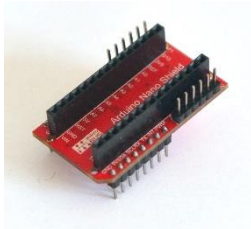


## Arduino Nano Shield



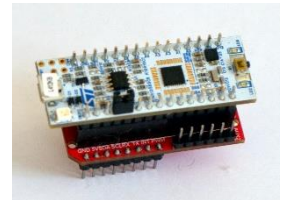
The **Arduino Nano Shield** is an adapter that allows you to install Arduino Nano compatible modules in the mikroBUS slot or connect mikroBUS modules (such as [MikroElektronika](#)'s Click®) to Arduino Nano or compatible modules.

The list of modules installed in the Arduino Nano slot of this shield:

[Arduino Nano](#), [Arduino Nano 33 BLE](#), [Arduino Nano 33 BLE Sense](#), [Arduino Nano 33 IOT](#), [Arduino Nano RP2040 Connect](#) as well as numerous clones of these modules



Modules of the [Nucleo-32](#) family (NUCLEO-F031K6, NUCLEO-F042K6, NUCLEO-F303K8, NUCLEO-G031K8, NUCLEO-G431KB, NUCLEO-L011K4, NUCLEO-L031K6, NUCLEO-L412KB, NUCLEO-L432KC, NUCLEO-8S207K8) from STMicroelectronics



with all software and services from specified companies.

The correspondence of Arduino Nano or STM32 Nucleo-32 contacts and **Arduino Nano Shield** connectors is as follows:

Arduino Nano	mikroBUS LEFT	mikroBUS RIGHT	AUX1	AUX2
LEFT	D13	SCK		
	3V3	3V3		
	REF		1	
	A0	AN		
	A1		2	
	A2		3	
	A3		4	
	A4	SDA		
	A5	SCL		
	A6		5	
	A7		6	
	5V	5V		
	RST	RST		
	GND	GND		
	VIN			
RIGHT	D12	MISO		
	D11	MOSI		
	D10	CS		
	D9		PWM	
	D8			6
	D7			5
	D6			4
	D5			3
	D4			2
	D3			1
	D2		INT	
	GND	GND	GND	
	RST	RST		
	RX0		RX	
	TX0		TX	

The mikroBUS and AUX connectors on this shield have exactly the same pin assignment as on the [Arduino Nano & Nucleo-32 Adapter](#) module (the only difference is in the names of the AUX connectors).

The bottom-side shield has a Qwiic connector for I<sup>2</sup>C. The bottom-side also houses pull-up resistors for I<sup>2</sup>C. They are switchable (using JP jumpers on bottom-side), resistors are connected by default.

On the bottom-side there are also jumpers to select direct and cross-connect RX and TX to the corresponding mikroBUS signals.

List of jumpers on the bottom-side and their default states:

	Function	Default state
JP1	pull-up for i2c	CLOSE
JP2		CLOSE
JP3	direct or cross connection for TX0 (default is direct)	CLOSE
JP4		OPEN
JP5	direct or cross connection for RX0 (default is direct)	CLOSE
JP6		OPEN
JP7	BME280 address on i2c	OPEN
JP8	3V3 source for mikroBUS (JP8 - Arduino Nano, JP9 - Shield), default Arduino Nano	CLOSE
JP9		OPEN

The **Arduino Nano Shield** contains (on the bottom-side) the voltage regulator [AMS1117-3.3](#) and the necessary capacitors. On the bottom-side there is a jumper defining the 3V3 source on the mikroBUS (from the installed to Arduino Nano slot module or from AMS1117-3.3). By default - from the installed module. For Nucleo-32, it makes sense to use AMS1117-3.3, since the regulator on Nucleo-32 is low-power (0.5A).

Optionally, a [BME280](#) is installed on the bottom-side of the module (7-bit address on I<sup>2</sup>C = 111011x). The address for BME280 is selected with jumpers on the bottom-side. The default address should be 1110111.



**Arduino Nano Shield** size - 43.18 x 25.4 mm.

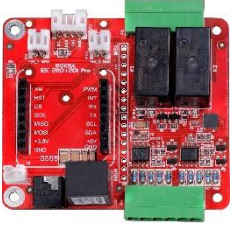
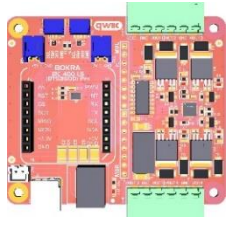
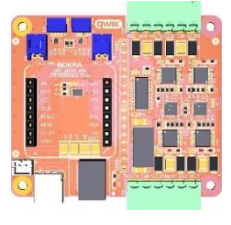
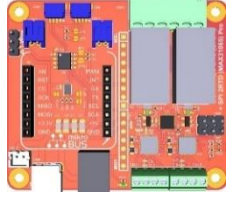


The main areas of application of the shield:

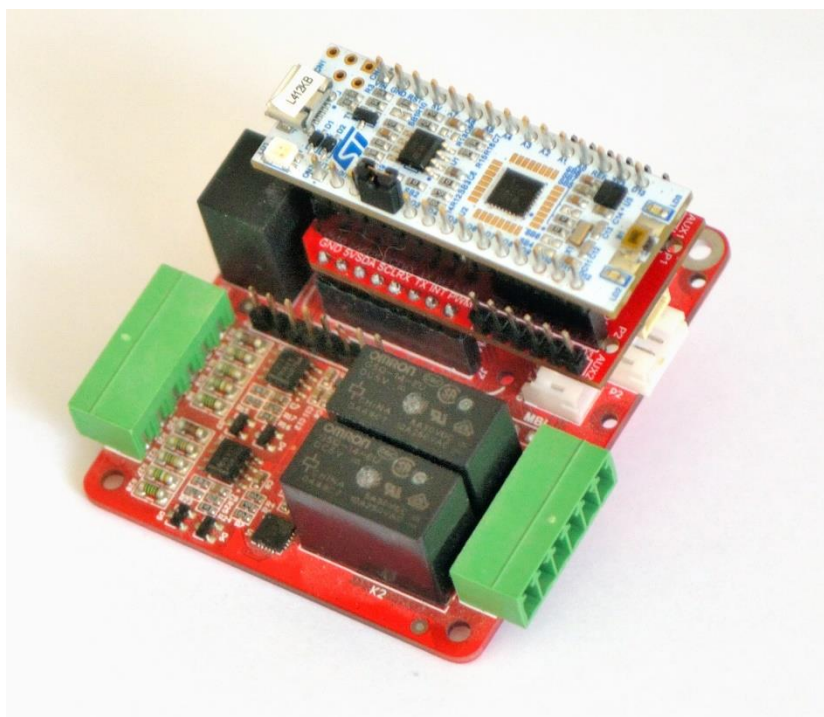
- Consumer electronics
- Distributed Data Acquisition Systems
- Lighting
- Smart sensors
- Air condition monitoring
- PLC
- Smart home control
- Motor control

With **Arduino Nano Shield**, it is easy to use Arduino Nano and compatible modules to control the following Pro Series I / O modules:

Image	Name	Characteristics
	I2C 4AI ADS1x15 Pro	4 channels differential analog input based on 16-bit ADS1115 and 12-bit ADS1015 ADC. The two Texas Instruments $\Delta\Sigma$ (delta-sigma) ADCs installed on the module. Voltage measurement ranges: 0-0.5V, 0-5V, 0-10V, $\pm 0.5V$ , $\pm 5V$ , $\pm 10V$ . Current measurement ranges: 0-20mA, 4-20mA, $\pm 20mA$ , 0-40mA. Measurement speed: up to 860 measurements per second for ADS1115 and up to 3300 measurements per second for ADS1015.
	I2C 2RO+2AI Pro	2 Omron G5Q-14 relays and 2 analog input channels based on an ADC from Texas Instruments (either ADS1115-Q1 or ADS1015). Voltage measurement ranges: 0-0.5V, 0-5V, 0-10V, $\pm 0.5V$ , $\pm 5V$ , $\pm 10V$ . Current measurement ranges: 0-20mA, 4-20mA, $\pm 20mA$ , 0-40mA. Measurement speed: up to 860 measurements per second for ADS1115 and up to 3300 measurements per second for ADS1015.

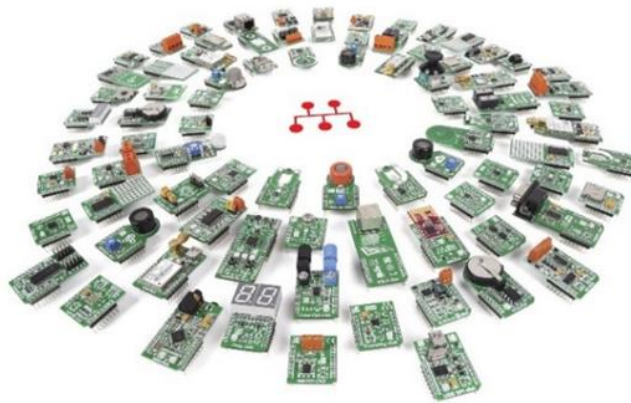
	I2C 2RO+2DI Pro	2 Omron G5Q-14 relays and 2 digital input channels (based on Texas Instruments ISO1211). The modules allow you to enter the values of 2 digital signals, both DC and AC. Supports 9-V to 300-V DC and AC digital input. Compliant to IEC 61131-2; Type 1, 2, 3 characteristics for 24-V isolated digital inputs. Accurate Current Limit for Low-Power Dissipation: – 2.2 mA to 2.47 mA for Type 3. Maximum transient isolation voltage (up to 60s) – 3600V.
	I2C 4DO LS (BTS3160D) Pro	4 channels low-side digital output, based on BTS3160D.
	I2C 4DO HS (TPS1H100) Pro	4 channels high-side digital output, based on TPS1H100.
	I2C 2RO + SPI 2RTD Pro	2 Omron G5Q-14 relays and 2 digital input channels (based on Texas Instruments ISO1211).

This is what the Arduino Nano looks like, installed with the **Arduino Nano Shield** in the module **I2C 2RO + 2DI Pro**:



You can also learn more about the **I2C 2RO + 2DI Pro** module on the [IoTThings Digital](#) page at Crowd Supply.

[MikroElektronika](http://MikroElektronika) manufactures numerous modules with mikroBUS interface - Click® modules.



All these modules can be easily connected directly to the Arduino Nano using the **Arduino Nano Shield**.

**Arduino Nano Shield** schematic:

