



E-BUS Digital Display Technical Guide

ASM07527
Software SS3025

NOTE: Display does not have onboard temperature and relative humidity sensing capabilities.



EBUS DIGITAL DISPLAY TECHNICAL GUIDE

REVISION AND DATE	CHANGE
Rev. A, June 28, 2023	Original
Rev. B, July 13, 2023	Added Note: Display does not have onboard temperature and relative humidity sensing capabilities.

EBUS DIGITAL DISPLAY PARTS REFERENCE

PART DESCRIPTION	PART NUMBER
E-BUS Digital Display	ASM07527
VCCX2 Controller	ASM01698



This manual is available for download from
www.aaon.com

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GENERAL INFORMATION

Features

Overview

The E-BUS Digital Display is used to display the active space temperature and space humidity the VCCX2 is currently using. See **Figure 1, this page.**

The E-BUS Digital Display connects to the controller using various lengths of EBUS cables.

WARNING: The E-BUS cables should not run in conduit with other AC line voltage wiring or with any conductors carrying highly inductive loads.

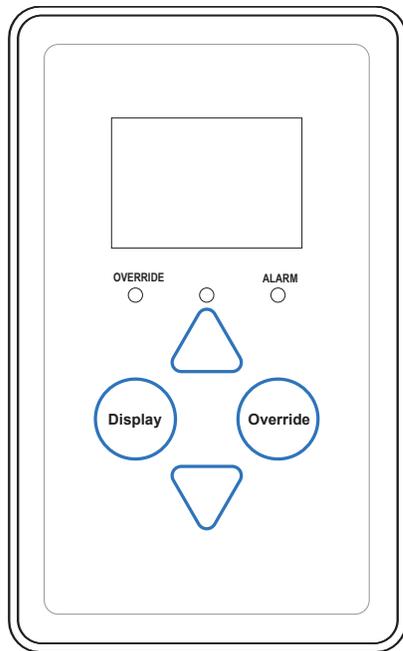


Figure 1: E-BUS Digital Display

The E-BUS Digital Display provides the following functions:

- Provides 112 x 64 monochrome graphical LCD display with LED backlight.
- Displays the current space temperature.
- Displays outdoor air temperature if controller is configured with an outdoor air temperature sensor.
- Displays the current space humidity.
- Displays outdoor air relative humidity if the controller is configured with an outdoor air humidity sensor.
- Displays the current zone setpoint temperature.
- Equipped with buttons for changing the zone setpoint temperature.
- Equipped with an override button for forcing the VCCX2 Controller into Occupied Mode.
- Provides graphics to indicate the mode of operation.
- Provides LEDs to indicate schedule override, button push, alarms, and communications.

NOTE: Display does not have onboard temperature and relative humidity sensing capabilities

MOUNTING AND WIRING

Requirements and Considerations

Environmental Requirements

The E-BUS Digital Display needs to be installed in an environment that does not exceed a temperature greater than 150°F or less than -30°F and does not exceed 95% relative humidity levels (non-condensing).

Mounting

The E-BUS Digital Display is designed to be mounted to a vertical 2" x 4" electrical box recessed in the wall. If the wall cannot be penetrated, a plastic surface mount box such as those made by Wiremold™ may be used to mount the display to the wall surface. The display should be mounted at least 5 ft. above the floor.

The display is mounted by removing the front cover and fastening the housing base to the electrical box using the supplied mounting screws. The E-BUS cable is plugged into the E-BUS connector located on the circuit board. The cover is then placed onto the housing base, and the screw on the bottom of the base is adjusted to hold the cover in place.

CAUTION: Do not touch the front face of the display while plugging in the E-BUS cable. Touching the front face of the display while plugging in the cable may prevent proper initialization and keep the buttons on the display from working properly.

Mounting Plate

A mounting plate is included with the E-BUS Digital Display. The plate screws onto the back of the housing base. The mounting plate is then mounted and covers the recessed space in the wall.

