



INDUSTRIAL SHIELDS



RELIABLE OPEN SOURCE INDUSTRIAL HARDWARE

Supply Voltage

24 Vdc



I2C

I/Os

Digital
Analog
Relay



open source
hardware

Open Source PLCs and Panel PCs





INDUSTRIAL SHIELDS



Now it's possible!

From prototype to industrialisation with Open Source hardware

You have never been so free to develop your innovative projects



INDUSTRIAL SHIELDS

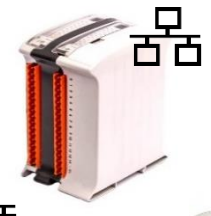
Open source PLC range (Arduino based) overview



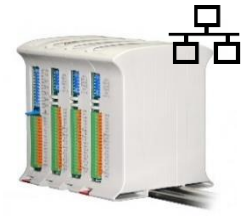
Relay
Analog
Digital



Analog
Digital



Analog



Relay



I/Os

18

19

20

21

38

42

57

58

Programmed with Arduino IDE based on Processing.



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Open source Panel PC range overview



Android

**GNU
LINUX**

**GNU
LINUX
(RASPBIAN)**



**1Gbyte
SDRAM**



**1Gbyte
SDRAM**



**512 MB
SDRAM**

Raspberry PI based

HummingBoard based

All Panel PCs have enough I/Os to avoid having to incorporate a PLC



INDUSTRIAL SHIELDS

PLC ARDBOX PLC 18 I/Os RELAY (Arduino Leonardo based)



24Vdc

Input Voltage

18 I/Os *

(8x) Digital inputs
(8x) Relay output
*See details

Compact

DIN rail mounting

Safety

Industrial
communications

Arduino-based PLC

It has 18 digital inputs / outputs. ARDBOX product family offers the possibility of communication between two computers using I2C obtaining a master-slave connection.

Instant connection and programming

The ARDBOX PLC, as it uses an Arduino LEONARDO, lets you program it through the USB. This feature lets it an immediate access in order to program, maintain and prepare it for its set up. It lets you to control your equipment without no limits.

Technical Specifications Inputs/ Outputs (18 I/Os)

8 Inputs:

(6x) Digital (24Vdc) Inputs, configurable by software.
(2x) Interrupt Input (24Vcc).

8 Outputs:

(8x) Relay outputs (220Vac - 5A)
- 2 Digital Input/output (5Vcc).

Communications

- (1x) USB port (type B).
- (1x) I2C port. (Allows you to connect several modules: I/Os, PLC Ardbox, sensors, ...).
- (1x) Serial port.

Other specifications:

Power: 30W

Flash memory: 32kB of which 0.5kB used by boot loader.

SRAM: 2kB

EEPROM: 1kB

Clock Speed: 16MHz

[Click here for more details](#)



INDUSTRIAL SHIELDS

PLC M-DUINO 19R I/Os Relay/Analog/Digital (Arduino Mega based)



**12 -
24Vdc**

Input Voltage

19 I/Os

Relay, Digital,
Analog, PWM

Relay

220Vac - 8A

Safety

Industrial
communicators

Modular PLC

This is the first equipment based on the Arduino technology designed for a professional use. This PLC has 19 I/Os. It also contains several communication systems¹ which provide more flexibility and control. The M-DUINO family offers the possibility to expand up to 127 modules through I2C, which means that you can have until 7100 Inputs / Outputs in Master-Slave connections, additionally to sensors, etc...

Instantaneous connection and coding

The PLC M-DUINO is programmed through the USB ports. This offers an immediate access to program, maintain and control. Also you can continuously monitor the status for all the variables, inputs, outputs, etc. It is compatible with the Ardbox and the Touchberry Pi with instantaneous connection.

Technical Specifications

M-DUINO compact PLC, 12 - 24Vdc and 19 I/Os and Ethernet.

