

JUMO GmbH & Co. KG

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JUMO hydroTRANS S10

Humidity and temperature transmitter with optional CO₂ module, indoor version

Description

The humidity and temperature transmitter monitors the indoor air quality.

The device is suitable for wall mounting (stationary use at weatherprotected locations).

Measurands

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

Interfaces

- RS485
- USB

Areas of application

- Building automation, home automation, smart home
- Climate monitoring
- Public indoor spaces
- Office rooms

Special features

- Ease of assembly
- Robustness
- Multisensor



Type 907045 with display



Type 907045 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 61010-1 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 SELV, PELV
Analog output	DC 24 V, -33 %/+33 %
Power consumption	≤ 2.4 W
Protection rating	DIN EN 61140, Class III (protective low voltage)
Electrical connection	
Connection elements	Screw terminal
Connecting cable	
Conductor cross section	0.08 to 4.5 mm ²
Stripping length	≥ 6 mm
Temperature resistance	≥ 80 °C
For UL applications	
Approved cable ^a	CYJV2/8, CYJV/7, PVVA2/8, PVVA/7

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

Device version with RS485

Voltage supply	SELV, PELV
RS485 interface	DC 24 V, -58 %/+33 %
Power consumption	≤ 2.4 W
Protection rating	DIN EN 61140, Classe III (protective low voltage)
Electrical connection	
Connection elements	Screw terminal
Connecting cable	
Temperature resistance	0.08 to 4.5 mm ²
For UL applications	≥ 6 mm
Approved cable ^a	≥ 80 °C
Electrical connection	
Connection elements	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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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	-5 to +55 °C
Accuracy	±0.4 °C
Sampling rate	1 s

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

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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	-5 to +55 °C
Admissible storage temperature	-25 to +60 °C
Protection type	DIN EN 60529 IP20 (front)
Site altitude max.	2,000 m above sea level
Climatic conditions	DIN EN IEC 60721-3-3
Climate class	3K22
Relative humidity	≤ 90 % without condensation, non-condensing
Electromagnetic compatibility (EMC)	DIN EN 61326-1:2022
Interference emission	Class B ^a
Interference immunity	Industrial requirement
Vibration ^b	DIN EN 60068-2-6
Amplitude	0.15 mm from 10 to 58.1 Hz
Acceleration	20 m/s ² from 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	~ 81 g

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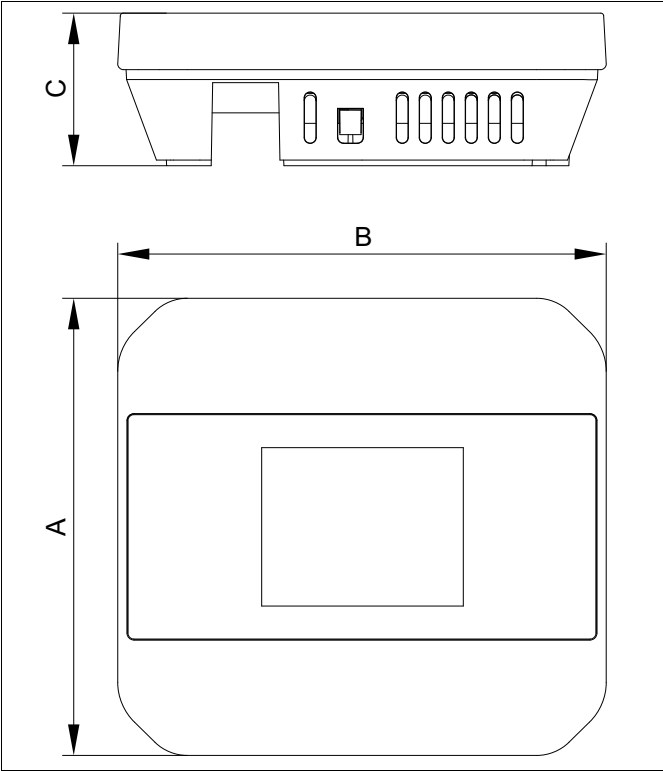
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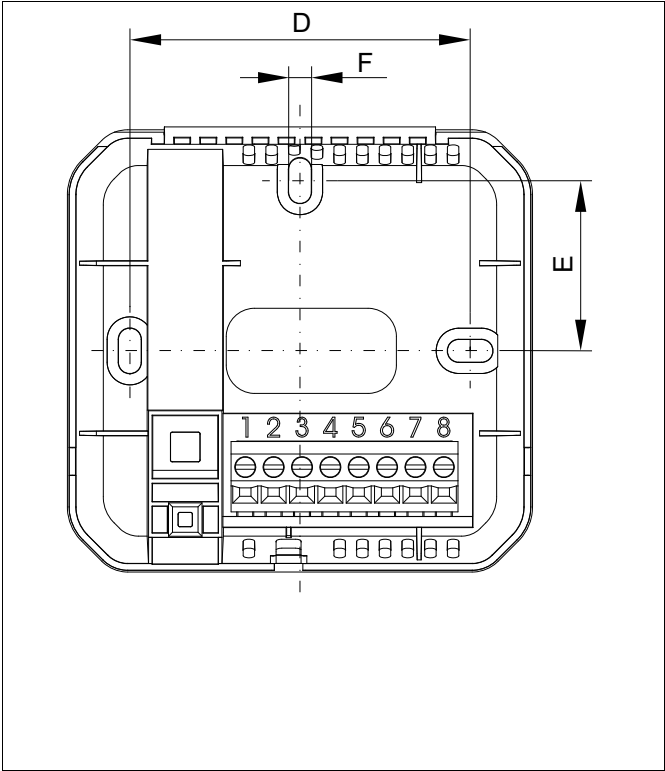


