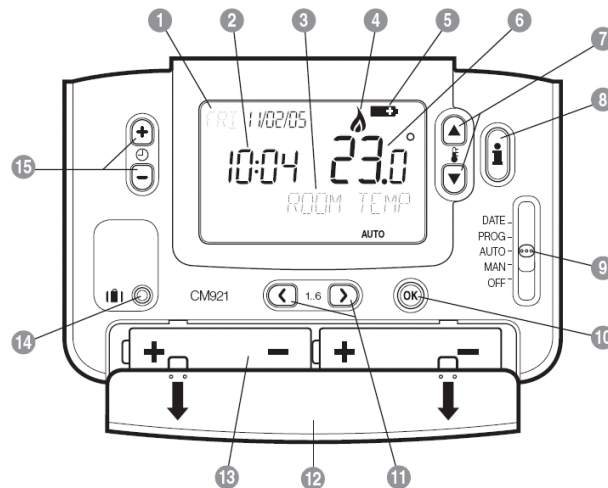
### FEATURES

- **CM921** can be installed without disrupting your room décor as no wiring connection is required between the room unit and the boiler
- Attractive, slim, ultra-modern styling makes it ideal for location in any type of home
- 1-day heating programming
- A dynamic text display on the LCD that gives enhanced feedback to the user / installer
- LCD Backlighting to illuminate the display for easier viewing in low light conditions
- Reliable RF communication utilising 868 MHz band with 1 % duty cycle limit to minimise communication disturbance
- Every room unit can be bound with several relay boxes (e.g. to control several electric heating panels)
- Armchair programmed
-  Holiday button that provides energy savings by reducing to a constant temperature for 1 to 99 days when people are on holiday, returning to normal operation (AUTO or MANUAL) on the day of their return.
- EEPROM memory holds the user program indefinitely
- OFF position has an integral frost protection setting at minimum 5°C (installer adjustable) so that pipes in the house will never freeze in winter.
- Communication compatibility with other Honeywell product such as HR80, HM80 and HCE80.
- **CM921** can be used to control a zoning system with up to 4 zones
- Maximum system efficiency and extended boiler life due to unique zoning system synchronisation
- Automatic Summer / Winter time change adjusts the time automatically to daylight saving time.
- Standard room units and receiver boxes are used for zoning applications algorithm
- When used with the table top stand the room unit can be positioned anywhere in the room where RF communication is reliable
- 24...230V 10A resistive, 3A inductive SPDT relay provides compatibility with most domestic central heating systems reducing the need to stock many different models.
- The **HC60NG** may be surface or wallbox mounted.
- Installer Set-Up Mode allows extra functions to be set at the discretion of the installer to match the consumer applications and needs:
  - Optimisation
  - Pump Exercise
  - Upper / Lower Setpoint Limit Adjust
  - Temperature offset
  - Minimum ON time
  - Cycle rate
  - Heat / Cool Operation
  - Proportional Band Width
  - Fail-safe mode for communication loss

## CONTROLS/DISPLAY LAYOUT

### Room Unit Layout:

1. Day & Date Display
2. Time Display
3. Dynamic Text Display (DTD)
4. Burner On Indicator
5. Battery Low Indicator
6. Temperature Display
7. Temperature Change Buttons
8. Information Enquiry Button
9. Slider Switch
10. Green OK Button
11. Program Buttons
12. Battery Cover
13. Battery Compartment
14. Holiday Button
15. Time Change Buttons



Push button and relay status LED's

## SPECIFICATIONS

### ELECTRICAL

Room unit power supply	: 2 x 1.5 V IEC LR6 (AA) Alkaline cells
Battery life	: Minimum 2 years
Battery replacement	: Program retained in EEPROM
Receiver power supply	: 230V AC +10% - 15%, 50Hz
Switch type	: SPDT potential free
Output rating	: 24-230 V AC, 10 A resistive, 3 A inductive 0.6 p.f.
Wiring (receiver only)	: Cable terminals for mains and relay wiring for max 2.5 mm <sup>2</sup> wire
Wire access	: from the rear (wall box mounting), right and bottom

### RF

RF operation band	: ISM (868.0-868.6) MHz, 1% duty cycle
RF communication range	: 30 m in a residential building environment
RF communication	: short, high rate transmissions to minimise air time and avoid collisions
Blocking immunity	: Receiver class 2 (ETSI EN300 220-1 version 1.3.1)
RF binding method	: Factory pre-bound with the room unit.

