

AE-06 Series

- 8 Digital Inputs
- 4 Transistor/Relay outputs
- 4 Analog inputs
- Built in OLED Display
- micro SD card support
- DS3231 RTC with battery backup
- W5500 Ethernet



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	NORVI IIOT	
Product type	Programmable Controller	
Certifications	EN 61131-2:2007 EN 61010-1:2010+A1:2019 EN IEC 61010-2-201:2018	2014/30/EU- Electromagnetic Compatibility (EMC) Annex III, Part B, Module C
Rated supply voltage	24V DC	
Discrete input number	8 discrete input	
Discrete output type	Transistor	
Discrete output number	6 Transistor outputs	
Discrete output voltage	24V DC for transistor output	
Discrete output current	0.5A with T0.0... T0.1 Transistor	
Communication	WiFi / Bluetooth	
OLED Display protocol	I2C	
TFT Display protocol	SPI	
Analog input range	4 - 20mA (AE06-I) / 0 - 10V (AE06-V)	
Analog input resolution	16 bit	

Complementary

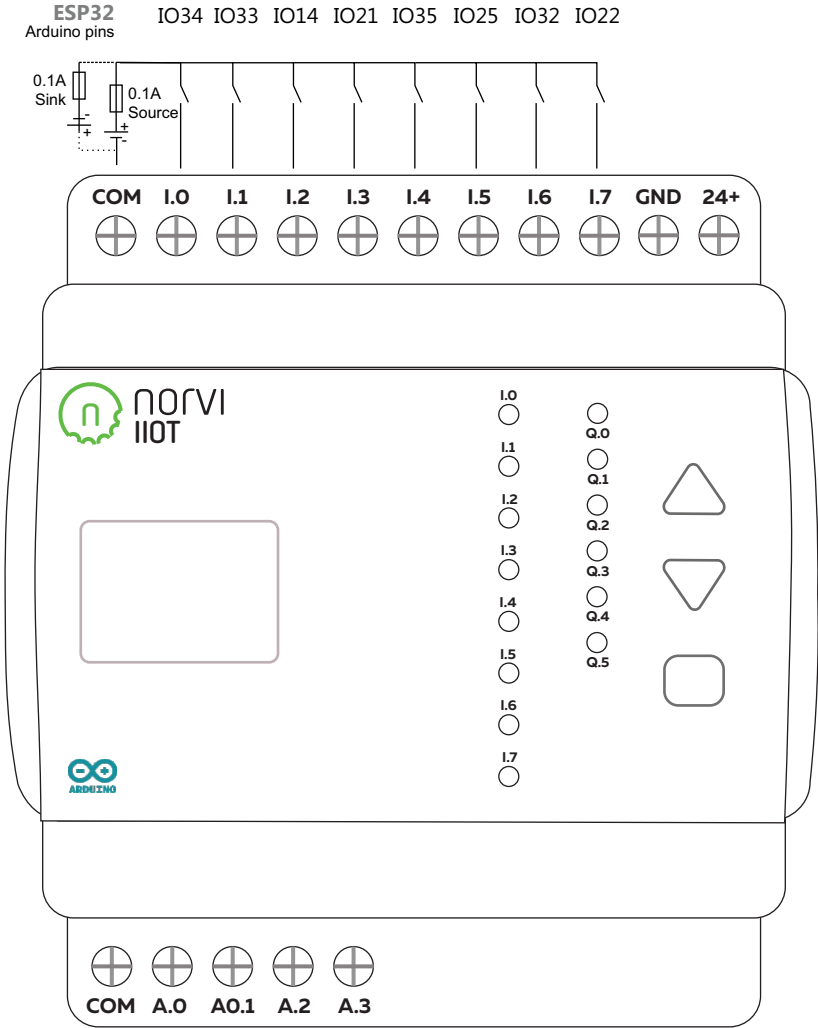
Discrete IO number	6
Number of Expansions	-----
Supply voltage limits	20.4....28.8V
Inrush current	<=50A
Power consumption in W	32.6.....40.4 with all outputs ON
Discrete logic input	Sink or source
Discrete input voltage	24V
Discrete input voltage type	DC
Voltage state 1 guaranteed	>=15 V for input
Voltage 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 1 LED green for RUN 8 LED green for IO.....I7 6 LED green for TO.....T5
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 Top hat type TH35-7.5 rail conforming to IEC 60715 Plate or panel with fixing kit
Height	90.50 mm
Depth	56.60 mm
Width	60.60 mm
Product weight	0.43 Kg

