

JUMO GmbH & Co. KG

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JUMO Process Control, Inc.

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JUMO hydroTRANS S30

Humidity and temperature transmitter with optional CO₂ module, duct version

Description

The humidity and temperature transmitter monitors outside air that enters into buildings and production processes.

The device is suitable for mounting in weather-proofed ventilation ducts.

Measurands

- Relative humidity
- Temperature
- Optional: carbon dioxide (CO₂)

Interfaces

- RS485
- USB

Areas of application

- Building automation, home automation, smart home
- Climate monitoring
- Ventilation systems
- Freight forwardings, storage
- Railway applications, according to DIN EN 50155

Special features

- Ease of assembly
- Robustness
- Multisensor
- Plastic sinter filter (optional)



Type 907043 with display



Type 907043 without display



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Approval marks and certificates



Certificates for approved device versions are available for download on the manufacturer's website.

Technical data

Electrical safety

Requirements	DIN EN IEC 61010-1:2020 The device must be equipped with an electrical circuit that meets the requirements for "Limited-energy circuits".
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Electrical data

Device version with analog output

Voltage supply	DC 24 V, -33 %/+33 %, SELV, PELV
Power consumption	≤ 2.4 W
Overvoltage category	II
Pollution degree	2
Protection rating	DIN EN 61140, Class III (protective low voltage)
Electrical connection	
Connection elements	Spring-cage terminal
Connecting cable	
Cable diameter	4.5 to 10 mm with M16 × 1.5 cable fitting
Conductor cross section	
Without ferrule	0.2 to 1.5 mm ²
With ferrule	0.25 to 1.5 mm ²
Stripping length	
Without ferrule	8 mm
With ferrule	10 mm
Temperature resistance	≥ 80 °C
For UL applications	
Approved cables ^a	CYJV2/8, CYJV/7, PVVA2/8, PVVA/7

^a The cables must be suitable for the voltage, current and temperature used.

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Device version with RS485

Voltage supply	DC 24 V, -58 %/+33 %, SELV, PELV
Power consumption	≤ 2.4 W
Overvoltage category	II
Pollution degree	2
Protection rating	DIN EN 61140, class III (protective low voltage)
Electrical connection	
Connection elements	Spring-cage terminal
Connecting cable	
Cable diameter	4.5 to 10 mm with M16 × 1.5 cable fitting
Conductor cross section	
Without ferrule	0.2 to 1.5 mm ²
With ferrule	0.25 to 1.5 mm ²
Stripping length	
Without ferrule	8 mm
With ferrule	10 mm
Temperature resistance	≥ 80 °C
For UL applications	
Approved cables ^a	CYJV2/8, CYJV/7, PVVA2/8, PVVA/7

^a The cables must be suitable for the voltage, current and temperature used.

Inputs

Measurands

Relative humidity

Measuring range	0 to 100 % RH
With CO ₂ module	0 to 95 % RH
Accuracy	
Stabilization time after initial startup	≥ 60 h
Typical	±2.0 % RH
Max.	±2.5 % RH
Reference conditions	
Humidity	≥ 30 % RH
Sampling rate	1 s

Temperature

Measuring range	-40 to +80 °C
With CO ₂ module	-10 to +60 °C
Accuracy	
Typical	±0.2 °C
Max.	±0.4 °C
Sampling rate	1 s

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Carbon dioxide (CO₂)

Measuring range	400 to 10000 ppm
Accuracy	±(50 ppm + 5 % of the measured value)
Reference conditions	
Ambient temperature	25 °C
Air pressure	1013 hPa
Humidity	50 % RH
Measuring range	400 to 1000 ppm
Sampling rate	30 s