### ENVIRONMENTAL & STANDARDS

Operating temperature	: 0 to 40°C when relay load < 8 A 0 to 30°C when relay load > 8 A
Shipping & storage temperature	: -20 to 55°C
Humidity	: Humidity range 10 to 90% rh, non-condensing
IP class	: 30
Meeting the following standards	: EN60730-1(Nov 2000), EN55014-1(1997), EN55014-2(2000), ETSI EN300 220-3 (2000), ETSI EN301 489-3(2000)

### TEMPERATURE CONTROL

Sensing element	: 100K (@ 25 °C ) NTC thermistor
Control form	: Fuzzy Logic Algorithm
Minimum ON time	: 10% of cycle time (min one minute), adjustable to 2 to 5 min (see installer set up)
Cycle rate	: Selectable by application (see installer set up)
Temperature control accuracy	: ±0.5 K (nominal) @ 20°C, 50% load 3K Δ/hour
Fail-safe mode	: Off or cycling depending on the CM927 system set-up

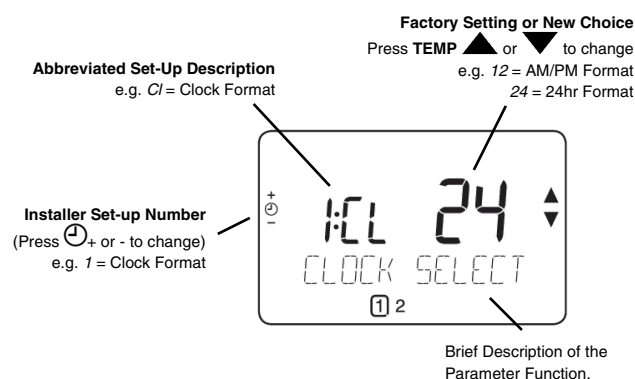
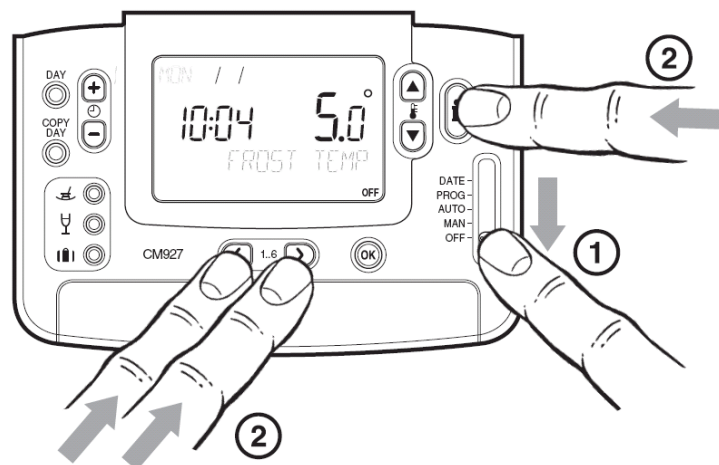
### TIME SETTING/PROGRAMMING

Time display	: 24 hour or 12 hour AM/PM format
Time keeping accuracy	: Typically better than 10 minutes per year
Program	: 1-day with 6 daily time and temperature level changes
Time setting resolution	: Time of day - 1 minute Program – 10 minute steps
Temperature setting range	: Program : 5 to 35°C in 0.5 °C steps Frost : 5°C or equal to lower limit (5 °C to 16°C). Frost protection does not work in cooling mode
Room Temperature display range	: From 0°C to 50 °C

## INSTALLER SET-UP

To enter the installer set-up mode:

- Move the slider switch to the **OFF** position.
- Press and hold the **INFO i** button and the two program buttons '< >' together.
- The unit will display the first parameter of installer parameter group category 1 (from n.1 to n.19).
- Press the **TEMP ▲** or **▼** buttons to change the factory setting. The display will flash indicating that a change has been made.
- Press the green **OK** button to confirm this change and the display will stop flashing.
- Press the **⊕ +** button to go to the next parameter.
- Press the program button **>** to go to category 2 in the Installer mode (from n.1 to n.14).
- To exit the installer mode, move the slider switch to the **AUTO** or **MAN** positions.



