sauermann®

KIMO®
INSTRUMENTS
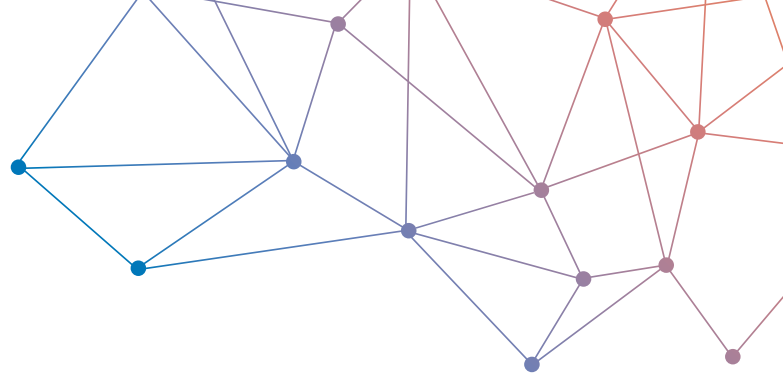
TRANSMITTER

Regulation and monitoring of HVAC

ABOUT US

over **45** years

of measurement expertise

For more than 45 years, Sauermann Group has designed, manufactured and sold products and services dedicated to the industrial and HVACR markets. The Group specifically focuses on the detection, measurement and control of indoor air quality (IAQ).

HIGH ACCURACY
UNMATCHED RELIABILITY
MULTIPLE APPLICATIONS

Measurement instruments: Sauermann measurement instruments monitor a broad spectrum of indoor air quality parameters and serve a wide range of applications, from building ventilation (heating and air conditioning) systems, to cold-chain installations and combustion gas analysis. Backed by our testing laboratories and in-house research and development programme, Sauermann instruments deliver the accuracy and reliability that HVACR engineers need.

LOW SOUND LEVEL
LOW FAIL RATE
HIGH PERFORMANCE

Condensate management solutions: Safe and effective condensate management for air quality systems can be a challenge. Sauermann pumps are designed to look good, while our patented piston technology delivers whisper-quiet operation and unrivalled reliability.

Sauermann Industrie, Laboratories, located in Montpon (FR), accredited to standard NF EN ISO/IEC 17025

cofrac
ETALONNAGE
SCOPE N°2-6860
AVAILABLE ON
WWW.COFRAC.FR

TEMPERATURE

cofrac
ETALONNAGE
SCOPE N°2-6861
AVAILABLE ON
WWW.COFRAC.FR

HUMIDITY

OUR EXPERTISE

ACCREDITED MEASUREMENT LABORATORIES, IN-HOUSE RESEARCH AND DEVELOPMENT

Sauermann products and services are backed by cutting-edge facilities and expertise: a team of over 20 experts working at multiple testing and calibration laboratories worldwide, and production lines in France, the United States and China.

Our in-house research and development program – spearheaded by a young, forward-looking group of 20 engineers and 10 technicians – has three aims: to push the boundaries of innovation in ergonomic design, digital technology and connected objects, to patent our technologies, and to consistently set new standards for electronic and mechanical performance in our products.
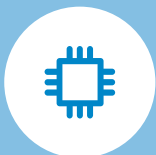
800 m² of laboratory space
Our experts provide maintenance, adjustment and calibration services for our measurement instruments.

Customer service staff trained by our experts
Our team is here to advise and quote you for the service you need.

After-sales service
Our technicians maintain and repair your devices right where they're made.

Over 20 patents, including our oscillating piston pump technology and the foldable frame system found on our DBM 620 air flow meter.

Our measurement expertise covers a wide range of fields:

Pressure	Air flow
Temperature	Gas analysis
Hygrometry	Light measurement
Weight	Electrical current
Radiometry	Acoustics
Tachometry	Air quality (CO_2, CO)
Air velocity	PH-Meter

Summary

CLASS 110

08

CLASS 320

14

Software solution

MONITORING SYSTEM

18

Overview of ranges

Transmitter sensors

Pressure / Temperature / Humidity / Air velocity and air flow / Air quality / Solar / Light / Atmospheric pressure

Designed and manufactured in France, Sauermann and Kimo's range of transmitters can be used in all industries, in the service sector or in OEM.

From the simplest to the most elaborate, these advanced measuring instruments can be adapted to any type of application thanks to their configuration and calculation possibilities.

