



PRODUCT OVERVIEW

arbn well is an environmental quality measurement and analysis system based on high-quality, low-cost sensing. It comprises a dense network of sensors measuring a variety of parameters affecting human health and comfort. This continuous and ubiquitous sensing is supplemented by occupant feedback (collected using the arbn well app), to create a uniquely rich and detailed picture of environmental conditions inside buildings and the satisfaction of occupants. Based on the needs of a client, three devices are available: Comfort, AQ, and AQ+. All three of these devices communicate data to a gateway.

For more information, go to www.arbnco.com/arbn-well or write to us as info@arbnco.com.

APPLICATIONS

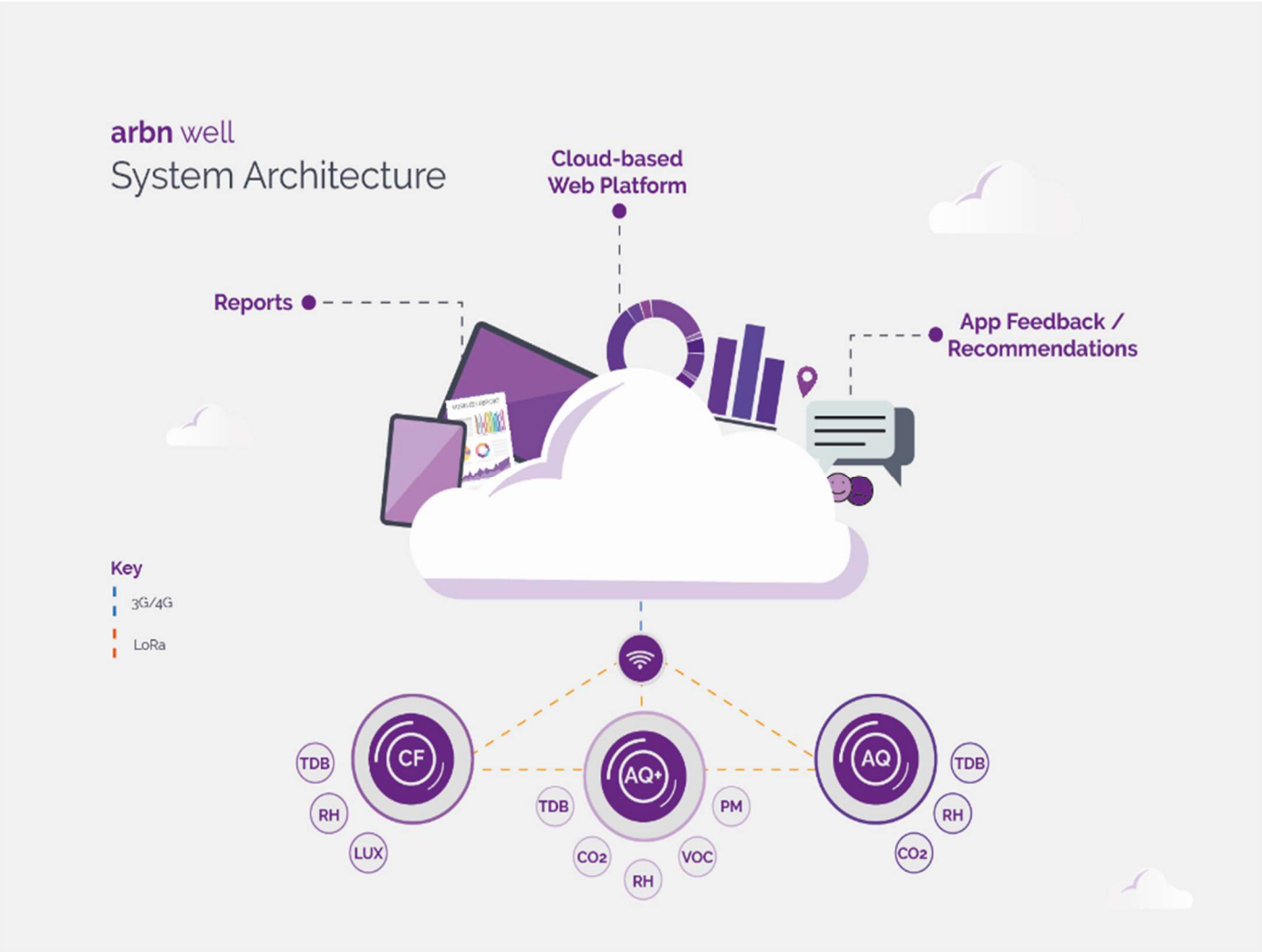
The arbn well system can be used in several applications including:

- Commercial (offices, conference rooms)
- Education (classrooms, auditoria, offices)
- Government (offices, conference rooms)
- Healthcare (wards, offices, common areas)
- Residential (bedrooms, living spaces)
- Urban farming (non-condensing applications)

THE SYSTEM

The arbn well devices connect wirelessly to the gateway over a private network, using the license-free wireless bands used by LoRa networks. The sensor data is then transmitted over 3G/4G mobile connections from the gateway, or optionally over WiFi through an AQ+ device, to the arbnco servers, from where it is analyzed and displayed on the arbn well dashboard and app, and can be accessed via APIs.

NETWORK ARCHITECTURE



MEASUREMENT CAPABILITIES

TEMPERATURE MEASUREMENTS

- **Accuracy:** 0.2 °C
- **Resolution:** 0.01 °C
- **Range:** -40 – 125 °C

RELATIVE HUMIDITY MEASUREMENTS

- **Accuracy:** 2 %
- **Resolution:** 0.01 %
- **Range:** 0 – 100 %

LIGHT MEASUREMENTS¹

- **Accuracy:** 1 lx
- **Resolution:** 1 lx
- **Range:** 0 – 26000 lx

CO₂ MEASUREMENTS

- **Accuracy:** 50 ppm, at 0 – 50 °C
- **Range:** 0 – 5000 ppm

PM MEASUREMENTS

- **Accuracy:**
 - 10 µg/m³, at less than 100 µg/m³
 - 10%, at more than 100 µg /m³
- **Resolution:** 0.3 µg /m³, at -10 – 60 °C
- **Range:** 1 – 999 µg /m³

TVOC MEASUREMENTS

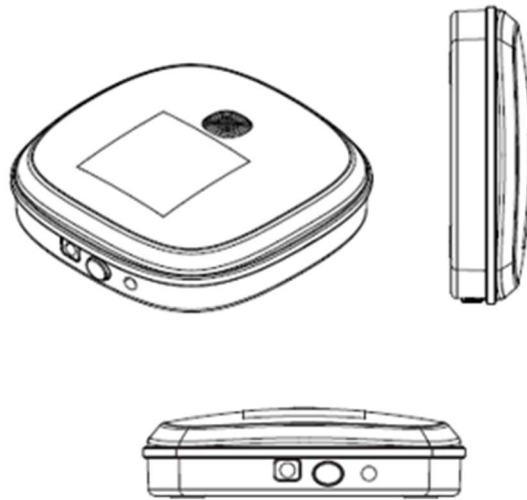
- **Resolution:** 1 ppb
- **Range:** 0 – 32768 ppb

¹ We provide illuminance in lux as standard. RGB and IR are available in W/m² on request.

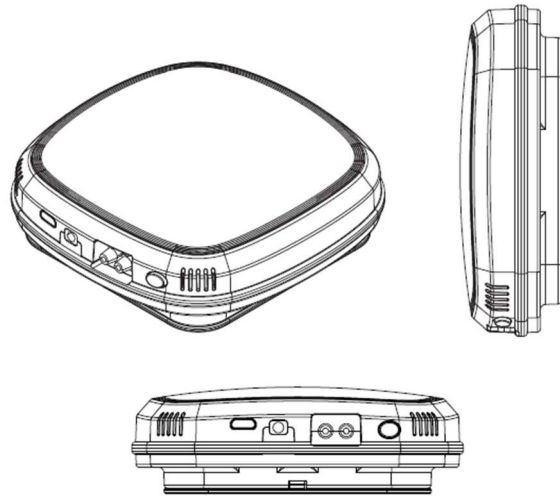
ATTACHMENTS

The specification sheets for the following arbn well system devices can be found attached below:

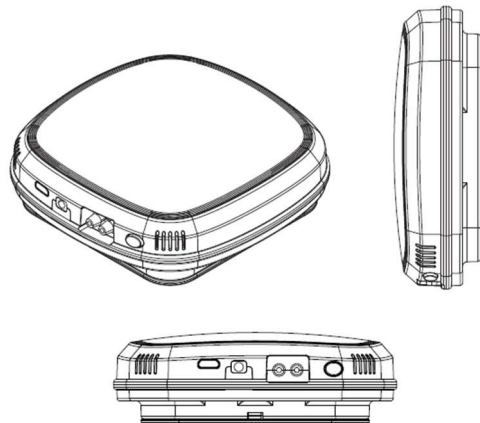
- arbn well Comfort Device
- arbn well AQ Device
- arbn well AQ+ Device
- arbn well Gateway



