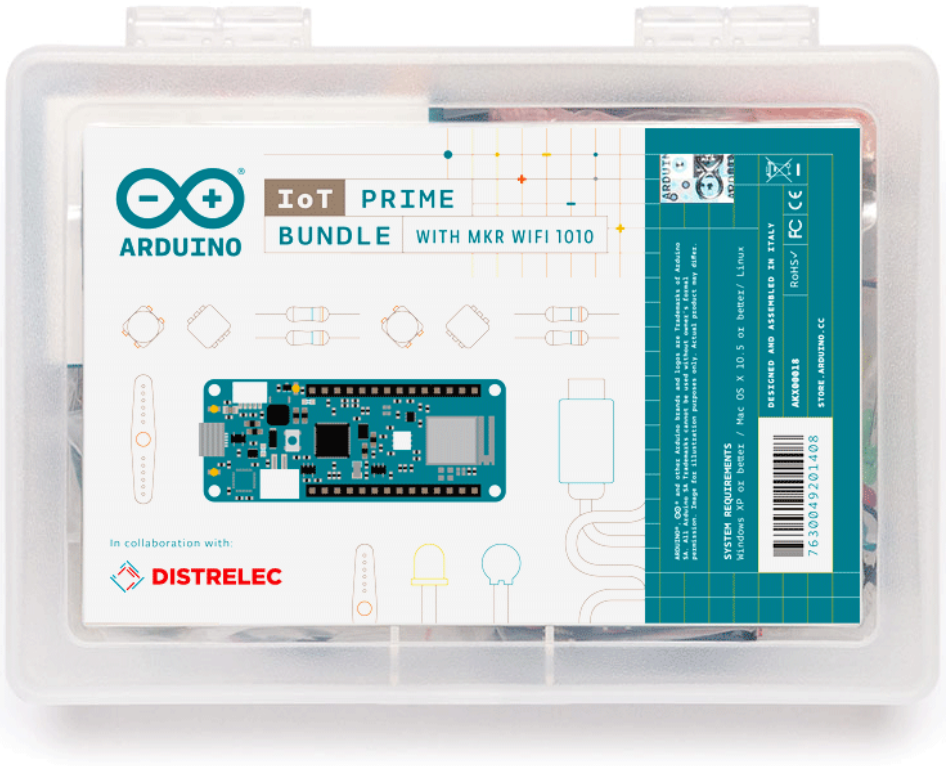
IoT Prime Bundle with MKR1010

Code: AKX00018

The **MKR IoT Prime Bundle** with MKR WIFI 1010 walks you through the basics of using the Arduino MKR1010 for IoT applications, in conjunction of MKR Environmental Shield and MKR Relay carrier and Arduino Cloud.
You'll learn through building 5 creative experiments thanks to the step by step online tutorials available on the Arduino Project Hub platform

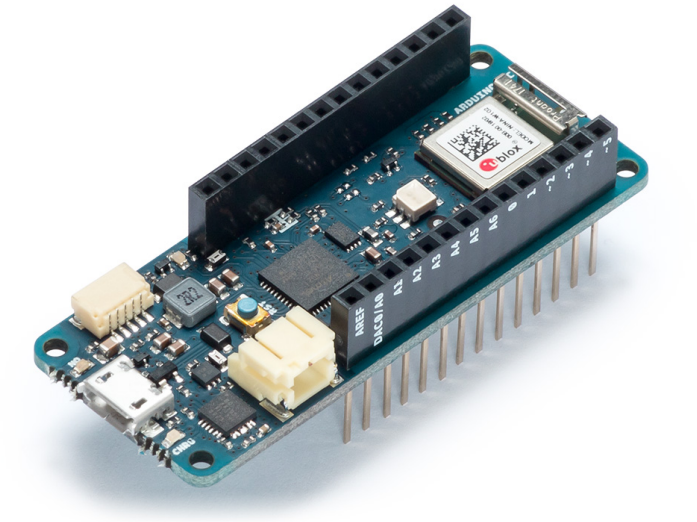


Each bundle includes:

1 Arduino MKR WIFI 1010 board
1 Arduino MKR ENV shield
1 MKR relay proto shield
1 Breadboard
1 LED (Red)
1 LED (Green)
1 LED (Yellow)
1 LED (Blue)
1 LED (RGB)
1 Piezo Capsule
70 Solid Core Jumper Wires
1 Photoresistor
20 Resistors 22 Ohm
5 Resistors 56 Ohm
5 Resistors 1K Ohm
20 Resistors 10K Ohm
5 Resistors 1M Ohm
5 Resistors 10M Ohm
1 USB cable

Want to add a WiFi interface to your devices?

