

Fan Coil Thermostat (2-pipe) a Z-Wave indoor temperature controller

EN - Instructions and warnings for installation and use



WARNINGS AND GENERAL PRECAUTIONS

- CAUTION! Read the instructions before starting up the unit!
- CAUTION! This product is not a toy. Keep out of reach of children and animals!
- CAUTION! Do not expose the device to moisture, water or other liquids. Do not place liquids near or on the device!
- CAUTION! Do not attempt to disassemble, repair or modify the device yourself!
- CAUTION! This product is for indoor use only. Do not use outdoors!
- CAUTION! Flush-mount only into a UL/ETL/CE certified plastic junction box. The minimum size should be 65*65*45mm, minimum Volume is 190cm3. Use Copper Conductors Only.
- CAUTION! Risk of Electric Shock More than one disconnect switch may be required to de-energize the equipment before servicing.

2 **PRODUCT SPECIFICATION**

Fan2-Control Fan Coil Thermostat is a Z-Wave (800 series) enabled device for indoor temperature control. It is mainly applied to a 2-pipe Fan coil system. It can read room temperature, and automatically control fan speed based on the temperature difference. This product can be included and operated in any of Nice hubs equipped with Z-wave radio: Yubii Home, Yubii Home Pro or FIBARO Home Center 3 Lite and Home Center 3.

Table A1 Specifications	
Power Supply	AC85~260V, 50/60Hz
Resistive Load:	≤3A
Self Consumption:	≤1W
Temperature Sensor:	NTC 10K
Temperature Range:	0~55°C
Temperature Setting:	5-37°C (Adjustable)
Humidity Range:	<95% RH (Non-condensation)
Dimension:	86* 86*14mm
Hole Pitch:	60-65mm (60 or 86 Standard junction box)
Z-Wave Frequency:	Operating frequency range, defined by the regulatory bodies (for Z-wave in Europe: 868.4 MHz, or other regions 908.4/916.0 MHz , 921.4 MHz)
Over Current Protection:	Required external 10A circuit breaker



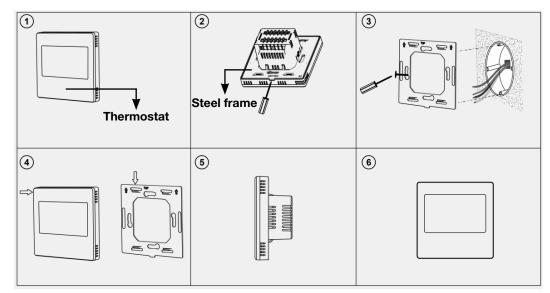
Location:

The device should be installed indoors, at around 1.5m height above the floor where the average room temperature can be measured correctly. It should be away from direct sunlight, cover, or any heat source to avoid wrong measurements.

Note:

- A qualified electrician with the understanding of wiring diagrams and knowledge of electrical safety should complete installa tion following the instructions.
- Before installation, please confirm the real voltage complying with the device's specification. Cut off any power supply to secure the safety of people and device.
- During installation, protect the device from any physical damage by dropping or bumping. If happens, please contact the supplier for maintenance.
- Keep the device away from acid-base and other corrosive solids, liquids, gases, to avoid damage.
- Read all instructions and documentation and save it for future reference.

A CAUTION! - Cut off power supply at circuit breaker or fuse before installation to avoid fire, shock or death!



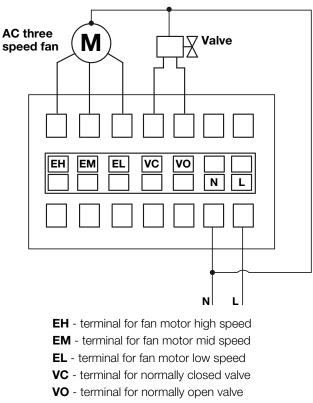
1. Remove the steel frame from the Thermostat (see picture 2) and secure it onto the junction box with two screws (see picture 3)

2. Insert all wires into the right terminals (according to wiring diagram shown below) and tighten screws. The wiring diagram is shown below.

3. Attach the wired device on the points of the steel frame (as shown in picture ④) and then push the whole device into the junction box.

