

Technical Features CONECTABLE PLC RASPBERRY PI 24Vcc

MODEL TYPE	Raspberry PLC
Input Voltage	12 to 24Vdc (Fuse protection (2.5A) Polarity protection)
Input rated voltage	24Vdc
Rated Power	30 W
I max.	15A
Size	Check the Measures Table
SRAM	2/4/8 GB
Communications	I2C, Ethernet (x2), USB (x4), RS485 (x2 HALF-Duplex), SPI, Wi-Fi, Bluetooth, Serial TTL, µSD, RTC, µHDMI (x2)

1x2 EXPANSION BOARDS SLOTS

Customize up to two additional communication expansions on your Raspberry PLC and prepare your custom-made project

- **GPRS:**
 - Model: SARA-G350
 - Type: 2G GPRS, GSM/LTE
 - Key Features: GSM Quad-band 850/1900, 900/1800 MHz, Maximum output power -8dBm, IPv4/IPv6, dual-stack
- Applications: Remote monitoring automation, asset tracking, surveillance and security, home automation systems, point of sales terminals etc.

General Features

Power supply voltage	DC power supply	12 to 24Vdc
Operating voltage range	DC power supply	11.4 to 25.4Vdc
Power consumption	DC power supply	30 W MIN. .
External power supply	Power supply voltage	24Vdc
Insulation resistance		20MΩ min. at 500Vdc between the AC terminals and the protective earth terminal.
Dielectric strength		2.300 VAC at 50/60 Hz for one minute with a leakage current of 10mA max. Between all the external AC terminals and the protective ground terminal.
Shock resistance		80m/s ² in the X, Y and Z direction 2 times each.
Ambient temperature (operating)		0° to 50°C with Raspberry OS Lite
Ambient humidity (operating)		10% to 90% (no condensation)
Ambient environment (operating)		With no corrosive gas
Ambient temperature (storage)		-20° to 60°C
Power supply holding time		2ms min.
Weight		Review at the Measures Table

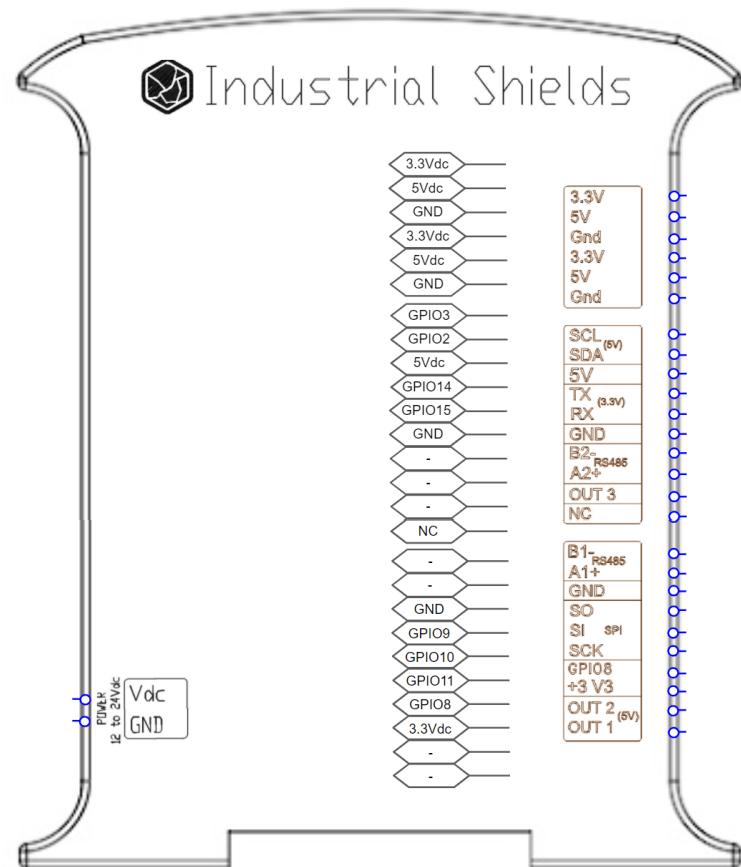
GPIO(x1)

Digital GPIO8 (3.3V)



