OPT1-FA/FU-Series
Operation terminal for TCX2, TCI2 and SxC2 controller

Features

Remote access to controller state, set points, inputs and outputs

- Resistive touch display with white backlit LCD
- Access to time schedule and clock settings
- Access to configuration parameters
- RS485 peer to peer communication according to proprietary protocol of Vector Controls GmbH
- The terminal adapts itself to the TCX2, TCI2 and SxC2 controller used. One terminal thus fits all the configuration variations of the TCX2, TCI2 and SxC2 product range.
- Internal temperature and –H version humidity sensor
- 1 passive input and 1 voltage input
- By using different frames and mounting plate, it is possible to mount this device to most of the existing flush mounted electrical connection boxes

OPT1-FU-

OPT1-FA-

Applications

- Configuration and operation of TCX2, TCI2 and SxC2 controllers
- Remote supervision (RS485)

General description

The OPT1-Fx-(H)TNV-VC is a remote display and operation terminal for TCX2, TCI2 and SxC2 series controllers.

Types and Ordering

Product name	Product No.	Description/option
OPT1-FA-TNV-VC	40-50-0136	Operation terminal for TCX2, TCI2 and SxC2 controller with peer-to-peer RS485 communication and 1 internal temperature sensor, 1 external passive and 1 voltage input with AMM-AD-W package (square frame and mounting plate)
OPT1-FA-HTNV-VC	40-50-0135	Operation terminal for TCX2, TCI2 and SxC2 controller with peer-to-peer RS485 communication and 1 internal temperature and humidity sensor, 1 external passive and 1 voltage input with AMM-AD-W package (square frame and mounting plate)
OPT1-FU-TNV-VC	40-50-0116	Operation terminal for TCX2, TCI2 and SxC2 controller with peer-to-peer RS485 communication and 1 internal temperature sensor, 1 external passive and 1 voltage input with AMM-UD-W package (rectangular frame and mounting plate)
OPT1-FU-HTNV-VC	40-50-0137	Operation terminal for TCX2, TCI2 and SxC2 controller with peer-to-peer RS485 communication and 1 internal temperature and humidity sensor, 1 external passive and 1 voltage input with AMM-UD-W package (rectangular frame and mounting plate)
Accessories		
AMM-AD-W	40-51-0089	Frame and mounting plate for square connection box
AMM-UD-W	40-51-0090	Frame and mounting plate for rectangular connection box
AES4-HT-A2	40-50-0153	Sensor element accuracy RH ± 2 %, temperature ± 0.3 °C
AES4-HT-A3	40-50-0152	Sensor element accuracy RH ± 3 %, temperature ± 0.4 °C

Safety

DANGER! 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.

Technical specification

Power supply	Operating voltage	12-30 VDC
	Power consumption	Max. 1 VA
	Electrical connection	Terminal connectors, wire 0.34…2.5 mm² (AWG 24…12)
Inputs	Temperature sensor Accuracy	NTC 10kΩ @ 25 °C (77°F) 0…50 °C (32…122 °F): 0.5 K
	Humidity sensor: Measuring accuracy Hysteresis Repeatability Stability	Capacitive sensor See figure 1 below ± 1% ± 0.1% < 0.5% / year
	Passive inputs Range	X1-NTC NTC 10kΩ@25 °C (77 °F) or open contact to M
	Analog input Range Resolution Impedance	X2-VDC 0…10 VDC 39 mV 98 kΩ
Communication	Communication type Protocol	RS485, peer to peer, VCPP: Vector Controls Proprietary Protocol
	Cabling acc. to EIA-485 Impedance Nominal capacitance Nominal velocity Maximum length	Shielded Twisted Pair (STP) balanced 100 to 130 ohm <100 pF/m 30 pF/ft. or lower 65% or higher 1200 m (4000 ft)
Environment	Operation Climatic conditions Temperature Humidity	To IEC 721-3-3 class 3 K5 0…50 °C (32…122 °F) <95 % RH 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…75 °C (-13…167 °F) <95 % RH non-condensing class 2M2
Standards	CE conform according to EMC Standard 89/336/EEC EMEI Standard 73/23/EEC	EN 61 000-6-1/ EN 61 000-6-3
	Product standards Automatic electrical controls for household and similar use Special requirement on temperature dependent controls	 EN 60 730 –1 EN 60 730 – 2 – 9
	Pollution class	Normal acc. to EN 60 730
	Degree of protection	IP30 to EN 60 529
	Safety class	III
General	Housing material:	Fire proof PC + ABS plastic (UL94 class V-0)
	Dimensions (H x W x D)	Front part: 60 x 60 x 13 mm (2.4” x 2.4” x 0.5”) Power case: 50 x 50 x 31 mm (2.0” x 2.0” x 1.2”) AMM-AD-W/OPT1-FA-: 88 x 88 x 8 mm (3.5” x 3.5” x 0.3”) AMM-ED-W/OPT1-FU-: 72 x 113 x 8 mm(2.8” x 4.4” x 0.3”)
	Weight (incl. packaging)	OPT1-F-: 105 g (3.7 oz) OPT1-FA / OPT1-FU-: 120 g (4.2 oz)