Input/Output (19 I/Os)

7 Input:

(4x) 10bit --- Analog (0---10Vdc) / Digital (24Vdc) Inputs, configurable by software
(1x) Digital Input (24Vdc).
(2x) Interrupt Input (24Vdc). "Can work like Digital Input (24Vdc)"

12 Output:

(9x) Relay outputs (220Vac --- 8A)
(3x) 8bit--- Analog (0---10Vdc)

Communications

(1x) Ethernet Port.
(1x) USB port,
(3x) Serial ports. Using RX,TX pins
(1x) I2C Bus using SDA, SCL pins of Arduino. (Allows you to connect several modules: I/Os, PLC Ardbox, sensors, ... You need to connect an additional 10k pull up resistance),
(1x) RS485 port
(1x) SPI external port (Using MOSI,MISO, SS pins of Arduino)

[Click here for more details](#)



INDUSTRIAL SHIELDS

PLC ARDBOX 20 I/Os Analog (Arduino Leonardo based)



12- 24Vdc

Input Voltage

20 I/Os

Digital, Analog,
PWM

Compact

DIN rail mounting

Safety

Industrial
communications

Arduino based PLC

It has 20 digital inputs / outputs (including 9 analog / digital inputs configurable by software, and 7 digital / analog output configurable with jumpers).

ARDBOX product family offers the possibility of communication between two computers using I2C obtaining a master-slave connection.

Instant connection and programming

The ARDBOX PLC, as it uses an Arduino LEONARDO, lets you program it through the USB. This feature lets it an immediate access in order to program, maintain and prepare it for its set up. It lets you to control your equipment without no limits.

Technical Specifications Inputs/ Outputs (20 I/Os)

10 Inputs:

(9x) Analog (0-10Vdc) / Digital (24Vdc) Inputs, configurable by jumpers¹

(1x) Digital inputs PNP (24Vdc).

10 Outputs:

(7x) Digitals (24Vdc) / Analog (0-10Vdc) / PWM (24Vdc) outputs, configurable by Jumpers.

(3x) Digital PNP outputs.

Communications

- (1x) USB port (type B).

- (1x) Serial port.(using USB port)

Other Specifications:

Pot: 30W

Flash memory: 32kB of which 0.5kB used by boot loader.

SRAM: 2kB

EEPROM: 1kB

Clock Speed: 16MHz

[Click here for more details](#)



INDUSTRIAL SHIELDS

PLC M-DUINO 21 I/Os Analog/Digital (Arduino Mega based)



24Vdc

Input Voltage

21 I/Os

Digital, Analog,
PWM

Connect

Ethernet

Safety

Industrial
communications

Modular PLC

This is the first equipment based on the Arduino technology designed for a professional use. This PLC has 21 I/Os. It also contains several communication systems which provide more flexibility and control. The M-DUINO family offers the possibility to expand up to 127 modules through I2C, which means that you can have until 7100 Inputs / Outputs in Master-Slave connections, additionally to sensors, etc...

Instantaneous connection and coding

The PLC M-DUINO is programmed through the USB ports. This offers an immediate access to program, maintain and control. Also you can continuously monitor the status for all the variables, inputs, outputs, etc. It is compatible with the Ardbox and the Touchberry Pi with instantaneous connection.

Technical Specifications

Input/Output (21 I/Os)

13 Input:

(6x) Analog/digital which are configurable by Jumpers and software¹

(5x) Digital PNP.

(2x) Digital Interrupt.

8 Output:

(3x) Digital/analogic/PWM configurable by Jumpers and software¹.

(5x) Digital PNP.

Communications

- (1x) Ethernet Port.

- (1x) USB port (type B).

- (1x) I2C port. (Lets you add additional modules: I/Os, other PLC Ardbox, sensors, ...).

- (4x) Serial ports. (RS232, RS485)

- (1x) Modbus Bus.*

Other Technical specs:

Max power consumption: 1.2A

Flash Memory:

256kB (8kB are used for the boot loader)

SRAM: 8kB

EEPROM: 4kB

Clock Speed: 16MHz

[Click here for more details](#)



INDUSTRIAL SHIELDS

PLC M-DUINO 38R I/Os Relay/Analog/Digital (Arduino Mega based)



12-24Vdc

Input Voltage

38 I/Os

Relay, Digital,
Analog, PWM

Connect

Ethernet

Safety

Industrial
communications

Modular PLC

This is the first equipment based on the Arduino technology designed for a professional use. This PLC has 42I/Os. It also contains several communication systems which provide more flexibility and control. The M-DUINO family offers the possibility to expand up to 127 modules through I2C, which means that you can have until 7100 Inputs / Outputs in Master-Slave connections, additionally to sensors, etc...

Instantaneous connection and coding

The PLC M-DUINO is programmed through the USB ports. This offers an immediate access to program, maintain and control. Also you can continuously monitor the status for all the variables, inputs, outputs, etc. It is compatible with the Ardbox and the Touchberry Pi with instantaneous connection.

Technical Specifications

M-DUINO compact PLC, 12 - 24Vdc and 38 I/Os and Ethernet.

