EcoStruxure™
Innovation At Every Level

RP-C-EXT-IS-BLE

SpaceLogic™ RP Controller Expansion Modules

EcoStruxure™ Building

Insight-Sensor

Introduction

SpaceLogic* RP-C-EXT-IS-BLE Insight-Sensor connects to the SpaceLogic RP controllers and is used for people counting, motion detection, and luminosity and sound level monitoring, and supports Bluetooth Low Energy based applications such as beaconing and remote control communication.

The SpaceLogic Insight-Sensor provides real-time occupant information that enables immediate and automatic adjustment of the BMS for reduced energy consumption and optimized indoor air quality, for example, by decreasing the fan speed or turning off the lights.

The SpaceLogic Insight-Sensor is connected to the RP controller using an RJ45 type quick connector.

The SpaceLogic Insight-Sensor's three flexible mounting brackets (springs) enable quick and easy installation on a suspended ceiling tile. The SpaceLogic Insight-Sensor also comes with a mounting ring, which allows the device to be installed in open ceiling applications.

The SpaceLogic Insight-Sensor is part of the RP controller expansion modules product range. The SpaceLogic Insight-Sensor can be combined with the RP controller expansion modules for lighting and blind control to provide a connected room solution.

www.se.com/buildings

Life Is On Schneider Electric

RP-C-EXT-IS-BLE

* Formerly known as SmartX.

Features

The SpaceLogic Insight-Sensor has the following features:

- Power and communications through the room bus
- People counting through thermal imaging sensor with software configurable detection areas
- Motion detection through passive infrared sensor
- Luminosity measurement through ambient light sensor
- Sound pressure level measurement through an analog microphone, which enables monitoring of sound levels in both enclosed and open spaces
- Temperature and humidity measurement provided for dew point calculation
- Bluetooth Low Energy for beaconing applications such as indoor positioning - a service to be provided by third partyBeaconing follows standard iBeacon profile - compatible with multiple indoor positioning providers
- Bluetooth Low Energy for wireless connection to RP-C-RC-BLE remote control
- Status LED for the device
- Rotary switch for address configuration

Room bus

The RP controller room bus allows RP controller expansion modules to be connected to the controller for people counting, motion detection, luminosity and sound pressure level measurements, Bluetooth Low Energy based applications, and control of electric lights and window blinds.

The RP-C Pro room bus supports up to nine connected RP controller expansion modules with the following restrictions:

- Maximum of two DALI light modules
- Maximum of two SMI blind modules
- Maximum of seven Multi-sensors or SpaceLogic Insight-Sensors

The RP-C Advanced room bus supports up to six connected RP controller expansion modules with the following restrictions:

- Maximum of two DALI light modules
- Maximum of two SMI blind modules
- Maximum of four Multi-sensors or SpaceLogic Insight-Sensors

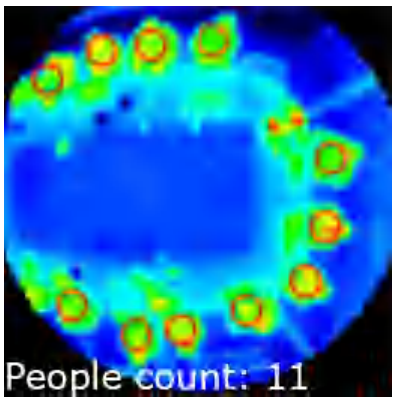
The RP-V Advanced room bus supports up to four connected RP controller expansion modules with the following restrictions:

- Maximum of one DALI light module
- Maximum of one SMI blind module
- Maximum of two Multi-sensors or SpaceLogic Insight-Sensors

Maximum total length of the room bus is 72 m (236 ft).

People counting

The thermal imaging sensor senses the heat radiation from each individual. The device applies advanced image processing to the thermal images, and the result is a people count number, which is periodically transmitted to the RP controller. The device does not transmit or record the thermal images, nor can it take photographic images. Thus, the information from the device cannot be used to identify people.



Thermal image of people sitting around a table

Using the EcoStruxure Building Operation software, the sensor's detection area can be configured to reduce overlapping areas between two devices to minimize the risk of a person being counted twice. The detection area can also be adjusted to exclude heat radiating objects such as radiators and windows, and to exclude corridors and other adjacent areas through which people just pass by.

Sound pressure level measurement

The SpaceLogic Insight-Sensor measures the sound pressure level using a completely analog solution, without involving any digital audio processing, codec, or recording. Each measured value is an average value for an interval of one second. The measurements are performed every two minutes. The device is not capable of recording or streaming audio samples.