### In Installer set-up we can:

- Set-up specific applications parameters
- Enable special features
- Configure system timing master for the zoning system

Specific Applications		Setting		What do you need to change?
		Cycle/ Hour	Minimum ON time (in minutes)	<b>Note :</b> All parameters listed below belong to <b>category 2</b> – System Parameters (see <b>Installer Parameters Table</b> )
Heating	Gas Boilers (<30KW)	6	1	No changes required
	Oil Boiler	3	4	1. Set Minimum ON Time to 4 minutes. 2. Set Cycle/Hour to 3.
	Thermal Actuator	12	1	Set Cycle/Hour to 12.
	Zone valve	6	1	No changes required.
Air conditioning				1. Configure the thermostat to allow switching between heating and cooling modes (set parameter n.4:HC to 1) 2. Set the thermostat accordingly to the required mode of operation (heating or cooling) by pressing the <b>TEMP ▲</b> or <b>▼</b> buttons together for 5 seconds. Modify the cooling program as required.
	Heat Pump/ Air conditioner	3	4	1. Set Minimum ON Time to 4 minutes. 2. Set Cycle/Hour to 3.
	Fan coil	6	1	No changes required.

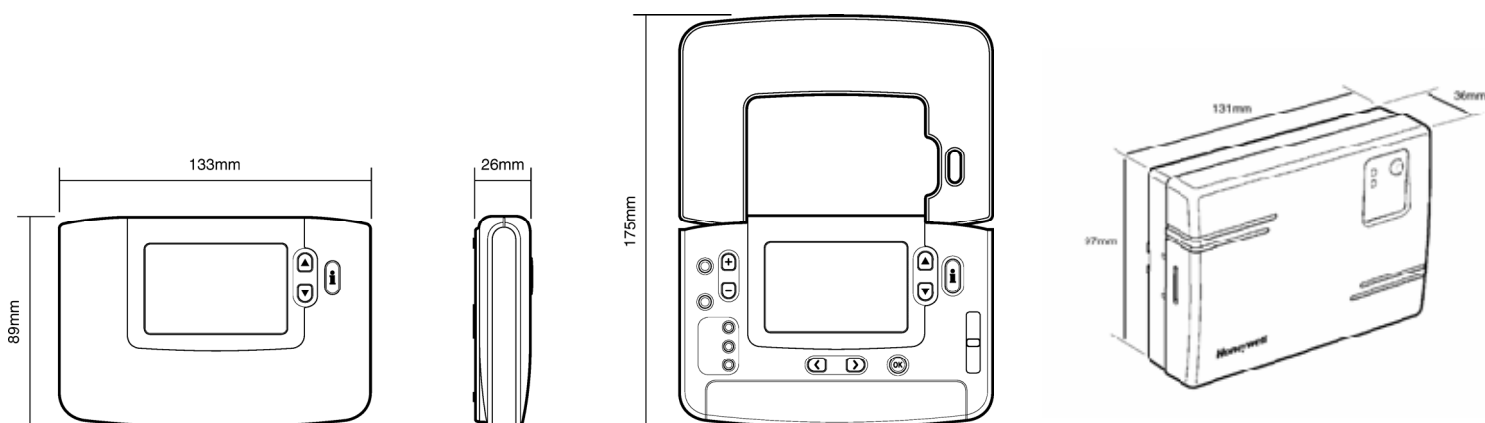
Special Features	Description	Setting
Optimisation (Variable Start Time)	The thermostat will adjust the start time in the morning/afternoon so the desired temperature is reached by the start of the program period. The system will restrict the start time to a max of 2 hours.	To enable: Set parameter 8:OP (category 1) to 1.
Heating or Cooling Operation	This product can be used for heating or cooling applications. If you select cooling mode the control algorithm and factory default program will be modified. You can independently modify the heating and cooling profile.	To enable: Set parameter 4:HC (category 2) to 1.
Summer/Winter Auto time change	This feature moves time automatically on the last Sunday of March and the last Sunday of October. The feature is factory enabled.	To enable: Set parameter 3:tC (category 1) to 1.
Temperature Offset	If the thermostat is located in a particularly hot/cold location for reliable signal transmission reasons then the measured/displayed temperature can be adjusted by +/- 3°C. This is useful if the homeowner wants the reading to match another appliance temperature display.	Set parameter 12:tO (category 1) to the required offset value.
Upper/Lower Temperature Limit	The normal upper temperature limit of 35°C can be reduced to 21°C to save the homeowner energy. The normal lower limit of 5°C can be increased up to 21°C to protect inhabitants from cold.	Set parameter 6:uL (category 1) to the desired upper limit. Set parameter 7:LL (category 1)

