



# ZIGSAVE

## Comfort & Energy Saving



# THINK GREEN with *TECNOVOX*

## THINK GREEN

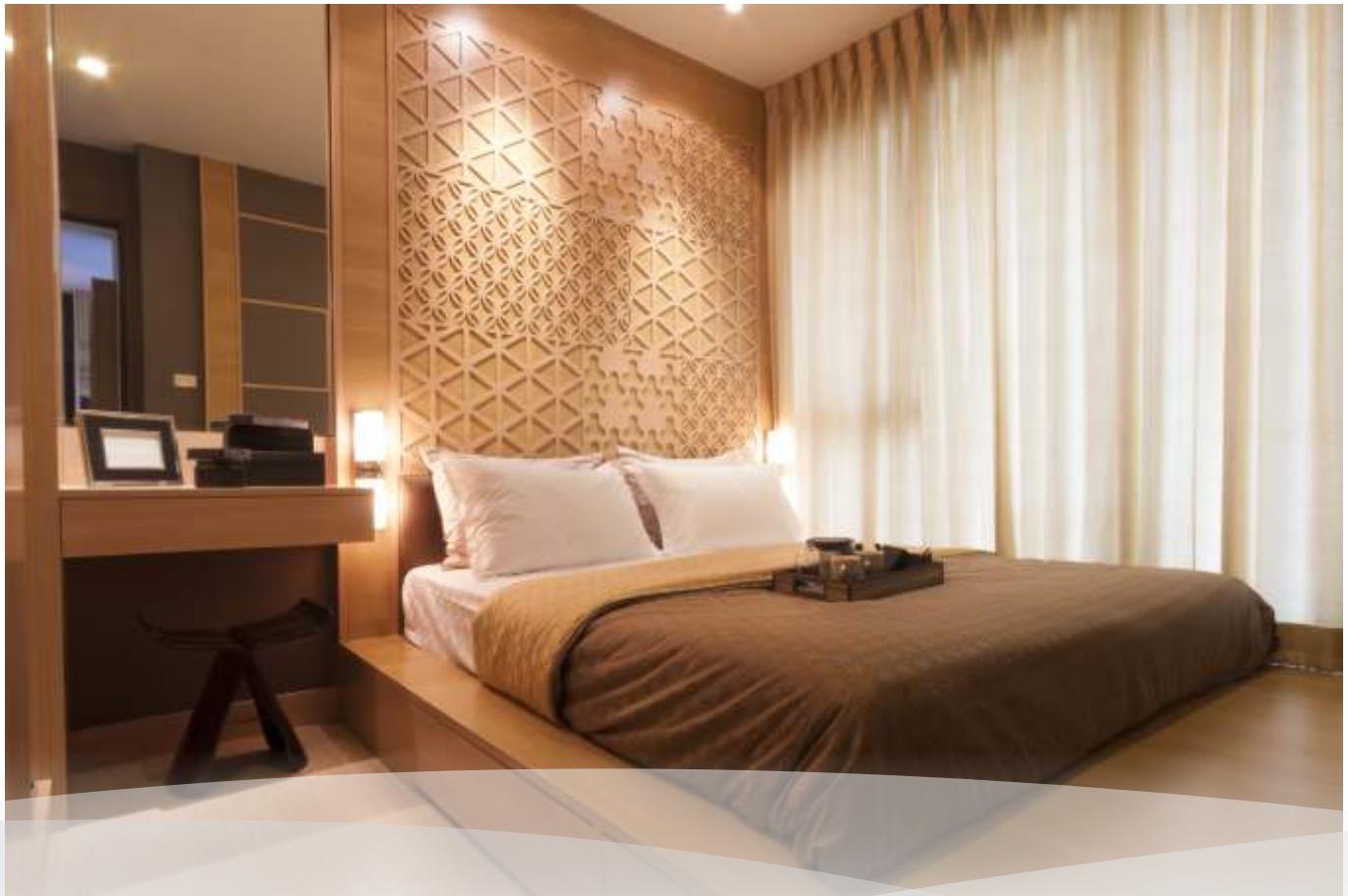
TECNOVOX has undertaken the mission to respect the environment and while working in harmony with technological developments.

TECNOVOX began their energy saving mission in accommodation facilities (hotels, hospitals and nursing homes) providing useful automation systems both in rooms and common areas, improving the comfort of guests while staying true to TECNOVOX's environmental concerns.

TECNOVOX introduced LED lighting as an alternative to incandescent and fluorescent lights, which are not as environmentally conscious and are aesthetically unpleasant. Our mission has continued in our streamlined designs that aim to research the lowest energy consumptions.

TECNOVOX's Amplification system was one of the first to use digital amplifiers that decrease energy consumption while dramatically increasing the sound performance.

This dual advantage is particularly important regarding alarm and voice evacuation systems, since neither the environment nor safety are sacrificed. In regards to our packaging, we use mainly recycled materials, completely avoiding the slow-deteriorating materials (polystyrene) in accordance with the European Union.



## ENERGY SAVING “MAXIMUM COMFORT”

**Wireless System based on ZigBee® standard  
for new release and retrofit solutions**



For the Hospitality Market one of the most important target is the cost reduction mainly saving energy, still providing the maximum guest comfort and satisfactory. To achieve this result TECNOVOX, with it's long experience in Hotel Electronics, is proposing a highly performing system suitable for new installations and retrofit, thanks to easy wired installation and wireless option.

