



Seamlessly integrated.
The new sensor range from Belimo.



Sensors by Belimo. The perfect complement to actuators and valves.

Belimo, the global leader in the development, production, and marketing of actuators and control valves for heating, ventilation, and air-conditioning (HVAC) systems, has opened a new chapter in its company history by adding an innovative line of sensors to its existing product range.

Sensors from Belimo offer superior reliability, easy installation, and seamless integration with major Building Automation Systems (BAS). We offer a complete line of field-level device solutions, including sensors for measuring temperature, humidity, pressure, CO₂, and volatile organic compounds (VOCs) in pipe, duct, and outdoor applications. All of our products are backed by world-class service and support.

Seamless integration, reliability, and intuitive design.

Our new range of sensors is the result of over four decades of experience, research, and focus on providing value-adding technologies to customers throughout the HVAC industry. The sensors' unique design offers easy installation and seamless integration, resulting in reduced costs and optimal system performance.

Seamless

Belimo sensors are compatible with major building automation systems, making them suitable for use in any HVAC application.

Reliable

Built from the highest quality materials, Belimo sensors deliver reliable and accurate readings over the entire life-cycle of the building. They also carry a 5-year warranty and conform to NEMA 4X / IP65 requirements.

Intuitive

The sensors compact modular design features a detachable mounting plate and snap-on cover that can be opened and closed without tools, allowing installation and commissioning to be completed in just a few simple steps.

“I have worked with Belimo for nearly 20 years and they have always exceeded my expectations for customer service, quality products, and timely deliveries. My clients and I count on Belimo and with good reason as they have NEVER let us down.”

Lucy Gedney, VP of Sales and Marketing, ATS Automation, Inc.

Innovation for peace of mind.

Sensors from Belimo feature an innovative uniform enclosure, which allows for easy installation and reliability you can count on. The universal enclosure design streamlines the entire product range and compliments our existing line of actuators and valves.

Unique snap-on cover

Screwless housing design allows for quick installation, easy commissioning, and provides NEMA 4X / IP65 protection.



BACnet and Modbus communication protocols

Provide superior application data access and enables easy commissioning and parameterization.



Detachable mounting plate

Designed to be used as a drill template for easy installation.



NEMA 4X / IP65 and UL compliance

Enclosure tested to withstand harsh indoor and outdoor conditions, including exposure to dirt, dust, humidity, condensation, rain, and snow.

**NEMA 4X
IP65**

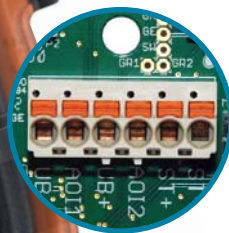




Universal design enclosure
Increases compatibility and simplifies the selection process.



Modular conduit fitting
Enables various mounting and cable configurations to meet a variety of applications.



Spring loaded removable terminal block
Creates a connection that offers resistance to vibration and maximum pull-out force, saving time during wiring and ensuring contact reliability.



Output protection
Provides reverse-polarity protection, which minimizes the risk of damage caused by incorrect wiring.



A comprehensive range of HVAC sensors.

With a complete range of sensors for temperature, humidity, air quality, and pressure, Belimo can serve as your single-source provider of HVAC field-level devices for any building project.

We offer a variety of mounting accessories that expedite device setup, saving you time, money, and manpower. The unique uniform design makes our new sensors easy to install and maintain. Furthermore, the characteristic Belimo orange allows the sensors to be immediately identified as Belimo products, which is particularly useful in the commissioning phase.



Temperature sensors

Accurate and reliable temperature readings are essential for optimal building comfort and energy efficiency. Outdoor air, duct, and pipe temperature sensors are designed for easy installation and are compatible with all major BAS.

FEATURES:

- Up to eight active measurement ranges simplifies field selection and reduces stock storage for maximum flexibility.
- Variety of output signals: passive NTC, RTD, 0-5/10 VDC, 4 to 20 mA.
- Sintered moisture protection coating on all duct, immersion, and cable sensors protects against condensation, mechanical stress, and vibrations.

