

Product sheet

GST - TriSensor



Making buildings smart, a sensor that redefines buildings

The concept

A climate ceiling is an architectural (metal) ceiling through which hot or cold-water flows for ceiling heating or cooling by means of radiation. Furthermore, ventilation and lighting are integrated in the climate ceiling to provide a flexible, modular concept for a building. All required systems for HVAC and lighting including sensors are fully integrated in the climate ceiling. Technical systems disappear invisibly in the ceiling, enabling a flexible division of space without fixed walls. This provides a comfortable indoor climate with optimal climate control. With a climate ceiling, rooms are energy-efficient, comfortable, quiet and draft-free to cool and heat.

Mymesh takes the climate ceiling one step further. Integrated in a climate ceiling, the TriSensor adds innovative measurement- and control technology, especially for the measurement of occupancy and room temperature. Occupancy (number of people in the room) is leading for the required ventilation amount.

The innovative sensor technology of the TriSensor makes accurate measurement of the room temperature from the ceiling possible. Second beaconing is used for location based services for employees. With a room control app, the end-user can change the settings of the room temperature and lighting making wall switches and panels redundant.

The product

The TriSensor is specially developed to support current and future smart building requirements. The combination of powerful sensors and software capabilities makes the TriSensor powerful beyond compare.

TriSensor supports:

- Measurement of room temperature
- Motion Detection
- Measurement of occupancy in the detection area
- Measurement of relative humidity
- Measurement of light level at the ceiling
- Bluetooth beaconing for location-based services

The Mymesh network and the Building Automation System work closely together in controlling the climate ceiling. Light control is locally handled by the Mymesh network using motion- and occupancy detection for switching and daylight harvesting for dimming the lighting. Both TriSensor and Room Control app are connected to the Building Automation System via the Mymesh REST API. The Building Automation System handles the actual room measurements versus the given setpoints via the app.

Installed at a typical ceiling height of 3 meter, the occupancy and PIR sensor cover an area of approximately 10m². Like the climate ceiling the Tri-Sensor needs to cover the area and is applied in a modular grid/pattern.

Network features

- Wireless, stand-alone network that is self-organizing and self-healing
- 2.4GHz communication for reliable data transfer
- Secure by design
- Ultra scalable to > 10,000 devices in one network
- Updates and new functionality can be installed with Over-The-Air updates.
- Cloud interface (API) available to connect with Building Automation Systems, dashboards, user apps and more.

Easy installation

The TriSensor fits perfectly flush mount in a rectangular hole of 42mm x 82mm. The raised edge is 0.8mm to lock the Tri-Sensor in the rectangular hole. The luminaire spring clip holds the Tri-Sensor in place. The Tri-Sensor has no brackets and is fully integrated in the luminaire.

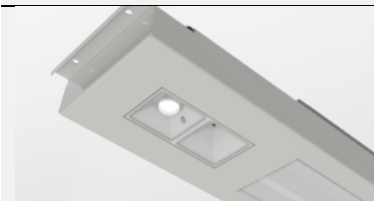
Bluetooth Beaconsing

The sensor can function as a beacon next to regular operations. Via a third-party application, mobile devices such as tablets and smartphones can pinpoint their precise 3D location in the building or receive location-based notifications.

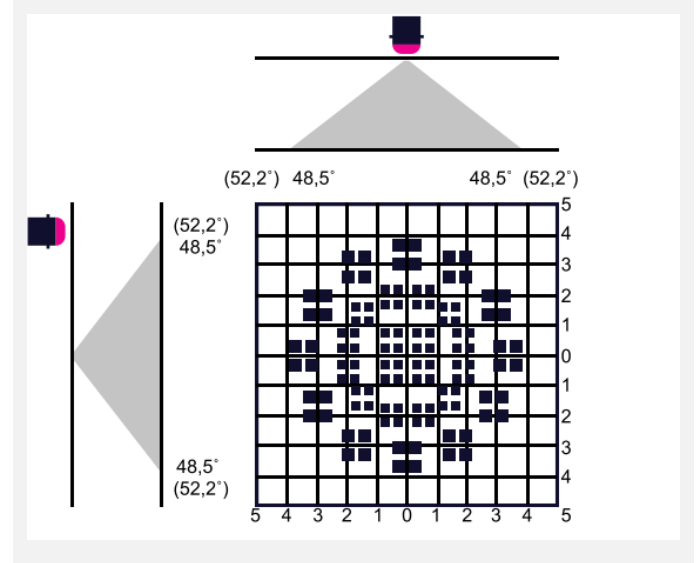
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Sensor Information

