Datasheet

WEIDOS-ESP32-A1

General ordering data

Type	Order No.
Description	IoT Open-Source micro-controller based on ESP32. Device IOs: 4 DI, 4 DO, 4 AI (0-10V) or DI (selectable), 1 AO and 2 Multifunction pins directly connected to microprocessor. Communication Interfaces: RJ45, RS485 Half Duplex (or UART), I2C and SPI. Communication Protocols: Wi-Fi and Bluetooth (external antenna). Others: Real Time Clock, EEPROM, ATECC608A (cryptographic chipset), µSD interface and Reset Button.
Type	WEIDOS-ESP32-A1
Order no.	4000003857
Quantity	1 piece
Availability	On Request

Technical data

Dimensions and Weight

Height x Width x Length (mm)	114 x 46 x 127
Height x Width x Length (inches)	4,488 x 1,811 x 5
Weight	<350 gr

CPU

CPU Type	Espressif ESP32-WROOM-32UE
Clock Speed	40 MHz (Processor)
Memory	ESP32: 448kB ROM, 520kB SRAM RTC: 16kB SRAM
Cryptographic Chipset	ATECC608
EEPROM	512 kB

Environmental Conditions

Operating temperature	0 to 60 ºC
Storage temperature	-20 to 60 ºC
Operating environment	With no corrosive gas
Operating humidity	10 to 90% (non-condensation)

Connectivity

Signals

Wire Connection Cross Section AWG, min - max	AWG 24 - AWG 14
Solid, min H05(07) V-U, min – max	$0,2\ mm^2$ - $1,5\ mm^2$
Stranded, min H07 V-R, min – max	$0,2\ mm^2$ - $2,5\ mm^2$
Flexible, min H05(07) V-K, min – max	$0,2\ mm^2$ - $2,5\ mm^2$
w. plastic collar ferrule, DIN 46228 pt. 4, min - max	$0,25\ mm^2$ - $2,5\ mm^2$

Communications

Ethernet Interface	RJ45 Female Socket
USB (Programming Interface)	Micro-USB Type B Female Socket
External antenna connections	SMA Female

Other

Other	µSD Interface, Reset Button, Real Time Clock (CR1220 Battery not included)

Digital Inputs

Input Voltage, High	> 5 V DC (max. 24 V DC)
Input Voltage, Low	< 3,3 V DC
I min.	2 mA (at 5 V DC input) - 12mA (at 24 V DC input)
Number of Digital Inputs	4 + 4* (Use Analogue Inputs as Digital Inputs)
Reverse Polarity Protection	Yes
Galvanic Isolation	Yes
Status Led	Yes (only on 4 pure Digital Inputs, not Analog ones)

Analog Inputs

Input Range	0 to 10 V DC
Type of Inputs	Referenced Single Ended (all analog inputs share the same common reference on the device)
Input Impedance	39 kΩ
Number of analogue inputs	4
Digital Input usage	Analog Inputs can be used as digital Input Signals (max. 24 V DC)
Resolution ADC	12 bits maximum

Digital Outputs

Output Voltage, High	Vin - 1,0V
Input Voltage, Low	GND (Supply Ground)
Imax	70 mA
Protection	Diode
Number of Digital Outputs	4
Galvanic Isolation	Yes
Status Led	Yes

Analog Outputs

Output Range	0 to 10 V DC
Output Reference	Referenced Single Ended (analog output share the same common reference on the device)
Imax	10 mA
Number of Analog Outputs	1
Resolution DAC	10 bits maximum

Multifunction Pins

Voltage operation	3,3 V / 5 V directly connected to Micro-controller pins
Voltage selection	Configurable via DIP switches
Signal functions	Digital Input, Digital Output, Interrupts, PWM.
Imax (when configured as Output)	<7 mA

Voltage Out Pins

5 V pin	5 V DC for sensor Power Supply (1 A max.)
3.3 V pin	3.3 V DC for sensor Power Supply (300 mA max.)
GND pins	Common reference in all GND pins (Vin-)

Communication Interfaces

External Buses Available	Ethernet, I2C, SPI, RS485 half-duplex or UART (Configurable via DIP switches)
Wireless communications	Bluetooth and Wi-Fi with external antenna.

Power Supply

Voltage Range (Vin)	11,4 V DC to 25,4 V DC
Max Power	30 W
Insulation Resistance	20 MΩ min. at 500 V DC between AC terminals and protective ground terminals
Dielectric strength	2.300 V AC at 50/60 Hz for one minute with a leakage current of 10 mA max. Between all the external AC terminals and the protective ground terminal.
Power supply holding time	2 ms min.

Directives

RoHS	EN 50581
LVD	EN 61010-1, EN 61010-2-201,
EMC	IEC 61000-6-1, IEC 61000-6-2, IEC 61000-6-3, IEC 61000-6-4
RED	EN 301 489-1, EN 301 489-52, EN 301 489-3, EN 301 489-17, EN 300 328, ETSI EN 300 220-1, ETSI EN 300 220-2, EN 301 908-1, EN 301 908-2, EN 301 908-13, EN 301 511
Safety	IEC62311

Marking

Marking	CE

Notes