Get the MKR WIFI 1010



The MKR WIFI 1010 is a significant improvement on the MKR 1000 WIFI.
It's equipped with an ESP32 module made by U-BLOX. This board aims to speed up and simplify the prototyping of WiFi based IoT applications thanks to the flexibility of the ESP32 module and its low power consumption.

The board is composed of three main blocks:

- SAMD21 Cortex-M0+ 32bit Low Power ARM MCU
- U-BLOX NINA-W10 Series Low Power 2.4GHz IEEE® 802.11 b/g/n Wi-Fi
- ECC508 Crypto Authentication

The MKR WIFI 1010 includes 32-bit computational power, the usual rich set of I/O interfaces, and low power Wi-Fi with a Cryptochip for secure communication using SHA-256 encryption.
Plus, it offers ease of use Arduino Software (IDE) for code development and programming.
All of these features make this board the preferred choice for the emerging IoT battery-powered projects in a compact form.
Its USB port can be used to supply power (5V) to the board.

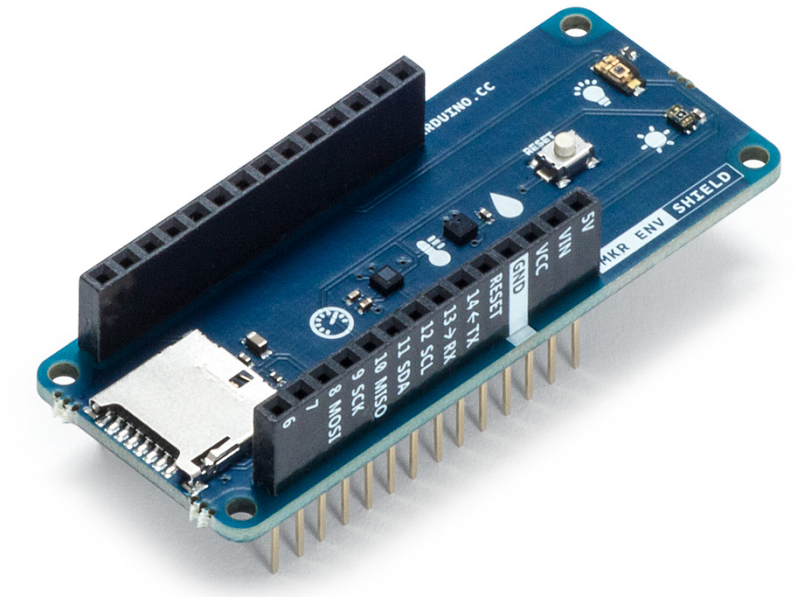
It has a Li-Po charging circuit that allows the Arduino MKR WIFI 1010 to run on battery power or an external 5 volt source, charging the Li-Po battery while running on external power. Switching from one source to the other is done automatically.

Warning: Unlike most Arduino boards, the MKR WIFI 1010 runs at 3.3V. The maximum voltage that the I/O pins can tolerate is 3.3V. Applying voltages higher than 3.3V to any I/O pin could damage the board. While output to 5V digital devices is possible, bidirectional communication with 5V devices needs proper level shifting

Microcontroller	SAMD21 Cortex-M0+ 32bit Low Power ARM MCU
Board Power Supply (USB/VIN)	5V
Supported Battery(*)	Li-Po Single Cell, 3.7V, 700mAh Minimum
Circuit Operating Voltage	3.3V
Digital I/O Pins	8
PWM Pins	12 (0, 1, 2, 3, 4, 5, 6, 7, 8, 10, A3 - or 18 -, A4 - or 19)
UART	1
SPI	1
I2C	1
I2S	1
Connectivity	WiFi
Analog Input Pins	7 (ADC 8/10/12 bit)
Analog Output Pins	1 (DAC 10 bit)
External Interrupts	8 (0, 1, 4, 5, 6, 7, 8, A1 -or 16-, A2 - or 17)
DC Current per I/O Pin	7 mA
Flash Memory	256 KB
SRAM	32 KB
EEPROM	No
Clock Speed	32.768 kHz (RTC), 48 MHz
LED_BUILTIN	6
Full-Speed USB Device and Embedded Host	Included
LED_BUILTIN	6
Length	61.5 mm
Width	25 mm
Weight	32 gr.

