

# CTD02E: FULL CONTROLLER USB & ETHERNET



Figure 1 : Controller CTD02E

## 1. Product Description

The controller supplies the necessary power and data via a 2-wire bus to all the connected modules. It should preferably be placed in a dry, slightly heated room and there should be sufficient distance between the controller and interfering sources such as contactors and transformers. The distribution cabinet should be adequately ventilated.

The power is delivered via a stabilized 18Vdc/2A power supply (included). In case of a voltage cut-off a built-in back up memory will save all data for a minimum of 10 years.

The CTD02E has two bus connections that each can supply 500mA at 13.8V and have thermal protection. When connecting the modules, polarity is not important. On average about 35 modules can be connected to each bus on the CTD02E. Power consumption per module :

- switches : 10mA (Tastu 20mA)
- output modules : 10mA
- ViZiR Room Controller : 30mA
- DIN-rail input modules : 10mA
- Input modules on bus: 10mA
- CO2 detector: 50mA
- touch screen 5.8" :  
150mA without external power supply  
10mA with external power supply

Before energizing the controller first check the bus for short circuits and make sure the insulation resistance to the ground is adequate. When switching on the controller a test procedure of 3 seconds will be performed. Avoid quickly switching the supply on and off. The minimum waiting time between on and off is 5secs.

A Qbus Controller is only limited in terms of the power it can supply through the bus – in case of the CTD02E this is 500mA for each bus which means about 35 modules can be connected to each bus. Besides the power limitation, a Qbus controller can control up to 388 available addresses. Dependent upon the output mode, one or more addresses are used per output:

- 1 relay controlled light point = 1 address
- 1 dimmer controlled light point = 2 addresses
- 1 shutter up = 1 address
- 1 shutter down = 1 address
- 1 thermostat output = 4 addresses

Furthermore it can process 92 scenes and 126 clock times. Each clock-time can be used for a maximum of 17 outputs in a week program. Analogue logical functions (x, / , + , - , < , > , = ), on-line operation, simulation, ... are built into the controller as standard option.

The CTD02E has a USB port and an Ethernet port through which the controller can be connected to a computer or to a network.

The CTD02E comes with an 8 GB SD Card. The SD Card is the main memory of the Qbus installation that stores the system configuration and that can log the events that happened on the system. Up to 10 different system configurations can be stored on the SD Card. Different configurations can also reside on different SD Cards – when an SD Card is replaced in the CTD02E, the new configuration will be executed automatically.

## 2. Safety Instructions

Read the complete manual before carrying out the installation and activating the system.

### WARNING

- The device must be mounted and commissioned by an authorized electrician in accordance with the country-specific regulations.
- This device is exclusively suitable for DIN-rail mounting EN 50022. It must be mounted in a closed distribution board.
- A safety disconnection of the device must be possible. Before carrying out the installation the CTD02E should be de-energized.
- The device must not be opened – all warranty provisions will expire when the device has been opened.

As a safety measure, the controller will automatically shut down in case the switching power supply regulator

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reaches 100 degrees Celsius. After cooling down the controller will start up again automatically.

**BEFORE WORKING ON THE DEVICE DISCONNECT THE SUPPLY VOLTAGE.**

## LED INDICATION ④ :

**Remark: led indication is purely indicative; all ranges mentioned below have a tolerance of  $\pm 5\%$**

- Power supply voltage indication LED. This will be GREEN if input voltage is between 16V and 20V, ORANGE if input voltage is  $>20V$  or RED if input voltage is  $<16V$ .

- Heat sink temperature indication. This will be GREEN if temperature is  $<60^{\circ}C$ ; ORANGE if temperature is between  $60^{\circ}C$  and  $70^{\circ}C$  or RED if temperature is  $>70^{\circ}C$ .

- Bus voltage LED indication. This will be GREEN if bus voltage is between 12V and 14.4V; ORANGE if bus voltage is  $>14V$  or RED if bus voltage is  $<12V$ .

- Bus current LED indication. This will be GREEN if bus current is  $<450mA$ ; ORANGE if bus current is between 450mA and 550mA or RED if bus current is  $>550mA$ .

- Bus communication LED: will be GREEN when there is a transmission to the bus, RED if it is receiving from the bus.

- UART communication LED: will be GREEN when the microprocessor is reading from the SD memory and RED when it is writing in the SD memory.