Dimensions

Device with display



Screw holes (housing rear)



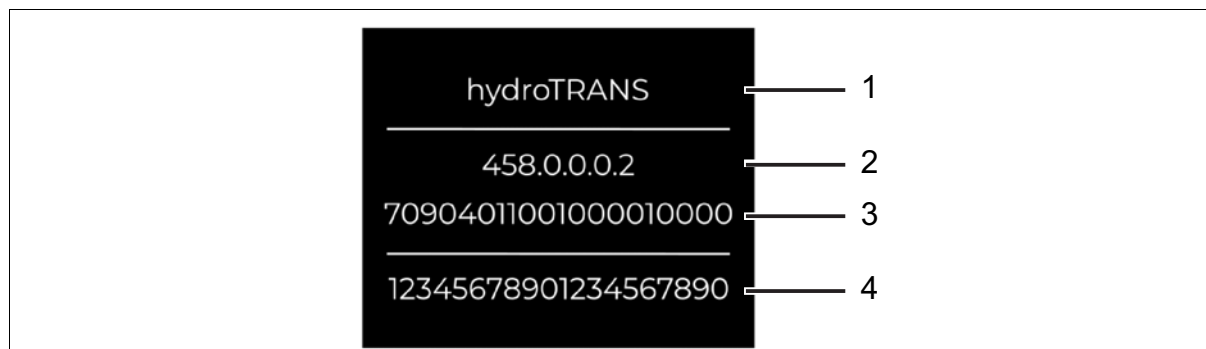
Device version	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
Device without display	81	85	25	60	30	4
Device with display			27			



Display elements

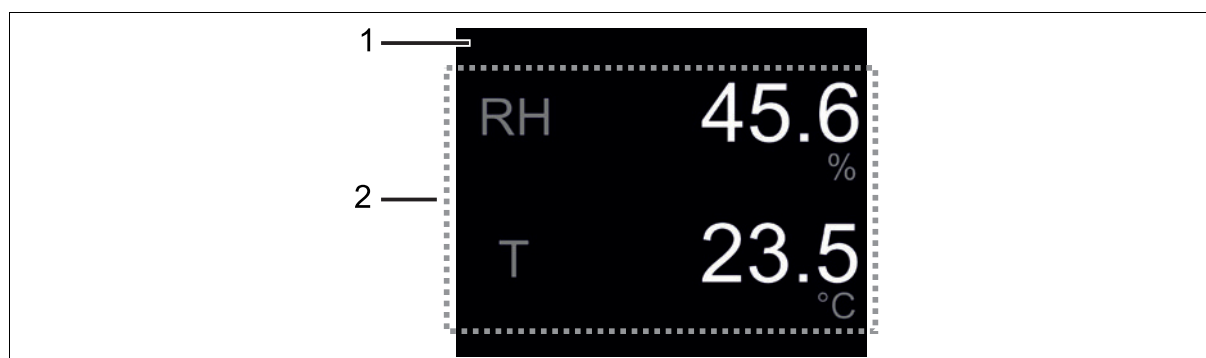
Startup display

The startup display appears as soon as the voltage supply to the device is established. The startup display switches to the process value display after approximately five seconds.