Outputs

Analog outputs

Current output	
Function	Output of measurands
Measured values	Relative humidity, temperature, optional: carbon dioxide (CO ₂)
Calculated values	Dew point, frost point, wet-bulb temperature, absolute humidity, mixing ration, partial water vapor pressure, specific enthalpy
Signal range	4 to 20 mA
Output signal limits	0 to 22 mA
Accuracy	≤ ±0.1 % in relation to the end of the signal range (20 mA)
Temperature influence	±50 ppm/K
Burden influence	≤ ±0.02 % per 100 Ω
Burden	≤ 500 Ω
Voltage output	
Function	Output of measurands
Measured values	Relative humidity, temperature, optional: carbon dioxide (CO ₂)
Calculated values	Dew point, frost point, wet-bulb temperature, absolute humidity, mixing ration, partial water vapor pressure, specific enthalpy
Signal range	0 to 10 V
Output signal limits	0 to 11 V
Accuracy	≤ ±0.1 % in relation to the end of the signal range (10 V)
Temperature influence	50 ppm/K
Load influence	≤ ±15 mV
Load	≥ 10 kΩ

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Interfaces

RS485

Function	Transfer of process data, configuration data, and device information
Communication	Via Modbus master
Galvanic isolation	Functional
Data transmission	Serial
Transmission protocol	Modbus RTU
Data format	8-1-none ^a 8-1-odd 8-1-even 8-2-none
Data transfer rate	9600 baud 19200 baud 38400 baud ^a 57600 baud 115200 baud
Minimum response time	0 to 500 ms
Device address	1 to 254

^a Default setting

USB

Function	Transfer of configuration data and device information
Communication	Via end device and setup software
Transmission standard	USB 2.0
Connector type	Micro-B
Power requirement	≤ 500 mA
Cable length	≤ 5 m

Display

Type	TFT display
Size	
Display range	35.04 mm × 28.03 mm
Screen size (diagonal)	1.77"
Resolution	128 × 160 RGB
Brightness	11 levels (configurable)

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Environmental influences

Admissible ambient temperature	-40 to +80 °C
With CO ₂ module	-10 to +60 °C
With display	-20 to +60 °C
Admissible storage temperature	-40 to +80 °C
With CO ₂ module	-30 to +70 °C
With display	-30 to +60 °C
Protection type	DIN EN 60529
Housing	IP65
Max. site altitude	5,300 m above sea level
Climatic conditions	DIN EN 60721-3-3
Climate class	3K24
Air temperature	-25 to +55 °C
Relative humidity	≤ 100 % (95 % with CO ₂ module), non-condensing
Electromagnetic compatibility (EMC)	DIN EN IEC 61326-2-3:2022
Interference emission	Class B ^a
Interference immunity	Industrial requirement
Oscillation ^b	DIN EN 60068-2-6
Amplitude	0.15 mm at 10 to 58.1 Hz
Acceleration	20 m/s ² at 58.1 to 150 Hz
Shock ^b	DIN EN 60068-2-27
Peak acceleration	150 m/s ²
Shock duration	11 ms

^a The product is suitable for industrial use as well as for households and small businesses.

^b The CO₂ module is sensitive to vibrations. In the event of vibrations, the measurement results could change on account of the design.