Expandability

I2C - 127 elements
(x2) RS485 - 32 elements using Modbus RTU



Model	Measures Table			
	Height (mm)	Width (mm)	Depth (mm)	Weight (g)
Raspberry PLC Ethernet CPU	119.5	84.60	101	373
Raspberry PLC 21+	119.5	109.20	101	490
Raspberry PLC 42+	119.5	133.80	101	598
Raspberry PLC 58+	119.5	158.40	101	710.5
Raspberry PLC 19R+	119.5	109.20	101	490
Raspberry PLC 38R+	119.5	133.80	101	598
Raspberry PLC 57R+	119.5	158.40	101	710.5
Raspberry PLC 38AR+	119.5	133.80	101	598
Raspberry PLC 53ARR+	119.5	158.40	101	710.5
Raspberry PLC 57AAR+	119.5	158.40	101	710.5
Raspberry PLC 54ARA+	119.5	158.40	101	710.5
Raspberry PLC 50RRA+	119.5	158.40	101	710.5

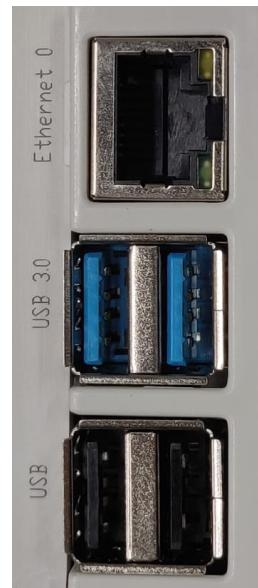
Left side



Upper side 2



Right Side



I/Os Table

I/Os Table						
Model	Reference 1	Analog Input	Digital Isolated Input	Digital Isolated Output	Digital/Analogic Output	Relay Output
Normal	012XXX000000	0	1	0	0	0
21+	012XXX000200	6	7	5	3	0
42+	012XXX000400	12	14	10	6	0
58+	012XXX000600	18	21	15	9	0
19R	012XXX00100	4	2	0	3	8
38R	012XXX00300	8	4	0	6	16
57R	012XXX00500	12	6	0	9	24
38AR	012XXX00700	10	9	5	6	8
57AAR	012XXX00800	16	16	10	9	8
50RRA	012XXX00900	14	11	5	9	16
53ARR	012XXX01000	14	11	5	9	16
54ARA	012XXX01100	16	16	10	9	8

Notes

1. There are XXX on the reference number show:

- First two characters are related to the expansion modules connected to the PLC unit and the RAM Memory model.
- The third character is related to the CPU RAM memory space:

See the Reference Table. Example:

- xxxx2xxxxx - 2GB RAM Memory
- xxxx3xxxxx - 4GB RAM Memory
- xxxx4xxxxx - 8GB RAM Memory

Reference Table

Reference Table				
Model	RAM Memory			
	2GB RAM	4GB RAM	8GB RAM	
PLC Raspberry General Family				
Raspberry PLC Ethernet CPU (Raspberry Pi 4B X GB RAM Included + 8GB pSLC SIM W/Linux)	012XXX000000	012XXX000000	012XXX000000	
Raspberry PLC Ethernet 21 I/Os Analog/Digital PLUS (Raspberry Pi 4B X GB RAM Included + 8GB pSLC SIM W/Linux)	012XXX000200	012XXX000200	012XXX000200	
Raspberry PLC Ethernet 42 I/Os Analog/Digital PLUS (Raspberry Pi 4B X GB RAM Included + 8GB pSLC SIM W/Linux)	012XXX000400	012XXX000400	012XXX000400	
Raspberry PLC Ethernet 58 I/Os Analog/Digital PLUS (Raspberry Pi 4B X GB RAM Included + 8GB pSLC SIM W/Linux)	012XXX000600	012XXX000600	012XXX000600	
Raspberry PLC Ethernet 19R I/Os Analog/Digital PLUS (Raspberry Pi 4B X GB RAM Included + 8GB pSLC SIM W/Linux)	012XXX00100	012XXX00100	012XXX00100	
Raspberry PLC Ethernet 38R I/Os Analog/Digital PLUS (Raspberry Pi 4B X GB RAM Included + 8GB pSLC SIM W/Linux)	012XXX00300	012XXX00300	012XXX00300	
Raspberry PLC Ethernet 57R I/Os Analog/Digital PLUS (Raspberry Pi 4B X GB RAM Included + 8GB pSLC SIM W/Linux)	012XXX00500	012XXX3000500	012XXX000500	
Raspberry PLC Ethernet 38AR I/Os Analog/Digital PLUS (Raspberry Pi 4B X GB RAM Included + 8GB pSLC SIM W/Linux)	012XXX00700	012XXX00700	012XXX00700	
Raspberry PLC Ethernet 57AAR I/Os Analog/Digital PLUS (Raspberry Pi 4B X GB RAM Included + 8GB pSLC SIM W/Linux)	012XXX00800	012XXX00800	012XXX00800	
Raspberry PLC Ethernet 50RRA I/Os Analog/Digital PLUS (Raspberry Pi 4B X GB RAM Included + 8GB pSLC SIM W/Linux)	012XXX00900	012XXX00900	012XXX00900	
Raspberry PLC Ethernet 53ARR I/Os Analog/Digital PLUS (Raspberry Pi 4B X GB RAM Included + 8GB pSLC SIM W/Linux)	012XXX01000	012XXX01000	012XXX01000	
Raspberry PLC Ethernet 54ARA I/Os Analog/Digital PLUS (Raspberry Pi 4B X GB RAM Included + 8GB pSLC SIM W/Linux)	012XXX01100	012XXX01100	012XXX01100	

