

TECHNICAL INFO

- **WiFi:**
802.11b/g/n (2.4 GHz)
Wi-Fi Security Standards:
WPA, WPA2
Antenna: Internal 2dBi
Range: Up to 75 meters
- **Ethernet:**
IEEE 802.3af PoE Adapted
- **Network Settings:**
IPv4 - DHCP or Static
- **Sensors:**
 - Temperature Sensor:**
Accuracy: +/- 0.4 °C
Range: -10 to 85 °C
 - Humidity Sensor:**
Accuracy: +/- 3% RH
Range: 0 to 80% RH
 - Light Sensor:**
Resolution: 1 lx
Range: 1 to 65535 lx
 - CO2 Sensor:**
Range: 0-2000 ppm
 - Presence Sensor:**
Passive Infrared Type
Range: 1 to 7 meter
 - Pressure Sensor:**
Accuracy: +/- 0.1 hPa
Range: 300-1100hPa
- **Electrical:**
Supply: 230V AC
- **Operating Temperature:**
-20 to +40 °C

COMPLIANCE

- **EMC:**
EN 301489-1: 2008
EN 55022: 2006
EN 61000-4-3: 2006
EN 61000-4-2: 2001
- **Safety:**
EN 60950
EN 60730

BEAD

Building Environment Analysis Device

BEAD

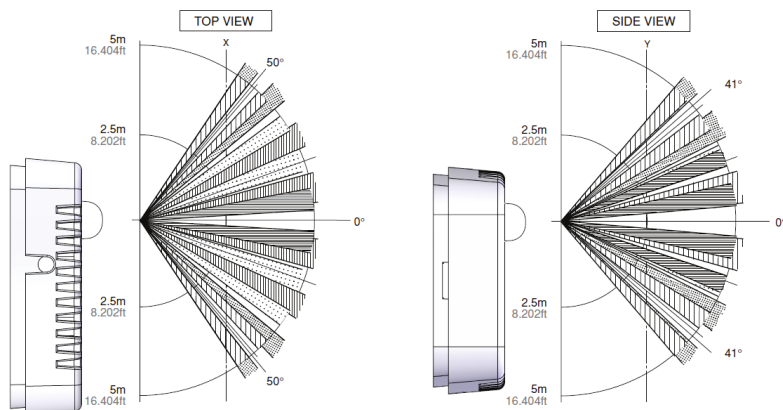
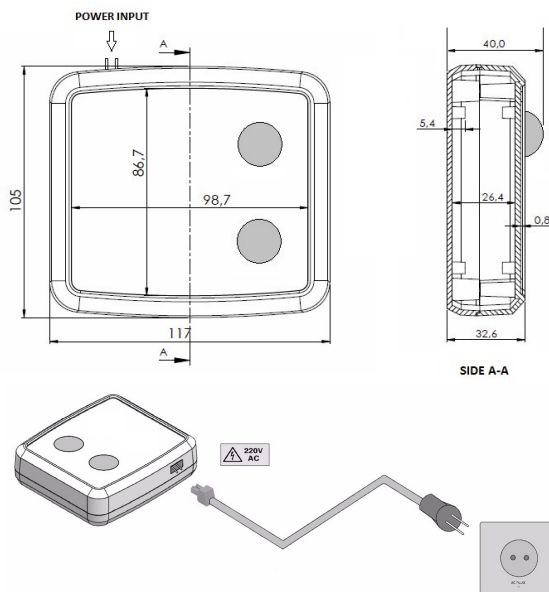
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COMMUNICATION

- TCP/IP
- HTTP Protocol Based Data Transfer
- Data collected through online BEAD® cloud endpoint
- All data is secured through HTTPS protocol (Port 443)
- Communications over HTTP (Port 5000) is possible
- Each BEAD® directly access cloud through WiFi or Ethernet



**FOR PRODUCT OPERATION AND INSTALLATION
INFORMATION PLEASE REFER TO THE BEAD WEBSITE**



DATA & SYSTEM

TECHNICAL DETAILS

DATA INTERVAL

HEAT
PRESSURE
HUMIDITY
CO2
LIGHT
PIR-MOTION

Data sending

Data is sent every minute to the cloud-based AI and analytics platform

Data are shown in the dashboard

The system shows hourly analyzed data in the dashboard

Data Sending Security

Data is sent with mqtt encryption to the cloud

NUMBER OF DEVICES TO BE INSTALLED

Office Building

In every room one device

Open office space: every 200m2 one device

Retail shop - Fitness area

Every 300m2 one device

Supermarket-Caffe-Restaurant

Every 200m2 one device

Banks-Hospitals

Every 200m2 one device

The number of devices installed is important for detailed analytics of the building. The suggested numbers are the outcomes of pilot projects which have been done over the last 2 years.

According to the project, the numbers can change

ADDITIONAL DATA SHOWN IN DASHBOARD

- Real time Energy consumption
- Outside weather forecast
- Energy prices
- Active and reactive power
- Occupancy analysis for marketing strategies
- Outside weather temperature
- T1 - T2 - T3 time zones energy consumption
- Building inventory of devices installed

OUTCOMES OF THE SYSTEM

DIGITIZED BUILDINGS

REPORTS

Energy Consumption reports

Real-time energy consumption reports of locations

Analytics

Analysis of how the indoor heating and cooling degrees changes

What time does the HVAC start and what time it stops

Occupancy changes and zones

Indoor temperature changes vs outside temperature

Energy consumption vs occupancy

Comparison of energy consumption of locations

Financial Reports

T1 T2 T3 time zones energy consumption

Daily-weekly-monthly energy costs

ALARMS

Energy consumption anomaly

After working hours energy consumption alarm

Daily over limit energy consumption

Location trends

HVAC System

Overheating and overcooling

Early or late HVAC working

Locating cooling or heating according to occupancy

HVAC cooling or heating vs outside temperature

Occupancy

Occupancy vs energy consumption

Occupancy vs heating or cooling

Occupancy vs lighting

The alarms can be set by the user as well according to the needs.

The alarm can be sent via email or push notification