Wide choice of auxiliary devices and function programming.

> TX8300 Controller



> TX8300 Controller

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A fully digital interface provides the flexibility to easily customize the information being presented to the guests.

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## Network Ready Solutions

Our solutions can easily integrate into most building automation and front desk reservation systems by the preferred BAS system integrator.

This provides significant future energy savings through chiller and boiler plant optimization. Reduce long-term service costs by prolonging the life of the fan coil terminal equipment and increasing the life cycle of the system as a whole!



## The Simple, Cost Effective, Energy Efficient, Retrofit Solution

TECNOVOX has developed a powerful new upgrade for fan coil units being controlled by older mechanical or digital stand-alone thermostats. This new solution reduces energy costs, improves ROI and accelerates payback, often in less than 12 months. This solution includes the TX8300 terminal equipment controller and TX2300 relay power pack. Integrated passive infrared motion sensor, set point limitation, advanced flexible occupancy routines and other functions typically found in advanced expensive DDC type controllers, are included on these units wireless ceiling or wall mounting motion sensors. Door and window switches are also available to facilitate retrofits and provide additional energy savings.

Integrated or external motion sensor and advanced occupancy algorithms automatically assures maximum energy savings for unoccupied rooms or during housecleaning periods.

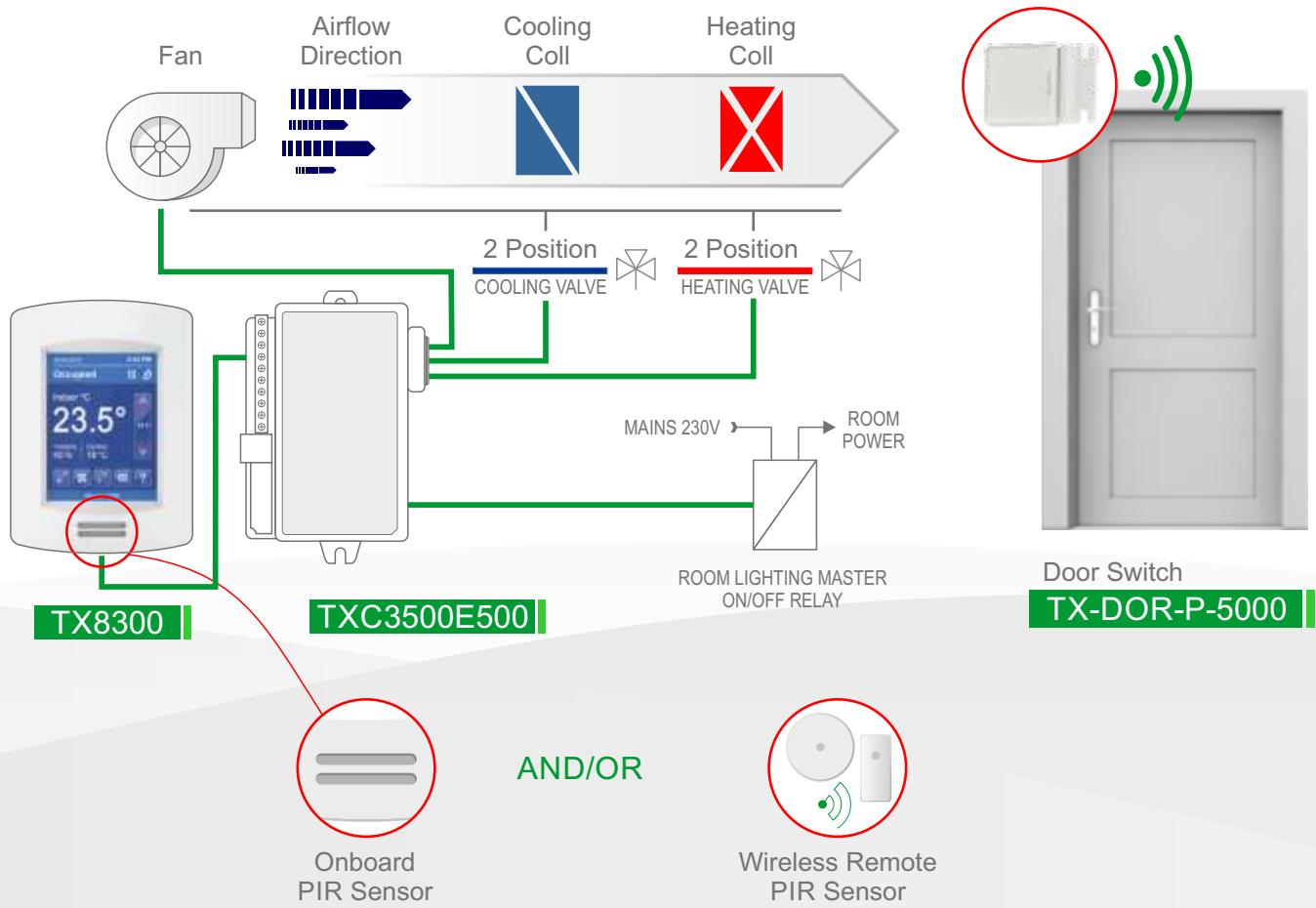
Also occupied room benefits the energy savings obtained by automatically setting back the temperature to a stand-by mode when no motion is detected in the room. The guest can be welcome to the hotel room with ideal temperature and control while benefiting from optimum energy savings.

