

SC-SE-I8-T08

- 8 Digital Inputs
- 8 Transistor outputs
- RS-485 communication
- Built in OLED Display



Expansions supported

LoRa communications  
REYAX RYLR896



NB-IOT  
BC95 module



Temperature  
MAX31856



Analog  
4-20mA / 0 - 10V



Load cell  
HX-711



Main

|                         |                                                        |
|-------------------------|--------------------------------------------------------|
| Range of product        | Smart Controls                                         |
| Product type            | Programmable Controller                                |
| Rated supply voltage    | 24V DC                                                 |
| Discrete input number   | 8 discrete input                                       |
| Discrete output type    | Relay and Transistor                                   |
| Discrete output number  | 6 Relay outputs , 2 Transistor outputs                 |
| Discrete output voltage | 24V DC for transistor output                           |
| Discrete output current | 0.5A with T0.0... T0.1 Transistor<br>2 A with R0....R5 |
| Communication           | 1 x RS-485                                             |
| OLED Display protocol   | I2C                                                    |

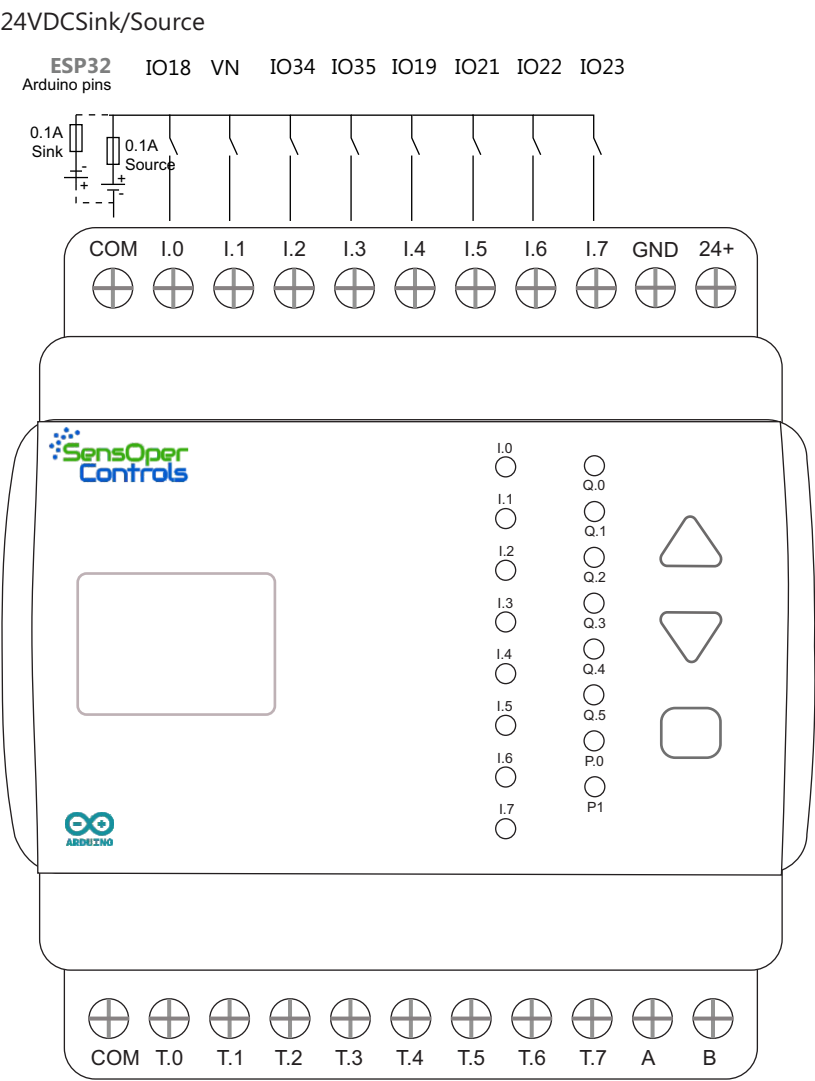
## Complementary

|                             |                                                                                                                                           |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Discrete IO number          | 16                                                                                                                                        |
| Number of Expansions        | -----                                                                                                                                     |
| Supply voltage limits       | 20.4....28.8V                                                                                                                             |
| Inrush current              | <=50A                                                                                                                                     |
| Power consumption in W      | 32.6.....40.4 with all outputs ON                                                                                                         |
| Discrete logic input        | Sink or source                                                                                                                            |
| Discrete input voltage      | 24V                                                                                                                                       |
