SIEMENS

Room sensors

QAA2160.., QFA226.., QPA2.0.., QPA2.6..

For temperature, relative humidity, and indoor air quality (IAQ)

- Active sensors for acquiring room temperature, relative humidity and IAQ (CO_2 and TVOC)
- Standalone sensors for locally indicating CO_2 levels using IAQ indicator
- Mounting: Wall (all models) or table standing (stand-alone models only)
- Touch LCD display:
  - With: QAA2160D.., QFA226..D.., QPA2.6..D..
  - Without: QAA2160.., QFA226.., QPA2.0.., QPA2.6..
- IAQ LED indicator: Indicating IAQ level in green (Good), orange (Fair), or red (Bad) (IAQ models)
- Operating voltage AC 24 V or DC 15...35 V
- Signal output (active models): DC 0...10 V, 4...20 mA, 0...5 V, 2...10 V, 0...20 mA, 0...10 mA
- Commissioning via Siemens Quick Config smartphone app and NFC
- Anti-contamination capacitive humidity sensing element (some models)
- Single-channel non-dispersive infrared (NDIR) CO_2 sensing element (some models) with automatic baseline calibration (ABC)
- Self-calibrated dual-channel NDIR CO_2 sensing element (some models)
- Measuring range: 0...50 °C for temperature, 0...100 % r.h. for relative humidity, 0...5000 or 400...5000 ppm for CO_2, and 0...45450 µg/m³ (0...9999 ppb) for TVOC
- Measuring accuracy: Up to ±0.2 K for temperature, ±2 % r.h. for relative humidity, ≤ ±(30 ppm + 3 % of measured value) for CO_2, and ±(20 µg/m³ + 15 % of measured value) for TVOC
- Meet RESET Grade B and WELL standards (IAQ models)
- Firmware updates via Siemens Quick Config PC app and standard USB cable
- Colors: White (RAL 9016) and black (RAL 9005)

Use

The active sensors are used in heating, ventilating, and air conditioning plants to acquire room

- temperature
- relative humidity
- CO_2 concentrations
- TVOC concentrations

for building automation and control systems.

Active models with displays show measured values locally, while active IAQ models indicate air quality levels using an IAQ indicator.

Active sensors equipped with anti-contamination capacitive humidity sensing elements are suitable for rooms with higher exposure to particles (such as dust and dirt) as well as vapors and gases emitted by aerosols, solvents, and cleaning agents.

Active CO_2 sensors with single-channel NDIR sensing elements are ideal for rooms with intermittent occupancy and scheduled supply of fresh air, whereas sensors with dual-channel NDIR elements are better suited for continuously occupied spaces without scheduled fresh air supply.

Standalone sensors are not designed to connect to building automation and control systems; instead, they only display CO_2 levels locally using an IAQ indicator.

Example:

- Offices, meeting and conference rooms, classrooms and training rooms, hotel rooms, hospital rooms, lobbies and reception areas, event spaces, retail areas, restrooms and changing rooms, clinics, fitness and wellness centers, etc.

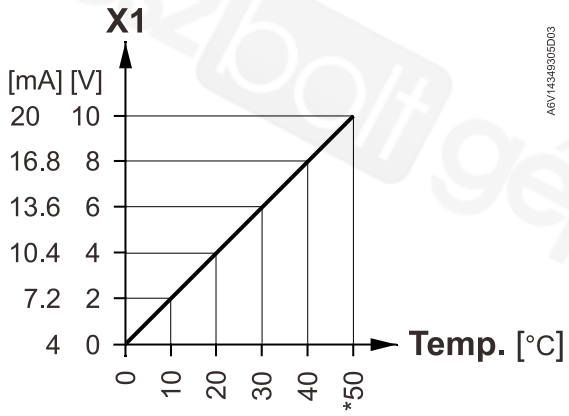
NOTICE	
!	Do not use sensors as safety devices, e.g. as gas or smoke detectors!

Functions

Temperature measurement

The sensor acquires the room temperature via a sensing element; the resistance changes as a function of temperature. The variation is converted to an active DC 0...10 V, 4...20 mA, 0...5 V, 2...10 V, 0...20 mA, 0...10 mA output signal corresponding to the default temperature range of 0…50 °C. This default temperature range can be changed in the Quick Config smartphone app by changing the minimum and maximum temperature values.

Function diagram temperature



* Default measuring range

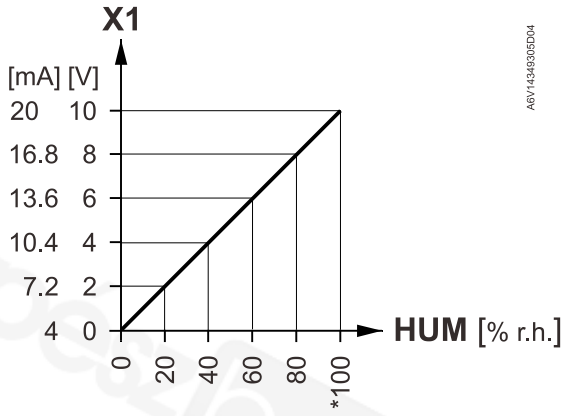
Relative humidity measurement

The sensor acquires the room relative humidity via:

- QFA2260.., QPA2360..: a digital capacitive relative humidity sensor.
- QFA2261..: an anti-contamination capacitive sensing element; the capacitance varies as a function of the relative humidity in the ambient air.