Bluetooth Low Energy beacon and remote control

The SpaceLogic Insight-Sensor is a Bluetooth Low Energy (BLE) device. The SpaceLogic Insight-Sensor support for Bluetooth beacon enables nearby mobile devices with a specific app installed to interact when in close proximity to the broadcasting SpaceLogic Insight-Sensor. The Bluetooth beacon can be used for services such as indoor positioning of the mobile device. The service and mobile app need to be provided by a third party. The Bluetooth connection can also be used for communication with the RP-C-RC-BLE remote control, which makes it possible to control the lighting, blinds, and air conditioning in a zone of an office building.

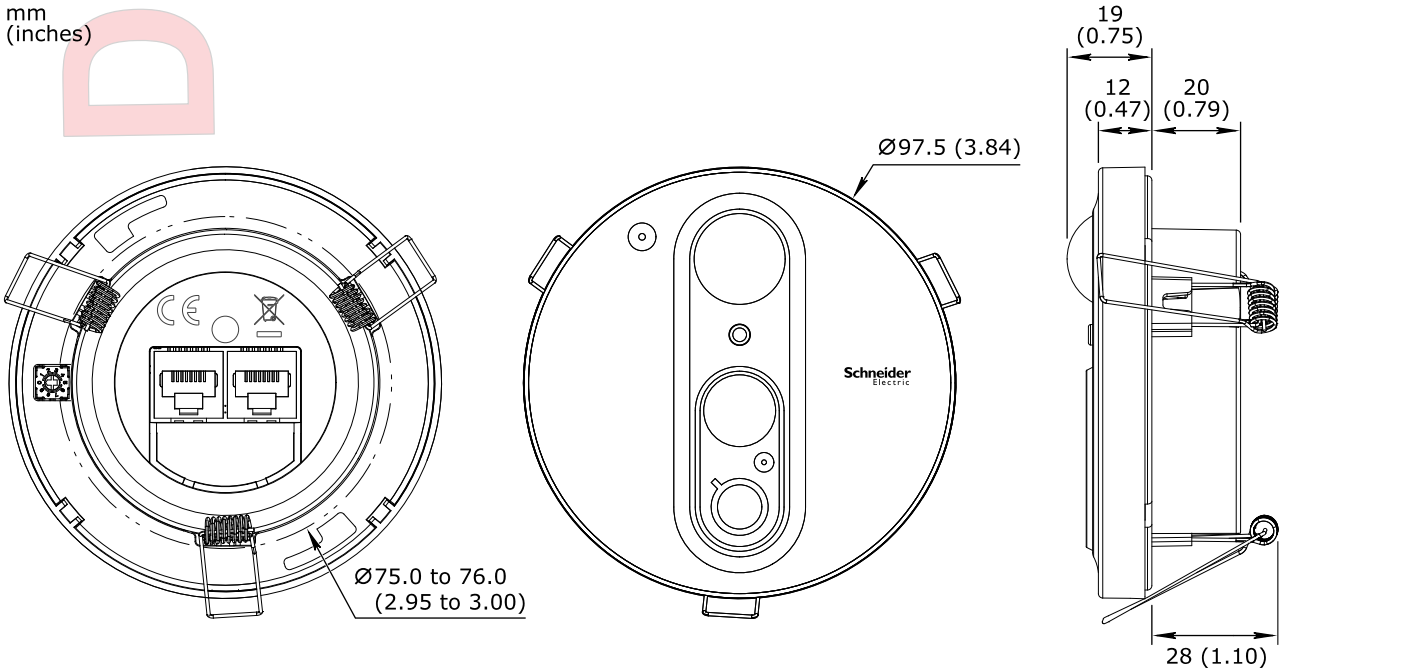
RP-C-EXT-IS-BLE

Part Numbers

Product	Part number
RP-C-EXT-IS-BLE	SXWREISBLE10001

Specifications

RP-C-EXT-IS-BLE	
Electrical	
DC input supply voltage	24 VDC Powered by the RP controller through the room bus (RJ45)
Maximum power consumption	0.35 W
Environment	
Ambient temperature, operating	0 to 50 °C (32 to 122 °F)
Ambient temperature, storage	-20 to +70 °C (-4 to +158 °F)
Humidity	20 to 90 % RH non-condensing
Material	
Plastic flame rating	UL94 V-0
Ingress protection rating	IP 20
Cover color	Signal white (RAL9003)
Mechanical	



Overall external diameter	97.5 mm (3.84 in.)