4. Confirm the device is firmly mounted, and power it on, then it is ready to operate.

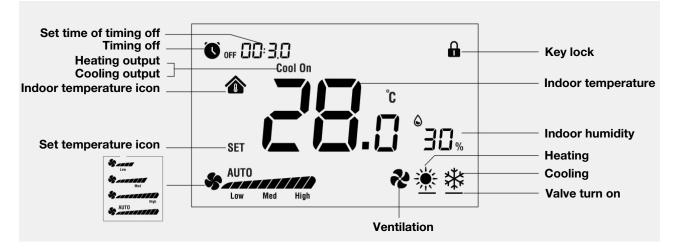
4.1 Fan2-Control wiring diagram



- ${\bf N}$ terminal for neutral lead
- ${\boldsymbol{\mathsf{L}}}$ terminal for live lead

BUTTONS AND DISPLAY

5.1 Fan2-Control display screen



5.2 Fan2-Control operational buttons

- On/Off button

- Fan speed change button

 \vee

- Temperature change button, increase direction

- Temperature change button, decrease direction

MODES OF OPERATION

6.1 On/Off Setting

When the device is powered on, it will display "OFF", press \bigcup to enter working interface. When the device is on, press \bigcup to turn it off, then "OFF" will be displayed and all outputs will be turned off.

6.2 Timing Power Off

When the device is turned on, long press \bigcup and **M** for 3 seconds to enter timing setting interface, press \bigvee or \bigwedge to adjust the setting value, then press **M** to save the setting and return to normal operation - the timing icon \bigcirc **OFF** will be displayed on the screen. Setting range is 00:30-12:00 (in sequence), setting gap is half-hour, minimum unit is half an hour.

Cancel timing power off: turn Off/On the device manually or set the timer value to 00:00 to cancel timer off.

6.3 Panel Lock

To activate key lock long press $V + \Lambda$ for 3 seconds to lock/unlock key.

This option is available is also available in Off mode. If key protection icon 🛱 appears on the screen, it indicates the keys are locked and all key operations are ignored. If it is not present, all key actions are available to operate.

Note: This function can be disabled by setting parameter E15 to Off position.

6.4 Fan Speed Setting

During normal operation, press to switch among the available fan speeds: "Low, Medium, High, Auto".

Note: In Ventilation mode, no Auto speed choice.

Auto fan speed mode

Automatically changes the fan speed depending on the difference between the setpoint temperature and actual room temperature as shown in table A2 below.

Note: In Auto speed mode the fan is activated only when valve is opened.

6.5 Fan Automation

Table A2 Fan Automation	
Cooling Mode	a. Room temperature \leq setting temperature, valve closes automatically, fan stops [*] ; b. Room temperature \geq setting temperature +1°C, fan turned on in low speed; c. Room temperature \geq setting temperature +2°C, fan turned on in medium speed; d. Room temperature \geq setting temperature +3°C, fan turned on in high speed;
Heating Mode	 a. Room temperature ≥ setting temperature, valve closes automatically, fan stops*; b. Room temperature ≤ setting temperature -1°C, fan turned on in low speed; c. Room temperature ≤ setting temperature -2°C, fan turned on in medium speed; d. Room temperature ≤ setting temperature -3°C, fan turned on in high speed;

* unless parameter E13 is switched to ON position, then the fan keeps working in low speed.

Note: Fan will operate only if the valve opens.

6.6 Temperature Setting

During normal operation, press \bigvee or \bigwedge to adjust the value of setpoint temperature, temperature by default ranges from 5 to 37 degrees, where difference between each key button press is 0.5°C. Press \bigvee to decrease the value of setpoint temperature or press \bigwedge to increase the value of setpoint temperature then press M to confirm, or wait for 8 seconds without any operation, it will return to normal working interface and save the modification automatically.

6.7 Temperature Sensor Error

If temperature sensor does not work, "0.0 " displays, fan stops and valve closes automatically.

6.8 Working Mode Setting

Under normal working interface, press M toswitch the working mode among 🗱 cooling \rightarrow 🌺 heating \rightarrow 🏖 ventilation in sequence.

6.9 Fan Manual Control

If fan speed is manually set, the device still auto controls the fan in such situation:

6.10 Cooling Mode:

Room temperature \leq setting temperature, valve closes and fan stops; Room temperature \geq setting temperature +1°C, valve and fan opens.

6.11 Heating Mode:

Room temperature \geq setting temperature, valve closes and fan stops; Room temperature \leq setting temperature -1°C, valve and fan opens.

6.12 Ventilation Mode:

Fan opens normally in accordance with the setting fan speed, valve is forced to close. **Note:** The fan output has nothing to do with the setting temperature in ventilation mode

In the Ventilation mode, auto fan speed mode functions are not available.

