

# S230 / S231



## Dew Point Transmitters for Ex Applications

**S230**

-100 ... +20 °C Td

**S231**

-50 ... +50 °C Td



IECE X  
AND GB EX  
APPROVAL



PRECISE  
MEASUREMENT  
Unique QCM  
sensor technology



LOW  
DEW POINT  
Measures down  
to -100 °C Td



DUAL SENSOR  
SYSTEM  
High precision  
over the whole range



## Benefits

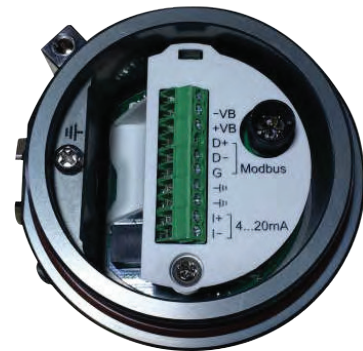
- ✓ Dew Point Transmitter made for Ex-Applications (IECEX, GB3836 Ex)
- ✓ Robust enclosure for the use rough industrial environments
- ✓ Dual sensor technology for the highest accuracy over the full range of -100 ... +20 °C Td
- ✓ G1/2" Stainless steel process connection
- ✓ 4 ... 20 mA analog and Modbus/RTU digital outputs for highest flexibility

## Reliable dew point monitoring

The SUTO S230 / S231 dew point sensors provide reliable, long term stable dew point monitoring in industrial or hazardous applications. SUTO's unique dual sensor technology optimizes sensor sensitivity and accuracy by automatically selecting the ideal sensor type for the situation.

The S230 / S231 comes ready to use and simple to install with your choice of 4-20mA or Modbus/RTU (RS485) outputs. If required, parameters can quickly and easily be configured through the SUTO service software.

## Cable connection



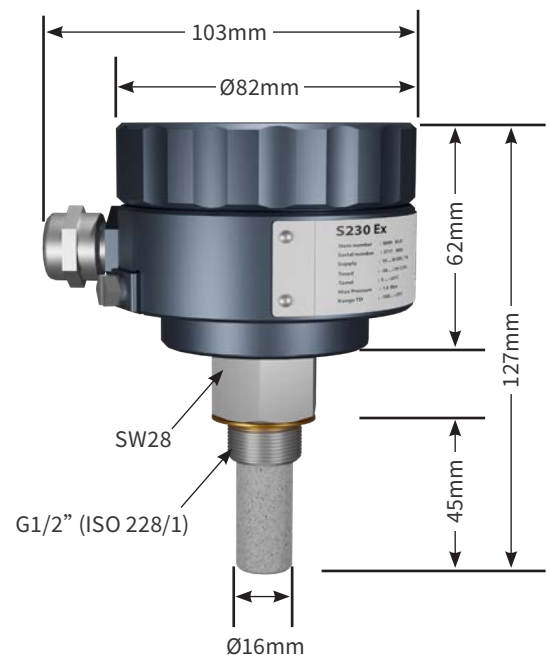
Screw terminals with signal labels inside the connection chamber

## Accessories



Measuring chamber with inlet / outlet valve and compression fitting for gas supply

## Dimensions



S230/S231 Dew Point Transmitters for Ex Applications

# Technical Data

## Measurement

### Dew Point

Accuracy	± 1 °C Td (0 ... 20 °C Td) ± 2 °C Td (-60 ... 0 °C Td) ± 3 °C (-100 ... -60 °C Td)
Selectable units	°C, °F, bar(g), MPa(g), psi(g), % rH, g/m <sup>3</sup> , mg/m <sup>3</sup> , G/m <sup>3</sup> atm., mg/m <sup>3</sup> atm., ppm(v), g/kg, °C Td atm.
Measuring range (model depending)	S230: -100 ... +20 °C Td S231: -50 ... +20 °C Td
Sensor	Polymer + QCM
Response time t90 (@ 4l/min)	-20 °C Td → -60 °C Td = < 240 sec -60 °C Td → -20 °C Td = < 30 sec

### Temperature

Accuracy	0.3 °C
Measuring range	-30 ... +70 °C
Sensor	NTC

### Reference conditions

Selectable conditions	Pressure Dew Point, Atmospheric Dew Point
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## Signal / Interface & Supply

### Analog output

Signal	4 ... 20 mA (isolated) Modbus/RTU
Scaling	S230: 4 mA = -100 °C Td; 20 mA = +20 °C Td S231: 4 mA = -50 °C Td; 20 mA = +20 °C Td
Load	250R
Update rate	3/sec

### Fieldbus

Protocol	Modbus/RTU
Update rate	1/sec

### Supply

Voltage supply	15 ... 30 VDC
Current consumption	40 mA @ 24 VDC

## General data

### Configuration

PC Software	S4C-DP Application
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### Material

Process connection	Stainless steel 1.4301 (SUS 304)
Housing	Aluminium alloy
Sensor	Stainless steel 1.4301 (SUS 304)
Metal parts	Sinter Filter (stainless steel)

### Miscellaneous

Electrical connection	Screw terminals
Protection class	IP65
Approvals	Ex db[ib] IIC T4 Gb, CE
Process connection	G 1/2" thread (ISO 228/1)
Weight	728 g

### Operating conditions

Medium	Air, Argon, O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> *
Medium quality	ISO 8573-1: 4.6.3 or better
Medium temperature	0 ... +50 °C
Medium humidity	≤ 20 °C Td
Operating pressure (model depending)	-0.1 ... 1.6 MPa (S230) -0.1 ... 35 MPa (S231)
Ambient temperature	0 ... +50 °C
Ambient humidity	0 ... 100 % rH
Storage temperature	-20 ... +50 °C
Transport temperature	-30 ... +70 °C

Stated accuracy under following conditions:

- Ambient temperature 23 °C ± 3 °C
- Process temperature 23 °C ± 3 °C
- Ambient humidity < 95 %, no condensation
- Airflow > 2 l/min at sensor tip



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

## S230 Dew Point Transmitter (-100 ... +20 °C Td)

Article No.	Description
KA66S6990230	S230 Dew Point Transmitter, -100 ... +20 °C Td, G 1/2" thread, 1.6 MPa, 1 x 4 ... 20 mA, RS-485 (Modbus)
KA66000A1481	Ex option IECEx (to be ordered for hazardous environment)
KA66000A1482	Ex option GB3836 (to be ordered for hazardous environment)

## S231 Dew Point Transmitter (-50 ... +20 °C Td)

Article No.	Description
KA66S6990231	S231 Dew Point Transmitter, -50 ... +20 °C Td, G 1/2" thread, 35 MPa, 1 x 4 ... 20 mA, RS-485 (Modbus)
KA66000A1481	Ex option IECEx (to be ordered for hazardous environment)
KA66000A1482	Ex option GB3836 (to be ordered for hazardous environment)

## Accessories

Article No.	Description
KA66A5542301	Measuring chamber with inlet / outlet valve and compression fittings for gas supply, 1.6 MPa
KA66A5542302	Measuring chamber with insertion type sampling tubes (for applications where purge losses are not acceptable), 1.6 MPa
KA66A6993491	Measuring chamber with quick connector, up to 1.5 MPa, 2 l/min purge @ 0.8 MPa
KA66A6993493	Measuring chamber by-pass, up to 1.5 MPa, 6 mm hose connection as in- and outlet

