TCY-BH-U Humidistat



Features

- Control for binary humidifiers and dehumidifiers with or without fan support
- Low power energy consumption: < 1W per unit
- Relays switching for outputs each up to 300W
- Cost saving option with Economy functionality and setpoint limitations
- External sensor input for setpoint setback based on outdoor temperature
- Password protected programmable user and control parameters
    - Setpoint range limitation
    - Access control for setpoints and mode change
    - Access control for clock and time programs
    - Select your display contents
    - Selectable behavior after return from power failure
- Temperature display of external input in Celsius or Fahrenheit

Deluxe version:

- Clock and time schedule functions
- Blue backlight for LCD

Applications

- Humidifiers:
    - On / Off type humidifiers
    - On / Off type humidifiers with single speed fan support
- Dehumidifiers:
    - On / Off type dehumidifiers
    - On / Off type dehumidifiers with single speed fan support
- Combination humidifiers and dehumidifiers without fan support

General description

The TCY-BH-U is a stand-alone electronic binary humidity stat. The TCY-BH-U features one internal humidity sensor, one external NTC temperature sensor input and two binary outputs (Relays).

A detailed parameterization is possible with the use of a simple configuration routine. The TCY-BH-U can be configured using the standard operation terminal. No special tools or software is required.

Ordering

Item name	Item code	Variant	Features
TCY-BH-U TCY-BH-U-W04 TCY-BH-U-W05	40-100055 40-100055-04 40-100055-05	standard humidifying de-humidifying	Binary controller with: 1 Internal humidity input 1 external temperature input (for setpoint shift) 1 DO (Relay) for humidifier or dehumidifier 1 DO (Relay) for fan (optional)
TCY-BH-U-D TCY-BH-U-D-W04 TCY-BH-U-D-W05	40-100056 40-100056-04 40-100056-05	Deluxe humidifying de-humidifying	
Accessories			
S-Tn10-2 SD-Tn10-12-2 SD-Tn10-20-2 SDB-Tn10-12 SDB-Tn10-20 SOA-Tn10 AES3-HT-A5	40-200001 40-200002 40-200003 40-200051 40-200004 40-200006 40-500104		Flying lead sensor with 2 m cable Flying lead duct sensor 12cm immersion depth, 2m cable Flying lead duct sensor 20cm immersion depth, 2m cable Duct sensor with housing, 12cm immersion depth Duct sensor with housing, 20cm immersion depth Outdoor sensor Replacement humidity sensor 5% accuracy

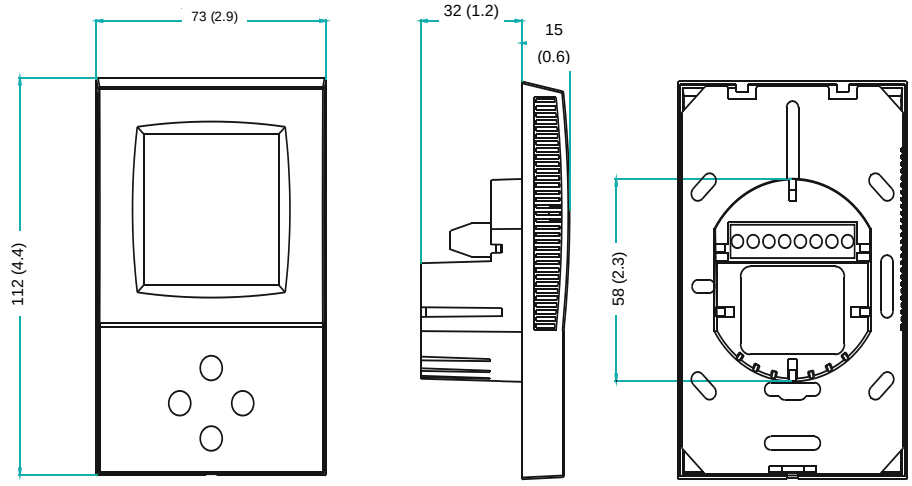
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Technical specifications

Caution! This device is intended to be used for comfort applications. Where a device failure endangers human life and/or property, it is the responsibility of the owner, designer and installer to add additional safety devices to prevent or detect a system failure caused by such a device failure. Vector Controls or its affiliates cannot be held liable for any damage caused by such a failure. Failure to follow specifications and local regulations may endanger life, cause equipment damage and void warranty.