⌇⌇ Monostats

**HVAC and Indoor Air Quality
Commercial - Industrial - OEM**

- 1 measured parameter
- 1 x 3 A 230 V$_{AC}$ changeover relay

❅ Class 110

**HVAC and Indoor Air Quality
Commercial - Industrial - OEM**

- 1 to 2 measured parameters
- 1 or 2 analog outputs 0-10 V / 4-20 mA

Class 210

Large commercial sector - Industrial environment

- 1 to 2 parameters
- Calculation functions
- 2 x 3 A 230 V$_{AC}$ changeover relays
- 2 analog outputs 0-10 V / 4-20 mA

Class 310 / 320

Industrial environment - Clean rooms

- Multifunction
- 2 to 4 analog outputs
- Up to 4 relays
- Ethernet communication
- MODBUS protocol

Monostats

HVAC and Indoor Air Quality - Commercial - Industrial - OEM

Temperature / Humidity / Differential pressure / CO level / Air quality

Quick to install and simple to set up, the monostats trigger an alarm when a pre-configured threshold is exceeded, then send this information via a relay. The alarm can be set simply using the onboard push button or using the LCC-S software, compatible with the Monostats, 110, 210 and 310 ranges.

PST Manostats
Differential pressure

- From ±100 Pa to ±2000 mbar

Visual and audible alarm

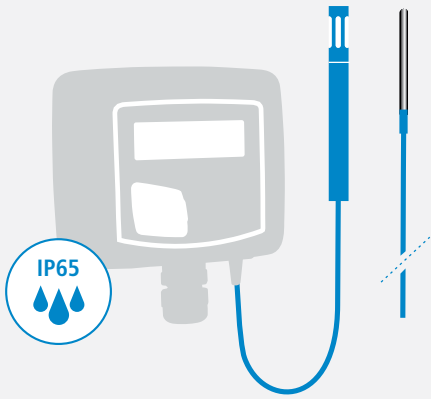**IP65 ABS housing**

3 A 230 Vac Changeover relay

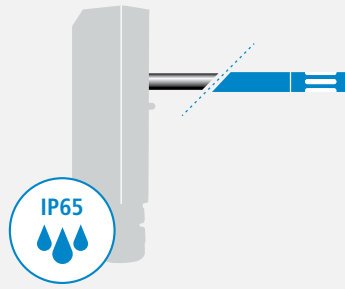**24 V_{DC}/V_{AC} power supply**

Simplified calibration

The electronic board and measuring element are integrated into the front of the sensor, which allows you to leave the installation intact to configure or calibrate your devices.
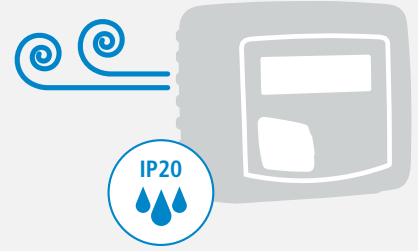
Monostats / Class 110

IP65

Remote probe

IP65

Rear probe

IP20

Integrated probe

CO2ST mounted in the air handling unit of an industrial infrastructure.

CO2ST CO$_2$ stats
CO$_2$ concentration

- From 0 to 5000 ppm

HST Hygrostats
Humidity

- From 5 to 95 %RH
- From -20 to +80 °C

COST CO stats
CO concentration

- From 0 to 500 ppm

TST Thermostats
Temperature

- From -100 to +400 °C

Class 110

HVAC and Indoor Air Quality - Commercial - Industrial - OEM

**Temperature / Air Quality / Light / Solar / Pressure / Atmospheric pressure
Humidity / Air velocity**

**The Class 110 covers a wide range of measurement parameters.**

This transmitter range delivers a current or voltage signal. To suit different applications, the sensors are available as ambient, remote or rear mounted probes. The analogue outputs automatically adapt to the measurement scale configured via switches on the device or via the LCC-S software.

TH 110
Temperature / Humidity

- From 5 to 95 %RH
- From -20 to +80 °C

Configurable outputs

**0-10 V
4-20 mA**
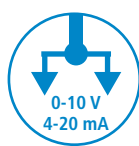
1 or 2 analog outputs

24 V$_{DC}$/V$_{AC}$ power supply

Indispensable for calibration laboratories, the CP 116 measures atmospheric pressure.

CP 110
Differential pressure

The CP 110 transmitter sensors are characterised by their reliability, high accuracy and high long-term stability. For example, they are particularly suitable for the following applications: ventilation and air-conditioning systems, control technologies based on atmospheric or differential pressure, and all types of climate monitoring.

