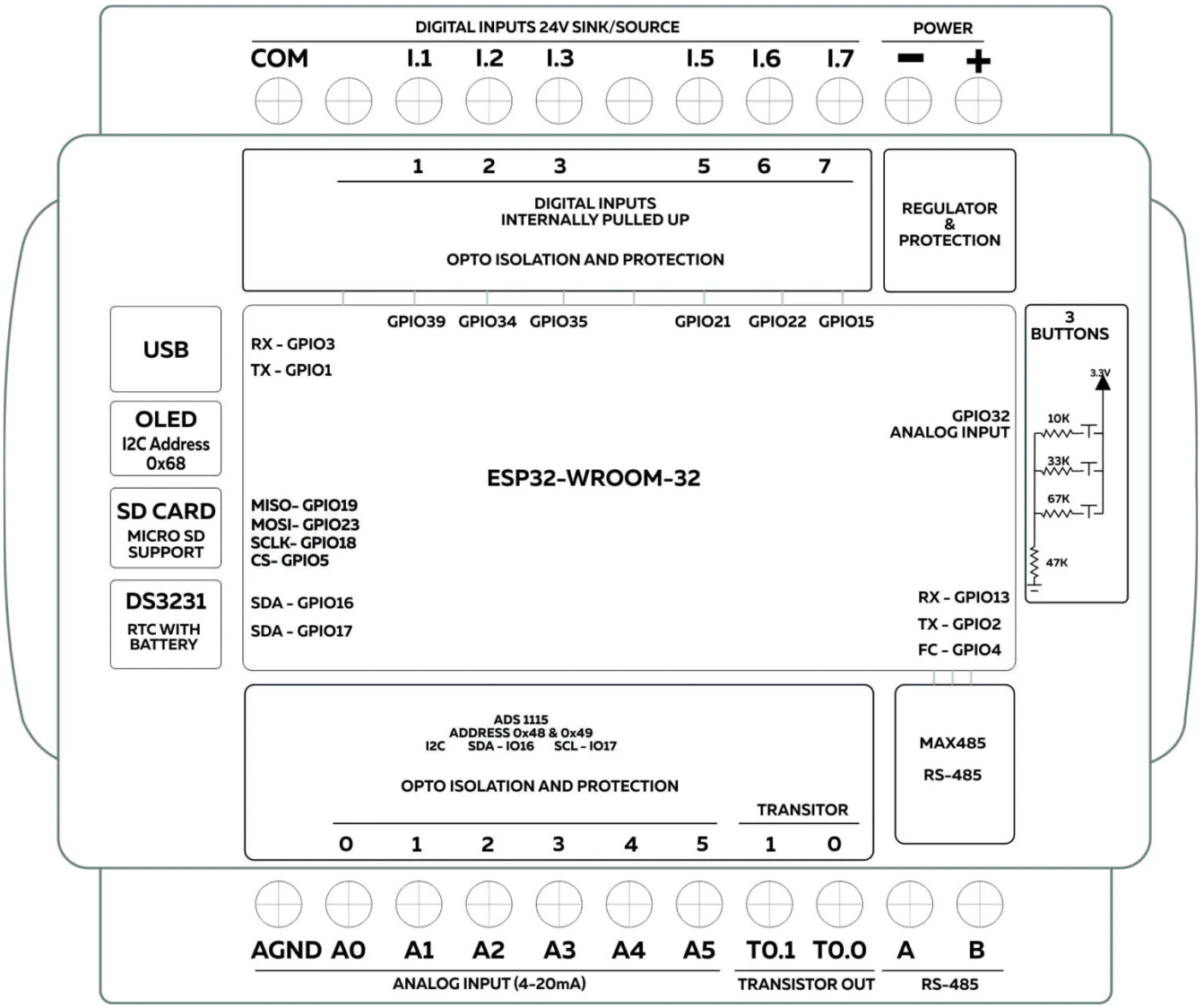
NORVI IIOT-AE04-I – Datasheet

Product Features



- ESP32-WROOM32 Module
- Built-in 0.96 OLED Display
- microSD Card Support
- DS3231 RTC with Battery Backup
- Built-in Button on the front panel
- Digital Inputs
- Analog Input
- Transistor Outputs
- DIN-Rail mounts
- Supports Expansion ports

Expansions Supported

- Digital Input
- Analog Input
- Transistor Output

Main

Range of Product	Product Type
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
Communication	WiFI 2.5GHz / Bluetooth RS-485
Inputs and Outputs	6 x Digital Inputs 6 x Analog Inputs with 4-20 mA 2 x Transistor Outputs
Displays and Visual Indicators	0.96 OLED Display and Indicators

Complementary

Product Unified Code	NORVI IIOT-AE04-I
Product Part Numbers	NORVI IIOT-AE04-I

Mechanical Properties

Enclosure	NORVI 204
Mounting / Installation Method	DIN RAIL / MOUNTING TABS
Terminal Type	SCREW TERMINAL

