

# S211 / S215 / S220 Dew Point Sensors

Very fast  
response time —  
**ensures safe  
and reliable  
measurements**



## Features



**COMPACT DESIGN**  
Makes it easy to fit into the application



**PRECISE MEASUREMENT**  
 $\pm 2 \text{ }^\circ\text{C Td}$   
Accuracy



**SIGNAL OUTPUT**  
4 ... 20 mA  
Modbus/RTU



**DISPLAY OPTION**  
For on-site values



**PRESSURE SENSOR**  
integrated as option



**AIR QUALITY**  
Monitors humidity



**S211**  
**FOR DESICCANT DRYERS**  
Measures down to  $-60 \text{ }^\circ\text{C Td}$



**S220**  
**HIGH-TECH APPLICATIONS**  
QCM + Polymer  
 $-100 \dots 20 \text{ }^\circ\text{C Td}$



**S215**  
**FOR FRIGID DRYERS**  
Measures down to  $-20 \text{ }^\circ\text{C Td}$



**S220**  
**DUALS SENSOR SYSTEM**  
High precision over the whole range



## Benefits

- ✓ Compact size makes them ideal for dryer installations.
- ✓ Optional display for on-site values. Display can be rotated by 340 ° to fit your needs.
- ✓ User friendly signal outputs: 2-wire analog 4 ... 20 mA or 3-wire analog 4 ... 20 mA + Modbus/RTU
- ✓ IP65 casing provides robust protection.
- ✓ Low maintenance costs due to stable and reliable measurements which increase calibration intervals.
- ✓ Measured values available in several units: °C Td • g/m<sup>3</sup> • mg/m<sup>3</sup> • ppmv • g/kg (@ reference pressure) • % rH and more, please ask our support for other measurement units.

### 1 Display Option

The OLED display directly mounted on the sensor provides on-site real time values. The display can be easily rotated by 340 ° to fit your application.

### 2 Robust Materials

The main body is made from high class aluminum alloy with a soft finish. The process connection is a 1.4301 (SUS 304) stainless steel connection, made to last forever.

Top cover made from aluminum at the same quality as the main body. The optional display cover is made from robust Polycarbonate with ABS reinforcement to withstand the rough environment.

### 3 Reliable Measurement

The stainless steel sinter filter cap protects the sensor from dust and other impurities. At the same time it offers fast response times and reliable measurement results.

### 4 S220 with unique QCM Sensor

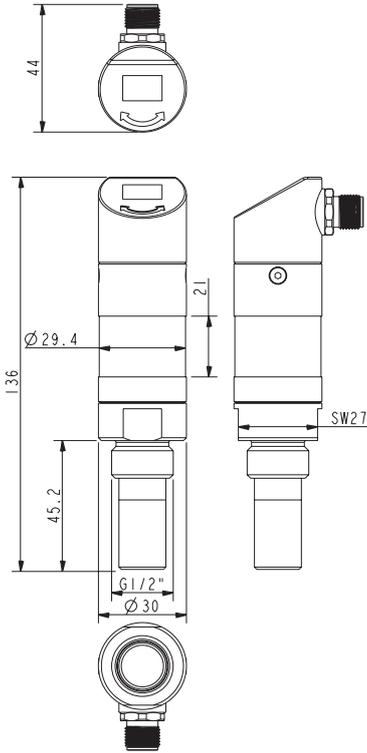
Our QCM sensor is the result of years of high-tech research and development. The sensor was especially designed for low dew point applications where other sensor types fail.

The combination of QCM and the well known Polymer sensor makes the S220 the worlds first model to measure accurate over the whole range, from -100 °C Td up to +20 °C Td by switching automatically between the two sensor elements as needed.

