



Installation and User Instructions

3.2" HMI

Volume Measurement Type "EB3025/EMA605"

April 2022
Version 1.0.0

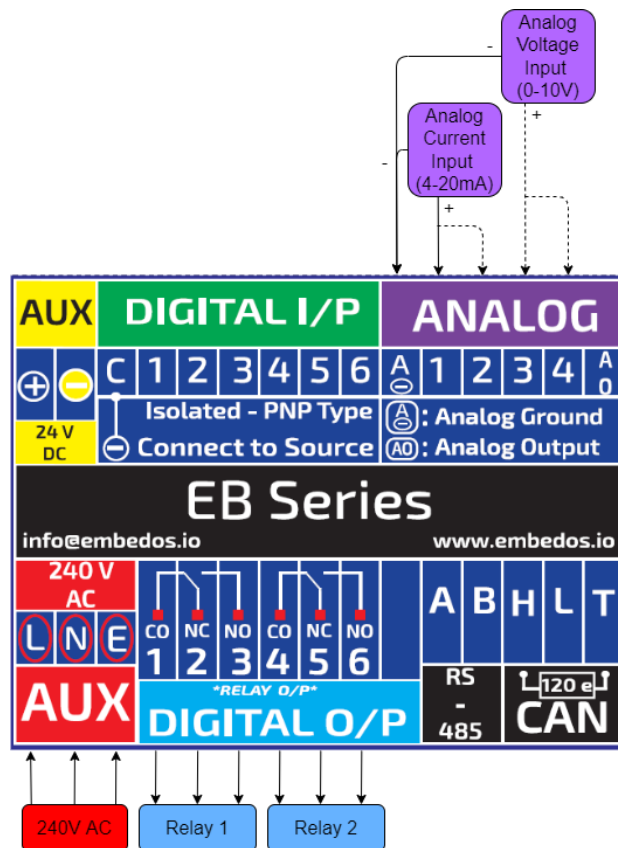
Document Revisions

Date	Version Number	Document Changes
07-04-2022	1.0	Initial Release

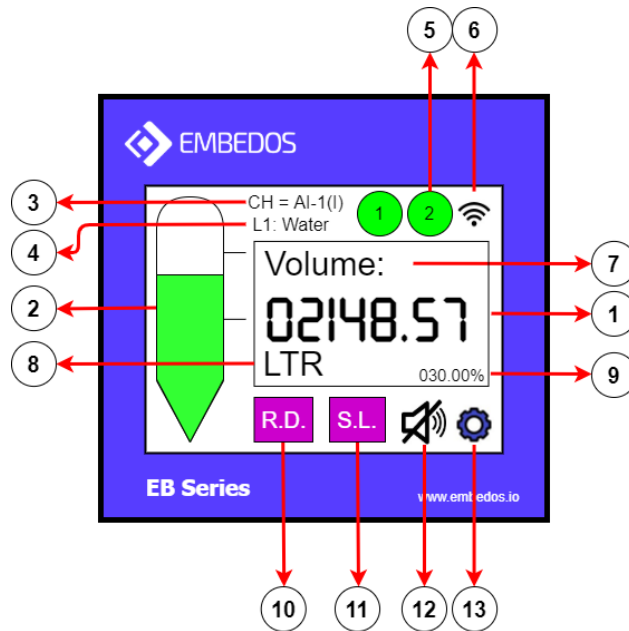
Factory Set configuration:

- Analog Current Input (4-20mA) on Analog Input channel 1 and channel 2 of device.
- Analog Voltage Input (0-10V) on Analog Input channel 3 and channel 4 of device.
- By default, Analog Input channel 1 is active. (Other channels can be active via menu)
- ADC averaging is set to 10 cycles by default.
- Relay 1 switches w.r.t. Low Setpoint.
- Relay 2 switches w.r.t. High Setpoint.
- Factory Set Wi-Fi SSID: Embedos
- Factory Set Wi-Fi Password: 0987654321 (Can be used to create a Wi-Fi AP with the same credentials to allow OTA)
- Default Menu password: 1010

Connection diagram:



Main Screen



1. **Calibrated Analog Data** – Displays the current analog data. This value is derived from the analog input (provided on AI-1/AI-2 in case of current input and AI-3/AI-4 in case of voltage input). The time in which this value updates depends upon Average Count set in Device settings in Menu multiplied by 100ms i.e., Refresh Rate = Average Count * 100ms.
2. **Volume Level Indication** - Displays the volume level of liquid filled in tank. The level is bound within cone volume and maximum tank volume which can be set via menu.
3. **Input Channel Indication** – Displays the selected analog input channel and type of input source it requires. (I – indicating 4-20mA current input, V – indicating 0-10V voltage input)
4. **Selected Liquid Indication** – Displays selected Liquid for volume measurement.
5. **Relay Output Indication** – The indicator will be green when output (relay) is off. It will turn red when output is on.
6. **Wi-Fi Indication** – Indicates whether the device is connected to network or not.
7. **Parameter Name** – Displays the parameter name on main screen. The name can be set via MENU.
8. **Parameter Unit** – Displays the parameter unit on main screen. The unit can be set via MENU.
9. **Percent Indication**– Displays the fill percent of the tank.
10. **Relative Density Button** – Tap on this button to set relative density of liquid.
11. **Select Liquid Button** – Tap on this button to select liquid of interest.
12. **Buzzer Indication/Button** – Tap on this button to enable/disable/acknowledge the buzzer. The buzzer indication will be displayed accordingly. Once the buzzer is acknowledged, it will be disabled until next setpoint is crossed.

13. **Menu Button** – Tap on this button for MENU Settings.

MENU Settings – Device Settings

Setting Analog Input Channel

1. Enter the settings menu by tapping the 'MENU' button on the touch screen.
2. Enter password and press OK.
3. Select 'Device Settings' -> 'Analog Input'
4. Select the Analog Input channel where input is to be provided.

Setting ADC averaging count

1. Enter the settings menu by tapping the 'MENU' button on the touch screen.
2. Enter password and press OK.
3. Select 'Device Settings' -> 'Average Count'
4. Enter the value for which ADC values will be averaged and then tap 'OK'

Setting MENU Password

1. Enter the settings menu by tapping the 'MENU' button on the touch screen.
2. Enter password and press OK.
3. Select 'Device Settings' -> 'Menu Password'
4. Enter the 4-Digit value starting with non-zero number and then tap 'OK'

Connecting to Wi-Fi

1. This unit supports OTA firmware updates using Wi-Fi. For this the unit can be setup to connect to an internet enabled Wi-Fi AP. Enter the settings menu by tapping the 'MENU' button on the touch screen.
2. Enter password and press OK.
3. Select the 'Device Settings' -> 'Wi-Fi Settings'
4. Enter the SSID of the AP to connect to
5. Enter the Password of AP
6. Connection to Wi-Fi is displayed on the main screen.
7. User can update Firmware whenever required after connecting to Wi-Fi.

MENU Settings – Parameter Settings

Calibrating Unit

1. Enter the settings menu by tapping the 'MENU' button on the touch screen.
2. Enter password and press OK.
3. Select 'Parameter Settings'.
4. Select 'Calibration'.
5. Three calibration options are available, which are -

Two Point: This mode requires a sensor to be connected to the unit on the selected channel. The sensor must be first set its most minimum measurable range such that its output is closest to 0.5V. User enters the value that the unit should display for this input. After tapping 'OK' on the touch screen, user raises the sensor close to its maximum measurable range such that its output is closest to 10V. User enters the value that the unit should display for this input and taps 'OK'.

Zero span: Sensor is not required for calibrating. User enters the full-scale range of the sensor on the consecutive screens. First, lowest value of sensor is entered, followed by the highest value.

Manual: User can directly modify the scale factor and offset values for finer control on calibration.

6. Calibration parameters can be observed on the configuration screen at 'MENU' -> 'View Configuration'.

Setting Tank Parameters

1. Enter the settings menu by tapping the 'MENU' button on the touch screen.
2. Enter password and press OK.
3. Select 'Parameter Settings' -> 'Tank Parameters'
4. Select Cone Volume/Max. Volume.
5. Enter the value in LTR and then tap 'OK'

Setting Setpoints to trigger output

1. Enter the settings menu by tapping the 'MENU' button on the touch screen.
2. Enter password and press OK.
3. Select 'Parameter Settings' -> 'Setpoint Settings'
4. Select Low Setpoint/High Setpoint/Hysteresis.
5. Enter the value in LTR and then tap 'OK'

Setting Parameter Name and Unit

1. Enter the settings menu by tapping the 'MENU' button on the touch screen.
2. Enter password and press OK.
3. Select 'Parameter Settings' -> 'Parameter Name and Unit'
4. Select Name/Unit.
5. Enter the name and then tap 'OK'

Setting Liquid Names

1. Enter the settings menu by tapping the 'MENU' button on the touch screen.
2. Enter password and press OK.
3. Select 'Parameter Settings' -> 'Types of Liquid'
4. Select Liquid.
5. Enter the name and then tap 'OK'

MENU Settings – View Configuration**View Current device settings:**

1. Enter the settings menu by tapping the 'MENU' button on the touch screen.
2. Enter password and press OK.
3. Select 'View Configuration'
4. Parameters information is displayed here along with the current firmware version.