M-DUINO CONTROLLER PLC

The Liberalization of the Industry with Open Source Technology

Industrial Shields

M-DUINO PLC Arduino 19R

6 Inputs:
· (2x) Digital Optoisolated (5-24Vdc)
· (4x) Analog (0-10Vdc, 10bit) / Digital (5-24Vdc) configurables by software
· (2x) Interrupt (5-24Vdc). "Are part of the Digital inputs (5-24Vdc)"

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

M-DUINO PLC Arduino 21

13 Inputs:
· (7x) Digital Optoisolated (5-24Vdc).
· (6x) Analog (0-10Vdc, 10bit) / Digital (5-24Vdc) configurables by software
· (2x) Interrupt (5-24Vdc). "Are part of the Digital inputs (5-24Vdc)".

8 Outputs:
· (5x) Digital Optoisolated(5-24Vdc)
· (3x) Analog (0-10Vdc, 8 bit) / Digital (5-24Vdc) / PWM Isolated (5-24Vdc)

RS485
RS232
SPI
TTL
I2C

Original **Arduino Mega** included

ARDUINO

Industrial Standard Communications

Ethernet
TCP / IP
Modbus RTU
Modbus TCP

M-DUINO PLC Arduino 38AR

19 Inputs:
· (9x) Digital Optoisolated (5-24Vdc)
· (10x) Analog (0-10Vdc, 10bit) / Digital (5-24Vdc) configurables by software
· (4x) Interrupt (5-24Vdc). "Are part of the Digital inputs (5-24Vdc)"

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

M-DUINO PLC Arduino 38R

12 Inputs:
· (4x) Digital Optoisolated (5-24Vdc)
· (8x) Analog (0-10Vdc, 10bit) / Digital (5-24Vdc) configurables by software
· (4x) Interrupt (5-24Vdc). "Are part of the Digital inputs (5-24Vdc)"

22 Outputs:
· (6x) Analog (0-10Vdc, 8 bit) / Digital (5-24Vdc) / PWM Isolated (5-24Vdc)
· (16x) Relay (220Vac - 5A)

M-DUINO PLC Arduino 42

26 Inputs:
· (14x) Digital Optoisolated (5-24Vdc)
· (12x) Analog (0-10Vdc, 10bit) / Digital (5-24Vdc) configurables by software.
· (4x) Interrupt (5-24Vdc). "Are part of the Digital inputs (5-24Vdc)"

16 Outputs:
· (10x) Digital Optoisolated (5-24Vdc)
· (6x) Analog (0-10Vdc, 8 bit) / Digital (5-24Vdc) / PWM Isolated (5-24Vdc)

ETHERNET

M-DUINO

■ M-DUINO PLC Arduino 50RRA

■ M-DUINO PLC Arduino 53ARR

■ M-DUINO PLC Arduino 54ARA

22 Inputs:
· (10x) Digital Optoisolated (5-24Vdc)
· (12x) Analog (0-10Vdc, 10bit) /
Digital (5-24Vdc) configurables by
software
· (6x) Interrupt (5-24Vdc). "Are part of
the Digital inputs (5-24Vdc)"

28 Outputs:
· (4x) Digital Optoisolated (5-24Vdc)
· (8x) Analog (0-10Vdc, 8 bit) / Digital
(5-24Vdc) / PWM Isolated (5-24Vdc)
· (16x) Relay (220Vac-5A)

25 Inputs:
· (11x) Digital Optoisolated (5-24Vdc)
· (14x) Analog (0-10Vdc, 10bit) /
Digital (5-24Vdc) configurables by
software
· (6x) Interrupt (5-24Vdc). "Are part of
the Digital inputs (5-24Vdc)"

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

29 Inputs:
· (15x) Digital Optoisolated (5-24Vdc).
· (14x) Analog (0-10Vdc, 10 bit) / Digital
(5-24Vdc), configurable by software
· (6x) Interrupt (5-24Vdc). "Are part of
the Digital inputs (5-24Vdc)"

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

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

ARDUINO

■ M-DUINO PLC Arduino 57R

■ M-DUINO PLC Arduino 57AAR

■ M-DUINO PLC Arduino 58

18 Inputs:
· (6x) Digital Optoisolated (5-24Vdc)
· (12x) Analog (0-10Vdc, 10 bit)/
Digital (5-24Vdc) configurable by
software
· (6x) Interrupt (5-24Vdc) "Are part of
the Digital inputs (5-24Vdc)".

