

OPU2-(2TH)-VC Operation terminal for TCX2-Series Controller

Features

- Remote access to controller state, setpoints, inputs and outputs
- Access to time schedule and clock settings
- Access to configuration parameters
- RS485 peer to peer communication according to proprietary protocol
- The terminal adapts itself to the TCX2 controller used. One terminal thus fits all the configuration variations of the TCX2 product range.
- Internal temperature sensor
- Internal humidity sensor (H version) with AES3-HT-A3 for example
- OPU2-2T(H)-VC version with one passive and one active input

Applications

- Configuration and operation of TCX2 controllers
- Remote supervision (RS485)

General Description

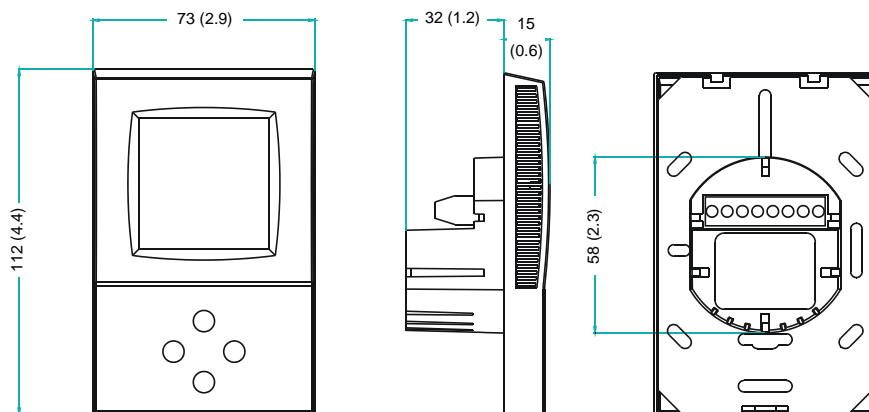
The OPU2-(2TH)-VC is a remote display and operation terminal for TCX2 series controllers.

Ordering

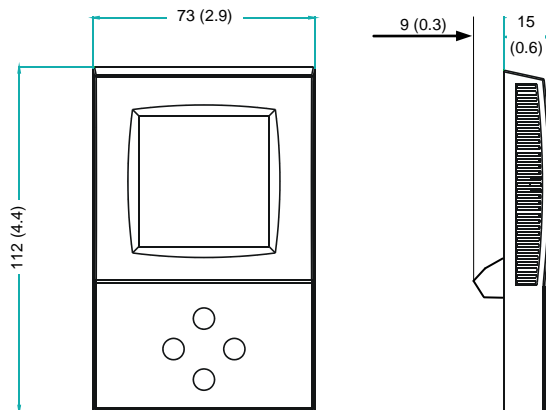
Item Name	Item Code	Option	Description
OPU2-T-VC	40-50-0100	Flat surface mount	Operation terminal for TCX2-type controller with peer to peer RS485 communication and internal temperature sensor.
OPU2-TH-VC	40-50-0101	+ humidity sensor, Flat surface mounted	
OPU2-2T-VC	40-50-0024	+ 1 open contact or NTC and 1 VDC input	
OPU2-2TH-VC	40-50-0025	+ 1 open contact or NTC and 1 VDC input + humidity sensor	



Dimensions [mm] (in) OPU2-2T(H)-VC




Dimensions [mm] (in) OPU2-T(H)-VC

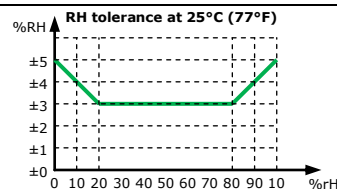


Technical Specification

Important notice and safety advice

This device is for use as operating controls. It is not a safety device! Where a device failure endangers human life and/or property, it is the responsibility of the client, installer and system designer to add additional safety devices to prevent a system failure caused by such a device failure. Ignoring specifications and local regulations may cause equipment damage and endangers life and property. Tampering with the device and misapplication will void warranty.