Environment

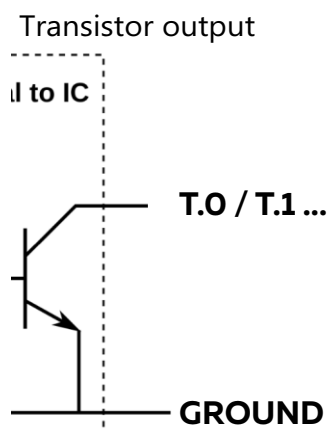
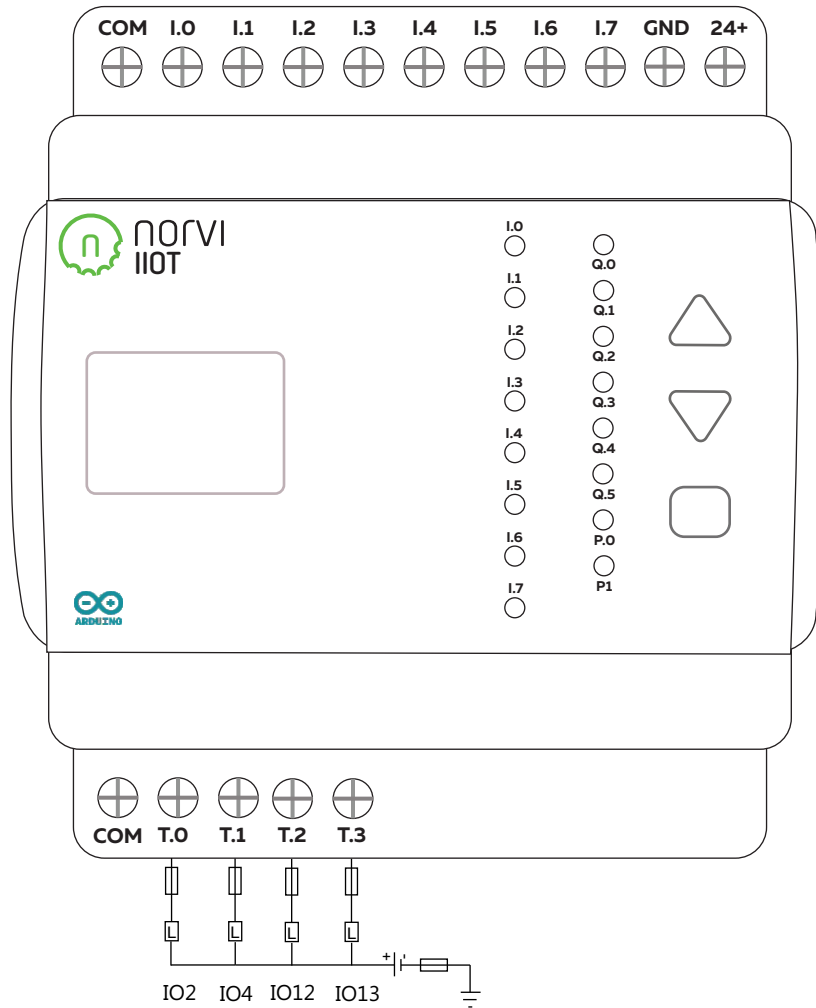
Resistance to electrostatic discharge	4kV on contact 8kV on air
Resistance to electro magnetic fields	10 V/m (80 MHz 1GHz) 3 V/m (1.4 MHz 2 GHz) 1 V/m (2 MHz 3 GHz)
Immunity to microbreaks	10 ms
Relative humidity	10....95% without condensation in operation
IP degree of protection	IP20
Operating Temperature	-10 ... +85° C (14...185 °F)
Storage Temperature	-25 ... +85° C (-13...185 ° F)
Operating altitude	0...2000m
Storage altitude	0...3000m
Shock resistance	15 gn for 11 ms