Input/Output (38 I/Os)

14 Input:

(8x) 10bit --- Analog (0---10Vdc) / Digital (24Vdc) Inputs, configurable by software
(2x) Digital Input (24Vdc).
(4x) Interrupt Input (24Vdc). "Can work like Digital Input (24Vdc)"

24 Output:

(18x) Relay outputs (220Vac --- 8A)
(6x) 8bit--- Analog (0---10Vdc)

Communications

(1x) Ethernet Port.
(1x) USB port,
(3x) Serial ports. Using RX,TX pins
(1x) I2C Bus using SDA, SCL pins of Arduino. (Allows you to connect several modules: I/Os, PLC Ardbox, sensors, ... You need to connect an additional 10k pull up resistance),
(1x) RS485 port
(1x) SPI external port (Using MOSI,MISO, SS pins of Arduino)

[Click here for more details](#)



INDUSTRIAL SHIELDS

PLC M-DUINO 42 I/Os Analog/Digital (Arduino Mega based)



24Vdc

Input Voltage

42 I/Os

Digital, Analog,
PWM

Connect

Ethernet

Safety

Industrial
communications

Modular PLC

This is the first equipment based on the Arduino technology designed for a professional use. This PLC has 42I/Os. It also contains several communication systems which provide more flexibility and control. The M-DUINO family offers the possibility to expand up to 127 modules through I2C, which means that you can have until 7100 Inputs / Outputs in Master-Slave connections, additionally to sensors, etc...

Instantaneous connection and coding

The PLC M-DUINO is programmed through the USB ports. This offers an immediate access to program, maintain and control. Also you can continuously monitor the status for all the variables, inputs, outputs, etc. It is compatible with the Ardbox and the Touchberry Pi with instantaneous connection.

Technical Specifications

Input/Output (42 I/Os)

26 Input:

(12x) Analog/digital which are configurable by Jumpers and software¹

(10x) Digital.

(4x) Int. Digital

6 Output:

(6x) Digital/analogic/PWM configurable by Jumpers and software¹.

(10x) Digital PNP.

Communications

- (1x) Ethernet Port.

- (1x) USB port (type B).

- (1x) I2C port. (Lets you add additional modules: I/Os, other PLC Ardbox, sensors, ...)*

- (4x) Serial ports. (RS232, RS485)*

- (1x) Mod Bus.*

Other Technical specs:

Max power consumption: 1.2A

Flash Memory:

256kB (8kB are used for the boot loader)

SRAM: 8kB

EEPROM: 4kB

Clock Speed: 16MHz

[Click here for more details](#)



INDUSTRIAL SHIELDS

PLC M-DUINO 57R I/Os Relay/Analog/Digital (Arduino Mega based)



**12 -
24Vdc**

Input Voltage

57R I/Os

Relay, Digital,
Analog, PWM

Connect

Ethernet

Safety

Industrial
communications

Modular PLC

This is the first equipment based on the Arduino technology designed for a professional use. This PLC has 58 I/Os. It also contains several communication systems which provide more flexibility and control. The M-DUINO family offers the possibility to expand up to 127 modules through I2C, which means that you can have until 7100 Inputs / Outputs in Master-Slave connections, additionally to sensors, etc...

Instantaneous connection and coding

The PLC M-DUINO is programmed through the USB ports. This offers an immediate access to program, maintain and control. Also you can continuously monitor the status for all the variables, inputs, outputs, etc. It is compatible with the Ardbox and the Touchberry Pi with instantaneous connection.

Technical Specifications

M---DUINO compact PLC, 12 - 24Vdc and 19 I/Os and Ethernet.

Input/Output (57 I/Os)

21 Input:

(12x) 10bit --- Analog (0---10Vdc) / Digital (24Vdc) Inputs, configurable by software
(3x) Digital Input (24Vdc).
(6x) Interrupt Input (24Vdc). "Can work like Digital Input (24Vdc)"

36 Output:

(27x) Relay outputs (220Vac --- 8A)
(9x) 8bit--- Analog (0---10Vdc)

Communications

(1x) Ethernet Port.
(1x) USB port,
(3x) Serial ports. Using RX, TX pins
(1x) I2C Bus using SDA, SCL pins of Arduino. (Allows you to connect several modules: I/Os, PLC Ardbox, sensors, ... You need to connect an additional 10k pull up resistance),
(1x) RS485 port
(1x) SPI external port (Using MOSI, MISO, SS pins of Arduino)

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INDUSTRIAL SHIELDS

PLC M-DUINO 58 I/Os Analog/Digital (Arduino Mega based)



24Vdc

Input Voltage

58 I/Os

Digital, Analog,
PWM

Connect

Ethernet

Safety

Industrial
communications

Modular PLC

This is the first equipment based on the Arduino technology designed for a professional use. This PLC has 58 I/Os. It also contains several communication systems which provide more flexibility and control. The M-DUINO family offers the possibility to expand up to 127 modules through I2C, which means that you can have until 7100 Inputs / Outputs in Master-Slave connections, additionally to sensors, etc...