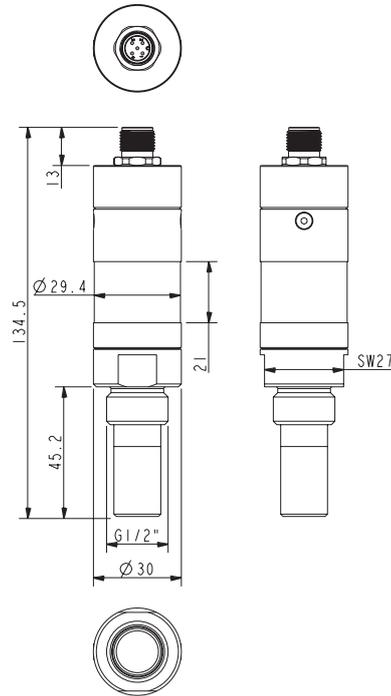


## Dimensions

### With display



### Without display

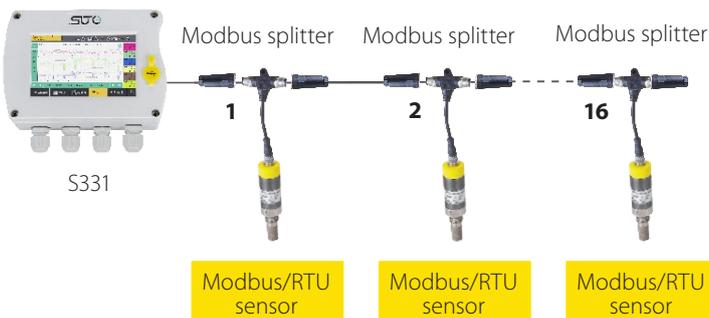


## Measurement Ranges

Model	S211	S215	S220
Dew point	-60 ... +20 °C Td	-20 ... +50 °C Td	-100 ... +20 °C Td
Temperature	-30 ... +70 °C	30 ... +70 °C	-30 ... +70 °C
Pressure	0 ... 1.6 MPa	0 ... 1.6 MPa	0 ... 1.6 MPa

## Modbus Sensor Network with S331

The Modbus/RTU bus allows to connect several sensors to a single bus line via Daisy-Chain. For example up to 16 sensors to a S331. The S331 is a very powerful yet cost effective new data logger and display solution.



## Exchange Service

### No Downtime anymore!

The exchange calibration service eliminates down time and enables users to have a seamless record of their dew point measurements.

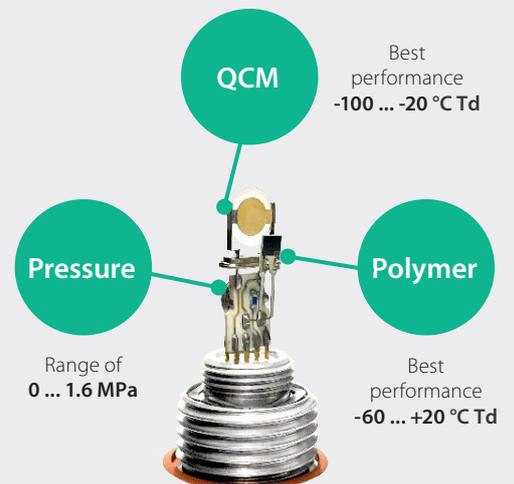
The user receives in advance a calibrated sensor unit with calibration certificate and the same sensor settings. The onsite sensor is then switched against the calibrated one and returned to the supplier.



**SUTO** | Exchange Service

## S220 with unique triple sensor solution

With the S220, SUTO is combining three sensors into a single measurement unit, making it unique and the most advanced sensor available on the market, with a full range of -100 ... +20 °C Td.



# Technical Data

## Specifications

Model	S211	S215	S220
Measurement Range	Dew point -60 ... +20 °C Td Temperature -30 ... +70 °C Pressure 0 ... 1.6 MPa	Dew point -20 ... +50 °C Td Temperature -30 ... +70 °C Pressure 0 ... 1.6 MPa	Dew point -100 ... +20 °C Td Temperature -30 ... +70 °C Pressure 0 ... 1.6 MPa
Dew point sensor	Polymer	Polymer	Polymer + QCM
Operating Pressure	-0.1 ... 1.6 MPa -0.1 ... 35.0 MPa optional	-0.1 ... 1.6 MPa -0.1 ... 35.0 MPa optional	-0.1 ... 1.6 MPa
Accuracy	Dew point +/- 1 °C Td (0 ... 20 °C Td) +/- 2 °C Td (-60 ... 0 °C Td) +/- 3 °C Td (-100 ... -60 °C Td) Temperature +/- 0.3 °C Pressure 0.5% FS		
Process connection	G 1/2" (ISO 228/1), stainless steel 1.4301 (SUS 304)		
Operating conditions	Medium Temp.: -30 ... +70 °C / Ambient Temp.: 0 ... +50 °C / Ambient Humidity: 0 ... 100 % rH		
Materials	Casing: Aluminum alloy / Process thread: Stainless steel 1.4301 (SUS 304) / Display cover: PC + ABS		
Classification / Approval	IP65 / CE		
Sensor protection	Sinter filter (stainless steel)		
Transport & Storage	Transport Temperature: -30 ... + 70 °C / Storage Temperature: -20 ... + 50 °C		
Weight	180 g		
Measured gases (Medium)	Air, Argon, O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> *		
Output Signal	4 ... 20 mA 2-wire + SDI, 4 ... 20 mA 3-wire + SDI, 4 ... 20 mA 3-wire + Modbus/RTU		
Sensor types	Temperature sensor: Pt100 / Pressure sensor: Piezo resistive type		
Display option	0.66" OLED display, indicates the measured value and unit		
Supply Voltage	12 ... 30 VDC		

