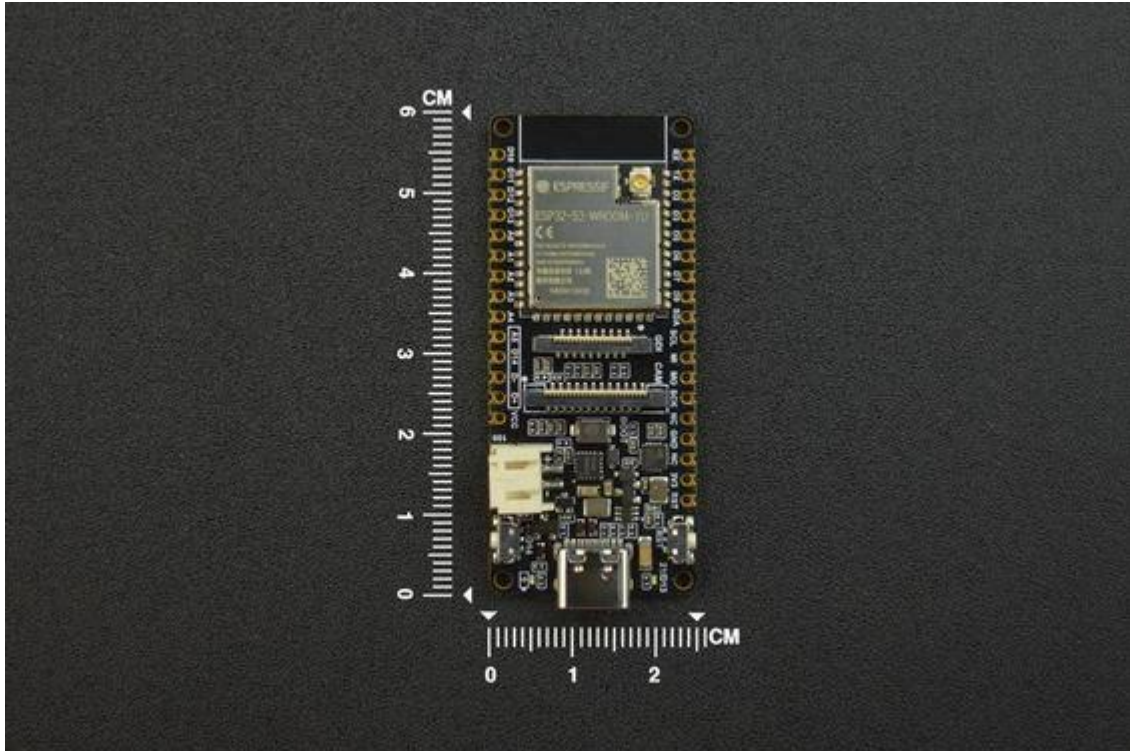


# Hardware analyse

FireBeetle 2 Board ESP32-S3-U (N16R8) AIoT Microcontroller with Camera (Wi-Fi & Bluetooth Routed through Cable)



# SPECIFICATION

## Basic Parameters

- Operating Voltage: 3.3V
- Type-C Input Voltage: 5V DC
- VCC Input Voltage: 5V DC
- Max Charging Current: 1A
- Operating Temperature: -20 to 70°C
- Dimension: 25.4x60mm/1x2.36"