6.13 Manual fan speed mode

If fan speed is manually set, it can be overwritten in certain conditions to the fan stop:

Cooling Mode:

When room temperature < setpoint temperature then valve closes and fan stops.

Later when Room temperature \geq setpoint temperature $+1^{\circ}$ C, then valve and fan starts (with the speed manually set).

Heating Mode:

When room temperature > setpoint temperature then valve closes and fan stops.

Later when room temperature ≤ setpoint temperature -1°C then valve and fan starts (with the speed manually set).

Ventilation Mode:

Fan works in accordance with the set fan speed, valve is forced to close.

Note: The fan speed has nothing to do with the setpoint temperature in ventilation mode since auto mode is not available in ventilation mode.

PARAMETER MENU

When the device is turned off, long press M + 2 to enter Paremeter Menu, input password 5138, changing the digits by pressing V or Λ and 2 to move between digits. Confirms PIN by pressing M

Table A3 Parameters	
Parameter:	E01
Description:	Restore to factory default. Change to 55 to restore factory default settings.
Available settings:	0~99
Default setting:	53

Parameter:	E02
Description:	Restore state after power failure. This parameter determines, if the device will return to state prior to the power failure after power is restored.
Available settings:	 0 - device does not return to previous mode and stays switched off. 1 - device returns to previous mode and stays switched on 2 - device returns to the last mode (Off/Heating/Cooling/Ventilation)
Default setting:	01

Parameter:	E03
Description:	Backlight brightness.
	1 - backlight is off on dimmed display after specific time of no key action
	2 - low brightness and dimmed display after specific time of no key action
	3 - medium brightness and dimmed display after specific time of no key action
	4 - high brightness and dimmed display after specific time of no key action
	5 - display always on
Available settings:	1 ~5
Default setting:	2

Parameter:	E04
Description:	Beep volume.
	1: OFF
	2: Low Beep
	3: Medium Beep
	4: High Beep
	5: Standard Beep
Available settings:	1~5
Default setting:	5

Parameter:	E05
Description:	Communicate address.
Available settings:	1~64
Default setting:	01

Parameter:	E06
Description:	Temp. upper limit.
Available settings:	0.0°C+55.0°C
Default setting:	37.0°C

Parameter:	E07
Description:	Temp. lower limit.
Available settings:	0.0°C~55.0°C
Default setting:	05.0°C

Parameter:	E08
Description:	Indoor temp. calibration.
Available settings:	-9.0~+9.0
Default setting:	0.0

Parameter:	E09
Description:	Indoor humidity calibration.
Available settings:	-20~+20
Default setting:	00

Parameter:	E10
Description:	Externaltemp. calibration.
Available settings:	-9.0~+9.0
Default setting:	0.0

Parameter:	E11	
Description:	Function option of external temp. sensor.	
	0: External temperature sensor work as high temperature protection detection	
	1: External temperature sensor work as main control temperature	
Available settings:	0~1	
Default setting:	0	

Parameter:	E12	
Description:	Anti-Freeze protection switch.	
	ON: Turn on	
	OFF: Turn off	
	Default protection temperature range: (5.0°C - 8.0°C)	
	Anti-Freeze feature is available only when heating mode, turn on when temperature decrease to 5.0°C, turn off when temperature increase to 8.0°C	
Available settings:	ON / OFF	
Default setting:	OFF	

Parameter:	E13
Description:	Fan mode option when indoor temperature reaches to setting temp. ON: fan keep low speed OFF: fan turned off
Available settings:	ON/OFF
Default setting:	OFF

Parameter:	E14
Description:	Fan working mode.
	0: Fan works both for cooling and heating mode
	1: Fan works only in cooling mode
	2: Fan works only in heating mode
	3: Fan not work neither in cooling nor heating mode
Available settings:	0~3
Default setting:	0

Parameter:	E15
Description:	Panel lock function.
	ON: turn on OF: turn off
Available settings:	ON/OFF
Default setting:	ON

Parameter:	E17
Description:	Option for interval ventilation feature.
	ON: turn on OF: turn off
Available settings:	ON/OFF
Default setting:	OFF

Parameter:	E18
Description:	Duration for interval ventilation. Duration for interval ventilation within 1 hour unit: minute
Available settings: 1~30 (min)	
Default setting:	02 (min)

Parameter:	E19
Description:	Temp.deadband.
Available settings:	0 - 9.9
Default setting:	1.0°C/2.0 F

Parameter:	E20
Description:	Temp.unit. 0: Celsius 1: Fahrenheit
Available settings:	0 ~ 1
Default setting:	0

This section describes how to add and remove Fan2-Control from Yubii Home gateway. There are 2 possible ways to make it.