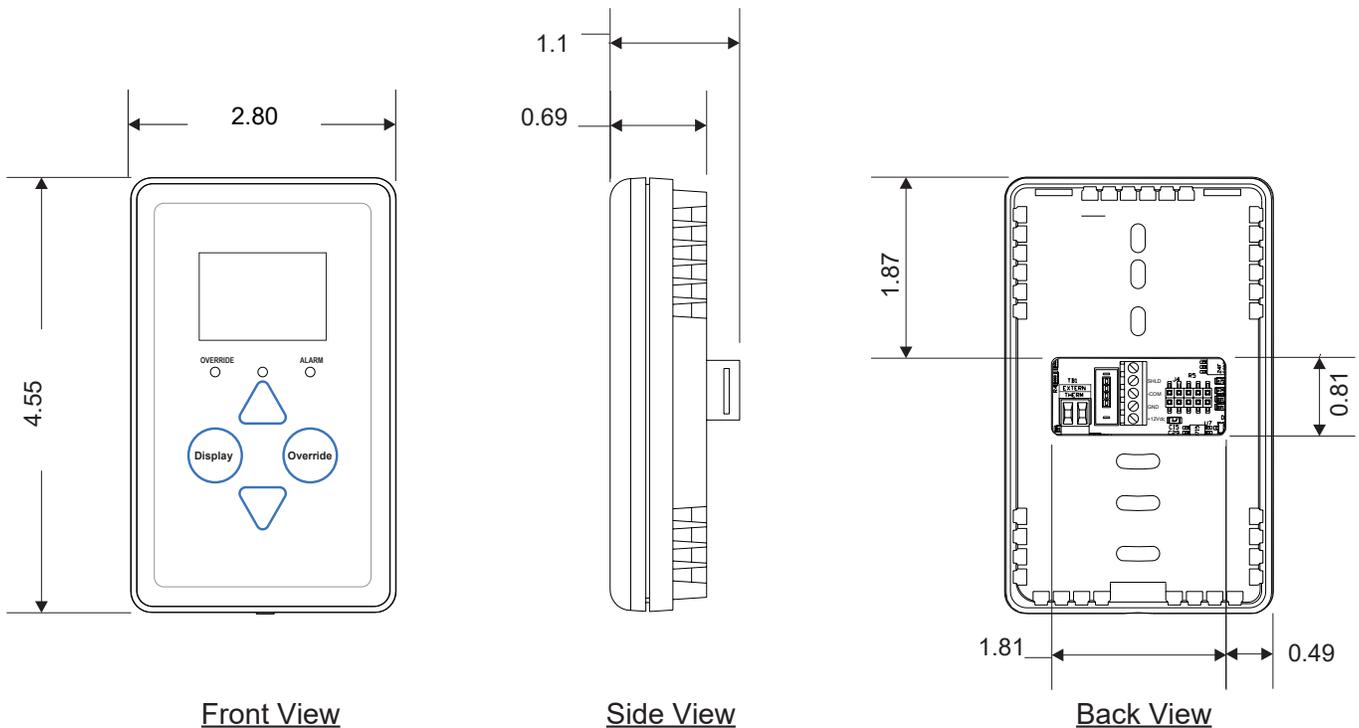


Figure 2: Dimensions

WIRING

E-BUS Digital Display to VCCX2 Controller

The E-BUS Digital Display connects directly to the VCCX2 Controller with an E-BUS cable when only the display is used.

See **Figure 3, this page**, for wiring details.