RP-C-EXT-IS-BLE

Diameter of mounting clearance hole	75.0 to 76.0 mm (2.95 to 3.00 in.)
External washer thickness	12 mm (0.47 in.)
Overall external thickness	19 mm (0.75 in.)
Internal thickness	20 mm (0.79 in.)
Overall internal depth	28 mm (1.10 in.)
Weight, SpaceLogic Insight-Sensor with mounting springs (3x)	0.088 kg (0.194 lb)
Weight, SpaceLogic Insight-Sensor with mounting ring	0.098 kg (0.216 lb)
Installation	Plastic unit to be fitted flush in a suspended ceiling tile with a thickness of up to 45 mm (1.77 in.) The mounting springs enable quick and easy installation in a suspended celing. The mounting ring allows the device to be installed in a ceiling with drywall anchors or to a 102 mm (4 in.) junction.
Software compatibility	
EcoStruxure Building Operation software	version 4.0 and later
Agency compliances	
Emission	RCM; BS/EN 61000-6-3; BS/EN 50491-5-2; FCC Part 15, Sub-part B, Class B
Immunity	BS/EN 61000-6-2; BS/EN 50491-5-3
Radio	EN 300 328 V2.1.1
Safety standards	BS/EN 60730-1; BS/EN 60730-2-11; BS/EN 50491-3; UL 916 C-UL US Listed
FCC ID	DVE-IS1
ISED certification number	IC: 24775-IS1
Fire performance in air-handling spaces[a] a) The SpaceLogic Insight-Sensor is approved for plenum applications.	UL 2043
Communication ports	
Room bus	RS-485 Dual RJ45 ports for daisy-chain configurations Use a Cat 5 (or higher) cable Maximum total length of the room bus: 72 m (236 ft)
Room bus protection	Transient voltage suppressors on communication and power signals
Wireless connectivity	
Bluetooth Low Energy	
Communication protocol	Bluetooth® 5.1 Low Energy compliant
Frequency	2.402 to 2.480 GHz
Maximum communication distance	Line-of-sight: 50 m (164 ft)
Maximum output power	3 dBm
Antenna	Integrated antenna
Beacon protocol	iBeacon

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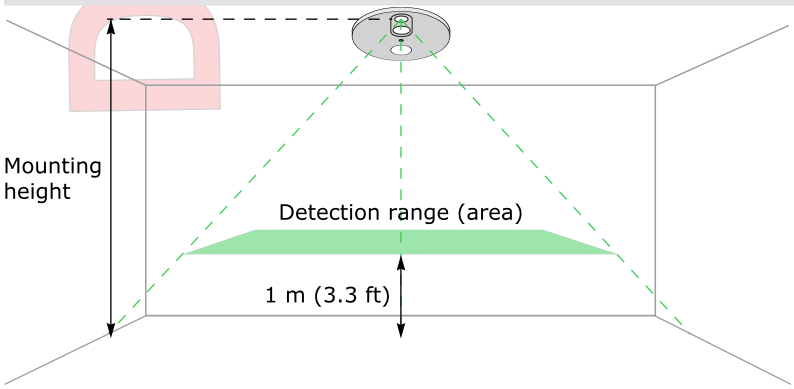
Hardware	
Main microcontroller	
CPU type	ARM Cortex-M4 single-core
Frequency	38.4 MHz
SRAM (embedded)	256 KB
Flash memory (embedded)	1024 KB
Flash memory (serial)	16 MB
Sub microcontroller	
CPU type	ARM Cortex-M4 single-core
Frequency	80 MHz
SRAM (embedded)	320 KB
Flash memory (embedded)	1 MB
Flash memory (serial)	2 MB
Additional hardware	
Status indicator	LED (green and red) that shows the status of the device
Address switch	Rotary switch 0 to 9
Set button	Push-button switch
People counting	
Sensor	Longwave infrared (LWIR) imaging sensor (microbolometer)
Detection range	See image and table below.



Sensor mounting height	Sensor detection range (area)[a] Standing people	Sensor detection range (area)[a] Seated people
3.0 m (10 ft)	6.9 x 6.9 m (22.6 x 22.6 ft)	5.2 x 5.2 m (17.0 x 17.0 ft)
2.7 m (9 ft)	6.0 x 6.0 m (19.7 x 19.7 ft)	4.5 x 4.5 m (14.8 x 14.8 ft)
2.5 m (8 ft)	5.2 x 5.2 m (17.0 x 17.0 ft)	3.9 x 3.9 m (12.8 x 12.8 ft)

a) At the level of 1 m (3.3 ft) above the floor.