By reducing the number of components required for a system retrofit and re-using the existing line-voltage wiring between the fan coil unit and controller, ZIGSAVE effectively minimize overall labour, time and installation costs associated with traditional retrofit projects.

Installation, configuration and commissioning do not require any special toolsets or custom software and can be done quickly by electrical or in-house maintenance staff. Furthermore, retrofits do not require painting or remodelling and can be done at any time, without having to wait years for the next major retrofit cycle, allowing money saving today!

## SYSTEM EXAMPLE

**Four pipes heating-cooling climate and electricity control by interaction between presence sensors and door switch**



### ALSO SUITABLE FOR:

#### CLIMATE CONTROL/SAVING

- 4 PIPES SYSTEM
- 2 PIPES SYSTEM
- VRV - VRF SYSTEMS
- ON OFF OR ANALOG VALVES CONTROL

#### ELECTRCITY SAVING

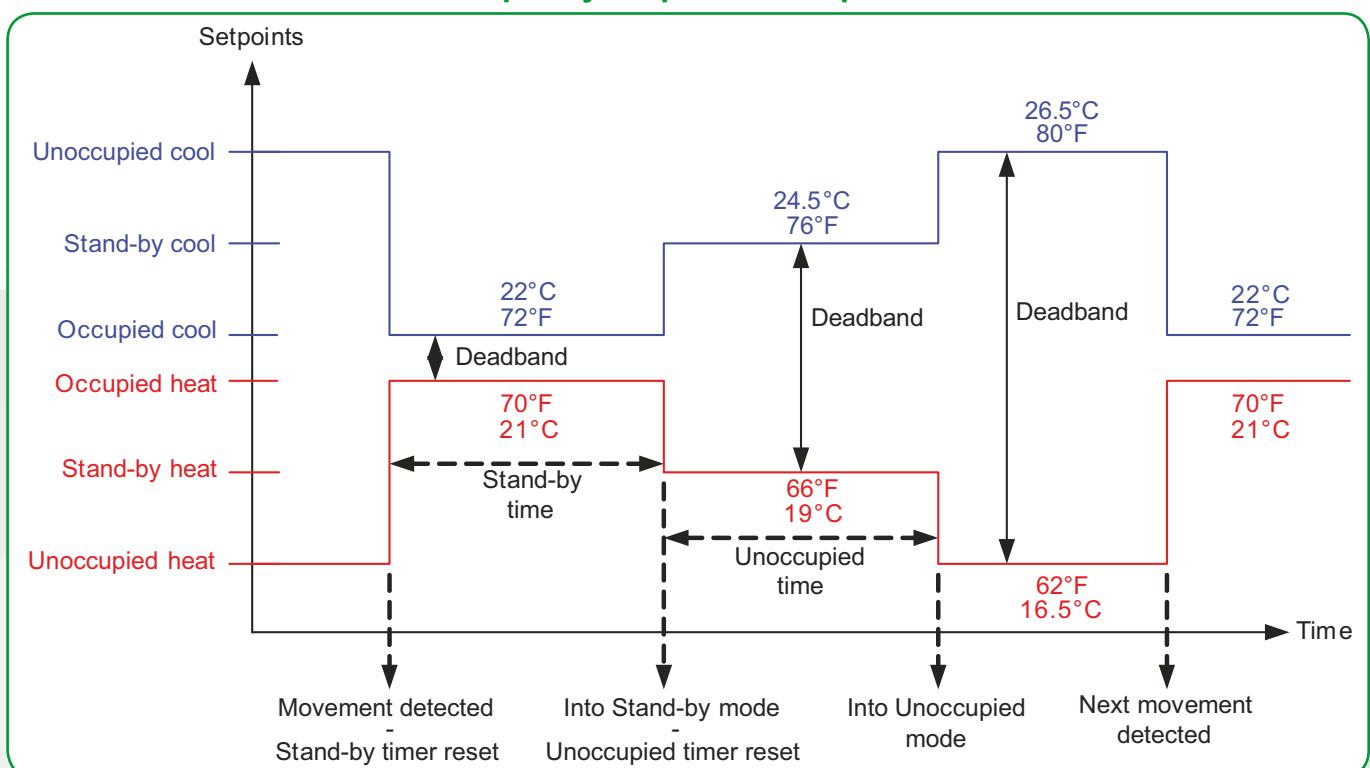
- ROOM LIGHTING CIRCUIT MASTER ON OFF

# PASSIVE INFRA-RED SENSOR SPECIFICATIONS

## Passive Infra-Red Sensor Sequence of Operation

Initially, the Controller is in Stand-by mode and Stand-by setpoints are used for the Controller. When the Passive Infra-Red (PIR) sensor detects motion, the Occupancy status switches to Occupied and the Stand-By Time timer is reset. The Occupied setpoints are used for this operation. If no motion is detected in the room for the entire Stand-By Time duration (adjustable parameter), the room switches to Stand-by mode and Stand-by setpoints are used. While in Stand-by mode, if no motion is detected for the entire Unoccupied Time period (adjustable parameter), the room switches to Unoccupied mode and uses its Unoccupied setpoints. While in Stand-By or Unoccupied mode, any motion switches the room back to Occupied mode.