PRODUCT SERIES:

Outdoor, Duct Averaging, Duct/Immersion, Strap-on, Cable, Low Limit Temperature Detection



Humidity sensors

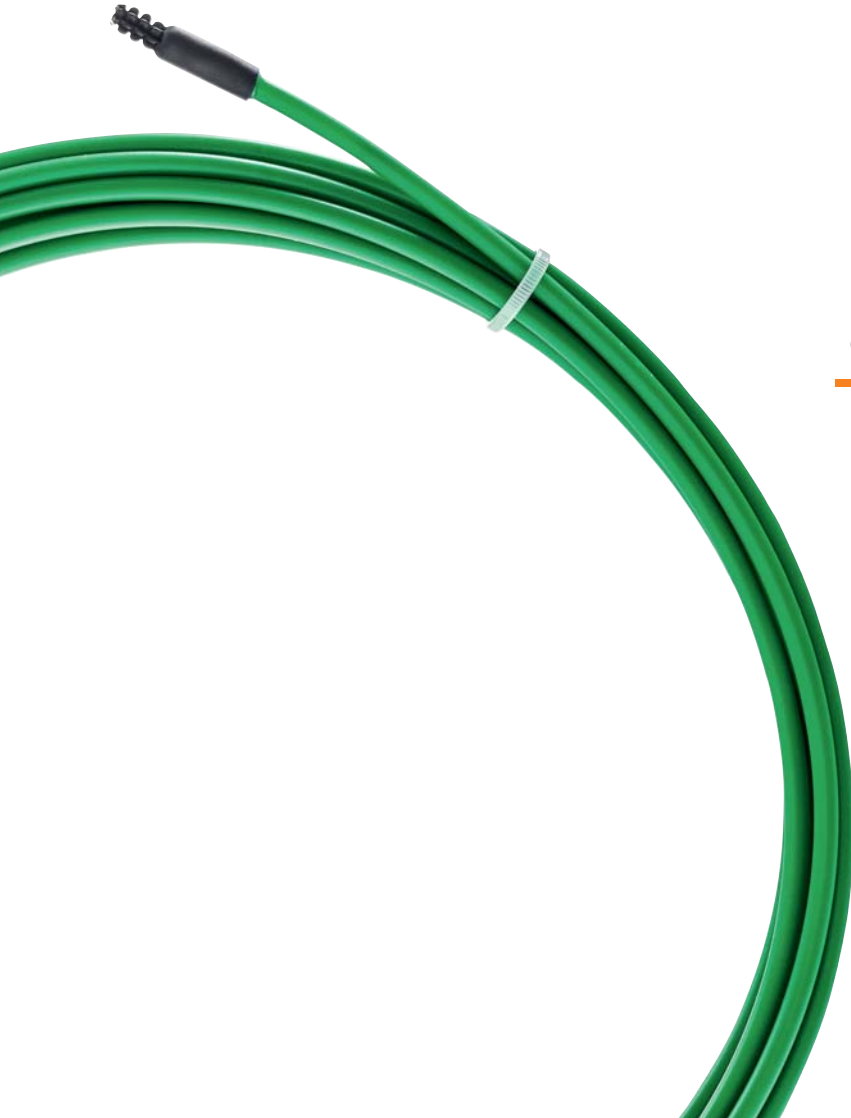
Controlling humidity in buildings is critical to occupant comfort. It's also important to protecting building infrastructure, production processes, stored goods, and museum artwork. Belimo's range of durable duct, outdoor air, and condensation sensors are manufactured using the highest quality materials to ensure superior reliability, accuracy, and repeatability. Combined temperature and humidity sensors provide a flexible and cost-effective solution.

FEATURES:

- Complementary Metal Oxide Semiconductor (CMOS) based polymer-capacitance sensor with an accuracy of $\pm 2\%$ relative humidity as standard and long-term drift $< \pm 0.25\%$ not affected by high humidity and contaminants.
- Multi-sensor with selectable output measurement values: relative humidity, absolute humidity, enthalpy, and dew point.
- Up to four active temperature measurement ranges simplifies field selection and reduces stock storage, providing flexibility for change requests during commissioning.

