Wireless Room Sensor
Specification and Installation Instructions

Description
Powered by solar energy with the largest solar caption surface, the Wireless Room Sensor performs temperature and humidity measurements and broadcasts the results using the EnOcean wireless standard. The Wireless Room Sensor can also broadcast the setpoint and the change of state of the two buttons. The Wireless Room Sensor also features an optional battery backup and an energy collector model for room sensors installed in areas with little or no natural light.

Solar Wireless Temperature Humidity enocean

STS29E
SHS29E

STR29E
SHR29E

CSV29

Applications
- EnOcean compatible building automation systems
- Installations requiring virtually no maintenance and easy installation
- Installations where wiring can be difficult (concrete or other)

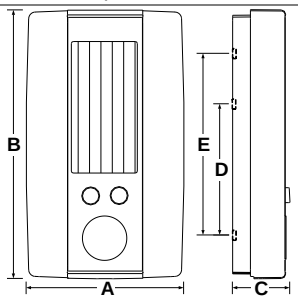
Features
- Solar powered or 24Vac input
- Large solar cell surface
- Energy harvesting provides operation for up to 14 days without light
- Energy harvesting functions down to 200 lux
- Optional backup battery for low light installations.
- EnOcean wireless communication (new generation)
- Frequency: 902MHz
- Saves time and labour (easy installation)
- Configurable wake-up intervals
- Configurable redundant transmissions
- Built-in temperature sensor and optional humidity sensor
- Remote temperature sensor input
- Optional setpoint dial with 2 buttons for configurable peripheral applications
- Energy collector model for room sensors installed in areas with little or no natural light also available.

Models

Model	Temperature sensor	Humidity sensor	Setpoint dial & 2 buttons	Energy collector	EnOcean profile number	Frequency
STS29E9	■	-	■	-	A5-10-05	902 MHz
STR29E9	■	-	-	-	A5-02-05	902 MHz
SHS29E9	■	■	■	-	A5-10-10	902 MHz
SHR29E9	■	■	-	-	A5-04-01	902 MHz
CSV29	-	-	-	■	-	-

Note: The enclosed device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
- *This device may not cause harmful interference.*
- *This device must accept any interference received, including interference that may cause undesired operation.*

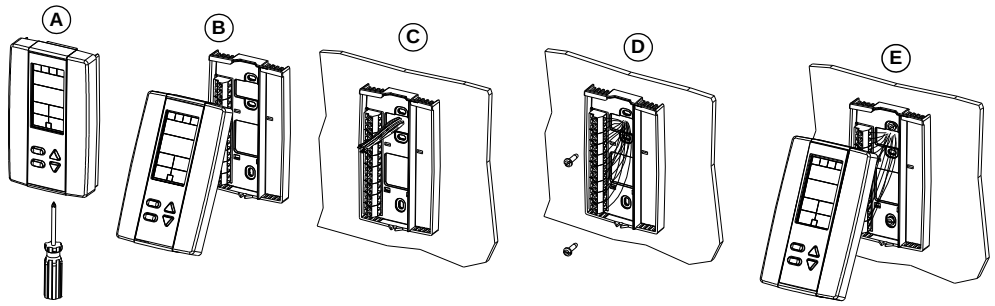
Technical Specifications

Technical Data	Wireless Room Sensor
Power Supply	- Solar cells and super capacitors - Optional 2032 backup battery - Optional 24Vac input - Optional Energy Collector (CSV29)
EnOcean Integrated	EnOcean integrated module = 902.87 MHz (STM300U)
	Antenna = Integrated (Whip Antenna)
	RF range = 300m (985ft) free of obstacles – 30m (100ft) interior
Temperature Sensor	10KΩ Thermistor, Type III (internal/external)
	Operating temperature range = 0°C to 40°C [32ºF to 122ºF]
	Internal sensor precision = +/- 0.2°C [0.4°F]
	External temperature sensor selectable by jumper
	The linearization of the sensor will be done by the application firmware
Humidity Sensor	Integrated CMOS humidity sensor
	Humidity sensor precision = +/- 2% RH (from 20% to 80% RH); +/- 3% RH entire range
Setpoint	Setpoint potentiometer range = 10°C to 30°C [50ºF to 86ºF]. Represented by 0-255 user configurable.
EnOcean Custom Application	Measurement of the temperature and linearization of the sensor output (Thermistor sensor).
	Manage communications and get the measurement of the integrated humidity sensor for product configuration when humidity measurement is requested.
	Get the setpoint level if this configuration is requested.
Dimensions A = 2.85” (73mm) B = 4.85” (123mm) C = 1.00” (24mm) D = 2.36” (60mm) E = 3.27” (83mm)	

Mounting Instructions

CAUTION: Remove power to avoid a risk of malfunction.