## WIFI

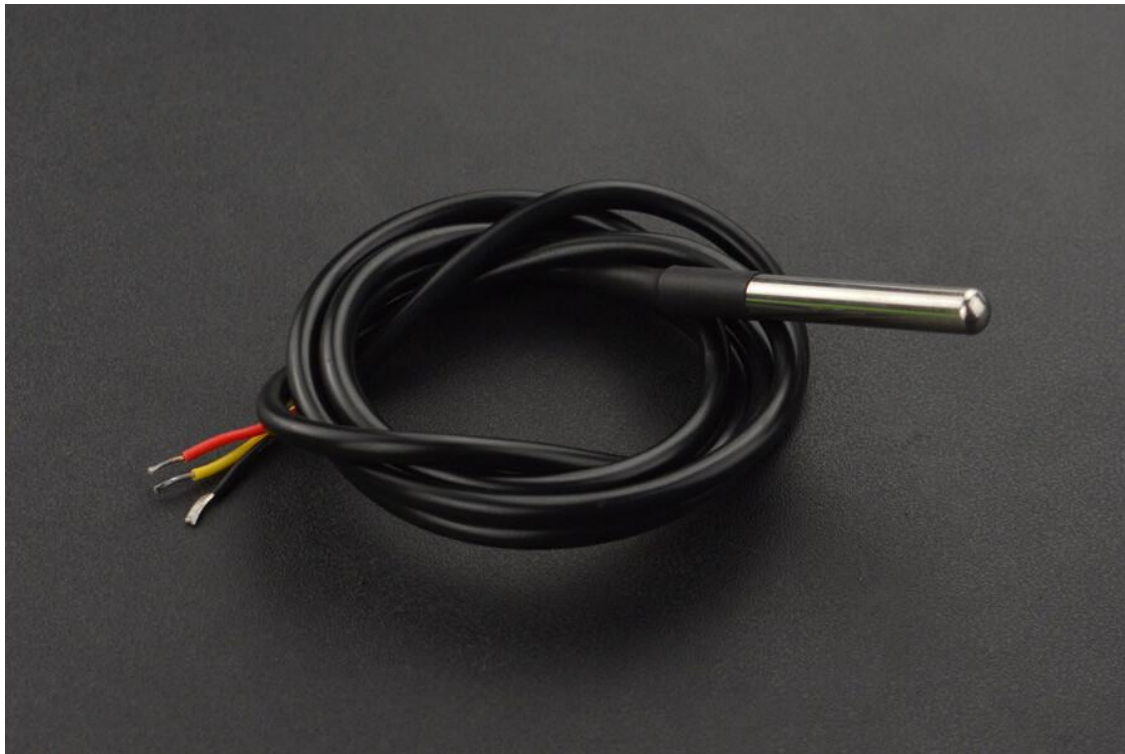
- WIFI Protocol: IEEE 802.11b/g/n
- Bandwidth: Support 20 MHz and 40 MHz at 2.4 GHz band
- WIFI Mode: Station, SoftAP, SoftAP+Station combined mode
- WIFI Frequency: 2.4GHz
- Frame Aggregation: TX/RX A-MPDU, TX/RX A-MSDU

## Ports

- Digital I/O x26
- LED PWM Controller 8 Channels
- SPI x2
- UART x3
- I2C x2
- I2S x2
- IR Transceiver: transmit channel x5, receive channel x5
- 2x12-bit SAR ADC, 20 Channels
- DMA Controller: transmit channel x5, receive channel x5