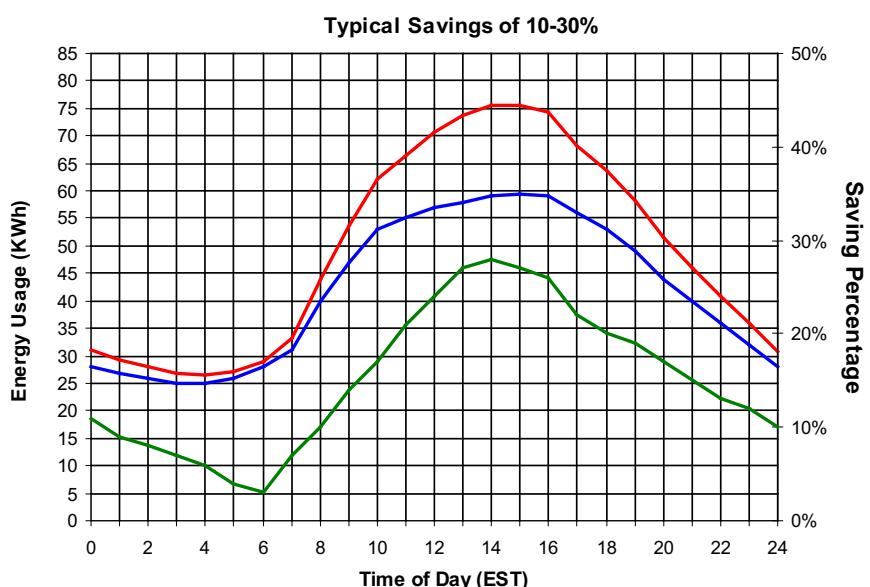
## Schematic of Controllers Occupancy Sequence of Operation



## Energy Savings

PIR can maximize your energy saving from 10-30% by adjusting temperature set points in unoccupied zones during scheduled periods.

- Typical Consumption
- PIR Thermostat Consumption
- Savings



# WIRELESS SENSORS

## Wireless ZIGSAVE

Wireless door switches used with an onboard or remote PIR sensor provide advanced local occupancy routines allowing for increased energy savings during occupied hours without sacrificing occupant comfort.

Wireless window switches are used to monitor exterior windows or patio/balcony doors when opened to prevent unnecessary energy consumption.

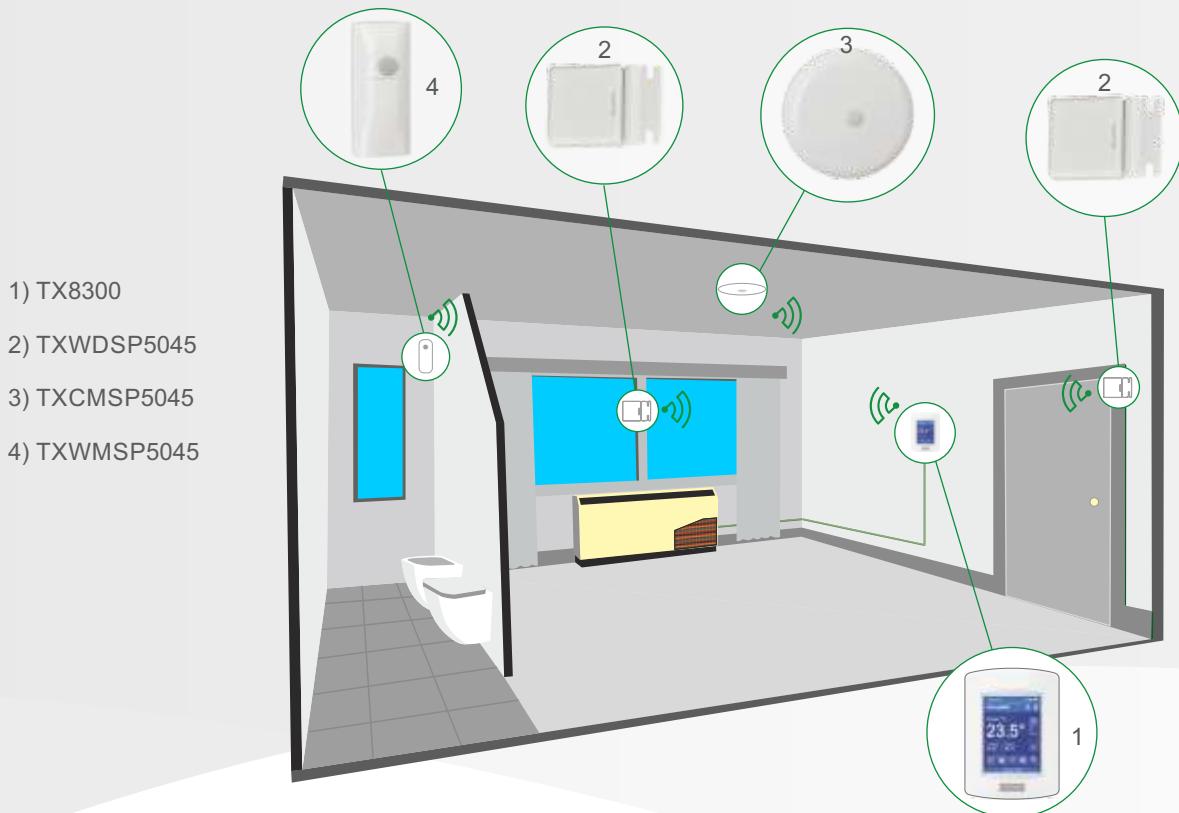
Fan Coil Room Controllers with ZIGSAVE Series wireless switches can be used in stand-alone mode, or with integration to a central management system, to allow for advanced functions such as central reservation and occupancy functions. Up to twenty TX-WIN or TX-DOR ZIGSAVE wireless switches can be used with a TX8300 or TX8350 Room Controller. Up to ten different ZigBee motion sensors and switches (TX-WMS, TX-CMS, or TX-WDS) can be used with a TX8300 or TX8350 Room Controller.