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

32 Inputs:
· (16x) Digital Optoisolated (5-24Vdc)
· (16x) Analog (0-10Vdc, 10bit) /
Digital (5-24Vdc) configurable by
software
· (6x) Interrupt (5-24Vdc). "Are part
of the Digital inputs (5-24Vdc)"

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

36 Inputs:
· (20x) Digital Optoisolated (5-24Vdc).
· (16x) Analog (0-10Vdc) / Digital
(5-24Vdc) configurable by software
· (6x) Interrupt (5-24Vdc). "Are part of
the Digital inputs (5-24Vdc)"

22 Outputs:
· (14x) Digital Optoisolated (5-24Vdc)
· (8x) Analog (0-10Vdc, 8 bit) / Digital
(5-24Vdc) / PWM Isolated (5-24Vdc)

REFERENCE LIST – ETHERNET PLC

Reference	Description	Communications								Inputs / Outputs						
		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+	M-DUINO PLC Arduino 21	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x7	x6 n.4	x2 n.5	x5	x3	-	x2 n.7
IS.MDuino.42+	M-DUINO PLC Arduino 42	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x14	x12 n.4	x4 n.5	x10	x6	-	x2 n.7
IS.MDuino.58+	M-DUINO PLC Arduino 58	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x20	x16 n.4	x6 n.5	x14	x8	-	x2 n.7
IS.MDuino.19R+	M-DUINO PLC Arduino 19R	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x2	x4 n.4	x2 n.5	x0	x3	x8	x2 n.7
IS.MDuino.38R+	M-DUINO PLC Arduino 38R	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x4	x8 n.4	x4 n.5	x0	x6	x16	x2 n.7
IS.MDuino.57R+	M-DUINO PLC Arduino 57R	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x6	x12 n.4	x6 n.5	x0	x8	x23	x2 n.7
IS.MDuino.38AR+	M-DUINO PLC Arduino 38AR	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x9	x10 n.4	x4 n.5	x5	x6	x8	x2 n.7
IS.MDuino.53ARR+	M-DUINO PLC Arduino 53ARR	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x11	x14 n.4	x6 n.5	x5	x8	x15	x2 n.7
IS.MDuino.57AAR+	M-DUINO PLC Arduino 57AAR	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x16	x16 n.4	x6 n.5	x10	x8	x7	x2 n.7
IS.MDuino.54ARA+	M-DUINO PLC Arduino 54ARA	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x15	x14 n.4	x6 n.5	x9	x8	x8	x2 n.7
IS.MDuino.50RRA+	M-DUINO PLC Arduino 50RRA	x2 n.11	x1 n.12	x1	x1	x1	x1	-	-	x10	x12 n.4	x6 n.5	x4	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.

M-DUINO GPRS

M-DUINO PLC ARDUINO GPRS

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...

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

M-DUINO WIFI

MDUINO PLC ARDUINO WiFi & BLE

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.

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.