GENERAL	
MOUNTING	Command Brand® Damage-Free Hanging Strips; 2 strips per sensor
DIMENSIONS	76x76x21mm
WEIGHT	67g
OPERATING/STORAGE TEMPERATURE	-10-70 °C
OPERATING/STORAGE HUMIDITY	0-95 % (RH), non-condensing
SENSOR/DEVICE LIFETIME	Approx. 5 years. Deployment in high contamination environments will significantly shorten the lifespan of the humidity and CO2 sensors, and potentially the circuits.
WARRANTY	Standard warranty of 1 year for factory defects
CERTIFICATIONS	CE, FCC
SENSORS	
TEMPERATURE and RELATIVE HUMIDITY	Sensirion SHT30-DIS-B
LIGHT	Avago APDS-9250
ELECTRICAL	
POWER SOURCE	ER26500 battery; approx. 3-year lifespan.
VOLTAGE	3.6V
BATTERY CAPACITY	30.6Wh
COMMUNICATIONS	
Sub-GHz (LoRa)	Supported channels: US902-928, EU863-870, AS923, AU915-928, KR920-923, CN470-780



GENERAL	
MOUNTING	Command Brand® Damage-Free Hanging Strips; 2 strips per sensor
DIMENSIONS	112x112x35mm
WEIGHT	205g
OPERATING/STORAGE TEMPERATURE	-10-70 °C
OPERATING/STORAGE HUMIDITY	0-95 % (RH), non-condensing
SENSOR/DEVICE LIFETIME	Approx. 5 years. Deployment in high contamination environments will significantly shorten the lifespan of the humidity and CO ₂ sensors, and potentially the circuits.
WARRANTY	Standard warranty of 1 year for factory defects
CERTIFICATIONS	CE, FCC
SENSORS	
TEMPERATURE and RELATIVE HUMIDITY	Sensirion SHT30-DIS-B
CO₂	GSS CoziR-IP (NDIR-type)
ELECTRICAL	
POWER SOURCE	ER26500 battery; approx. 3-year lifespan.
VOLTAGE	3.6V
BATTERY CAPACITY	30.6Wh
COMMUNICATIONS	
Sub-GHz (LoRa)	Supported channels: US902-928, EU863-870, AS923, AU915-928, KR920-923, CN470-780



GENERAL	
MOUNTING	Command Brand® Damage-Free Hanging Strips; 2 strips per sensor
DIMENSIONS	112x112x35mm
WEIGHT	200g
OPERATING/STORAGE TEMPERATURE	-10-70 °C
OPERATING/STORAGE HUMIDITY	0-95 % (RH), non-condensing
SENSOR/DEVICE LIFETIME	Approx. 5 years. Deployment in high contamination environments will significantly shorten the lifespan of the humidity and CO2 sensors, and potentially the circuits.
WARRANTY	Standard warranty of 1 year for factory defects
CERTIFICATIONS	CE, FCC
SENSORS	
TEMPERATURE and RELATIVE HUMIDITY	Sensirion SHT30-DIS-B
CO₂	GSS CozIR-IP (NDIR-type)
PM	Plantower PMSA003
TVOC	AMS CCS811
ELECTRICAL	
POWER SOURCE	Micro USB B cable
ADAPTOR INPUT	AC 100-240V, 50/60Hz 0.4A
ADAPTOR OUTPUT	DC 5V, 750mA
COMMUNICATIONS	
Sub-GHz (LoRa)	Supported channels: US902-928, EU863-870, AS923, AU915-928, KR920-923, CN470-780
WiFi	Requires 2.4GHz network

GENERAL	
MOUNTING	Command Brand® Damage-Free Hanging Strips; 5 strips per gateway
DIMENSIONS	145x95x40mm
WEIGHT	715g
OPERATING/STORAGE TEMPERATURE	-40-75 °C
WARRANTY	Standard warranty of 1 year for factory defects
CERTIFICATIONS	CE, FCC
ELECTRICAL	
POWER SOURCE	PoE+ 48 Input, IEEE 802.3 af/at
VOLTAGE RANGE	42.5-57V
POWER RANGE	25.5-34.2W
COMMUNICATIONS	
Sub-GHz (LoRa)	Supported channels: US902-928, EU863-870, AS923, AU915-928, KR920-923, CN470-780
Other communication capabilities	Wi-Fi and Ethernet