An electronic circuit converts the sensor signal to a continuous DC 0...10 V, 4...20 mA, 0...5 V, 2...10 V, 0...20 mA, 0...10 mA signal, corresponding to the default relative humidity range of 0...100 %. This default relative humidity range can be changed in the Quick Config smartphone app by changing the minimum and maximum relative humidity values.

Function diagram relative humidity



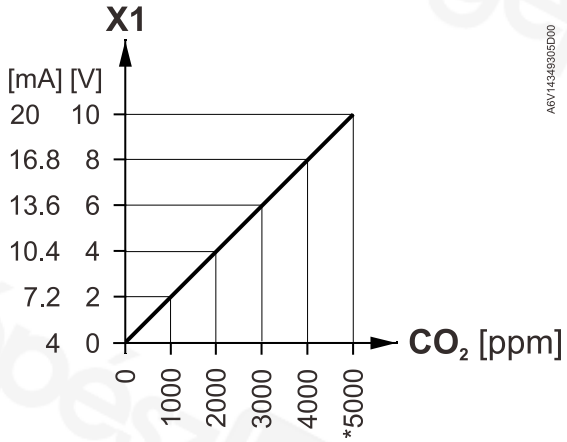
* Default measuring range

CO_2 concentrations measurement

- QPA2001.., QPA226.., QPA236..:
  The sensor acquires CO_2 concentration by a single-channel infrared absorption measurement (NDIR). The resulting output signal of DC 0...10 V, 4...20 mA, 0...5 V, 2...10 V, 0...20 mA, 0...10 mA is proportional to the CO_2 content in the ambient air.
  Automatic baseline calibration (ABC)
  The baseline value for the ABC function of the CO_2 sensor is 400 ppm (fresh air). For the ABC function to function properly, the room/space must have intermittent occupancy (i.e. not constantly occupied), and be supplied with fresh air (typically 400 ppm) at least once a week (The sensor's calibration cycle is 180 hours (7.5 days)).

- QPA2161..:
  The sensor acquires CO_2 concentration by dual-channel NDIR without ABC. The resulting output signal of DC 0...10 V, 4...20 mA, 0...5 V, 2...10 V, 0...20 mA, 0...10 mA is proportional to the CO_2 content in the ambient air. This dual-channel NDIR sensor is suitable for spaces that are continuously occupied and/or lack a scheduled supply of fresh air (400 ppm).

Function diagram CO_2

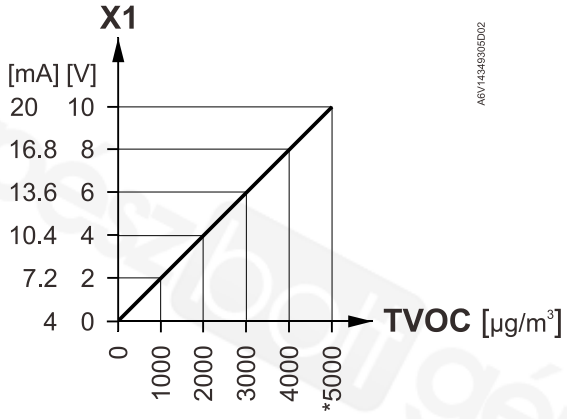


* Default setting

TVOC concentrations measurement

The sensor determines the mixed gas concentration (TVOC) using metal-oxide semiconductor sensing elements. The resistance is sensitive to TVOC gas as the concentration changes. The sensors only represent a concentration of mixed gas but cannot distinguish specific gases. The sensors measure precisely. The sensor has an integrated compensation mechanism and does not require maintenance and recalibration, saving costs. The sensor provides a DC 0...10 V, 4...20 mA, 0...5 V, 2...10 V, 0...20 mA, 0...10 mA output signal proportionate to the TVOC content in the ambient air.

Function diagram TVOC



* Default measuring range

Measured value display

The following measured values are displayed as per product function:

- Temperature: in °C or °F
- Humidity: in % r. h.
- CO_2: in ppm
- TVOC: in µg/m³ or ppb

NFC communication

The sensor is commissioned with NFC (near-field communication) in the Siemens Quick Config smartphone app.

The distance between the smartphone and sensor is max. 2 cm while scanning the NFC area on the individual package or sensor antenna. Data exchange between sensor and Siemens smartphone application takes 2...3 seconds.

Using Siemens smartphone application, users can:

- Set, read or download sensor parameter settings
- Enable or disable password protection
- Import and export the setting parameter list in .json format

Notes:

- The parameters can be configured even if the sensor has no power.
- The phone must have active NFC functionality.

For commissioning in the Siemens Quick Config smartphone app, see Commissioning [▸ 9].

Malfunction

- Temperature sensor
  If the temperature sensing element has a fault, after 60 seconds, the configured minimum temperature output is applied to signal output, and the configured maximum relative humidity output is applied to signal output. The LCD displays the configured minimum temperature and maximum relative humidity values.
- Relative humidity sensor
  If the relative humidity sensing element has a fault, after 60 seconds, the configured maximum relative humidity output is applied to signal output. The LCD displays the configured maximum relative humidity value.
- CO_2 sensor
  If the CO_2 sensing element has a fault, after 60 seconds, the configured maximum CO_2 output is applied to signal output. The LCD displays the configured maximum CO_2 value.
- TVOC sensor
  If the TVOC sensing element has a fault, after 60 seconds, the configured maximum TVOC output is applied to signal output. The LCD displays the configured maximum TVOC value.

Note: For displayed faults in Quick Config, see parameter "Fault" listed in Parameters [▸ 10].

