Shelly Plus Add-on



Device identification

- Device name: **Shelly Plus Add-on**

Short description

Shelly Plus Add-on (the Device) is a galvanically isolated sensor interface to the Shelly Plus and Gen3 devices.

Main applications

- Residential
- MDU (Multi Dwelling Units - apartments, condominiums, hotels, etc.)
- Light commercial (small office buildings, small retail/restaurant/gas station, etc.)
- Agricultural (greenhouses, hotbed, nurseries, ranches, etc.)
- Government/municipal
- University/college

Future integrations

- Google
- Amazon
- Samsung SmartThings

Device electrical interfaces

Inputs

- 1 analog input: **ANALOG IN**
- 1 digital input: **DIGITAL IN**

Output

- 1 reference voltage output: **VREF OUT**
- 1 reference voltage through a pull-up resistor output: **VREF + R1 OUT**
- 2 ground terminals: **GND***

1-Wire interface

- 3 sensor power supply outputs (connected to the same PCB track): **VCC**
- 3 sensor data terminals (connected to the same PCB track): **DATA**
- 3 ground terminals: **GND***
- Connected to the same PCB ground layer.

Add-on interface

- Shelly proprietary serial interface to connect to a Shelly Plus device

Supported sensors

- Up to 5 DS18B20
- Single DHT22
- NTC resistors with 10 kΩ nominal resistance and β=4000 K
- Photoresistors
- PIR sensors
- Soil moisture sensors
- Ultrasonic proximity sensors
- Capacitive liquid level sensors
- Sound detectors
- Other analog sensors with 0 to 10 V output voltage

Specifications

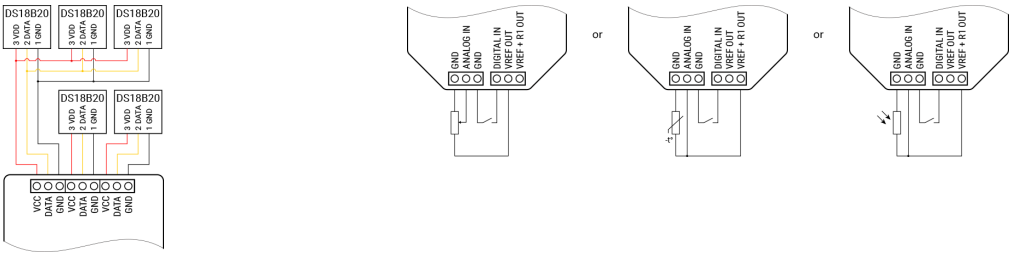
Type	Value
Physical	
Size (HxWxD):	37x42x15 ±0.5 mm / 1.46 x 1.65 x 0.59 ±0.02 in
Weigh:	105 g / 3.70 oz
Shell material:	Plastic
Screw terminals max torque:	0.1 Nm / 0.89 lbIn
Conductor cross section:	max. 1 mm² / 17 AWG
Conductor stripped length:	4.5 mm / 0.18 in
Color:	Black
Environmental	

Ambient temperature:	-20 °C to 40 °C / -5 °F to 105 °F
Humidity	30 % to 70 % RH
Max. altitude	2000 m / 6562 ft
Electrical	
Power supply voltage AC:	N/A
Power supply voltage DC:	3.3 V (from Shelly plus device)
Power consumption:	< 0.5 W (without sensors)
Output circuits ratings	
VCC max. current:	10 mA
VREF OUT max. current:	1 mA
VREF+R1 OUT resistor	10 kΩ
Shelly Plus device firmware capabilities	
Shelly Plus Addon supporting devices:	**Shelly Plus devices:** • Shelly Plus 1 • Shelly Plus 1PM • Shelly Plus 1 UL • Shelly Plus 1PM UL • Shelly Plus 2PM • Shelly Plus 2PM UL • Shelly Plus i4 • Shelly Plus i4DC • Shelly Plus 0-10V Dimmer • Shelly Plus RGBW PM
	Shelly Gen3 devices: • Shelly 1 Gen3 • Shelly 1PM Gen3 • Shelly 2PM Gen3 • Shelly Shutter • Shelly i4 Gen3 • Shelly DALI Dimmer Gen3 • Shelly Dimmer 0/1-10V PM Gen3 • Shelly EM Gen3

	Shelly Gen4 devices: • Shelly 1 Gen4 • Shelly 1PM Gen4 • Shelly 2PM Gen4
Temperature reading:	Depends on the DS18B20 or DHT22 sensors
Humidity reading:	Depends on the DHT22 sensor
Digital input:	-15 V to 0.5 V (True) / 2.5 V to 15 V (False)*
Analog input range:	0 to 100%
Analog input report threshold:	1%**
Voltmeter range:	0 to 10 V
Voltmeter report threshold:	0.1 V**
Analog input / Voltmeter accuracy	Better than ±5%

* Logic can be inverted in the digital input settings
** Can be configured in the analog input / voltmeter settings

Basic wiring diagrams



Legend

Terminals		External sensor pins	
VCC	Sensor power supply terminals	**VCC/VDD**	Sensor power supply pins
DATA	1-wire data terminals	**DATA/DQ**	Sensor data pins
GND	Ground terminals	**GND**	Ground pins
ANALOG IN	Analog input		
DIGITAL IN	Digital input		
VREF OUT	Reference voltage output		

VREF+R1 OUT	Reference voltage through a pull-up resistor* output		
*For passive devices that need it to form a voltage divider.			

Troubleshooting

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Components and APIs

- This device
- All Shelly devices and services

Printed user guide

- Shelly Plus Add-on multilingual printed user and safety guide.pdf
- Ръководство за употреба и безопасност

Compliance

- Shelly Plus Add-On multilingual EU declaration of conformity.pdf
- Shelly Plus Add-On UK PSTI ACT Statement of compliance.pdf
- Shelly Plus Add-on AU NZ Certificate for Suitability.pdf

Installation guides

- Use Shelly Plus 2PM and Add-on with a wind sensor to retract your motorized awning in high winds
- Using Shelly Plus Add-on to measure soil moisture with a capacitive sensor
- Using Shelly Plus Add-on with a capacitive liquid detection sensor
- Using Shelly Plus Add-on with a LDR (photoresistor) to control lights