| Discrete input voltage type | DC                                                                                                                                        |
| Voltage state 1 guaranteed  | >=15 V for input                                                                                                                          |
| Voltage state 0 guaranteed  | <=5 V for input                                                                                                                           |
| Discrete input current      | 5 mA for input                                                                                                                            |
| Input impedance             | 4.7k Ohm for input                                                                                                                        |
| Memory capacity             | Refer datasheet of base micro-controller                                                                                                  |
| Battery type                | -----                                                                                                                                     |
| Backup time                 | -----                                                                                                                                     |
| Local signalling            | 1 LED green for PWR<br>8 LED green for I0.....I7<br>6 LED green for R0.....R5<br>2 LED green for T0....T1                                 |
| Electrical connection       | Removable screw terminal block for inputs and outputs (pitch 5.08 mm)                                                                     |
| Mounting support            | Top hat type TH35-15 rail conforming to IEC 60715<br>Top hat type TH35-7.5 rail conforming to IEC 60715<br>Plate or panel with fixing kit |
| Height                      | 90.50 mm                                                                                                                                  |
| Depth                       | 56.60 mm                                                                                                                                  |
| Width                       | 60.60 mm                                                                                                                                  |
| Product weight              | 0.43 Kg                                                                                                                                   |

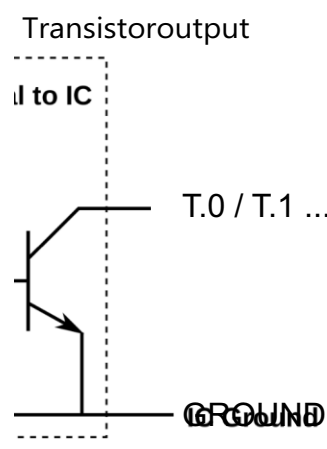
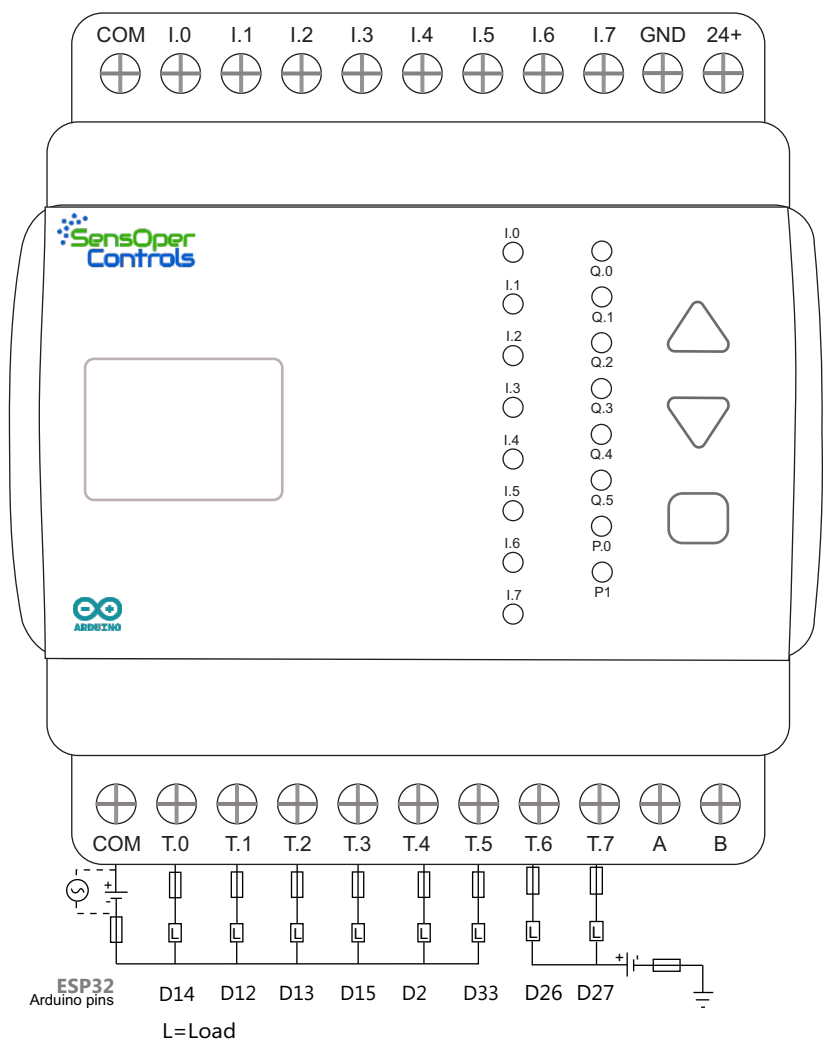
## Environment