ARDUINO MKR ENV SHIELD

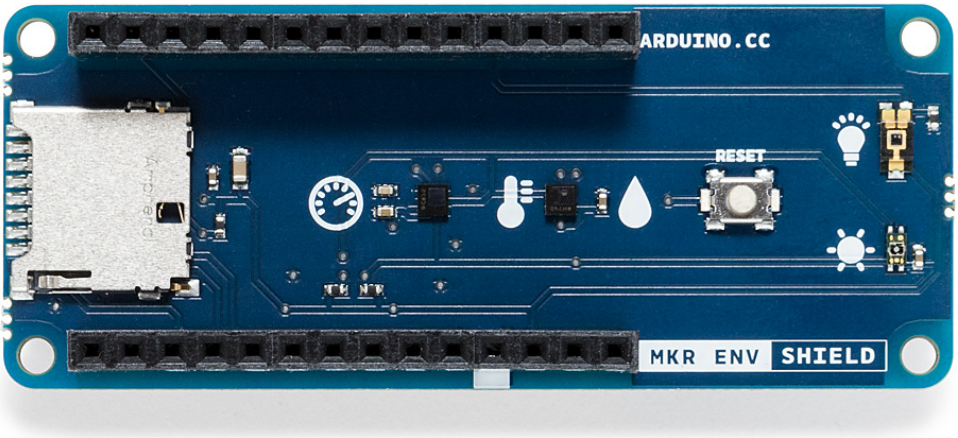
Add environmental sensors to your MKR board at a glance.



The MKR ENV Shield allows a MKR board to acquire environmental data collected by an array of sensors.

These sensors are of the latest generation and measure:

- Atmospheric pressure
- Temperature and humidity
- Ultraviolet UVA intensity Ultraviolet UVB intensity,
- UV Index (calculated)
- Light intensity (in LUX)



To help you build projects and store the data collected locally, this shield has a slot for a microSD card (not provided).

There is a ready to use library with examples and methods to read values from the different sensors, that provides an easy and smooth integration path.

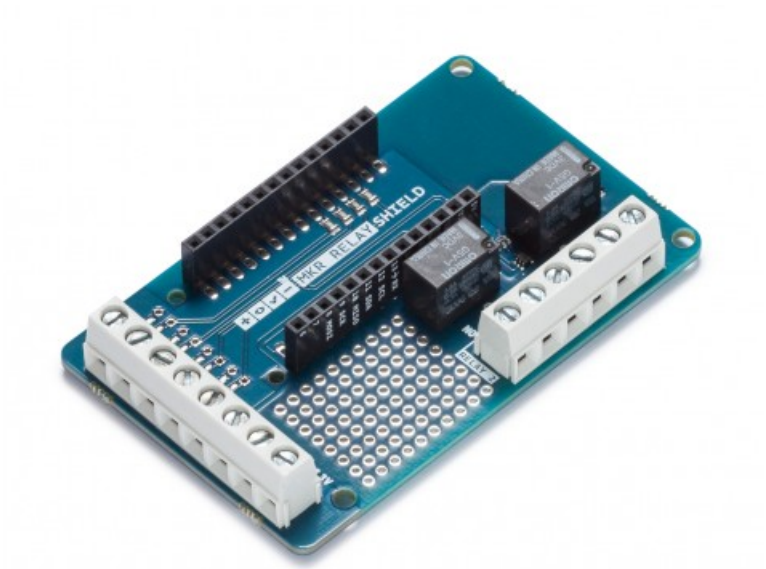
Sensors used :

- ST LPS22HB : atmospheric pressure
- ST HTS221 : temperature and humidity
- VISHAY TEMT6000 : Lux of the ambient.
- VISHAY VEML6075 : UltraViolet wavelengths A / B

ICs	LPS22HB TEMT6000 VEML6075
Input Voltage	3.3V
Operating Voltage	3.3V
Ranges	Pressure: 260 to 1260 hPa rH sensitivity: 0.004% rH/LSB Humidity accuracy: ± 3.5% rH, 20 to +80% rH UVA, UVB and UVBI measurment
Communication	I2C/Analog
Length	61 mm
Width	25 mm
Weight	32 gr.