Mechanical design

The sensors are designed for wall mounting, and table standing (QPA2001, QPA2001/BK). They are suitable for use with the most commercially available square or round recessed conduit boxes or directly on the wall without a conduit box. The cables can be introduced from the rear (concealed wiring), or from the top and bottom.

The device has 2 parts:

- Sensor with electronic components
- Mounting plate with connecting terminals

Type summary

Comfort models

Product no.	Stock no.	Temperature measuring range	Humidity measuring range [1]	CO_2 measuring range	TVOC measuring range [2]	IAQ indicator	Outputs	Measured value display	Color
QAA2160	S55720-S661	0...50 °C	---	---	---	No	1	No	White
QAA2160/BK	S55720-S662	0...50 °C	---	---	---	No	1	No	Black
QAA2160D	S55720-S663	0...50 °C	---	---	---	No	1	Yes	White
QAA2160D/BK	S55720-S664	0...50 °C	---	---	---	No	1	Yes	Black
QFA2260 [3]	S55720-S665	0...50 °C	0...100 %	---	---	No	2	No	White
QFA2260/BK [3]	S55720-S666	0...50 °C	0...100 %	---	---	No	2	No	Black
QFA2260D [3]	S55720-S667	0...50 °C	0...100 %	---	---	No	2	Yes	White
QFA2260D/BK [3]	S55720-S668	0...50 °C	0...100 %	---	---	No	2	Yes	Black
QPA2001 [4]	S55720-S669	---	---	400...5000 ppm	---	Yes	None	No	White
QPA2001/BK [4]	S55720-S670	---	---	400...5000 ppm	---	Yes	None	No	Black
QPA2260 [4]	S55720-S671	---	---	400...5000 ppm	0...45450 µg/m³ / 0...9999 ppb	Yes	2	No	White
QPA2260/BK [4]	S55720-S672	---	---	400...5000 ppm	0...45450 µg/m³ / 0...9999 ppb	Yes	2	No	Black
QPA2260D [4]	S55720-S673	---	---	400...5000 ppm	0...9999 µg/m³ / 0...9999 ppb	Yes	2	Yes	White
QPA2260D/BK [4]	S55720-S674	---	---	400...5000 ppm	0...9999 µg/m³ / 0...9999 ppb	Yes	2	Yes	Black
QPA2360 [4]	S55720-S675	0...50 °C	0...100 %	400...5000 ppm	---	Yes	3	No	White
QPA2360/BK [4]	S55720-S676	0...50 °C	0...100 %	400...5000 ppm	---	Yes	3	No	Black
QPA2360D [4]	S55720-S677	0...50 °C	0...100 %	400...5000 ppm	---	Yes	3	Yes	White
QPA2360D/BK [4]	S55720-S678	0...50 °C	0...100 %	400...5000 ppm	---	Yes	3	Yes	Black

[1] Ambient conditions for humidity are lower than the measuring range. See ambient conditions in Technical data [► 17].

[2] Conversion between µg/m³ and ppb is based on the gas mixture utilized by Mølhave et al. (1997)

[3] Relative humidity: Uses a digital capacitive sensing element which is suitable for standard comfort applications. Use cases: Offices, meeting and conference rooms, classrooms and training rooms, hotel rooms, and retail areas.

[4] CO_2: Uses a single-channel NDIR sensing element which is ideal for rooms with intermittent occupancy and scheduled supply of outdoor air (typically, 400 ppm at least once a week.) Use cases: Offices, meeting and conference rooms, classrooms and training rooms, hotel rooms, and retail areas.

Specialty models

Product no.	Stock no.	Temperature measuring range	Humidity measuring range [1]	CO_2 measuring range	TVOC measuring range	IAQ indicator	Outputs	Measured value display	Color
QFA2261 [2]	S55720-S679	0...50 °C	0...100 %	---	---	No	2	No	White
QFA2261/BK [2]	S55720-S680	0...50 °C	0...100 %	---	---	No	2	No	Black
QFA2261D [2]	S55720-S681	0...50 °C	0...100 %	---	---	No	2	Yes	White
QFA2261D/BK [2]	S55720-S682	0...50 °C	0...100 %	---	---	No	2	Yes	Black
QPA2161 [3]	S55720-S683	---	---	0...5000 ppm	---	Yes	1	No	White
QPA2161/BK [3]	S55720-S684	---	---	0...5000 ppm	---	Yes	1	No	Black

[1] Ambient conditions for humidity are lower than the measuring range. See ambient conditions in Technical data [► 17].

[2] Relative humidity: Uses an anti-contamination capacitive sensing element which is suitable for rooms with higher exposure to particles (such as dust and dirt) as well as vapors and gases emitted by paints, aerosols, solvents, and cleaning agents. It is important to note that while the anti-contamination performance of QFA2261.. are better than that of its comfort models counterparts QFA2260.., they do not totally resist all kinds of contamination especially from chemical gases. They are therefore not a replacement for specialized vertical market sensors.

Use cases: Paint shops, bathrooms, and kitchens.

[3] CO_2: Uses a dual-channel NDIR CO_2 sensing element which is suited for continuously occupied spaces without scheduled outdoor air supply. Use cases: 24/7 spaces such as hospital patient rooms, underground stations, airports, nursing homes and assisted living facilities.