Digital inputs wiring diagram

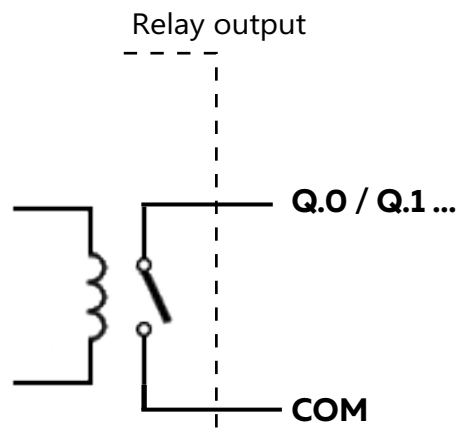
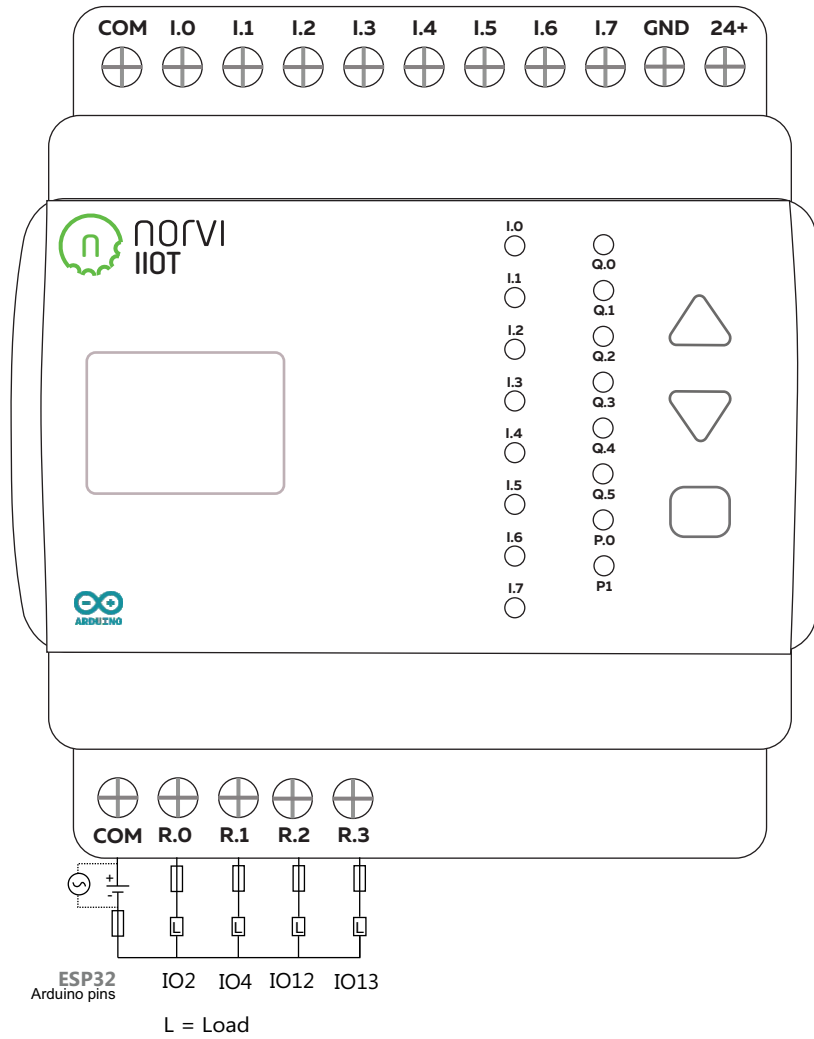
24V DC Sink/Source



