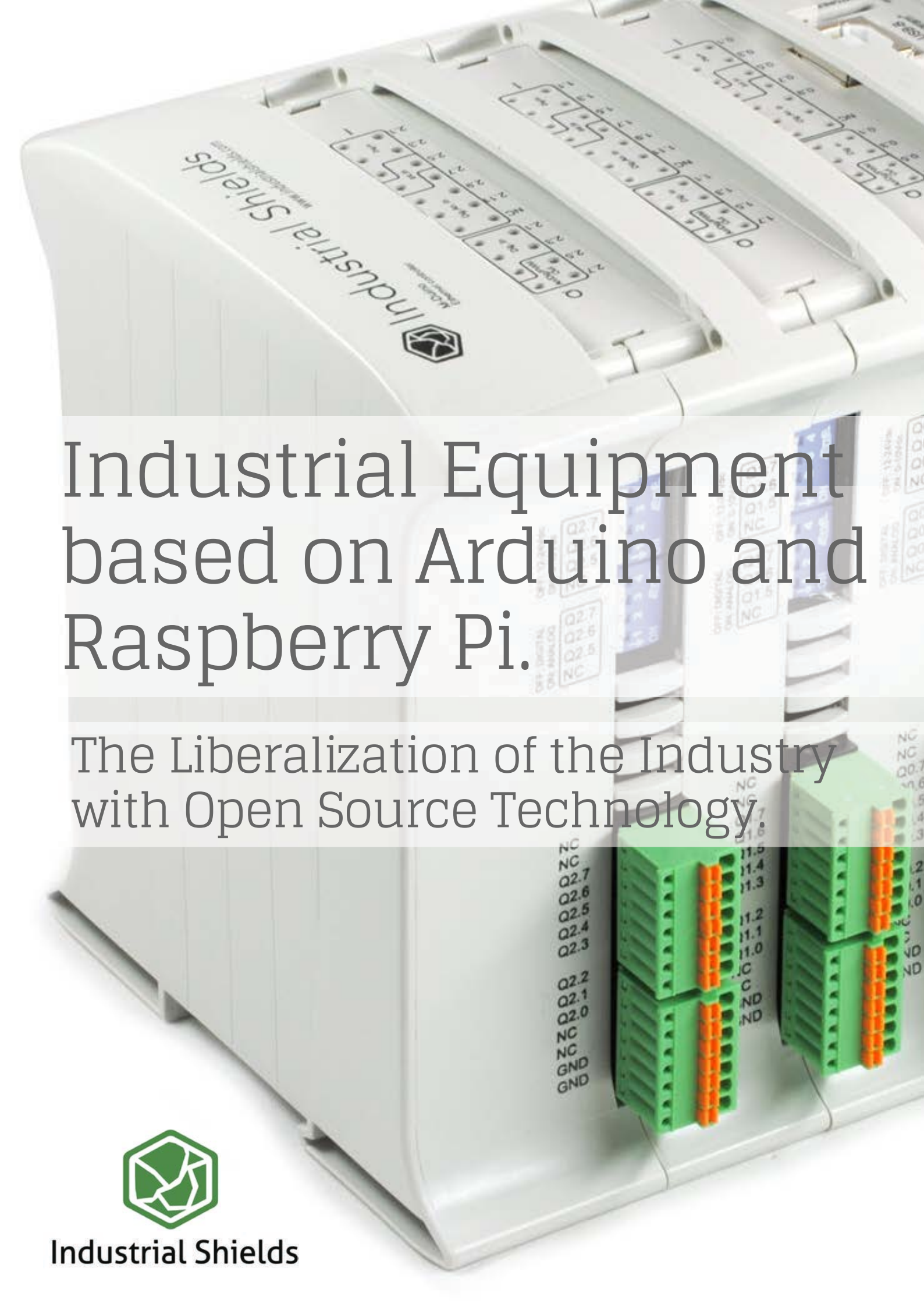


Industrial Equipment based on Arduino and Raspberry Pi.

The Liberalization of the Industry with Open Source Technology.

Industrial Shields

10 IOS

10 IOS Digital Module with ESP32

- 10 GPIOs
- I2C - RS485 - Ethernet - WiFi

Original **ESP32** included

10 IOS Relay Module with ESP32

- 10 GPIOs
- 10 Relay Output
- I2C - RS485 - Ethernet - WiFi

10 IOS Digital Module with Arduino

- 10 GPIOs
- I2C - RS485 - Ethernet

Original **Arduino Nano** included

10 IOS Relay Module with Arduino

- 10 GPIOs
- 10 Relay Output
- I2C - RS485 - Ethernet

ARDBOX

Also Available with:
GPRS
WiFi & Bluetooth LE

Original **Arduino Leonardo** included

PLC Arduino Ardbox
20 I/Os Analog HF +

10 Inputs:
· (2x) Digital Optoisolated Inputs (7-24Vdc) | can work like interrupt Inputs INT (7-24Vdc)
· (8x) 10 bit Analog Inputs (0-10V) | Digital (7-24Vdc) Inputs configurable by software

10 Outputs:
· (3x) Digital Optoisolated Outputs (5-24Vdc)
· (7x) Analog (0-10Vdc) and Digital / PWM Isolated (5 to 24Vdc)

PLC Arduino Ardbox
20 I/Os RELAY HF +

10 Inputs:
· (2x) Digital Optoisolated Inputs (7-24Vdc) | can work like interrupt Inputs INT (7-24Vdc)
· (8x) 10 bit Analog Inputs (0-10V) | Digital (7-24Vdc) Inputs configurable by software

10 Outputs:
· (2x) Digital Optoisolated and PWM (5-24Vdc) | 8 bit Analog (0-10V) Outputs configurable by switch
· (8x) Relay (220Vac-5A)

Industrial Protocols

RS485 · RS232 · SPI · I2C · Modbus RTU

EEPROM 1KB | SRAM 2.5 KB | Flash 32 KB | CPU Speed 16 MHz

REFERENCE LIST – 10IOS

		Communications								Inputs / Outputs						
Reference	Description	Serial TTL (UART)	I2C	SPI	RS232	RS485 Half / Full	Ethernet	Wi-Fi & BLE	GPRS / GSM	Digital Inputs	Analog Inputs	Interrupt Inputs	Digital Outputs	Analog Outputs	Relay Outputs	In / Out 5Vdc
013001000100	10 I/O's Digital Module - CPU Arduino NANO	-	x1	-	-	x1	x1	-	-	x10 GPIOS		-	-	-	-	x3 n.7
013002000100	10 I/O's Digital Module - CPU ESP32	-	x1	-	-	x1	x1	x1	-	x10 GPIOS		-	-	-	-	x3 n.7
013001000200	10 I/O's Relay Module - CPU Arduino NANO	-	x1	-	-	x1	x1	-	-	x10		-	-	-	x10	x2 n.15
013002000200	10 I/O's Relay Module - CPU ESP32	-	x1	-	-	x1	x1	x1	-	x10		-	-	-	x10	x2 n.15

REFERENCE LIST – ARDBOX

		Communications								Inputs / Outputs						
Reference	Description	Serial TTL (UART)	I2C	SPI	RS232	RS485 Half / Full	Ethernet	Wi-Fi & BLE	GPRS / GSM	Digital Inputs	Analog Inputs	Interrupt Inputs	Digital Outputs	Analog Outputs	Relay Outputs	In / Out 5Vdc
IS.AB20AN.HF+	PLC Arduino ARDBOX 20 I/Os Analog HF Modbus (RS485 configured by default)	-	x1 n.1	x1	x1 n.2	x1 n.3	-	-	-	x10	x6 n.4	x2 n.5	x10	x7 n.6	-	x3 n.7
IS.AB20REL.HF+	PLC Arduino ARDBOX 20 I/Os Analog HF Modbus (RS485 configured by default)	-	x1 n.8	x1	x1 n.9	x1 n.10	-	-	-	x10	x12 n.4	x2 n.5	-	x2 n.6	x8	x3 n.7
006001001200	PLC Arduino ARDBOX 20 I/Os Analog HF Modbus & GPRS	-	x1 n.1	-	x1 n.2	x1 n.3	-	-	x1 n.14	x9	x16 n.4	x2 n.5	x10	x2 n.6	-	x2 n.15
006001001300	PLC Arduino ARDBOX 20 I/Os Relay HF Modbus & GPRS	-	x1 n.8	-	x1 n.9	x1 n.10	-	-	x1 n.14	x9	x4 n.4	x2 n.5	-	x2 n.6	x8	x2 n.15
007001001200	PLC Arduino ARDBOX 20 I/Os Analog HF Modbus & WiFi & Bluetooth LE	-	x1 n.1	-	x1 n.2	x1 n.3	-	x1 n.17	-	x10	x8 n.4	x2 n.5	X10	x2 n.6	x8	x3 n.7
007001001300	PLC Arduino ARDBOX 20 I/Os Relay HF Modbus & WiFi & Bluetooth LE	-	x1 n.8	-	x1 n.9	x1 n.10	-	x1 n.17	-	x10	x12 n.4	x2 n.5	-	x2 n.6	x8	x3 n.7

n.1: 1 Input & 1 Digitial 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 | n.13: If using Serial 1. GPRS/GSM not available | n.14: If using GPRS/GSM, Serial 1 is not available | n.15: Pin 2 is used as GPRS/GSM Module Reset, DON'T USE! | n.16: If using Serail 1, WiFi & BLE are not available | n.17: If using WiFi & BLE, Serial 1 is not available | n.18: Flat ribbon cable with 40-pin IDC connector is required to connect to Raspberry Pi Internal (Not included).