Original **Arduino Mega** included

For all those projects that require wireless, our range of Wi-Fi PLC (programmable logic controllers) is a great solution.
It is an ideal automation solution for remote monitoring, diagnostics and control.
Those PLC can directly work with humidity sensors, water level sensors, 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	M-DUINO PLC Arduino GPRS 21	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x6	x6 n.4	x1 n.5	x5	x3	-	x1 n.7
006001000400	M-DUINO PLC Arduino GPRS 42	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x11	x12 n.4	x1 n.5	x10	x6	-	x1 n.7
006001000600	M-DUINO PLC Arduino GPRS 58	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x17	x16 n.4	x3 n.5	x14	x8	-	x1 n.7
006001000100	M-DUINO PLC Arduino GPRS 19R	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x1	x4 n.4	x1 n.5	x0	x3	x8	x1 n.7
006001000300	M-DUINO PLC Arduino GPRS 38R	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x1	x8 n.4	x1 n.5	x0	x6	x16	x1 n.7
006001000500	M-DUINO PLC Arduino GPRS 57R	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x3	x12 n.4	x3 n.5	x0	x8	x23	x1 n.7
006001000700	M-DUINO PLC Arduino GPRS 38AR	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x6	x10 n.4	x2 n.5	x5	x6	x8	x1 n.7
006001000800	M-DUINO PLC Arduino GPRS 57AAR	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x13	x16 n.4	x3 n.5	x10	x8	x7	x1 n.7
006001000900	M-DUINO PLC Arduino GPRS 50RRA	x1 n.13	x1 n.12	x1	x1	x1	x1	-	x1 n.14	x7	x12 n.4	x3 n.5	x4	x8	x16	x1 n.7
006001001000	M-DUINO PLC Arduino GPRS 53ARR	x1 n.13	x2 n.12	x1	x1	x1	x1	-	x1 n.14	x8	x14 n.4	x3 n.5	x5	x8	x15	x1 n.7
006001001100	M-DUINO PLC Arduino GPRS 54ARA	x1 n.13	x2 n.12	x1	x1	x1	x1	-	x1 n.14	x12	x14 n.4	x3 n.5	x9	x8	x8	x1 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). They are counted as Digital Inputs. | n.7 : If using pin 2 and pin 3, (x2) In are lost | 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

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	M-DUINO PLC Arduino WiFi & BLE 21	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x7	x6 n.4	x2 n.5	x5	x3	-	x2 n.7
007001000400	M-DUINO PLC Arduino WiFi & BLE 42	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x14	x12 n.4	x4 n.5	x10	x6	-	x2 n.7
007001000600	M-DUINO PLC Arduino WiFi & BLE 58	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x20	x16 n.4	x6 n.5	x14	x8	-	x2 n.7
007001000100	M-DUINO PLC Arduino WiFi & BLE 19R	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x2	x4 n.4	x2 n.5	x0	x3	x8	x2 n.7
007001000300	M-DUINO PLC Arduino WiFi & BLE 38R	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x4	x8 n.4	x4 n.5	x0	x6	x16	x2 n.7
007001000500	M-DUINO PLC Arduino WiFi & BLE 57R	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x6	x12 n.4	x6 n.5	x0	x8	x23	x2 n.7
007001000700	M-DUINO PLC Arduino WiFi & BLE 38AR	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x9	x10 n.4	x4 n.5	x5	x6	x8	x2 n.7
007001000800	M-DUINO PLC Arduino WiFi & BLE 57AAR	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x16	x16 n.4	x6 n.5	x10	x8	x7	x2 n.7
007001000900	M-DUINO PLC Arduino WiFi & BLE 50RRA	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x10	x12 n.4	x6 n.5	x4	x8	x16	x2 n.7
007001001000	M-DUINO PLC Arduino WiFi & BLE 53ARR	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x11	x14 n.4	x6 n.5	x5	x8	x15	x2 n.7
007001001100	M-DUINO PLC Arduino WiFi & BLE 54ARA	x1 n.13	x2 n.12	x1	x1	x1	x1	x1 n.14	-	x15	x14 n.4	x6 n.5	x9	x8	x8	x2 n.7

n.4: Can be used as Analog/Digital | 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.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

LORA

M-DUINO PLC Range

The M-Duino range with LoRa technology, 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.

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

M-DUINO PLC

Dali is used in street lighting and 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 to have the optimal conditions for rational consumption.