\* CO<sub>2</sub> medium:

If the S211 is used in CO<sub>2</sub> the range is limited to -40 °C Td

The S220 must be set to CO<sub>2</sub> ex works or by using the SFA Service Software + Service Kit (please state at the order if S220 will be used in CO<sub>2</sub>)

## Accessoires



Measuring chamber for easy installation through quick coupling



By-pass measuring chamber with 6 mm hose connections as in- and outlet



High pressure measuring chamber for applications up to 35.0 MPa



M12 Sensor cable with open ends 5 m or 10 m

# Ordering

Please use the following tables to assist in placing your order with our sales staff.

Sensor Model and Range	2-wire Analog output		3-wire Analog & SDI output		3-wire Analog & Modbus/RTU* <sup>3</sup> output		3-wire Analog & Modbus/RTU* <sup>3</sup> output With Pressure Sensor	
	Order No.	Code	Order No.	Code	Order No.	Code	Order No.	Code
S215 Dew Point Sensor -20 ... +50 °C Td	S699 1215	S1215	S699 2215	S2215	S699 3215	S3215	S699 4215	S4215
S211 Dew Point Sensor -60 ... +20 °C Td	S699 1211	S1211	S699 2211	S2211	S699 3211	S3211	S699 4211	S4211
S220 Dew Point Sensor -100 ... +20 °C Td	S699 1220	S1220	S699 2220	S2220	S699 3220	S3220	S699 4220	S4220
<b>Options</b>								
Operating Pressure 0 ... 1.6 MPa (Standard)	-	A	-	A	-	A	-	A
Operating Pressure 0 ... 35.0 MPa	A1381* <sup>1</sup>	B	A1381* <sup>1</sup>	B	A1381* <sup>1</sup>	B	N/A* <sup>2</sup>	B
Without Display (Standard)	-	C	-	C	-	C	-	C
With OLED Display	N/A* <sup>2</sup>	D	A1387	D	A1388	D	A1388	D

\*<sup>1</sup> A1381: The high pressure option is only available for the models S215 and S211. The S220 can not be used in pressure applications > 1.6 MPa

\*<sup>2</sup> N/A: This option is not available for these models

\*<sup>3</sup> Standard Modbus/RTU Settings are Slave Address: last two digits of serial number / Com. Settings: 19200 baud, 8/N/1

## Order Example

**Code:**  
S3211 AD

S211 Dew point Sensor, -60 ... +20 °C Td,  
3-wire Analog & Modbus/RTU output,  
Operating Pressure 0... 1.6 MPa, with  
OLED Display

## Output Unit

The dew point sensor is available with different measurement units for dew point, humidity, temperature and pressure. Standard is:  
**Dew point = °C Td / Temperature = °C / Pressure = bar**  
If you would like to have a different unit as output, please specify it at the order or use the optional Service Kit with the Service Software to change the output unit. For example pressure in PSI or humidity in ppmv.

## Accessories

Order No.	Description
A699 3491	Measuring chamber with quick connector, up to 1.5 MPa, 2 l/min purge @ 0.8 MPa
A699 3493	Measuring chamber by-pass, up to 1.5 MPa, 6 mm hose connection as in- and outlet
A699 3590	High pressure measuring chamber, up to 35.0 MPa, G 1/4" inner thread process connection
A553 0104	Sensor cable, 5 m , M12 connector, open end wires
A553 0105	Sensor cable, 10 m , M12 connector, open end wires

## Calibration

Order No.	Description
R699 3396	Re-calibration dew point sensor, incl. certificate of calibration

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