Counting accuracy	>90%

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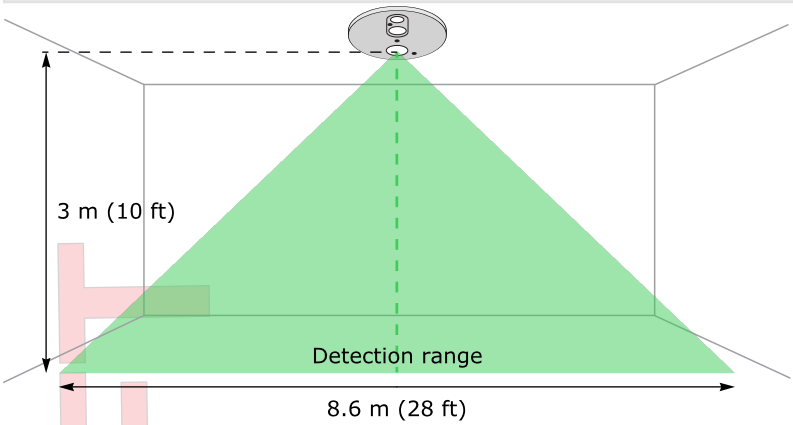
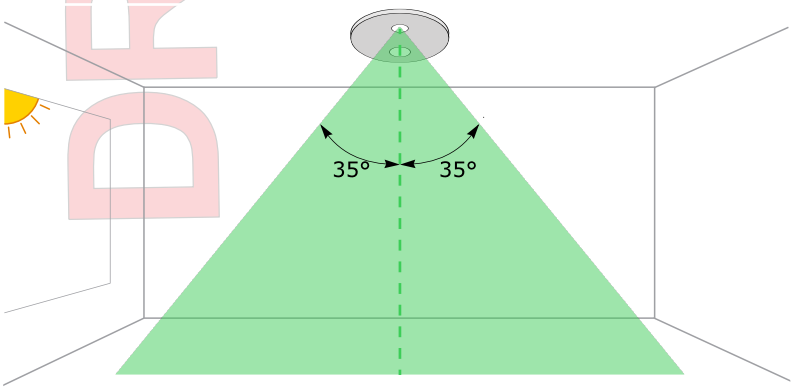
Motion detection	
Sensor	Quad-type passive infrared (PIR) sensor with Fresnel lens
Detection range	See image and table below.



Sensor mounting height	Sensor detection range (diameter)
3.0 m (10 ft)	8.6 m (28 ft)
2.7 m (9 ft)	8.0 m (26 ft)
2.5 m (8 ft)	7.4 m (24 ft)

Luminosity measurements	
Sensor	Ambient Light Sensor (ALS)



Spectral response	Human eye
Luminosity range	0 to 10,000 lux
Field of view	35 degrees from vertical

Sound pressure level measurements	
Sensor	Microelectromechanical system (MEMS) microphone
Dynamic pressure	35 to 79 dBA
Accuracy	+/- 3 dBA

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Continued

Bandwidth	10 Hz to 8 kHz
Temperature measurements	
Range	0 to 50 °C (32 to 122 °F)
Accuracy	+/-1 °C (+/-1.8 °F)
Humidity measurements	
Range	0 to 100% RH
Accuracy	+/-4% (within the range of 20 to 80% RH) +/-6% (outside the range of 20 to 80% RH)

RP-C-EXT-IS-BLE

Regulatory Notices

Federal Communications Commission
FCC Rules and Regulations CFR 47, Part 15, Class B
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference. (2) This device must accept any interference received, including interference that may cause undesired operation.
FCC ID: DVE-IS1
Industry Canada
This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.
IC: 24775-IS1

Regulatory Compliance Mark (RCM) - Australian Communications and Media Authority (ACMA)
This equipment complies with the requirements of the relevant ACMA standards made under the Radiocommunications Act 1992 and the Telecommunications Act 1997. These standards are referenced in notices made under section 182 of the Radiocommunications Act and 407 of the Telecommunications Act.

UL 916 Listed products for the United States and Canada, Enclosed Energy Management Equipment. UL file E80146.

CE - Compliance to European Union (EU)
2014/53/EU Radio Equipment Directive (RED)
2011/65/EU Restriction of Hazardous Substances (RoHS) Directive
2015/863/EU amending Annex II to Directive 2011/65/EU
This equipment complies with the rules, of the Official Journal of the European Union, for governing the Self Declaration of the CE Marking for the European Union as specified in the above directive(s).

WEEE - Directive of the European Union (EU)
This equipment and its packaging carry the waste of electrical and electronic equipment (WEEE) label, in compliance with European Union (EU) Directive 2012/19/EU, governing the disposal and recycling of electrical and electronic equipment in the European community.

UK Conformity Assessed
S.I. 2017/1206 - Radio Equipment Regulations 2017
S.I. 2012/3032 - Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012
S.I. 2013/3113 - Waste Electrical and Electronic Equipment Regulations 2013
This equipment complies with the rules, of the UK regulations, for governing the UKCA Marking for the United Kingdom specified in the above directive(s).

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