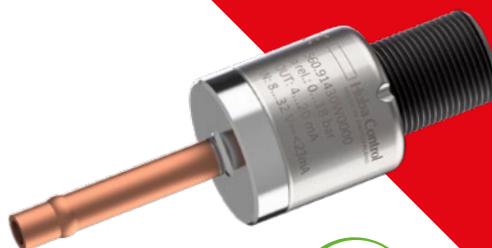


# Sensor solutions for heat pumps

Reliable and efficient  
pressure and flow measurement



# Sensors for modern heat pumps

Increasing efficiency requirements and stricter environmental regulations are accelerating the technological development of current and future heat pump systems. The transition to natural refrigerants such as R290, combined with stricter safety requirements under DIN EN 60335-2-40, places increased demands on all electronic components within the refrigeration circuit.

## Safe. Precise. Long-term stability.

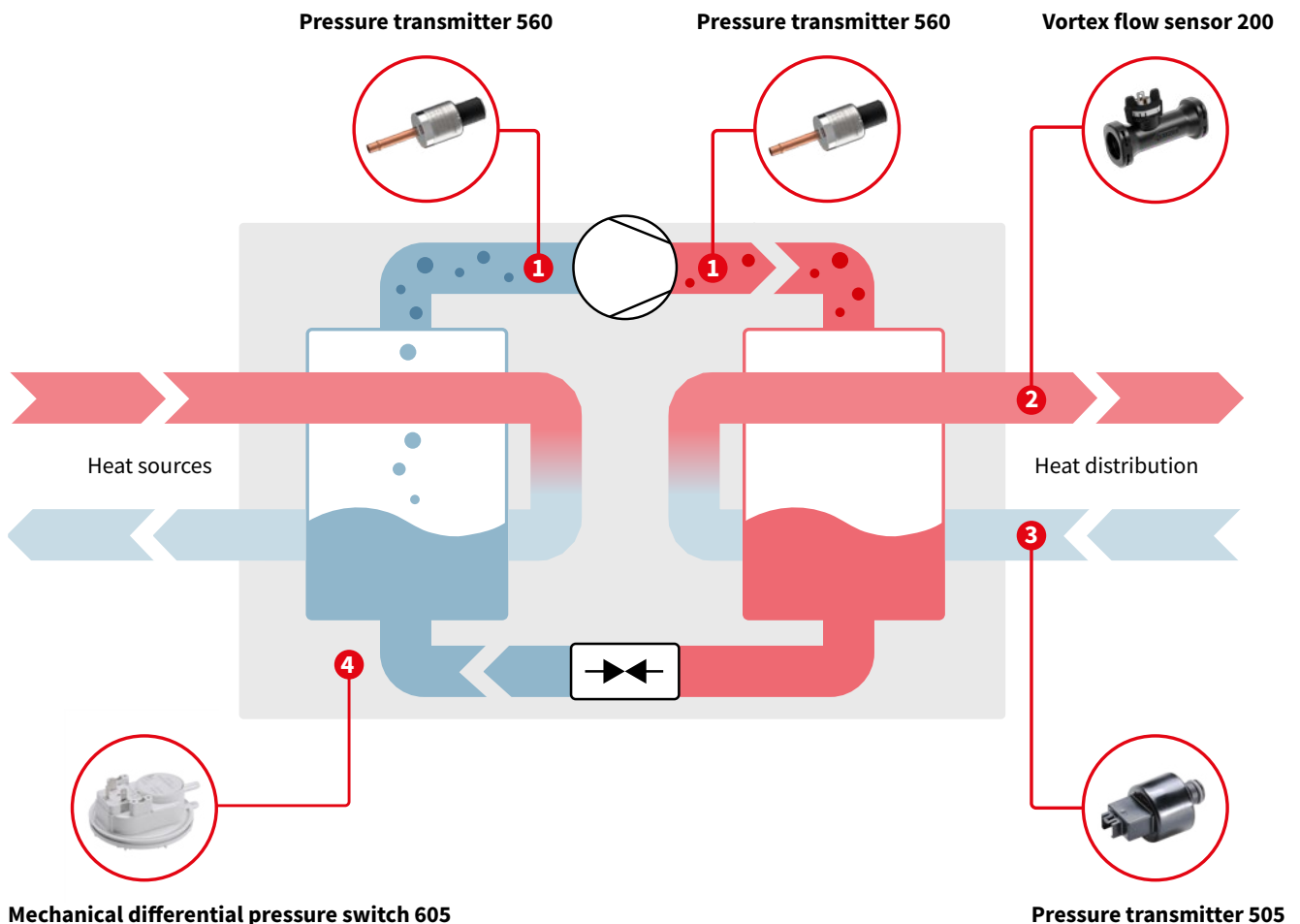
The increased safety requirements in the context of flammable refrigerants in safety groups A2L and A3 significantly tighten the requirements for the sensor technology used. High measurement performance with maximum safety throughout the entire lifespan is required. Our sensors are designed precisely to withstand the most challenging operating conditions.