|                                       |                                                                                        |
|---------------------------------------|----------------------------------------------------------------------------------------|
| Resistance to electrostatic discharge | 4kV on contact<br>8kV on air                                                           |
| Resistance to electro magnetic fields | 10 V/m (80 MHz ..... 1GHz)<br>3 V/m (1.4 MHz ..... 2 GHz)<br>1 V/m (2 MHz ..... 3 GHz) |
| Immunity to microbreaks               | 10 ms                                                                                  |
| Relative humidity                     | 10....95% without condensation in operation                                            |
| IP degree of protection               | IP20                                                                                   |
| Operating altitude                    | 0...2000m                                                                              |
| Storage altitude                      | 0...3000m                                                                              |
| Shock resistance                      | 15 gn for 11 ms                                                                        |

Digital inputs wiring diagram

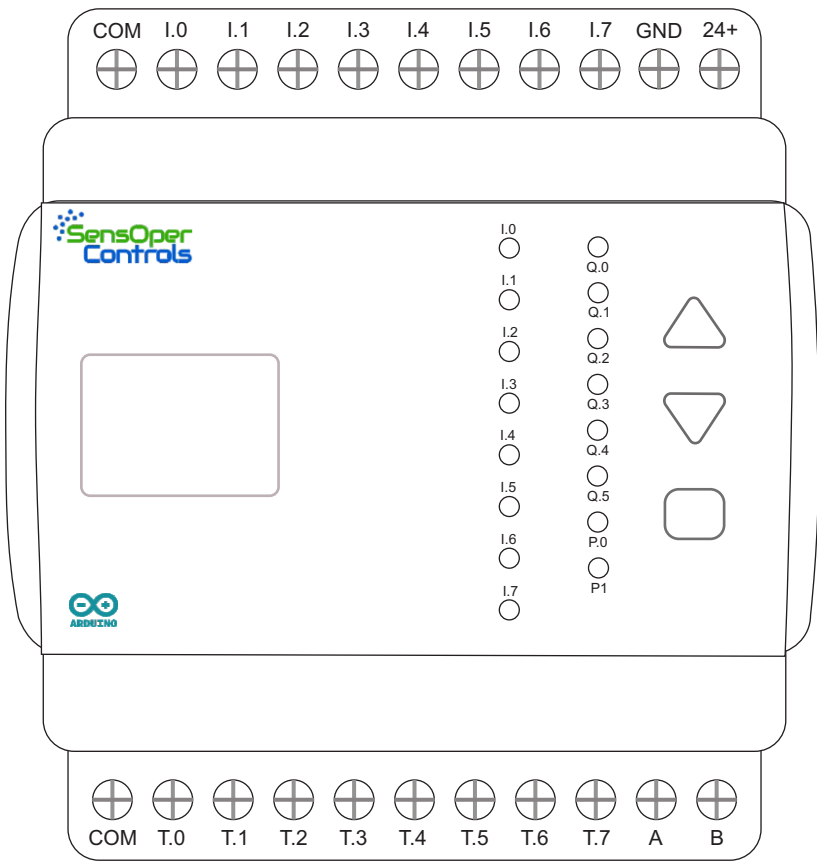


Relay outputs wiring diagram



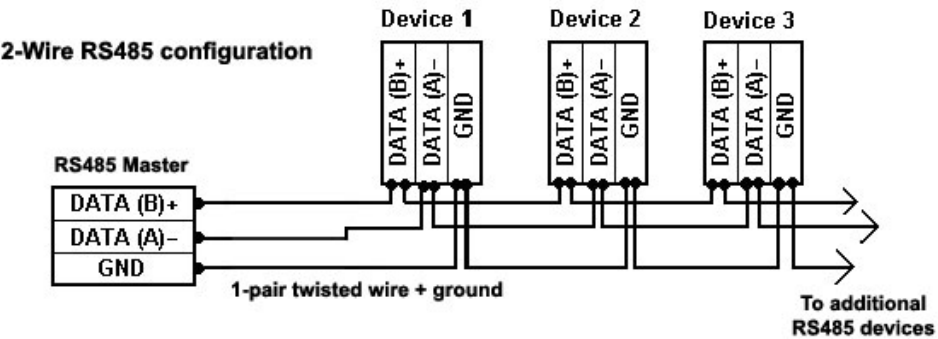
RS-485 communication wiring diagram

|                 |           |           |
|-----------------|-----------|-----------|
| Driver          | MAX485    |           |
| UART Connection | IO3 - RXD | IO1 - TXD |
| Flow Control    | IO4       |           |