Power Supply	Operating voltage	12-30VDC
	Power consumption	Max. 1VA
	Electrical Connection	Terminal Connectors, wire 0.34...2.5 mm ² (AWG 24...12)
Inputs	Internal temperature Range	0...50 °C (32...122 °F)
	Accuracy	0.5 K
	Humidity Sensor:	Capacity sensor
	Range	0...100 % RH
	Measuring Accuracy	See Figure to the right
	Hysteresis	± 1%
	Repeatability	± 0.1%
	Stability	< 0.5% / year
	Passive inputs: only for OPU2-2T(H)-VC	X1, X2
	Range	Open contact to GND
Communication	Hardware interface	RS485 in accordance with EIA/TIA 485
	Cabling	Shielded Twisted Pair (STP).
	Impedance	balanced 100 to 120 ohm
	Nominal capacitance	50 pF/m 16pF/ft or lower
Environment	Nominal velocity	65% or higher
	Operation	To IEC 721-3-3
	Climatic Conditions	class 3 K5
	Temperature	0...50 °C (32...122 °F)
	Humidity	<95 % r.H. non-condensing
	Transport & Storage	To IEC 721-3-2 and IEC 721-3-1
	Climatic Conditions	class 3 K3 and class 1 K3
	Temperature	-25...70 °C (-13...158 °F)
	Humidity	<95 % r.H. non-condensing
	Mechanical Conditions	class 2M2
Standards	 conformity	2004/108/EC
	EMC directive	2006/95/EC
	Low voltage directive	
	Product standards	
	Automatic electrical controls for household and similar use	EN 60 730 -1
	Pollution Class	Normal acc. to EN 60 730
	Degree of Protection	IP30 to EN 60 529
	Safety Class	III
	Dimensions (H x W x D)	Front part: 112 x 73 x 15 mm (4.4" x 2.9" x 0.6") Back part: only for OPU2-2T(H)-VC : ø 58 x 32 mm (ø 2.3" x 1.3") only for OPU2-T(H)-VC: 20 x 15 x 9 mm (0.8 x 0.6 x 0.3)
	Housing Material	Fire proof ABS plastic
General	Mounting Plate	Zinc coated steel
	Standard Color	White RAL 9003
	Weight (inc. package) OPU2-2T(H)-VC	250 g (8.8 oz)
	Weight (inc. package) OPU2-T(H)-VC	188.6 g (6.65 oz)



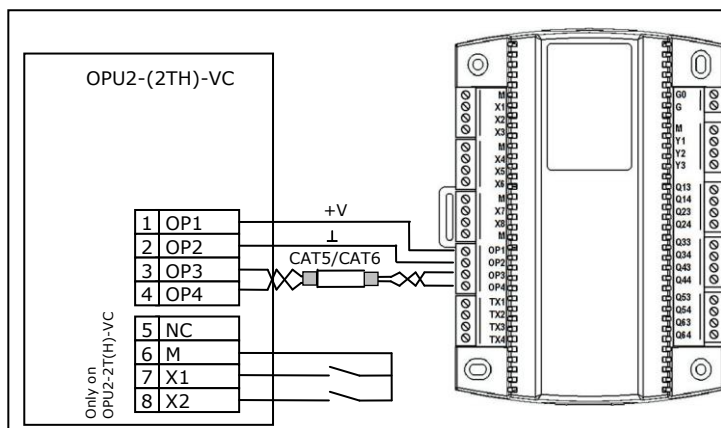
Connection Diagram

Description

OP1-OP4 Connection to TCX2 controller via RS485

Only on OPU2-2T(H)-VC:

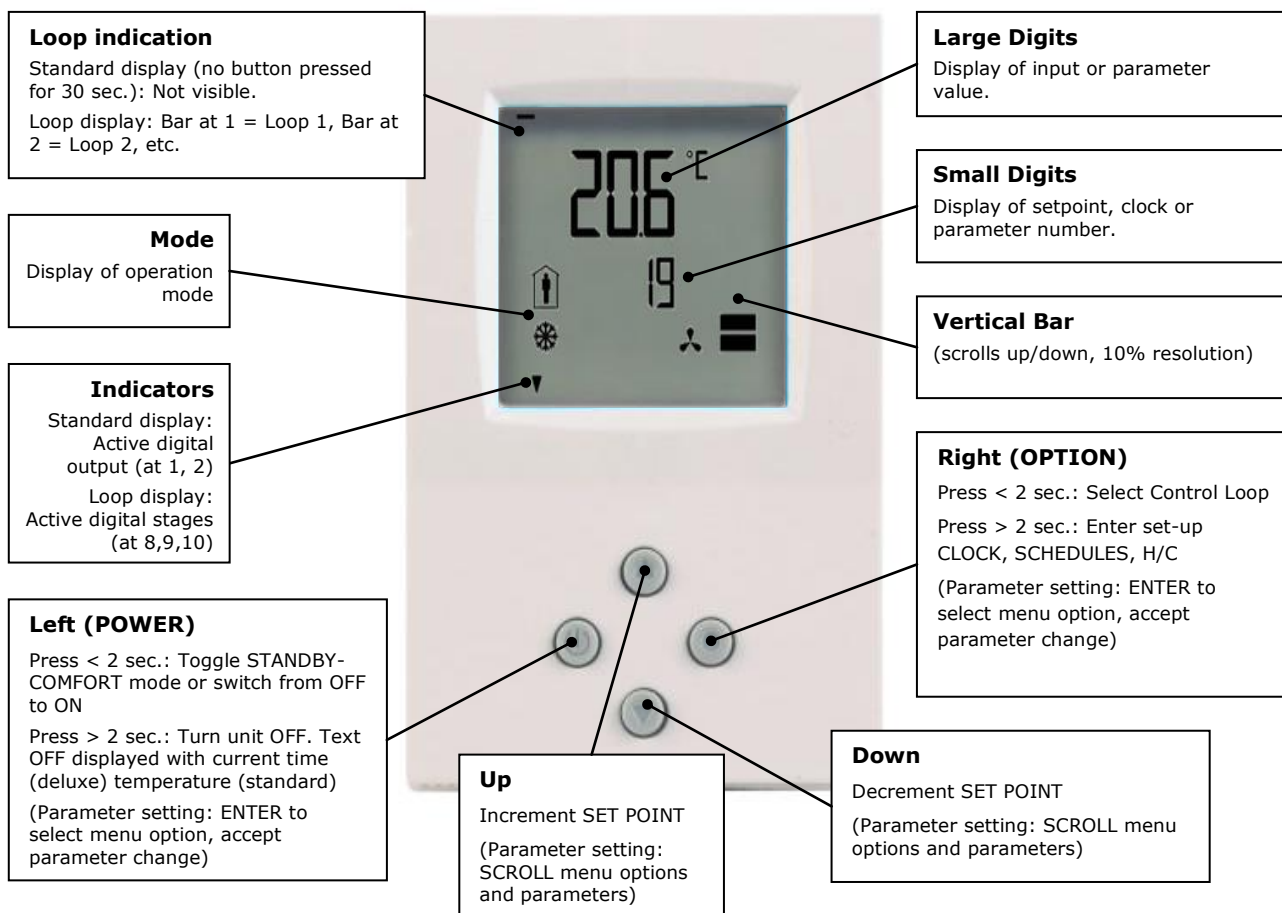
- NC Do not connect
- M Common for potential free contacts
- X1 Passive input for dry contact. VI3
- X2 Passive input for dry contact. VI4










Installation

See installation sheet no. 70-000659 for OPU2-2T(H)-VC and 70-000542 for OPU2-TH-VC (www.vectorcontrols.com).

Display and Operation



Operation modes		Control symbols	
	Occupied: (Comfort) All control functions operating per set points.		Heating (reverse) active
	Unoccupied: (Standby, Economy) If enabled, alternative setpoints are used with the intention to reduce energy consumption.		Cooling (direct) active
OFF	OFF: (Energy Hold Off, EHO) Normal control functions are inactive, inputs are monitored for alarms.		Schedule set
			Manual override, delay on enable function
			Fan active

Idle display

- The idle display is activated when no key has been pressed for 30 seconds.
- The contents of the idle display are selectable through parameters UP08 to UP14.
- Setting UP08 to OFF will disable idle display. Last active control loop or manual output will remain displayed.

Display of control loop

- Active when changing set points. Large digits show input value. Small digits show set point. Horizontal bars top left show which loop is being displayed.

Override of secondary set point in cascade control

- If cascade control is active (with VAV for example) the user can override the primary loop and manually select the set point of the secondary loop (the loop is then changed to constant air volume mode). This function is helpful for tuning the VAV system. This feature may be disabled by setting UP02 to OFF.
- While the secondary loop is displayed change the set point with UP/DOWN. The hand symbol appears.
- Change setpoint again to cancel cascade override. The hand symbol disappears.

Delay on enable function

- During a pending delay the hand symbol will be shown. For example the condition to activate the controller with 1FU is met, but a startup delay is specified. The controller will remain switched off and show the hand symbol until the delay expired.

Error messages

Err1: Communication error

Additional error messages depend on the connected controller and its firmware version. Please use controller manual for further instructions.

Accessing advanced operation modes and user settings

The actual settings and their interpretation depend on the connected controller and its installed firmware version. Please refer to the documentation of that controller for further details.