ETHERNET

M-DUINO

M-DUINO PLUS

- Plus SECURITY
- Plus PROTECTION
- Plus ESD improvement
- Modbus RTU
  - Half-duplex
  - Full-duplex
- Modbus TCP
- RTC
- MicroSD socket

PLC Arduino 19R I/Os
Relay / Analog / Digital PLUS

6 Inputs:
· (4x) Analog (0-10Vdc, 10bit) / Digital (7-24Vdc) configurables by software
· (2x) Interrupt (7-24Vdc). "Can work like Digital (24Vdc)"
· (2x) Digital Optoisolated Inputs (7-24Vdc)

11 Outputs:
· (8x) Relay (220Vac - 5A)
· (3x) Analog (0-10Vdc, 8bit) / Digital (5 - 24Vdc)

PLC Arduino 21 I/Os
Analog / Digital PLUS

13 Inputs:
· (6x) Analog (0-10Vdc) / Digital (7-24Vdc) configurable by software
· (5x) Digital Isolated (7-24Vdc).
· (2x) Interrupt (7-24Vdc). "Can work like Digital (24Vdc)"

8 Outputs:
· (8x) Digital Isolated (5-24Vdc) / (3 of which) PWM Isolated Analog (0-10Vdc) configurable by switch

RS485
RS232
SPI
TTL
I2C

Original **Arduino Mega** included

ARDUINO

Ethernet
TCP / IP
Modbus RTU
Modbus TCP

Industrial Standard Communications

PLC Arduino 38AR I/Os
Relay / Analog / Digital PLUS

19 Inputs:
· (10x) Analog (0-10Vdc, 10bit) / Digital (7-24Vdc) configurables by software
· (4x) Interrupt (7-24Vdc). "Can work like Digital (24Vdc)"
· (5x) Isolated Digital (7-24Vdc)

19 Outputs:
· (8x) Relay outputs (220Vac-5A).
· (6x) Analog (0-10Vdc, 8 bit) / Digital (5-24Vdc) / PWM Isolated (5 - 24Vdc)
· (5x) Digital (5-24Vdc)

PLC Arduino 38R I/Os
Analog / Digital /Relay PLUS

12 Inputs:
· (8x) 10 bit - Analog (0-10Vdc) / Digital (7-24Vdc) configurable by software
· (4x) Digital Optoisolated Inputs (7-24Vdc) | can work like interrupt Inputs INT (7-24Vdc)

22 Outputs:
· (16x) Relay Outputs (220Vac - 5A)
· (6x) Digital Optoisolated and PWM (5-24Vdc) | 8 bit Analog (0-10V) Outputs configurable by switch

PLC Arduino 42 I/Os
Analog / Digital PLUS

26 Inputs:
· (12x) Analog (0-10Vdc) / Digital (7-24Vdc) , configurable by software
· (10x) Digital Isolated (7-24Vdc).
· (4x) Interrupt (7-24Vdc). "Can work like Digital (24Vdc)"

16 Outputs:
·(10x) Digital Optoisolated Outputs (5-24Vdc)
·(6x) Digital Optoisolated and PWM (5-24Vdc) | 8 bit Analog (0-10V) Outputs configurable by switch

ETHERNET

PLC Arduino 50RRA I/Os
Relay / Analog / Digital PLUS

22 Inputs:
· (12x) Analog (0-10Vdc, 10bit) / Digital (7-24Vdc) configurables by software
· (4x) Digital Isolated (7-24Vdc).
· (6x) Interrupt (7-24Vdc). "Can work like Digital (24Vdc)"

36 Outputs:
· (16x) Relay (220Vac-5A)
· (8x) Analog (0-10Vdc, 8bit) / Digital (5-24Vdc)
· (12x) Digital (5-24Vdc)

PLC Arduino 53ARR I/Os
Relay / Analog / Digital PLUS

25 Inputs:
· (14x) Analog (0-10Vdc, 10 bit) / Digital (7-24Vdc) configurables by software
· (5x) Digital (7-24Vdc).
· (6x) Interrupt (7-24Vdc). "Can work like Digital 24Vdc"

28 Outputs:
· (15x) Relay (220Vac-5A)
· (8x) Analog (0-10Vdc, 8bit) / Digital (5-24Vdc)
· (5x) Digital (Optoisolated 24Vdc max).

PLC Arduino 54ARA I/Os
Relay / Analog / Digital PLUS

29 Inputs:
· (14x) Analog (0-10Vdc, 10 bit) / Digital (7-24Vdc) , configurable by software
· (9x) Digital Isolated (7-24Vdc).
· (6x) Interrupt (7-24Vdc). "Can work like Digital (24Vdc)"

25 Outputs:
· (8x) Relay (220Vac-5A)
· (8x) Analog (0-10Vdc, 8 bit)/ Digital (5-24Vdc)
· (9x) Digital (Isolated 24Vdc max)

M-DUINO

Industrial Standard Communications

RS485 - RS232 - SPI - TTL - I2C
Ethernet - TCP / IP - Modbus RTU / TCP

Original **Arduino Mega** included

EEPROM 4 KB | SRAM 8 KB
Flash 256 KB | CPU Speed 16 MHz

PLC Arduino 57R I/Os
Relay / Analog / Digital PLUS

18 Inputs:
· (12x) Analog (0-10Vdc, 10 bit) / Digital (7-24Vdc) configurable by software
· (6x) Interrupt (5-24Vdc) "Can work like Digital (24Vdc)".

31 Outputs:
· (23x) Relay (220Vac - 5A).
· (8x) Analog (0-10Vdc, 8 bit) / Digital (5-24Vdc)

PLC Arduino 57AAR I/Os
Analog / Digital PLUS

32 Inputs:
· (16x) Analog (0-10Vdc, 10bit) / Digital (7-24Vdc) configurable by software
· (6x) Interrupt (5-24Vdc). "Can work like Digital (24Vdc)"
· (10x) Isolated Digital (5-24Vdc)

25 Outputs:
· (7x) Relay (220Vac – 5A)
· (8x) Analog (0-10Vdc, 8bit) / Digital (5-24Vdc) / PWM Isolated (5-24Vdc)
· (10x) Digital Isolated (5-24Vdc)

PLC Arduino 58 I/Os
Analog / Digital PLUS

36 Inputs:
· (16x) Analog (0-10Vdc) / Digital (7-24Vdc) configurable by software
· (14x) Digital Isolated (7-24Vdc).
· (6x) Interrupt (7-24Vdc). "Can work like Digital (24Vdc)"

22 Outputs:
· (14x) Digital Isolated (5-24Vdc)/ (8 of which) PWM configurable by software
· (8 of which) Analog (0-10Vdc)