Ordering

When ordering, please provide the name and type reference, e.g.: Room sensor **QAA2160**

Equipment combinations

- Desigo PXC4.., PXC5.., PXC7.. automation stations
- TXM1.8U.. universal module and TXM1.8X.. super universal module
- Desigo Essentials ELC.E14 controller and EM.8U extension module
- Desigo DXR2.. and DXR1.. room automation stations

Other controllers and devices capable of acquiring and handling the sensor’s DC 0...10 V, 4...20 mA, 0...5 V, 2...10 V, 0...20 mA, 0...10 mA output signal.

Product documentation

Title	Document ID
Mounting instruction	A6V12967701
CE declarations	A5W02963574A
RCM	A5W02963578A
UKCA	A5W02963575A
Environmental product declaration	A5W02656177A

Related documents such as the environmental declarations, declarations of conformity, etc., can be downloaded from the following Internet address:

www.siemens.com/bt/download

Notes

Safety

⚠ CAUTION	
	**National safety regulations** Failure to comply with national safety regulations may result in personal injury and property damage. • Observe national regulations and comply with the appropriate safety regulations.

Engineering

Room sensors with active outputs have a high-power and this can influence temperature measurements. The degree of influence depends on the operating voltage and is compensated for at an operating voltage of AC 24 V or DC 24 V. Over- or under compensation may occur for other operating voltages.

Measuring accuracy is impacted by the following factors:

- Prevailing air flow
- Wall surface (rough, smooth)
- Wall texture (wood, plaster, concrete, brick)
- Wall type (interior, exterior).

The application-specific measuring inaccuracy is constant for an installed sensor after approx. one operating hour, and can be adjusted as needed in a overlying system (e.g. controller). There is no correction on the local LCD.

Powering the sensor requires a safety extra-low-voltage (SELV) transformer with separate windings for 100 % duty. Comply with all local safety regulations on transformer sizing and protection.

Use a transformer that is properly sized to the sensor's power consumption.

See the related device data sheets for wiring.

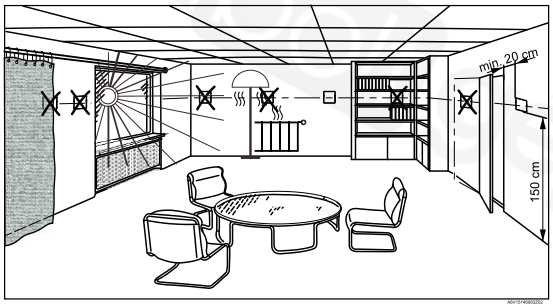
Observe all permissible cable lengths.

Cable routing and cable selection

When routing cables, the longer the cable runs and the closer the cables, the greater the electrical interference. Use shielded cables in EMC-prone environments.

Twisted pair cables are required for supply lines.

Mounting



Location

- The devices are suitable for wall mounting.
- Recommended height: 1.5 m above the floor.
- Install the sensor in the occupied space at least 50 cm from the next wall.
- Do not mount the devices in recesses, shelves, behind curtains or doors, or above or near heat sources.
- Do not mount near lamps or above radiators.
- Avoid direct solar radiation and drafts.
- Avoid unheated (uncooled) building areas such as outside walls.
- The end of the conduit at the sensor must be sealed to prevent false measurements due to draughts through the conduit.
- Adhere to allowed ambient conditions.

Chemical vapors

Handle this high-precision device with care. Chemical vapors at high concentration in combination with long exposure times may distort sensor readings.

NOTICE	
!	Avoid direct contact with chemicals in any form. Do not touch sensitive components with bare hands or tools as this negatively impacts measurement accuracy.

Commissioning

Sensor configuration and commissioning

The sensor is delivered pre-configured with default parameters (see Parameters [▶ 10]) for immediate use. If needed, these can be modified using the Quick Config smartphone app, which connects to the sensor via NFC, even when the sensor is unpowered and still in its packaging.

Commissioning options

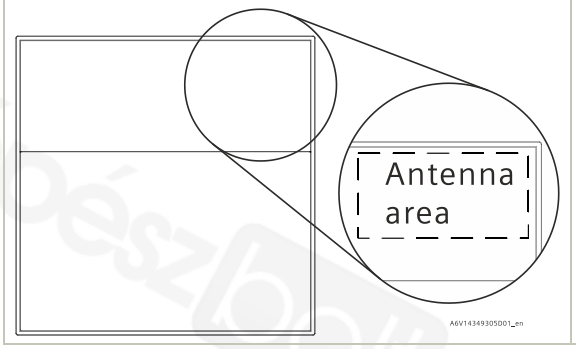
Users can choose between:

- **Read from device**: Once connected, the app automatically detects the sensor model.
- **Use parameter file**: Manually select the model to create a new file or import an existing one. Users can adjust parameter values and write them to the sensor.

NFC connection guidelines

To read or write parameters, position the smartphone's NFC antenna max. 2 cm from the sensor's NFC antenna (location shown below) and hold for 2..3 seconds until the data exchange is completed.

NOTICE	
!	For reliable communication, identify the NFC antenna location on your smartphone before scanning.

Antenna area	Unpowered, packaged sensor
	 NFC area

Notes

- NFC function required. (for example, iPad does not support NFC.)
- Quick Config is available for smartphones (version 2.0.0 or higher) compatible with NFC. To download the app, scan the QR code printed on the box or search for "Quick Config" in Apple Store or Google Play.
- Always upgrade to the latest version of Quick Config app.
- On older versions of sensor firmware, read the sensor first and then edit & write parameters to devices.