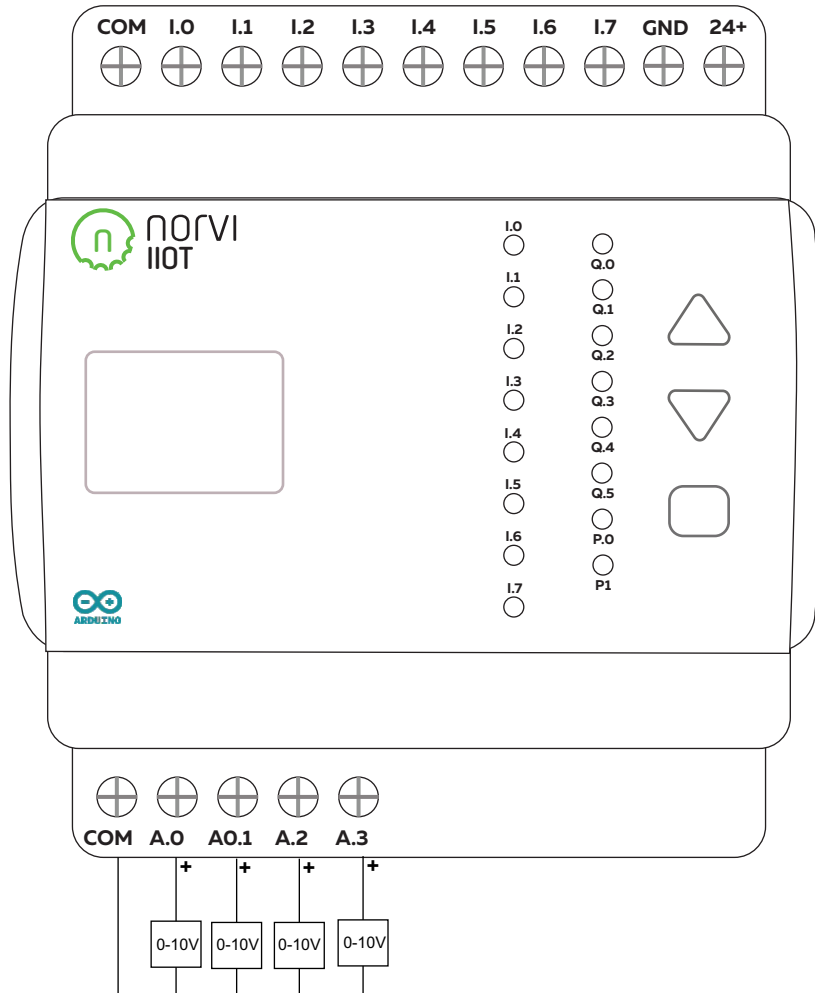
Transistor outputs wiring diagram



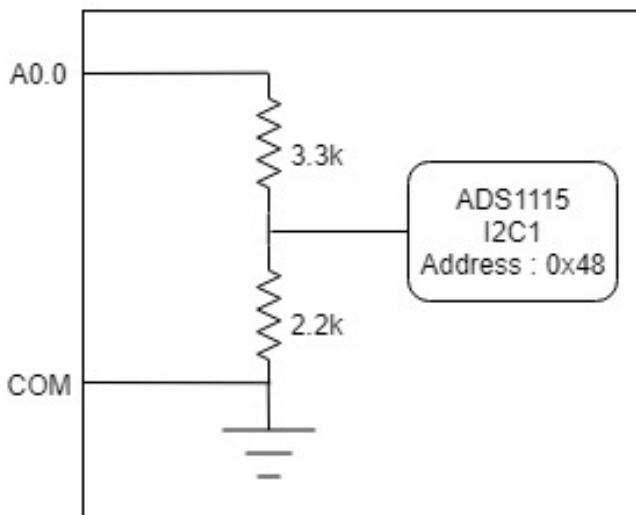
Relay outputs wiring diagram



Analog input wiring diagram (0-10V)



