SIEMENS


# Symaro – innovative sensors, measurable quality

**A structured range of sensors for all typical HVAC measurements and applications**

Answers for infrastructure.

# Symaro – energy-efficient, innovative measurement that pays off over the long term

**Saving energy thanks to highly accurate measurements – Symaro™ sensors record and transmit readings extremely quickly and accurately, providing an optimal basis for precise and therefore energy- and cost-efficient control of the entire HVAC plant.**

**With innovations such as integrated self-monitoring and highly versatile multisensors for different applications, Symaro sensors are a secure investment in the future. And thanks to an installation concept that has remained unchanged for decades, they can be quickly installed and put into operation – so your investment pays off right from the start.**

# Symaro – simply a better way to measure

### A range of sensors to meet every need

Whether for measuring temperature, pressure, humidity or air quality in rooms, ducts or outside areas, Symaro offers a transparent, clearly structured range of sensors for typical HVAC measurements and applications. The range also includes multisensors that measure mixed gases, as well as sensors for special areas, for example in the pharmaceutical industry. Digital correction algorithms guarantee clean, clear measurement signals. Tested applications ensure full compatibility with all HVAC controllers from Siemens. In addition, the connection to standard commercial third-party systems is always an option thanks to standardized output signals.

### High room comfort and user-friendly operation

Symaro provides a solid foundation for optimum comfort when it comes to operation, control, and room climate. The sensors allow energy-efficient, demand-controlled ventilation for optimum room quality and comfort. They automatically compensate for changes in building occupancy, building usage or plant characteristics.

The measured value display on Symaro multisensors makes them even more convenient. The LCD display alternately indicates the different measured temperature, humidity, and air quality readings. And the temperature display can be switched from °C to °F.

### Measurable quality based on many years of experience

Symaro reflects Siemens' more than 60 years of experience in developing and producing sensors: Symaro sensors are highly reliable and designed for simple, standardized, cost-saving installation with low cabling effort and fast start-up. They have also been intensively tested in the in-house HVAC laboratory. Symaro complies with all international standards such as CE, UL, C-Tick, and RoHS.

### Comprehensive support in every respect

With Symaro, you are assured of Siemens' comprehensive support, whether it's intensive training courses, practical tools, extensive documentation or expert assistance. Worldwide – if you want.

### Highlights

- Perceptible energy savings – thanks to fast, high-precision measurement and efficient measuring techniques
- Innovative sensor technology – with self-monitoring, service mode, integrated installation concept, and functional design
- High level of comfort – provided by demand-controlled ventilation
- Reduced installation and cabling effort – thanks to multisensors
- Guaranteed quality – the result of many years of experience, in-depth applications expertise, and systematic sensor tests
- Comprehensive support from experts worldwide

| | | Temperature | | Humidity | | | Air quality | | Pressure | | | Xtra | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sensors | Switching sensors[1)] | Sensors | Switching sensors | Certified sensors | Sensors | Switching sensors | Sensors | Switching sensors | Certified sensors | Velocity sensors | Switching velocity sensors | Solar sensors |
| Air | Room | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | |
| | Duct | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | | |
| | Outside | ■ | | ■ | | ■ | | | | | | | | ■ |
| Water, refrigerant | Immersion | ■ | | | | | | | ■ | | | | ■ | |
| | Strap-on | ■ | | | ■ | | | | | | | | | |
| | Cable | ■ | | | | | | | | | | | | |

[1)] see separate overview of thermostats

# Symaro temperature – reliable and precise measurement at any place

### Flexible sensors for temperature measurement

Prepared for every situation: Symaro offers temperature sensors with all important active and passive output signals. The active sensors can be quickly adapted to the situation at hand using a number of different, easily adjustable measurement ranges.

### Energy-efficient and convenient for every application

– When it comes to room sensors, the optimum weighting of room and wall temperatures guarantees the best possible comfort even during dynamic processes.
– In addition to outside temperature, to keep heat requirements economical, the outside sensors measure wind, wall temperature, and solar radiation.
– Strap-on, immersion, and cable sensors optimize control thanks to their sophisticated design and short reaction times.
– The air duct sensors deliver precise results with their mean value measurement, regardless of temperature stratification or flow conditions. The duct sensors can therefore be flexibly positioned.

### Innovative and simple installation

All temperature sensors can be quickly, securely, and easily mounted – saving time and money during installation.
– The mounting plate allows the room sensors to be wired in advance. Then, after all plastering and painting work is finished, the sensor is snapped on.
– When it comes to preinstalled protection pipes, immersion sensors are simply snapped in place.
– Strap-on sensors can be fixed fast and securely, regardless of the pipe diameter, using the supplied clamping strip.