REFERENCE LIST – ETHERNET PLC

		Communications								Inputs / Outputs						
Reference	Description	Serial TTL (UART)	I2C	SPI	RS232	RS485 Half / Full	Ethernet	Wi-Fi & BLE	GPRS / GSM	Digital Inputs	Analog Inputs	Interrupt Inputs	Digital Outputs	Analog Outputs	Relay Outputs	In / Out 5Vdc
IS.MDuino.21+	MDUINO PLC Arduino Ethernet 21 I/Os Analog Digital PLUS	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x13	x6 n.4	x2 n.5	x8	x3	-	x2 n.7
IS.MDuino.42+	MDUINO PLC Arduino Ethernet 42 I/Os Analog Digital PLUS	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x26	x12 n.4	x4 n.5	x16	x6	-	x2 n.7
IS.MDuino.58+	MDUINO PLC Arduino Ethernet 58 I/Os Analog Digital PLUS	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x36	x16 n.4	x6 n.5	x22	x8	-	x2 n.7
IS.MDuino.19R+	MDUINO PLC Arduino Ethernet 19R I/Os Analog Digital PLUS	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x6	x4 n.4	x2 n.5	x3	x3	x8	x2 n.7
IS.MDuino.38R+	MDUINO PLC Arduino Ethernet 38R I/Os Analog Digital PLUS	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x12	x8 n.4	x4 n.5	x6	x6	x16	x2 n.7
IS.MDuino.57R+	MDUINO PLC Arduino Ethernet 57R I/Os Analog Digital PLUS	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x18	x12 n.4	x6 n.5	x8	x8	x23	x2 n.7
IS.MDuino.38AR+	MDUINO PLC Arduino Ethernet 38AR+ I/Os Analog Digital PLUS	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x19	x10 n.4	x4 n.5	x11	x6	x8	x2 n.7
IS.MDuino.53AAR+	MDUINO PLC Arduino Ethernet 53AAR+ I/Os Analog Digital PLUS	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x25	x14 n.4	x6 n.5	x13	x8	x15	x2 n.7
IS.MDuino.57AAR+	MDUINO PLC Arduino Ethernet 57AAR+ I/Os Analog Digital PLUS	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x32	x16 n.4	x6 n.5	x18	x8	x7	x2 n.7
IS.MDuino.54ARA+	MDUINO PLC Arduino Ethernet 54ARA+ I/Os Analog Digital PLUS	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x29	x14 n.4	x6 n.5	x17	x8	x8	x2 n.7
IS.MDuino.50RRA+	MDUINO PLC Arduino Ethernet 50RRA+ I/Os Analog Digital PLUS	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x22	x12 n.4	x6 n.5	x20	x8	x16	x2 n.7

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.7 : If using pin 2 and pin 3, (x2) In 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.

ARDBOX GPRS M-DUINO

GPRS ARDBOX PLC Range

Original **Arduino Leonardo** included

Equipment based on the Arduino technology designed for a professional use. It also contains several communication ports which provide more flexibility and control.

The GPRS/GSM 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…

GPRS MDUINO PLC Range

Original **Arduino Mega** included

EEPROM 4 KB | SRAM 8 KB
Flash 256 KB | CPU Speed 16 MHz

Industrial Standard Communications

RS485 - RS232 - SPI - TTL - I2C
Ethernet - TCP / IP - Modbus RTU / TCP

ARDBOX WIFI M-DUINO

WiFi ARDBOX PLC Range

Original **Arduino Leonardo** included

The WiFi and Bluetooth integrated module consists in a single 2.4 GHz Wi-Fi and Bluetooth combo chip designed with the TSMC ultra-low-power 40 nm technology.

It is designed to achieve the best power and RF performance, showing robustness, versatility and reliability in a wide variety of applications and power scenarios.

WiFi MDUINO PLC Range

Original **Arduino Mega** included

Some applications are:

- Generic Low-power IoT Sensor Hub
- Generic Low-power IoT Data Loggers
- Mesh Network.

It is designed for Internet-of-Things (IoT) applications.

For all those projects that require wireless, our range of Wi-Fi PLC (programmable logic controllers) are a great solution.

It is a ideal automation solution for remote monitoring, diagnostics and control.

Those PLC can directly work with humidity sensors, water level sensor, pressure transducers, flow sensors, etc...

It can be used as an access point to create the wireless network infrastructure, such as bridge to connect computers in the network.

REFERENCE LIST – GPRS PLC

		Communications								Inputs / Outputs						
Reference	Description	Serial TTL (UART)	I2C	SPI	RS232	RS485 Half / Full	Ethernet	Wi-Fi & BLE	GPRS / GSM	Digital Inputs	Analog Inputs	Interrupt Inputs	Digital Outputs	Analog Outputs	Relay Outputs	In / Out 5Vdc
006001000200	MDUINO PLC Arduino Ethernet GPRS 21 I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x12	x6 n.4	x1 n.5	x8	x3	-	x1 n.7
006001000400	MDUINO PLC Arduino Ethernet GPRS 42 I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x25	x12 n.4	x3 n.5	x16	x6	-	x1 n.7
006001000600	MDUINO PLC Arduino Ethernet GPRS 58 I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x35	x16 n.4	x5 n.5	x22	x8	-	x1 n.7
006001000100	MDUINO PLC Arduino Ethernet GPRS 19R I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x5	x4 n.4	x1 n.5	x3	x3	x8	x1 n.7
006001000300	MDUINO PLC Arduino Ethernet GPRS 38R I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x11	x8 n.4	x3 n.5	x6	x6	x16	x1 n.7
006001000500	MDUINO PLC Arduino Ethernet GPRS 57R I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x17	x12 n.4	x5 n.5	x8	x8	x23	x1 n.7
006001000700	MDUINO PLC Arduino Ethernet GPRS 38AR+ I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x18	x10 n.4	x3 n.5	x11	x6	x8	x1 n.7
006001000800	MDUINO PLC Arduino Ethernet GPRS 53AAR+ I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x24	x14 n.4	x5 n.5	x13	x8	x15	x1 n.7
006001000900	MDUINO PLC Arduino Ethernet GPRS 57AAR+ I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x31	x16 n.4	x5 n.5	x18	x8	x7	x1 n.7
006001001000	MDUINO PLC Arduino Ethernet GPRS 54ARA+ I/Os Analog Digital PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	-	x1 n.14	x28	x14 n.4	x5 n.5	x17	x8	x8	x1 n.7
006001001100	MDUINO PLC Arduino Ethernet GPRS 50RRA+ I/Os Analog Digital PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	-	x1 n.14	x21	x12 n.4	x5 n.5	x20	x8	x16	x1 n.7
006001001200	PLC Arduino ARDBOX 20 I/Os ANALOG HF Modbus GPRS	-	x1 n.1	-	x1 n.2	x1 n.3	-	-	x1 n.14	x9	x12 n.4	x5 n.5	x10	x5 n.6		x1 n.15
006001001300	PLC Arduino ARDBOX 20 I/Os RELAY HF Modbus GPRS	-	x1 n.8	-	x1 n.9	x1 n.10	-	-	x1 n.14	x9	x12 n.4	x5 n.5	-	x2 n.6	x8	x1 n.15

n.1: 1 Input & 1 Digitial 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 | n.13: If using Serial 1. GPRS/GSM not available | n.14: If using GPRS/GSM, Serial 1 is not available | n.15: Pin 2 is used as GPRS/GSM Module Reset, DON'T USE!

REFERENCE LIST – WIFI PLC

		Communications								Inputs / Outputs						
Reference	Description	Serial TTL (UART)	I2C	SPI	RS232	RS485 Half / Full	Ethernet	Wi-Fi & BLE	GPRS / GSM	Digital Inputs	Analog Inputs	Interrupt Inputs	Digital Outputs	Analog Outputs	Relay Outputs	In / Out 5Vdc
007001000200	MDUINO PLC Arduino Ethernet & WiFI & Bluetooth LE 21 I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x13	x6 n.4	x2 n.5	x8	x3	-	x2 n.7
007001000400	MDUINO PLC Arduino Ethernet & WiFI & Bluetooth LE 42 I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x26	x12 n.4	x4 n.5	x16	x6	-	x2 n.7
007001000600	MDUINO PLC Arduino Ethernet & WiFI & Bluetooth LE 58 I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x36	x16 n.4	x6 n.5	x22	x8	-	x2 n.7
007001000100	MDUINO PLC Arduino Ethernet & WiFI & Bluetooth LE 19R I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x6	x4 n.4	x2 n.5	x3	x3	x8	x2 n.7
007001000300	MDUINO PLC Arduino Ethernet & WiFI & Bluetooth LE 38R I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x12	x8 n.4	x4 n.5	x6	x6	x16	x2 n.7
007001000500	MDUINO PLC Arduino Ethernet & WiFI & Bluetooth LE 57R I/Os Analog Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x18	x12 n.4	x6 n.5	x8	x8	x23	x2 n.7
007001000700	MDUINO PLC Arduino Ethernet & WiFI & Bluetooth LE 38AR+ I/Os Analog Digital PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x19	x10 n.4	x4 n.5	x11	x6	x8	x2 n.7
007001000800	MDUINO PLC Arduino Ethernet & WiFI & Bluetooth LE 53AAR+ I/Os Analog Digital PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x25	x14 n.4	x6 n.5	x13	x8	x15	x2 n.7
007001000900	MDUINO PLC Arduino Ethernet & WiFI & Bluetooth LE 57AAR+ I/Os Analog Digital PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x32	x16 n.4	x6 n.5	x18	x8	x7	x2 n.7
007001001000	MDUINO PLC Arduino Ethernet & WiFI & Bluetooth LE 54ARA+ I/Os Analog Digital PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x29	x14 n.4	x6 n.5	x17	x8	x8	x2 n.7
007001001100	MDUINO PLC Arduino Ethernet & WiFI & Bluetooth LE 50RRA+ I/Os Analog Digital PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x22	x12 n.4	x6 n.5	x20	x8	x16	x2 n.7
007001001200	PLC Arduino ARDBOX 20 I/Os ANALOG HF Modbus & WiFI & Bluetooth LE	-	x1 n.1	-	x1 n.2	x1 n.3	-	x1 n.14	-	x10	x6 n.4	x2 n.5	x10	x5 n.6		x2 n.15
007001001300	PLC Arduino ARDBOX 20 I/Os RELAY HF Modbus & WiFI & Bluetooth LE	-	x1 n.8	-	x1 n.9	x1 n.10	-	x1 n.14	-	x10	x6 n.4	x2 n.5	-	x2 n.6	x8	x2 n.15

n.1: 1 Input & 1 Digitial 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 | n.13: If using Serial 1. GPRS/GSM not available | n.14: If using GPRS/GSM, Serial 1 is not available | n.15: Pin 2 is used as GPRS/GSM Module Reset, DON'T USE!