Mechanical features

Materials	
Housing	PC
Display cover	PMMA
Weight	~ 260 g

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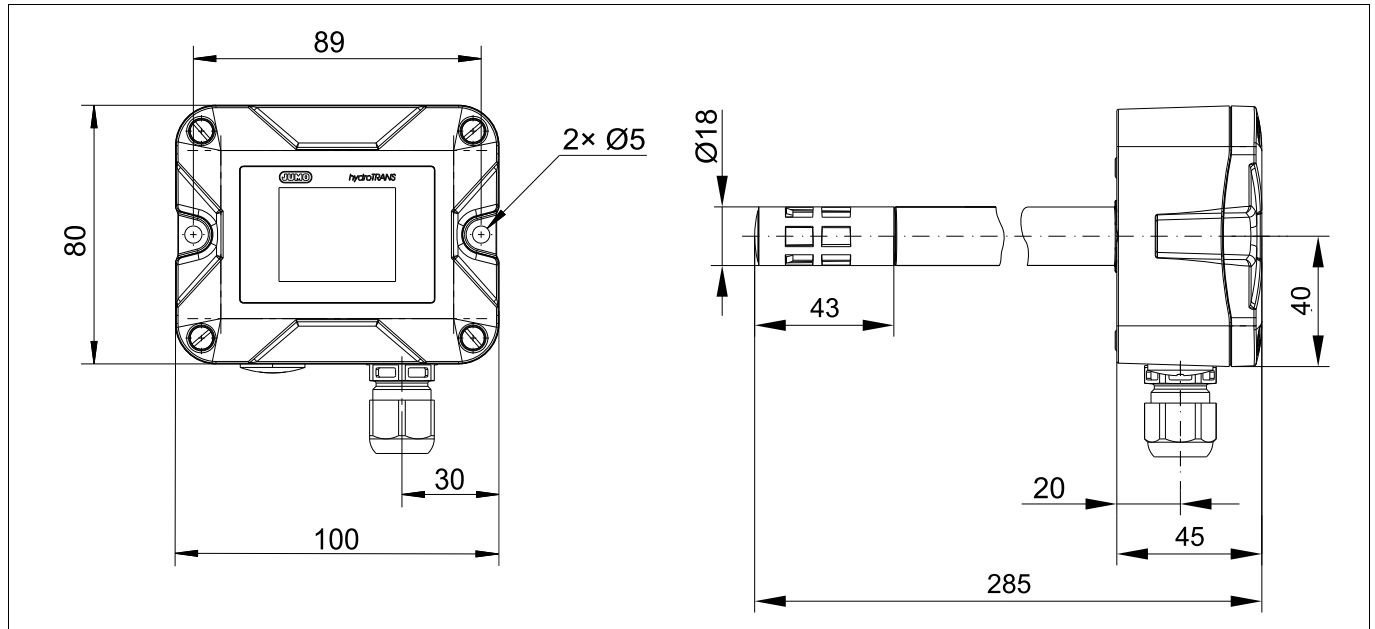
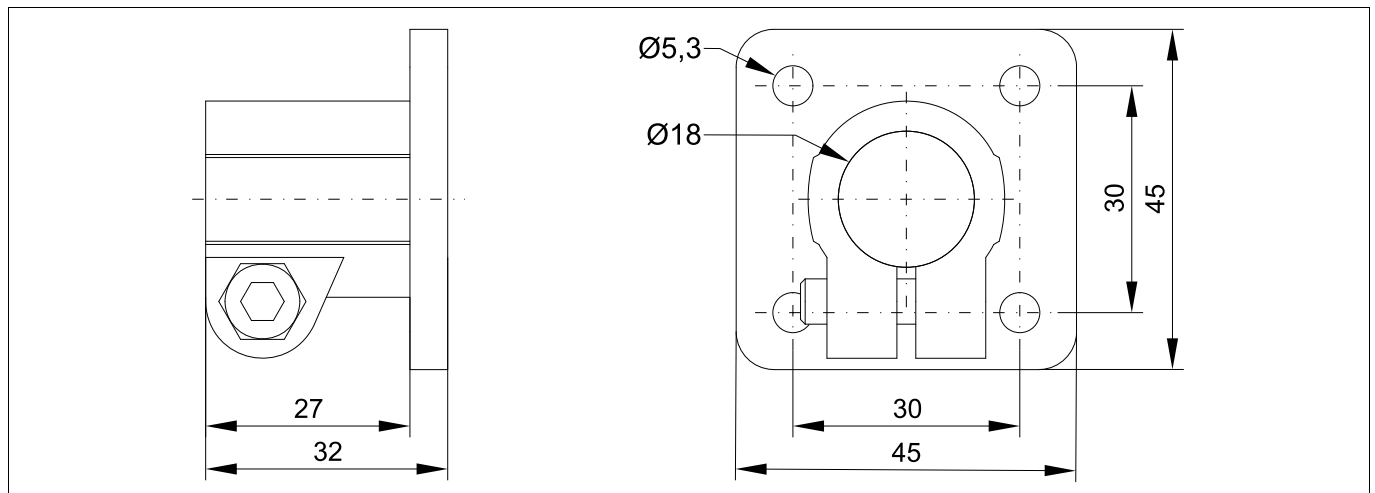
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**Dimensions****Device****Connecting flange**