### Highlights

- Wide choice of products covering all usual measurement ranges and output signals
- Energy-efficient heat requirements and high room comfort – the result of balanced measurement weighting, short reaction times, and high measuring precision
- Innovative and simple installation – thanks to a construction and housing design that comply to all measuring technology and installation requirements

| |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|
| **Model** | Room sensor | Room sensor | Duct sensor | Immersion sensor | Outside sensor | Outside sensor | Strap-on sensor | Cable sensor |
| **Type** | QAA | QAA...D | QAM | QAE | QAC3... | QAC2... | QAD | QAP |

| | Type | Output | | | | | | Range | Category | Supply | | Length | | Protection | MA [1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LG-Ni1000 | Pt100 | Pt1000 | NTC 10k | DC 0...10 V | DC 4...20 mA | °C | High quality | AC 24 V | DC 13.5...35 V | Sensor mm | Cable mm | | |
| Room | QAA2010 | | ■ | | | | | 0...+50 | | | | | | IP30 | |
| | QAA2012 | | | ■ | | | | 0...+50 | | | | | | IP30 | |
| | QAA2012N [2] | | | ■ | | | | 0...+50 | | | | | | IP30 | |
| | QAA2030 | | | | ■ | | | 0...+50 | | | | | | IP30 | |
| | QAA2061 | | | | | ■ | | 0...+50 | | ■ | ■ | | | IP30 | |
| | QAA2061D | | | | | ■ | | 0...+50 | | ■ | ■ | | | IP30 | |
| | QAA2071 | | | | | | ■ | 0...+50 | | | ■ | | | IP30 | |
| | QAA24 | ■ | | | | | | 0...+50 | | | | | | IP30 | |
| | QAA2020N [2] | ■ | | | | | | 0...+50 | | | | | | IP30 | |
| Duct | QAM2110.040 | | ■ | | | | | −50...+80 | | | | 400 | | IP54 | ■ |
| | QAM2112.040 | | | ■ | | | | −50...+80 | | | | 400 | | IP42 | ■ |
| | QAM2112.200 | | | ■ | | | | −50...+80 | | | | 2000 | | IP42 | ■ |
| | QAM2120.040 | ■ | | | | | | −50...+80 | | | | 400 | | IP42 | ■ |
| | QAM2120.200 | ■ | | | | | | −50...+80 | | | | 2000 | | IP42 | ■ |
| | QAM2120.600 | ■ | | | | | | −50...+80 | | | | 6000 | | IP42 | ■ |
| | QAM2130.040 | | | | ■ | | | −40...+80 | | | | 400 | | IP42 | ■ |
| | QAM2161.040 | | | | | ■ | | −50...+50 | | ■ | ■ | 400 | | IP54 | ■ |
| | QAM2171.040 | | | | | | ■ | −50...+50 | | | ■ | 400 | | IP54 | ■ |
| Immersion | QAE2111.010 | | ■ | | | | | −30...+130 | | | | 100 | | IP42 | |
| | QAE2111.015 | | ■ | | | | | −30...+130 | | | | 150 | | IP42 | |
| | QAE2112.010 | | | ■ | | | | −30...+130 | | | | 100 | | IP42 | |
| | QAE2112.015 | | | ■ | | | | −30...+130 | | | | 150 | | IP42 | |
| | QAE2120.010 | ■ | | | | | | −30...+130 | | | | 100 | | IP42 | ■ |
| | QAE2120.015 | ■ | | | | | | −30...+130 | | | | 150 | | IP42 | ■ |
| | QAE2121.010 | ■ | | | | | | −30...+130 | | | | 100 | | IP42 | |
| | QAE2121.015 | ■ | | | | | | −30...+130 | | | | 150 | | IP42 | |
| | QAE2130.010 | | | | ■ | | | −30...+125 | | | | 100 | | IP42 | |
| | QAE2130.015 | | | | ■ | | | −30...+125 | | | | 150 | | IP42 | |
| | QAE2164.010 | | | | | ■ | | −10...+120 | | ■ | ■ | 100 | | IP54 | |
| | QAE2164.015 | | | | | ■ | | −10...+120 | | ■ | ■ | 150 | | IP54 | |
| | QAE2174.010 | | | | | | ■ | −10...+120 | | | ■ | 100 | | IP54 | |
| | QAE2174.015 | | | | | | ■ | −10...+120 | | | ■ | 150 | | IP54 | |
| | QAE3010.010 | | ■ | | | | | −50...+200 | ■ | | | 100 | | IP65 | ■ |
| | QAE3010.016 | | ■ | | | | | −50...+200 | ■ | | | 160 | | IP65 | ■ |
| | QAE3075.010 | | | | | | ■ | 0...+200 | ■ | | ■ [3] | 100 | | IP65 | ■ |
| | QAE3075.016 | | | | | | ■ | 0...+200 | ■ | | ■ [3] | 160 | | IP65 | ■ |
| | QAE26.90 | ■ | | | | | | −50...+180 | | | | 65 | 2000 | IP64 | ■ |
| | QAE26.91 | ■ | | | | | | −50...+180 | | | | 125 | 2000 | IP64 | ■ |
| | QAE26.93 | ■ | | | | | | −50...+180 | | | | 240 | 2000 | IP64 | ■ |
| | QAE26.95 | ■ | | | | | | −50...+180 | | | | 465 | 2000 | IP64 | ■ |
| Strap-on | QAD2010 | | ■ | | | | | −30...+130 | | | | | | IP42 | ■ |
| | QAD2012 | | | ■ | | | | −30...+130 | | | | | | IP42 | ■ |
| | QAD2030 | | | | ■ | | | −30...+125 | | | | | | IP42 | ■ |
| | QAD22 | ■ | | | | | | −30...+130 | | | | | | IP42 | ■ |
| Outside | QAC2010 | | ■ | | | | | −50...+70 | | | | | | IP54 | |
| | QAC2012 | | | ■ | | | | −50...+70 | | | | | | IP54 | |
| | QAC2030 | | | | ■ | | | −40...+70 | | | | | | IP54 | |
| | QAC3161 | | | | | ■ | | −50...+50 | ■ | ■ | ■ | | | IP65 | |
| | QAC3171 | | | | | | ■ | −50...+50 | ■ | | ■ | | | IP65 | |
| | QAC22 | ■ | | | | | | −50...+70 | | | | | | IP54 | |
| Cable | QAP1030.200 | | | | ■ | | | −25...+95 | | | | | 2000 | IP65 | |
| | QAP2010.150 | | ■ | | | | | −30...+130 | | | | | 1500 | IP65 | |
| | QAP2012.150 | | | ■ | | | | −30...+130 | | | | | 1500 | IP65 | |
| | QAP21.2 | ■ | | | | | | −30...+180 | | | | | 1500 | IP67 | |
| | QAP21.3 | ■ | | | | | | −30...+130 | | | | | 1500 | IP65 | |
| | QAP22 | ■ | | | | | | −25...+95 | | | | | 2000 | IP65 | |
| | QAZ21.682/101 | ■ | | | | | | −50...+80 | | | | | 2000 | IP67 | ■ |

