Industrial PLC based on Raspberry Pi

The Liberalisation of the Industry with Open Source Technology
The industrial controller solution with original Raspberry Pi board.

**UPS - UNINTERRUPTED POWER SUPPLY**
Secure your operating system, your current processes and your data with an uninterrupted power supply that guarantees a clean shutdown in case of a power failure.

**MULTIPLE CONNECTIVITY, MULTIPLE OPTIONS**
Thanks to the dual Ethernet ports, the dual RS-485, WiFi, Bluetooth, CAN bus and other options, you can connect to a large number of devices and use multiple protocols and communication ports.

**HIGH PROCESSING SPEED**
The Raspberry Pi allows high speed processing compared to most common PLCs.

**RTC - REAL TIME CLOCK**
A large number of applications require working with RTC. The PLC Raspberry Pi allows you to use this feature with the internal clock that guarantees the current time and date to keep track of the right time.

**MULTI-PROCESS**
IWork with real-time applications and allowing multi-process.

**HIGH PROCESSING SPEED**
The Raspberry Pi allows high speed processing compared to most common PLCs.

**RTC - REAL TIME CLOCK**
A large number of applications require working with RTC. The PLC Raspberry Pi allows you to use this feature with the internal clock that guarantees the current time and date to keep track of the right time.

**MULTI-PROCESS**
IWork with real-time applications and allowing multi-process.

**LINUX or RASPBERRY PI OS (previously called Raspbian)**
All the power, flexibility and features of the Linux Operating System. Use Linux or Raspberry Pi OS (previously called Raspbian), the Debian-based solution from Raspberry Pi.

**Industrial Standard Communications**

By using Raspberry Pi PLCs along with the right sensors and control elements, you can quickly implement dedicated industrial automation systems capable of meeting the requirements for a wide range of operations in industrial environments.
<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
<th>Communications</th>
<th>Inputs / Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>01200X000000</td>
<td>Raspberry PLC CPU</td>
<td>Serial TTL (UART)</td>
<td>Analog Inputs</td>
</tr>
<tr>
<td>01200X0000200</td>
<td>Raspberry PLC 21</td>
<td>x1 x1.12 x1 x2 x1 x7 x6 n.4 x2 x5 x3 x1</td>
<td></td>
</tr>
<tr>
<td>01200X0000400</td>
<td>Raspberry PLC 42</td>
<td>x1 x1.12 x1 x2 x1 - x14 x12 n.4 x4 x10 x6 x1</td>
<td></td>
</tr>
<tr>
<td>01200X0000600</td>
<td>Raspberry PLC 58</td>
<td>x1 x1.12 x1 x2 x1 - x21 x16 n.4 x6 x14 x8 - x1</td>
<td></td>
</tr>
<tr>
<td>01200X0001000</td>
<td>Raspberry PLC 19R</td>
<td>x1 x1.12 x1 x2 x1 - x2 x4 n.4 x2 x0 x3 x8 x1</td>
<td></td>
</tr>
<tr>
<td>01200X0003000</td>
<td>Raspberry PLC 38R</td>
<td>x1 x1.12 x1 x2 x1 - x4 x8 n.4 x4 x0 x6 x16 x1</td>
<td></td>
</tr>
<tr>
<td>01200X0005000</td>
<td>Raspberry PLC 57R</td>
<td>x1 x2.12 x1 x2 x1 - x6 x12 n.4 x6 x0 x8 x24 x1</td>
<td></td>
</tr>
<tr>
<td>01200X0007000</td>
<td>Raspberry PLC 38AR</td>
<td>x1 x2.12 x1 x2 x1 - x9 x10 n.4 x4 x5 x6 x8 x1</td>
<td></td>
</tr>
<tr>
<td>01200X0008000</td>
<td>Raspberry PLC 57AAR</td>
<td>x1 x2.12 x1 x2 x1 - x16 x16 n.4 x6 x10 x8 x8 x1</td>
<td></td>
</tr>
<tr>
<td>01200X0009000</td>
<td>Raspberry PLC 50RRA</td>
<td>x1 x2.12 x1 x2 x1 - x11 x12 n.4 x6 x4 x8 x16 x1</td>
<td></td>
</tr>
<tr>
<td>01200X0010000</td>
<td>Raspberry PLC 53ARR</td>
<td>x1 x2.12 x1 x2 x1 - x11 x14 n.4 x6 x5 x8 x16 x1</td>
<td></td>
</tr>
<tr>
<td>01200X0011000</td>
<td>Raspberry PLC 54ARA</td>
<td>x1 x1.12 x1 x2 x1 - x16 x14 n.4 x6 x9 x8 x8 x1</td>
<td></td>
</tr>
</tbody>
</table>