✓ AUTO-CALIBRA-TION SOLENOID VALVE*

*CP 111 only

Differential pressure

CP 111: from -100 to +100 Pa, with solenoid valve

CP 112: from -1000 to +1000 Pa

CP 113: from -10,000 to +10,000 Pa

CP 114: from -500 to +500 mbar

CP 115: from -2000 to +2000 mbar

Atmospheric pressure

CP 116: from 800 to 1100 hPa

The CP 112 connected to a Debimo device mounted in a ventilation duct.
Our Debimo accessories for air flow measurement on page 17.

TM 110
Temperature

- From -100 to +400 °C

CO 110 / CO 112
Air Quality

- CO: from 0 to 500 ppm
- CO_2: from 0 to 5000 ppm

CTV 110
Air Velocity

- From 0 to 30 m/s
- From 0 to +50 °C

HM 110
Humidity

- From 5 to 95 %RH

Rear and remote models. IP65
Ambient model IP20

IP20

IP65

ARTIFICIAL
ENVIRONMENT

LR 110
Light

- From 0 to 10,000 lux

Monitoring of solar panels' efficiency

NATURAL
ENVIRONMENT

CR 110
Solar

- From 0 to 1500 W/m^2

Class 210

Large service sector - Industrial environment

**Temperature / Humidity / Pressure
Air quality / Air velocity and Air flow**

Supplied with ADJUSTMENT certificate

Some very demanding sectors (medical technology, food processing, nuclear, high-tech industry, etc.) require certified instruments that can measure several parameters simultaneously, such as temperature, CO_2, differential pressure or air velocity.

The Class 210-R models transmit the measured values via their analog outputs and integrate two relays allowing them to send up to two alarms directly to automated systems.

**0-5 / 10 V
0 / 4-20 mA**

2 analog outputs

$f\ x/y$
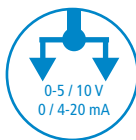
Calculation functions

IP65

IP65 ABS housing

**3 A
230 Vac**

2 relays

**24 V_{DC}/V_{AC} or
115/230 V_{AC}
power supply**

Configurable outputs

CP210-R in the air handling unit of an industrial facility.

**CP 210-R
Pressure / Temperature**

- From ±100 Pa to ±10,000 Pa
- From -100 to +400 °C
- From 3 to 85 m/s

Air quality measurement and control

These CO_2 sensors allow you to comply with the new standards and decrees concerning the management of indoor air quality.

COT 212-R
CO_2 / Temperature

- CO_2: from 0 to 5000 ppm
- From 0 to +50 °C

- Respect of limit values
- Atmosphere monitoring
- Ventilation and sanitation control

CTV 210-R
Air velocity and Air flow

- From 0 to 30 m/s
- From 0 to +50 °C
- From 0 to 99,999 m³/h

TH 210-R
Humidity / Temperature

- From 0 to 100 %RH
- From -40 to +180 °C

TM 210-R
Temperature

- From -100 to +400 °C

Class 310

Special for production areas

Supplied with ADJUSTMENT certificate

CA 310
with large backlit display

- From -10,000 to +10,000 Pa	- CO: From 0 to 500 ppm
- From 0 to 100 %RH	- CO_2: From 0 to 5000 ppm
- From -50 to +180 °C	- From 800 to 1100 hPa
- From -5 to 35 m/s (with vane probe)	- From 0 to 10 V
- From 3 to 85 m/s (with Pitot tube)	- From 0 to 20 mA
- From 0 to 99,999 m³/h	

1 port for SPI-2 or MVA card
3 changeover relays

1 input for probe

A total of 17 probes are available to order from our Customer Service.

Ethernet Communication

MODBUS Protocol

3 visual and audible alarms
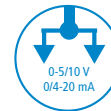
3 analog outputs (0-5/10 V 0/4-20 mA)

0,1 Pa Resolution to the tenth

LCC-S

OPTION

Configuration software for Monostats, Class 110, 210 and 310 transmitters

Units, scales, relays, thresholds, channels and outputs setup.

- Configuration uploading
- Alarm creation
- Real time measurements display

Configure

Record

Visualise

Protect

Alarms

Duplicate

Not compatible with Class 320 transmitters
The software is delivered with a USB connection cable and a user manual.