[1] including mounting accessories [2] without Siemens logo [3] DC 7.5...30 V

# Symaro humidity – highly stable measurement under all conditions

### Robust sensors for energy efficiency and long life cycle

When it comes to energy-optimized control concepts, Symaro humidity sensors guarantee fault-free operation for years, even in critical applications. Thanks to the capacitive measurement element, they feature excellent long-term stability with high accuracy, freedom from maintenance, and high precision. Microprocessor technology and a sophisticated algorithm for temperature compensation ensure very high accuracy not only in the comfort range, but over the entire measurement range. Additionally, the sensors are impervious to dust and most chemicals

### Innovative high-quality sensors for strictest standards

Symaro also includes humidity sensors for applications with especially high requirements in the HVAC application area, for example in the pharmaceutical, food, and paper industries as well as in clean room facilities. They even conform to the rigorous FDA and GMP guidelines.

### Comfortable and economical in handling

Combined temperature/humidity sensors offer exceptional flexibility and savings potential. They also have three defined measurement ranges that are extremely simple to adjust with no need for additional tools.

### Quality with experience thanks to a high-precision calibration laboratory

Our in-house laboratory for measuring relative humidity is based on the Swiss Federal Office of Metrology's (METAS) [1)] standard for calibration laboratories. This serves as a reference system for the production of humidity sensors and multisensors. The result: documented process transparency and production reliability that translates into optimum quality, precision, and reproducibility for Symaro humidity sensors.

### Highlights

- Energy efficiency with long life cycle – thanks to outstanding long-term stability with a high level of accuracy, freedom from maintenance, and precision
- Reliable operation even in critical applications
- High degree of reliability – thanks to innovative, FDA- and GMP-certified precision measuring sensors
- Best quality, accuracy, and reproducibility thanks to high-precision calibration laboratory

[1)] equivalent internationally to LNE, PTB, NPL, NIST, BEV etc.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |
| **Model** | Room sensor | Room sensor | Duct sensor | Duct sensor | Room sensor | Room sensor | Outside sensor | Dew point sensor |
| **Type** | QFA2... | QFA2...D | QFM2... | QFM3...D | QFA3... | QFA3...D | QFA3... + AQF3100 | QXA2... |

