

# LFHV-2B65, LFHxx-2B65

## DUCT HUMIDITY TEMPERATURE TRANSMITTERS

### PRODUCT DATA



### GENERAL

The LFHV-2B65 duct humidity temperature duct transmitter combines a capacitance-type relative humidity sensor and a temperature sensor in one housing, both with 0...10V output.

The LFHxx-2B65 humidity temperature duct transmitter is additionally equipped with a passive temperature sensor.

These temperature transmitters can be used:

- for checking and monitoring temperature and humidity in air duct applications (fresh air / exhaust);
- to avoid condensation in air duct applications;
- for humidification control.

### Models

OS-No.	Analog outputs	Passive temperature output
LFHV-2B65	0...10 V for temperature 0...10V for humidity	--
LFH00-2B65		Pt1000
LFH01-2B65		Ni1000
LFH10-2B65		NTC10kΩ
LFH20-2B65		NTC20kΩ

### FEATURES

- **Wide sensing range**
- **Capacitance-type sensing element for rel. humidity**

### SPECIFICATION

#### Measured Values

##### Relative humidity (0...10 V)

Working range	10...90% %RH (non-condensing)
Accuracy (active sensor)	±3% RH (30...70% RH) at 20 °C, otherwise ±5% RH
Temperature dependency	typically ±0.05% RH / °C
Typical response time	< 180 s

##### Temperature (0...10 V)

Working range	-5...+55 °C (+23...+131 °F)
Accuracy	±0.3 °C at 20 °C
Typical response time	< 180 s

#### Passive Temperature Sensor

##### NTC10kΩ

Nominal value	10kΩ ±0.5% at 25 °C
Accuracy	±0.2 °C at 25 °C
Response time (typ.)	t <sub>63</sub> < 120 s at 3 m/s air velocity
Sensitivity (typ.)	-440 Ω / K at 25 °C (non-linear)

##### NTC20kΩ

Nominal value	20kΩ ±0.5% at 25 °C
Accuracy	±0.2 °C at 25 °C
Characteristic	NTC20kΩ (see EN0B-0476GE51)
Response time (typ.)	t <sub>63</sub> < 120 s at 3 m/s air velocity
Sensitivity (typ.)	≈ -934.5 Ω / K at 25 °C (non-linear)

##### Ni1000

Nominal value	1000 Ω at 0 °C
Accuracy	±0.4 °C at 0 °C
Characteristic	DIN 43760
Sensitivity (typ.)	≈ 6.18 Ω / K

##### Pt1000

Nominal value	1000 Ω at 0 °C
Accuracy (IEC751 Class B)	0.3 + 0.005 *  t  at 0 °C
Characteristic	see EN0B-0476GE51
Sensitivity (typ.)	≈ 3.85 Ω / K

#### Outputs

Analog output	0...10 V ≅ 0...100% relative humidity / 0...50 °C (R <sub>L</sub> ≥ 10 kΩ)
Passive temp. sensor (LFHxx-2B65, only)	2-wire, passive sensor; wire resistance (terminal-sensor), typ. 0.5 Ω; temp. unit: °C

**General**

Power supply (Class III)	for 0...10 V, 15...35 VDC or 24 VAC ± 20%
Current consumption	DC power supply: typ. 5 mA AC power supply: typ. 13 mA <sub>eff</sub> Screw terminals, max. 1.5 mm <sup>2</sup>
Connection	
Housing material	Polycarbonate, UL94V-0 appr.
Protection class	IP65 / NEMA 4 for enclosure; IP40 for sensing part (cap filter)
Cable gland	M16 x 1.5 / UL94-V2
Sensor protection	PTFE filter, non-removable
EMC	EN61326-1, EN61326-2-3; FCC Part 15, Class B; ind. environment: ICES-003 Issue 5 Class B
Working conditions	-5...+55 °C (+23...+131 °F), 0...95% RH (non-condensing)
Storage conditions	-25...+60 °C (-13...+140 °F), 20...80% RH
Dimensions:	See Fig. 1
Mounting	Duct
Approvals	CE

**WIRING**

wiring run	maximum length
sensor to controller	200 m (660 ft)