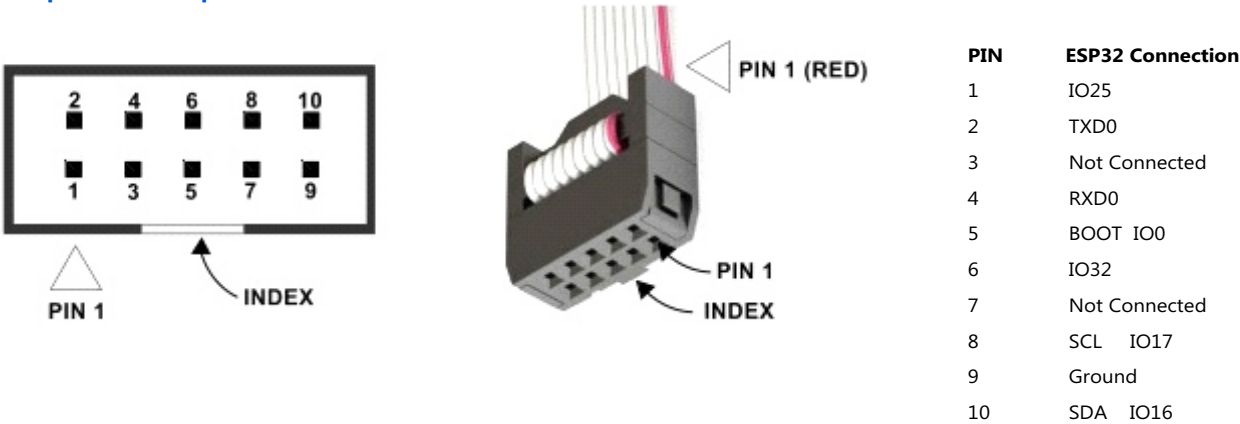


HALF-DUPLEX

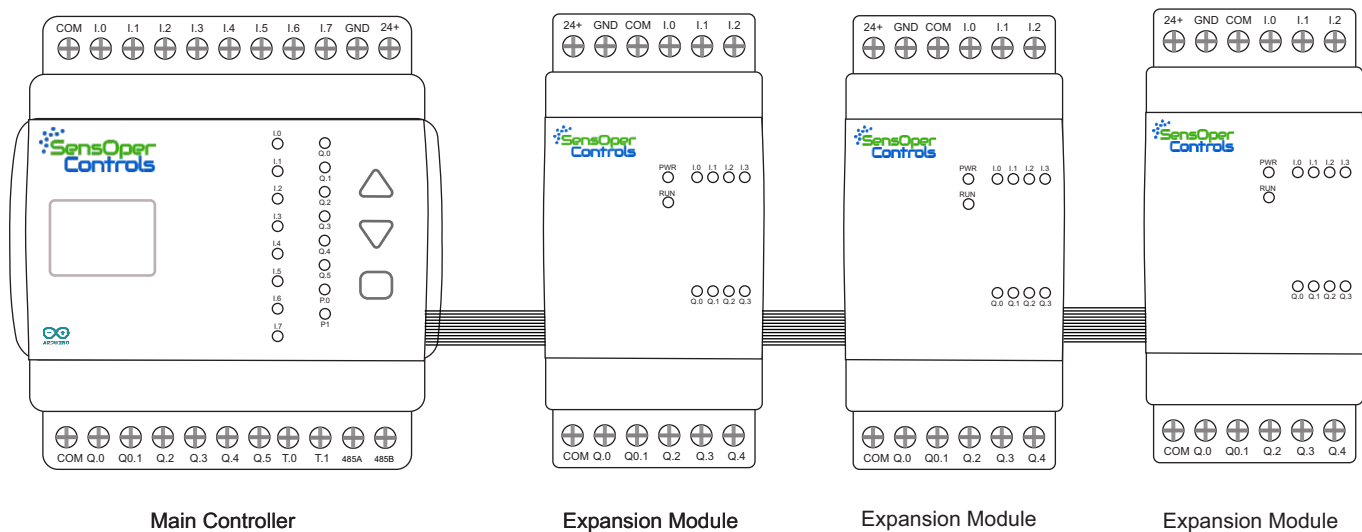
Flow control  
Arduino pin D26



Expansion port



Expansion modules



- Expansion modules connects to the right side of the controller
- Upto 6 expansion modules can be connected on one controller
- Expansion modules use I2C, UART and GPIO on the expansion port
- Depending on the model, some expansion modules require external power



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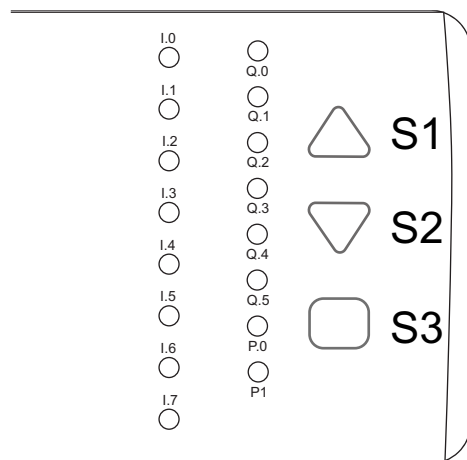
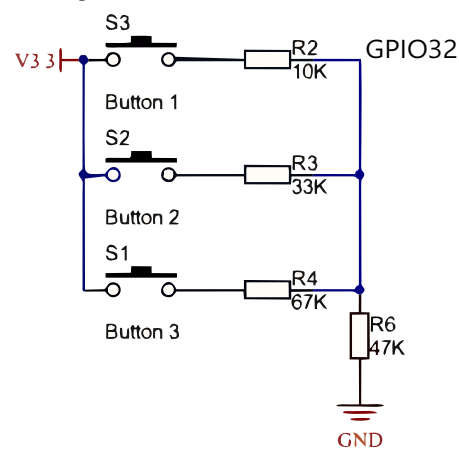
## 0.96 OLED Display parameters

|                |                              |
|----------------|------------------------------|
| Display driver | SSD1306                      |
| Communication  | I2C    IO16(SDA) - IO17(SCL) |
| Module Address | 0x3C                         |
| Resolution     | 128 x 64                     |