| | Type | Version | | Output | | | | Range | | Category | | Supply | | Protection | MA [1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Humidity | Temperature | DC 0...10 V | DC 4...20 mA | Relay contact | Display | Humidity % r.h. | Temperature [2] °C | High quality | Certified | AC 24 V | DC 13.5...35 V | | |
| Room | QFA2000 | ■ | | ■ | | | | 0...95 | | | | ■ | ■ | IP30 | |
| | QFA2001 | ■ | | | ■ | | | 0...95 | | | | ■ | ■ | IP30 | |
| | QFA2060 | ■ | ■ | ■ | | | | 0...95 | –15...+50 | | | ■ | ■ | IP30 | |
| | QFA2060N [3] | ■ | ■ | ■ | | | | 0...95 | –15...+50 | | | ■ | ■ | IP30 | |
| | QFA2060D | ■ | ■ | ■ | | | ■ | 0...95 | –15...+50 | | | ■ | ■ | IP30 | |
| | QFA2071 | ■ | ■ | | ■ | | | 0...95 | –15...+50 | | | ■ | ■ | IP30 | |
| | QFA3100 | ■ | | ■ | | | | 0...100 | | ■ | | ■ | ■ | IP65 | |
| | QFA3101 | ■ | | | ■ | | | 0...100 | | ■ | | | ■ | IP65 | |
| | QFA3160 | ■ | ■ | ■ | | | | 0...100 | –40...+70 | ■ | | ■ | ■ | IP65 | |
| | QFA3160D | ■ | ■ | ■ | | | ■ | 0...100 | –40...+70 | ■ | | ■ | ■ | IP65 | |
| | QFA3171 | ■ | ■ | | ■ | | | 0...100 | –40...+70 | ■ | | | ■ | IP65 | |
| | QFA3171D | ■ | ■ | | ■ | | ■ | 0...100 | –40...+70 | ■ | | | ■ | IP65 | |
| | QFA4160 | ■ | ■ | ■ | | | | 0...100 | –40...+70 | | ■ | ■ | ■ | IP65 | |
| | QFA4160D | ■ | ■ | ■ | | | ■ | 0...100 | –40...+70 | | ■ | ■ | ■ | IP65 | |
| | QFA4171 | ■ | ■ | | ■ | | | 0...100 | –40...+70 | | ■ | | ■ | IP65 | |
| | QFA4171D | ■ | ■ | | ■ | | ■ | 0...100 | –40...+70 | | ■ | | ■ | IP65 | |
| Duct | QFM2100 | ■ | | ■ | | | | 0...95 | | | | ■ | ■ | IP54 | ■ |
| | QFM2101 | ■ | | | ■ | | | 0...95 | | | | | ■ | IP54 | ■ |
| | QFM2160 | ■ | ■ | ■ | | | | 0...95 | –15...+60 | | | ■ | ■ | IP54 | ■ |
| | QFM2160N [3] | ■ | ■ | ■ | | | | 0...95 | –15...+60 | | | ■ | ■ | IP54 | ■ |
| | QFM2171 | ■ | ■ | | ■ | | | 0...95 | –15...+60 | | | | ■ | IP54 | ■ |
| | QFM3100 | ■ | | ■ | | | | 0...100 | | ■ | | ■ | ■ | IP65 | ■ |
| | QFM3101 | ■ | | | ■ | | | 0...100 | | ■ | | | ■ | IP65 | ■ |
| | QFM3160 | ■ | ■ | ■ | | | | 0...100 | –40...+70 | ■ | | ■ | ■ | IP65 | ■ |
| | QFM3160D | ■ | ■ | ■ | | | ■ | 0...100 | –40...+70 | ■ | | ■ | ■ | IP65 | ■ |
| | QFM3171 | ■ | ■ | | ■ | | | 0...100 | –40...+70 | ■ | | | ■ | IP65 | ■ |
| | QFM3171D | ■ | ■ | | ■ | | ■ | 0...100 | –40...+70 | ■ | | | ■ | IP65 | ■ |
| | QFM4160 | ■ | ■ | ■ | | | | 0...100 | –40...+70 | | ■ | ■ | ■ | IP65 | ■ |
| | QFM4171 | ■ | ■ | | ■ | | | 0...100 | –40...+70 | | ■ | | ■ | IP65 | ■ |
| Outside | QFA3100 + AQF3100 | ■ | | ■ | | | | 0...100 | | ■ | | ■ | ■ | IP65 | |
| | QFA3101 + AQF3100 | ■ | | | ■ | | | 0...100 | | ■ | | | ■ | IP65 | |
| | QFA3160 + AQF3100 | ■ | ■ | ■ | | | | 0...100 | –40...+70 | ■ | | ■ | ■ | IP65 | |
| | QFA3171 + AQF3100 | ■ | ■ | | ■ | | | 0...100 | –40...+70 | ■ | | | ■ | IP65 | |
| Dew point | QXA2000 | ■ | | | | ■ | | 0...100 | | | | ■ | | IP40 | |
| | QXA2001 | ■ | | | | ■ | | 0...100 | | | | ■ | | IP40 | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Hygrostats | QFA1000 | ■ | | | | ■ | | 30...90 [2] | | | | | | IP20 | |
| | QFA1001 | ■ | | | | ■ | | 30...90 [2] | | | | | | IP20 | |
| | QFM81.2 | ■ | | | | ■ | | 15...95 [2] | | | | | | IP30 | ■ |
| | QFM81.21 | ■ | | | | ■ | | 15...95 [2] | | | | | | IP55 | ■ |

[1] including mounting accessories [2] measurements adjustable [3] without Siemens logo

# Symaro air quality – energy efficiency and more comfort

### Unique product range with stable measurement method

Symaro air quality sensors cover all requirements and are suitable for every type of building. The high-precision multisensors ($CO_2$/VOC [1)], $CO_2$/T and $CO_2$/T/r.h.) are available for room and duct applications, and also with an attractive display.

### Efficient in usage

Through infrared absorption measurement (NDIR), air quality sensors determine the $CO_2$ concentration. And because of an additionally integrated reference light source, they can also periodically recalibrate themselves. This ensures freedom from maintenance, long-term stability, and maximum measuring accuracy. The sensors also deliver immediately, precisely measured values regardless of room occupation. Ultimately, you save substantial start-up, service, and operating costs.

### Comfortable and economical installation in the air duct

Fast, secure, and cost-efficient installation – with no need for additional duct installation housing or sealing measures: The installation of air duct sensors is very easy thanks to their ergonomic, installation-friendly housing. Due to the infinitely variable immersion depth, the sensors can be optimally adapted to every installation situation. Additionally, because of the patented measurement system, alignment with the flow direction is no longer needed. Two totally separate chambers for measurement modules and connection terminals prevent air outside the duct from affecting the measurement accuracy.

### Energy-saving comfort

Optimum air quality with low energy consumption: Combined with Siemens systems, controllers, and variable speed drives, Symaro air quality sensors allow for optimized demand-controlled ventilation [2)]. Thus, 20% to 70% in energy and cost savings can be achieved.

### Highlights

- Wide selection of multisensors for room and duct applications
- Cost efficiency with guaranteed measurement accuracy and long-term stability – through precise infrared measurement and self calibration
- High application and installation comfort – through patented technology
- Energy savings and maximum room comfort – thanks to demand-controlled ventilation

[1)] VOC: Volatile Organic Compound (mixed gas)

[2)] you will find detailed information in the brochure (order no. 0-92166-en): "Demand-controlled ventilation"

| | | | | | |
|---|---|---|---|---|---|
| |  |  |  |  |  |
| Model | Room sensor | Room sensor | Duct sensor | Duct sensor | Room sensor |
| Type | QPA10.../20... | QPA20...D | QPM11.../21... | QPM21...D | QPA84 |

| | Type | Version | | | | Output | | | Range | | | | Supply | | | Protection | MA [1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $CO_2$ | VOC | Temperature | Humidity | DC 0...5 V or DC 0...10 V | Relay contact | Display | $CO_2$ 0...2000 ppm | Temperature 0...50/ –35...+35 °C | Temperature passive [2] | Humidity 0...95% r.h. | AC 24 V | DC 15...35 V | AC 230 V | | |
| Room | QPA1000 | | ■ | | | ■ | | | | | | | ■ | ■ | | IP30 | |
| | QPA1000N [3] | | ■ | | | ■ | | | | | | | ■ | ■ | | IP30 | |
| | QPA2000 | ■ | | | | ■ | | | ■ | | | | ■ | ■ | | IP30 | |
| | QPA2000N [3] | ■ | | | | ■ | | | ■ | | | | ■ | ■ | | IP30 | |
| | QPA2002 | ■ | ■ | | | ■ | | | ■ | | | | ■ | ■ | | IP30 | |
| | QPA2002N [3] | ■ | ■ | | | ■ | | | ■ | | | | ■ | ■ | | IP30 | |
| | QPA2002D | ■ | ■ | | | ■ | | ■ | ■ | | | | ■ | ■ | | IP30 | |
| | QPA2060 | ■ | | ■ | | ■ | | | ■ | ■ | | | ■ | ■ | | IP30 | |
| | QPA2060N [3] | ■ | | ■ | | ■ | | ■ | ■ | ■ | | | ■ | ■ | | IP30 | |
| | QPA2060D | ■ | | ■ | | ■ | | ■ | ■ | ■ | | | ■ | ■ | | IP30 | |
| | QPA2062 | ■ | | ■ | ■ | ■ | | | ■ | ■ | | ■ | ■ | ■ | | IP30 | |
| | QPA2062D | ■ | | ■ | ■ | ■ | | ■ | ■ | ■ | | ■ | ■ | ■ | | IP30 | |
| | QPA2080 | ■ | | ■ | | ■ | | | ■ | | ■ | | ■ | ■ | | IP30 | |
| | QPA2080D | ■ | | ■ | | ■ | | ■ | ■ | | ■ | | ■ | ■ | | IP30 | |
| | QPA84 | | ■ | | | | ■ | | | | | | | | ■ | IP30 | |
| Duct | QPM1100 | | ■ | | | ■ | | | | | | | ■ | ■ | | IP54 | ■ |
| | QPM2100 | ■ | | | | ■ | | | ■ | | | | ■ | ■ | | IP54 | ■ |
| | QPM2100N [3] | ■ | | | | ■ | | | ■ | | | | ■ | ■ | | IP54 | ■ |
| | QPM2102 | ■ | ■ | | | ■ | | | ■ | | | | ■ | ■ | | IP54 | ■ |
| | QPM2102D | ■ | ■ | | | ■ | | ■ | ■ | | | | ■ | ■ | | IP54 | ■ |
| | QPM2160 | ■ | | ■ | | ■ | | | ■ | ■ | | | ■ | ■ | | IP54 | ■ |
| | QPM2160D | ■ | | ■ | | ■ | | ■ | ■ | ■ | | | ■ | ■ | | IP54 | ■ |
| | QPM2162 | ■ | | ■ | ■ | ■ | | | ■ | ■ | | ■ | ■ | ■ | | IP54 | ■ |
| | QPM2162D | ■ | | ■ | ■ | ■ | | ■ | ■ | ■ | | ■ | ■ | ■ | | IP54 | ■ |
| | QPM2180 | ■ | | ■ | | ■ | | | ■ | | ■ | | ■ | ■ | | IP54 | ■ |

[1] including mounting accessories [2] resistance included: LG-Ni1000, Pt100, Pt1000, NTC 10k [3] without Siemens logo

# Symaro pressure – highly precise and robust pressure measurement

Symaro pressure sensors are designed to quickly and accurately measure the pressure in all fields of use. They are thus ideally suited for all kinds of applications.

## Precise pressure sensors for all requirements

Symaro covers the entire range of requirements for pressure measurement. It comprises sensors for measuring very low to high pressures in all kinds of different media such as liquids, gases, water, refrigerants, and air. Measurement cells matched precisely to the pressure range increase the measurement accuracy. This eliminates the need for temperature or pressure calibration.

## Innovations for very good long-term stability

Thanks to patented membranes, the operating points of the Symaro pressure differential switch for air are stable over a long period. And because of its gold-coated contacts, even frequent operating cycles pose no problem.

The individually laser-adjusted pressure difference sensors for air and non-aggressive gases use the patented ceramic bending bar technology. That allows a highly accurate pressure measurement, which is stable over a long period, even with highly dynamic processes.

The robust pressure sensors for liquids and gases are based on a stainless steel, piezo-resistive measuring system. They are ideally suited for the measurement of static and dynamic overpressures with intensive load change. Their fully encapsulated electronics design permanently protects them against the effects of temperature and humidity.

When it comes to Symaro pressure sensors for use in refrigeration areas, the stainless steel membrane is welded to the housing with no need for a seal. This means they can be used in conjunction with all refrigerants, even ammonia and carbon dioxide, as well as at high process temperatures and with aggressive media.

**Highlights**

- Optimum pressure sensor for every measuring and application area
- High measurement accuracy and best quality – thanks to optimized measuring cells over the entire measurement range
- Great, long-term stability – thanks to innovative and patented measuring elements

| | | | | | |
|---|---|---|---|---|---|
| |  |  |  |  |  |
| **Model** | Differential pressure sensors | Differential pressure sensors | Differential pressure sensors | Differential pressure sensors | Differential pressure switch |
| **Medium** | Air | Air | Air | Air | Air |
| **Type** | QBM65 | QBM65.1 | QBM75 | QBM66 | QBM81 |

| | Type | Version | | Output | | | | | Range | | Category | | Supply | | Protection | MA [1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Relative | Differential | DC 0...10 V | DC 4...20 mA | Root function | Relay contact | Display | Adjustable | | High quality | Certified | AC 24 V | DC 20...30 V | | |
| Air | QBM65-1U | | ■ | ■ | | | | | | –50...+50 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65-1 | | ■ | ■ | | | | | | 0...100 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65-3 | | ■ | ■ | | | | | | 0...300 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65-5 | | ■ | ■ | | | | | | 0...500 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65-10 | | ■ | ■ | | | | | | 0...1000 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65-25 | | ■ | ■ | | | | | | 0...2500 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65.1-1 | | ■ | ■ | | | | ■ | | 0...100 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65.1-3 | | ■ | ■ | | | | ■ | | 0...300 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65.1-5 | | ■ | ■ | | | | ■ | | 0...500 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65.1-10 | | ■ | ■ | | | | ■ | | 0...1000 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65.1-25 | | ■ | ■ | | | | ■ | | 0...2500 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65.2-1 | | ■ | ■ | | ■ | | | | 0...100 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65.2-3 | | ■ | ■ | | ■ | | | | 0...300 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65.2-5 | | ■ | ■ | | ■ | | | | 0...500 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65.2-10 | | ■ | ■ | | ■ | | | | 0...1000 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65.2-25 | | ■ | ■ | | ■ | | | | 0...2500 Pa | ■ | | ■ | ■ | IP54 | ■ |
| | QBM65-1/C | | ■ | ■ | | | | | | 0...100 Pa | | ■ | ■ | ■ | IP54 | ■ |
| | QBM65-3/C | | ■ | ■ | | | | | | 0...300 Pa | | ■ | ■ | ■ | IP54 | ■ |
| | QBM65-10/C | | ■ | ■ | | | | | | 0...1000 Pa | | ■ | ■ | ■ | IP54 | ■ |
| | QBM65-25/C | | ■ | ■ | | | | | | 0...2500 Pa | | ■ | ■ | ■ | IP54 | ■ |
| | QBM75-1U/C | | ■ | | ■ | | | | | –50...+50 Pa | | ■ | | ■ | IP54 | ■ |
| | QBM75.1-1/C | | ■ | | ■ | | | ■ | | 0...100 Pa | | ■ | | ■ | IP54 | ■ |
| | QBM66.201 | | ■ | ■ | | | | | ■ | 0...100/200 Pa | | | ■ | ■ | IP42 | ■ |
| | QBM66.202 | | ■ | ■ | | | | | ■ | 0...250/500 Pa | | | ■ | ■ | IP42 | ■ |
| | QBM66.204 | | ■ | ■ | | | | | ■ | 0...500/1000 Pa | | | ■ | ■ | IP42 | ■ |
| | QBM66.203 | | ■ | ■ | | | | | ■ | 0...1500/3000 Pa | | | ■ | ■ | IP42 | ■ |
| | QBM81-3 | | ■ | | | | ■ | | ■ | 20...300 Pa | | | | | IP54 | ■ |
| | QBM81-5 | | ■ | | | | ■ | | ■ | 50...500 Pa | | | | | IP54 | ■ |
| | QBM81-10 | | ■ | | | | ■ | | ■ | 100...1000 Pa | | | | | IP54 | ■ |
| | QBM81-20 | | ■ | | | | ■ | | ■ | 500...2000 Pa | | | | | IP54 | ■ |
| | QBM81-50 | | ■ | | | | ■ | | ■ | 1000...5000 Pa | | | | | IP54 | ■ |

