OPA2-2T(H)-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) or with AES4-HT-A3 for example
- OPA2-2T(H)-VC version with two passive inputs for either open contact or passive temperature with Sxx-Tn10 type sensors.

Applications

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

General description

The OPA2-2T(H)-VC is a remote display and operation terminal for TCX2 series controllers.

Ordering

Item Name	Item Code	Description/Option
OPA2-VC	40-50-0007	Operation terminal for TCX2-type controller with peer to peer RS485 communication and internal temperature sensor
OPA2-2T-VC	40-50-0047	As above with 2 passive inputs
OPA2-2TH-VC	40-50-0023	As above with internal humidity sensor

Sensor element (for replacement only)

Product Name	Product No.	Humidity Accuracy [%RH]	Temperature Accuracy [K] @25°C (77°F)	Description/Option
AES4-HT-A2	40-500153	2%	± 0.3°	Humidity sensor element
AES4-HT-A3 *	40-500152	3%	± 0.4°	

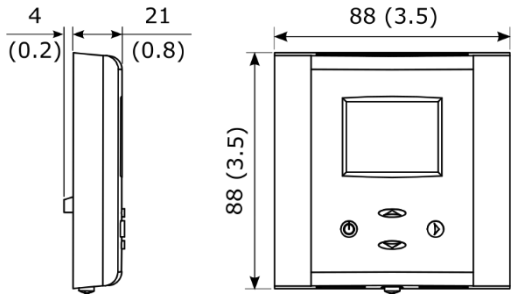
Mounting location

- Install the operation terminal on an easy accessible interior wall, approx. 1.5 m above the floor in an area of average temperature.
- Avoid direct sunlight or other heat sources, e.g. the area above radiators and heat emitting equipment.
- Avoid locations behind doors, outside walls and below or above air discharge grills and diffusers.
- Location of mounting is less critical if external temperature sensors are used.

Installation

See installation sheet no. 70-000377 (www.vectorcontols.com).

Dimensions mm (in)



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.

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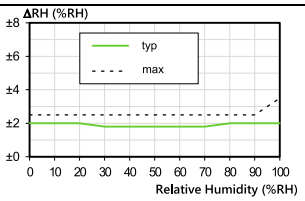
Technical specification

Power supply	Operating voltage	12-30 VDC, 10-26 VAC
	Power consumption	Max 1 VA
	Electrical connection	Terminal connectors, wire 0.34…2.5 mm² (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	X1, X2
	Range	Open contact to GND or Temperature NTC 10kΩ@25°C (77°F)
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
	Nominal velocity	65% or higher
Environment	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	Pollution class	Normal acc. to EN 60 730
	Degree of protection	IP30 to EN 60 529
	Safety class	III
General	Dimensions (H x W x D)	88 x 88 x 21 mm (3.5” x 3.5” x 0.8”)
	Housing material	Fire proof ABS plastic
	Mounting plate	Zinc coated steel
	Standard color	White RAL 9003
	Weight (including package)	180 g (6.5 oz)



Product testing and certification

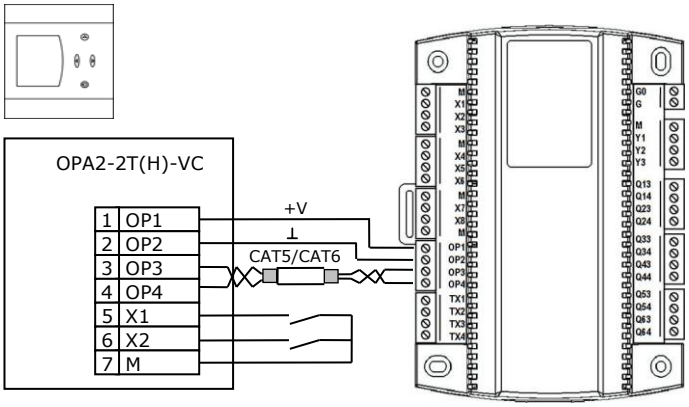
CE Declaration of conformity

Information about the conformity of our products can be found on our website www.vectorcontrols.com on the corresponding product page under "Downloads"

Connection diagram

Description

1	OP1	V+ Power supply
2	OP2	⊥ Power supply
3	OP3	RS485
4	OP4	RS485
5	X1	Passive input VI3
6	X2	Passive input VI4
7	M	Common for inputs