## INSTALLER PARAMETER TABLES

Parameter	Installer Set-Up Number / Abbreviation (Press + or - keys to select)	Factory Setting		Optional Setting	
<b>Category 1 Parameters – Room Thermostat Settings</b>					
		Display	Description	Display	Description
AM-PM / 24hr Display	1:CI	24	24 hr clock display	12	12 hr AM / PM clock display
RESET Time / Temperature Program	2:rP	1	Time / Temperature profile set to factory default Changes to 0 when one of the time/temp profiles are changed	0 1	Time / Temperature are as programmed To restore the factory profile set to 1
Automatic Summer/Winter Time Change	3:tC	1	Automatic Summer/Winter Time Change Enabled	0	Automatic Summer/Winter Time Change Disabled
LCD Backlighting	5:bL	1	Backlighting Enabled	0	Backlighting Disabled
Upper Temperature Limit	6:uL	35	35°C Upper Temp. Limit	21 to 34	21°C to 34°C adjustment in 1°C steps
Lower Temperature Limit	7:LL	5	5°C Lower Temp. Limit	6 to 21	6°C to 21°C adjustment in 1°C steps
Optimisation	8:OP	0	Optimisation disabled	1	Optimisation enabled
Temperature Offset	12:tO	0	No offset	-3 to +3	-3°C to +3°C adjustment in 0.1°C steps
Proportional Band Width	13:Pb	1.5	1.5°C Proportional Band	1.6 to 3.0	1.6°C to 3.0°C adjustment in 0.1°C steps
Reset Parameters to Factory Defaults	19:FS	1	All settings held are the factory defaults.  Changes to 0 when one of the parameter values are changed	0 1	Settings are as modified above  To restore the factory profile set to 1