[1] including mounting accessories

| | | | | | |
|---|---|---|---|---|---|
| |  |  |  |  |  |
| **Model** | Relative pressure sensors | Differential pressure sensors | Differential pressure sensors | Differential pressure sensors | Relative pressure sensors |
| **Medium** | Liquid/gas | Liquid/gas | Liquid/gas | Liquid/gas | Refrigerants |
| **Type** | QBE2x02-P | QBE61 | QBE63 | QBE3x00-D | QBE2x01-P |

| | Type | Version | | Output | | | | | Range | | Category | | Supply | | Protection | MA [1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Relative | Differential | DC 0...10 V | DC 4...20 mA | Root function | Relay contact | Display | Adjustable | | High quality | Certified | AC 24 V | DC 20...30 V | | |
| Liquid/gases | QBE2002-P1 | ■ | | ■ | | | | | | 0...1 bar | | | ■ | ■ | IP65 | |
| | QBE2002-P2 | ■ | | ■ | | | | | | 0...2 bar | | | ■ | ■ | IP65 | |
| | QBE2002-P4 | ■ | | ■ | | | | | | 0...4 bar | | | ■ | ■ | IP65 | |
| | QBE2002-P5 | ■ | | ■ | | | | | | 0...5 bar | | | ■ | ■ | IP65 | |
| | QBE2002-P10 | ■ | | ■ | | | | | | 0...10 bar | | | ■ | ■ | IP65 | |
| | QBE2002-P16 | ■ | | ■ | | | | | | 0...16 bar | | | ■ | ■ | IP65 | |
| | QBE2002-P20 | ■ | | ■ | | | | | | 0...20 bar | | | ■ | ■ | IP65 | |
| | QBE2002-P25 | ■ | | ■ | | | | | | 0...25 bar | | | ■ | ■ | IP65 | |
| | QBE2002-P40 | ■ | | ■ | | | | | | 0...40 bar | | | ■ | ■ | IP65 | |
| | QBE2002-P60 | ■ | | ■ | | | | | | 0...60 bar | | | ■ | ■ | IP65 | |
| | QBE2102-P4 | ■ | | | ■ | | | | | 0...4 bar | | | | ■ | IP65 | |
| | QBE2102-P5 | ■ | | | ■ | | | | | 0...5 bar | | | | ■ | IP65 | |
| | QBE2102-P10 | ■ | | | ■ | | | | | 0...10 bar | | | | ■ | IP65 | |
| | QBE2102-P16 | ■ | | | ■ | | | | | 0...16 bar | | | | ■ | IP65 | |
| | QBE2102-P20 | ■ | | | ■ | | | | | 0...20 bar | | | | ■ | IP65 | |
| | QBE61.3-DP2 | | ■ | ■ | | | | | | 0...2 bar | | | ■ | ■ | IP54 | |
| | QBE61.3-DP5 | | ■ | ■ | | | | | | 0...5 bar | | | ■ | ■ | IP54 | |
| | QBE61.3-DP10 | | ■ | ■ | | | | | | 0...10 bar | | | ■ | ■ | IP54 | |
| | QBE63-DP01 | | ■ | ■ | | | | | | 0...100 mbar | | | ■ | ■ | IP65 | |
| | QBE63-DP02 | | ■ | ■ | | | | | | 0...200 mbar | | | ■ | ■ | IP65 | |
| | QBE63-DP05 | | ■ | ■ | | | | | | 0...500 mbar | | | ■ | ■ | IP65 | |
| | QBE63-DP1 | | ■ | ■ | | | | | | 0...1 bar | | | ■ | ■ | IP65 | |
| | QBE3000-D1 | | ■ | ■ | | | | | | 0...1 bar | | | ■ | ■ | IP65 | |
| | QBE3000-D1.6 | | ■ | ■ | | | | | | 0...1.6 bar | | | ■ | ■ | IP65 | |
| | QBE3000-D2.5 | | ■ | ■ | | | | | | 0...2.5 bar | | | ■ | ■ | IP65 | |
| | QBE3000-D4 | | ■ | ■ | | | | | | 0...4 bar | | | ■ | ■ | IP65 | |
| | QBE3000-D6 | | ■ | ■ | | | | | | 0...6 bar | | | ■ | ■ | IP65 | |
| | QBE3000-D10 | | ■ | ■ | | | | | | 0...10 bar | | | ■ | ■ | IP65 | |
| | QBE3000-D16 | | ■ | ■ | | | | | | 0...16 bar | | | ■ | ■ | IP65 | |
| | QBE3100-D1 | | ■ | | ■ | | | | | 0...1 bar | | | | ■ | IP65 | |
| | QBE3100-D1.6 | | ■ | | ■ | | | | | 0...1.6 bar | | | | ■ | IP65 | |
| | QBE3100-D2.5 | | ■ | | ■ | | | | | 0...2.5 bar | | | | ■ | IP65 | |
| | QBE3100-D4 | | ■ | | ■ | | | | | 0...4 bar | | | | ■ | IP65 | |
| | QBE3100-D6 | | ■ | | ■ | | | | | 0...6 bar | | | | ■ | IP65 | |
| | QBE3100-D10 | | ■ | | ■ | | | | | 0...10 bar | | | | ■ | IP65 | |
| | QBE3100-D16 | | ■ | | ■ | | | | | 0...16 bar | | | | ■ | IP65 | |
| Refrigerants | QBE2001-P10U | ■ | | ■ | | | | | | –1...+9 bar | | | ■ | ■ | IP67 | |
| | QBE2001-P25U | ■ | | ■ | | | | | | –1...+24 bar | | | ■ | ■ | IP67 | |
| | QBE2001-P30U | ■ | | ■ | | | | | | –1...+29 bar | | | ■ | ■ | IP67 | |
| | QBE2001-P60U | ■ | | ■ | | | | | | –1...+59 bar | | | ■ | ■ | IP67 | |
| | QBE2101-P10U | ■ | | | ■ | | | | | –1...+9 bar | | | | ■ | IP67 | |
| | QBE2101-P25U | ■ | | | ■ | | | | | –1...+24 bar | | | | ■ | IP67 | |
| | QBE2101-P30U | ■ | | | ■ | | | | | –1...+29 bar | | | | ■ | IP67 | |
| | QBE2101-P60U | ■ | | | ■ | | | | | –1...+59 bar | | | | ■ | IP67 | |