Passive Input may be used as open contact or temperature sensor with NTC 10 kΩ@25°C (77°F)

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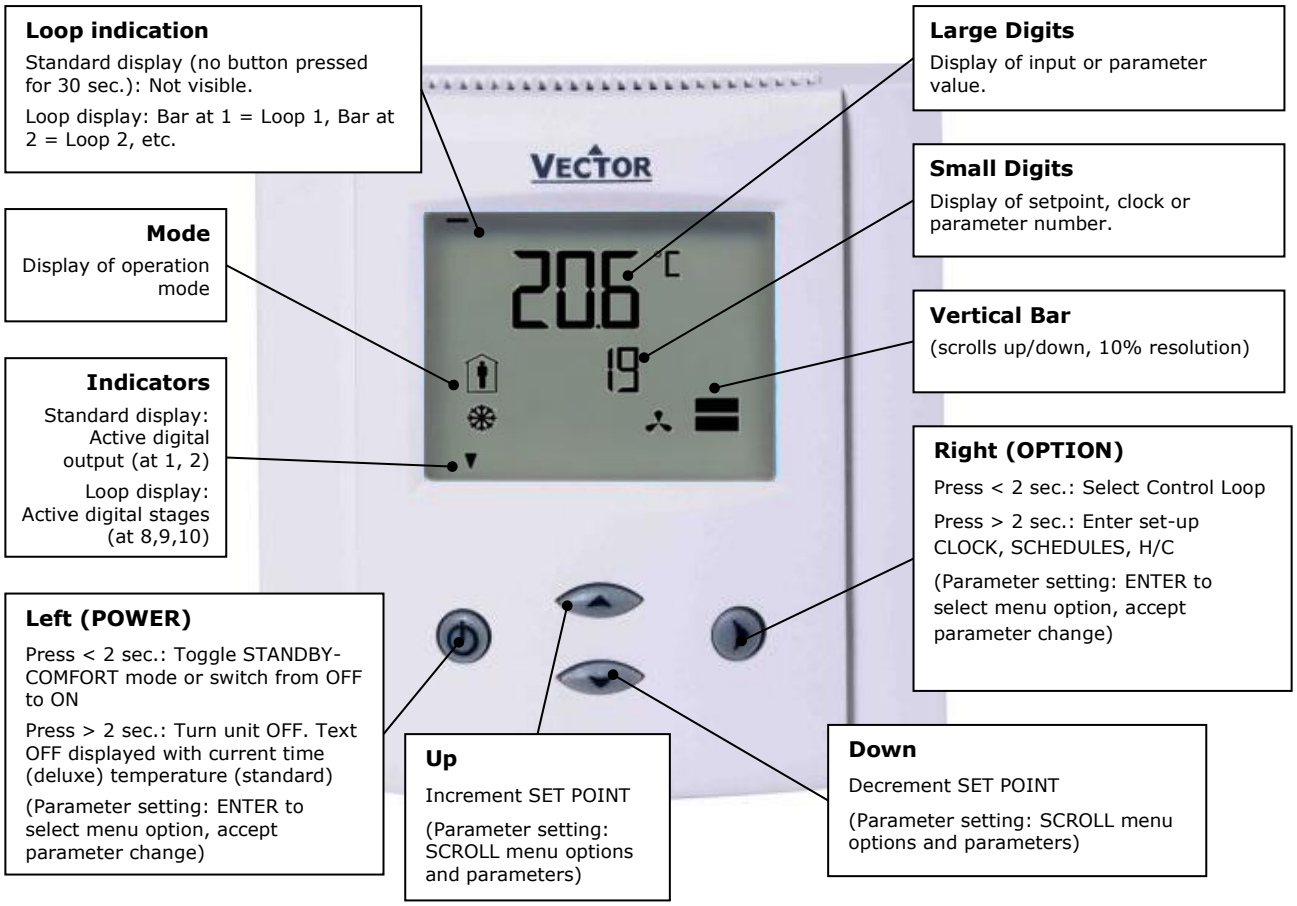
Display and Operation



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.

Operation manual

This operation terminal works with the latest generation X2 control devices. Detailed operating instructions for all devices equipped with this operating system can be downloaded here:

http://www.vectorcontrols.com/products/x2

Also available are programming instructions for technicians and an application database.

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