

AE-03 Series

8 Digital Inputs

1 Analog Inputs

 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



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
Rated supply voltage	24V DC
Discrete input number	8 discrete input
Discrete output type	Relay and Transistor
Discrete output number	-----
Discrete output voltage	-----
Discrete output current	-----
Communication	-----
OLED Display protocol	I2C
TFT Display protocol	SPI
Analog input range	0 - 10V Internal ADC 12 bit
Analog input resolution	12 bit

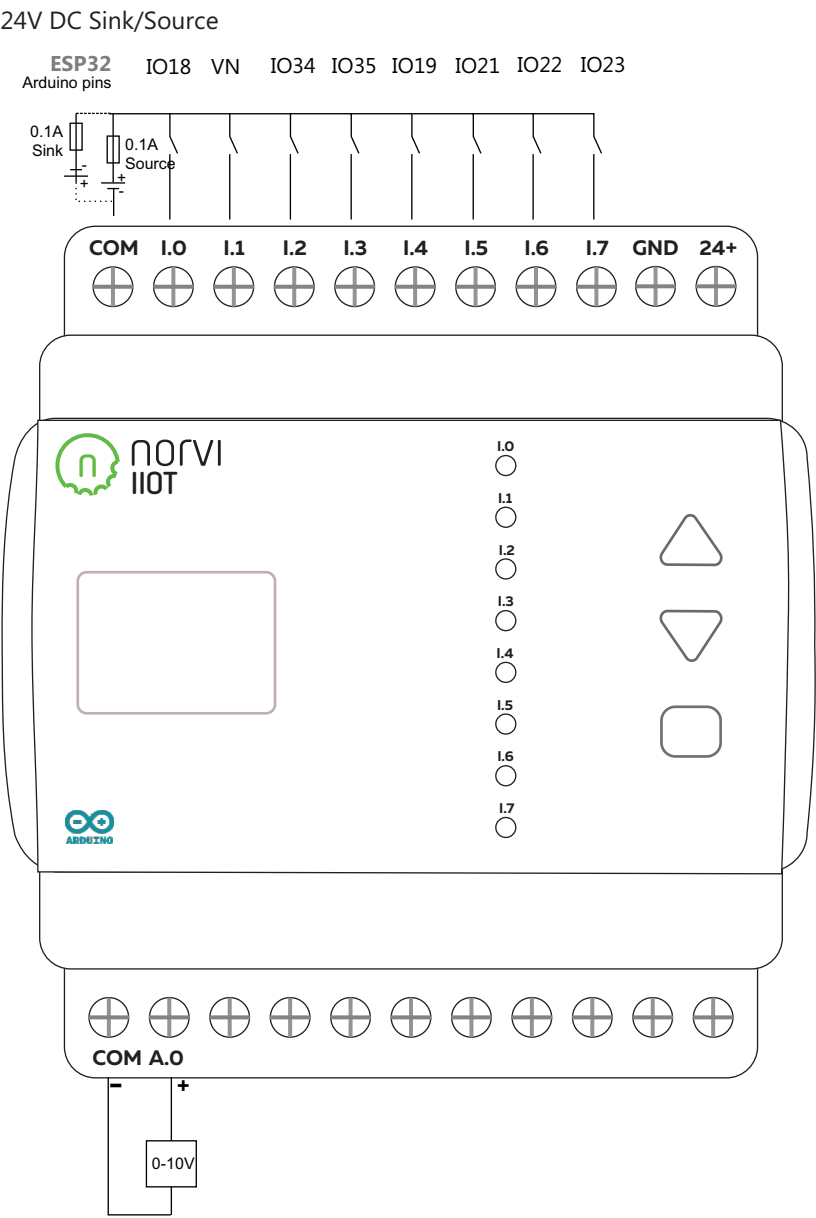
Complementary

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 1 LED green for RUN 8 LED green for IO.....I7
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