Parameters

Parameter	Value range	Default value	Access RO: Read only RW: Read/Write
Device name	-	-	RO
Device type	-	-	RO
Firmware version	-	-	RO
Serial number	≤16 characteristics	-	RO

Parameter	Value range	Default value	Access RO: Read only RW: Read/Write
Temperature			
Output *	Deactivate Activate	Activate	RW
Unit	°C °F	°C	RW
Process value for minimum output signal	0...50 °C	0 °C	RW
Process value for maximum output signal	0...50 °C	50 °C	RW
Offset	−5...5 °C −9...9 °F	0	RW
Relative humidity			
Output *	Deactivate Activate	Activate	RW
Process value for minimum output signal	0...100 %RH	0 %RH	RW
Process value for maximum output signal	0...100 %RH	100 %RH	RW
Offset	−10.0...10.0 %RH	0 %RH	RW
CO_2			
Output *	Deactivate Activate	Activate	RW
Process value for minimum output signal	0...5000 ppm	0 ppm	RW
Process value for maximum output signal	0...5000 ppm	5000 ppm	RW
Upper limit for Good	10...(Upper limit for Fair - 10) ppm	900 ppm	RW
Upper limit for Fair	(Upper limit for Good + 10)...4990 ppm	1500 ppm	RW
Offset	−300...300 ppm	0 ppm	RW
Automatic calibration	Deactivate Activate	Activate	RW
Total VOC			
Output *	Deactivate Activate	Activate	RW
Unit	µg/m³ ppb	µg/m³	RW

Parameter	Value range	Default value	Access RO: Read only RW: Read/Write
Process value range for output signal	5000 µg/m³ 9999 µg/m³ 45450 µg/m³	5000 µg/m³	RW
Upper limit for Good	0...(Upper limit for Fair - 10) µg/m³	300 µg/m³	RW
Upper limit for Fair	(Upper limit for Good + 10)...5000** µg/m³	1000 µg/m³	RW
Offset	−2500...2500 µg/m³ −550...550 ppb	0	RW
Response	Slow Normal Fast	Normal	RW
Indoor air quality IAQ			
IAQ indicator	Off On	On	RW
Outputs			
Signal type	0...10 V 4...20 mA 0...5 V 2...10 V 0...20 mA 0...10 mA	0...10 V	RW
Device			
Restart device	Done Restart	Done	RW
Reset parameter	Done Reset	Done	RW
Display			
Main measured value	None Temperature in °C Temperature in °F Relative humidity CO_2 Total VOC in µg/m³ Total VOC in ppb Note: Only supported measurements can be selected.	Product specific	RW
Temperature resolution	0.1 °C 0.5 °C 1 °C	0.5 °C	RW

Parameter	Value range	Default value	Access RO: Read only RW: Read/Write
Relative humidity resolution	0.1 %RH 0.5 %RH 1 %RH	1 %RH	RW
CO_2 resolution	10 ppm 50 ppm 100 ppm	50 ppm	RW
Total VOC resolution	50 µg/m³ 100 µg/m³ 500 µg/m³	50 µg/m³	RW
	10 ppb 50 ppb 100 ppb	10 ppb	
Power mode	Standard Power saving	Standard	RW
Sleep mode timeout	1...300 s	45 s	RW
Backlight	Activate Deactivate	Activate	RW
Backlight off timeout	1...300 s	15 s	RW
Backlight brightness	0...100 %	48 %	RW
Override			
Test mode ***	Deactivate Activate	Deactivate	RW
Signal type for test mode **** Note: This parameter is visible when "Test mode" is set to "Activate".	0...10 V 4...20 mA 0...5 V 2...10 V 0...20 mA 0...10 mA	0...10 V	RW
Diagnostics			
Fault	No fault CO2 sensing element Temp. sensing element TVOC sensing element Rel. humidity sensing element Power supply over voltage Power supply under voltage	No fault	RO
Temperature	0.0...50.0 °C or 32.0...122.0 °F	-	RO
Relative humidity	0...100 %RH	-	RO

Parameter	Value range	Default value	Access RO: Read only RW: Read/Write
CO_2	0...5000 ppm	-	RO
Total VOC	0...45450 µg/m³ or 0...9999 ppb	-	RO
PIN			
PIN protection	Disable Enable	Disable	RW
Set PIN	0...9999	0000	RW

* The parameter is used to deactivate/activate related output and its display.

** The maximum configurable value of "Upper limit for Fair" is "Process value range for output signal".

*** The outputs are overridden for 2 minutes. After 2 minutes, the sensor:

- Returns to the "Signal type" chosen for "Outputs" in the "Parameters" menu
- Outputs signal values that correspond to the measurements (temperature, humidity, CO_2, and TVOC)

**** Output can be configured as follows (by product type):

Signal type for test mode	X1	X2	X3
0...5 V	0 V (default) 2.5 V 5 V	0 V 2.5 V (default) 5 V	0 V 2.5 V 5 V (default)
0...10 V	0 V (default) 5 V 10 V	0 V 5 V (default) 10 V	0 V 5 V 10 V (default)
2...10 V	2 V (default) 6 V 10 V	2 V 6 V (default) 10 V	2 V 6 V 10 V (default)
0...10 mA	0 mA (default) 5 mA 10 mA	0 mA 5 mA (default) 10 mA	0 mA 5 mA 10 mA (default)
0...20 mA	0 mA (default) 10 mA 20 mA	0 mA 10 mA (default) 20 mA	0 mA 10 mA 20 mA (default)
4...20 mA	4 mA (default) 12 mA 20 mA	4 mA 12 mA (default) 20 mA	4 mA 12 mA 20 mA (default)

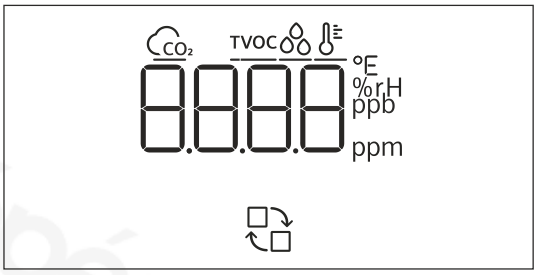
NOTICE	
!	Diagnostic readout via NFC is valid only when the device is powered on; data obtained while the device is powered off is unreliable.

Firmware update

Sensor supports firmware updates via Siemens Quick Config PC app and standard USB cable. If updates are required, contact the nearest Siemens branch office or our system supplier to update as per guidelines on SiePortal.

Operation

Operating and setting elements



Information	Description
CO₂	CO_2
TVOC	TVOC
	Relative humidity
	Temperature
°F %rH ppb ppm	Temperature, relative humidity, TVOC, or CO_2 values
	Sensor switch

Indoor air quality (IAQ) indicator

LED color	LED pattern	IAQ status
Off	Off	IAQ indicator is inactive
Green	On	Good
Orange	On	Fair
Red	On	Bad

Power saving mode

Sleep mode Active mode

When the sensor is in Sleep Mode and the Power Saving Mode is enabled: No icons are displayed and the backlight is off. When the user touches the screen, the screen enters active mode, the backlight switches on, and the main measured value and sensor switch symbol display.

Standard mode

Sleep mode Active mode

When the sensor is in Sleep Mode and Standard Mode is enabled: The main measured value and sensor switch symbol display and the backlight is off. When the user touches the screen, the screen enters active mode, the backlight switches on, and the main measured value and sensor switch symbol remain.

Disposal

	This symbol or any other national label indicates that the product, its packaging, and, where applicable, any batteries may not be disposed of as domestic waste. Delete all personal data and dispose of the item(s) at separate collection and recycling facilities in accordance with local and national regulations. For additional details, refer to Siemens information on disposal.

Cyber security disclaimer

Siemens provides a portfolio of products, solutions, systems and services that includes security functions that support the secure operation of plants, systems, machines and networks. In the field of Building Technologies, this includes building automation and control, fire safety, security management as well as physical security systems.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art security concept. Siemens' portfolio only forms one element of such a concept.

You are responsible for preventing unauthorized access to your plants, systems, machines and networks which should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place. Additionally, Siemens' guidance on appropriate security measures should be taken into account. For additional information, please contact your Siemens sales representative or visit the following website:

https://www.siemens.com/global/en/products/automation/topic-areas/industrial-cybersecurity.html.

Siemens' portfolio undergoes continuous development to make it more secure. Siemens strongly recommends that updates are applied as soon as they are available and that the latest versions are used. Use of versions that are no longer supported, and failure to apply the latest updates may increase your exposure to cyber threats. Siemens strongly recommends to comply with security advisories on the latest security threats, patches and other related measures, published, among others, under the following website:

https://www.siemens.com/cert/ => 'Siemens Security Advisories'.

Warranty

Technical data on specific applications are only valid together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

Technical data

Power supply		
Operating voltage	AC 24 V ±20 % or DC 15...35 V (SELV) or class 2 (US)	
Frequency	50/60 Hz at AC 24 V	
External supply line protection	Fuse slow max. 10 A or Circuit breaker max. 13 A Characteristic B, C, D according to EN 60898 or Power source with current limitation of max. 10 A	
Power consumption at AC 24 V QAA2160, QAA2160/BK QAA2160D, QAA2160D/BK QFA2260, QFA2260/BK QFA2260D, QFA2260D/BK QFA2261, QFA2261/BK QFA2261D, QFA2261D/BK QPA2260, QPA2260/BK QPA2260D, QPA2260D/BK QPA2360, QPA2360/BK QPA2360D, QPA2360D/BK QPA2161, QPA2161/BK	For voltage output signal 1.1 VA 1.6 VA 1.2 VA 1.6 VA 1.2 VA 1.6 VA 1.4 VA 1.9 VA 1.3 VA 1.7 VA 1.2 VA	For current output signal 1.5 VA 2.1 VA 2.1 VA 2.7 VA 2.1 VA 2.7 VA 2.5 VA 3 VA 2.7 VA 3.3 VA 1.6 VA
Power consumption (No output signal) at AC 24 V QPA2001, QPA2001/BK	1.1 VA	

Functional data of sensor	
Temperature sensor (QAA2160.., QFA226.., QPA2360..)	
Range of use	0...50 °C
Measuring range	0...50 °C
Display resolution	Max. 0.1 °C/0.1 °F
Sensing element	NTC 10k
Measuring accuracy at AC/DC 24 V and at Voltage output signal ● 23 °C ● 15...35 °C ● 5...50 °C Current output signal ● 23 °C ● 15...35 °C ● 5...50 °C	 ● ±0.2 K (typical) ● ±0.4 K (typical) ● ±0.7 K (typical) ● ±0.3 K (typical) ● ±0.4 K (typical) ● ±0.7 K (typical)
Time constant t_{63} ● With display ● Without display	Depending on air movement and thermal coupling to the wall ● <15.5 min ● <14 min
Output signal, linear (terminal X1)	DC 0...5 V, DC 0...10 V, DC 2...10 V ≙ 0...50 °C, max. 1 mA 0...10 mA, 0...20 mA, 4...20 mA ≙ 0...50 °C, max. 500 Ohm
Humidity sensor (QFA226.., QPA2360..)	
Range of use	0...95 % r.h.
Measuring range	0...100 % r.h.
Measuring accuracy at 23 °C and AC/DC 24 V and in the range of 30...70 % r.h. ● Voltage output signal ● Current output signal	 ● ±2 % r.h. (typical) ● ±3 % r.h. (typical)
Display resolution	Max. 0.1 % r.h.
Temperature dependency	≤ 0.2 % r.h./℃
Time constant t_{63}	< 20 s
Output signal, linear (terminal X2)	DC 0...5 V, DC 0...10 V, DC 2...10 V/0...100 % r.h., max. 1 mA 0...10 mA, 0...20 mA, 4...20 mA/0...100 % r.h., max. 500 Ohm
CO_2 sensor (QPA2.0.. and QPA2.6..)	
Measuring range ● QPA2161.. ● QPA2001.., QPA226.., QPA236..	 ● 0...5000 ppm ● 400...5000 ppm
Measuring accuracy at 23 °C and 1013 hPa ● QPA2161.. ● QPA2001.., QPA226.., QPA236..	 ● 0...5000 ppm: ≤ ±(50 ppm + 3 % of measured value) ● 400...5000 ppm: ≤ ±(30 ppm + 3 % of measured value)
Display resolution	Max. 10 ppm
Long time drift	< ±5 % of measuring range / 5 years (typical)
Time constant t_{63}	< 5 min

Functional data of sensor	
Recalibration-free	8 years
TVOC sensor (QPA2260..)	
Measuring range • QPA2260, QPA2260/BK • QPA2260D, QPA2260D/BK	 • 0...45450 µg/m³ (0...9999 ppb) Default: 5000 µg/m³ (1100 ppb) • 0...9999 µg/m³ (0...9999 ppb) Default: 5000 µg/m³ (1100 ppb)
Measuring accuracy	• 150...600 µg/m³: ±(20 µg/m³ + 15 % measured value) • 600...2000 µg/m³: ±(20 µg/m³ + 20 % measured value) • > 2000 µg/m³: ±(20 µg/m³ + 25 % measured value)
Display resolution	Max. 50 µg/m³ (10 ppb)
Time constant t_{63} TVOC	< 13 min (Slow), < 3.5 min (Medium), < 1 min (Fast)

Near field communication (NFC)	
NFC	13.56 MHz
Max. magnetic field strength	<42 dBµA/m@10 m (depending on NFC reader)

Wiring connections	
Permissible cable lengths	See documentation of connected automation station, controller, or I/O module
Screw terminals for electrical connections	1 × 1.5 mm², 1 × 2.5 mm², 2 × 0.5 mm² or 2 × 0.75 mm²

Ambient conditions and protection classification	
Classification as per EN 60730 Action type Degree of pollution Overvoltage category Maximum altitude Rated impulse voltage	 Type 1 2 I Up to 3000 m 330 V (OVC I)
Protection against electrical shock	Protection class III
Degree of protection of housing as per EN 60529	IP30

Ambient conditions Products in room applications	
Climatic ambient conditions • Transport and storage (in packaging) as per IEC/EN 60721-3-2 / -3-1 • Operation as per IEC/EN 60721-3-3	• Temperature -25...+70 °C (-13...+158 °F) Air humidity < 95 % r.h. • QFA2261.., QPA2161..: Temperature 0...50 °C (32...122 °F) Air humidity 0...95 % r.h. (non-condensing) QAA2160.., QFA2260.., QPA2..: Temperature 0...50 °C (32...122 °F) Air humidity 0...85 % r.h. (non-condensing)
Mechanical ambient conditions • Transport (in transport packaging) as per IEC/EN 60721-3-2 • Operation as per IEC/EN 60721-3-3	• Class 2M4 • Class 3M11

Standards, directives and approvals	
Product standard	IEC/EN 60730-1 Automatic electronic controls for household and similar use
Electromagnetic compatibility	For residential, commercial, and industrial environments
EU conformity (CE)	A5W02963574A *)
UK conformity (UKCA)	A5W02963575A *)
RCM conformity	A5W02963578A *)
UL certification	UL873, http://ul.com/database
EAC conformity	Eurasian conformity
Environmental compatibility	The product environmental declaration (A5W02656177A *) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

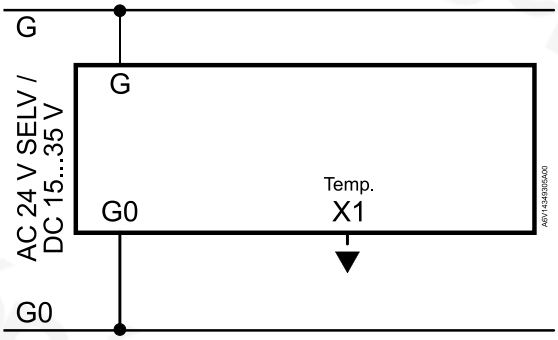
General	
Materials and colors Material: Colors: • QAA2160.., QFA226.., QPA2.. • QAA2160../BK, QFA226../BK, QPA2../BK	Polycarbonates • White (RAL 9016) • Black (RAL 9005)
Housing flammability class as per UL94	V-0
Packaging	Corrugated cardboard
Weight including package • QAA2160.., QFA226.., QPA2161.. • QPA2001.., QPA2260.., QPA2360D.. • QAA2160D.., QFA226..D.. • QPA2260D.., QPA2360..	 • 0.16 kg • 0.17 kg • 0.18 kg • 0.19 kg

*) The documents can be downloaded at https://siemens.com/bt/download.