PRODUCT SERIES:

Outdoor Air, Duct, and Condensation



Air Quality sensors

Air quality sensors provide occupant comfort and energy efficiency. We offer a wide range of combined multi-sensors for CO₂, humidity, temperature, and VOCs designed to ensure air quality and maximize energy savings over the life-cycle of the building.

FEATURES:

- Dual Channel CO₂ sensor based on NDIR technology. The additional reference channel, allows effective compensation of long term drift, thus providing precise accuracy and long-term stability.
- Sensors are completely maintenance free.
- Integrated temperature, humidity, and VOC sensors are available for building applications that require sensors with multi-functional capabilities.
- Dual Channel self-calibration technology allows the Belimo CO₂ sensors to be used for all types of buildings and applications where ABC logic can not be used.

PRODUCT SERIES:

CO₂, CO₂ + Temperature
CO₂ + Humidity + Temperature
CO₂ + VOC
CO₂ + VOC + Temperature
CO₂ + VOC + CO₂/VOC + Temperature





Pressure sensors

Accurate pressure measurement is important for optimal HVAC system performance. Pressure sensors from Belimo are capable of measuring extremely high and low pressures in air, water, and refrigerant applications. The sensors offer precise measurement of pressure, differential pressure, and velocity for reliable monitoring. Selectable measuring ranges are available for application flexibility.

FEATURES:

Differential Air Pressure Sensor

- Eight field selectable pressure ranges in one unit.
- Direct volume-flow-output equations are pre-programmed for most major fan manufacturers.
- Excellent zero-point stability and high accuracy.
- Auto-zero or manual calibration option.
- LCD display optional.

Differential Air Pressure Switch

- Field-adjustable switch point.
- Mechanical working life 10^6+ switching operations.

Differential Water Pressure Sensor

- Highly stable resistive sensor element on ceramic substrate.
- Rugged stainless steel housing.

Water and Refrigerant Pressure Sensor

- Resistive sensor element on stainless steel membrane.
- All wetted material is made from stainless steel.

PRODUCT SERIES:

Differential Air Pressure Sensor, Differential Air Pressure Switch, Differential Water Pressure Sensor, and Water and Refrigerant Pressure Sensor



Flow sensors

Reliable measurement of flow plays an important role in maximizing HVAC system efficiency and conserving energy. Belimo's inline flow meters utilize ultrasonic transit-time technology to provide accurate and repeatable flow measurement in any application. Their compact size and robust design makes them suitable for use with chilled water, hot water, and water/glycol solutions at temperatures ranging from -4°F to +250°F [-20°C to +120°C]. The meters are fabricated from corrosion-resistant materials, ensuring reliable operation and extended product life.

FEATURES:

- Multi-point wet calibrated to ensure accuracy and repeatability.
- Patented temperature and glycol compensation logic eliminates calibration requirements.
- $\pm 2\%$ accuracy of reading and $\pm 0.5\%$ repeatability ensure accurate and precise flow measurement.
- Ultra-compact size with a short inlet length of 5 x nominal pipe diameter and no output-length requirements allow the ultrasonic flow sensor to be installed in tight spaces.
- Low power consumption of 0.5W saves energy and transformer capacity.

PRODUCT SERIES:

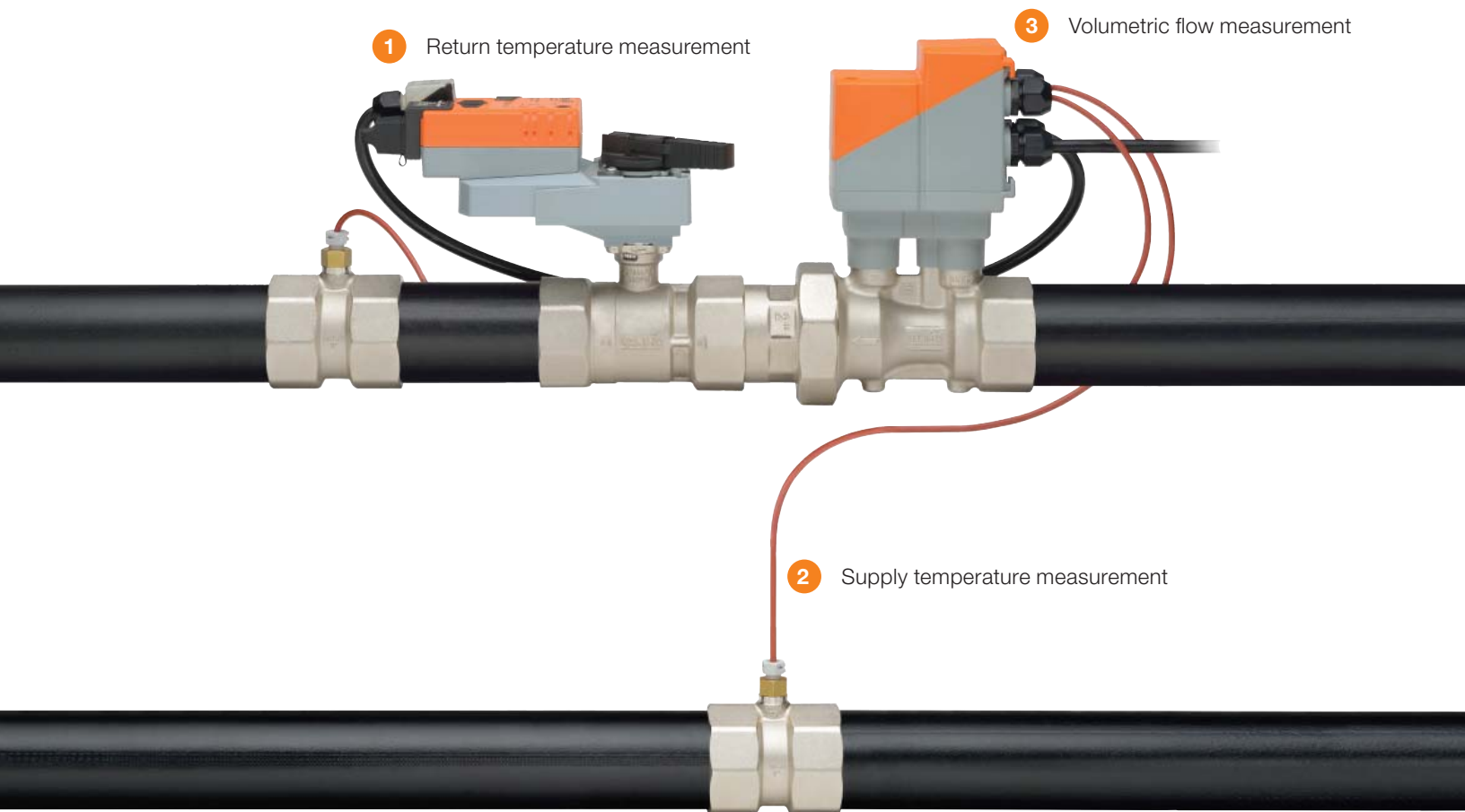
Ultrasonic Flow (Volumetric Flow)

A seamless approach.

For over 40 years, Belimo has been continuously developing and expanding its range of new products and technologies to improve efficiency in buildings. The new range of sensors stems from the release of the Belimo Energy Valve™, an innovative solution that features a unique combination of sensors and a flow meter.

The Belimo Energy Valve is a pressure independent valve that measures and manages coil energy by using an embedded ultrasonic flow meter, along with supply and return water-temperature sensors. It features a patented Power Control and the built-in Belimo Delta T Manager™ logic, which monitors coil performance and optimizes the available energy of the coil by maintaining the Delta T.

Since its introduction, the Belimo Energy Valve has won many major industry awards worldwide.



Helpful tools for seamless product selection.

Belimo offers a variety of product specification and selection tools for planning and designing energy efficient solutions for buildings.

SelectPro – Sizing and selection made simple

SelectPro is a quick and simple tool for accurately sizing and selecting valves, actuators, and replacement solutions. The tool is also available for sensor selection, making it the single-source for all of your HVAC field-level device needs.

Additional features:

- Search for 1 : 1 replacement products from other manufacturers.
- View and print data sheets and mounting instructions.
- Seamlessly move from selection to schedule to ordering.
- Create, store, and upload project schedules with product tagging information.

