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# JUMO hydroTRANS S30

## Humidity and temperature transmitter with optional CO<sub>2</sub> module, duct version

### Areas of application

- Facility management
- Climate monitoring
- Ventilation systems
- Storage rooms
- Railway applications, according to DIN EN 50155

### Special features

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

### 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 (CO<sub>2</sub>)

### Interfaces

- USB
- RS485



Type 907043 with display



Type 907043 without display

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## 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 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	
Conductor cross section	AWG 28 to AWG 14
Without ferrule	0.2 to 1.5 mm <sup>2</sup>
With ferrule	0.25 to 1.5 mm <sup>2</sup>
Stripping length	
Without ferrule	8 mm
With ferrule	10 mm
Temperature resistance	≥ 80 °C

#### Device 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	
Conductor cross section	AWG 28 to AWG 14
Without ferrule	0.2 to 1.5 mm <sup>2</sup>
With ferrule	0.25 to 1.5 mm <sup>2</sup>
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## Inputs

### Measurands

#### Relative humidity

Measuring range	0 to 100 % RH
With CO <sub>2</sub> module	0 to 95 % RH
Accuracy	
Typical	±2.0 % RH
Max.	±2.5 % RH
Sampling rate	1 s

#### Temperature

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

#### Carbon dioxide (CO<sub>2</sub>)

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

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## Outputs

### Device with analog output

#### Current output

Signal range	4 to 20 mA
Output signal limits	0 to 22 mA
Accuracy	≤ ±0.05 % 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

Signal range	0 to 10 V
Output signal limits	0 to 11 V
Accuracy	≤ ±0.05 % in relation to the end of the signal range (10 V)
Temperature influence	50 ppm/K
Load influence	≤ ±15 mV
Load	≥ 10 kΩ

## Interfaces

### 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

### 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 <sup>a</sup> 8-1-odd 8-1-even 8-2-none
Data transfer rate	9600 baud 19200 baud 38400 baud <sup>a</sup> 57600 baud 115200 baud
Minimum response time	0 to 500 ms
Device address	1 to 254

<sup>a</sup> Default setting

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## Display

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

## Environmental influences

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

<sup>a</sup> The product is suitable for industrial use as well as for households and small businesses.

<sup>b</sup> The CO<sub>2</sub> 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
Probe	PC
Cable fitting	PA
Thread sealing ring	EPDM
Connecting flange	PA
Rubber seal	EPDM
Weight	Approx. 260 g