LORA

ARDBOX PLC Range

Original **Arduino Leonardo** included

The Ardbox Arduino PLC Range and the M-Duino range, both with LoRa technology it will allow you to work with this wireless communication system, the versatility of the Arduino board and this all-in-one solution in an industrial PLC with up to 58 Inputs and Outputs.

MDUINO PLC Range

Original **Arduino Mega** included

Same inputs and outputs, communication protocols, but with dedicated features for specialized markets, requirements or solutions.

DALI

Digital Addressable Lighting Interface

ARDBOX PLC Range

Original **Arduino Leonardo** included

Dali is used in building automation to control individual lights and lighting groups.

Integrating this feature in the Arduino PLC allows you to control huge range of lighting areas and at the same time it is an easily growing system.

It maximizes flexibility by adjusting lighting control with the aim of having the optimal conditions at a rational consumption.

MDUINO PLC Range

Original **Arduino Mega** included

Same inputs and outputs, communication protocols, but with dedicated features for specialized markets, requirements or solutions.

REFERENCE LIST – LORA PLC (EU & USA)

		Communications								Inputs / Outputs						
Reference	Description	Serial TTL (UART)	I2C	SPI	RS232	RS485 Half / Full	Ethernet	LoRa	GPRS / GSM	Digital Inputs	Analog Inputs	Interrupt Inputs	Digital Outputs	Analog Outputs	Relay Outputs	In / Out 5Vdc
015001000200	MDUINO PLC ARDUINO ETHERNET & LoRa (868 - 915MHz) 21 I/Os ANALOG/DIGITAL PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x13	x6 n.4	x2 n.5	x8	x3	-	x2 n.7
015001000400	MDUINO PLC ARDUINO ETHERNET& LoRa (868 - 915MHz) 42 I/Os ANALOG/DIGITAL PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x26	x12 n.4	x4 n.5	x16	x6	-	x2 n.7
015001000600	MDUINO PLC ARDUINO ETHERNET & LoRa (868 - 915MHz) 58 I/Os ANALOG/DIGITAL PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x36	x16 n.4	x6 n.5	x22	x8	-	x2 n.7
015001000100	MDUINO PLC ARDUINO ETHERNET & LoRa (868 - 915MHz) 19R I/Os RELAY/ANALOG/DIGITAL PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x6	x4 n.4	x2 n.5	x3	x3	x8	x2 n.7
015001000300	MDUINO PLC ARDUINO ETHERNET & LoRa (868 - 915MHz) 38R I/Os RELAY/ANALOG/DIGITAL PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x12	x8 n.4	x4 n.5	x6	x6	x16	x2 n.7
015001000500	MDUINO PLC ARDUINO ETHERNET & LoRa (868 - 915MHz) 57R I/Os RELAY/ANALOG/DIGITAL PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x18	x12 n.4	x6 n.5	x8	x8	x23	x2 n.7
015001000700	MDUINO PLC ARDUINO ETHERNET & LoRa (868 - 915MHz) 38AR I/Os ANALOG/DIGITAL/RELAY PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x19	x10 n.4	x4 n.5	x11	x6	x8	x2 n.7
015001000800	MDUINO PLC ARDUINO ETHERNET & LoRa (868 - 915MHz) 57AAR I/Os ANALOG/DIGITAL/RELAY PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x25	x14 n.4	x6 n.5	x13	x8	x7	x2 n.7
015001000900	MDUINO PLC ARDUINO ETHERNET & LoRa (868 - 915MHz) 50RRA I/Os ANALOG/DIGITAL/RELAY PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x32	x16 n.4	x6 n.5	x18	x8	x16	x2 n.7
015001001000	MDUINO PLC ARDUINO ETHERNET & LoRa (868 - 915MHz) 53ARR I/Os ANALOG/DIGITAL/RELAY PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x29	x14 n.4	x6 n.5	x17	x8	x15	x2 n.7
015001001100	MDUINO PLC ARDUINO ETHERNET & LoRa (868 - 915MHz) 54ARA I/Os ANALOG/DIGITAL/RELAY PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x22	x12 n.4	x6 n.5	x20	x8	x8	x2 n.7
015001001200	PLC ARDUINO ARDBOX 20 I/Os ANALOG HF MODBUS & LoRa (868 - 915MHz)	-	x1 n.1	-	x1 n.2	x1 n.3	-	x1 n.14	-	x10	x6 n.4	x2 n.5	x10	x5 n.6		x2 n.15
015001001300	PLC ARDUINO ARDBOX 20 I/Os RELAY HF MODBUS & LoRa (868 - 915MHz)	-	x1 n.8	-	x1 n.9	x1 n.10	-	x1 n.14	-	x10	x6 n.4	x2 n.5	-	x2 n.6	x8	x2 n.15

n.1: 1 Input & 1 Digitial 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 | n.13: If using Serial 1. LoRa not available | n.14: If using LoRa, Serial 1 is not available | n.15: Pin 2 is used as GPRS/GSM Module Reset, DON'T USE!

REFERENCE LIST – DALI EHTERNET PLC

		Communications								Inputs / Outputs						
Reference	Description	Serial TTL (UART)	I2C	SPI	RS232	RS485 HalF / Full	Ethernet	Wi-Fi & BLE	GPRS / GSM	Digital Inputs	Analog Inputs	Interrupt Inputs	Digital Outputs	Analog Outputs	Relay Outputs	In / Out 5Vdc
004002000200	MDUINO PLC Arduino Ethernet & DALI 21 I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x13	x6 n.4	x2 n.5	x8	x3	-	x2 n.7
004002000400	MDUINO PLC Arduino Ethernet & DALI 42 I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x26	x12 n.4	x4 n.5	x16	x6	-	x2 n.7
004002000600	MDUINO PLC Arduino Ethernet & DALI 58 I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x36	x16 n.4	x6 n.5	x22	x8	-	x2 n.7
004002000100	MDUINO PLC Arduino Ethernet & DALI 19R I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x6	x4 n.4	x2 n.5	x3	x3	x8	x2 n.7
004002000300	MDUINO PLC Arduino Ethernet & DALI 38R I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x12	x8 n.4	x4 n.5	x6	x6	x16	x2 n.7
004002000500	MDUINO PLC Arduino Ethernet & DALI 57R I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x18	x12 n.4	x6 n.5	x8	x8	x23	x2 n.7
004002000700	MDUINO PLC Arduino Ethernet & DALI 38AR I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x19	x10 n.4	x4 n.5	x11	x6	x8	x2 n.7
004002000800	MDUINO PLC Arduino Ethernet & DALI 53ARR I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x25	x14 n.4	x6 n.5	x13	x8	x7	x2 n.7
004002000900	MDUINO PLC Arduino Ethernet & DALI 57AAR I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x32	x16 n.4	x6 n.5	x18	x8	x16	x2 n.7
004002001000	MDUINO PLC Arduino Ethernet & DALI 54ARA I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x29	x14 n.4	x6 n.5	x17	x8	x15	x2 n.7
004002001100	MDUINO PLC Arduino Ethernet & DALI 50RRA I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x22	x12 n.4	x6 n.5	x20	x8	x8	x2 n.7
004002001200	PLC Arduino Ardbox & DALI 20 I/Os Analog HF Modbus (RS485 configured by default)	-	x1 n.1	-	x1 n.2	x1 n.3	-	x1 n.14	-	x10	x6 n.4	x2 n.5	x10	x5 n.6		x2 n.15
004002001300	PLC Arduino Ardbox & DALI 20 I/Os Relay HF Modbus (RS485 configured by default)	-	x1 n.8	-	x1 n.9	x1 n.10	-	x1 n.14	-	x10	x6 n.4	x2 n.5	-	x2 n.6	x8	x2 n.15

n.1: 1 Input & 1 Digitial 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 | n.13: If using Serial 1. WiFi not available | n.14: If using WiFi, Serial 1 is not available | n.15: Pin 2 is used as GPRS/GSM Module Reset, DON'T USE!

PLC RASPBERRY

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.

Raspberry Pi PLC Range

Raspberry Pi & GPRS PLC Range

PANEL PC

Original **Raspberry Pi** included

Panel PC's for industrial environment using Linux or Android

TFT
10.1" TouchScreen LVDS, 315 nits, 170° viewing angle.
Format 16:9, 1280x720.

Video in
MIPI CSI connector which lets you install an RPF camera module.

Integrated Storage
SD /MMC / SDIO slot.

Power supply
12Vdc to 24Vdc (5.5x2.5 Jack)

Current consumption
2.5A (12Vdc) // 1,25A (24Vdc)

Low level devices
10x GPIOs , SPI , I2C , UART

LAN connectivity
10/100 Ethernet (RJ-45)

CPU

Raspberry Pi
Quad-core A53 (ARMv8) 64-bit @ 1.4GHz

Tinker Board
Rockchip Quad-Core RK3288

SOFTWARE

Linux **Android**
You can choose among these three Operating Systems to boot the Panel PC.

Depending on your installation requirements and/or needs you have the flexibility to select the option that fits best with your project.

Original **Raspberry Pi**

Choose the processor
That fits your project

Original **Tinker Board**

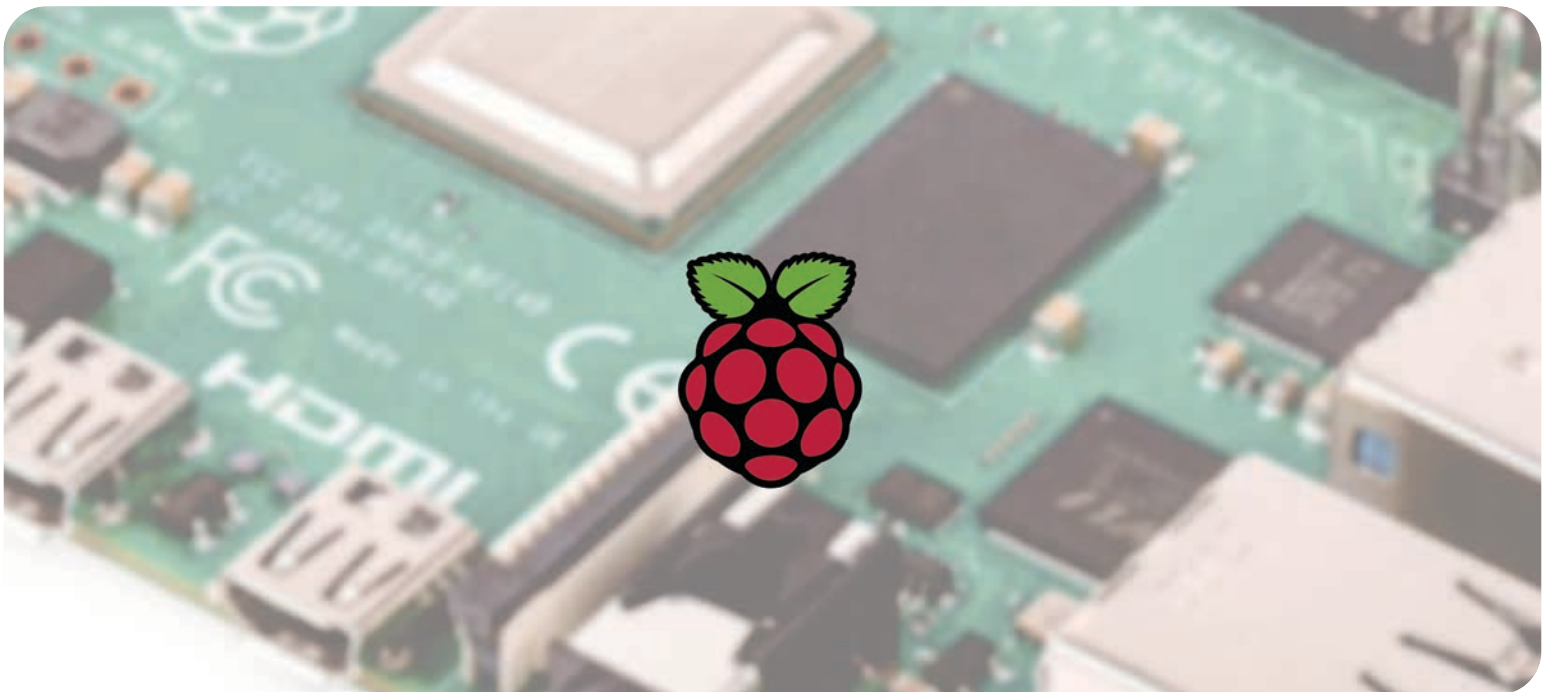
TinkerTouch 7"

Panel PC based on TinkerBoard (ASUS), encasing a 7" TouchScreen.
From 12 to 24Vdc
10x GPIOs Optoisolated (5-24Vdc) configurable.
1x RS485-RS232* - 1x Serial TTL - 1x I2C - 1x SPI - RTC (Real Time Clock)
UPS included

REFERENCE LIST – RASPBERRY PI PLC

		Communications								Inputs / Outputs						
Reference	Description	Serial TTL (UART)	I2C	SPI	RS232	RS485 Half / Full	Ethernet	Wi-Fi & BLE	GPRS / GSM	Digital Inputs	Analog Inputs	Interrupt Inputs	Digital Outputs	Analog Outputs	Relay Outputs	In / Out 5Vdc
012001000000	Raspberry PLC Ethernet CPU	x1 n.13	x1 n.12	x1	-	x1	x2	x1	-	-	-	-	-	-	-	-
012001000200	Raspberry PLC Ethernet 21 I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	-	x1	x2	x1	-	x13	x6 n.4	x2 n.5	x8	x3	-	-
012001000400	Raspberry PLC Ethernet 42 I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	-	x1	x2	x1	-	x26	x12 n.4	x4 n.5	x16	x6	-	-
012001000600	Raspberry PLC Ethernet 58 I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	-	x1	x2	x1	-	x36	x16 n.4	x6 n.5	x22	x8		-
012001000100	Raspberry PLC Ethernet 19R I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	-	x1	x2	x1	-	x6	x4 n.4	x2 n.5	x3	x3	x8	-
012001000300	Raspberry PLC Ethernet 38R I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	-	x1	x2	x1	-	x12	x8 n.4	x4 n.5	x6	x6	x16	-
012001000500	Raspberry PLC Ethernet 57R I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	-	x1	x2	x1	-	x18	x12 n.4	x6 n.5	x8	x8	x23	-
012001000700	Raspberry PLC Ethernet 38AR I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	-	x1	x2	x1	-	x19	x10 n.4	x4 n.5	x11	x6	x8	-
012001000800	Raspberry PLC Ethernet 53ARR I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	-	x1	x2	x1	-	x25	x14 n.4	x6 n.5	x13	x8	x7	-
012001000900	Raspberry PLC Ethernet 57AAR I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	-	x1	x2	x1	-	x32	x16 n.4	x6 n.5	x18	x8	x16	-
012001001000	Raspberry PLC Ethernet 54ARA I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	-	x1	x2	x1	-	x29	x14 n.4	x6 n.5	x17	x8	x15	-
012001001100	Raspberry PLC Ethernet 50RRA I/Os Analog/Digital PLUS	x1 n.13	x1 n.1	x1	-	x1 n.3	x2	x1	-	x22	x12 n.4	x6 n.5	x20	x8	x8	-

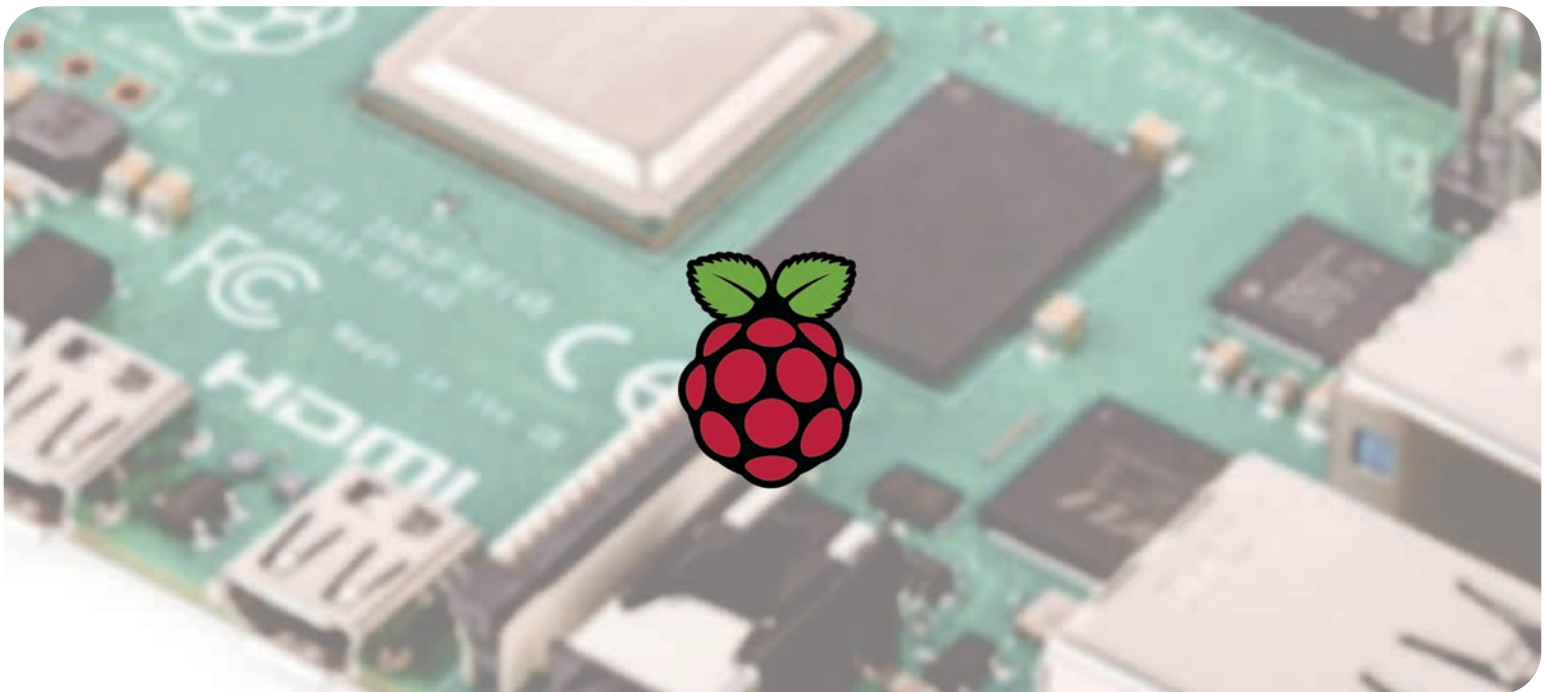
n.1: 1 Input & 1 Digitial Out are lost | n.2: 2 Inputs & 2 Relay are lost | n.3: 2 Inputs & 2 Digital Outputs & 2 Analog Outputs are lost | n.4: From the (Xx) Digital, (Yx) can be configured as Analog (Xx = Total Digital In, Yx = Number of Analog In) | n.5 : From the (Xx) Digital, (Zx) can be configured 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 | n.13: If using Serial 1. WiFi not available | n.14: If using WiFi, Serial 1 is not available | n.15: Pin 2 is used as GPRS/GSM Module Reset, DON'T USE!



REFERENCE LIST – RASPBERRY PI & GPRS PLC

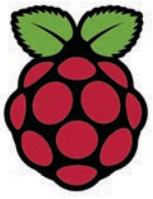
		Communications								Inputs / Outputs						
Reference	Description	Serial TTL (UART)	I2C	SPI	RS232	RS485 HalF / Full	Ethernet	Wi-Fi & BLE	GPRS / GSM	Digital Inputs	Analog Inputs	Interrupt Inputs	Digital Outputs	Analog Outputs	Relay Outputs	In / Out 5Vdc
016002000200	Raspberry PLC & GPRS 21 I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	-	x1	x2	x1	x1	x12	x6 n.4	x1 n.5	x8	x3	-	-
016002000400	Raspberry PLC & GPRS 42 I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	-	x1	x2	x1	x1	x25	x12 n.4	x3n. 5	x16	x6	-	-
016002000600	Raspberry PLC & GPRS 58 I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	-	x1	x2	x1	x1	x35	x16 n.4	x5 n.5	x22	x8	-	-
016002000100	Raspberry PLC & GPRS 19R I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	-	x1	x2	x1	x1	x5	x4 n.4	x1 n.5	x3	x3	x8	-
016002000300	Raspberry PLC & GPRS 38R I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	-	x1	x2	x1	x1	x11	x8 n.4	x3n. 5	x6	x6	x16	-
016002000500	Raspberry PLC & GPRS 57R I/Os Analog/Digital PLUS	x1 n.13	x1 n.12	x1	-	x1	x2	x1	x1	x17	x12 n.4	x5 n.5	x8	x8	x23	-
016002000700	Raspberry PLC & GPRS 38AR I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	-	x1	x2	x1	x1	x18	x10 n.4	x3 n.5	x11	x6	x8	-
016002000800	Raspberry PLC & GPRS 53ARR I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	-	x1	x2	x1	x1	x24	x14 n.4	x5 n.5	x13	x8	x7	-
016002000900	Raspberry PLC & GPRS 57AAR I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	-	x1	x2	x1	x1	x31	x16 n.4	x5 n.5	x18	x8	x16	-
016002001000	Raspberry PLC & GPRS 54ARA I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	-	x1	x2	x1	x1	x28	x14 n.4	x5 n.5	x17	x8	x15	-
016002001100	Raspberry PLC & GPRS 50RRA I/Os Analog/Digital PLUS	x1 n.13	x2 n.12	x1	-	x1	x2	x1	x1	x21	x12 n.4	x5 n.5	x20	x8	x8	-

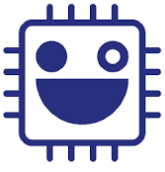
n.1: 1 Input & 1 Digitial Out are lost | n.2: 2 Inputs & 2 Relay are lost | n.3: 2 Inputs & 2 Digital Outputs & 2 Analog Outputs are lost | n.4: From the (Xx) Digital, (Yx) can be configured as Analog (Xx = Total Digital In, Yx = Number of Analog In) | n.5 : From the (Xx) Digital, (Zx) can be configured 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 | n.13: If using Serial 1. WiFi not available | n.14: If using WiFi, Serial 1 is not available | n.15: Pin 2 is used as GPRS/GSM Module Reset, DON'T USE!



REFERENCE LIST – PANEL PC

CPU	Reference	Description	Single Board Computer (SBC) Microcontroller	RAM (GB)	Total GPIOs	Ethernet communication 10/100 Gbps Ethernet (RJ-45)	WiFi & BLE (Bluetooth Low Energy)	Bluetooth	USB ports	Operative Systems	Storage	Serial TTL (UART) communication	RS-232 communication	Half/Full Duplex RS-485 communication	SPI external port communication	RTC (Real Time Clock. NOTE: I2C port used. See pinout modification)	µSD included (16GB)	UPS icluded	Power Supply Voltage (Vdc) Range	Operating Temperture C	Operating Relative Humidity % (no condensation)	Resolution
Raspberry Pi	003002000100	Touchberry PI 10.1 4B (Panel PC Industrial EMC Aluminum - Raspberry PI 4B Included + µSD Card with Raspbian)	Raspberry Pi 4 Model B	2 GB	-	X1	WiFi 802.11 b/g/n/ac	5.0 BLE	2x 2.0 3x 3.0	-	Micro SD (TF) card slot	-	-	-	-	-	-	-	12/24 Vdc	0-40°C	10-90%	1280 x 720
	003002000200	Touchberry PI 10.1 4B (Panel PC Industrial EMC Aluminum - Raspberry PI 4B Included + 16Gb µSD Card without OS)	Raspberry Pi 4 Model B	2 GB	-	X1	WiFi 802.11 b/g/n/ac	5.0 BLE	2x 2.0 3x 3.0	-	Micro SD (TF) card slot	-	-	-	-	-	X1	-	12/24 Vdc	0-40°C	10-90%	1280 x 720
	003002000300	Touchberry PI 10.1 4B (Panel PC Industrial EMC Aluminum - Raspberry PI 4B Included)	Raspberry Pi 4 Model B	2 GB	X10	X1	WiFi 802.11 b/g/n/ac	5.0 BLE	2x 2.0 3x 3.0	Linux	Micro SD (TF) card slot	-	-	-	-	-	X1	-	12/24 Vdc	0-40°C	10-90%	1280 x 720
	003002000400	Touchberry PI 10.1 4B UPS (Panel PC Industrial EMC Aluminum - Raspberry PI 4 B Included + µSD Card with Raspbian - UPS included)	Raspberry Pi 4 Model B	2 GB	-	X1	WiFi 802.11 b/g/n/ac	4.0 EDR	2x 2.0 3x 3.0	Linux	Micro SD (TF) card slot	-	-	-	-	-	X1	X1	12/24 Vdc	0-40°C	10-90%	1280 x 720
	003002000500	Touchberry PI 10.1 4B UPS & RTC & RS485 (Panel PC Industrial EMC Aluminum - Raspberry PI 4 B Included + µSD Card with Raspbian - UPS,RTC,RS485 functions included)	Raspberry Pi 4 Model B	2 GB	-	X1	WiFi 802.11 b/g/n/ac	5.0 BLE	2x 2.0 3x 3.0	Linux	Micro SD (TF) card slot	-	-	X1	-	X1	X1	X1	12/24 Vdc	0-40°C	10-90%	1280 x 720
	003002400100	TouchBerry PI 7" - 10 Configurable I/Os - RS485 - RS232 - UPS Included (Raspberry Pi 4B)	Raspberry Pi 4 Model B	2 GB	X10	X1	WiFi 802.11 b/g/n/ac	5.0 BLE	2x 2.0 3x 3.0	Linux	Micro SD (TF) card slot	X1	X1	X1	X1	-	X1	X1	12/24 Vdc	0-40°C	10-90%	800x 400
Asus	003001100100	TinkerTouch S 10.1 (Panel PC Industrial, Aluminum enclosure, EMC compliance - ASUS Quad-Core, 2GB, 16Gb eMMC + MicroSD slot - LINUX)	ASUS Tinker Board	2 GB	-	X1	WiFi 802.11 b/g/n	4.0 EDR	4x 2.0	Linux	Micro SD MMC SDIO slot	-	-	X1	-	-	X1	-	12/24 Vdc	0-40°C	10-90%	1280 x 720
	003001100200	TinkerTouch S 10.1 (Panel PC Industrial, Aluminum enclosure, EMC compliance - ASUS Quad-Core, 2GB, 16Gb eMMC +MicroSD slot - ANDROID)	ASUS Tinker Board	2 GB	-	X1	WiFi 802.11 b/g/n	4.0 EDR	4x 2.0	Android	Micro SD MMC SDIO slot	-	-	X1	-	-	X1	-	12/24 Vdc	0-40°C	10-90%	1280 x 720
	003001200100	TinkerTouch S 10.1 UPS (Panel PC Industrial, Aluminum enclosure, EMC compliance - ASUS Quad-Core, 2GB, 16Gb eMMC + MicroSD slot - UPS function included - LINUX)	ASUS Tinker Board	2 GB	-	X1	WiFi 802.11 b/g/n	4.0 EDR	4x 2.0	Linux	Micro SD MMC SDIO slot	-	-	-	-	-	X1	X1	12/24 Vdc	0-40°C	10-90%	1280 x 720
	003001200200	TinkerTouch S 10.1 UPS (Panel PC Industrial, Aluminum enclosure, EMC compliance - ASUS Quad-Core, 2GB, 16Gb eMMC +MicroSD slot - UPS function included - ANDROID)	ASUS Tinker Board	2 GB	-	X1	WiFi 802.11 b/g/n	4.0 EDR	4x 2.0	Android	Micro SD MMC SDIO slot	-	-	-	-	-	X1	X1	12/24 Vdc	0-40°C	10-90%	1280 x 720
	003001300100	TinkerTouch S 10.1 UPS & RTC & RS485 (Panel PC Industrial, Aluminum enclosure, EMC compliance - ASUS Quad-Core, 2GB, 16Gb eMMC + MicroSD slot - UPS,RTC,RS485 functions included - LINUX)	ASUS Tinker Board	2 GB	-	X1	WiFi 802.11 b/g/n	4.0 EDR	4x 2.0	Linux	Micro SD MMC SDIO slot	-	-	-	-	X1	X1	X1	12/24 Vdc	0-40°C	10-90%	1280 x 720
	003001300200	TinkerTouch S 10.1 UPS & RTC & RS485 (Panel PC Industrial, Aluminum enclosure, EMC compliance - ASUS Quad-Core, 2GB, 16Gb eMMC + MicroSD slot - UPS, RTC, RS485 functions included - ANDROID)	ASUS Tinker Board	2 GB	-	X1	WiFi 802.11 b/g/n	4.0 EDR	4x 2.0	Android	Micro SD MMC SDIO slot	-	-	-	-	X1	X1	X1	12/24 Vdc	0-40°C	10-90%	1280 x 720
	003001400100	TinkerTouch 7" - 10 Configurable I/Os - RS485 - RS232 - UPS Included - Linux installed into eMMC	ASUS Tinker Board	2 GB	-	X1	WiFi 802.11 b/g/n	4.0 EDR	4x 2.0	Linux	Micro SD MMC SDIO slot	X1	X1	X1	X1	-	X1	X1	12/24 Vdc	0-40°C	10-90%	800x 400





LIBRARIES, COMMUNICATIONS, PROTOCOLS

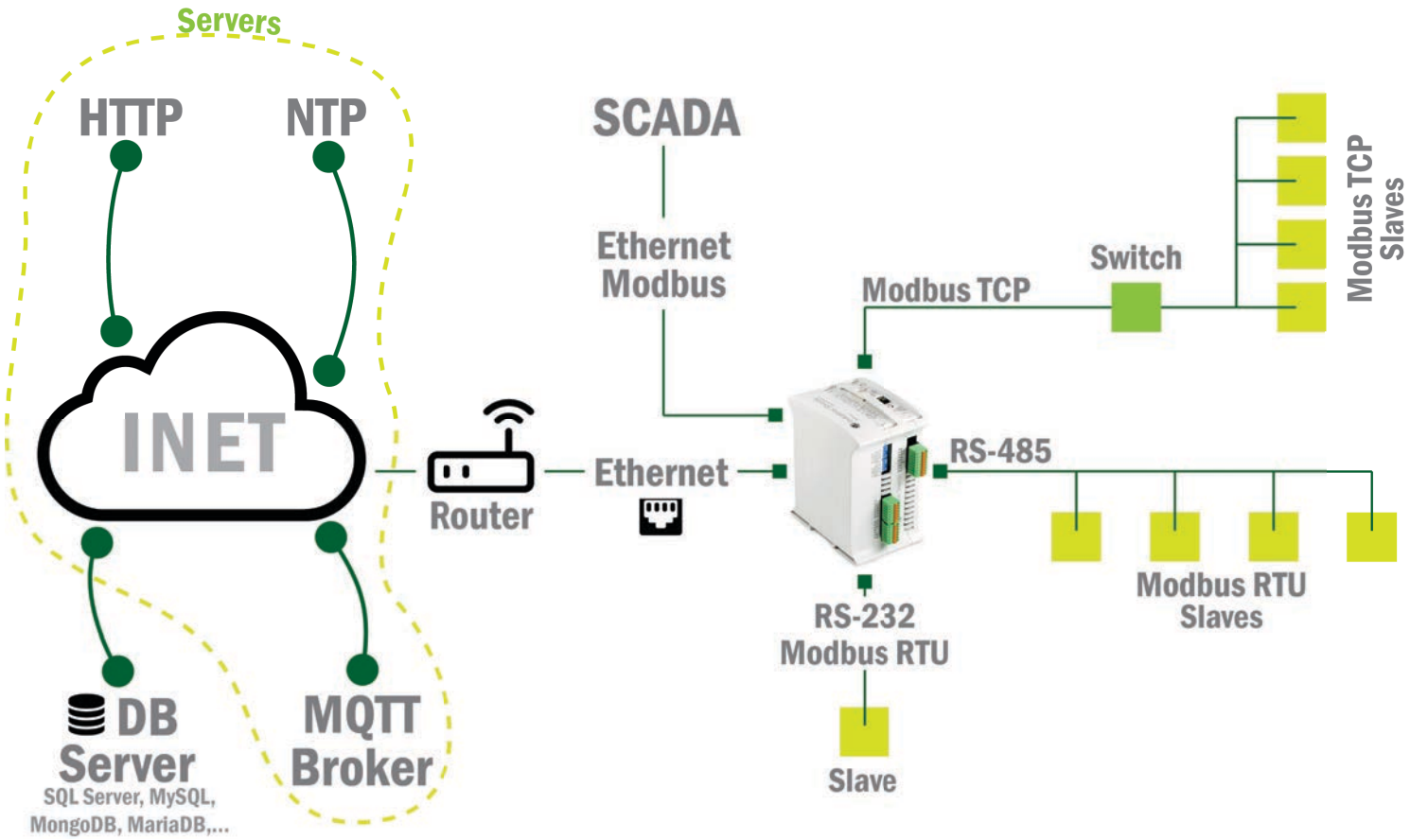
Available Libraries in our Blog and GitHub

Application Layer	MySQL	SQL Server	SimpleComm	Modbus TCP	MQTT	http	Raw Data	NTD	Raw Data	Modbus RTU	SimpleComm	Raw Data	Modbus RTU	SimpleComm	Sensor Data	Sensor Data	Sensor Data
	Data Base																
4- Transport	TCP							UDP									
3- Network	IP																
2- Data Link	Ethernet / WiFi								RS-485			RS-232			TTL/ SPI	I2C	One Wire
1- Physical	GPRS								Serial UART								

https://github.com/IndustrialShields

https://www.industrialshields.com/blog/industrial-shields-blog-1

With our PLC's you can communicate using several protocols like RS-232, RS-485, Modbus TCP, or using ethernet, etc.
It's possible to send and receive information from several server types (HTTP, NTP, MQTT) or DB Servers.



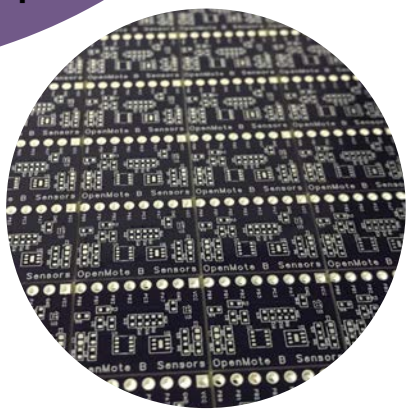
OpenMote B is a Super LOW consumption mote for the IoT aplications.
It is the reference for the IETF 6TiSCG Working Group and is supported by all the Open Source 6TiSCH implementation in Contiki and OpenWSN projects.

- **High Autonomy (>10 years*)**
- **Less than 50µA Consumption**
- **USB Interface**

Tech Features

Technical characteristics:

· Temperature sensor, Humidity sensor, Pressure sensor, Luminosity sensor
· 4x Leds indicators
· 2xAA Battery placeholder
· 2.4GHz SMA Antenna
· SubGHz SMA Antenna



OPEN MOTE

Main Features

· Ti CC2538 SoC (512kb Flash 32kb RAM)
· Atmel AT86RF215 SubGHz Radio (868/915MHz)
· Supports all IEEE802.15.4g modulations
· Simultaneous dual radio Operation

Programming

· Programming over BSL
· Supported in Contiki and OpenWSN for experimentation
· JTAG and OCD compliant
· USB Interface

OpenMote B
OpenMote B is a Raspberry compatible IoT harware in compliance with the standard IEEE802.15.4g and it can be programmed by Open Source platforms.

POWER SUPPLY

Din RAIL Power Supply 120W

· AC-DC, 120W, 1 Output 5A at 24Vdc

Din RAIL Power Supply 180W

· AC-DC, 180W, 1 Output 7.5A at 24Vdc

Din RAIL Power Supply 240W

· AC-DC, 240W, 1 Output 10A at 24Vdc

Din RAIL Power Supply 30W

· AC-DC, 30W, 1 Output 2.5A at 12Vdc

Din RAIL Power Supply 30W

· AC-DC, 30W, 1 Output at 24Vdc

Din RAIL Power Supply 50W

· AC-DC, 50W, 1 Output at 24Vdc

SOFTWARE

Arduino IDE is the Original platform to program Arduino boards

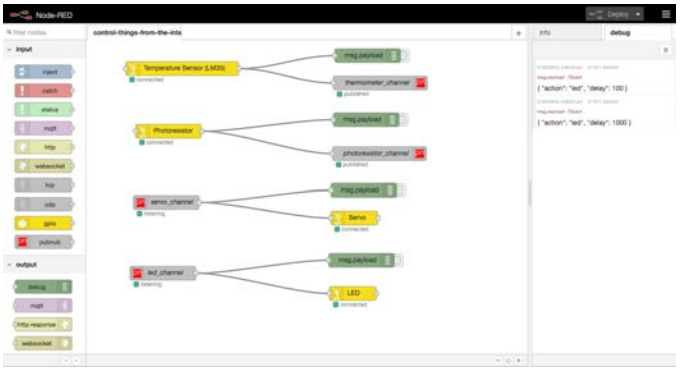
Our Arduino based PLCs use Original Arduino boards assembled inside all devices

- Free software licenses
- Standard Libraries available
- Documentation and examples available, ready to use
- Industrial Shields libraries available to facilitate the programming of our PLC's

NodeRED. Platform to develop Apps, Servers, Dashboards and more.

Node-Red is a programming tool for wiring together hardware devices, APIs and online services in new and interesting ways. It is very intuitive, easy and fast-programming. It is an excellent tool for working graphically.

- It provides a browser-based editor that makes it easy to wire together flows using nodes.
- Online debugging aplication



Our PLC's can be programmed with all software platforms compatible with Arduino IDE.

Electron · Codebender · Stino · Eclipse · Visual Studio · Gedit · Komodo Edit · MariaMole · Zeus · Atmel Studio · AVR-GCC · CodeBlocks · ROBOTC for Arduino · Xcode · ArduinoDroid · Notepad++ · Programino · and more...

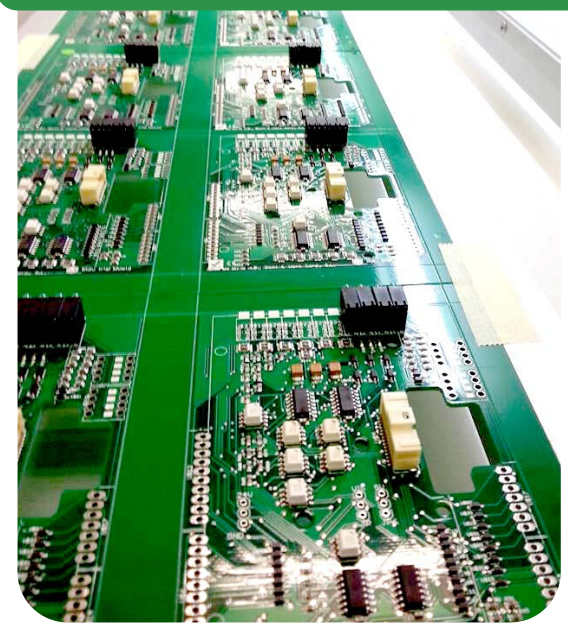
Our Panel PC's can work with Linux and Android, it means that If your team have knowledge enough you can create a custom applications for the Panel PC's. You have more flexibility to fit the needs of your installation or application.

COMPANY

Industrial Shields was born in October 2012 from the hand of an engineer, who, searching for a more flexible PLC equipment and a better price, decided to develop its 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 two worlds.

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



Bigdata
Cloud Computing
Flexible Hardware
Industrial Internet of Things

Boot & Work Corp. S.L. is a company committed to the promotion, development, manufacture and selling of products based on Open Source technology to liberalize 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.

The **Open Source Hardware** solutions are still not 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** for us and so for the market, using Open Source solutions we can provide more specifications at a better price.

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

Industrial Shields are convinced with a perspective focused on **Industry 4.0 and the Internet of Things**.

QUALITY

Incompliance with :

EN61010-1 | EN61010-2-201 | EN61131-2:2007 (Clause 8: Zone A/B EMC and clause 11:LVD) | EN61000-6-4:2007 + A1 2011 (Emissions) | EN 61000-6-2:2005 (Inmunity) | EMC: FCC Part 15

EVOLVING

2007

Through the IEEE-UNEDsb we started to know Arduino and we used it to manufacture machinery as a prototype.

2010

We created the first Shields for industrial use for machinery of the labeling sector and automatic production lines.

2012

Boot & Work Corp. is created with the objective of standardizing 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 created the Industrial Shields brand from where we started to market a first basic family of products. First unit sold online to Lybia.

2015

Industrial Shields has commercialized 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 industrial sectors of all kinds.

2017

We have more than 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 process, industrial certifications.

2019

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

Presence in more than **90 countries**

CONTACT US

Contact us, let's **get in touch**

Industrial Shields has been working worldwide through distributors, or in direct contact with the customers. We have been working since 2016 with big players of the market that are selling our products in their websites.

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

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

Fabrica del Pont 1-11
(Recinte industrial del Pont Vell)
Sant Fruitós de Bages 08272 (Barcelona)
Spain

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