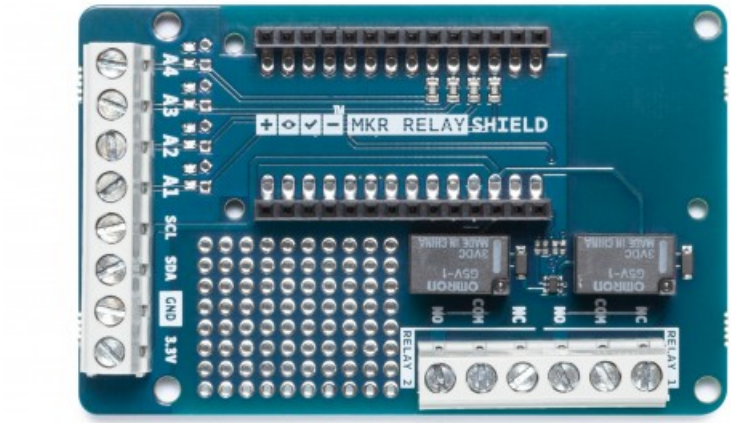
ARDUINO MKR RELAY SHIELD

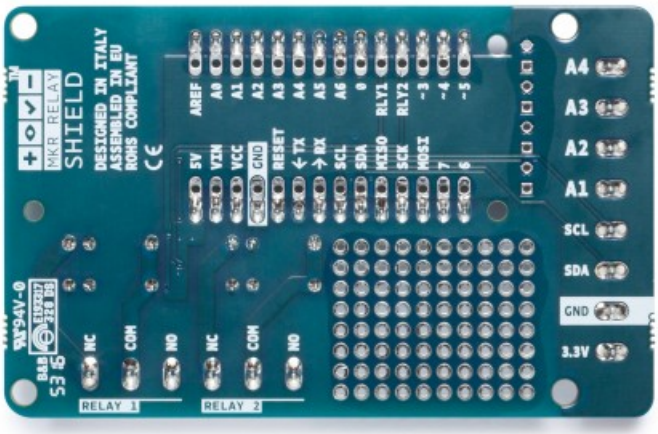
The MKR Relay Proto Shield allows you to easily command relays with your MKR board. The shield provides two on board relays and a small prototyping area if you need to add some other component to your project.



The MKR Relay Shield allows you to easily add relays to your MKR board based project.
The shield provides two relays called **RELAY1** and **RELAY2** commanded by **pin 1** and **pin 2** respectively.
The shield also provides easy connection by means of screw terminal blocks to **A1** to **A4** analog inputs, **I2C** and **supply voltages**.

- Operating voltage 3.3V (supplied from the host board)
- Two relays with **NO**, **COM** and **NC** connections
- Works with battery powered board
- Screw terminal blocks for easy connections
- Carry current: 2 A
- Max. operating voltage: 125 VAC, 60 VDC
- Max. operating current: 1 A
- Max. switching capacity: 62.50 VA, 30W


MKR RELAY SHIELD
A4
A3
A2
A1
SCL
SDA
GND
3.3V
OMRON
G5V-1
MADE IN CHINA
NO
COM
NC
RELAY 1
RELAY 2


MKR RELAY
SHIELD
DESIGNED IN ITALY
ASSEMBLED IN EU
ROHS COMPLIANT
AREF
A0
A1
A2
A3
A4
A5
A6
0
RLY1
RLY2
-3
-4
-5
5V
VIN
VCC
GND
RESET
TX
RX
SCL
SDA
MISO
SCK
MOSI
7
6
A4
A3
A2
A1
SCL
SDA
GND
3.3V
NC
COM
NO
RELAY 1
RELAY 2

The IoT Prime Bundle with MKR WIFI 1010 is based on the Arduino's unique 'Panini Concept' — where designers pick up a MKR board, then mix-and-match it with the desired shields and carrier boards to create custom hardware configurations for IoT projects as if they were crafting a sandwich!