Using one or more wireless remote PIR motion sensors means that a wired PIR motion sensor cannot be used, and vice versa.

The wireless Series sensors are factory delivered with batteries and are ready to be installed, configured, and used right out of the box. Due to the extremely small current consumption of the sensors, the expected battery life is approximately 10 years, which is equivalent to the battery shelf life.

No tools are required for commissioning or servicing the ZIGSAVE devices. A simple interface on the devices with an on-board LED and hidden switch provides all required functions for local interaction. The TX8300 user interface has screens used to pair and configure ZIGSAVE devices (TX-WMS, TX-CMS, or TX-WDS only). Local information for battery life and connectivity (heartbeat) are also displayed through the ZIGSAVE Pro wireless network. For more information about using the switches, consult the Wireless Door and Window Switch Installation Guide.

For more information about using the TX-WDS, TX-WMS and TX-CMS wireless switches and sensors, consult the Pairing TX8000 Series Room Controllers with ZIGSAVE Sensors Installation Guide and Procedure.



## ROOM CONTROLLERS AND ACCESSORIES

This new cost-effective solution for upgrading low-voltage fan coil unit thermostats requires only the TX8300 Room Controller. The TX8300 Room Controller can also be used along with a TX2300 Relay Pack for mixed-voltage solutions, when control of both line-voltage and low-voltage end devices is required.

SMART ROOM CONTROLLERS				
	Part Number	Description	Humidity Sensor	PIR Sensor
	TX8300U5000B	Room Controller	No	No
	TX8350U5500B	Room Controller	Yes	Yes

RELAY PACK INTERFACE		
	Part Number	Description
	TX2300E5000	3 on/off outputs, 220/240V 3 speed

WIRELESS ACCESSORIES FOR ROOM CONTROLLERS		
	Part Number	Description
	TXM8000V5045P	ZigBee® wireless card to be set inside the room controller
	TXCMSP5045	Ceiling mounted motion sensor
	TXWDSP5045	Mini door - window switch
	TXWMSP5045	Wall mounted motion sensor



## ENERGY SAVING FOR SPLIT CLIMATE SYSTEM

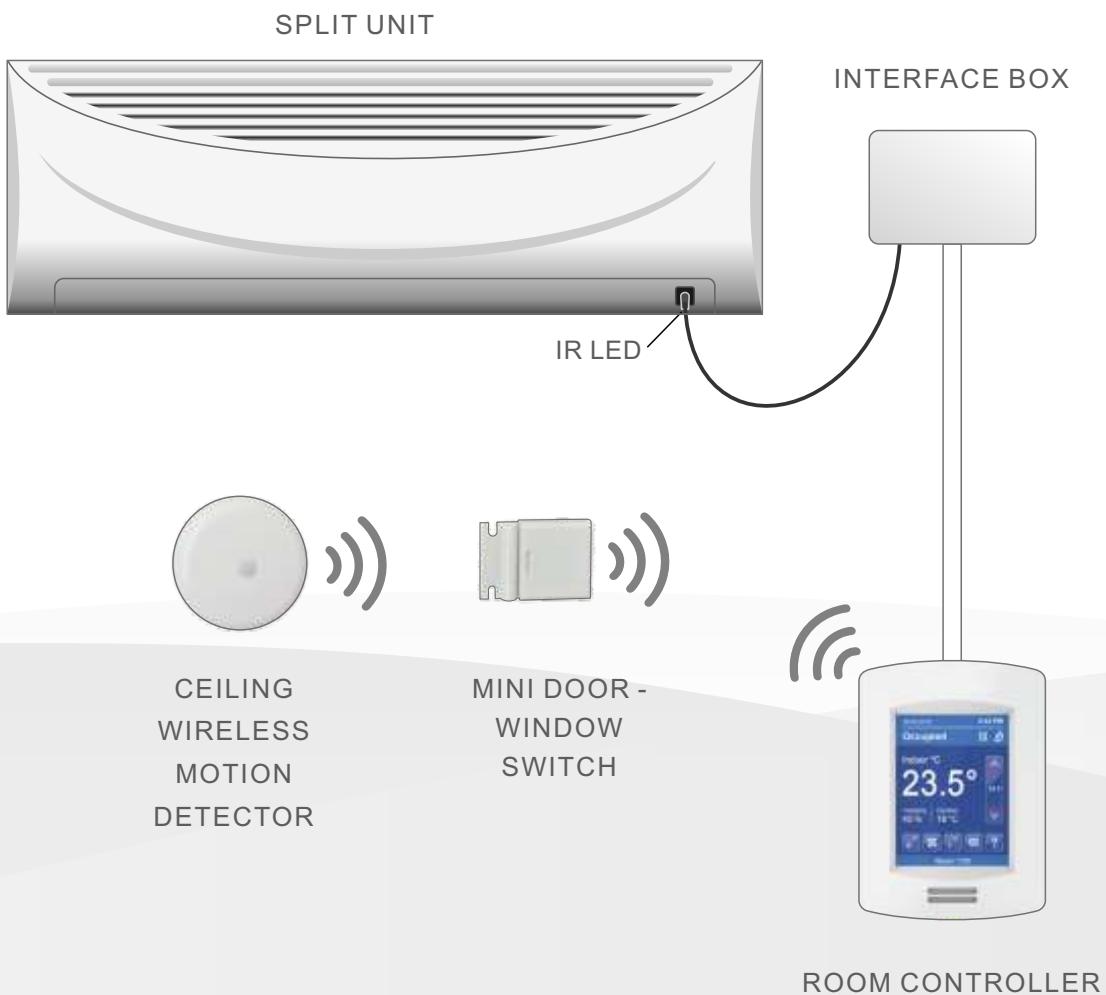
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To steadily increase its range of energy saving systems, TECNOVOX has developed several new equipments to control the indoor unit split, reproducing the typical IR remote control commands. Therefore, performing the control in the most correct and usual way.