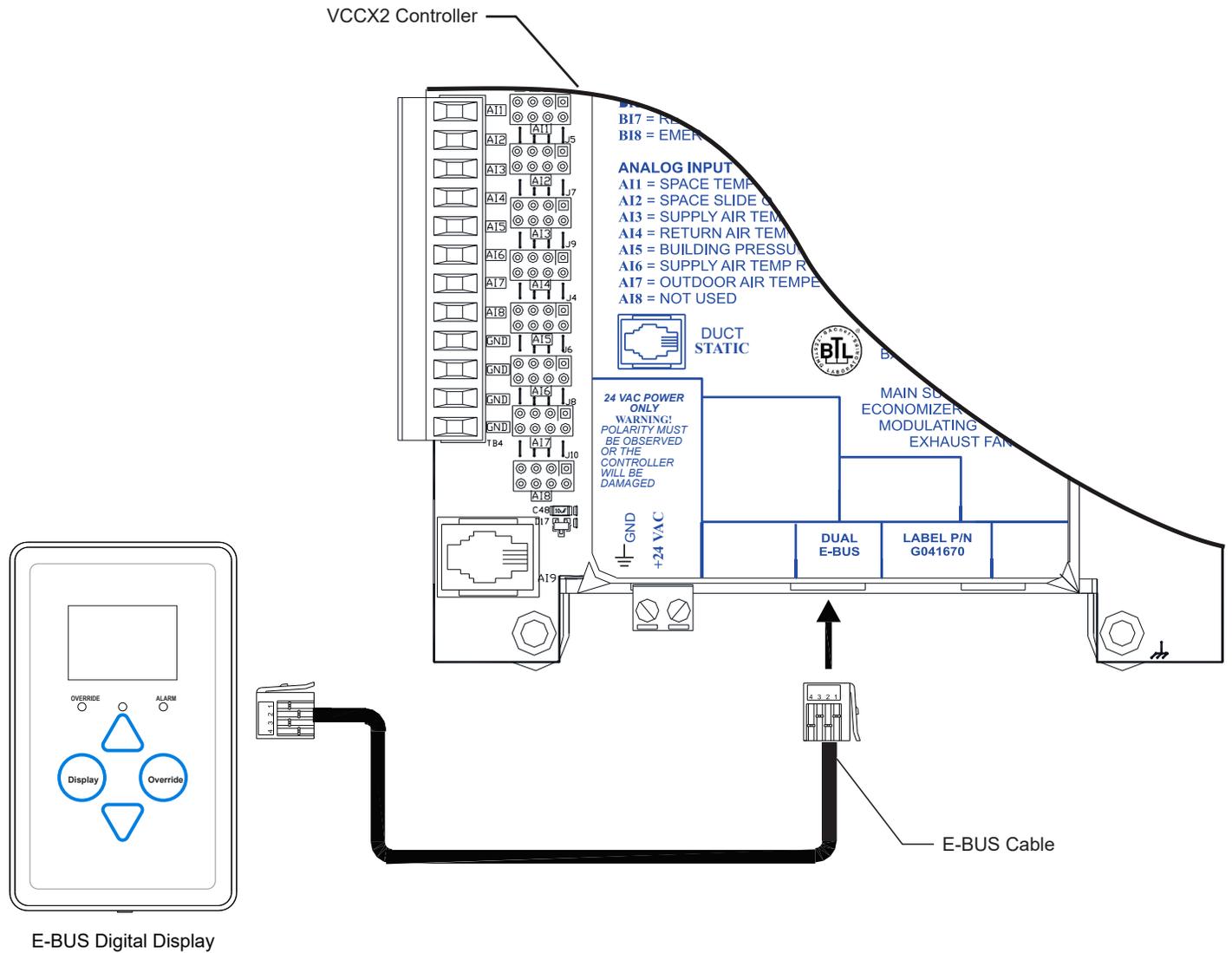


Figure 3: E-BUS Digital Display Wiring to Controller

BASIC OPERATION

Buttons and LEDs

Display Operation

When power is first applied to the E-BUS Digital Display the current space temperature, humidity, and slide offset are visible.

NOTE: The readings are not accurate until the controller the display is connected to is finished calibrating.

The display has four buttons: **<Display>**, **<Override>**, **<Up>**, and **<Down>**. Certain functions can be accessed by touching the area below the **<Display>** and **<Override>** buttons. The display has three user-visible LEDs, one to indicate an override, one to indicate an alarm, and one to indicate a button has been pressed. See **Figure 4, this page**, for LED and button descriptions.

LED Operation

Alarm LED: The Alarm LED lights up solid when there is an alarm from the controller. The default for the Alarm LED is to be disabled. The Alarm LED can be enabled by configuring the VCCX2 Controller.

Sense LED: The Sense LED blinks when the display gets a valid touch.

Override LED: The Override LED is inoperable when in Occupied Mode. In Unoccupied Mode, the Override LED blinks when the **<Override>** button is touched, indicating an override request. The controller responds by sending the unit into override. The Override LED stays on for the duration of the override. Any time the unit is in Override Mode, the override can be canceled by touching the **<Override>** button. The Override LED blinks and the unit cancels the override. The Override LED then turns off.