n.1: 1 Input & 1 Digital Out are lost | n.2: 2 Inputs & 2 Relay are lost | n.3: 2 Inputs & 2 Digital Outputs & 2 Analog Outputs are lost | n.4: From the (Xx) Digital, (Yx) can be configured as Analog (Xx = Total Digital In, Yx = Number of Analog In) | n.5: From the (Xx) Digital, (Zx) can be configured as Interrupt (Xx = Total Digital In, Zx = Number of Interrupt pins) | n.6: if using RS-232 or RS-485 (x2) Analog Output are lost | n.7: If using pin 2 and pin 3, (x2) In are lost | n.8: 1 Inputs & 1 Relay are lost | n.9: 2 Inputs & 2 Relay are lost | n.10: 2 Inputs & 2 Relay are lost | n.11: USB Only meant for uploading or debugging, not always connected as serial in a project! | n.12: 2 Inputs are lost |

Raspberry Pi 4B 2GB RAM Included
Raspberry Pi 4B 4GB RAM Included
Raspberry Pi 4B 8GB RAM Included
Additional FAN

Powered by Raspberry Pi
<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
<th>Serial TTL (UART)</th>
<th>SPI</th>
<th>RS232</th>
<th>RS485 Half/Full</th>
<th>Ethernet</th>
<th>Wi-Fi &amp; BLE</th>
<th>GPRS / GSM</th>
<th>Digital Inputs</th>
<th>Analog Inputs</th>
<th>Interrupt Inputs</th>
<th>Digital Outputs</th>
<th>Analog Outputs</th>
<th>Relay Outputs</th>
<th>In / Out 5Vdc</th>
</tr>
</thead>
<tbody>
<tr>
<td>01600X000200</td>
<td>Raspberry PLC &amp; GPRS 21</td>
<td>x1 n.13</td>
<td>x1 n.12</td>
<td>x1</td>
<td>-</td>
<td>x1</td>
<td>x2</td>
<td>x1</td>
<td>x1 x7</td>
<td>x6 n.4</td>
<td>x2 x5 x3</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01600X000400</td>
<td>Raspberry PLC &amp; GPRS 42</td>
<td>x1 n.13</td>
<td>x1 n.12</td>
<td>x1</td>
<td>-</td>
<td>x1</td>
<td>x2</td>
<td>x1</td>
<td>x1 x14</td>
<td>x12 n.4</td>
<td>x4 x10 x6</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01600X000600</td>
<td>Raspberry PLC &amp; GPRS 58</td>
<td>x1 n.13</td>
<td>x1 n.12</td>
<td>x1</td>
<td>-</td>
<td>x1</td>
<td>x2</td>
<td>x1</td>
<td>x1 x20</td>
<td>x16 n.4</td>
<td>x5 x14 x9</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01600X000100</td>
<td>Raspberry PLC &amp; GPRS 19R</td>
<td>x1 n.13</td>
<td>x1 n.12</td>
<td>x1</td>
<td>-</td>
<td>x1</td>
<td>x2</td>
<td>x1</td>
<td>x1 x2</td>
<td>x4 n.4</td>
<td>x2 x0 x3</td>
<td>x8</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01600X000300</td>
<td>Raspberry PLC &amp; GPRS 38R</td>
<td>x1 n.13</td>
<td>x1 n.12</td>
<td>x1</td>
<td>-</td>
<td>x1</td>
<td>x2</td>
<td>x1</td>
<td>x1 x4</td>
<td>x8 n.4</td>
<td>x4 x0 x6</td>
<td>x16</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01600X000500</td>
<td>Raspberry PLC &amp; GPRS 57R</td>
<td>x1 n.13</td>
<td>x1 n.12</td>
<td>x1</td>
<td>-</td>
<td>x1</td>
<td>x2</td>
<td>x1</td>
<td>x1 x5</td>
<td>x12 n.4</td>
<td>x5 x0 x9</td>
<td>x24</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01600X000700</td>
<td>Raspberry PLC &amp; GPRS 38AR</td>
<td>x1 n.13</td>
<td>x1 n.12</td>
<td>x1</td>
<td>-</td>
<td>x1</td>
<td>x2</td>
<td>x1</td>
<td>x1 x9</td>
<td>x10 n.4</td>
<td>x4 x5 x6</td>
<td>x8</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01600X000800</td>
<td>Raspberry PLC &amp; GPRS 57AAR</td>
<td>x1 n.13</td>
<td>x1 n.12</td>
<td>x1</td>
<td>-</td>
<td>x1</td>
<td>x2</td>
<td>x1</td>
<td>x1 x15</td>
<td>x16 n.4</td>
<td>x5 x10 x9</td>
<td>x8</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01600X000900</td>
<td>Raspberry PLC &amp; GPRS 50AAR</td>
<td>x1 n.13</td>
<td>x1 n.12</td>
<td>x1</td>
<td>-</td>
<td>x1</td>
<td>x2</td>
<td>x1</td>
<td>x1 x10</td>
<td>x12 n.4</td>
<td>x5 x4 x9</td>
<td>x16</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01600X001000</td>
<td>Raspberry PLC &amp; GPRS 53ARR</td>
<td>x1 n.13</td>
<td>x1 n.12</td>
<td>x1</td>
<td>-</td>
<td>x1</td>
<td>x2</td>
<td>x1</td>
<td>x1 x10</td>
<td>x14 n.4</td>
<td>x5 x5 x9</td>
<td>x16</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01600X001100</td>
<td>Raspberry PLC &amp; GPRS 54ARA</td>
<td>x1 n.13</td>
<td>x1 n.12</td>
<td>x1</td>
<td>-</td>
<td>x1</td>
<td>x2</td>
<td>x1</td>
<td>x1 x15</td>
<td>x14 n.4</td>
<td>x5 x9 x9</td>
<td>x8</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n.1: 1 Input & 1 Digital Out are lost | n.2: 2 Inputs & 2 Relay are lost | n.3: 2 Inputs & 2 Digital Outputs & 2 Analog Outputs are lost | n.4: From the (Xx) Digital, (Yx) can be configured as Analog (Xx = Total Digital In, Yx = Number of Analog In) | n.5: From the (Xx) Digital, (Zx) can be configured as Interrupt (Xx = Total Digital In, Zx = Number of Interrupt pins) | n.6: From using RS-232 or RS-485 (x2) Analog Output are lost | n.7: From using pin 2 and pin 3, (x2) In are lost | n.8: 1 Inputs & 1 Relay are lost | n.9: 2 Inputs & 2 Relay are lost | n.10: 2 Inputs & 2 Relay are lost | n.11: USB Only meant for uploading or debugging, not always connected as serial in a project! | n.12: 2 Inputs are lost