Pos.	Designation	Description
1	Startup display	Shows the device name.
2		Shows the device software version.
3		Shows the device hardware version.
4		Shows the device TAG number.

Process display



Pos.	Designation	Description
1	Process display	Shows the following values and messages: - Up to three process values - Error messages
2	Process value display	Shows the following values: - The formula symbol - The process value (measured or calculated value) - The system unit

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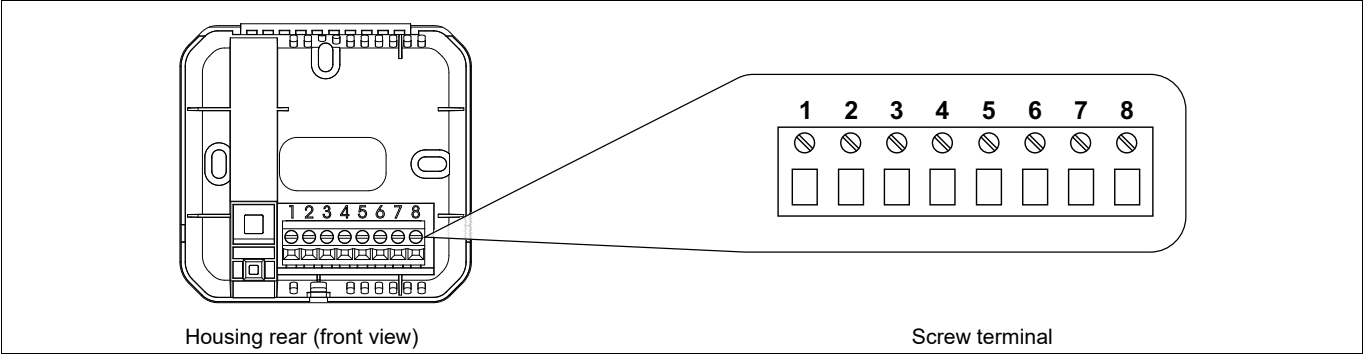
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Connection elements

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

Screw terminal

Designation	Description	Assignment
Analog output	–	1
	–	2
	Analog output 3 ^a	3
	Analog output 2 ^a	4
	Analog output 1 ^a	5
	Analog output GND	6
	GND	7
	DC 24 V	8

^a Standard
^b Optional extra

Designation	Description	Assignment
RS485	RS485 A (D+)	1
	RS485 B (D-)	2
	RS485 GND ^b	3
	RS485 A (D+)	4
	RS485 B (D-)	5
	RS485 GND ^b	6
	GND	7
	DC 24 V	8

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Order details

(1)	Basic type
907045	JUMO hydroTRANS S10 – Humidity and temperature transmitter with optional CO ₂ module, indoor version
(2)	Basic type extension
11	RH - T
12	RH - T - CO ₂
(3)	Version
0	Standard
(4)	Measuring ranges
18	0 to 95 % RH/-5 to +55 °C/5000 ppm
33	0 to 95 % RH/-5 to +55 °C
(5)	Outputs
009	4 to 20 mA/0 to 10 V combination output configurable
530	RS-485 Modbus
(6)	Extra codes
000	Without
775	DAkkS (DKD) calibration (service), please state desired test points in plain text
994	Integrated display

	(1)		(2)		(3)		(4)		(5)		(6)
Order code		/		-		-		-		/	
Order example	907045	/	12	-	0	-	18	-	009	/	994

Stock versions

Order code	Part no.
907045/12-0-18-530/000	30049450
907045/11-0-33-009/000	30049471
907045/11-0-33-009/994	30049472
907045/11-0-33-530/000	30049473
907045/11-0-33-530/994	30049474
907045/12-0-18-530/994	30049524

Accessories

Without UL approval

Designation	Part no.
USB cable, A to Micro-B	00616250
JUMO hydroTRANS setup program	00775170

Scope of delivery

Device in the ordered version
Brief instructions
3 fastening screws