Datasheet
M-Duino 57AAR+
WiFi & BLE

Industrial Shields®
Technical Features

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

**MODEL TYPE**
M-Duino HF WiFi & BLE

**Input Voltage**
12 to 24Vdc; 0 to 10Vac

**Input rated voltage**
24Vdc

**Rated Power**
30 W

**I max.**
1.5A

**Size**
101x193x195

**Clock Speed**
16MHz

**Flash Memory**
256KB of which 8KB used by bootloader

**SRAM**
8KB

**EEPROM**
4KB

**Communications**
I2C, Ethernet, USB, RS485, RS232, SPI (Rx, Tx (Arduino pins), WiFi, BLE, Max232, Max485, W5500

**USB consideration**
Only for uploading or debugging, NOT connected as a serial

**Input Rated Voltage**

- 0 to 10Vac: I max: 20 mA
- 7 to 24Vdc: I max: 1.2 mA

- 0 to 10Vac: I max: 5 mA
- 7 to 24Vdc: I max: 120 mA

**Output Rated Voltage**

- 24Vdc
- 10Vdc: I max: 5 mA

**Power supply voltage**
DC power supply: 24Vdc

**Operating voltage range**
DC power supply: 11.4 to 25.4Vdc

**Power consumption**
DC power supply: 30 W

**External power supply**
Power supply voltage: 24Vdc

**Power supply holding time**
2ms min.

**Weight**
597g max.

**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 20mA max. between all the external AC terminals and the protective ground terminal.

**Shock resistance**
80m/s² in the X, Y and Z direction 2 times each.

**Ambient temperature (operating)**
0º to 60ºC

**Ambient humidity (operating)**
10% to 90% (no condensation)

**Ambient environment (operating)**
With no corrosive gas

**Ambient temperature (storage)**
-20º to 60ºC

**Input Voltage**
7 to 24Vdc

**Power supply voltage**
DC power supply: 700Ma

**I max:**
1.5A

**Size**
101x119.3x119.5

**Flash Memory**
4KB

**EEPROM**
2KB

**Communications**
I2C, Ethernet, USB, RS485, RS232, SPI (Rx, Tx (Arduino pins), WiFi, BLE, Max232, Max485, W5500

**USB consideration**
Only for uploading or debugging, NOT connected as a serial

**Input Rated Voltage**

- 0 to 10Vac: I max: 20 mA
- 7 to 24Vdc: I max: 1.2 mA

- 0 to 10Vac: I max: 5 mA
- 7 to 24Vdc: I max: 120 mA

**Output Rated Voltage**

- 24Vdc
- 10Vdc: I max: 5 mA

**Power supply voltage**
DC power supply: 24Vdc

**Operating voltage range**
DC power supply: 11.4 to 25.4Vdc

**Power consumption**
DC power supply: 30 W MAX.

**External power supply**
Power supply voltage: 24Vdc

**Power supply holding time**
2ms min.

**Weight**
30 W MAX.

**Insulation resistance**
2.300 VAC at 50/60 Hz for one minute with a leakage current of 10mA max. between all the external AC terminals and the protective ground terminal.

**Dielectric strength**
2.300 VAC at 50/60 Hz for one minute with a leakage current of 10mA max. between all the external AC terminals and the protective ground terminal.

**Shock resistance**
80m/s² in the X, Y and Z direction 2 times each.

**Ambient temperature (operating)**
0º to 60ºC

**Ambient humidity (operating)**
10% to 90% (no condensation)

**Ambient environment (operating)**
With no corrosive gas

**Ambient temperature (storage)**
-20º to 60ºC

**Power supply holding time**
2ms min.

**Weight**
597g max.

**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 20mA max. between all the external AC terminals and the protective ground terminal.

**Shock resistance**
80m/s² in the X, Y and Z direction 2 times each.

**Ambient temperature (operating)**
0º to 60ºC

**Ambient humidity (operating)**
10% to 90% (no condensation)

**Ambient environment (operating)**
With no corrosive gas

**Ambient temperature (storage)**
-20º to 60ºC

**Power supply holding time**
2ms min.

**Weight**
597g max.

**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 20mA max. between all the external AC terminals and the protective ground terminal.

**Shock resistance**
80m/s² in the X, Y and Z direction 2 times each.

**Ambient temperature (operating)**
0º to 60ºC

**Ambient humidity (operating)**
10% to 90% (no condensation)

**Ambient environment (operating)**
With no corrosive gas

**Ambient temperature (storage)**
-20º to 60ºC

**Power supply holding time**
2ms min.

**Weight**
597g max.

**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 20mA max. between all the external AC terminals and the protective ground terminal.

**Shock resistance**
80m/s² in the X, Y and Z direction 2 times each.

**Ambient temperature (operating)**
0º to 60ºC

**Ambient humidity (operating)**
10% to 90% (no condensation)

**Ambient environment (operating)**
With no corrosive gas

**Ambient temperature (storage)**
-20º to 60ºC

**Power supply holding time**
2ms min.

**Weight**
597g max.
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_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 that 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

Warnings

- 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.

Symbology

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️</td>
<td>Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury</td>
</tr>
<tr>
<td>⚡️</td>
<td>To indicate hazards arising from dangerous voltages</td>
</tr>
<tr>
<td>❌</td>
<td>CE marking indicates that a product complies with applicable European Union regulations</td>
</tr>
<tr>
<td>⬇️</td>
<td>To identify an earth (ground) terminal in cases where neither the symbol 5018 nor 5019 is explicitly required.</td>
</tr>
<tr>
<td>☑️</td>
<td>Indicates that the equipment is suitable for alternating current only; to identify relevant terminals</td>
</tr>
<tr>
<td>⬆️</td>
<td>To identify the control by which a pulse is started.</td>
</tr>
<tr>
<td>⚡️</td>
<td>To identify relevant terminals</td>
</tr>
<tr>
<td>🌍</td>
<td>Indicates that the equipment is suitable for direct current only; to identify relevant terminals</td>
</tr>
</tbody>
</table>

Technical Support

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

- Support: support@industrialshields.com
- Visit our Blog, Forum or Ticketing system: www.industrialshields.com
- Use our chat service
- Check the user guides
- Visit our Channel: IS.MDuino 57AAR+ WiFi & BLE