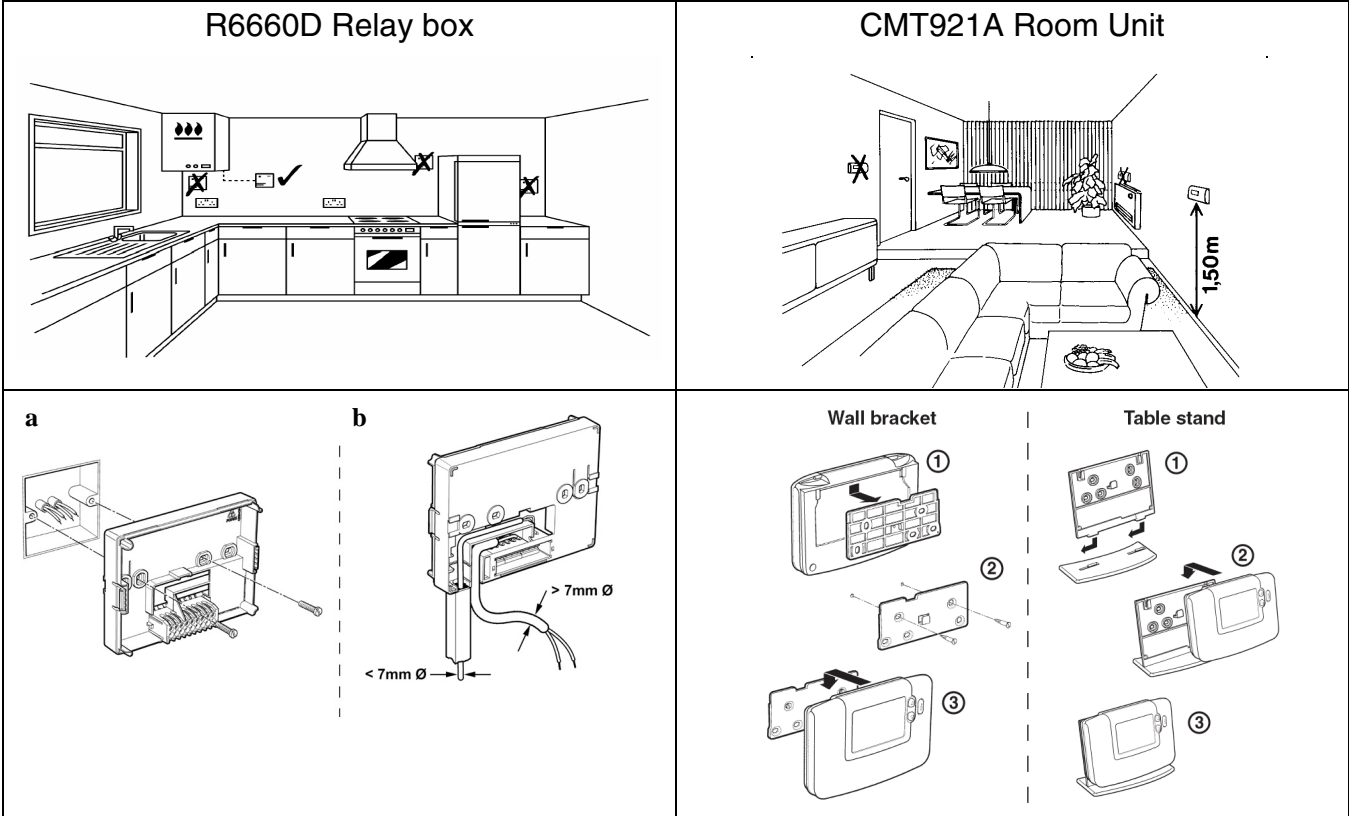
Parameter	Installer Set-Up Number / Abbreviation (Press + or - keys to select)	Factory Setting	Optional Setting		
<b>Category 2 Parameters – System Settings (press the &gt; button to access this category)</b>					
		Display	Description	Display	Description
Minimum boiler ON Time	1:Ot	1	1 minute minimum ON time	2 to 5	Selection of 2,3,4 or 5 minutes minimum ON time
Cycle Rate	2:Cr	6	6 cycles per hour (cph)	3, 9 or 12	Selection of 3,9 or 12 cph
Heat / Cool Change	4:HC	0	Disabled	1	Enabled
Pump Exercise	5:PE	0	Pump Exercise Disabled	1	Pump Exercise Enabled
System Synchronisation	6:Sn	0	Standard operation of the Room Unit	1	Room unit configured as Synchroniser
Loss of Communication Instruction	7:LC	0	Relay Off	1	Relay 20% on / 80% off
<b>The following parameters are for the control of other Honeywell Wireless products such as Wireless Underfloor Heating controls and Wireless Radiator controls. For more information please contact Honeywell sales.</b>					
Room Temperature Sensor Use	8:Su	0	HC60 Control	1,2,3 or 4	1 - HR80/HM80 control with own/remote sensor (no temperature displayed) 2 - Hr80/HM80/HCE80 control with CM Sensor 3 - HC60 control and HR80/HM80/HCE80 control with own/remote sensor 4 – Hr80/HM80/HCE80 control with own/remote sensor (temperature displayed)
HR80 Window-Open Function	9:HO	0	Disabled	1	Enabled
HR80 Local Override	10:HL	1	Enabled	0	Disabled
Maximum Flow Setpoint	11:uF	55	55°C Maximum Flow Temp.	0 to 99	0°C to 99°C adjustments in 1°C steps
Minimum Flow Setpoint	12:LF	15	15°C Minimum Flow Temp.	0 to 50	0°C to 50°C adjustments in 1°C steps
Mixing Value Run Time	13:Ar	150	150 seconds	0 to 240	0 to 240 sec. adjustments in 1sec steps