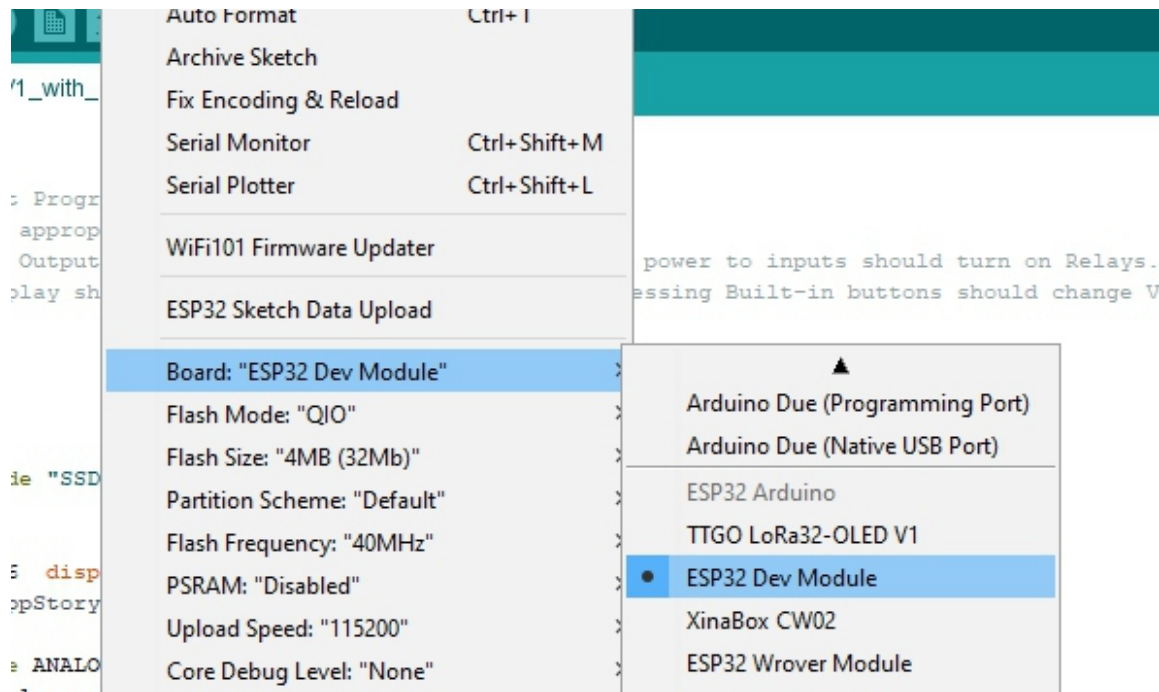
## Built in but ons

|           |                                    |
|-----------|------------------------------------|
| Read mode | ADC (Analog to Digital Conversion) |
| Analog IO | GPIO32                             |

### Voltage levels

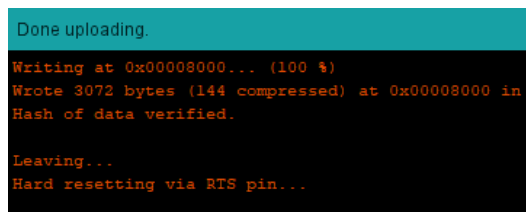


## Programming procedure



|                 |                  |
|-----------------|------------------|
| Board           | ESP32 Dev Module |
| Flash Mode      | QIO              |
| Flash Size      | 4MB              |
| Flash Frequency | 10MHz            |
| PSRAM           | Disabled         |
| Upload Speed    | 115200           |

After successful uploading of program following message appears.



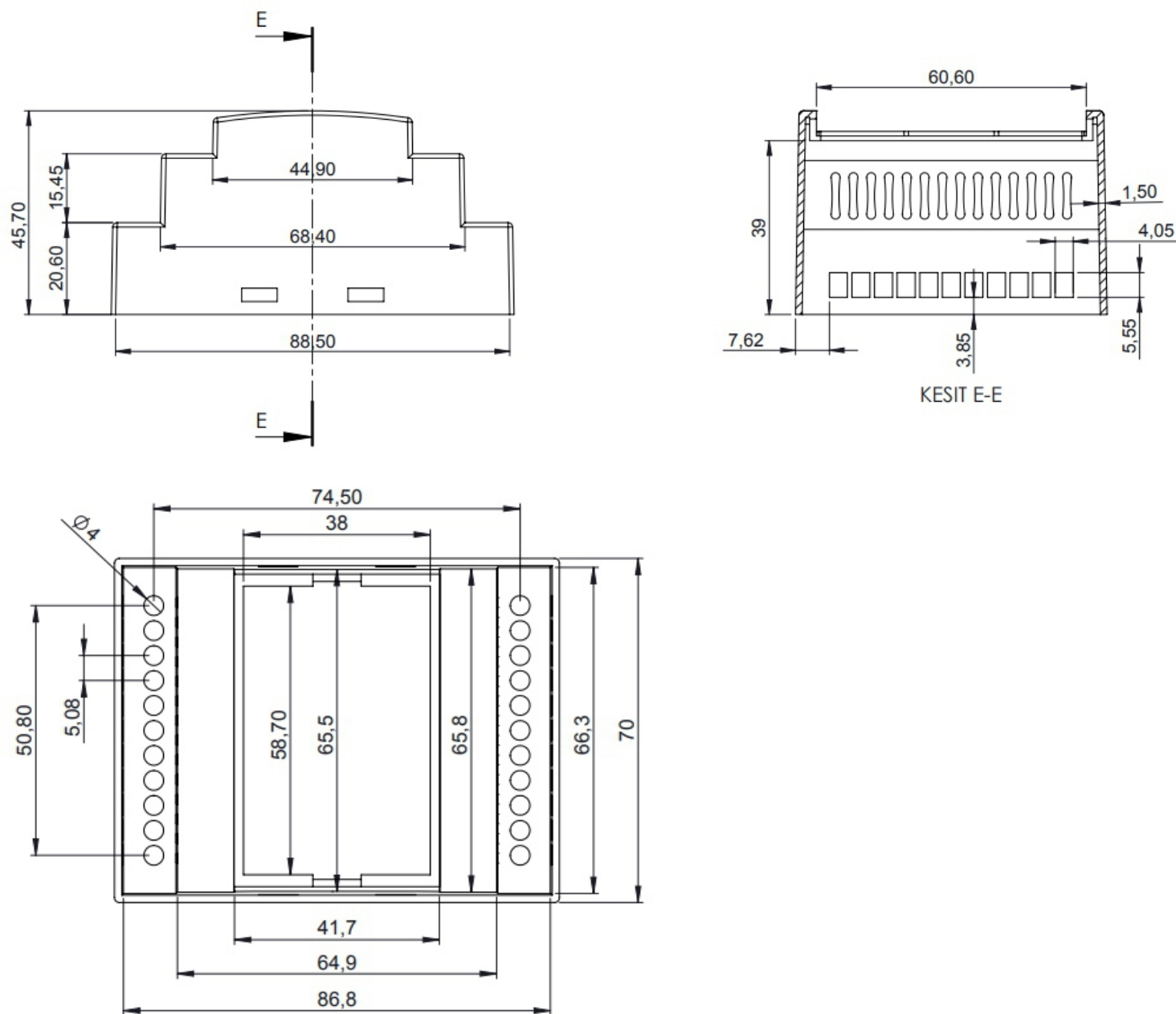
esp32 Boards must be installed under board manager, it is recommended to use the latest version of esp32 board driver for Arduino.

Due to installation of different drivers and older versions of libraries, Arduino fails to upload the program to the controller. In most cases it is due to failure to enter boot mode of the device.

The device can be forced to boot mode by connecting the BOOT IO0 of the expansion port to the GND pin with a jumper wire. Arduino is able to upload the program to controller while the controller is in boot mode.

After uploading the program , the connection between the BOOT IO0 and GND must be removed to run the uploaded program.

Dimensions





## Reach-Us

### ***Technical Support***

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