Bron: <https://www.dfrobot.com/product-2676.html>

## Waterproof DS18B20 Digital Temperature Sensor for Arduino

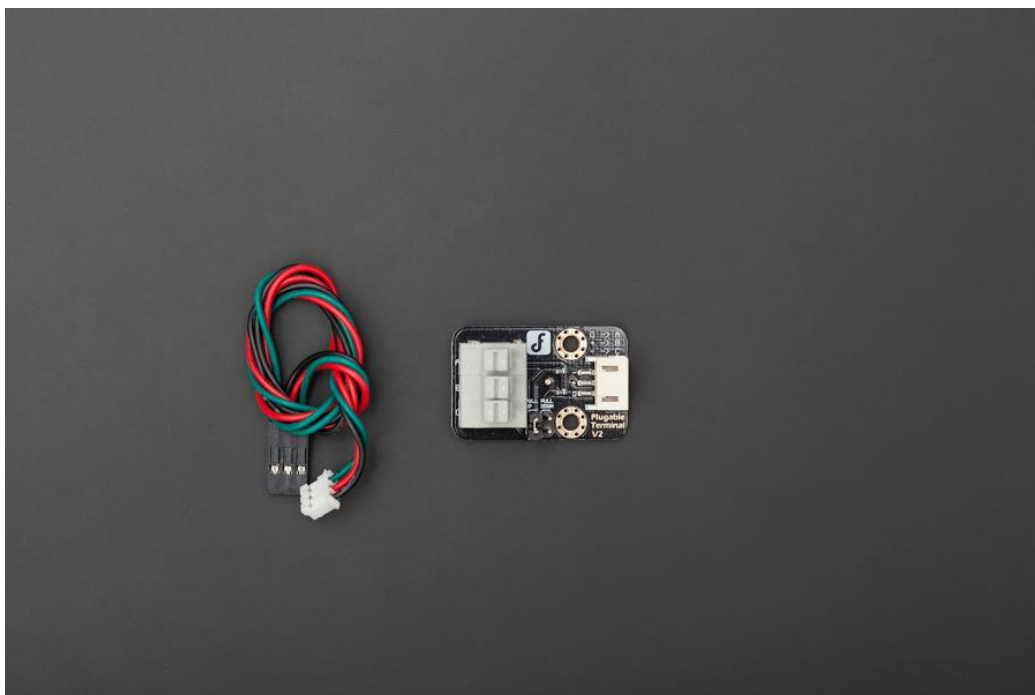


### SPECIFICATION

- Usable with 3.0V to 5.5V power/data
- $\pm 0.5^{\circ}\text{C}$  Accuracy from  $-10^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- Usable temperature range:  $-55$  to  $125^{\circ}\text{C}$  ( $-67^{\circ}\text{F}$  to  $+257^{\circ}\text{F}$ )
- 3 wires interface:
  - Type A
    - Red wire - VCC
    - Black wire - GND
    - Yellow wire - DATA
- Stainless steel tube 6mm diameter by 35mm long
- Cable diameter: 4mm (0.16)
- Length: 95cm (37.4")

Bron: <https://www.dfrobot.com/product-689.html>

## Gravity: Terminal Sensor Adapter V2.0



### *SPECIFICATION*

- Voltage: +5 V
- Current: <1000mA
- Size: 22x34mm (0.87x1.3 in)
- Red wire - VCC
- Black wire – GND
- Green wire - DATA

Bron: <https://www.dfrobot.com/product-203.html>

## Raspberry Pi Zero W



### *SPECIFICATION*

- 802.11 b/g/n wireless LAN
- Bluetooth 4.1
- Bluetooth Low Energy (BLE)
- 1GHz, single-core CPU

- 512MB RAM
- Mini HDMI® port and micro USB On-The-Go (OTG) port
- Micro USB power
- HAT-compatible 40-pin header
- Composite video and reset headers
- CSI camera connector

Bron: <https://www.raspberrypi.com/products/raspberry-pi-zero-w/>

## Kingston microSDXC-geheugenkaart »Canvas Select Plus- 32GB



## PRODUCTEIGENSCHAPPEN

- Opslagcapaciteit 32 GB
- max. leesnelheid 100 MB/s
- uitwisbaar zo vaak als nodig / wisbaar Ja
- Bijzonderheden stootvast, watervast, bestand tegen vibraties, bestand tegen röntgenstraling, temperatuurbestendig
- Breedte 11 mm
- Diepte 15 mm
- Hoogte 1 mm

Bron: [https://www.otto-office.com/bn/Kingston-microSDXC-geheugenkaart-Canvas-Select-Plus---32GB/323256/p?pshoptype=b2c&pid=GSB17-NL-SU5UmWAAAAAA-55-205502-323256&gclid=Cj0KCQjwsp6pBhCfARIsAD3GZuYipAHwPDa3P7wPCu0UhcQL9kP7YrsIFfXixLPuHV5q2SLnNqz1RwaAljEALw\\_wcB#{%22ref\\_scroll%22:%22Produkteigenschaften%22}](https://www.otto-office.com/bn/Kingston-microSDXC-geheugenkaart-Canvas-Select-Plus---32GB/323256/p?pshoptype=b2c&pid=GSB17-NL-SU5UmWAAAAAA-55-205502-323256&gclid=Cj0KCQjwsp6pBhCfARIsAD3GZuYipAHwPDa3P7wPCu0UhcQL9kP7YrsIFfXixLPuHV5q2SLnNqz1RwaAljEALw_wcB#{%22ref_scroll%22:%22Produkteigenschaften%22})