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)

Reference	Description	Communications								Inputs / Outputs						
		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	M-DUINO PLC ARDUINO LoRa 21	x2 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x6	x6 n.4	x1 n.5	x5	x3	-	x1 n.7
015001000400	M-DUINO PLC ARDUINO LoRa 42	x2 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x13	x12 n.4	x3 n.5	x10	x6	-	x1 n.7
015001000600	M-DUINO PLC ARDUINO LoRa 58	x2 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x19	x16 n.4	x5 n.5	x14	x6	-	x1 n.7
015001000100	M-DUINO PLC ARDUINO LoRa 19R	x2 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x1	x4 n.4	x1 n.5	x0	x3	x8	x1 n.7
015001000300	M-DUINO PLC ARDUINO LoRa 38R	x2 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x3	x8 n.4	x3 n.5	x0	x6	x16	x1 n.7
015001000500	M-DUINO PLC ARDUINO LoRa 57R	x2 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x5	x12 n.4	x5 n.5	x0	x6	x23	x1 n.7
015001000700	M-DUINO PLC ARDUINO LoRa 38AR	x2 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x8	x10 n.4	x3 n.5	x5	x6	x8	x1 n.7
015001000800	M-DUINO PLC ARDUINO LoRa 57AAR	x2 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x15	x16 n.4	x5 n.5	x10	x6	x7	x1 n.7
015001000900	M-DUINO PLC ARDUINO LoRa 50RRA	x2 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x9	x12 n.4	x5 n.5	x4	x6	x16	x1 n.7
015001001000	M-DUINO PLC ARDUINO LoRa 53ARR	x2 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x10	x14 n.4	x5 n.5	x5	x6	x15	x1 n.7
015001001100	M-DUINO PLC ARDUINO LoRa 54ARA	x2 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x14	x14 n.4	x5 n.5	x9	x8	x8	x1 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.12: 2 Inputs are lost | n.13: If using Serial 1. LoRa not available | n.14: If using LoRa, Serial 1 is not available

REFERENCE LIST – DALI EHTERNET PLC

| Reference | Description | Communications | | | | | | | | Inputs / Outputs | | | | | | |
		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
004001000200	M-DUINO PLC Arduino DALI 21	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x7	x6 n.4	x2 n.5	x5	x3	-	x2 n.7
004001000400	M-DUINO PLC Arduino DALI 42	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x12	x12 n.4	x2 n.5	x10	x6	-	x2 n.7
004001000600	M-DUINO PLC Arduino DALI 58	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x18	x16 n.4	x4 n.5	x14	x8	-	x2 n.7
004001000100	M-DUINO PLC Arduino DALI 19R	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x2	x4 n.4	x2 n.5	x0	x3	x8	x2 n.7
004001000300	M-DUINO PLC Arduino DALI 38R	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x4	x8 n.4	x4 n.5	x0	x6	x16	x2 n.7
004001000500	M-DUINO PLC Arduino DALI 57R	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x6	x12 n.4	x6 n.5	x0	x8	x23	x2 n.7
004001000700	M-DUINO PLC Arduino DALI 38AR	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x9	x10 n.4	x4 n.5	x5	x6	x8	x2 n.7
004001000800	M-DUINO PLC Arduino DALI 57AAR	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x14	x16 n.4	x4 n.5	x10	x8	x7	x2 n.7
004001000900	M-DUINO PLC Arduino DALI 50RRA	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x10	x12 n.4	x6 n.5	x4	x8	x16	x2 n.7
004001001000	M-DUINO PLC Arduino DALI 53ARR	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x11	x14 n.4	x6 n.5	x5	x8	x15	x2 n.7
004001001100	M-DUINO PLC Arduino DALI 54ARA	x1 n.13	x1 n.12	x1	x1	x1	x1	x1 n.14	-	x15	x14 n.4	x6 n.5	x9	x8	x8	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.12: 2 Inputs are lost | n.13: If using Serial 1. WiFi not available | n.14: If using WiFi, Serial 1 is not available