[1] including mounting accessories

# Symaro Xtra – best quality even for special applications

### Special sensors to complement the range

The comprehensive Symaro range is complemented by a selection of sensors with a variety of different measurement parameters, from solar sensors to air velocity sensors and flow switches.

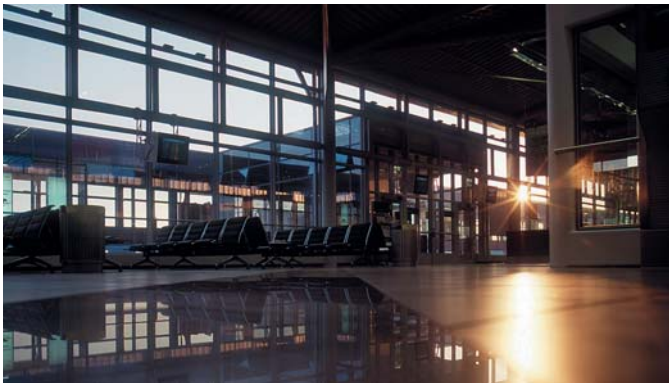
Users can therefore select precisely the products they need from a truly comprehensive, transparent, and modular sensor range for all applications.

**Highlights**

- Supports energy-efficient control – by measuring solar irradiation
- Point measurement of air velocity or the volumetric flow in air ducts
- Increased security – thanks to flow monitoring in HVAC plants and hydraulic systems

| | | | | |
|---|---|---|---|---|
| |  |  |  |  |
| **Model** | Solar sensors | Air velocity sensors | Flow switch | Flow switch |
| **Medium** | | Air | Water, refrigerants | Water, refrigerants |
| **Type** | QLS60 | QVM62.1 | QVE1900 | QVE1901 |
| **Measurand** | Radiation intensity | Velocity volumetric flow | Velocity volumetric flow | Velocity volumetric flow |

| | Type | Output | | | Range | Supply | | Protection | Usage/comment |
|---|---|---|---|---|---|---|---|---|---|
| | | DC 0...10 V | DC 4...20 mA | Relay contact | | AC 24 V | DC 18...30 V | | |
| | QLS60 | ■ | ■ | | 0...1000 W/m² | ■ | ■ | IP65 | Solar cell |
| Air | QVM62.1 | ■ | | | 0...5 m/s<br>0...10 m/s<br>0...15 m/s | ■ | | IP42 | Anemometric measurement principle |
| Water/refrigerants | QVE1900 | | | ■ | Pipes<br>DN 1¼...8"<br>(32...200 mm) | | | IP65 | Paddle switch for high currents.<br>Contact rating 15 (8) A, AC 24...250 V,<br>PN 11 bar, screw-in body R1" brass |
| | QVE1901 | | | ■ | Pipes<br>DN ¾...8"<br>(20...200 mm) | | | IP65 | Paddle switch for use in connection with controllers, building automation and control systems.<br>Contact rating 1 A, < AC 230 V/DC 48 V,<br>< 26 VA/20 W PN 25 bar, screw-in body G½" brass |

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**Answers for infrastructure.**

Our world is undergoing changes that force us to think in new ways: demographic change, urbanization, global warming, and resource shortages. Maximum efficiency has top priority – and not only where energy is concerned. In addition, we need to increase comfort for the well-being of users. Also, our need for safety and security is constantly growing. For our customers, success is defined by how well they manage these challenges. Siemens has the answers.

**"We are the preferred partner for energy-efficient, safe, and secure buildings and infrastructure."**

**www.siemens.com/symaro**