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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 EN 50155

### Special features

- Ease of assembly
- Robustness
- Multisensor

### Description

The device is for monitoring the ambient air that gets into buildings and production processes and can be used in a temperature range of -40 to +80° C.

The process values of the measurands are issued to a higher-level system via the outputs by means of an M12 connector.

The device is designed for use in ventilation ducts and lines as well as for railway applications according to EN 50155 for installation in ducts.

#### Measurands

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

#### Interfaces

- RS-485 Modbus
- Analog outputs



Type 907044



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## Approvals

	Designation Test facility Certificate no. Inspection basis Valid for	DNV DNV In preparation Class Guidelines CG 0339 Type 907044/...
	Designation Test facility Certificate no. Inspection basis Valid for	Railway application RST Rail System Testing, JUMO (declaration of manufacturer) In preparation DIN EN 45545-2, DIN EN 50155, DIN EN 50121-3-2, DIN EN 61373 Type 907044/... with extra code 950

## Technical data

### Electrical data

Voltage supply DIN EN 50155 Analog output RS-485 interface Power consumption Protection rating	DC 24 V SELV, PELV 24 V -30 % +25 % 16 to 32 V 10 to 32 V ≤ 2.4 W DIN EN 61140, Class III (protective low voltage )
Electrical safety	The device must be equipped with an electrical circuit that meets the requirements of EN 61010-1 with regard to "Limited-energy circuits".

### Inputs

#### Relative humidity

Measuring range	0 to 100 % RH
Accuracy (at 25 °C and 1013 mbar)	Typical ±2 % RH Max. ±2.5 % RH
Sampling rate	1 s

#### Temperature

Measuring range	-40 to +80 °C
Accuracy (at 25 °C and 1013 mbar)	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 (at 25 °C and 1013 mbar)	±(50 ppm + 5 % of reading) (to 2000 ppm)
Sampling rate	30 s

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## Outputs

### Analog outputs

#### Current output

Signal range	4 to 20 mA
Output signal limits	0 to 22 mA
Accuracy	±0.05 % based on measuring range (20 mA)
Temperature influence	50 ppm/K
Burden influence	±0.02 %/100 Ω
Burden	≤ 500 Ω
Minimum burden	
Voltage supply	
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

#### Voltage output

Signal range	0 to 10 V
Output signal limits	0 to 11 V
Accuracy	±0.05 % based on measuring range (20 mA)
Temperature influence	50 ppm/K
Burden influence	±15 mV
Burden	≥ 10 kΩ

## Interfaces

### RS-485

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 screwed-on machine connector)
Climatic conditions	DIN EN IEC 60721-3-3
Climate class	3K24
Relative humidity	≤ 100 % (95 % with CO <sub>2</sub> ), non-condensing
Electromagnetic compatibility (EMC)	DIN EN 61326-1:2022
Interference emission	Class B <sup>a</sup>
Interference immunity	Industrial requirement
Vibration <sup>b</sup>	DIN EN 60068-2-6
Amplitude	0.15 mm from 10 to 58.1 Hz
Acceleration	20 m/s <sup>2</sup> from 58.1 to 150 Hz
Railway application	Category 1B Max. acceleration: 5.72 m/s <sup>2</sup> Frequency range: 5 to 150 Hz
Shock <sup>b</sup>	DIN EN 60068-2-27
Peak acceleration	150 m/s <sup>2</sup>
Shock duration	11 ms
Railway application	Category 1B Peak acceleration: 50 m/s <sup>2</sup> Shock duration: 30 ms

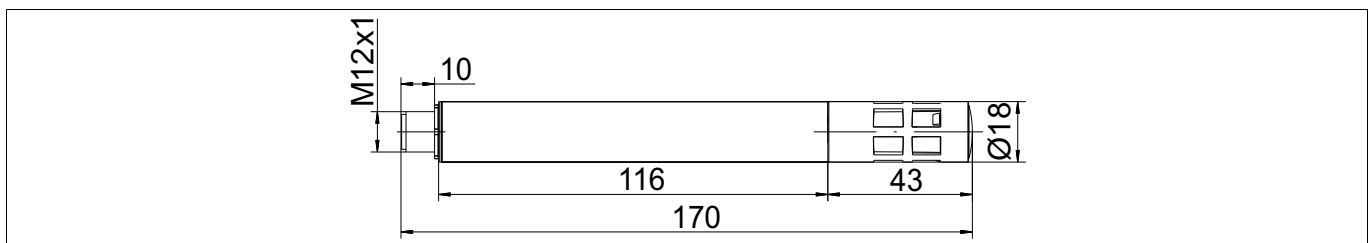
<sup>a</sup> The product is suitable for industrial use as well as for households and small businesses.

<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	Plastic (PC)
Weight	Approx. 40 g

## Dimensions



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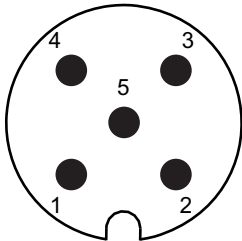
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## Connection diagram

### Terminal assignment



### Analog output with M12 connector

Connection	Terminal assignment
1	24 V
2	Output relative humidity
3	GND
4	Temperature output
5	Output carbon dioxide (CO <sub>2</sub> )

### RS-485 interface

Connection	Terminal assignment
1	NC
2	24 V
3	GND
4	B-RS-485 (Data -)
5	A-RS-485 (Data +)

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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	RS-485 Modbus
	<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.