Indoor Air Quality sensor Temperature / Humidity / CO₂ / PM2.5 / PM10 / TVOC

EXT-KA-SQ100 provides real-time accurate measurements of IAQ to allow for increased credit from building certification (e.g. LEED, WELL, RESET). IAQ sensor comes with multiple power, connectivity, and installation options.



BELIMO

| nnical data | | | |
|----------------------------------|--------------------------|---|--|
| Electrical data | Nominal voltage | AC 100240 V via terminal | |
| | Connection wireless | 2.4 GHz 802.11 b/g/n; security standards supported: 64/128 WEP, WPA-PSK, WPA2-PSK | |
| | | WPA, WPA2 Personal | |
| Data bus communication | Communication | Modbus RTU | |
| | | Local and cloud MQTT | |
| | | Open API Cloud | |
| Functional data | Coverage area | Area: 325 m² [3500 ft²] | |
| | - | Space types and layouts should be considered | |
| | | in accordance with project requirements. | |
| Measuring data | Measured values | CO ₂ | |
| | | TVOC | |
| | | PM2.5, PM10 | |
| | | Relative humidity Temperature | |
| Specification Particulate Matter | Mesurement range | Mass concentration range: 01000 μg/m³ | |
| | | PM2.5 mass concentration size range: 0.32. | |
| | | μg/m³ | |
| | Accuracy | ±3 μg/m³ (0 to 30 μg/m³) | |
| | | ±10% m.v. (301000 μg/m³) | |
| | Typical response time | ≤10 s | |
| | Sensor output resolution | 1 μg/m³ | |
| | Sensor technology | Laser particle sensor (light scattering) | |
| Specification TVOC | Mesurement range | 060000 ppb | |
| | Accuracy | ±15% ±8 ppb | |
| | Typical startup time | 0.4 ms | |
| | Sensor output resolution | 1 ppb | |
| | Sensor technology | Multi-pixel metal oxide sensor (MOx) | |
| Specification CO₂ | Mesurement range | 4002000 ppm | |
| | | Up to 10000 ppm extended range | |
| | Accuracy | ±3% m.v. ±50 ppm | |
| | Typical response time | 120 s by 90% | |
| | Sensor output resolution | 1 ppm | |
| | Sensor technology | Non-dispersive infrared (NDIR) | |
| Specification Temperature | Mesurement range | -20100°C | |
| | Accuracy | ±1°C | |
| | Long term drift | <0.03 °C/y (over typical RH/T operating range) | |
| | Typical response time | >2 s | |



| Technical data sheet | EXT-KA-SQ100 |
|--------------------------|--|
| Sensor output resolution | 0.01°C |
| Mesurement range | 099% RH |
| Accuracy | ±5% RH |
| Long term drift | <0.25 % RH/yr |
| Typical response time | >8 s (depends on the surrounding surface and the airflow in the final application environment) |
| Sensor output resolution | 0.01% RH |
| | |

Safety data

Specification Temperature

Specification Humidity

EU Conformity CE Marking Ambient humidity Max. 95% RH, non-condensing Ambient temperature 0...50°C [32...122°F]

Product Features

Mode of operation Temperature: Typical value for operation in normal RH/T operating range. Higher drift values

may occur due to contaminant environments with vaporised solvents, out-gassing tapes, adhesives, packaging materials, etc. Temperature response times strongly depend on the type of heat exchange, the surrounding surface and the airflow in the final application environment. Humidity: Humidity response times strongly depend on the surrounding surface and the airflow

in the final application environment.

Target gas profile TVOC Complex mixture of 22 VOCs as defined by Molhave et al.

n-Hexane, n-Nonane, n-Decane, n-Undecane ,1-Octane, 1-Decene, Cyclohexane, m-Xylene, Ethylbenzene, 1,2,4-Trimethylbenzene, n-Propylbenzene, a-Pinene, n-Pentanal, n-Hexanal, Isopropanol, n-Butanol, 2-Butanone, 3-Methyl-3-butanone, 4-Methyl-2-pentanone, n-Butylacetate,

Ethoxyethylacetate, 1, 2-Dichloroethane

Sampling process Diffusion

Data storage and logging Frequency of readings (log interval): 1 minute, 1 hour, 1 day

Data push interval: 1 minute (customisable upon request)

Onboard memory: 1 hour of data

Recommended lifetime of sensor unit CO₂: 15 years

Temperature: 10 years Humidity: 10 years

Particulate matter: 1.3 years (>200 μg/m³), 2 years (<100 μg/m³)

Warranty and durability Standard warranty: 2 years

Expected lifespan: 5 to 7 years

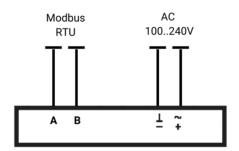
Remarks

General remarks concerning sensors Particulate matter: Calibrated against standardised aerosol mix

TVOC: Calibrated against ethanol

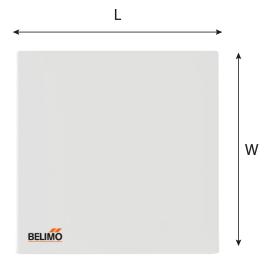


Wiring diagram



Modbus RTU

Dimensions



| Туре | L | W | Н | |
|--------------|------|------|------|---------------|
| | [mm] | [mm] | [mm] | <u>/ kg ∖</u> |
| EXT-KA-SQ100 | 90 | 90 | 50 | 0.3 |