Datasheet
Ardbox Analog
HF WiFi & BLE

Industrial Shields®
### Technical Features

**CONECTABLE PLC ARDUINO 24Vcc ARDBOX**

**MODEL TYPE:** Ardbox Analog HF WiFi & BLE

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>12 to 24Vdc (Fuse protection (25A) Polarity protection)</td>
</tr>
<tr>
<td>Input rated voltage</td>
<td>24Vdc</td>
</tr>
<tr>
<td>Rated Power</td>
<td>30 W</td>
</tr>
<tr>
<td>I max.</td>
<td>1.5A</td>
</tr>
<tr>
<td>Size</td>
<td>100x45x15S</td>
</tr>
<tr>
<td>Clock Speed</td>
<td>16MHz</td>
</tr>
<tr>
<td>Flash Memory</td>
<td>32KB of which 4KB used by bootloader</td>
</tr>
<tr>
<td>SRAM</td>
<td>2.5KB</td>
</tr>
<tr>
<td>EEPROM</td>
<td>1KB</td>
</tr>
<tr>
<td>Communications</td>
<td>I2C, USB, RS485, RS232, SPI (2x) Rx, Tx (Arduino pins), WiFi, BLE Max2230, Max5200</td>
</tr>
<tr>
<td>USB consideration*</td>
<td>Only for uploading or debugging, NOT connected as a serial</td>
</tr>
<tr>
<td></td>
<td>Cannot be working in a final application</td>
</tr>
</tbody>
</table>

### General Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply voltage</td>
<td>DC power supply 12 to 24Vdc</td>
</tr>
<tr>
<td>Operating voltage range</td>
<td>DC power supply 11.4 to 25.4Vdc</td>
</tr>
<tr>
<td>Power consumption</td>
<td>DC power supply 30 W MAX</td>
</tr>
<tr>
<td>External power supply</td>
<td>Power supply voltage 24Vdc</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>Power supply voltage 700Ma</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>20MO min at 500Vdc between the AC terminals and the protective earth terminal.</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>2300 VAC at 50/60 Hz for one minute with a leakage current of 10mA max.</td>
</tr>
<tr>
<td>Shock resistance</td>
<td>30mV/2x in the X, Y and Z direction 2 times each.</td>
</tr>
<tr>
<td>Ambient temperature (operating)</td>
<td>0º to 60°C</td>
</tr>
<tr>
<td>Ambient humidity (operating)</td>
<td>10% to 90% (no condensation)</td>
</tr>
<tr>
<td>Ambient environment (operating)</td>
<td>With no corrosive gas</td>
</tr>
<tr>
<td>Ambient temperature (storage)</td>
<td>-20º to 60°C</td>
</tr>
<tr>
<td>Power supply holding time</td>
<td>2ms min</td>
</tr>
<tr>
<td>Weight</td>
<td>350g max</td>
</tr>
</tbody>
</table>

### INPUTS (x10)

- **An/Dig Input 10bit (0-10Vac) - (x6)**
  - 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 Input (24Vcc) - (x3)**
  - 7 to 24Vdc: I min. 2 to 12 mA
  - Galvanic: Isolation
  - Rated Voltage: 24 Vdc

- **Interrupt Input HS (24Vcc) - (x1)**
  - The Interrupt isolated Inputs can also work as Digital isolated Inputs.
  - 7 to 24Vdc: I min. 2 to 12 mA
  - Galvanic: Isolation
  - Rated Voltage: 24 Vdc

### Outputs (x8)

- **Analog Output 8bit (0-10Vac) - (x7)**
  - The Analog outputs can also work as Digital outputs.
  - 0 to 10Vac
  - I max: 20 mA
  - Separated PCB ground
  - Rated Voltage: 10Vac

- **Digital Isolated Output (24Vcc) - (x10)**
  - 5 to 24Vdc: I max: 70 mA
  - Galvanic: Isolation
  - Diode Protected for Relay
  - Rated Voltage: 24Vdc

- **PWM Isolated Output 8bit (24Vac) - (x7)**
  - The PWM outputs can also work as Digital outputs.
  - 5 to 24Vdc: I max: 70 mA
  - Galvanic: Isolation
  - Diode Protected for Relay
  - Rated Voltage: 24Vdc

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**HS**: Hardware Serial  
**SS**: Software Serial  
**ARDUINO**
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.
- 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**

- Indicates that the equipment is suitable for direct current only; to identify relevant terminals
- Indicates that the equipment is suitable for alternating current only; to identify relevant terminals
- To identify the control by which a pulse is started.
- To identify an earth (ground) terminal in cases where neither the symbol 5018 nor 5019 is explicitly required.
- To identify the switch by means of which the signal lamp(s) is (are) switched on or off.
- CE marking indicates that a product complies with applicable European Union regulations
- Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury
- To indicate hazards arising from dangerous voltages

**Technical Support**

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

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