We spare no effort to ensure the longevity of our products: Huba Control focuses clearly on quality and lifespan during development and puts all products through their paces. Thanks to highly automated production and extensive quality controls, every single Huba sensor impresses with its outstanding and repeatable level of quality.



## Measuring points in the heat pump

Measurands: pressure, differential pressure, flow rate





## **OEM expertise: precision and repeatability in series production**

Huba Control is the strategic OEM partner for pressure and flow rate sensors designed for high performance, durability and stable series production processes. We help you take the efficiency of your heat pump to the next level.

### **Customized and ready for series production**

In co-engineering, we consistently tailor our sensors to your system requirements – from specific measurement ranges to electrical interfaces and manufacturing concepts. This results in sensor solutions that integrate seamlessly into your platform and can be quickly industrialised. The goal: accelerated market launch without unnecessary redesign or requalification loops.

### **Repeatability that creates certainty**

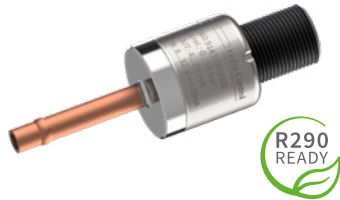
For our OEM products, we rely on highly automated manufacturing, including extensive monitoring of all individual manufacturing steps. Thanks to 100% inline functional and leak testing, we ensure maximum performance and reliability. For you, this means reliable and highly reproducible measurement values as a stable basis for efficient modulation strategies.

1

## System pressure measurement in the refrigerant circuit

### Pressure transmitter 560

#### Refrigeration circuit OEM sensor



- All-in-one sensor for all common refrigerants
- Best-in-class accuracy total error band +/-1% FSO
- Hermetically welded construction (no O-rings)
- 100% inline helium leak test
- "Install and forget" for refrigeration circuits
- Optimized for high production volumes

Measuring range -1 ... 150 bar

Temperature range -40 ... 135 °C



2

## Water flow control for energy monitoring

### Vortex flow sensor 200

#### OEM volume flow sensor for greater energy efficiency



- High accuracy and reliability
- Ideal for water and water-glycol applications
- No moving parts, long lifespan
- Extremely fast response time
- Multi-sensor option (integrated temperature measurement)
- Optimized for high production volumes

Measuring range 0 ... 150 l/min

Temperature range -40 ... 125 °C



#### ALTERNATIVE SENSOR

### Pressure transmitter 520

#### Refrigeration circuit all-rounder



- All-in-one sensor for all common refrigerants
- Hermetically welded construction (no O-rings)
- High variety
- "Install and forget" for refrigeration circuits

Measuring range -1 ... 150 bar

Temperature range -40 ... 135 °C



#### ALTERNATIVE SENSOR

### Vortex flow sensor 210

#### Versatile volume flow sensor for greater energy efficiency



- High accuracy and reliability
- No moving parts, long lifespan
- High variety of variants for simple plug & play integration
- Multi-sensor option (integrated temperature measurement)

Measuring range 0 ... 150 l/min

Temperature range -40 ... 125 °C



**3****Water pressure control****Pressure transmitter 505****Water circuit OEM sensor**

- Monitoring of heating and drinking water systems
- Compact and proven quality
- Easy installation thanks to plug-in interfaces
- Drinking water compatibility
- Optimized for high production volumes

<b>Measuring range</b>	0 ... 16 bar
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<b>Temperature range</b>	0 ... 90 °C
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**4****Airflow monitoring****Mechanical differential pressure switch 605****OEM differential pressure monitor for safety**

- Precise switching points from 20 Pa
- Best-in-class reproducibility +/- 1 Pa
- High switching loads & low-wear switching contacts
- Maintenance-free with maximum lifespan
- Certified according to the Gas Appliance Directive

<b>Measuring range</b>	20 ... 400 Pa
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<b>Temperature range</b>	-30 ... 110 °C
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**Product comparison**

Find the right solution quickly –  
with the product comparison tool on our website.

# #SwissSensorQuality

Our sensors cover a wide range of measuring ranges and process media: low-pressure air from 1 mbar, process media up to 1,000 bar and flow rates from 0.5 to 240 l/min. This allows typical requirements in HVAC, industry, automotive and water/environment to be reliably mapped.

## Quality right from the start

An integrated management system (ISO 9001, IATF 16949, ISO 14001, ISO 45001) ensures clear, documented processes throughout the entire product life cycle. Our development and quality assurance teams work hand in hand – from the initial design phase to final production. Close coordination and long-standing cooperation with customers ensure that the sensors reliably pass even the most rigorous tests and meet the required quality standards. Proven OEM processes such as APQP and PPAP also enable stable series production and a quick start to production.

**Our experts will assist you in selecting, integrating and validating your sensor solutions.**

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Advice in your region:

