e-Bus Display Modbus

Bus coupler with RS-485 interface and Modbus RTU protocol for e-Touch Display

Purchase reference: BD.470002-011

(EN)

Instructions sheet

e-Bus Display is a bus coupler to connect any touch display in the e-Touch Display family to an RS-485 communication bus. The equipment includes the Modbus RTU protocol to communicate with other bus equipment and it is a slave component in a Modbus network such that any master device can monitor its status and act on it through the Modbus map, using question-answer messages through a network address on the equipment.

The product can be configured with the mobile application EConfigurator, using a wireless NFC interface included on the e-Touch Display or using configuration records via the Modbus protocol.

Function description

e-Bus Display detects the e-Touch Display model that has been connected to the equipment and provides the functions corresponding to each model, either to view environmental parameters or to control a fan coil unit. Through a configuration parameter named "Operating mode", the display can be set up to work in one of the following two modes:

1. Display to view environmental parameters: Allows the user to view the temperature, humidity, pressure, CO_2 and VOC on a rotational basis, with the option of using a touch screen with or without keypad. This operating mode also allows all icons on the equipment's screen to be controlled remotely through the bus.

2. Display to manage a remote fan coil unit controller: Allows control of the status of a fan coil unit controller or a controller with combined fan coil unit and radiant floor control.

Consult the equipment's operating manual for detailed information on how the equipment works.

Communication error
If an error occurs in the RS-485 bus due to a cut in the wiring or because it is not receiving messages from a master device, the equipment will turn on the LED power indicator of the e-Touch Display.

Equipment setup

Equipment setup can be carried out through the e-Touch Display, using the EConfigurator mobile application and the wireless NFC interface included on the display. This mechanism allows the equipment to be set up without a power supply. If an incorrect setup is applied to the display, for example, for an incorrect bus coupler, an installation error will occur and the LED indicator of the On/Off key will flash quickly for 10 seconds
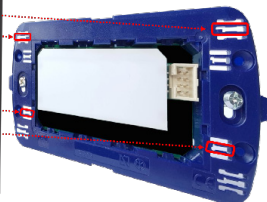
when the equipment is powered or when a key is pressed to indicate an installation error. In this case, it must be reconfigured.
The equipment can also be set up via the bus by accessing the equipment's settings map. For more information, consult the equipment's Modbus map.

Installing the product

The equipment is comprised of two components: the **e-Touch Display** display and the **e-Bus Display** bus coupler.

Assembly:
1. Ensure the equipment is not connected to the power supply.
2. Install the flush-mounted box on the wall.
3. Connect all cables on the e-Bus Display by following the indications of the installation diagram.
4. Attach the e-Bus Display to the flush-mounted box.
5. Position the e-Touch Display in line with the e-Bus Display trim, ensuring the fastening clips and connector are aligned, as shown in the image below, and then gently press until all components are fitted together.
6. Remove the transparent anti-scratch protective screen from the front.
7. Connect the equipment to the power supply and check the display switches on.
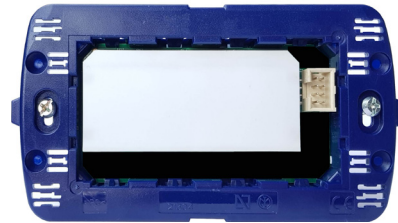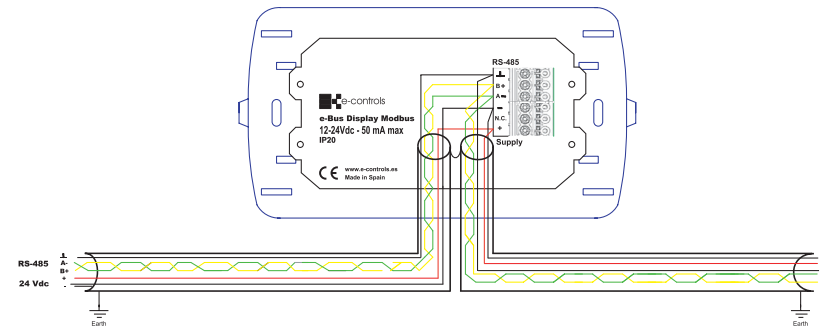
The equipment must not be installed on shelves, behind curtains, above or near heat sources, or exposed to direct solar radiation. To quickly and correctly check the room temperature, the controller must be assembled such that the air can circulate vertically. The assembly height will be approximately 1.5 metres from floor level.

Precautions:
• Before installing or uninstalling the equipment, ensure there is no power from the electrical supply in the cables to be connected or near the equipment.
• Do not cut or wind network cables to be connected to the equipment.
• Do not make connections with wet hands.
• Do not open or pierce the product.
• Keep the equipment and power cables away from moisture and dust.
• Clean the product with a wet cloth (use water).

e-Touch Display

e-Bus Display

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Installation diagram

(*) This drawing shows a functional installation diagram for the product. The installer is responsible for suitably protecting the facility and equipment comprising it in accordance with the regulations in force in each country.

Remote management of the equipment using the Modbus
The equipment includes an RS-485 communications interface through which it communicates using the Modbus RTU protocol. The equipment is a slave device within the network and it has different parameters that are used to set up the bus.
For more information on input/output records, read the "BD.470002-011- e-Bus Display Modbus - Registros Modbus V1.1.0 – DMCSP" document.

Technical specifications

Power supply
Operating voltage . . . . 12 to 24Vcc ± 20%
Maximum nominal current . . . . 50 mA

Communications
Interface RS-485
Terminals . . . . A-, B+, GND
Protocol . . . . Modbus RTU
Configurable transmission speed . . . . 1200 to 115200 Baud
Modbus configuration 8E1, 8O1, 8N1, 8N2

LCD backlight
Type . . . . LED
Colour . . . . White

Working temperature
Operation . . . . 0ºC to +50ºC (32ºF to 104ºF)
Storage . . . . -20ºC to +85ºC (-4ºF to +185ºF)

Humidity (non-condensing)
Operation . . . . 10% to 90% RH at 50ºC
Storage . . . . 95% RH at 50ºC

Mechanical installation
Installation type . . . . Recessed on wall
Flush-mounted box . . . . Bticino 504E
Recommended assembly height . . . . 1.5 m from ground

Mechanical characteristics
Dimensions (with trim) . . . . 142x86x42 mm
Weight . . . . 120 g
Removable connectors . . . . Yes
Cable cross-section . . . . .0.5 mm^2 to 2.5 mm^2
Protection level . . . . IP20 (EN 60529:1991)
Electrical safety . . . . Class III

Product family standards
Automatic electrical control devices for household and similar use . . . . EN 60730-1:2013

CE Conformity
Mark . . . . CE

Safety
Standard . . . . EN 60730-1:2013
IEC protection . . . . Class III
Environmental protection level IP20

EMC
Emissions . . . . EN 61000-6-3
Immunity . . . . EN 61000-6-3

Purchase references

e-Bus Display Modbus, Bus coupler with Modbus RTU communication for e-Touch Display BD.470002-011

Accessories (not included with product)

Flush-mounted box for brick wall recessing 504E
Flush-mounted box for plasterboard recessing PB504N
Mounting box for surface assembly AC.000030-00X

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