## DIMENSIONS



# INSTALLATION

- The **CM921** is a radio frequency device and for the best performance should be installed in an open space.
- Leave at least 30cm distance from any metal objects including wall boxes and at least 1 metre from any other electrical equipment e.g. radio, TV, PC etc.
- **Do not mount onto metal wall boxes.**
- NOTE: It is recommended that the R6660D relay box is installed before commencing with the room unit installation (refer to the Installation Guide).



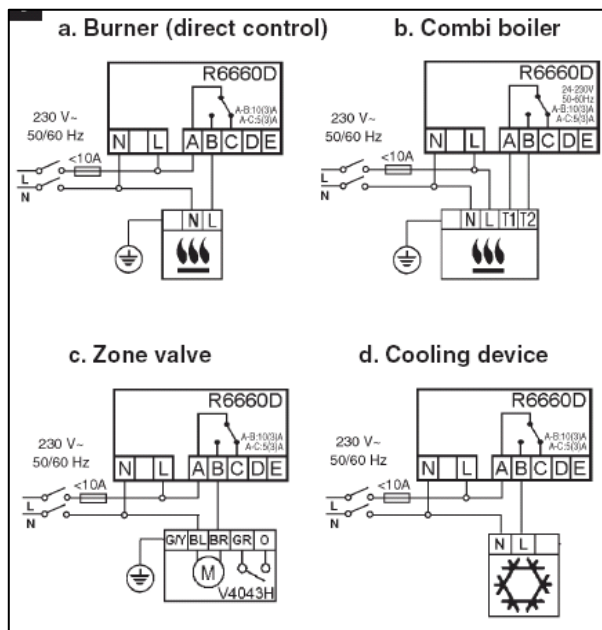
## WIRING

The R6660D relay box is designed for fixed wiring only and must be installed in accordance with latest I.E.E. regulations. Ensure the wiring connection to the supply is via a fuse rated at no more than 10 amps and a Class "A" switch (having contact separation of at least 3 mm in all poles).

### IMPORTANT

1. The installer must be a trained service engineer
2. Disconnect the power supply before beginning installation

# WIRING



**NOTE:** All wiring must be in accordance with IEE regulations

**Caution:** Observe ambient temperature and current limits (see the receiver box wiring label)

# ORDERING SPECIFICATION

Description	Model	Logo	Literature	Availability	Spec Sheet
1-day RF system pack (includes HC60)	<b>CMT921A1018</b>	Honeywell	French & Dutch.	<b>Sep 06</b>	ENOH8557
1-day RF system pack (includes HC60)	<b>CMT921A1026</b>	Honeywell	French	<b>Oct 06</b>	ENOH8557
1-day RF system pack (includes HC60)	<b>CMT921A1042</b>	Honeywell	English (UK)	<b>Oct 06</b>	ENOH8557
1-day room unit spare	<b>CMS921B1018</b>	Honeywell	French & Dutch.	<b>Sep 06</b>	ENOH8557
1-day room unit spare	<b>CMS921B1026</b>	Honeywell	French	<b>Oct 06</b>	ENOH8557
1-day room unit spare	<b>CMS921B1042</b>	Honeywell	Spanish	<b>Oct 06</b>	ENOH8557
HC60 Spare	<b>R6660D1017</b>	Honeywell	French & Dutch.	<b>Sep 06</b>	ENOH8557
HC60 Spare	<b>R6660D1025</b>	Honeywell	French	<b>Sep 06</b>	ENOH8557
HC60 Spare	<b>R6660D1041</b>	Honeywell	English (UK)	<b>Sep 06</b>	ENOH8557

