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**JUMO Process Control, Inc.**

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# JUMO hydroTRANS S40

## Humidity and temperature transmitter with optional CO<sub>2</sub> module, rod 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 and lines.

### Measurands

- Relative humidity
- Temperature
- Optional: carbon dioxide (CO<sub>2</sub>)

### Interfaces

- RS485

**Type 907044**

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## 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

Voltage supply	DC 24 V SELV, PELV
Analog output	
0 to 10 V	DC 24 V, -33 %/+33 %
4 to 20 mA	DC 24 V, -54 %/+33 %
RS485 interface	DC 24 V, -58 %/+33 %
Power consumption	≤ 2.4 W
Protection rating	DIN EN 61140, Class III (protective low voltage)
Electrical connection	
Connection elements	M12 plug connection
Connecting cable	
Temperature resistance	≥ 80 °C

### 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

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## 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

## Outputs

### Device with analog output

#### Current output

Signal range	4 to 20 mA
Output signal limits	0 to 22 mA
Accuracy <sup>a</sup>	≤ ±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
Minimum burden	
Voltage supply U <sub>V</sub>	
DC 11 to 25 V	0 Ω
DC 25 to 32 V	(U <sub>V</sub> - 25 V) ÷ 0.02 A
Maximum burden	(U <sub>V</sub> - 2.4 V) ÷ 0.0215 A

<sup>a</sup> Applies to operation with the lowest operating voltage possible according to the burden connected.

#### 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

### RS485

Function	Transfer of process data, configuration data, and device information
Data transmission	Serial
Data format	8-1-none <sup>a</sup> 8-1-odd 8-1-even 8-2-none
Transmission protocol	Modbus RTU
Transfer rate	9600 baud 19200 baud 38400 baud <sup>a</sup> 57600 baud 115200 baud

<sup>a</sup> Default setting

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## Environmental influences

Admissible ambient temperature	-40 to +80 °C
With CO <sub>2</sub> module	-10 to +60 °C
Admissible storage temperature	-40 to +80 °C
With CO <sub>2</sub> module	-30 to +70 °C
Protection type	DIN EN 60529 IP65 (with connected M12 plug connector)
Max. site altitude.	5300 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 61326-1:2022
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	2 g at 58.1 to 150 Hz
Shock <sup>b</sup>	DIN EN 60068-2-27
Peak acceleration	15 g
Shock duration	11 ms

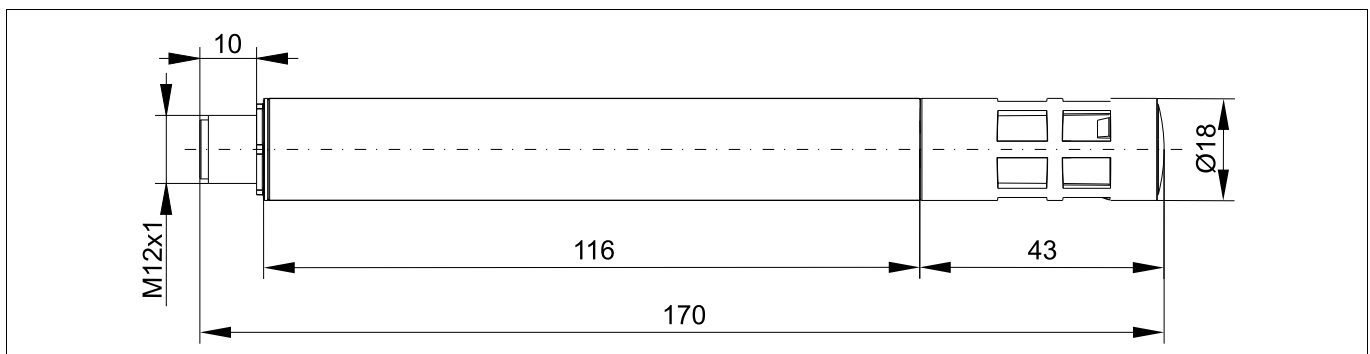
<sup>a</sup> The product is suitable for industrial use as well as for households and small businesses.