Class 320

Multifunction

Supplied with **ADJUSTMENT** certificate

AUTO-CALIBRA-TION SOLENOID VALVE

Differential pressure / Hygrometry / Temperature / Air velocity / Air flow / Air quality / VOC

EXPERT

Si-C320
Industry – Laboratories

The Sauermann Si-C320 is an evolution of the KIMO C 310.

For clean rooms, regulated environments and industrial VAC applications where a perfect regulation/monitoring of the air parameters is needed, our Si-C320 transmitters provide reliable measurements and allow you to achieve compliance with the strictest regulations.

The Si-C320 housing is waterproof, rugged and resistant to vaporised hydrogen peroxide (VHP). It also features a colour touch screen for comprehensive viewing and advanced control of measurement parameters.

In addition, measurements can be recorded and downloaded via the Sauermann Control application/software.

ESSENTIAL MODELS:

Si-C320-D	With display
Si-C320-D-50	With display and -50 to 50 Pa differential pressure module included
Si-C320-D-250	With display and -250 to 250 Pa differential pressure module included
Si-C320-D-1000	With display and -1000 to 1000 Pa differential pressure module included
Si-C320-D-10000	With display and -10,000 to 10,000 differential pressure module included

Other configurations of Si-C320 transmitters are available, please contact our Sales for further information.

2 inputs for interchangeable probes

4 visual and audible alarms

4 configurable analog outputs
0-5 / 10 V
4-20 mA

Multifunction device for VAC and IAQ applications

Touch screen

Wireless interface for mobile App

IP66 **VHP resistant ABS IP66 housing**

1 x RS485 interface for MODBUS RTU protocol

Air Change Rate calculation

Sauermann leverages KIMO's 45 years expertise legacy and keeps on perfecting the art of measurement!

over **45** years
of measurement expertise

FLUSHMOUNT

Si-CPE320
**Designed for clean rooms and regulated environments**

The Sauermann Si-CPE320 is an evolution of the KIMO CPE 310.

For clean room applications, the Si-CPE320 is a panel transmitter with minimal impact on the internal layout of the working environment. Its front face is made of a high-grade stainless-steel waterproof with an integrated touch screen. Equipped with the same technologies as the Si-C320, this panel-mounted version provides state-of-the-art reliability and accuracy.

In addition, measurements can be recorded and downloaded via the Sauermann Control application/software.

IP66 IP66 VHP resistant 316L stainless steel front a
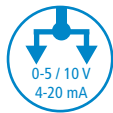
1 x input for external probe

0-5 / 10 V 4-20 mA — 3 configurable analog outputs

3 visual and audible alarms

AVAILABLE VERSIONS:

Si-CPE320	Optional wireless communication module
Si-CPE320-W	Integrated wireless communication module

Typical applications include:

Si-C320 Monitoring of drying processes in industrial manufacturing (bricks, pasta...)

Si-C320 and **Si-CPE320** Monitoring and regulation of differential pressure, relative humidity, temperature, air velocity and ACR in cleanrooms, operating rooms, etc.

Si-CPE320 Air parameters monitoring in glove boxes, fume hoods, isolation cabinets, vial filling machines, etc.

Touch control and mobile application

Full device setup

Trend indicator: up to 4 parameters displayed simultaneously

History: chart display

Touch screen
No physical buttons: better sealing and less mechanical failure
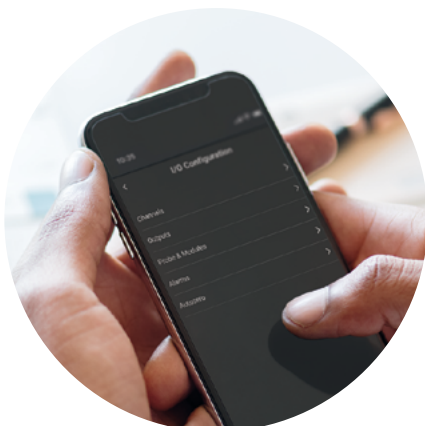
Simultaneous display of up to 4 measurements
Chart form display

Full device setup

Indicator lights
blue light: wireless connection
green light: power on

Sauermann Control app

It is also possible to control and configure the Class 320 transmitters with a computer, a smartphone or a tablet via the Sauermann Control application, which allows the user to manage all the device's parameters via its wireless connection module (USB wired for computers). This app can also easily update the firmware of the instrument and its probes.