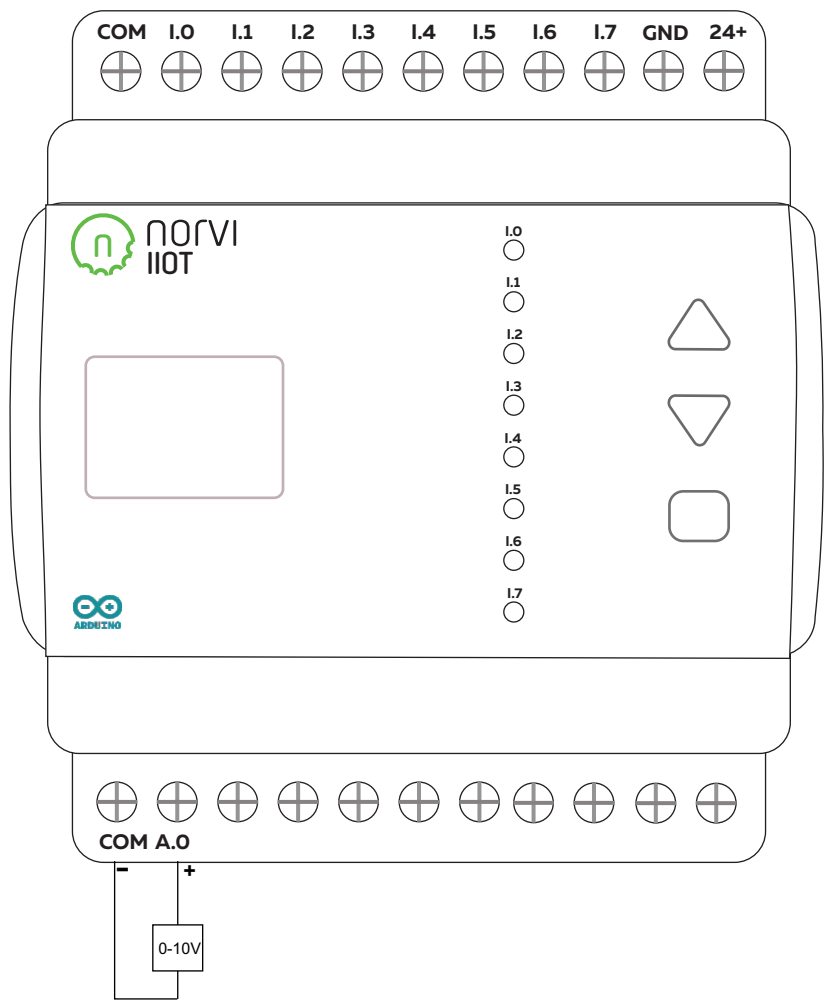
Environment

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 altitude	0...2000m
Storage altitude	0...3000m
Shock resistance	15 gn for 11 ms