The systems are non-invasive and do not need any electrical tampering of split devices, avoiding problems that may affect the manufacturer's warranty.

The application of the saving system does not inhibit the use of the original IR remote control.

## #1 CLIMATE CONTROL WITH WIRELESS DOOR SWITCH & MOTION DETECTORS



### FEATURES

The most complete and efficient system for the control of the room temperature with the maximum comfort and high energy savings avoiding any intervention by the guest except the voluntary temperature adjustment.

The room controller, connected wireless with the door switch and the motion detector, will set automatically the preset temperature according with the presence of the guest in room.

An appropriate detectors management algorithm ensure high reliability in the verification of the presence, avoiding the risk of error. Furthermore, the controller allows a complete temperature regulation and the related operating times, greatly increasing the comfort and the saving. The standard IR remote control will not be present.

### COMPONENTS

Art. TX8350USB11 Room controller

Art. TXM8000V5045P Zigbee card set inside the room controller

Art. TXCMSP5045 Wireless ceiling motion detector

Art. TXWDSP5045 Wireless door contact

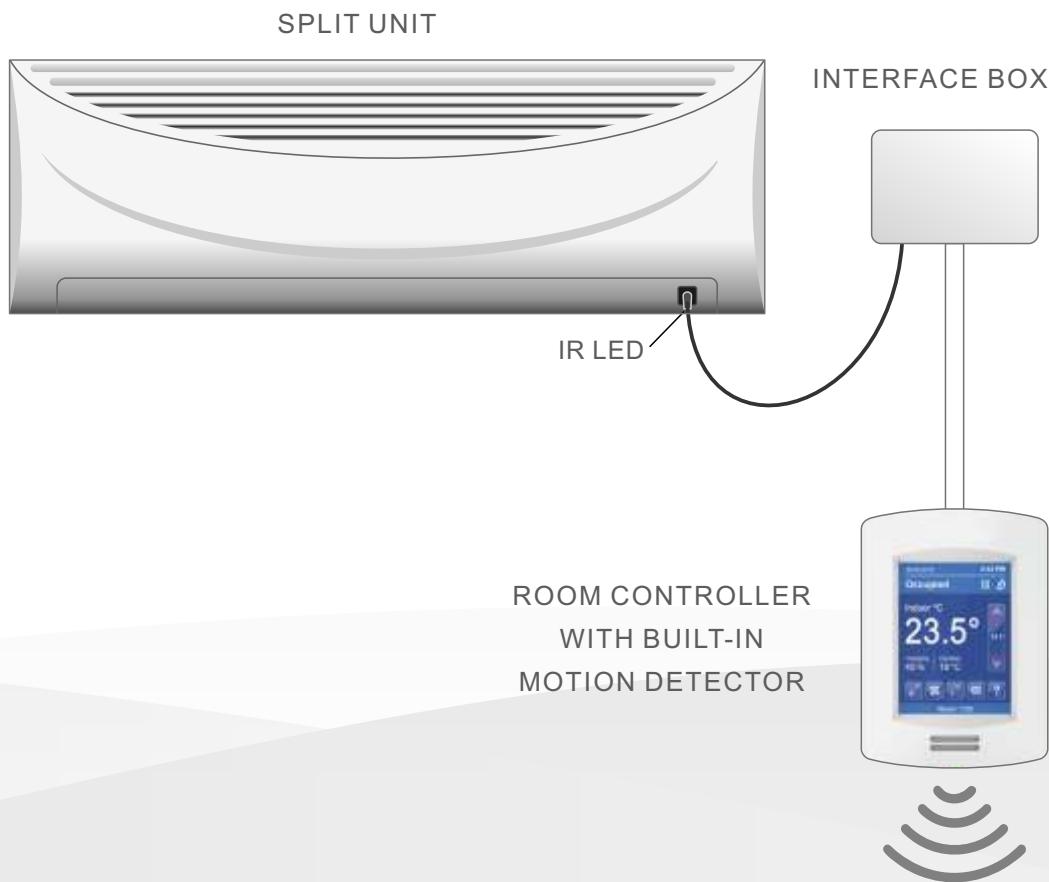
### INTERFACE BOX

Art. 2024 Power supply

Art. TX10027/1 IR Converter

Art. TX10009/1 IR Led

## #2 CLIMATE CONTROL WITH MOTION DETECTOR BUILT-IN ROOM CONTROLLER



### FEATURES

Easy to install, is an appropriate solution when the motion detector built-in the room controller can cover the whole room then avoiding any further detector, avoiding any intervention by the guest except the voluntary temperature adjustment.