Raspberry Pi 4B 2GB RAM Included
Raspberry Pi 4B 4GB RAM Included
Raspberry Pi 4B 8GB RAM Included
Additional FAN
Industrial Shields was born in October 2012 by an engineer who, searching for a more flexible PLC equipment at a better price, decided to develop his own solution using Open Source Hardware.

Therefore, Industrial Shields is the brand that provides Open Source Hardware for industrial use, including all design and safety required, combining the best of both worlds.

Industrial Shields designs, produces and markets the range of products based on Open Source Hardware.

Boot & Work Corp. S.L. is a company committed to the promotion, development, manufacture and sale of products based on Open Source technology to liberalise the industrial sector and boost the growth of its customers.

Our company's goal is to provide low-cost solutions for automation in industrial environments.

Open Source Hardware solutions are not yet widely introduced in the industrial sector, it is a growing market and we are its pioneers.

The balance between quality and cost is very important to us and therefore to the market, so by using Open Source solutions we can provide more specifications at a better price.

Even more, Open Source solutions are more flexible and accessible than standard industrial solutions, and furthermore, the software is license free.

Industrial Shields is convinced of a perspective focused on Industry 4.0 and the Internet of Things.

In compliance with:
Through the IEEE-UNEDsb we meet Arduino and use it to manufacture machinery as a prototype. We created the first Shields for industrial use for machinery in the labeling sector and automatic production lines.

**2012**

Boot & Work Corp. is created with the aim of standardising a product based on Open Source technology for use in industrial environments.

**2013**

Boot & Work Corp wins the award for the best innovative company in Barberá del Valles. First prototype units. The Ardbox is coming.

**2014**

We create the Industrial Shields brand from where we start to market a first basic family of products. The first unit is sold online to Libya.

**2015**

Industrial Shields has commercialised equipment based on Open Source technology to more than 20 countries.

**2016**

5 distributors in different countries (UK, Germany, USA, Mexico and Italy) and more than 500 clients in all types of industrial sectors.

**2017**

We have over 17 distributors in 15 countries from all continents and we have reached more than 75 countries.

**2018**

International trade shows in Barcelona, Paris and Bangalore. Investment in improving facilities, quality processes, industrial certifications.

**2019**

Presence in more than 90 countries, more than 20 distributors worldwide. New products developments: PLC with WiFi and GPRS/GSM.

**2020**

Presence in more than 100 countries, more than 40 distributors worldwide. New developments: Raspberry PLC, Dali PLC, LoRa PLC.
Industrial Shields has been working worldwide through distributors, or in direct contact with customers.

Our commercial, technical and support team will assist you by phone, email, skype; or by using the ticket system or chatting directly on our website.

Get in touch with us. We are here, glad to help and assist you.

Camí del Grau, 25
Sant Fruitós de Bages 08272 (Barcelona)
Spain

Tel: (+34) 938 760 191

industrialshields@industrialshields.com

https://www.industrialshields.com