Comm LED: The Comm LED located on the back of the display blinks on whenever communications are sensed.

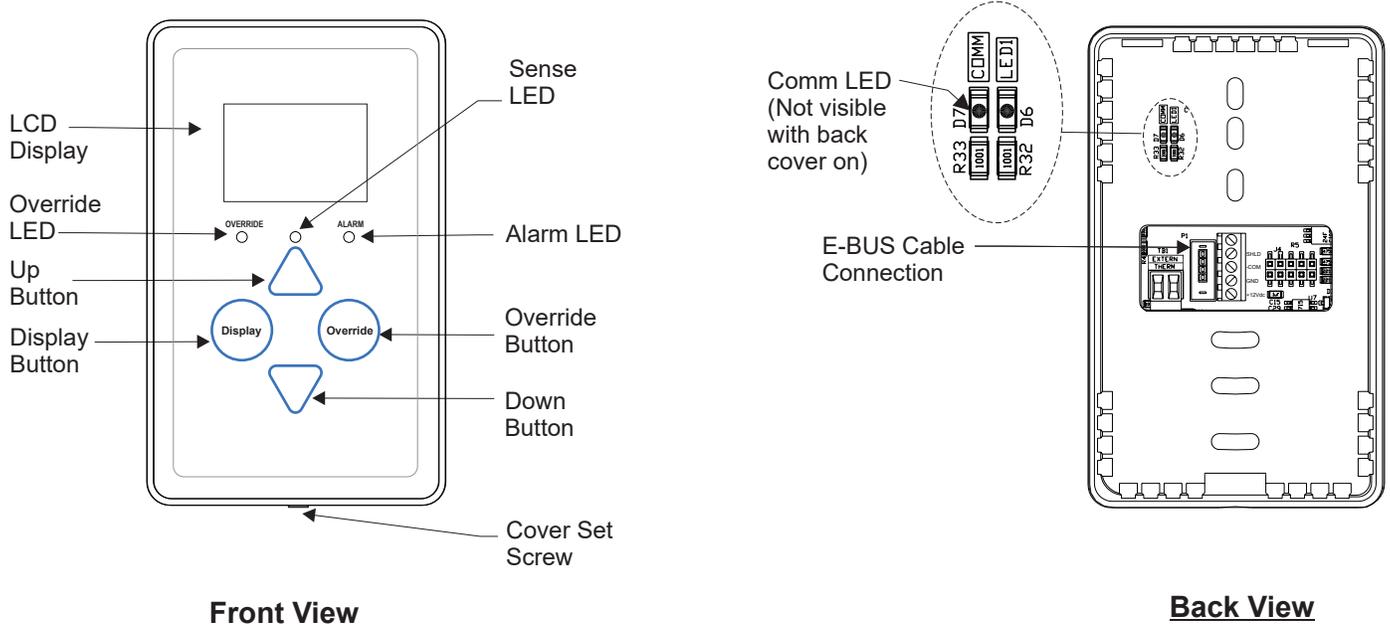


Figure 4: E-BUS Digital Display Components

DISPLAY SCREENS

LCD Display Screens

Main Display Screens

There are three main display screens. The first screen displays the current space temperature, operation mode, slide offset, and RH. The second screen displays the outdoor air temperature and/or humidity if connected to the appropriate sensor. The third screen displays the unit information for the controller connected to the E-BUS Digital Display.

Home Screen

The Home Screen displays the current space temperature, the humidity in the room, the current setting of the slide offset, and an icon for the current mode of operation once the controller it is connected to is done calibrating.

Descriptions of the displayed operation modes can be found on page 10.

Outdoor Status Screen

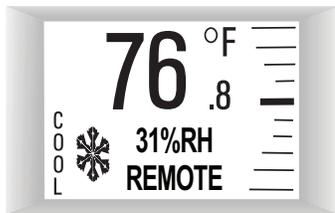


Figure 5: Home Screen

If the connected controller is receiving an outdoor air temperature and/or humidity broadcast, touching <Display> will first bring up the Outdoor Status Screen.

