

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.



Technical data

Electrical data	Nominal voltage	AC 100...240 V
	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
Measuring data	Measured values	CO ₂ TVOC PM2.5, PM10 Relative humidity Temperature
Specification Particulate Matter	Mesurement range	Mass concentration range: 0...1000 µg/m ³ PM2.5 mass concentration size range: 0.3...2.5 µg/m ³
	Accuracy	±3 µg/m ³ (0 to 30 µg/m ³) ±10% m.v. (30...1000 µg/m ³)
	Typical response time	≤10 s
	Sensor output resolution	1 µg/m ³
	Sensor technology	Laser particle sensor (light scattering)
Specification TVOC	Mesurement range	0...60000 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	400...2000 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)

Technical data

Specification Temperature	Measurement range	-20...100°C
	Accuracy	±1°C
	Long term drift	<0.03°C [0.054°F]/yr (under normal RH/T operating range)
	Typical response time	>2 s
	Sensor output resolution	0.01°C
Specification Humidity	Measurement range	0...99% 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	EU Conformity	CE Marking
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	0...50°C [32...122°F]

Product Features

Mode of operation	<p>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.</p> <p>Humidity: Humidity response times strongly depend on the surrounding surface and the airflow in the final application environment.</p>
Target gas profile TVOC	<p>Complex mixture of 22 VOCs as defined by Molhave et al.</p> <p>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, Iso-propanol, n-Butanol, 2-Butanone, 3-Methyl-3-butanone, 4-Methyl-2-pentanone, n-Butylacetate, Ethoxyethylacetate, 1, 2-Dichloroethane</p> <p>Sampling process Diffusion</p>
Data storage and logging	<p>Frequency of readings (log interval): 1 minute, 1 hour, 1 day</p> <p>Data push interval: 1 minute (customisable upon request)</p> <p>Onboard memory: 1 hour of data</p>
Recommended lifetime of sensor unit	<p>CO₂: 15 years</p> <p>Temperature: 10 years</p> <p>Humidity: 10 years</p> <p>Particulate matter: 1.3 years (>200 µg/m³), 2 years (<100 µg/m³)</p>
Warranty and durability	<p>Standard warranty: 2 years</p> <p>Expected lifespan: 5 to 7 years</p>

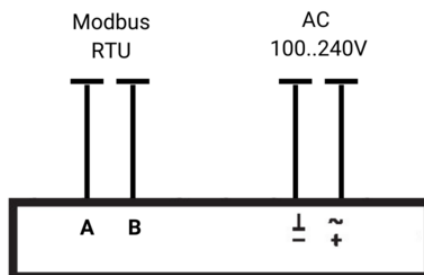
Remarks

General remarks concerning sensors	<p>Particulate matter: Calibrated against standardised aerosol mix</p> <p>TVOC: Calibrated against ethanol</p>
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Indicators and Operation

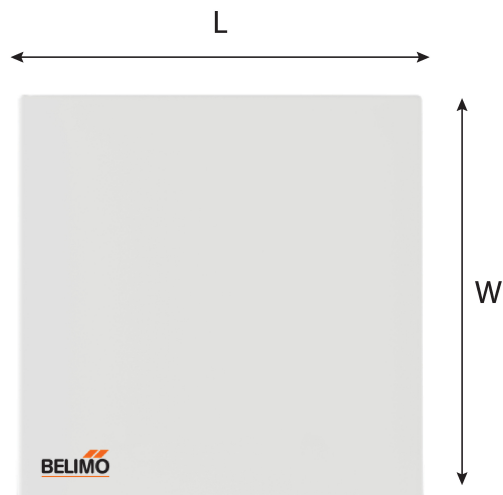
Complies with
IMDA Standards
DA107974

Wiring diagram



Modbus RTU

Dimensions



Type	L [mm]	W [mm]	H [mm]	 kg
EXT-KA-SQ100	90	90	50	0.3