The controller allows a complete temperature regulation and the related operating times, greatly increasing the comfort and the saving. The standard IR remote control will not be present.

### COMPONENTS

Art. TX8350USB11 Room controller

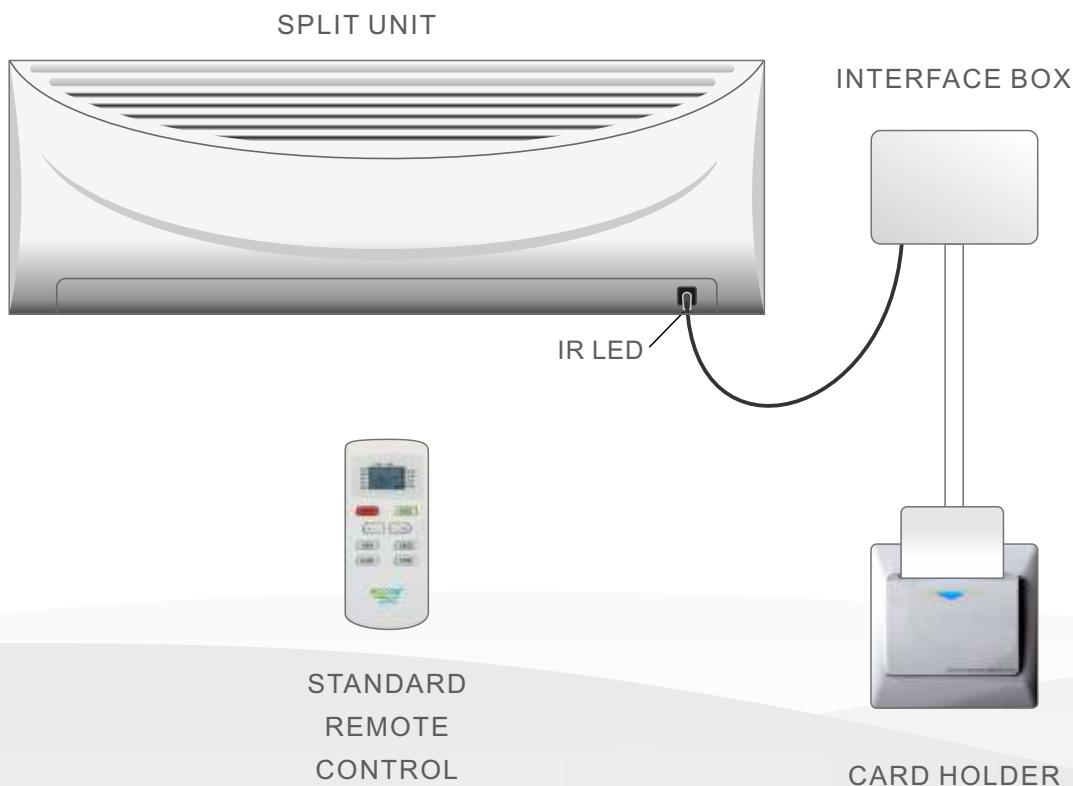
#### INTERFACE BOX

Art. 2024 Power supply

Art. TX10027/1 IR Converter

Art. TX10009/1 IR Led

## #3 CLIMATE CONTROL WITH WIRED CARD HOLDER



### FEATURES

Using any kind of card holder with dry switch or by application of a relays controlled by the room power supply switched by the card holder, wire connected to the Interface Box.  
When the guest enters the room inserting his card into the card holder, the system will switch the split preset temperature from stand by to comfort. The standard IR control of the split will be active for adjustment by the guest.