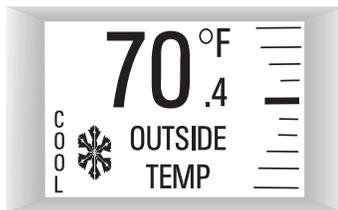


Figure 6: Outdoor Status Screen

Unit Information Screen

Touching <Display> again will bring up the Unit Information Screen which contains the unit address or ID, screen ID, and software version of the controller connected to the display.

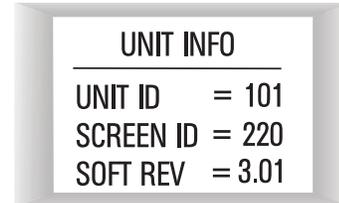


Figure 7: Unit Information Screen

Setpoint Adjust Screen

Touching <Up>, or <Down> will display the Setpoint Adjust Screen. You can adjust the cooling and heating setpoints from this screen based on the VCCX2 Controller slide offset setpoint.

For example, if the connected controller's max slide offset setpoint is set for five, you can adjust the setpoint up five degrees and down five degrees.

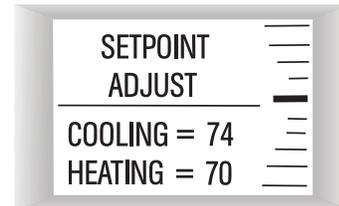


Figure 8: Setpoint Adjust Screen

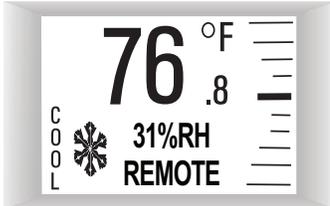
NOTE: If the VCCX2 Controller's slide offset setpoint is set to zero, this screen will not appear when you touch <Up>, or <Down>.

DISPLAY SCREENS

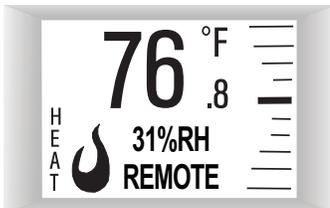
LCD Display Screens

Operation Modes

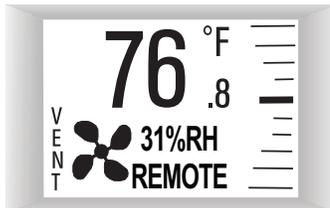
The different icons shown are a snowflake for Cooling Mode, a flame for Heating Mode, a fan in motion for Vent Mode, and a moon for Unoccupied Mode. When the unit is in Unoccupied Mode, the screen's background will turn dark.



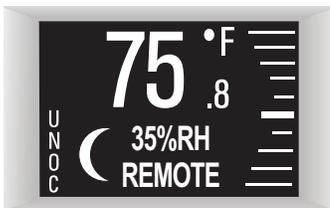
Cooling Mode
with Snowflake Icon



Heating Mode
with Flame Icon



Vent Mode
with Fan in Motion Icon



Unoccupied Mode
with Moon Icon

Figure 9: Operation Mode Screens

DISPLAY SCREENS

Configuration and Test Screens

Configuration and Test Screens

To access the Configuration and Test Screens, you first need to access the Unit Information Screen by touching **<Display>** while at the Home Screen.

NOTE: While in the Configuration and Test Screens, the **<Display>** button functions as an exit key to return to the previous screen or menu. After a few seconds, however, the display will automatically revert to the Home Screen.

While the Unit Information Screen is being displayed, you can enter the Configuration and Test Screen options by touching simultaneously below the **<Display>** and **<Override>** buttons.

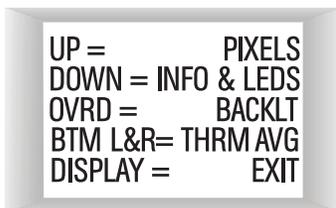


Figure 10: Configuration and Test Screen

Pixel Test Screen

Touch **<Up>** while at the Configuration and Test Screen to access the Pixel Test Screen. This tests the pixels of the LCD display, allowing you to make the screen white with black characters, black with white characters, a solid black screen, or a solid white screen. To exit this screen, touch **<Display>**.