8.1 Adding device using the manual method

- 1. Set the Yubii Home into add mode (see the Yubii Home manual).
- 2. In the home page, long press 🏞 + 🔨 synchronously for 3 sec, Fan2-Control enters into adding mode displaying product "--" on the interface.

Note:

- If there is number displayed it means that device has been already added to the network. In case of re-adding please follow the procedure of removing the device from the network first (described below) or restore the device to factory defaults.
- 3. Press M to include the device into Z-Wave network, if the inclusion is successful, it will show node number in the Z-wave network.

8.2 Adding device using the SmartStart method

To add Fan2-Control to the Z-Wave network using SmartStart:

- 1. Scan the DSK QR code or input the underlined 5-digit PIN code (label on the side of the box and on the device).
- 2. Power the device (turn on the mains voltage).
- 3. Successful adding will be confirmed by the Z-Wave indicator on the display.

8.3 Removing device from Yubii Home

- 1. Set the Yubii Home into exclusion mode (see the Yubii Home manual).
- 2. Long press $\rightarrow A$ synchronously for 3 sec, Fan2-Control enters into removing mode displaying existing product ID
- on the interface. Please note that if a device has been added to the gateway It should be displaying number different from "--".
- 3. Press M to exclude the device from Z-Wave network, if the exclusion is successful, it will show 000 in the interface.

ASSOCIATION GROUP

Table A4 Association group			
AG Identifier	Max Node ID	Command Class	Trigger Situation
	1	COMMAND_CLASS_SENSOR_ MULTILEVEL_ VS,SENSOR_ MULTILEVEL_REPORT_VS	1. When the temp. unit is celsius: the parameter 2 set to 1, detected temperature change is greater than the value set by parameter 3.
			2. When the temp. unit is fahrenheit: the parameter 2 set to 1, detected temperature change is greater than the value set by parameter 4.
			3. The parameter 2 set to 2, when the report is that the interval time is greater than the value set by parameter 5.
0x01			4. When the temp. unit is celsius: the parameter 2 set to 3, the detected temperature change is greater than the value set by parameter 3 or the reported time is greater than the value set by parameter 5.
			5. When the temp. unit is fahrenheit: the parameter 2 set to 3, the detected temperature change is greater than the value set by parameter 4 or the reported time is greater than the value set by parameter 5.
		COMMAND_CLASS_THERMOSTAT_MODE_ V2,THERMOSTAT_MODE_ REPORT	Device Mode changes
		COMMAND_CLASS_THERMOSTAT OPERAT- ING_STATE, THERMOSTAT_ OPERATING_ STATE_REPORT	Device Status changes

Table A5 Association group			
AG Identifier	Max Node ID	Command Class	Trigger Situation
	1	COMMAND_CLASS_THERMOSTAT_SETPOINT_ V2,THERMOSTAT_SETPOINT_REPORT_V2	Set point value changes
		COMMAND_CLASS_THERMOSTAT_FAN_ MODE,THERMOSTAT_FAN_MODE_REPORT	Fan mode changes
0x01		COMMAND_CLASS_THERMOSTAT_FAN_ STATE,THERMOSTAT_FAN_ STATE_REPORT	Fan status changes
		COMMAND_CLASS_DEVICE_RESET_ LOCALLY,DEVICE_RESET_LOCALLY_NOTIFICATION	Restore the factory setting

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Table A6 Command Class supported by the device

Table Ao Command Class supported by the device
S2 Support
COMMAND_CLASS_VERSION
COMMAND_CLASS_MANUFACTURER_SPECIFIC
COMMAND_CLASS_DEVICE_RESET_LOCALLY
COMMAND_CLASS_POWERLEVEL
COMMAND_CLASS_SENSOR_MULTILEVEL_V5
COMMAND_CLASS_THERMOSTAT_SETPOINT,
COMMAND_CLASS_THERMOSTAT_MODE
COMMAND_CLASS_THERMOSTAT_OPERATING_STATE
COMMAND_CLASS_THERMOSTAT_FAN_MODE
COMMAND_CLASS_THERMOSTAT_FAN_STATE
COMMAND_CLASS_CONFIGURATION
COMMAND_CLASS_ASSOCIATION_V2
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION_V2
COMMAND_CLASS_ASSOCIATION_GRP_INFO
COMMAND_CLASS_FIRMWARE_UPDATE_MD_V5