Terminal Arrangement	Top and Bottom
Length	90.50 mm
Height	56.60 mm
Width	60.60 mm

Environment

IP degree of protection	IP20
Operating altitude	0–2000 meters
Operating Temperature	– -10… +85° C (14…185 °F)
Storage altitude	0–3000 meters
Shock resistance	15 gn for 11ms

Resistance to electrostatic discharge	4 kV on contact 8 kV on air
Resistance to electromagnetic fields	10 V/m (80 MHz …… 1GHz) 3 V/m (1.4 MHz… 2 GHz) 1 V/m (2 MHz, 3 GHz)

Electrical Characteristics

Grid-powered devices

Rated Supply Voltage (V)	24V DC
Current Consumption (mA)	400mA
Recommended Power Source	1A, 24V DC

Processing

SOC / MCU	ESP32-WROOM32
Flash Memory	4MB
ROM	448 KB
SRAM	520 KB
PSRAM	NOT AVAILABLE

Peripherals

MicroSD Card support

Card Type	microSD
Interface	SPI
SD CARD CS	GPIO5
MISO	GPIO19
MOSI	GPIO23
SCLK	GPIO18

SD Detect	NOT CONNECTED

Internal RTC

RTC Chip	DS3231
Backup Battery Type	CR2032
Interface	I2C
I2C Address	0x68
SCL Pin	GPIO17
SDA Pin	GPIO16

Built-in Buttons

Button 1 Pin	GPIO32 Analog Input Level 1
Button 2 Pin	GPIO32 Analog Input Level 2
Button 3 Pin	GPIO32 Analog Input Level 3

OLED Display

Display Driver	SSD1306
Display Size	0.96 inch
SCL PiN	GPIO17
SDA Pin	GPIO16
RESET Pin	NOT CONNECTED

INPUTS and OUTPUTS

Digital Inputs

Number of Digital Inputs	6

Digital Input Polarity	Sink and Source
Digital Input Maximum Voltage	32V DC
Digital Input Minimum Voltage	18V DC
Maximum Switching Frequency	1 kHZ
Terminal Arrangement	Digital Input 1 – GPIO39 Digital Input 2 – GPIO34 Digital Input 3 – GPIO35 Digital Input 5 – GPIO21 Digital Input 6 – GPIO22 Digital Input 7 – GPIO15

Analog Inputs

Number of Analog Inputs	6
Analog Input Measurement Range	4 – 20mA
Analog to Digital Converter (ADC)	ADS1115
Analog to Digital Converter (ADC) Communication	I2C
Analog to Digital Converter (ADC) Address	0x48, 0x49
Terminal Arrangement	A0 : Analog Input 0 – ADS1115 – 0x48 – AIN0 A1 : Analog Input 1 – ADS1115 – 0x48 – AIN1 A2 : Analog Input 2 – ADS1115 – 0x48 – AIN2 A3 : Analog Input 3 – ADS1115 – 0x48 – AIN3 A4 : Analog Input 4 – ADS1115 – 0x49 – AIN0 A5 : Analog Input 5 – ADS1115 – 0x49 – AIN1

Transistor Outputs

Number of Transistor Outputs	2

Transistor Output Type	OPEN COLLECTOR
Maximum Sink/Source Current (mA)	100mA
Maximum Applicable Voltage	40V DC
Maximum Switching Frequency	1 kHz
Terminal Arrangement	T0.0 – GPIO26 T0.1 – GPIO27

Communication Channels

RS-485 Communication

Communication Mode	HALF-DUPLEX
Transceiver	MAX485
Unit Load	1/4
Flow Control / Direction Control Pin	GPIO4
TX Pin	GPIO2
RX Pin	GPIO13
Terminal Arrangement	

GPIO Map

GPIO	Description	Usage
0	outputs PWM signal at boot	NRST
1	debug output at boot	

2	RS485	TX
3	HIGH at boot	
4	RS-485	Flow Control
5	outputs PWM signal at boot	
12		
13	RS485	RX
14	outputs PWM signal at boot	
15	input only	Digital Input 5
16	SDA	I2C
17	SCL	I2C
18	SCLK	
19	MISO	
21	input only	Digital Input 3
22	input only	Digital Input 4
23	MOSI	
25	Expansion Port	Pin 1
26		Transistor output 0.0
27		Transistor output 0.1
28		
32	Analog Input	Buttons
33		
34	input only	Digital Input 1
35	input only	Digital Input 2
38		
39	input only	Digital Input 0

Expansion Port

PIN	ESP32 Connection
1	IO25
2	TXD0
3	NOT CONNECTED
4	RXD0
5	BOOT IO0
6	IO32
7	NOT CONNECTED
8	SCL – GPIO17
9	GROUND
10	SDA – GPIO16