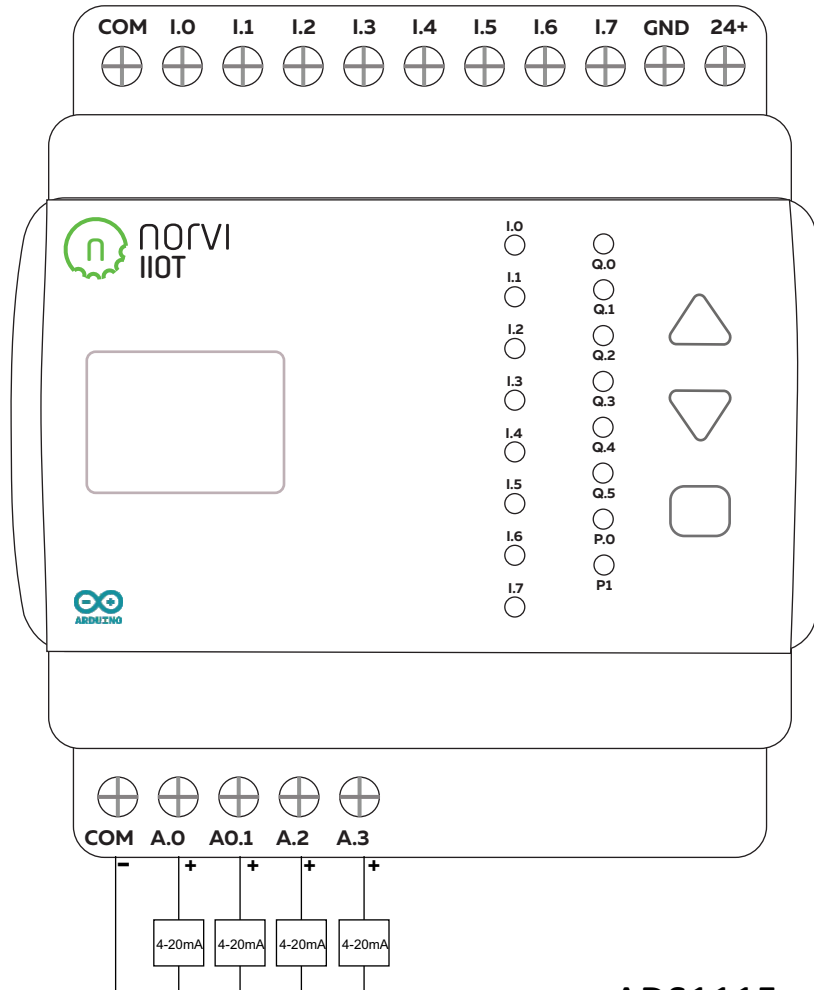
0 - 10 V input to 0 - 4V



ADS1115 connections

IC Type	ADS 1115
Communication	I2C IO16 - IO17
Module Address	0x48
Resolution	16 bit

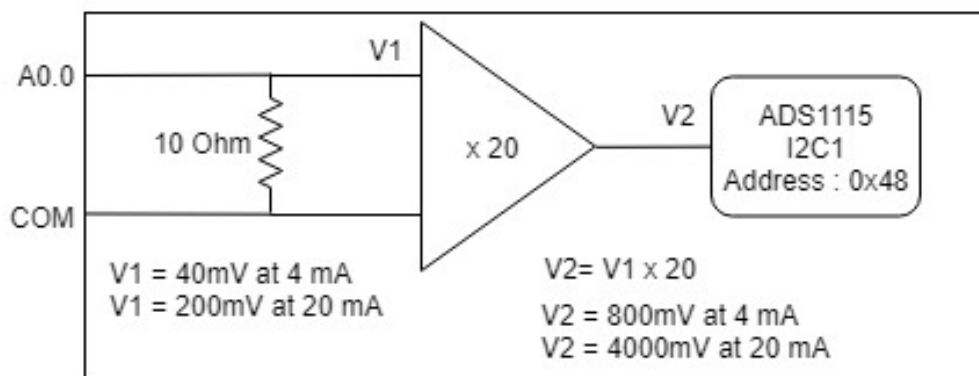
Analog input wiring diagram (4-20mA)



ADS1115 connections

IC Type	ADS 1115
Communication	I2C IO16 - IO17
Module Address	0x48
Resolution	16 bit

0 - 20mA to 0 to 4V



0.96 OLED Display parameters

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

W5500 Ethernet

Ethernet PHY	W5500
Connection	SCK IO18 MISO IO19 MOSI IO23 CS IO26

*IO5 CS of microSD should be High for the W5500.