A. Remove the captive screw that’s holding the base and the front cover of the unit together.
B. Lift the front cover of the unit to separate it from the base.
C. Pull all wires through the holes in the base.
D. Secure the base to the wall using wall anchors and screws (supplied). Make the appropriate connections.
E. Mount the control module on the base and secure using the screw.



PCB

DIP Switches

Wake-up Interval

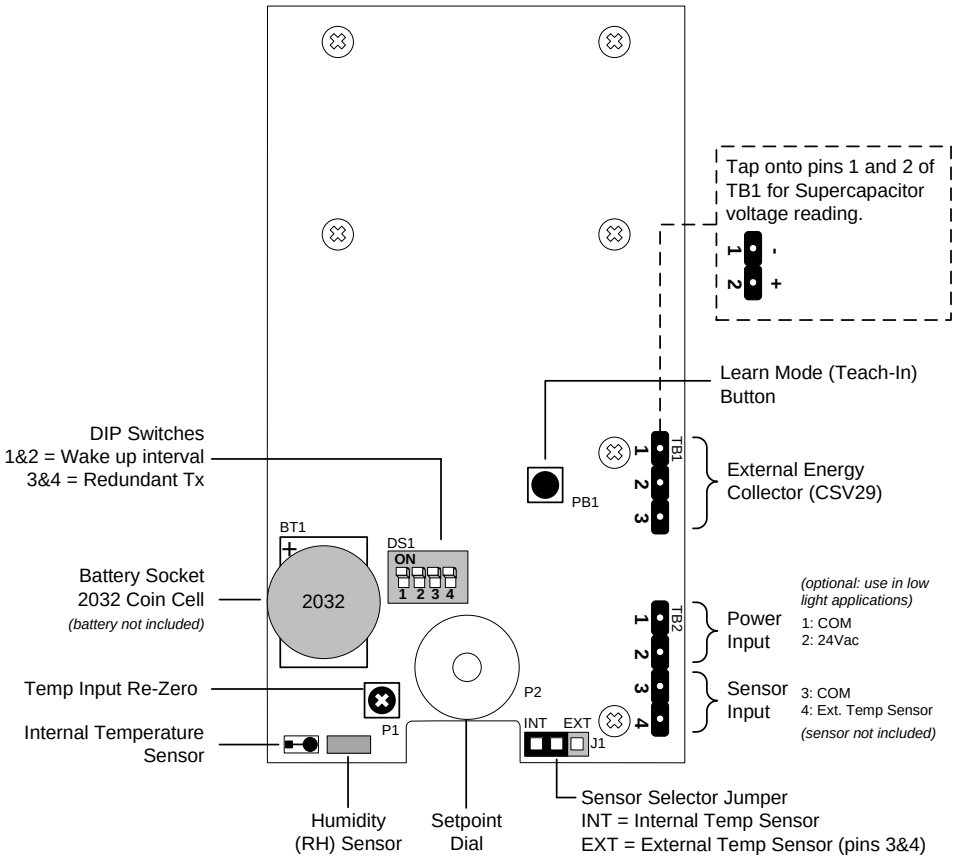
1	2	Value
OFF	OFF	No cycling wake up*
ON	OFF	1
OFF	ON	10
ON	ON	100

* = Default value

Redundant Transmissions

3	4	Value
OFF	OFF	Every wake up*
ON	OFF	7 to 14 wake ups
OFF	ON	70 to 140 wake ups
ON	ON	Never

* = Default value



WARNING: Risk of non compliance to FCC standard. For FCC compliant installations do not use the 1-second wake-up interval setting. ***As per FCC15.231, devices shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.***

EnOcean Equipment Profile Support

A5-10-05: Temperature, and Occupancy Override Buttons

RORG	A5	4BS Telegram
FUNC	10	Room Operating Panel
TYPE	05	Temperature Sensor (Range: 0°C–40°C), Setpoint, Occupancy, and Auxiliary Switch