Temperature & occupancy sensor	
Type	IR Array Sensor
Typical installation height	2.65m – 3.10m
Field of view	60° x 60°
Temperature accuracy	±0.2 °C between 12-32 °C
Occupancy accuracy	±10%
Light sensor	
Type	Independent ambient light sensor
Range	1 – 65,000 Lux
Audio sensor	
Accuracy	IEC 61672 Class 2
Dynamic range	33-120 dB(A)
Frequency range	0-3 dB: 100-10000 Hz
Sensitivity	-26 dBFS (digital microphone)



Humidity sensor	
Range	0 -100% RH
Accuracy	2% RH
Slight motion PIR sensor	
Typical Installation height	3m
Maximum detection distance	4m
Field of view	104° x 104°
X-Y Cross section at 3m	

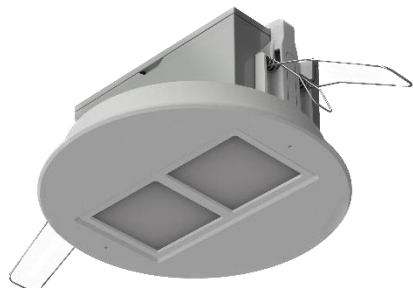


Device Information

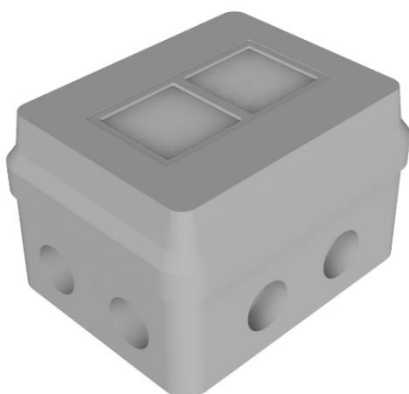
Connections		Environment	
Power Supply	Single phase 230VAC (+/- 10% 50Hz)	Operating Temp.	+5° to + 40°C (no frost, no condensation)
Wieland pluggable installation connector. Type GST18 3K1-S 75H 05SW with 50cm cable. Free length excluding connector 36cm.		Relative Humidity	10% to 90%
		Installation Height	Max. 2000m above sea level
Protection degree		Certification	
GST - TriSensor	IP20	ETSI EN 300 440	
		ETSI EN 300 328	
		ETSI EN 301 489-01/03/17	
		IEC EN 62368-1	
		RED / CE / UKCA	
Order information		Housing	
GST - TriSensor RAL7035 Light Grey	BLC.5306.001	LxWxH	86.3 x 46.5 x 52 mm
GST - TriSensor RAL9016 Traffic White	BLC.5316.001	Weight	101 gram
GST - TriSensor RAL9005 Black	BLC.5317.001	Material	ABS
		Colour	White
Ceiling Mount Attema Grey White RAL9002	BLC.5536.001		
Suspended Ceiling Mount Traffic White RAL9016	BLC.5532.001		
Energy Consumption		Radio	
TriSensor	< 0.5 W	Band	2.4GHz ISM band

Accessories

Suspended Ceiling Mount Traffic White RAL9016.



Circular holder with spring clips to mount a Tri- or BiSensor in a suspended ceiling.



Ceiling Mount Attema Grey White RAL9002.

Surface mount rectangular holder for Tri- or BiSensor.