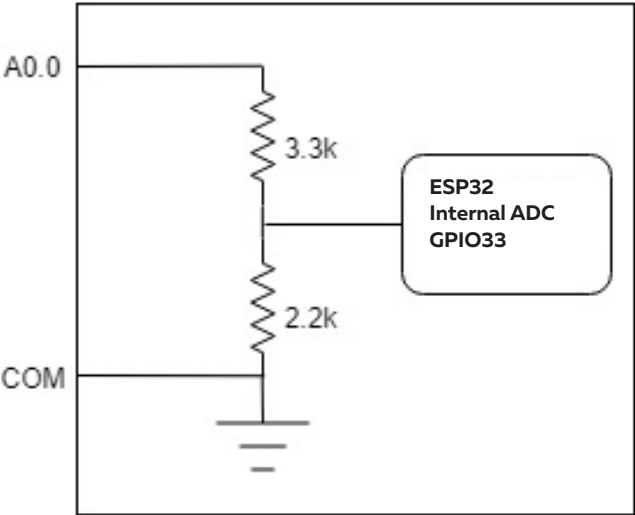
Digital inputs wiring diagram



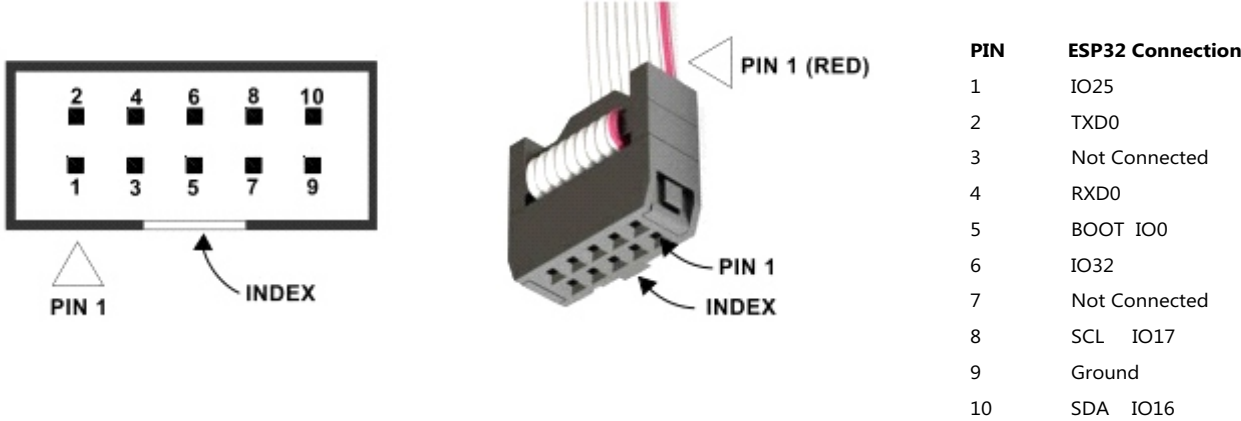
Analog input wiring diagram (0-10V)



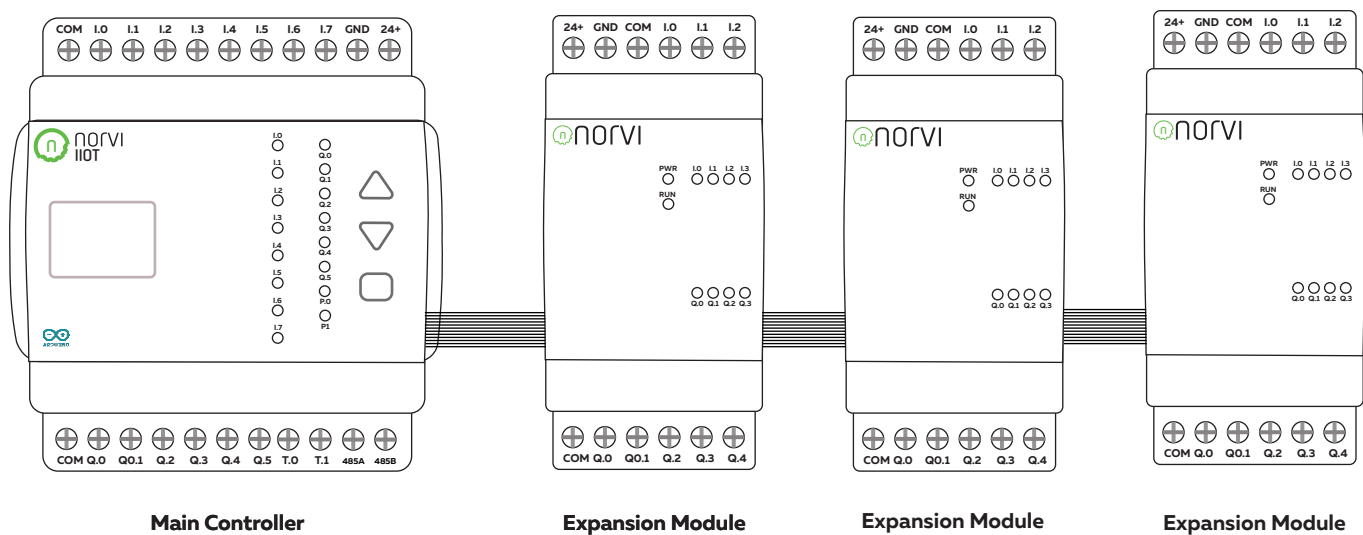
0 - 10 V input to 0 - 4V



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



LoRa communications
REYAX RYL896

NB-IOT
BC95 module

Temperature
MAX31856

Analog
4-20mA / 0 - 10V

Load cell
HX-711

TFT Display parameters

Display driver	ST7789			
Communication	SPI IO18/IO19/IO23 SCK/MISO/MOSI			
Module Address	NA			
Resolution	80 x 160			
Connection	TFT_SCK	IO18	TFT_RST	IO32
	TFT_MOSI	IO23	TFT_DC	IO13
	TFT_CS	IO27		