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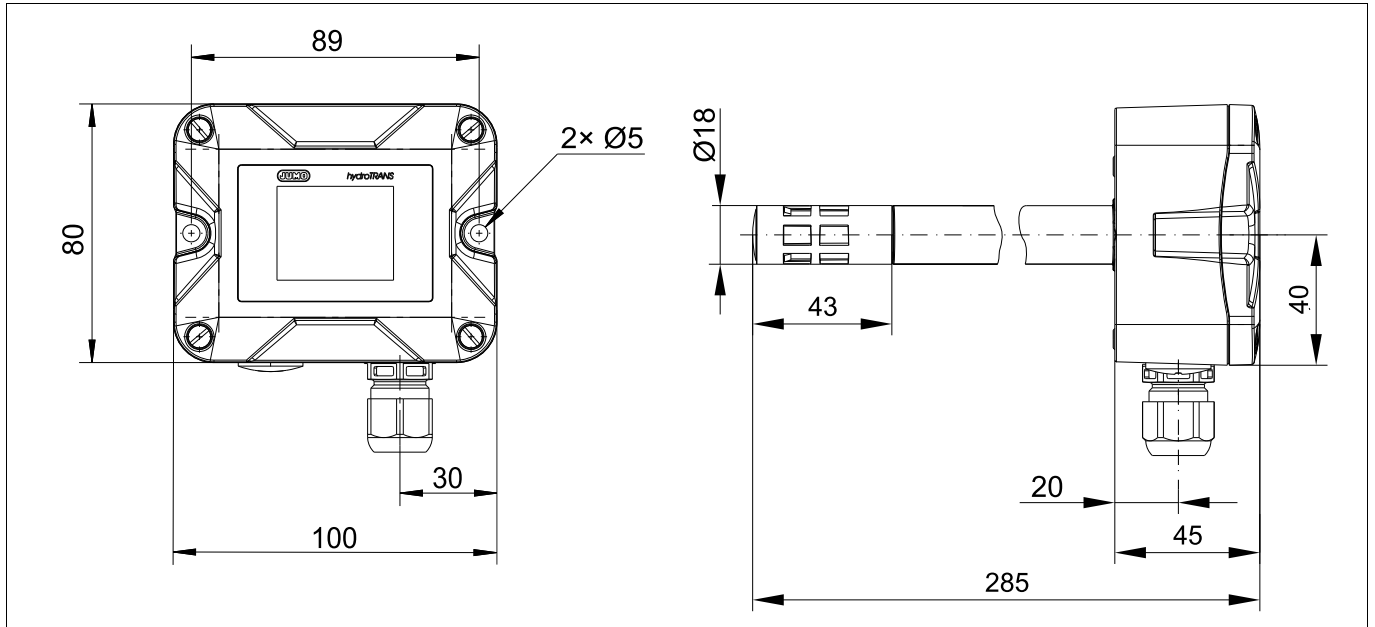
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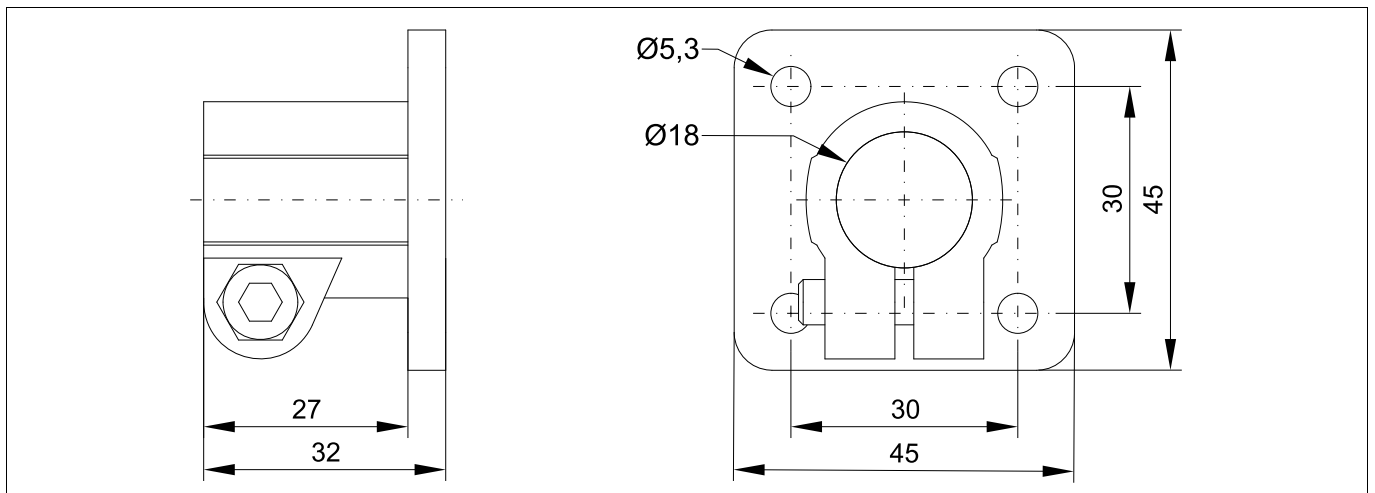


## Dimensions

### Device



### Connecting flange



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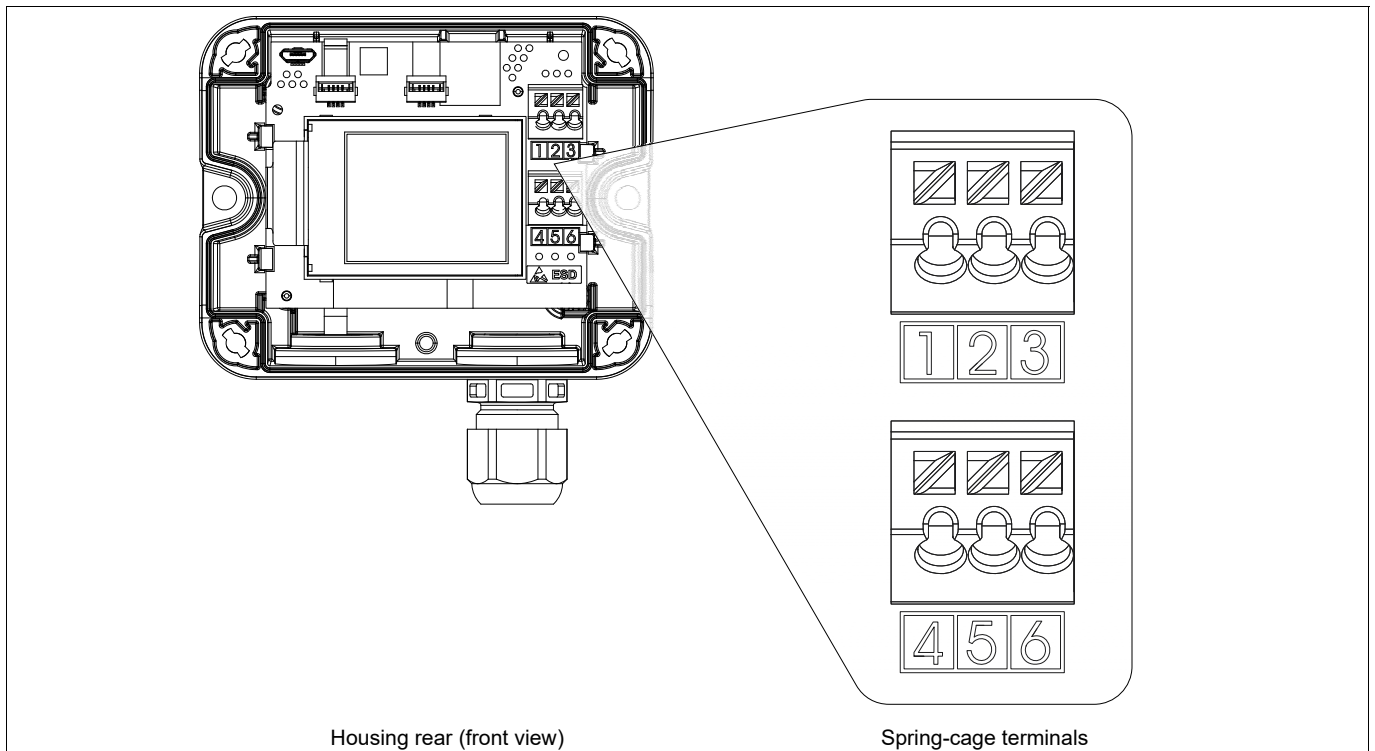
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## Connection elements

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 <sup>a</sup>	1
	Temperature <sup>a</sup>	2
	CO <sub>2</sub> <sup>a</sup>	3
	Analog output GND	4
	DC 24 V	5
	GND	6

<sup>a</sup> Standard

<sup>b</sup> Optional extra

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

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## Order details

(1)	<b>Basic type</b>
907043	JUMO hydroTRANS S30 – Humidity and temperature transmitter with optional CO <sub>2</sub> module, duct version
(2)	<b>Basic type extension</b>
11	RH - T
12	RH - T - CO <sub>2</sub>
(3)	<b>Version</b>
0	Standard
(4)	<b>Measuring range(s)</b>
15	0 to 100 % RH/-40 to +80 °C
17	0 to 95 % RH/-10 to +60 °C/10000 ppm
(5)	<b>Output</b>
009	4 to 20 mA (per default)/0 to 10 V combination output, configurable
530	RS485 Modbus
(6)	<b>Extra codes</b>
775	DAkKS (DKD) calibration (service, please state desired test points in plain text)
950	Railway application
951	DAkKS calibration (DKD), 3 test points: 20 %RH/50 %RH/80 %RH @23 °C
952	DAkKS calibration (DKD), 2 test points: 33 %RH/73 %RH @23 °C
994	Integrated display

Order code:    (1)                          /                          (2)                          -                          (3)                          -                          (4)                          -                          (5)                          /                          (6)                          , ...<sup>a</sup>  
 Order example    907043    /    12    -    0    -    17    -    009    /    994

<sup>a</sup> List extra codes in sequence and separate using commas.

## Stock versions

Order code	Part no.
907043/11-0-15-009/000	30049451
907043/11-0-15-530/000	30049468
907043/12-0-17-009/000	30049482
907043/12-0-17-530/000	30049485

## Accessories

Designation	Part no.
USB cable, A to Micro-B	00616250
Plastic sinter filter (Ø = 18 mm)	00754581
Plastic membrane filter (Ø = 18 mm)	30048149
JUMO hydroTRANS setup program	00775170