SelectPro can be downloaded from www.belimo.us





Belimo website – Overview of products and solutions

The website features a user-friendly platform that provides an overview of our new range of sensors, along with existing actuators and valves. It also includes all the latest information and resources on products and allows customers to easily select and order products via the online shop.

Belimo Retrofit App – Selection for easy and convenient replacement solutions

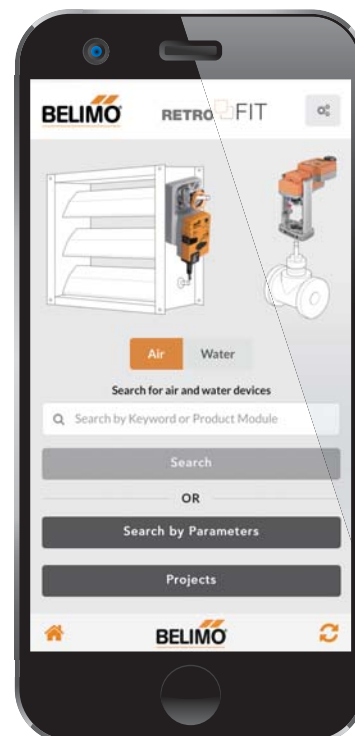
The Retrofit App is a mobile tool that can be used to quickly and easily find retrofit replacement solutions for valves, actuators, and sensors. Available for free download via the Apple App Store and Google Play.

The tool allows for:

- Storage of projects.
- E-mailing product selection(s) for a project.
- Access to documentation such as data sheets and mounting instructions.








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Belimo sensors at a glance.

The following tables provide an overview of Belimo's wide range of sensors for each application and their technical specifications. Please note: Degree Fahrenheit and degree Celsius are not direct conversions.

Temperature


Application	Type code	Output signal			Measurement range* (Active sensors: factory settings shown)	Multi Range (selectable)	Probe length	Application/comment
		Passive	Active	Switch				
 Outdoor air	01UT	•			-30°F to +122°F [-35°C to +50°C]	-	-	- Outdoor temperature - Wall temperature with NEMA 4X / IP65 protection
	22UT		•		-30°F to +130°F [-50°C to +50°C]	8	-	
 Duct immersion	01DT	•			Sensor dependent	-	2" [50 mm], 4" [100 mm], 6" [150 mm], 8" [200 mm], 12" [300 mm], 18" [450 mm]	- Duct temperature - Immersion sensor and thermowell pockets in brass or stainless steel
	22DT		•		0°F to 150°F [0°C to 160°C]	8	2" [50 mm], 4" [100 mm], 6" [150 mm], 8" [200 mm], 12" [300 mm], 18" [450 mm]	
 Duct averaging	01MT	•			Sensor dependent	-	10 ft [3 m], 20 ft [6 m]	Duct averaging temperature sensor for air-handling units or larger ducts with air stratification
	22MT		•		40°F to 90°F [-20°C to +80°C]	8	10 ft [3 m], 20 ft [6 m]	
 Strap-on	01ST	•			-30°F to +212°F [-35°C to +100°C]	-	-	Pipe strap-on temperature sensors for heating systems, 01ST without housing and 01HT, 22HT with housing
	01HT	•			-30°F to +94°F [-35°C to +90°C]	-	-	
	22HT		•		40°F to 240°F [0°C to 100°C]	8	-	
 Cable	01CT	•			-30°F to +212°F [-35°C to +100°C]	-	2" [50 mm]	Cable temperature sensor passive (without housing) and active (with housing)
	22CT		•		0°F to 150°F [0°C to 160°C]*	8	2" [50 mm]	
 Low temperature detection	01DTS			•	14°F to 54°F [-10°C to +12°C]	-	10 ft [3 m], 20 ft [6 m]	Low temperature detection for frost protection in air-handling units available with automatic or manual reset