I/Os Ranges

- Analog I/Os voltage: 0 - 10 Vdc
- Digital I/Os voltage: 5 - 24 Vdc (300 mA)
- Relay's voltage: 30 Vdc (3A) / 250 Vac (5 A)

Main changes compared to previous versions

- Customize up to two additional communication expansions on your Raspberry PLC and prepare your custom-made project
- Communication pins upgrade! Now located next to USB Ports instead of microSD layer
- CAN Bus is not available by default. Select it as expansion board if required.
- No FAN is required at RPI PLC V4 family products! Heater passive elements installed by default.

Zones Table for Raspberry PLC V4 Family products

Zones Table					
Model	Zone 0	Zone A	Zone B	Zone C	
Raspberry PLC Ethernet CPU	<input checked="" type="checkbox"/>	-	-	-	
Raspberry PLC 21+	<input checked="" type="checkbox"/>	Analog / Digital	-	-	
Raspberry PLC 42+	<input checked="" type="checkbox"/>	Analog / Digital	Analog / Digital	-	
Raspberry PLC 58+	<input checked="" type="checkbox"/>	Analog / Digital	Analog / Digital	Analog / Digital	
Raspberry PLC 19R+	<input checked="" type="checkbox"/>	Relay	-	-	
Raspberry PLC 38R+	<input checked="" type="checkbox"/>	Relay	Relay	-	
Raspberry PLC 57R+	<input checked="" type="checkbox"/>	Relay	Relay	Relay	
Raspberry PLC 38AR+	<input checked="" type="checkbox"/>	Analog / Digital	Relay	-	
Raspberry PLC 53ARR+	<input checked="" type="checkbox"/>	Analog / Digital	Relay	Relay	
Raspberry PLC 57AAR+	<input checked="" type="checkbox"/>	Analog / Digital	Analog / Digital	Relay	
Raspberry PLC 54ARA+	<input checked="" type="checkbox"/>	Analog / Digital	Relay	Analog / Digital	
Raspberry PLC 50RRA+	<input checked="" type="checkbox"/>	Relay	Relay	Analog / Digital	



Performance Specifications

Raspberry Board	Raspberry Pi 4 B
I/O control method	Combination of the cyclic scan and immediate refresh processing methods.
Programming language	Linux applications: Bash Scripts, Python, C++, Node-Red and more!
CPU	Broadcom BCM2711, Quad core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz
Website	https://www.raspberrypi.org/

Raspberry PLC Access

How to access to the Raspberry PLC:

-Linux users: using ssh specifying the IP address: 10.10.10.20/24 (eth0) and 10.10.11.20/24 (eth1).

-Windows users: we recommend to use PuTTY ssh client. The IP address have to be specified: 10.10.10.20/24 (eth0) and 10.10.11.20/24 (eth1).

You can download the latest release of PuTTY here:

<https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>

Warnings



Unused pins should not be connected. Ignoring the directive may damage the controller.

Before using this product, it is the responsibility of the user to read the product's User Guide and all accompanying documentation.

Industrial Shields PLCs must be powered between 12Vdc and 24Vdc. If a higher voltage is supplied to the equipment can suffer irreversible damage.

Maintenance must be performed by qualified personnel familiarized with the construction, operation, and hazards involved with the control.

Maintenance should be performed with the control out of operation and disconnected from all sources of power.

UPS Shield

This PLC has integrated an UPS Shield, a device which provides an anti-voltage drop protection system designed to avoid data corruption when the current is suddenly cut off.

RTC

This PLC has integrated the DS3231 Real Time Clock model which is powered by a button battery (CR1216 or CR1220).

Heater

This PLC family products include an external heater to refrigerate the CPU and the other components connected internally.

Eth1

This Ethernet port is configured at 10BT Half-Duplex auto-negotiation disabled.

Outputs

After a reboot/power disconnection and reconnection, the UPS will be activated and, until the device is fully initialized again (it will take some seconds), the outputs will maintain their last activation state. For more information about that consult the User Guide.

Symbology

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

Technical Support

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