S2 No Support

COMMAND_CLASS_ZWAVEPLUS_INFO,

COMMAND_CLASS_TRANSPORT_SERVICE_V2,

COMMAND_CLASS_SECURITY_2,

COMMAND_CLASS_SUPERVISION

11 Z-WAVE PARAMETER SETTING

Table A7 Z-Wave parameter setting				
Parameter:	1. Parameter Menu No. E20 Temp. Unit			
Description:	0: Celsius 1: Fahrenheit			
Available settings:	0-1			
Default setting:	1	Parameter size:	1 [byte]	

Parameter:	2. Automatic Temperature Value Reporting (Celsius)			
Description:	Unit 0.1			
	0: OFF:			
	3-255: n *0.1, automatically report to gateway when temperature variation greater than this value.			
Available settings:	0,3-255			
Default setting:	5	Parameter size:	2 [byte]	

Parameter:	2. Automatic Temperature Value Reporting (Celsius)		
Description:	Unit 0.1 F:		
	0: OFF:		
	3-255: n *0.1F,automatically report to gate	way when temperatur	e variation greater than this value.
Available settings:	0,3-255		
Default setting:	10	Parameter size:	2 [byte]

Parameter:	3. Automatic Humidity Value Reporting		
Description:	0: OFF		
	1-99: Automatically report to gateway when humidity variation greater than this value.		
Available settings:	0-99		
Default setting:	6	Parameter size:	1 [byte]

Parameter:	12. Parameter Menu No. E02: Power Failure Memory		
Description:	When power on again:		
	0:device will be in shutdown state ("OFF");		
	1: device will be in working interface;		
	2: device will stay the last status before power failure.		
Available settings:	0-2		
Default setting:	1	Parameter size:	1 [byte]

Parameter:	13. Parameter Menu No. E03: Backlight Brightness		
Description:	 1: dim, dim without key touch 2: Low brightness 3: Medium brightness 4: High brightness 5: Always on 		
Available settings:	1-5		
Default setting:	2	Parameter size:	1 [byte]

Parameter:	14. Parameter Menu No. E04: Beep		
Description:	1: OFF2 Low Beep		
	3: Medium Beep		
	4: High Beep		
	5: Standard Beep		
Available settings:			
Default setting:	0	Parameter size:	1 [byte]

Parameter:	16. Parameter Menu No. E06: Temp. Upper limit/ Set upper		
Description:	Upper limit always > lower limit		
Available settings:	1-99		
Default setting:	37 (Celsius)	Parameter size:	1 [byte]

Parameter:	16. Parameter Menu No. E06: Temp. Upper limit/ Set upper		
Description:	Upper limit always > lower limit		
Available settings:	1-99		
Default setting:	98 (Fahrenheit)	Parameter size:	1 [byte]

Parameter:	17. Parameter Menu No. E07: Temp. Lower limit/Set lower		
Description:	Upper limit always > lower limit		
Available settings:	0-98		
Default setting:	5 (Celsius) Parameter size: 1 [byte]		

Parameter:	17. Parameter Menu No. E07: Temp. Lower limit/Set lower		
Description:	Upper limit always > lower limit		
Available settings:	0-98		
Default setting:	41 (Fahrenheit) Parameter size: 1 [byte]		

Parameter:	18. Parameter Menu No. E08: Indoor temp. calibration		
Description:	Temperature Calibration Value (°C or °F), accuracy 0.1 (n *0.1)		
Available settings:	(-99~+99) (Celsius)		
Default setting:	0	Parameter size:	1 [byte]

Parameter:	18. Parameter Menu No. E08: Indoor temp. calibration			
Description:	Temperature Calibration Value (°C or °F), accuracy 0.1 (n *0.1)			
Available settings:	(-99~+99) (Fahrenheit)			
Default setting:	0 Parameter size: 1 [byte]			

Parameter:	19. Parameter Menu No. E09: Indoor humidity calibration		
Description:	Humidity calibration value		
Available settings:	-20~+20		
Default setting:	O Parameter size: 1 [byte]		

Parameter:	20. Parameter Menu No. E10: External temp. calibration		
Description:	Temperature Calibration Value (°C or °F) accuracy 0.1 (n *0.1)		
Available settings:	(-99~+99) (Celsius)		
Default setting:	0	Parameter size:	1 [byte]

Parameter:	20. Parameter Menu No. E10: External temp. calibration		
Description:	Temperature Calibration Value (°C or °F) accuracy 0.1 (n *0.1)		
Available settings:	(-99~+99) (Fahrenheit)		
Default setting:	0	Parameter size:	1 [byte]