Digital Addressable Lighting Interface

# 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.
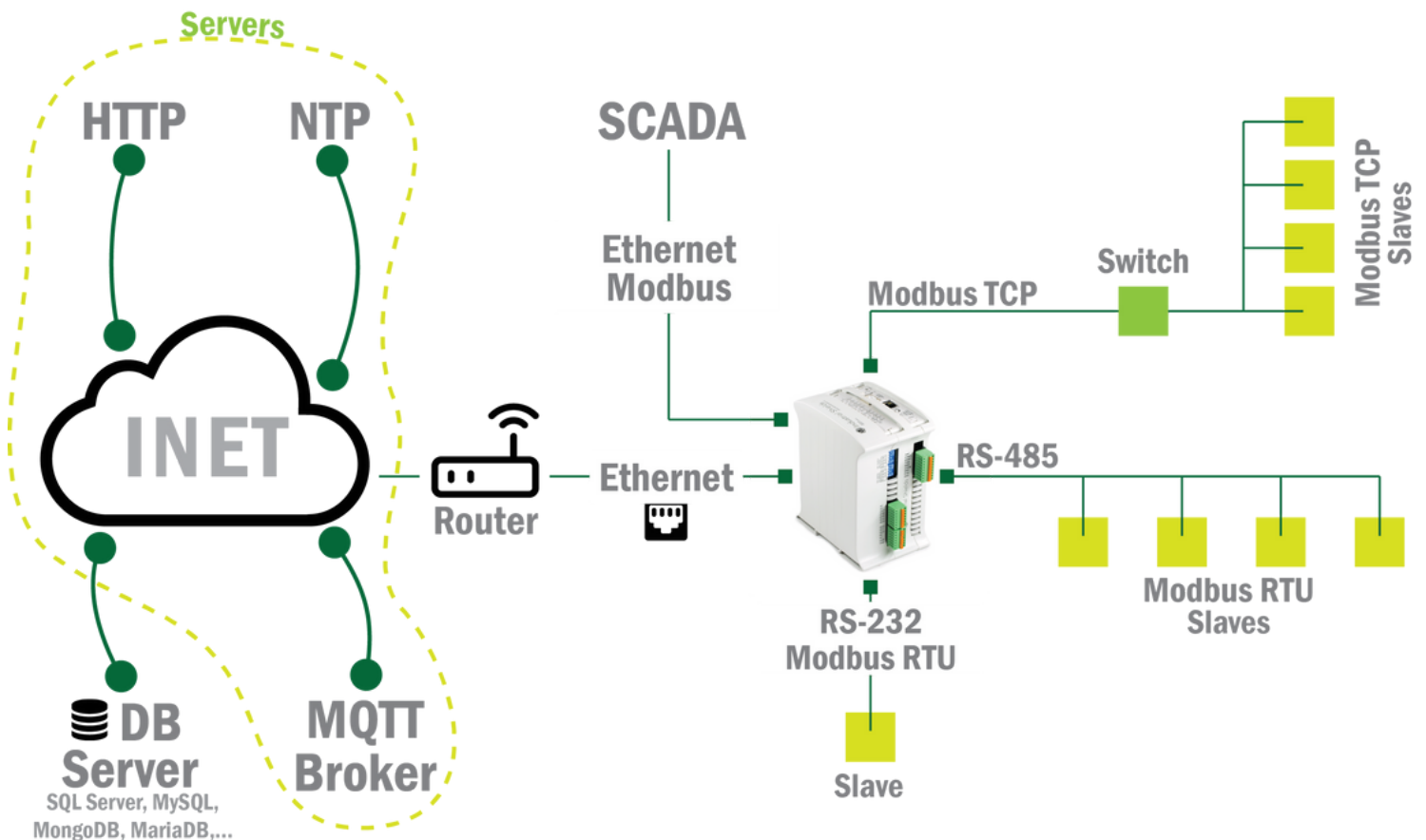
SOFTWARE

ARDUINO

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 PLCs
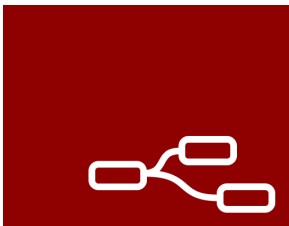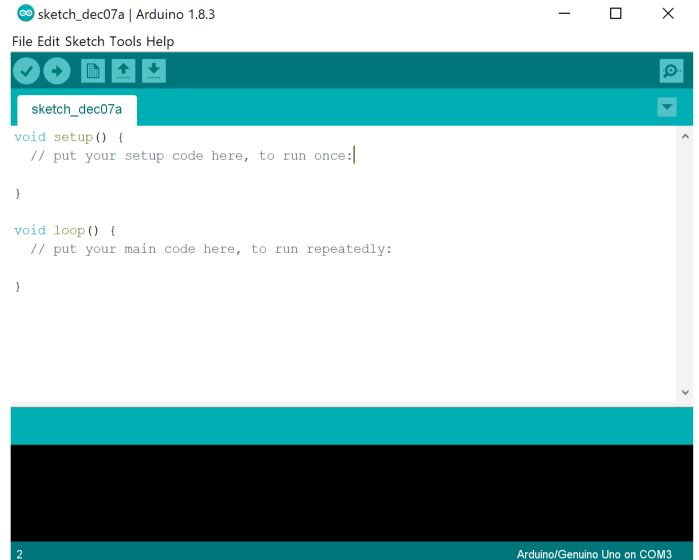
Node-RED