Accuracy of relative humidity sensor (RH)

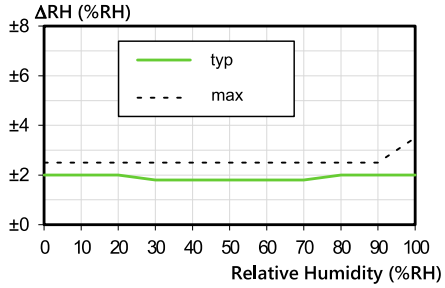
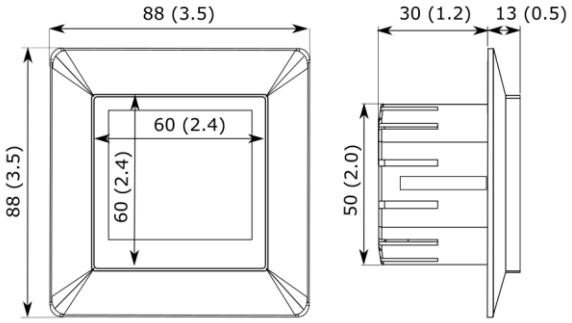
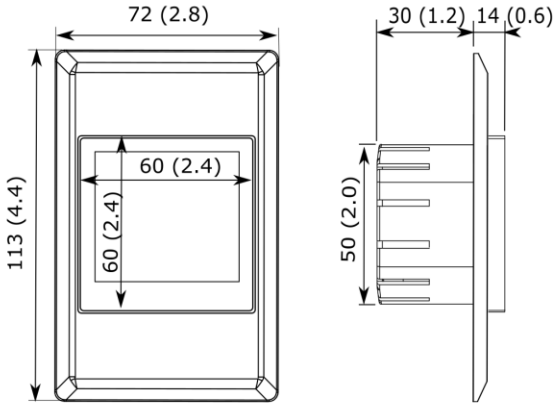


Figure 1: Typical and maximal RH-Accuracy at 25°C (77°F)

Dimensions OPT1-FA mm (in)



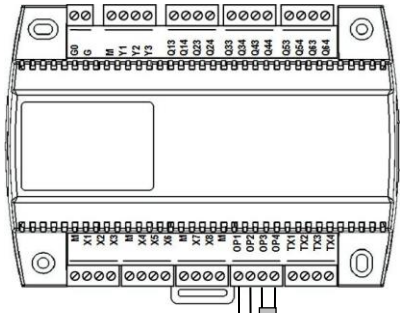
Dimensions OPT1-FU mm (in)

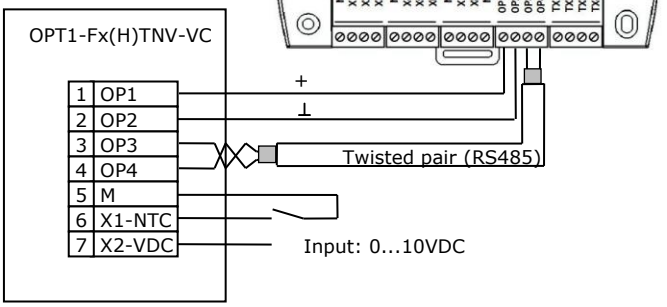


Mounting and Installation instructions

For details see "OPT1-FA/FU-(H)TNV-VC" install sheet, no. 70-00-0722 or "OPT1-FU-(H)TNV-VC" install sheet, no. 70-00-0714 on our website www.vectorcontrols.com.

Connection diagram





Description

OP1-OP4	Connection to TCX2, TCI2 and SxC2 controller via RS485
M	Common for potential free contacts
X1-NTC	Passive input: NTC 10kΩ@25 °C (77 °F) or dry contact: open 100%, close 0%
X2-VDC	Voltage input: Voltage input for active sensor 0...10VDC

Display and Operation

For information on how to operate the terminal see document "X2 operations manual touch displays", no. 70-00-0951 on our website www.vectorcontrols.com.

More detailed information on the X2 functions can be found in the "X2 Engineering Manual" document no. 70-00-0737 on our website www.vectorcontrols.com.

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