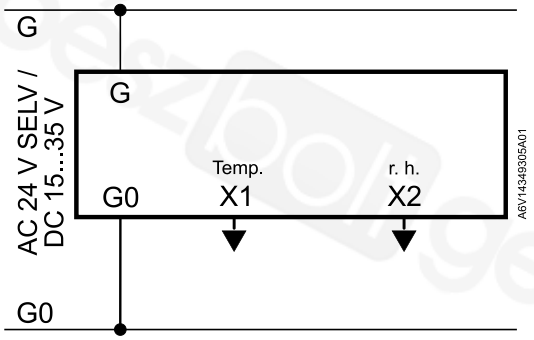
Diagrams

Connection diagrams

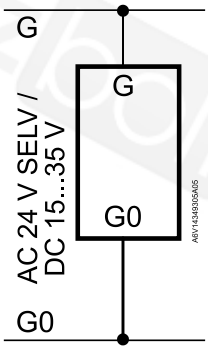
QAA2160.., QAA2160D..



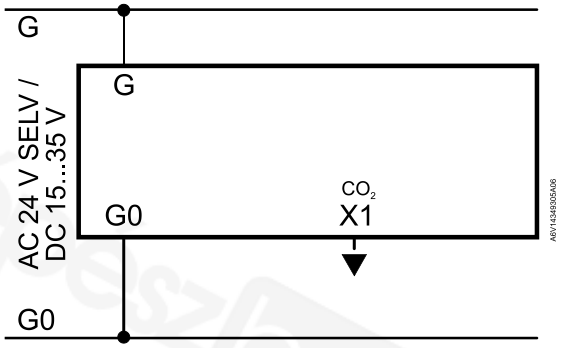
QFA2260.., QFA2260D.., QFA2261.., QFA2261D..



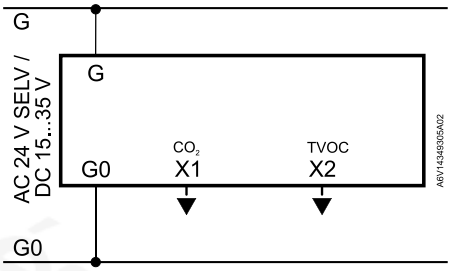
QPA2001..



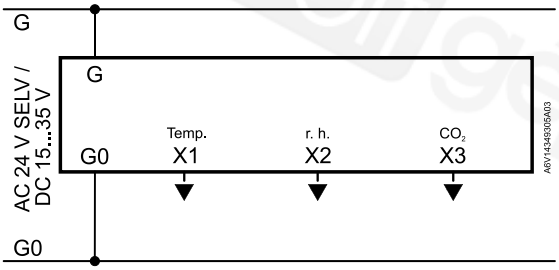
QPA2161..



QPA2260.., QPA2260D..



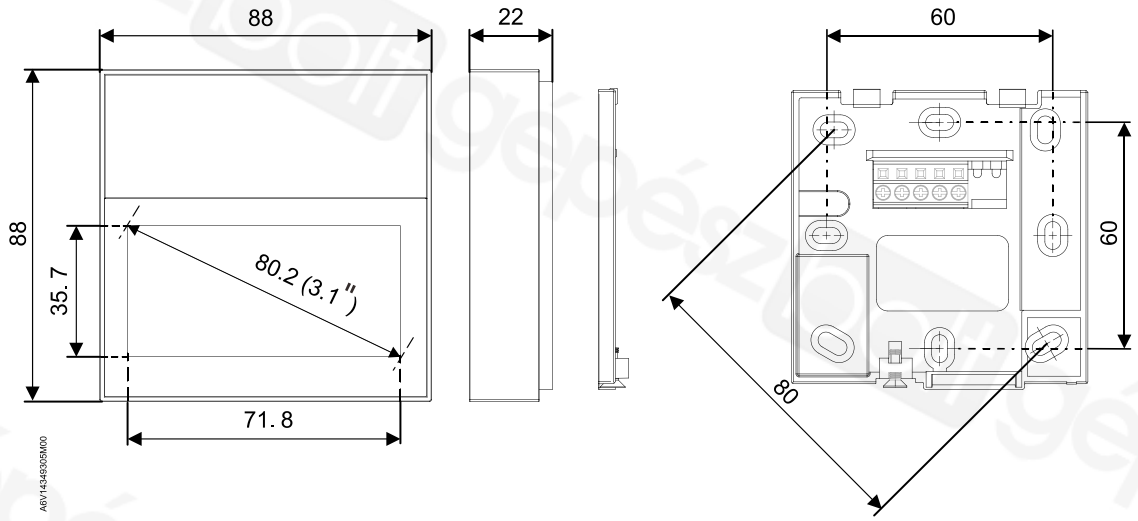
QPA2360.., QPA2360D..



G, G0 Operating voltage AC 24 V (SELV) or DC 15...35 V

X1, X2, X3 Signal output DC 0...10 V, 4...20 mA, 0...5 V, 2...10 V, 0...20 mA, 0...10 mA

Dimensions



Dimensions in mm

Regulatory compliance information

European Union conformity

Contact for regulatory topics: (EU) Siemens AG, Berliner Ring 23, DE-76437 Rastatt

United Kingdom conformity assessed

Contact for regulatory topics: (GB) Siemens plc, Sir William Siemens House, Princess Road, Manchester, M20 2UR

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