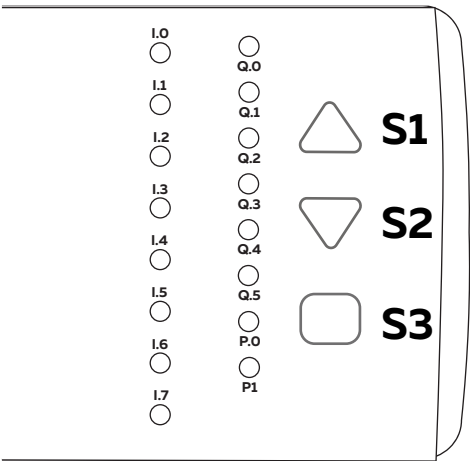
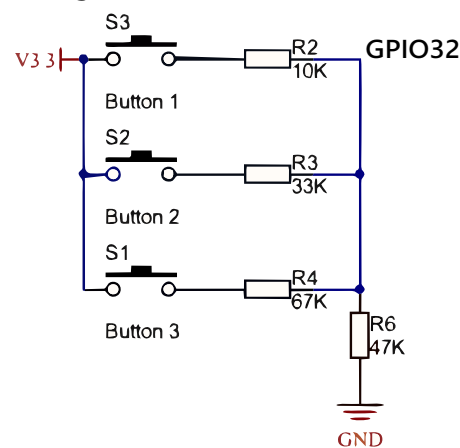
0.96 OLED Display parameters