RTC parameters

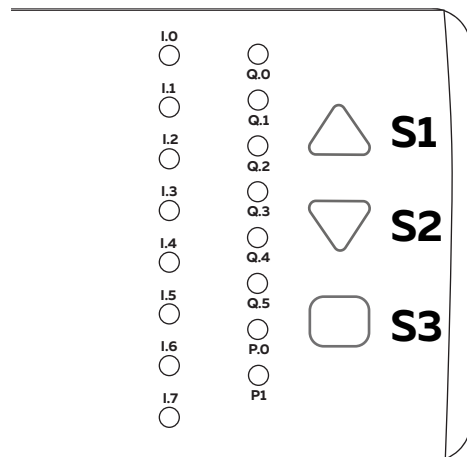
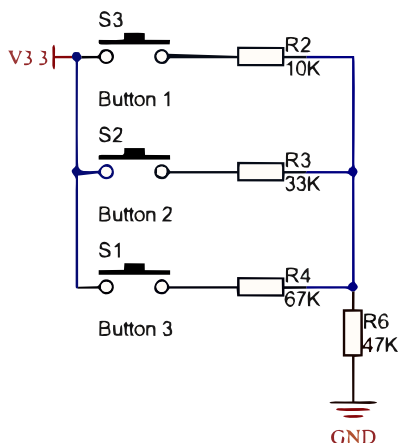
Display driver	DS3231
Communication	I2C IO16(SDA) - IO17(SCL)
Module Address	0x68
Battery Backup	YES

microSD card access

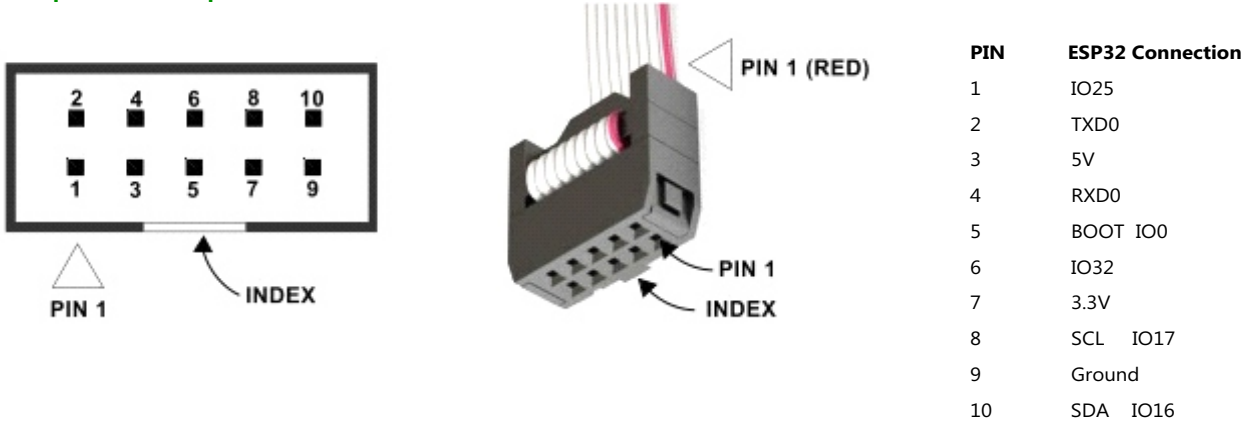
Connection	SCK IO18 CS IO5 MISO IO19 SD Detect IO14 MOSI IO23
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Built in buttons

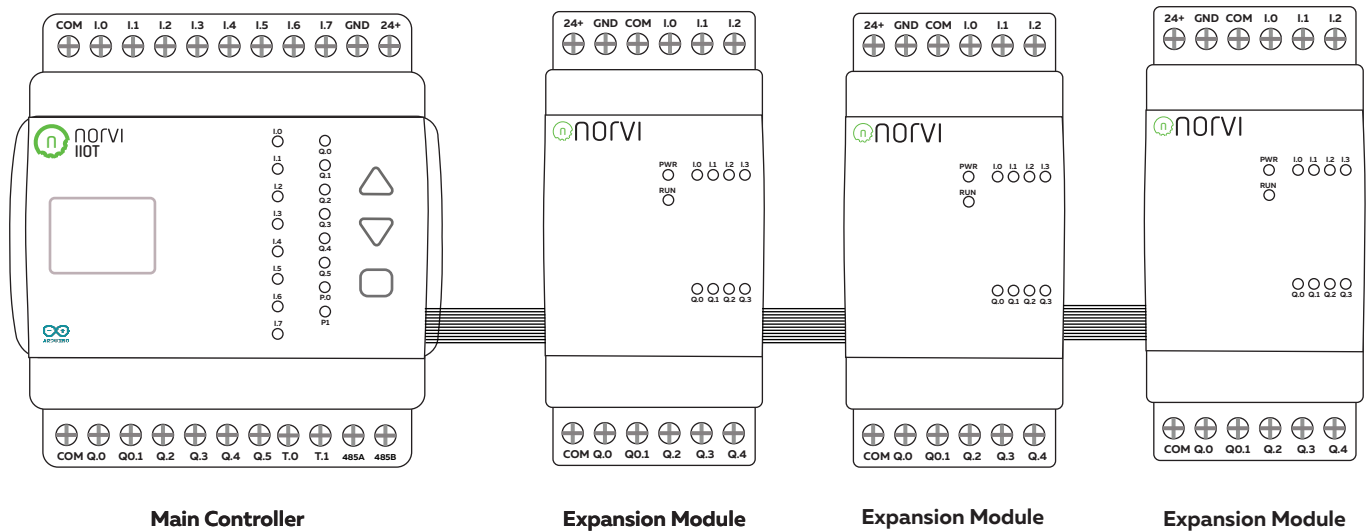
Read mode	ADC (Analog to Digital Conversion)
Analog IO	GPIO 32
Voltage levels	3