- Wireless connection with iOS and Android
- Full device control
- Downloading recorded measurements
- One-click firmware update
- Remote measurement viewing

Unlimited modularity

The right accessory for every requirement

| Wireless communication module	Configuration of transmitters using Sauermann Control mobile app
USB/mini-DIN interface	Connect transmitters to configuration PC software
Power supply	24 V_{AC}/V_{DC}

More than 50 kits and accessories are available on demand: junctions, AC and DC power supplies, cables and extensions, adapters, protections, mountings, etc.

Mounting plates
In stainless steel and DIN rail mounting kit
(except ambient)
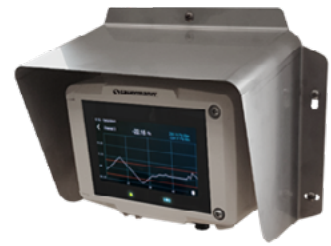
External protection
Against solar radiation and rain fall

PVC, silicone, PFA cables
Stainless steel hose with or without shielding
Cable clamps
Mounting brackets
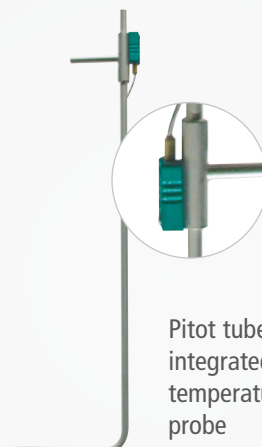
Connectors and thermowells

Temperature converters

AIR FLOW ACCESSORIES

Class 110, 210, 310, 320 Compatible

DEBIMO measuring blades
(air velocity / air flow)

Pitot tube with integrated temperature probe

SQR3 function: calculation of the air velocity and air flow in the duct via differential pressure measurement.

Monitoring system

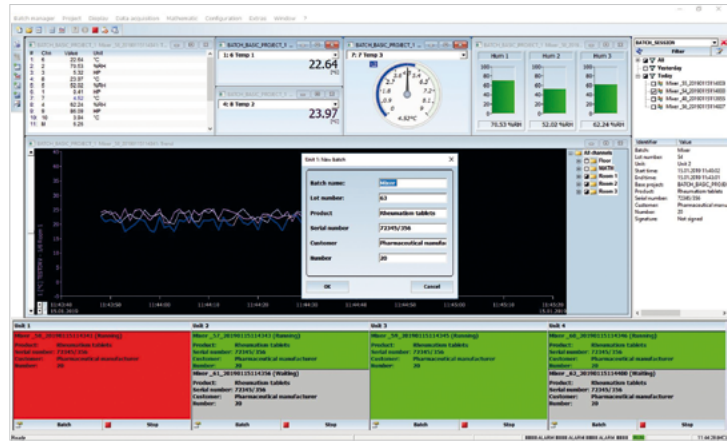## Clean rooms and regulated environments

Compatible with Monostats, Class 110, 210, 310 and 320

The synoptic mode is ideal for real-time monitoring.

Intuitive interface

Immediate alarm identification

Sauermann offers a state-of-the-art software solution for data acquisition environment monitoring. This monitoring system collects measurements from Sauermann transmitters is compliant with the FDA 21 CFR Part 11.

TM 110 temperature

TH 110 humidity

CP 110 pressure

Air Handling Unit

Operating room

Si-PRO-U-W RH/T probe

Si-CPE320 differential pressure and RH/T

Acquisition module

Laboratory

Si-C320 pressure

Si-PRO-U-I-150 RH/T probe

Si-C320 CO_2

Office

COST CO concentration

Pt 100 temperature probes

Boiler room

Transmitters

Acquisition module

Secure your configurations with passwords.

Customers

SERVER

Secured connection

Remote users

Alarms configuration

Chart analysis

Reports printing

Receiving alerts

Depending on their assigned rights, users will be able to view measurements, receive alerts or set up alarms, via a secured connection.