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

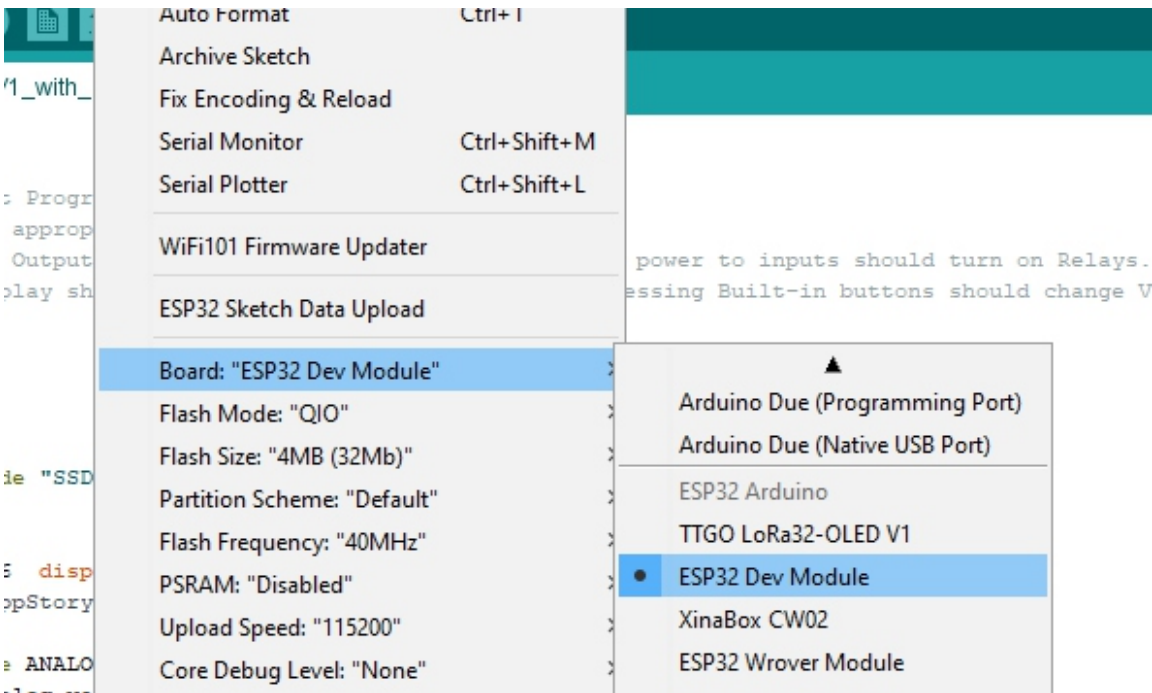
Built in buttons

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

Voltage levels

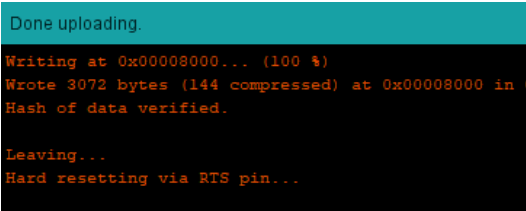


Programming procedure



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

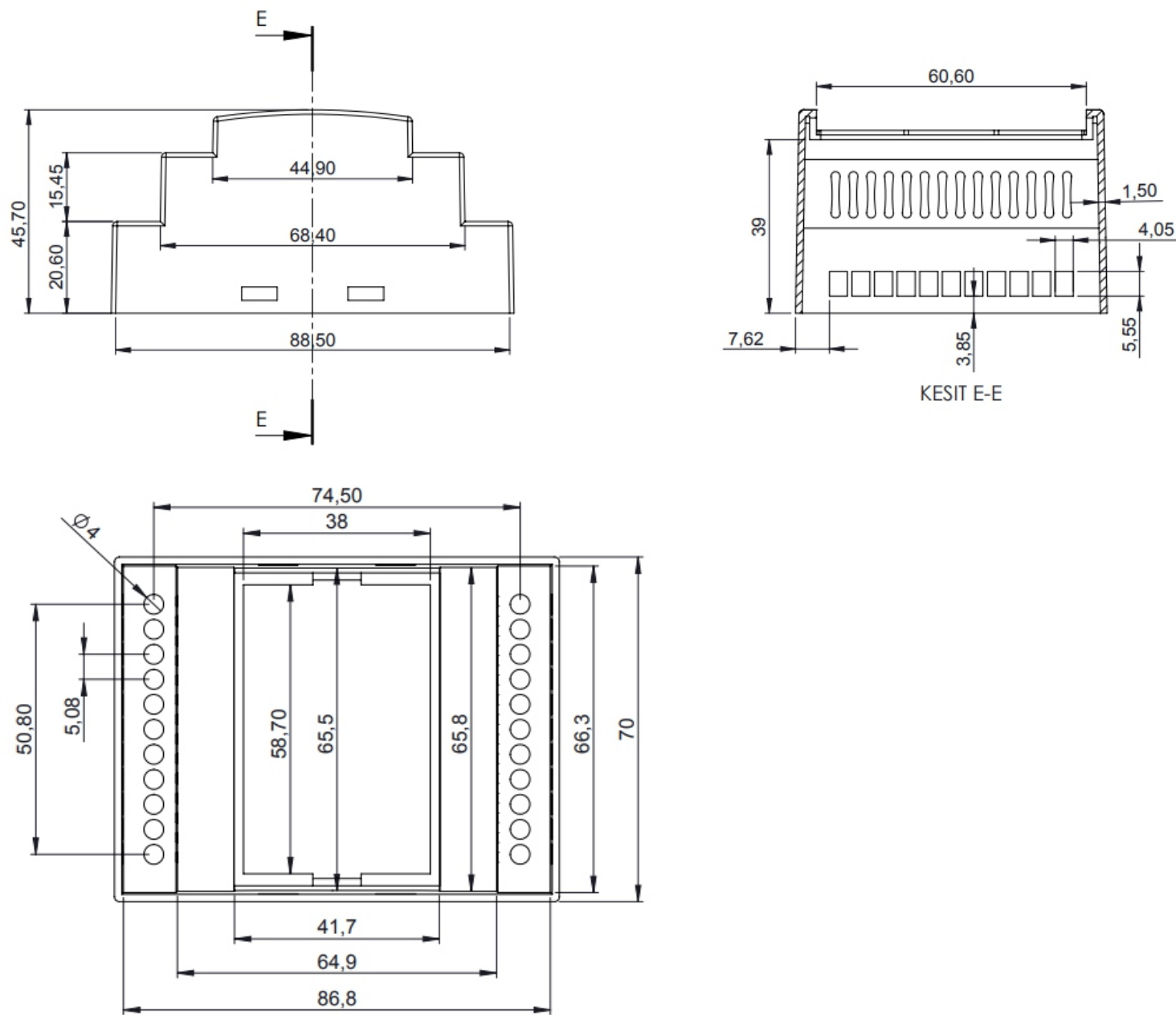
After successful uploading of program following message appears.



