### Technical Features

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

**MODEL TYPE**
- M-Duino LoRa
- Original Arduino Mega included

**Inputs (x25)**
- **An/Dig Input 10bit (0-10Vcc) - (x12)**
  - 0 to 10Vcc
  - Input Impedance: 39K
  - Separated PCB ground
  - Rated Voltage: 24Vdc
  - I min: 2 to 12 mA
  - Galvanic Isolation
  - Rated Voltage: 24 Vdc
- **Digital Isolated Input (24Vcc) - (x10)**
  - 5 to 24Vdc
  - I min: 2 to 12 mA
  - Galvanic Isolation
  - Rated Voltage: 24 Vdc
- **Interrupt Isolated Input (24Vcc) - (x3)**
  - 5 to 24Vdc
  - I min: 2 to 12 mA
  - Galvanic Isolation
  - Rated Voltage: 24 Vdc

**Outputs (x16)**
- **Analog Output 8bit (0-10Vcc) / PWM Isolated Output 8bit (24Vcc) - (x6)**
  - The Analog & PWM outputs can also work as Digital outputs.
  - The configuration between Analog and PWM isolated outputs can be done by switch.
- **Digital Isolated Output (24Vcc) - (x10)**
  - 5 to 24Vdc
  - I max: 70 mA
  - Galvanic Isolation
  - Diode Protected for Digital isolated outputs
  - Rated Voltage: 24 Vdc

### General Features

**Power supply voltage**
- DC power supply
  - 12 to 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 voltage
  - 700Ma

**Insulation resistance**
- 20MO 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 10mA max. Between all the external AC terminals and the protective ground terminal.

**Shock resistance**
- 30m/s2 in the X, Y and Z direction
  - 2 times each.

**Ambient temperature (operating)**
- 0° to 60°C

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

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

**Ambient temperature (storage)**
- -20° to 60°C

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

**Weight**
- 490 g max.

### Pinout

- **C ZONE**
- **B ZONE**
- **A ZONE**
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.
- 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 that the equipment is suitable for direct current only, to identify relevant terminals</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 an earth (ground) terminal in cases where neither the symbol 5018 nor 5019 is explicitly required.</td>
</tr>
<tr>
<td>✕️</td>
<td>To identify the switch by means of which the signal lamp(s) is (are) switched on or off.</td>
</tr>
<tr>
<td>CE</td>
<td>CE marking indicates that a product complies with applicable European Union regulations</td>
</tr>
<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>
</tbody>
</table>

### Technical Support

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

- Email: support@industrialshields.com
- Website: www.industrialshields.com
- Visit our Blog, Forum or Ticketing system
- Use our chat service
- Check the user guides
- Visit our Channel