MODBUS PROTOCOL

Ethernet Communication
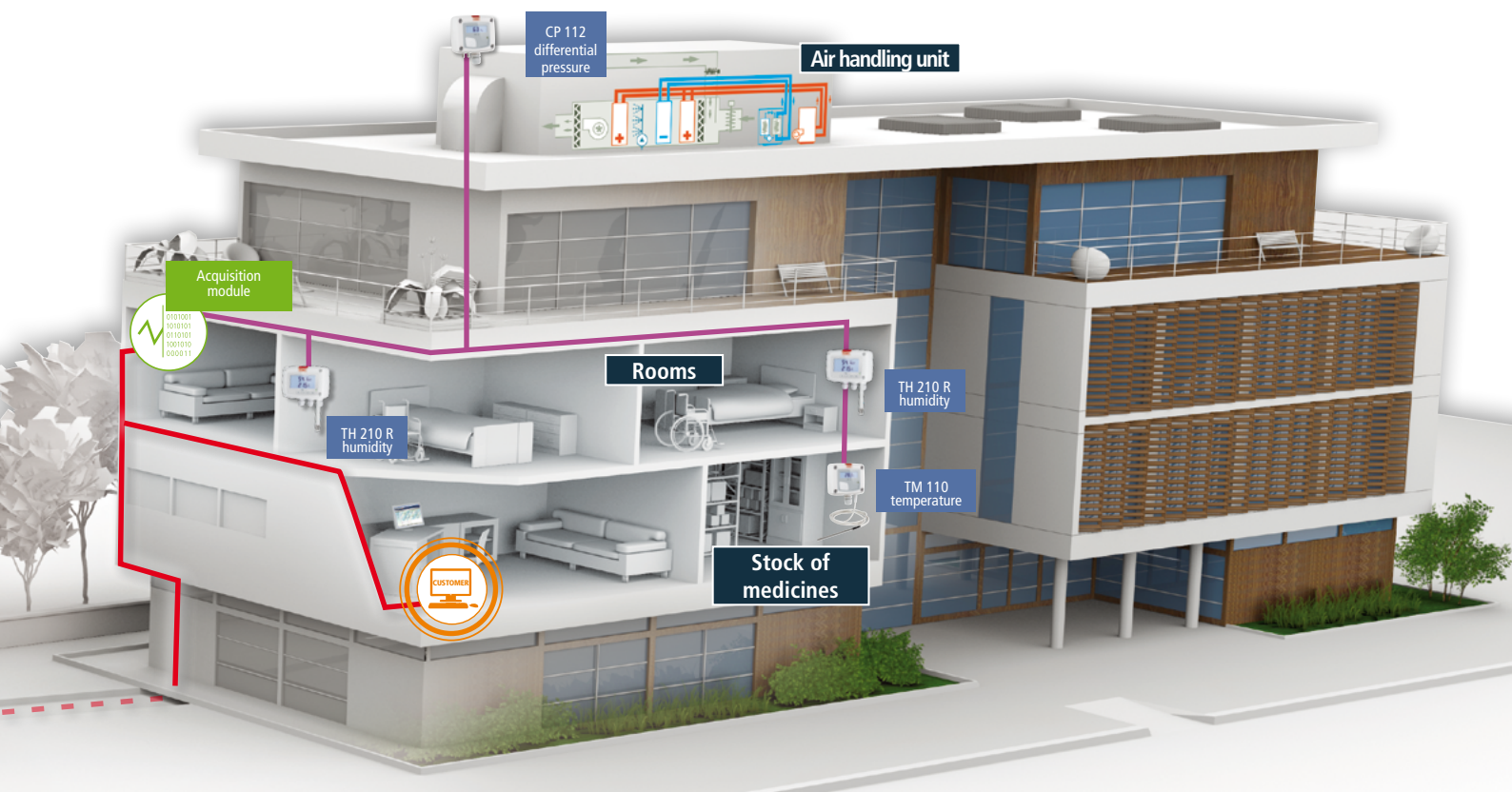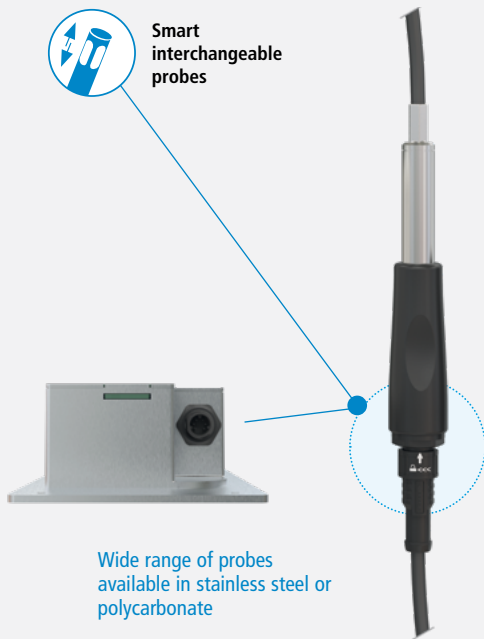
Example
of installation in a hospital

RS-485

4-20 mA

Ethernet

Pt100

CP 112 differential pressure

Air handling unit

Acquisition module

Rooms

TH 210 R humidity

TH 210 R humidity

TM 110 temperature

CUSTOMER

Stock of medicines

New generation probes

High accuracy, stable and reliable long-term measurements with Class 320

Plug & Measure

Smart interchangeable probes

Wide range of probes available in stainless steel or polycarbonate

Changing the probe is quick and easy. Automatic recognition.