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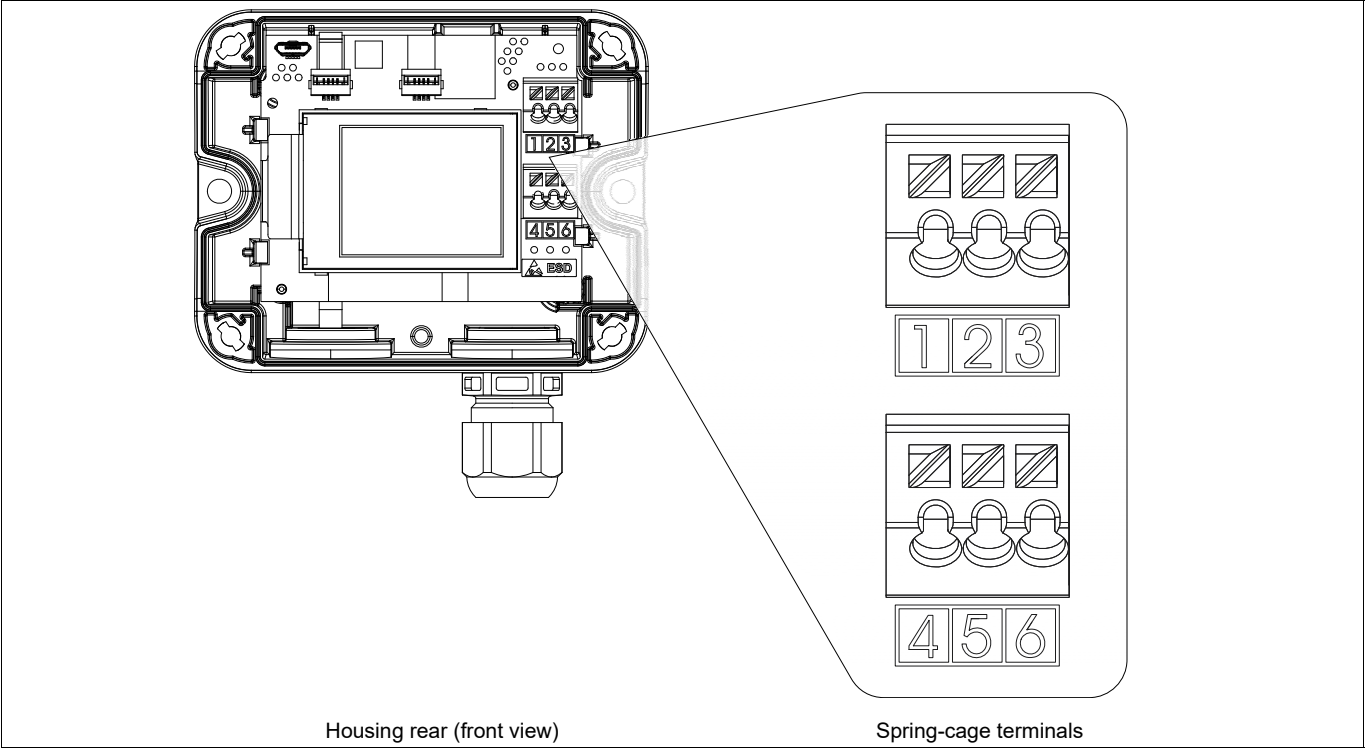
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Connection elements

The connection elements in the data sheet provide information on product selection.
For the electrical connection, only use the installation instructions or the operating manual.



Terminal assignment

Spring-cage terminals

Designation	Description	Assignment
Analog output	Relative humidity ^a	1
	Temperature ^a	2
	CO ₂ ^a	3
	Analog output GND	4
	DC 24 V	5
	GND	6

^a Standard

^b Optional extra

Designation	Description	Assignment
RS485	RS485 A (D+)	1
	RS485 GND ^b	2
	RS485 B (D-)	3
	-	4
	DC 24 V	5
	GND	6



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Scope of delivery

Device in the ordered version
Brief instructions
Cable fitting
Thread sealing ring
Connecting flange
Rubber seal, self-adhesive
2 Fastening screws (socket button self-tapping screw 4.8 × 38)
4 socket button self-tapping screws 3.5 × 13