Parameter:	21. Parameter Menu No. E11: Function option for external temperature sensor			
-	0: External temperature sensor work as high temperature protection detection			
	1: External temperature sensor work as main control temperature			
Available settings:	0-1			
Default setting:	0	Parameter size:	1 [byte]	

Parameter:	22. Parameter Menu No. E12: Switch for anti-freeze protection			
Description:	1: Turn on 0: Turn off Default protection temperature range: (5.0°C - 8.0°C) Anti-Freeze feature is available only when heating mode, turn on when temperature decrease to 5.0 °C, turn off when temperature increase to 8.0°C			
Available settings:	0-1			
Default setting:	0 Parameter size: 1 [byte]			

Parameter:	23. Parameter Menu No. E13: Fan mode option when indoor temp. reaches to setting temp		
Description:	1: Manual fan speed, keep fan speed, valve turned off, Auto fan speed, keep low fan speed 0: Fan turned off		
Available settings:	0-1		
Default setting:	0	Parameter size:	1 [byte]

Parameter:	24. Parameter Menu No. E14:Fan working mode			
Description:	0: Fan works both for cooling and heating1: Fan works only in cooling mode2: Fan works only in heating mode3: Fan not work neither in cooling nor heating			
Available settings:	0-3			
Default setting:	0	Parameter size:	1 [byte]	

Parameter:	25. Parameter Menu No. E15: Panel lock function			
Description:	1:Turn on			
	0:Turn off			
Available settings:	0-1			
Default setting:	1 Parameter size: 1 [byte]			

Parameter:	26. Reserve		
Description:			
Available settings:			
Default setting:		Parameter size:	1 [byte]

Parameter:	27. Parameter Menu No. E17: Option for interval ventilation feature		
Description:	1:Turn on		
	0:Turn off		
Available settings:	0-1		
Default setting:	0	Parameter size:	1 [byte]

Parameter:	28. Parameter Menu No. E18: Duration for interval ventilation		
Description:	Duration for interval ventilation within 1 hour, unit: minute		
Available settings:	1-30		
Default setting:	5	Parameter size:	1 [byte]

Parameter:	29. Parameter Menu No. E19: Temp. Deadband			
Description:	Temperature deadband (°C or °F), accuracy: n* 0.1			
Available settings:	0-99 (Celsius)			
Default setting:	15 (Celsius)	Parameter size:	1 [byte]	

Parameter:	29. Parameter Menu No. E19: Temp. Deadband			
Description:	Temperature deadband (°C or °F), accuracy: n* 0.1			
Available settings:	0-99 (Celsius)			
Default setting:	30 (Fahrenheit)	Parameter size:	1 [byte]	

Parameter:	255. Parameter Menu No. E01 Factory Restore		
Description:	55:write 55 to restore factory setting and turn to shut down interface Other Value: invalid		
Available settings:	0-99		
Default setting:	53	Parameter size:	1 [byte]

2 WARRANTY

We warrant this product to be free from defects in material and workmanship under normal and proper use for one year from purchase date of the original purchaser. We will, at its option, either repair or replace any part of its products that prove defective by reason of improper workmanship or materials. THIS LIMITED WARRANTY DOES NOT COVER ANY DAMAGE TO THIS PRODUCT THAT RESULTS FROM IMPROPER INSTALLATION, ACCIDENT, ABUSE, MISUSE, NATURAL DISASTER, INSUFFICIENT OR EXCESSIVE ELECTRICAL SUP-PLY, ABNORMALMECHANICAL OR ENVIRONMENTAL CONDITIONS, OR ANY UNAUTHORIZED DISASSEMBLY, REPAIR OR MODIFICA-TION. This limited warranty shall not apply if: (i) the product was not used in accordance with any accompanying instructions, or (ii) the product was not used for its intended function. This limited warranty also does not apply to any product on which the original identification information has been altered, obliterated or removed, that has not been handled or packaged correctly, that has been sold as second-hand or that has been resold contrary to Country and other applicable export regulations.

PRODUCT DISPOSAL

The device marked with this symbol should not be disposed of with household waste. It is the user's responsibility to deliver the used appliance to a designated recycling point.



14 declaration of conformity

Hereby, NICE S.p.A., declares that the radio equipment Fan2-Control is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: http://www.niceforyou.com/en/supports under the "support" and "download" sections.

15 z-wave compliance



The thermostat is a fully compatible Z-Wave Plus V2 device.



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www.niceforyou.com