Humidity




Application	Type code	Measured values						Output signal				Measurement range			Application/comment
		Humidity	Temperature	Enthalpy	Dew point	Absolute Humidity	Condensation	Active	Modbus RTU	BACnet MS/TP	Switch	Humidity	Temperature (factory settings)	Multi Range (selectable)	
 Outdoor	22UTH	•	•	•	•	•		•	•	•		0 to 100% rH non-condensing	0°F to 200°F [-20°C to +80°C]	4	- Outside humidity temperature sensor - Wall humidity temperature sensor with NEMA 4X / IP65 protection - Option: weather/rain shield protection
 Duct	22DTH	•	•	•	•	•		•	•	•		0 to 100% rH non-condensing	0°F to 200°F [-20°C to +80°C]	4	Duct humidity temperature sensor
 Condensation	22HH						•				•	-	-		Condensation sensor Optional: external sensor

Please note: For temperature and humidity sensors, the °F and °C are not direct conversions. °F is the standard range for the United States, and °C is the standard range for Canada and Latin America.


Air Quality

Application	Type code	Measured values					Output signal			Measurement range			Options	Application/ comment
		CO ₂	Temperature	Humidity	VOC	CO ₂ /VOC mix	Active	Modbus RTU	BACnet MS/TP	CO ₂	Temperature	Humidity		
	Duct	22DC	•							0 to 2000 ppm	-	-		Duct CO ₂
		22DTC	•	•						0 to 2000 ppm	32°F to 122°F [0°C to 50°C]	-		Duct CO ₂ , Temp
		22DTM	•	•	•			•	•	0 to 2000 ppm	32°F to 122°F [0°C to 50°C]	0 to 100% Non condensing	•	Duct CO ₂ , rH, Temp
		22DCV	•			•				0 to 2000 ppm	-	-		Duct CO ₂ , VOC
		22DCM	•	•		•				0 to 2000 ppm	32°F to 122°F [0°C to 50°C]	-		Duct CO ₂ , VOC, Temp
		22DCK	•	•		•	•			0 to 2000 ppm	32°F to 122°F [0°C to 50°C]	-		Duct CO ₂ , VOC, CO ₂ /VOC, Temp

Pressure

Application	Type code	Measured values			Output signal			Media			Measurement range* (22ADP factory default setting shown)			Options	Application/ comment
		Differential pressure	Pressure	Flow (Volumetric flow)*	Active	Modbus RTU	Switch	Air	Water	Refrigerants	Pressure	Multi Range (selectable)	Auto-zero		
	Duct	22ADP	•		•	•		•			0 to 1"wc [250Pa] 0 to 10"wc [2500Pa] 0 to 28"wc [7000Pa]	8	•	•	Differential air pressure sensor
	Switch	01APS	•					•			0.08 to 1.20"wc [20 to 300Pa] 0.20 to 2.00"wc [50 to 500Pa] 0.80 to 4.00"wc [200 to 1000Pa] 2.00 to 10.00"wc [500 to 2500Pa]				Duct differential air pressure switch
	Pipe	22WP		•		•		•	•	•	0 to 15 psi 0 to 50 psi 0 to 100 psi 0 to 200 psi				Pipe water and refrigerant pressure sensor
		22WDP	•			•				•		0 to 15 psi 0 to 50 psi 0 to 100 psi			

Flow

Application	Type code	Measured values	Output signal	Media		Pipe size	Measurement range	Application/comment	
		Flow	Output Signal	Water	Water/glycol Mixtures (<60%)				
	Pipe	FM	•	analog, 0 to 10VDC	•	•	½" [15 mm] ¾" [20 mm] 1" [25 mm] 1¼" [32 mm] 1½" [40 mm] 2" [50 mm]	6.6 12.4 21.8 34.2 47.5 91.2	Dynamic range: 1: 100

All Belimo sensors (excluding FM series) features:

Active: 0...5/10 V, 4...20 mA
 Passive: PT100, PT1000, Ni1000, 10k2, 10k3, NTC20k
 Supply voltage: 15...24 VDC, 24 VAC
 UL: cULus listing
 Protection: NEMA 4X / IP65 (except for 01DTS, 01APS, 22WP, 22WDP)

* For active temperature sensors with several measurement ranges, the default range is noted. For the other ranges and allowable operating temperature ranges refer to the data sheet. For pressure sensors with several measurement ranges, the maximum range is noted. For the other ranges refer to data sheet.

Seamless Service.



5-year warranty

On-site around the globe

Complete product range

Quality first

Short delivery times

Comprehensive support

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