### COMPONENTS

Any Card holder with NO/NC dry switch

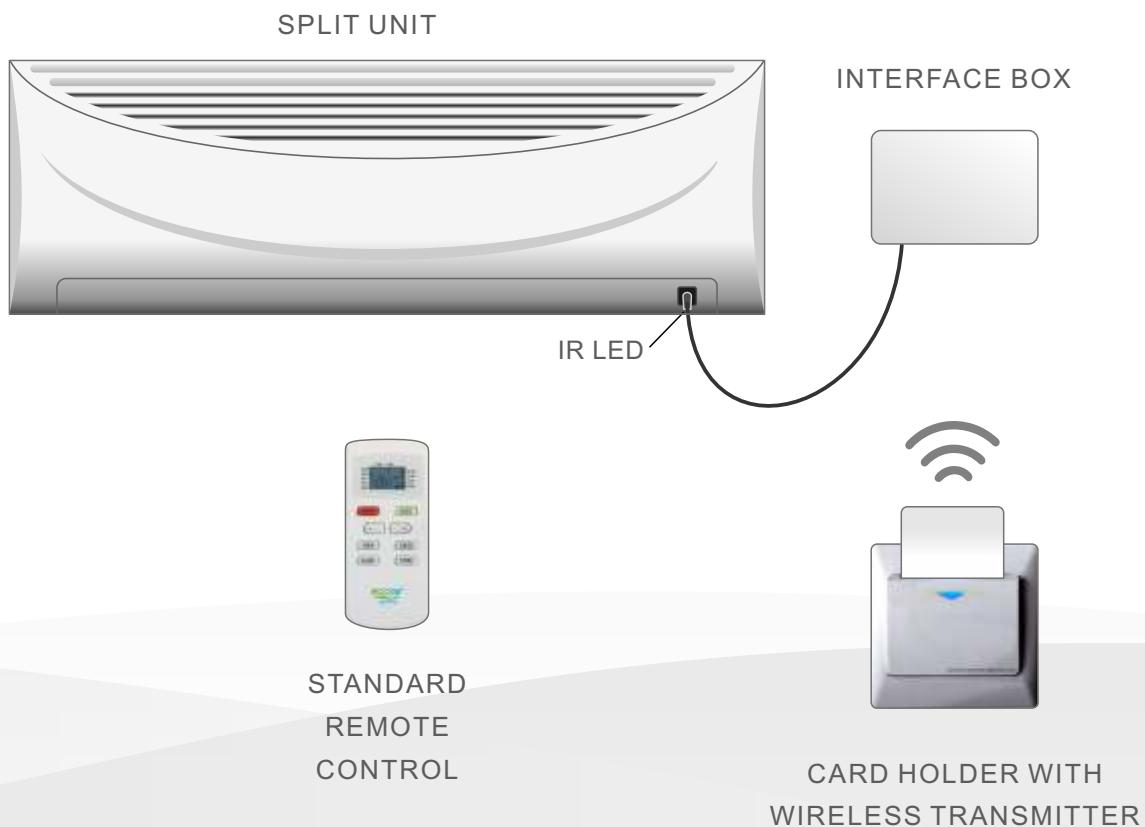
#### **INTERFACE BOX**

Art. 2024 Power supply

Art. TX10025/3 IR Converter

Art. TX10009/1 IR Led

## #4 CLIMATE CONTROL WITH WIRELESS CARD HOLDER (SOON AVAILABLE)



### FEATURES

The last advanced release, using a special card holder with wireless transmitter and the Interface Box with wireless receiver.

When the guest enters the room inserting his card into the card holder, the system will transmit the information to the Interface Box, switching the split preset temperature from stand by to comfort. The standard IR control of the split will be active for adjustment by the guest.

### COMPONENTS

Art. 6087/W Card holder with wireless transmitter

#### **INTERFACE BOX**

Art. 2024 Power supply

Art. TX10030/0 IR Converter

Art. TX10009/1 IR Led

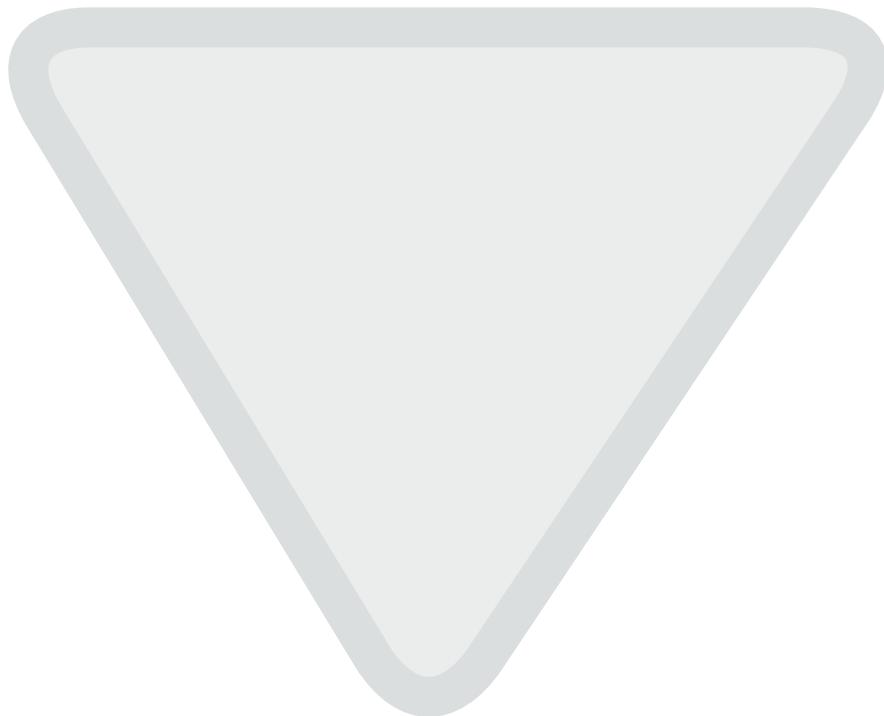
## ROOM CONTROLLERS AND ACCESSORIES FOR SPLIT

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SMART ROOM CONTROLLERS				
	Part Number	Description	Humidity Sensor	PIR Sensor
	TX8350USB11	Room Controller with 24 V output power supply 24 Vca built-in temperature sensor, humidity sensor, IR motion detector	Yes	Yes

INTERFACE BOX COMPONENTS		
	Part Number	Description
	TX10025/3	Converter with dry contact drive
	TX10027/1	Converter with 24 Vca drive
	TX10027/3	Converter with 110/230 Vca drive
	TX10009/1	IR emitter led

WIRELESS ACCESSORIES FOR ROOM CONTROLLERS		
	Part Number	Description
	TXM8000V5045P	ZigBee® wireless card to be set inside the room controller
	TXCMSP5045	Ceiling mounted motion sensor
	TXWDSP5045	Mini door - window switch
	TXWMSP5045	Wall mounted motion sensor



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