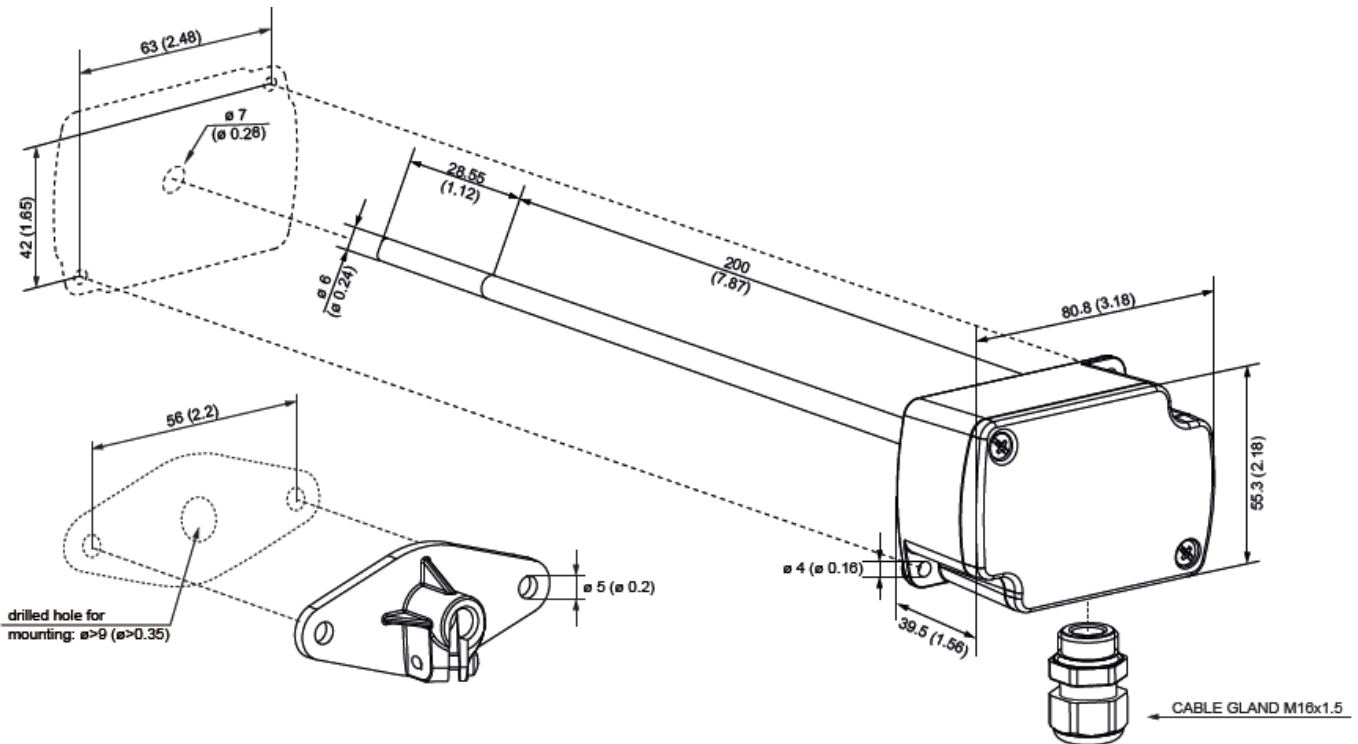
**NOTE:** Installation of the sensor near high EMI-emitting devices may lead to faulty measurements.

Use shielded wiring in areas with high EMI.

Keep 15 cm (5.9'') min. distance between sensor lines and 230 Vac power lines.

Use two transformers: one for sensors and actuators and one for the controller.

**MOUNTING**



**Fig. 1. Dimensions (mm / inch)**

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## TERMINAL ASSIGNMENTS

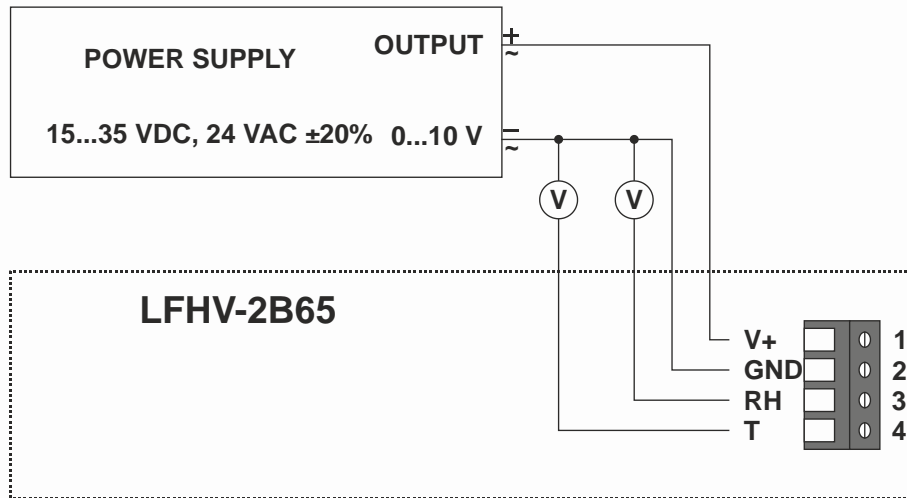


Fig. 2. Connection diagram LFHV-2B65

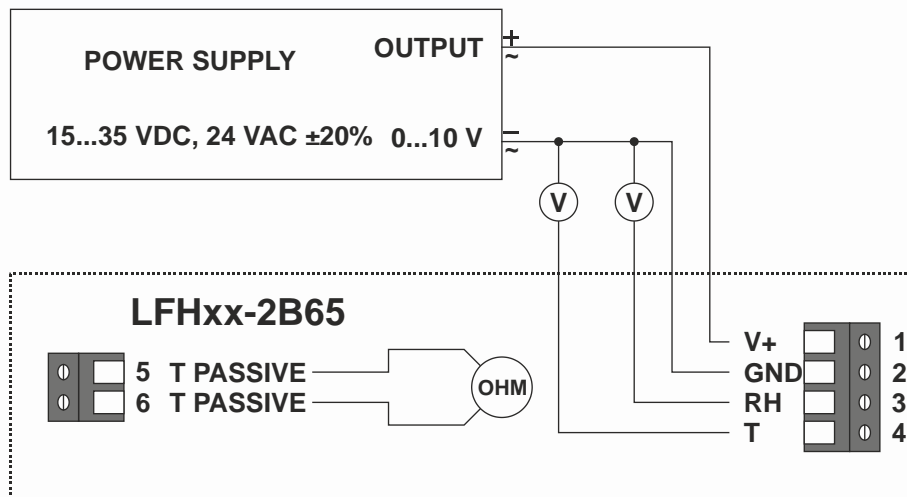


Fig. 3. Connection diagram LFHxx-2B65

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