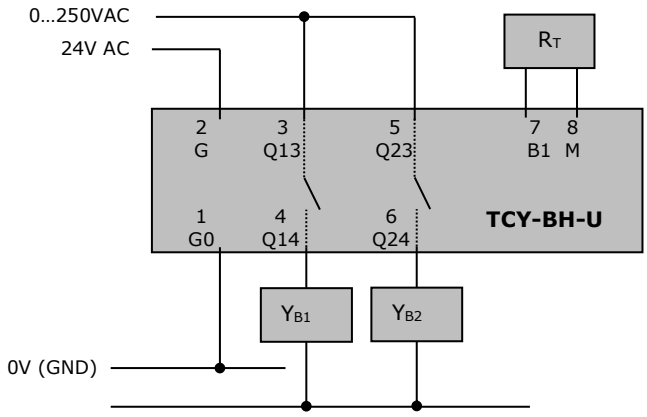
Power supply	Operating voltage	24 V AC/DC ± 10 %, 50…60 Hz
	Power consumption	Max. 1.5 VA
	Electrical connection	Terminal connectors, wire 0.34…2.5 mm² (AWG 24…12)
	Deluxe type only: Power backup for real time clock	 Min 48h if charged for 24h
Signal inputs	Humidity input: Range Accuracy Hysteresis	Element: Polymer-Based Capacity Sensor 0…100 % r.H. 10%...90% r.H. ± 5.0 % 0…10% and 90…100% ± 7.0 % ±1% r.H.
	Temperature input Range	External NTC (Sxx-Tn10 sensor): -40…70 °C (-40…158 °F)
	Accuracy	-40…0 °C (-40…32 °F): 0.5 K 0…50 °C (32…122 °F): 0.2 K 50…70 °C (122…158 °F): 0.5 K
Signal outputs	Digital switching outputs Switching type AC Switching power	DO1…DO2 Relays 2(1.2) A, 250VAC (max fan power 300W)
Environment	Operation Climatic conditions Temperature Humidity	To IEC 721-3-3 class 3 K5 0°C …50°C (32°F…122°F) <95% R.H. non-condensing
	Transport & storage Climatic conditions Temperature Humidity Mechanical conditions	To IEC 721-3-2 and IEC 721-3-1 class 3 K3 and class 1 K3 -25°C…70°C (-13°F…158°F) <95% R.H. non-condensing class 2M2
General	Degree of protection	IP30 to EN 60 529
	Safety class	III (IEC 60536)
	Material: Cover, back part Mounting plate	Fire proof ABS plastic (UL94 class V-0) Galvanized steel
	Dimensions (H x W x D) Front part: Power case:	 112 x 73 x 15 mm (4.4 x 2.9 x 0.6 in) ø 58 x 32 mm (ø 2.3 x 1.3 in)
	Weight (including package)	270g

Dimensions mm (inch)



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Wiring diagram



Description

Connections depend on parameter CP10 and CP11!

CP10	YB1 DO1	YB2 DO2	RT
CP10 = 0	Humidify	Dehumidify	Temperature input for setback NTC 10kΩ @ 25°C (77°F)
CP10 = 1	Humidify	CP11 = ON: FAN	
CP10 = 2	If CP11 = ON: FAN	Dehumidify	

Selection of devices and sensors

External temperature sensors: Use only our approved NTC sensors to achieve maximum accuracy. Recommended is SDB-Tn10-15 as duct sensor and SOA-Tn10 as outdoor sensor.

Binary auxiliary devices: E.g. humidifiers, de-humidifiers and fans. Do not directly connect devices that exceed 2(1.2) A.

Observe startup current on inductive loads!

Mounting and installation

Mount the controller on an interior wall, approx. 1.5 m (4.5 ft) above the floor, in a place with average room temperature and humidity. Avoid direct sunlight, heat and moisture sources, doors, outside walls and air outlets.

Mount and connect the controller as shown in the installation sheet supplied with the device, and wire it according to the wiring diagram above.

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