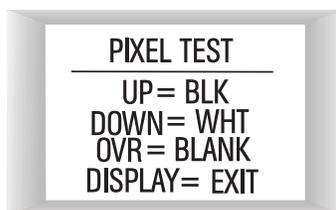


Figure 11: Pixel Test Screen

Info & LED Test Screen

Touch **<Down>** while at the Configuration and Test Screen to access the Info & LED Test Screen. This screen shows the version of software that the display is running and allows you to test the LEDs that are used on the controller. Touching **<Up>** will turn the LEDs on and touching **<Down>** will turn the LEDs off. To exit this screen, touch **<Display>**.

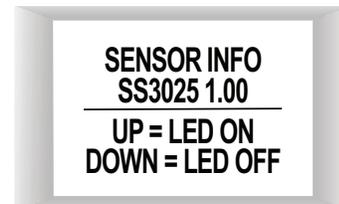


Figure 12: Info & LED Test Screen

LCD Backlight Test Screens

Touch **<Override>** while at the Configuration and Test Screen to access the Backlight Screen. This option allows you to control when the LCD backlight turns on and off. You can configure the backlight to stay on at all times, remain off at all times, or to come on when any button is touched on the display. To exit this screen, touch **<Display>**.

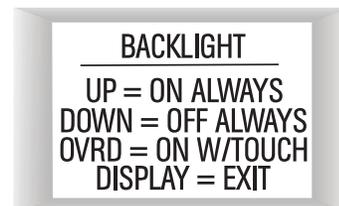


Figure 13: Backlight Screen

APPENDIX A - MOUNTING PLATE

Dimensions

Mounting Plate

Included with the Digital Display is a mounting plate that can be used, if necessary, to cover the display sheet rock opening. This mounting plate screws onto the back of the housing base. The mounting plate is then mounted and covers the recessed space in the wall. A locking screw secures the display to the wall.

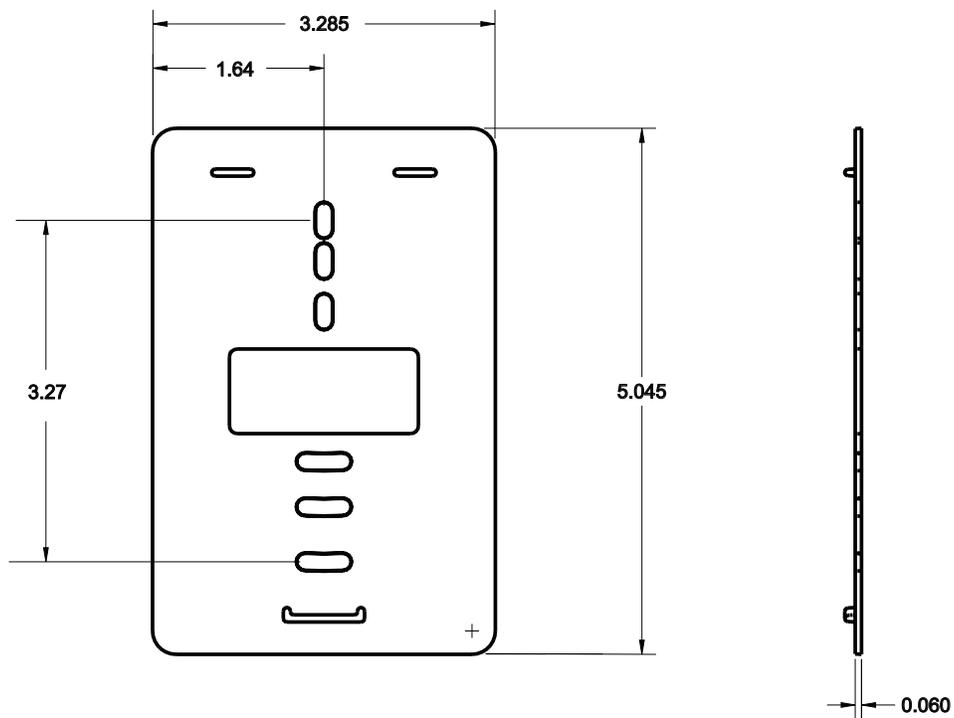


Figure 14: Mounting Plate Dimensions

E-BUS Digital Display Technical Guide

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NOTE: Before calling Technical Support, please have the model and serial number of the unit available.

PARTS: For replacement parts, please contact your local AAON Representative.



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