## 3. Mounting and wiring

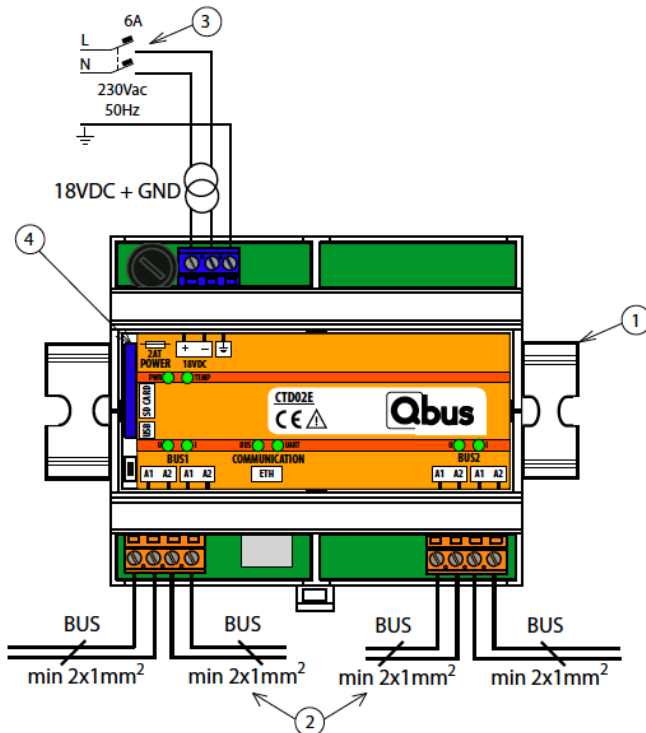


Figure 2 : Connection controller CTD02E

### FITTING ①:

Snap device onto DIN rail to DIN EN 50022.

### BUS WIRING ② :

It is recommended to use the Qbus cable or any other cable with minimum 2 x 1mm<sup>2</sup> conductors as a bus lead. The green protected EIB wire is also allowed when the conductors are guided per 2 in order to obtain a section of minimum 2 x 1mm<sup>2</sup>.

**IMPORTANT : THE BUS CABLE SHOULD BE SHIELDED AND GROUNDED! THE GROUNDING SHOULD BE CONNECTED TO THE OVERALL GROUNDING OF THE BUILDING.**

### POWER SUPPLY ③ :

The power is delivered via a stabilized 18Vdc/2A power supply (DIN rail mounting - included). A bipolar automatic fuse of a maximum of 6A must be placed on the mains power.

Conductor cross section : maximum 1,5mm<sup>2</sup>.

Remove approx 7mm of insulation from the wire and screw it into the terminals POWER.

**WARNING :**

## 4. Technical Data

### GENERAL SPECIFICATIONS :

- Power supply : 230Vac  $\pm 10\%$ , 50 Hz - maximum protection 6A/2P
- Power supply controller : stabilized 18Vdc/2A
- Characteristic consumption : 2VA, no bus load
- SD Card 8 GB
- Ambient temperature :  
Working temp. range :  $10^{\circ}C$  to  $50^{\circ}C$   
Storage temp. range :  $-10^{\circ}C$  to  $60^{\circ}C$
- Maximum humidity : 93%, no moisture condensation
- Internal fuse : 1AF
- Max installation altitude : 2.000m

### OUTPUTS :

- Bus output : 2x 500mA/13,8Vdc
- USB connector
- Ethernet: RJ45 connector

### PHYSICAL SPECIFICATIONS

- Housing : Plastic, self-extinguishing acc. to UL94-V0
- Protection Degree : IP20, EN 60529
- Installation : rapid mounting on DIN-RAIL, width 6 modules

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- Dimensions (HxWxL) : 62mm x 90mm x 107mm
- Weight : approx. 0.295 kg

## ELECTRICAL SAFETY

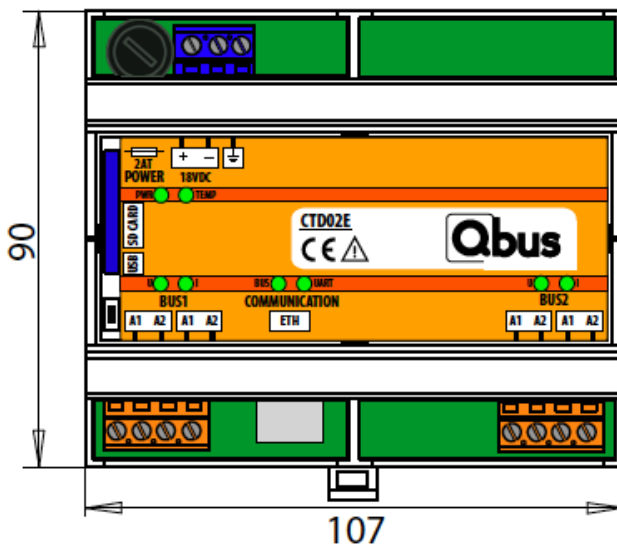
- Bus : 13,8VDC safety extra low voltage (according EN 60950 – 1 : 2006)
- Non-toxic WEEE/ RoHS compliant

## CE

- Complies with the EMC regulations and low voltage regulations. The device complies with HBES – EN 50090-2-2 and EN 60950 – 1 : 2006.

## 5. Dimension Diagram

Dimensions in mm.



Width = 6 modules.  
1 Module = 17mm.

## 6. Guarantee provisions

Period of guarantee : 4 years from date of delivery.  
Any faulty devices should be send postage-free with a description of the defect to our central customer service office :

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