Instantaneous connection and coding

The PLC M-DUINO is programmed through the USB ports. This offers an immediate access to program, maintain and control. Also you can continuously monitor the status for all the variables, inputs, outputs, etc. It is compatible with the Ardbox and the Touchberry Pi with instantaneous connection.

Technical Specifications

Input/Output (58 I/Os)

36 Input:

(16x) Analog/digital which are configurable by Jumpers and software¹

(14x) Digital.

(6x) Interrupt Digital.

22 Output:

(8x) Digital/analog/PWM configurable by Jumpers and software¹.

(14x) Digital PNP.

Communications

- (1x) Ethernet Port.

- (1x) USB port (type B).

- (1x) I2C port. (Lets you add additional modules: I/Os, other PLC Ardbox, sensors, ...).

- (4x) Serial ports. (RS232, RS485)

- (1x) Mod Bus.*

Other Technical specs:

Max power consumption: 1.2A

Flash Memory:

256kB (8kB are used for the boot loader)

SRAM: 8kB

EEPROM: 4kB

Clock Speed: 16MHz

[Click here for more details](#)



INDUSTRIAL SHIELDS

TOUCHBERRY PI 10.1"(Raspberry PI based)



Panel PC

10.1"

Linux

Linux Operation system

Com

With ethernet, USB, I2C

GPIOs

Available different input/output signals

Touch Screen based on Raspberry PI incorporating a 10.1" capacitive Touch Screen

The first panel PC Linux with 10.1" which uses a Raspberry Pi for industrial environment.

Operative System and instantaneous configuration

This Panel PC mounts and GNU/Linux OS in its SD card. It has all types of connections: Ethernet, USB, I2C, SPI Serial TTL...

Control your device status

Using the Ethernet port you can control from your desk all the parameters, data, input, output of your devices and equipment. Additionally this PC panel has as enough I/Os to avoid having to incorporate a PLC on simple automation and control designs.

Connectivity

With TOUCHBERRY PI you can connect all the Industrial Shields devices in order to obtain a complete industrial control all your equipment, machinery, installations, etc...

Technical Specifications (Raspberry PI type B+ Included)

TFT

10.1" Capacitive LVDS, 315 nits, 170°viewing angle,

Format

16:9, 1366x768,

SoC

BroadCom BCM 2835 (CPU+GPU+DSP+SDRAM+USB

CPU

ARM 1176JZF-S a 700MHz (ARM11 family)

GPU

Broadcom VideoCore IV, OpenGL ES 2.0, MPEG-2 y VC-1 (with licence), 1080p30 H.264/MPEG-4 AVC

Memory (SDRAM)

512MiB (shared with the GPU)

USB 2.0 ports

2x (hub USB)

Data storage

SD / MMC / SDIO slot

Network Connectivity

10/100 Ethernet (RJ-45)

Low level devices

8x GPIO, SPI, I2C, UART

Energy consumption

1.25A - 30W

Power supply

24Vdc

Operative system

GNU/Linux (Raspbian)

[Click here for more details](#)



INDUSTRIAL SHIELDS

HummTOUCH 10.1" Linux (HummingBoard based)



Panel PC

10.1"

Linux

Linux Operation system

64bits

With ethernet, USB, I2C

GPIOs

8 GPIOs available

Touch Screen based on LINUX OS incorporating a 10.1" capacitive Touch Screen

The first panel PC Linux with 10.1" which uses a 64bits CPU for industrial environment.

Operative System and instantaneous configuration

This Panel PC mounts and GNU/Linux OS in its SD card. It has all types of connections: Ethernet, USB, I2C, SPI Serial TTL...

Control your device status

Using the Ethernet port you can control from your desk all the parameters, data, input, output of your devices and equipment. Additionally this PC panel has as enough I/Os to avoid having to incorporate a PLC on simple automation and control designs.