<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	
Sensor case	PC
M12 plug connector	CuZn
Weight	Approx. 40 g

## Dimensions



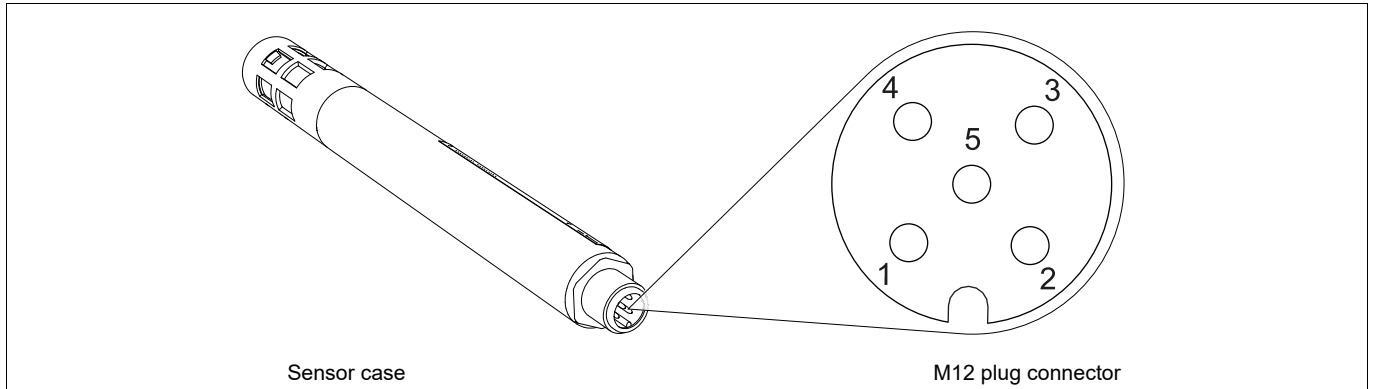
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## Connection elements



## Terminal assignment

### M12 plug connector

Designation	Description	Assignment
Analog output	DC 24 V	1
	Relative humidity	2
	GND	3
	Temperature	4
	Carbon dioxide (CO <sub>2</sub> )	5

Designation	Description	Assignment
RS485 interface	NC	1
	DC 24 V	2
	GND	3
	B-RS485 (Data -)	4
	A-RS485 (Data +)	5

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## Order details

<b>(1) Basic type</b>	
907044	JUMO hydroTRANS S40 – Humidity and temperature transmitter with optional CO <sub>2</sub> module, rod version
<b>(2) Basic type extension</b>	
11	RH - T
12	RH - T - CO <sub>2</sub>
<b>(3) Version</b>	
0	Standard
<b>(4) Measuring range(s)</b>	
15	0 to 100 % RH/-40 to +80 °C
17	0 to 95 % RH/-10 to +60 °C/10000 ppm
<b>(5) Output</b>	
005	4 to 20 mA
065	0 to 10 V
530	RS485
<b>(6) Extra codes</b>	
000	None
775	DAkKS (DKD) calibration (service), please state desired test points in plain text
950	Railway application

Order code    **(1)**    **(2)**    **(3)**    **(4)**    **(5)**    **(6)**    , ...<sup>a</sup>  
 Order example    907044    /    12    -    0    -    17    -    005    /    950

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

## Stock versions

Order code	Part no.
907044/11-0-15-530/000	30049003
907044/11-0-15-065/000	30049004
907044/12-0-17-530/000	30049016
907044/12-0-17-005/000	30049019

## Accessories

Designation	Part no.
Plastic sinter filter (Ø = 18 mm)	00754581
Plastic membrane filter (Ø = 18 mm)	30048149
JUMO hydroTRANS setup program	00775170