Humidity - Temperature - Air velocity - Air quality - Differential pressure

The latest technology for your measurements

Si-PRO-DP

Internal differential pressure modules

- Autocalibration via solenoid valve
- Temperature compensation from
  -10 to 50 °C

Si-PRO-U-W

Flush mounted humidity and temperature probe

- For being used in clean rooms
- VHP resistant, stainless steel body

Si-PRO-U-I-100-H

Heated humidity and temperature probe

- Heated probe
- Resistant against pollution

COMPARISON

A total of 16 probes are available to order from our Customer Service.

PROBES		SPECIFIC PARAMETERS		COMMON PARAMETERS (calculated parameters if present)			TRANSMITTER SENSORS COMPATIBILITY	
Photo	Part number	DIFFERENTRIAL PRESSURE	AIR VELOCITY	TEMPERATURE	AIR FLOW	ACR*	Si-C320	Si-CPE320
	Si-PRO-DP-50	-50 to 50 Pa	0 to 9 m/s (0 to 29.5 fps)	-200 to 1300 °C (-328 to 2372 °F) (according to connected probe)	0 to 999,999 m³/h (0 to 588 577 cfm)	0 to 1000 ACH	✓	-
	Si-PRO-DP-250	-250 to 250 Pa	0 to 20 m/s (0 to 65.6 fps)				✓	-
	Si-PRO-DP-1000	-1000 to 1000 Pa	0 to 40 m/s (0 to 131 fps)				✓	-
	Si-PRO-DP-10000	-10,000 to 10,000 Pa	0 to 100 m/s (0 to 328 fps)				✓	-
	Si-M4R	SPDT relays 40 V_{DC} / 600 mA.					✓	-
		TEMPERATURE		HYGROMETRY				
	Si-PRO-U-150	-40 to 80 °C (-40 to 176 °F)		Relative humidity: 0 to 100 %RH Wet temperature: -50 to 100 °C$_{tw}$ (-58 to 212 °F$_{tw}$) Dewpoint: -50 to 100 °C$_{td}$ (-58 to 212 °F$_{td}$) Frost point: -50 to 100 °C$_{tf}$ (-58 to 212 °F$_{tf}$) Absolute humidity: 0 to 1000 g/m³ Enthalpy: 0 to 15,000 kJ/kg Mixing ratio: 0 to 1000 g/kg			✓	✓
	Si-PRO-U-I-150	-40 to 150 °C (-40 to 302 °F)					✓	✓
	Si-PRO-U-I-300	-40 to 150 °C (-40 to 302 °F)					✓	✓
	Si-PRO-U-I-100-H	-40 to 150 °C (-40 to 302 °F)					✓	-
	Si-PRO-U-W	-20 to 80 °C (-4 to 176 °F)					-	✓
	Si-PRO-T-150	-80 to 150 °C (-112 to 302 °F)					✓	✓
	Si-ACC-ETP	According to the connected Pt100 probe (max. measuring range in temperature: -100 to 400 °C/-148 to 752 °F)					✓	✓
		AIR VELOCITY AND TEMPERATURE						
	Si-PRO-V-300	Air velocity: 0 to 30 m/s (0 to 98.4 fps) Temperature : 0 to 50 °C (32 to 122 °F) Air flow: 0 to 999,999 m³/h (0 to 588,577 cfm) ACR*: 0 to 1000 ACH						✓	✓
		AIR QUALITY						
	Si-PRO-CO	CO concentration: 0 to 500 ppm					✓	✓
	Si-PRO-CO2	CO_2 concentration: 0 to 10,000 ppm					✓	✓
	Si-PRO-VOC	VOC (total) concentration: Isobutene equivalent: 0 to 1000 ppb - CO_2 equivalent: 400 to 2000 ppm					✓	✓