Expansion port



Expansion modules



Expansion modules connects to the right side of the controller

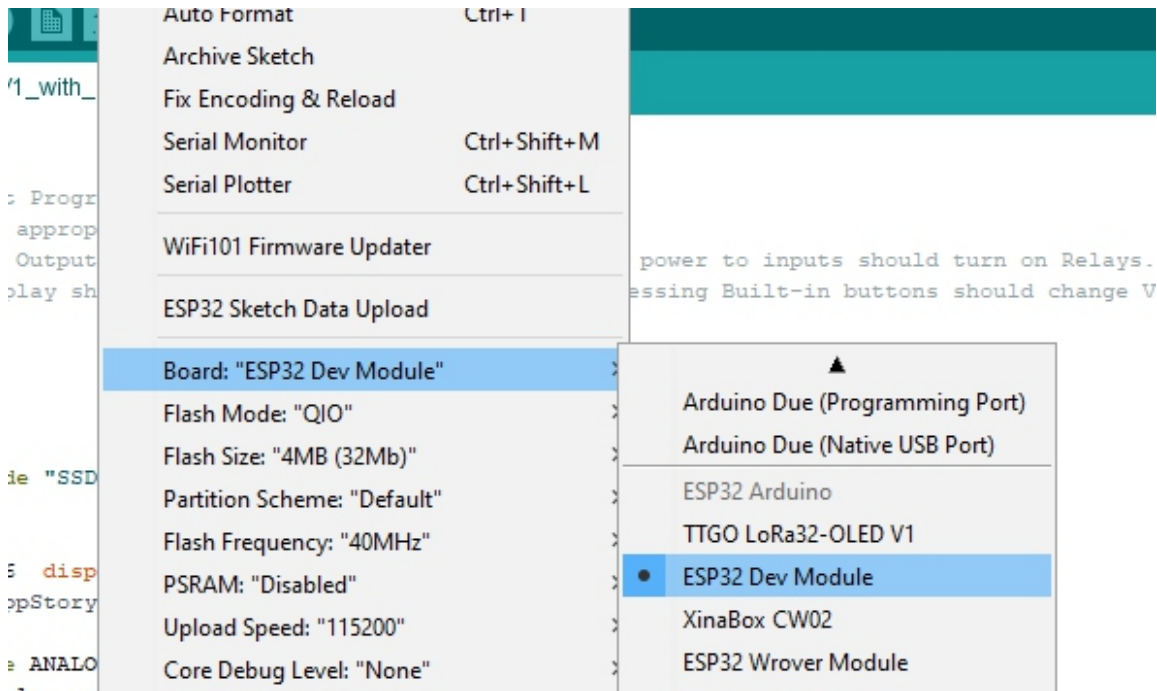
Upto 6 expansion modules can be connected on one controller

Expansion modules use I2C, UART and GPIO on the expansion port

Depending on the model, some expansion modules require external power

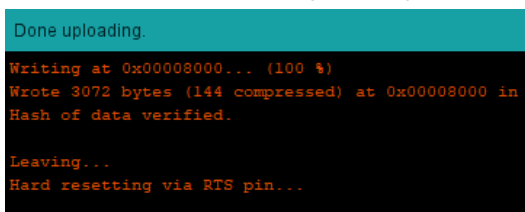


Programming procedure



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.



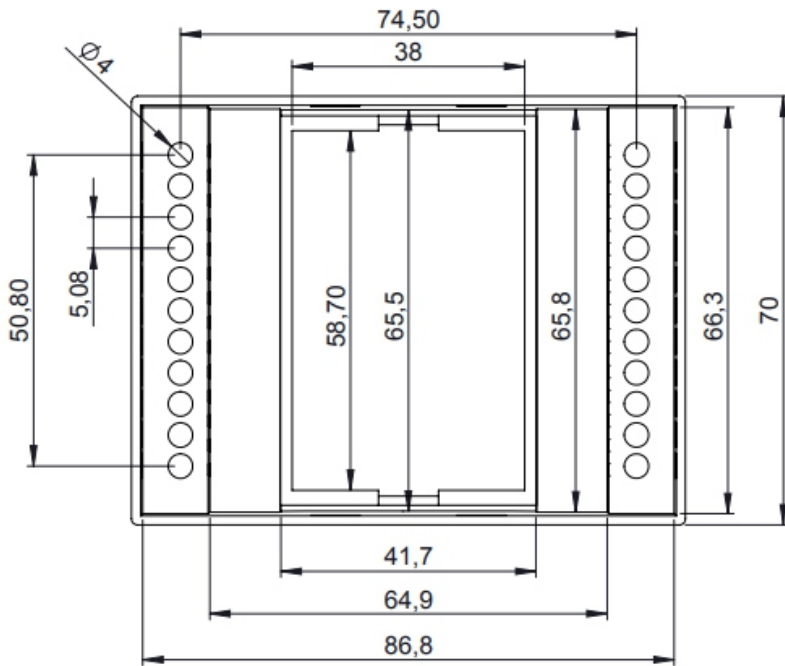
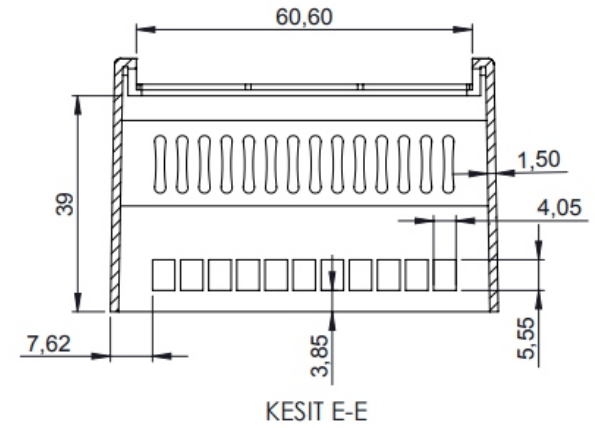
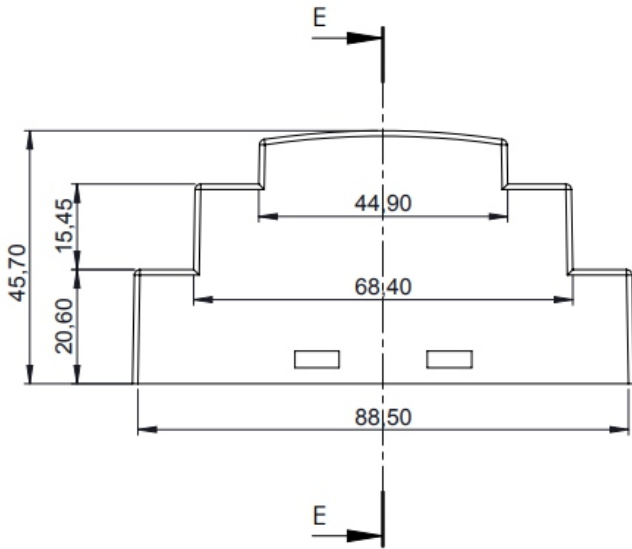
esp32 Boards must be installed under board manager, it is recommended to use the latest version of esp32 board driver for Arduino.

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

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