Connectivity

With PANEL PC you can connect all the Industrial Shields devices in order to obtain a complete industrial control all your equipment, machinery, installations, etc...

Technical Specifications

TFT

10.1" Capacitive LVDS, 315 nits, 170°viewing angle,

Format

16:9, 1366x768,

CPU

i.MX6 Dual Lite, 64bit, 1GB @ 800Mbps

GPU

GC880

Memory (SDRAM)

1Gbyte

USB 2.0 ports

2x (via hub USB)

Video in

MIPI CSI connector (to connect RPF camera module)

Data storage

SD / MMC / SDIO slot

Network Connectivity

10/100 Ethernet (RJ-45)

Low level devices

8x GPIO, SPI, I2C, UART

Energy consumption

1.25A - 30W

Power supply

24Vdc (5.5x2.5 Jack)

Operative system

GNU/Linux

[Click here for more details](#)



INDUSTRIAL SHIELDS

HummTOUCH 10.1" Android (HummingBoard based)



Panel PC

10.1"

Android

Android Operation system

64bits

With ethernet, USB, I2C

GPIOs

8 GPIOs available

Touch Screen based on ANDROID OS incorporating a 10.1" capacitive Touch Screen

The first panel PC Android with 10.1" which uses a 64bits CPU for industrial environment.

Operative System and instantaneous configuration

This Panel PC mounts and Android OS in its SD card. It has all types of connections: Ethernet, USB, I2C, SPI Serial TTL...

Control your device status

Using the Ethernet port you can control from your desk all the parameters, data, input, output of your devices and equipment. Additionally this PC panel has as enough I/Os to avoid having to incorporate a PLC on simple automation and control designs.

Connectivity

With PANEL PC you can connect all the Industrial Shields devices in order to obtain a complete industrial control all your equipment, machinery, installations, etc...

Technical Specifications

TFT

10.1" Capacitive LVDS, 315 nits, 170°viewing angle,

Format

16:9, 1366x768,

CPU

i.MX6 Dual Lite, 64bit, 1GB @ 800Mbps

GPU

GC880

Memory (SDRAM)

1Gbyte

USB 2.0 ports

2x (via hub USB)

Video in

MIPI CSI connector (to connect RPF camera module)

Data storage

SD / MMC / SDIO slot

Network connectivity

10/100 Ethernet (RJ-45)

Low level devices

8x GPIO, SPI, I2C, UART

Real time clock

Not available - see accessories

Energy consumption

1.25A - 30W

Power supply

24Vdc (5.5x2.5 Jack)

Operative system

ANDROID

[Click here for more details](#)



INDUSTRIAL SHIELDS

RS Brand exclusive accessories



Power supplies



Energy meters



Proximity sensors



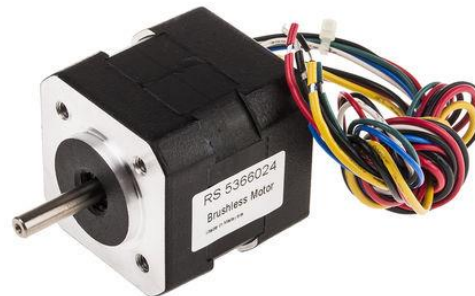
Panel meters



Temperature controllers



Stepper motors



DC motors



Wall boxes

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All you need to fully exploit the power of Industrial Shields products in 1 page

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About Industrial Shields

Industrial Shields manufactures open source industrial hardware to build machines, designs and installations in industrial automation and process control. Industrial Shields PLCs and Panel PCs are based on the most popular open source boards such as Arduino Leonardo, Arduino Mega, Raspberry Pi and Hummingboard; moreover, they support open source operative systems like Android and Linux.

Using Industrial Shields products allow engineers to design complete Industrial Automation projects with Open Source Hardware (OSH)

What's in the offer from Industrial Shields and what are the product benefits for end users?


The goal of the open source industrial hardware from Industrial Shields is to offer a choice of open source products for a very reasonable price compared with the products that are developed under the current market leaders.



The current offer of Industrial Shields covers Arduino based compact and modular PLCs as well as Raspberry Pi based, Android OS and Linux OS Panel PCs. In particular, The ARDBOX and M-DUINO series of Arduino based PLCs allow you to prototype your applications with the most famous Arduino boards, such as Arduino Leonardo and Arduino Mega, and go in production with almost no changes to the code.

ARDBOX COMPACT PLCs

Entry level Arduino-based PLCs



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