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 connect flows using nodes.
- Online debugging aplication
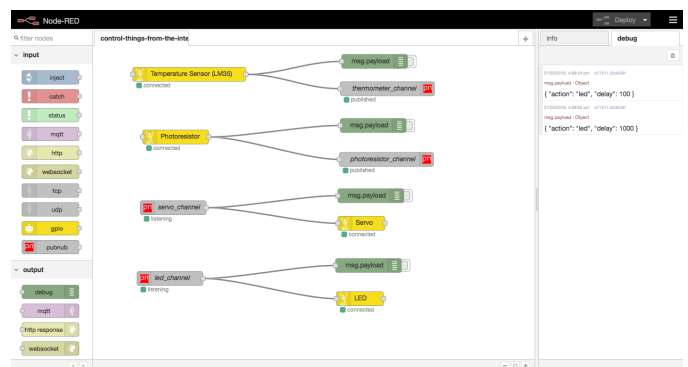
Our PLCs can be programmed with all software platforms compatible with Arduino IDE.

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 PCs can work with Linux and Android which means that, if your team has enough knowledge, you can create a custom applications for the Panel PCs. You will have more flexibility to fit the needs of your installation or application.
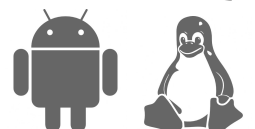
Industrial Shields was born in October 2012 from the hand of an engineer, who, searching for a more flexible PLC equipment and a better price, decided to develop his own solution using **Open Source Hardware.**

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

Industrial Shields, designs, produces and markets the range of products based on **Open Source Hardware**.
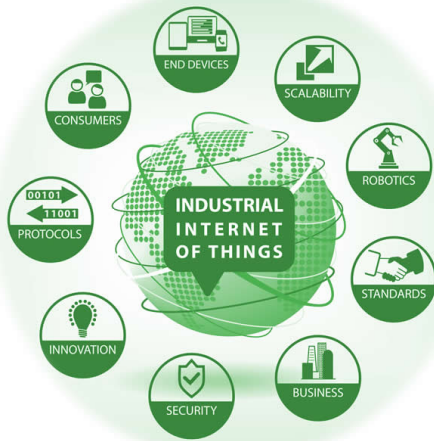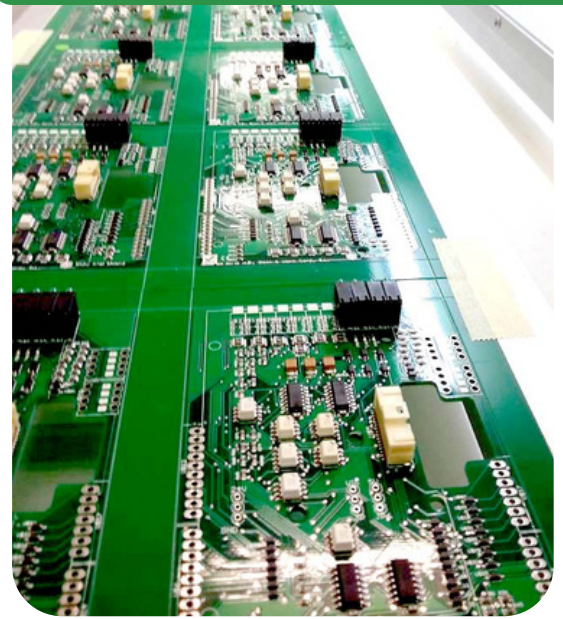
Bigdata
Cloud Computing
Flexible Hardware
Industrial Internet of Things

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

The aim of our company 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** for us and therefore for the market, using Open Source solutions we can provide more specifications at a better price.