Offset	Size	Bit Range	Data	Shortcut	Description	Valid Range	Scale	Unit
0	8	DB3.7–DB3.0	Not Used (= 0)					
8	8	DB2.7–DB2.0	Setpoint	SP	Setpoint (linear) Min (-) to Max (+)	0–255	0–255	NA
16	8	DB1.7–DB1.0	Temperature	TMP	Temperature (linear)	255–0	0–40	°C
24	4	DB0.7–DB0.4	Power Monitor	PWR	Super Capacitor Voltage Reading	0–15	2.1–5.0	V
28	1	DB0.3	LRN Bit	LRNB	LRN Bit	Enum 0 = Teach-in telegram 1 = Data telegram		
29	1	DB0.2	Not Used (= 0)					
30	1	DB0.1	Auxiliary	AUX	Auxiliary Button	Enum 1 = Button released 0 = Button pressed		
31	1	DB0.0	Occupancy	OCC	Occupancy Button	Enum 1 = Button released 0 = Button pressed		

A5-02-05: Temperature Sensor

RORG	A5	4BS Telegram
FUNC	02	Temperature Sensors
TYPE	05	Temperature Sensor (Range: 0°C– 40°C)

Offset	Size	Bit Range	Data	Shortcut	Description	Valid Range	Scale	Unit
0	8	DB3.7–DB2.0	Not Used (= 0)					
16	8	DB1.7–DB1.0	Temperature	TMP	Temperature (linear)	255–0	0–40	°C
24	4	DB0.7–DB0.4	Power Monitor	PWR	Super Capacitor Voltage Reading	0–15	2.1–5.0	V
28	1	DB0.3	LRN Bit	LRNB	LRN Bit	Enum 0 = Teach-in telegram 1 = Data telegram		
29	2	DB0.2–DB0.0	Not Used (= 0)					

A5-04-01: Temperature and Humidity Sensor

RORG	A5	4BS Telegram
FUNC	04	Temperature and Humidity Sensor
TYPE	01	Range: 0°C–40°C, 0%–100%

Offset	Size	Bit Range	Data	Shortcut	Description	Valid Range	Scale	Unit
0	8	DB3.7–DB3.0	Not Used (= 0)					
8	8	DB2.7–DB2.0	Humidity	HUM	Relative Humidity (linear)	0–250	0–100	%
16	8	DB1.7–DB1.0	Temperature	TMP	Temperature (linear)	0–250	0–40	°C
24	4	DB0.7–DB0.4	Power Monitor	PWR	Super Capacitor Voltage Reading	0–15	2.1–5.0	V
28	1	DB0.3	LRN Bit	LRNB	LRN Bit	Enum 0 = Teach-in telegram 1 = Data telegram		
29	1	DB0.2	Not Used (= 0)					
30	1	DB0.1	T Sensor	TSN	Availability of the temperature sensor	Enum 0 = Not available 1 = Available		
31	1	DB0.0	Not Used (= 0)					

A5-10-10: Temperature, Humidity, and Setpoint

RORG	A5	4BS Telegram
FUNC	10	Room Operating Panel
TYPE	10	Temperature and Humidity Sensor, Setpoint and Occupancy Control, and Auxiliary Switch

Offset	Size	Bit Range	Data	Shortcut	Description	Valid Range	Scale	Unit
0	8	DB3.7–DB3.0	Setpoint	SP	Setpoint (linear) Min (-) to Max (+)	0–255	0–255	NA
8	8	DB2.7–DB2.0	Humidity	HUM	Relative Humidity (linear)	0–250	0–100	%
16	8	DB1.7–DB1.0	Temperature	TMP	Temperature (linear)	0–250	0–40	°C
24	4	DB0.7–DB0.4	Power Monitor	PWR	Super Capacitor Voltage Reading	0–15	2.1–5.0	V
28	1	DB0.3	LRN Bit	LRNB	LRN Bit	Enum 0 = Teach-in telegram 1 = Data telegram		
29	1	DB0.2	Not Used (= 0)					
30	1	DB0.1	Auxiliary	AUX	Auxiliary Button	Enum 1 = Button released 0 = Button pressed		
31	1	DB0.0	Occupancy	OCC	Occupancy Button	Enum 1 = Button released 0 = Button pressed		