Datasheet
M-Duino 42+
WiFi & BLE

Industrial Shields®
### Technical Features

**CONECTABLE PLC ARDUINO 24Vcc M-DUINO**

#### General Features

- **Power supply range**: 12 to 24Vdc
- **Operating voltage range**: 11.4 to 25.4Vdc
- **Power consumption**: DC power supply
- **External power supply**: Power supply voltage
- **Power supply voltage**: 24Vdc
- **Power supply voltage**: 700Ma
- **Insulation resistance**: 20MΩ min. at 500Vdc between the AC terminals and the protective earth terminal.
- **Dielectric strength**: 2,300 VAC at 50/60 Hz for one minute with a leakage current of 30mA max. Between all the external AC terminals and the protective ground terminal.
- **Shock resistance**: 80m/s² in the X, Y and Z direction
- **Ambient temperature (operating)**: 0°C to 60°C
- **Ambient humidity (operating)**: 10% to 90% (no condensation)
- **Ambient environment (operating)**: With no corrosive gas
- **Ambient temperature (storage)**: -20°C to 60°C
- **Power supply holding time**: 2ms min.
- **Weight**: 488g max.

#### Inputs (x26)

- **An/Dig Input 10bit (0-10Vcc) – (x12)**
  - I max: 2 to 12 mA
  - Galvanic isolation
  - Rated Voltage: 24 Vdc

- **Digital Isolated Input (24Vcc) – (x10)**
  - I max: 20 mA
  - Galvanic isolation
  - Rated Voltage: 24 Vdc

- **Interrupt Isolated Input HS (24Vcc) – (x4)**
  - I max: 12 mA
  - Galvanic isolation
  - Rated Voltage: 24 Vdc

#### Outputs (x16)

- **Analog Output 8Bit (0-10Vcc) – (x6)**
  - 0 to 10Vac
  - Input Impedance: 39k
  - Separated PCB ground
  - Rated Voltage: 10Vac
  - 7 to 24Vdc
  - I min: 2 to 12 mA
  - Galvanic isolation
  - Rated Voltage: 24 Vdc

- **Digital Isolated Output (24Vcc) – (x10)**
  - I max: 70 mA
  - Galvanic isolation
  - Diode protected for Relay
  - Rated Voltage: 24Vdc

- **Digital Isolated Output (8bit 24Vcc) – (x6)**
  - 220V Vac
  - I max: 5A
  - Galvanic isolation
  - Diode protected for Relay
  - Rated Voltage: 24Vdc

- **PWM Isolated Output 8bit (24Vcc) – (x6)**
  - 5 to 24Vdc
  - I max: 410 mA
  - Galvanic isolation
  - Diode protected for Relay
  - Rated Voltage: 24Vdc

#### Expansion

- **I2C - 127 elements - Serial Port RS232/RS485**

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**DataSheet Rev. 20230428**
The steps to follow to install our equipment’s to Arduino IDE are:

- Open the Arduino IDE, versión 1.8.0 or superior. If you don’t have it yet, you can download here: https://www.arduino.cc/en/Main/Software.
- Press the “Preferences” option to “File” menu and open the preferences window.
- In the text box “Additional boards manager URLs”, add the direction: http://apps.industrialshields.com/main/arduino/boards/package_industrialshields_index.json
- Close the preferences window with the “OK” button.
- Click on “Tools” menu, and open the “Boards” submenu, and click the “Boards Manager” option, to open the Boards Manager window.
- Search “industrialshields” to the search filter and select to the list and click “Install”.
- Close the “Boards Manager”. Once it is performed these steps, you are available to select each PLC that you wish to work on “Tools” -> “Boards” : M-Duino…

To get more information: https://www.industrialshields.com/first-steps-with-the-industrial-arduino-based-plc-s-and-the-panel-pc-s-raspberry-pi-based#boards

Unused pins should not be connected. Ignoring the directive may damage the controller.

Before using this product, it is the responsibility of the user to read the product’s User Guide and all accompanying documentation.

Industrial Shields PLCs must be powered between 12Vdc and 24Vdc. If a higher voltage is supplied to the equipment can suffer irreversible damage.

Maintenance must be performed by qualified personnel familiarized with the construction, operation, and hazards involved with the control. Maintenance should be performed with the control out of operation and disconnected from all sources of power.

The Industrial Shields Family PLCs are Open Type Controllers. It is required that you install the M-Duino PLC in a housing, cabinet, or electric control room. Entry to the housing, cabinet, or electric control room should be limited to authorized personnel.

Inside the housing, cabinet or electric control room, the Industrial Shields PLC must be at a minimum distance from the rest of the components of a minimum of 25 cm, it can be severely damaged.

Failure to follow these installation requirements could result in severe personal injury and/or property damage. Always follow these requirements when installing M-Duino family PLCs.

In case of installation or maintenance of the M-Duino please follow the instructions marked in the Installation and Maintenance section on the User Guide.

Do not disconnect equipment when a flammable or combustible atmosphere is present. Disconnection of equipment when a flammable or combustible atmosphere is present may cause a fire or explosion which could result in death, serious injury and/or property damage.

You can contact with us using the best channel for you:

- Visit our Channel
- Check the user guides
- Visit our Blog, Forum or Ticketing system

You can join our Community in: www.industrialshields.com/support@industrialshields.com