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

Industrial Shields is convinced with a focus on **Industry 4.0 and the Internet of Things**.

QUALITY

In compliance with :

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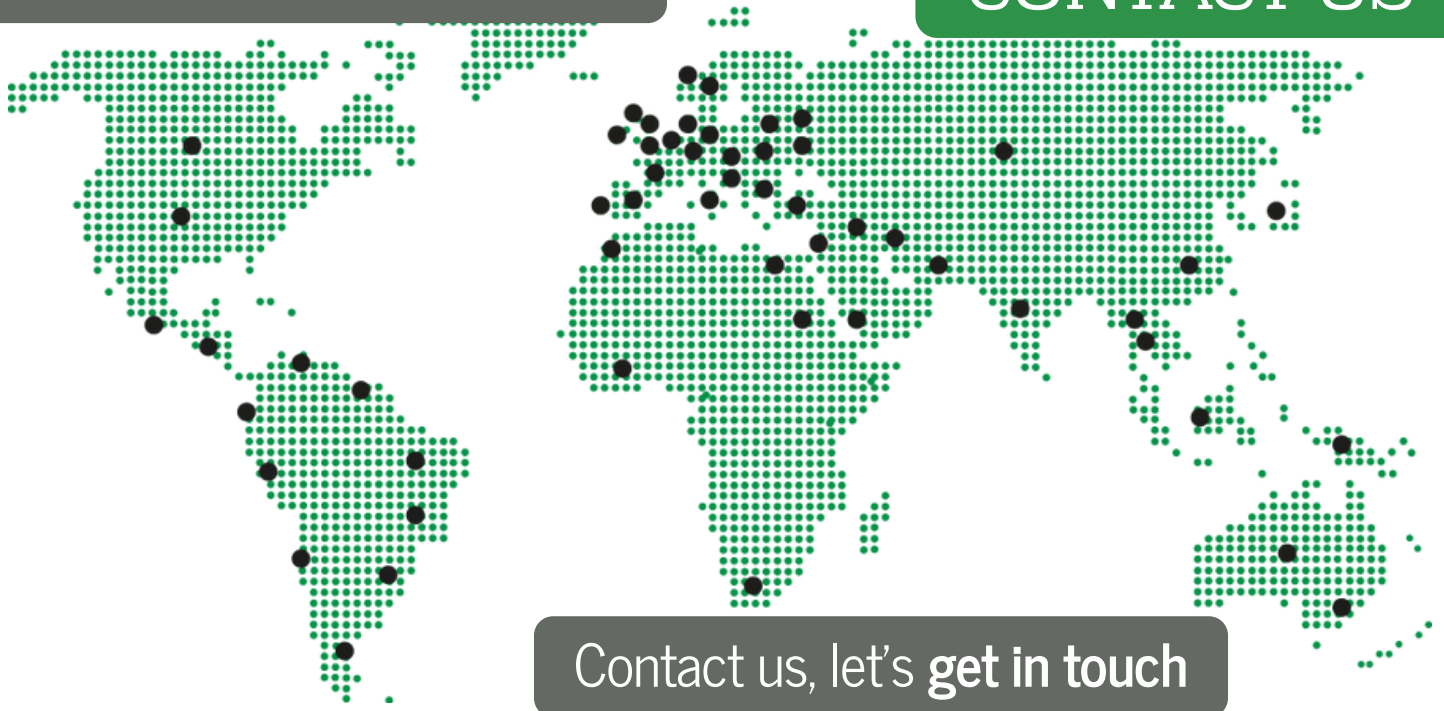EN61000-6-4:2007 + A1 2011 (Emissions) | EN 61000-6-2:2005 (Inmunity) | EMC: FCC Part 15

CONTACT US

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

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

Our **sales, 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 support you.

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

industrialshields@industrialshields.com

Tel: (+34) 938 760 191

https://www.industrialshields.com