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





DECLARATION OF CONFORMITY NO. ID/TCF/1/1-20

We hereby declare, for the product above, that the requirement of the Electromagnetic Compatibility Directives (2014/30/EU) are fulfilled, as laid out in the guideline set down by the member states of the EEC Commission. This declaration of conformity is issued under the sole responsibility of the manufacturer. The object of the declaration described within this declaration, is/are in conformity with the relevant Union harmonization legislations.

1	Organization Name & Brand:	ICONIC DEVICES (PVT) LTD. (NORVI)				
2	Model Name & Model No(s):	PROGRAMMABLE CONTROLLER DEVICE				
3	Technical Specifications	Model No(s):	AE01-R	AE01-T	AE02-V	AE02-I
		RATED SUPPLY VOLTAGE	24 V DC	24 V DC	24 V DC	24 V DC
		DISCRETE INPUT NO.	8 x SINK/SOURCE	8 x SINK/SOURCE	8 x SINK/SOURCE	8 x SINK/SOURCE
		DISCRETE OUTPUT TYPE	R/T	T	T	T
		DISCRETE OUTPUT NO.	6 X RELAY	N/A	N/A	N/A
			2 X TRANSISTER	6 X TRANSISTER	2 X TRANSISTER	2 X TRANSISTER
		DISCRETE OUTPUT MAX VOLTAGE	R 270VAC/125VDC T 36V DC	R 270VAC/125VDC T 36V DC	R 270VAC/125VDC T 36V DC	R 270VAC/125VDC T 36V DC
		DISCRETE OUTPUT CURRENT	R 5A /T 0.5 A	0.5 A	0.5A	2 A
		COMMUNICATION	RS-485	RS-485	RS-485	RS-485
		OLED DISPLAY SIZE	0.96"	0.96"	0.96"	N/A
4	Objective of declaration	IDENTIFICATION				
						
3	Intended application(s) of product:	- PROGRAMMABLE AUTOMATION CONTROLLERS - INTERNET OF THINGS DEVICE - SIMPLEX/MULTIPLEX DATA TRANSMISSION				
4	Name and contact address of the manufacturer & authorized representative:	BHANUKA GAMACHCHIGE ICONIC DEVICES (PVT) LTD. NO.91, WISHWAKALAWA JUNCTION, MAHARAGAMA ROAD, PILIYANDALA, SRI LANKA				
6	Conformity Route:	ELECTROMAGNETIC COMPATIBILITY DIRECTIVE (2014/30/EU) ANNEX III, PART B, MODULE C (CONFORMITY TO TYPE BASED ON INTERNAL PRODUCTION CONTROL)				
7	Applied EU Harmonized Standards & other Standards	1) EN 61131-2:2007 (PROGRAMMABLE CONTROLLERS – PART 2: EQUIPMENT REQUIREMENTS AND TESTS) 2) EN 61010-1:2010 (SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE - PART 1: GENERAL REQUIREMENTS) 3) EN 61010-2-201:2018 (SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL AND LABORATORY USE PARTICULAR REQUIREMENTS FOR CONTROL EQUIPMENT)				

Name & Function	BHANUKA GAMACHCHIGE (PRODUCT MANAGER)
Date & Place of Issue	PILIYANDALA, SRI LANKA
Signature	 Director





Reach-Us

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MAIN OFFICE :

ICONIC DEVICES (PVT) LTD.
"GREEN CLIFF", MIDIGAMA EAST, WELIGAMA, SRI LANKA

PRODUCTION FACILITY :

ICONIC DEVICES (PVT) LTD.
NO.91, WISHWAKALAWA JUNCTION, MAHARAGAMA ROAD, PILIYANDALA, SRI LANKA