*ACR: Air Change Rate

DEVICES / FEATURES	MONOSTATS	CLASS 110	CLASS 210-R	CLASS 310	CLASS 320	
Temperature	TST	TM 50 - TM 110	TM 210-R	Pa %RH °C m/s m³/h ppm hPa V mA Alternating display	Pa %RH °C m/s m³/h ppm ppb Display of 1 to 4 parameters simultaneously	Pa %RH °C m/s m³/h ppm ppb Display of 1 to 3 parameters simultaneously
Humidity	HST	HM110	-			
Temperature - Humidity	-	TH 110	TH 210-R			
Air velocity	-	CTV 110	-			
Pressure	PST	CP 111 CP 112 CP 113 CP 114 CP 115	CP 210-R			
Atmospheric pressure	-	CP 116	-			
CO level	COST	-	-			
Air quality	CO2ST	CO 110 - CO 112	-			
CO_2 - Temperature	-	-	COT 212-R			
Air velocity and air flow	-	-	CTV 210-R			
Light	-	LR 110	-	-	-	-
Solar	-	CR 110	-	-	-	-
Analog outputs	-	1 or 2	2	3	4	3
Wireless communication module	-	-	-	-	Option	Option
Ethernet Module	-	-	-	Option	-	-
MODBUS Protocol	-	-	-	Option	Yes	Yes
Relays	1	-	2	3	4 (optional)	-
Visual and audible alarm	1	-	-	3	4	3
Type of probes	Fixed	Fixed	Fixed	Interchangeable		
Material	ABS	ABS	ABS	ABS	ABS	Stainless steel
Tightness according to model	IP20 - IP65	IP20 - IP65	IP65	IP65	IP66	IP66
VHP* resistant	-	-	-	-	Yes	Yes
PC Software	LCC-S				Sauermann Control	Sauermann Control
Mobile App	-	-	-	-	Sauermann Control	Sauermann Control
Mounting	On wall-mounting plate			Bracket	On wall-mounting plate	Flush mount
Safety	-	-	🔒 The keypad lock with access code allows you to secure your installation.	The on-board menu is secured with an access code.		
Standards	All sensors meet the CE standard and the EMC requirements					

NOTES:

*VHP: Vaporized hydrogen peroxide

Sauermann Services

A complete metrological solution to support your measurement equipment

ALL
BRANDS OF
INSTRUMENTS

Free quote

IN OUR LABORATORIES

- Regulated environment laboratories
- Cofrac ISO 17025:2017 accreditation in temperature and hygrometry

- Customised measurement points
- Diagnostics, repair, and maintenance
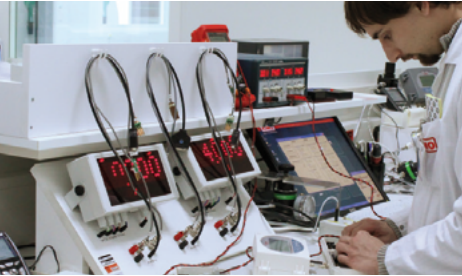- Adjustment for KIMO / Sauermann instruments

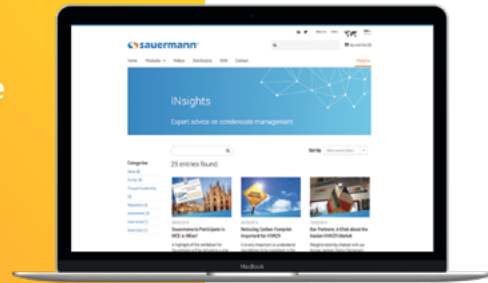**Temperature**   **Hygrometry**   **Pressure**   **Air flow**   **Air velocity**   **Air quality**

Professional solutions for condensate management and indoor air quality measurement

INsights

Case studies, useful information and practical advice for HVACR and indoor air quality professionals.
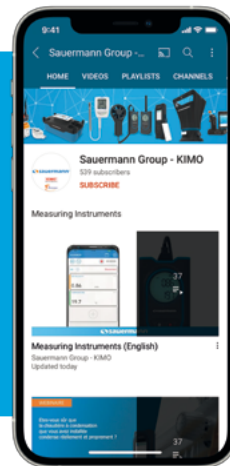
sauermanngroup.com/insights

Sauermann on YouTube

Head to our YouTube channel for tutorials, webinars and product guides.

youtube.com/sauermanngroup

For more information, visit:
sauermanngroup.com

Sauermann Industrie S.A.S
Route de Férolles
77173 Chevry-Cossigny - France

services@sauermanngroup.com