PLC – PLC500 Programmable Logic Controller

Power in processing, **flexibility** in programming

GROSS AUTOMATION

Driving efficiency and sustainability

weg

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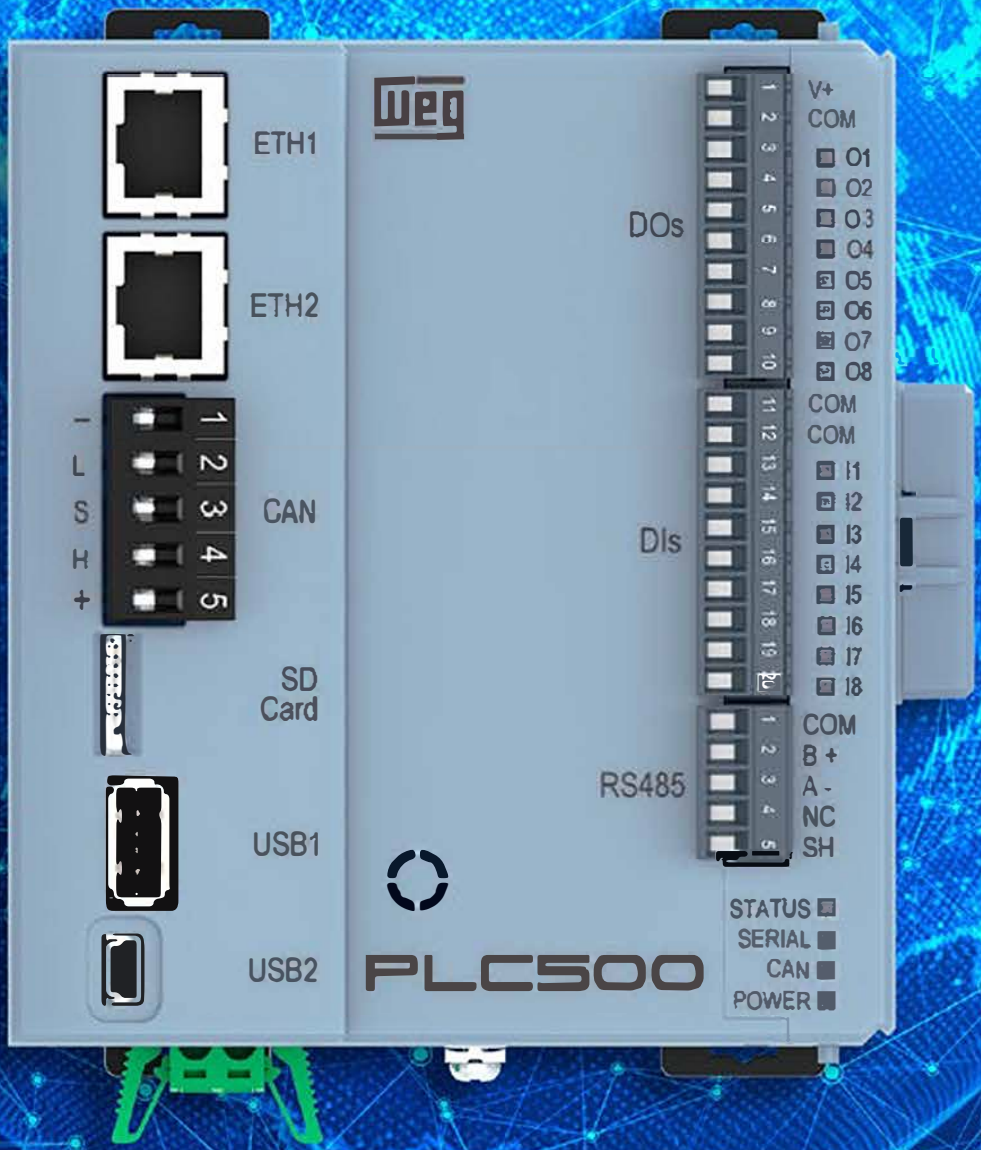


WEG is distributed by Gross Automation

+1 262 252 1600 or sales@grossautomation.com

Power in processing, flexibility in programming

PLC500 is a **Medium-sized Programmable Logic Controller**, compact in size, robust in performance and modular in programming. It is a solution that uses WEG technology and the CODESYS® platform flexibility, allowing the development of flexible and efficient solutions. With high-processing hardware, it is possible to perform highly complex tasks, such as timing, counting, basic and advanced math operations, interlocking logic, PID control and much more. All that, at high speed and with maximum operational accuracy.

Maximum efficiency in highly complex tasks

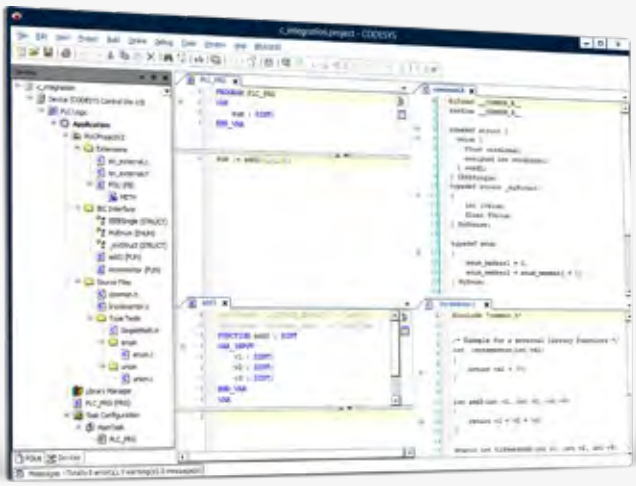
Benefits

- Develop your solutions on the CODESYS® platform
- Get the best performance through powerful hardware
- Compact design
- Expandable in Book format
- Easily add new expansions, Plug & Play
- Add up to 8 expansion modules locally
- Reuse your programs through the object-oriented programming concept
- All that from the same development platform
- Designed for the industrial environment
- Cost reduction

The robustness of the CODESYS® platform with WEG technology

The high processing performance that simplifies the simultaneous handling of highly complex tasks is one of the main advantages of the PLC500. Efficiently modular, WEG's Medium-Sized Programmable Logic Controller combines powerful hardware, intelligent software, great memory capacity and the flexibility of the CODESYS® platform.

Especially developed for industrial automation, with open interfaces and several native functions, it also has an online platform for free download of functions (Codesys Store). The CODESYS® development platform is free and based on the IEC 61131-3 programming standard, which offers integrated solutions for developing, configuring and simulating efficient, fast and flexible applications that simplify commissioning and daily tasks.



CODESYS

Perform complex tasks with high performance processing

Mounting bracket latch

Ethernet ports
EtherNet/IP and Modbus-TCP protocols. Allows integration to the main industrial communication networks.

Cover for protection of the expansions
It allows isolating the contact from the external environment, increasing the durability of the expansions.

CAN connector
Isolated, with own internal power supply. CANopen protocol.

Contact between expansions

Expansion module
Compatible with RUW100 remote unit expansions.

MicroSD card input
Maximum capacity up to 128 GB.

Quick connectors
Power, digital inputs and outputs.

USB Host port

LEDs
Visual status indication.

RS485 connector
Modbus-RTU protocol.

Mini USB device port
Easy firmware update, programming and monitoring via PC.

Perform complex tasks with high performance processing

Developed to be a high performance medium-sized controller with embedded IIoT function, the PLC500 allows you to obtain maximum performance from your applications, optimizing time and increasing your productive and operational efficiency. Flexibility is another unique feature of this solution, enabling numerous protocols to be available in a single product, without the need for additional communication modules.

Features

Built in connectivity and IIoT

Available protocols and IIoT services:

- Web Client SL
- MQTT Client SL
- Mail Service SL
- SMS Service SL
- SNMP Service SL
- Supported SNMP Versions
- SNTP Service SL
- AWS IoT Core Client SL
- Azure IoT Hub Client SL
- JSON Web Token SL
- Web Socket Client SL

Ports and protocols

2x Gigabit Ethernet Ports (EtherNet/IP-Adapter and Modbus-TCP-Client/Server), 1x CAN Port (CANopen-Master) and 1x RS485 (Modbus-RTU Master/Slave). Allows integration to the main industrial communication networks.

MicroSD card slot

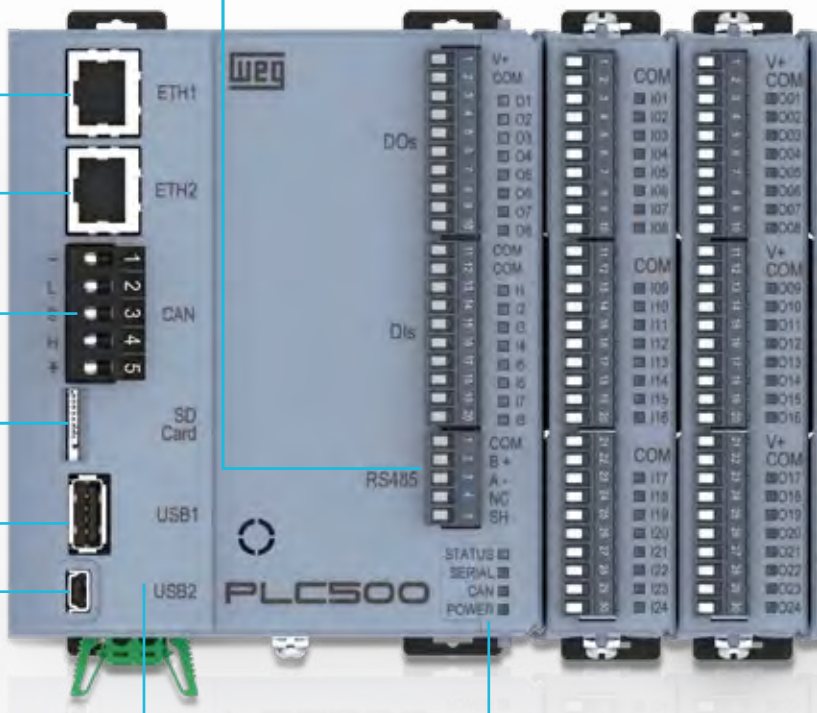
Maximum capacity up to 128 GB.

Mini USB device port

1x Mini USB Device Port for programming and monitoring via PC.
1x USB Host Port.

Smart CPU

CODESYS® solution development platform, greater operational stability and smart tools.



Status LEDs

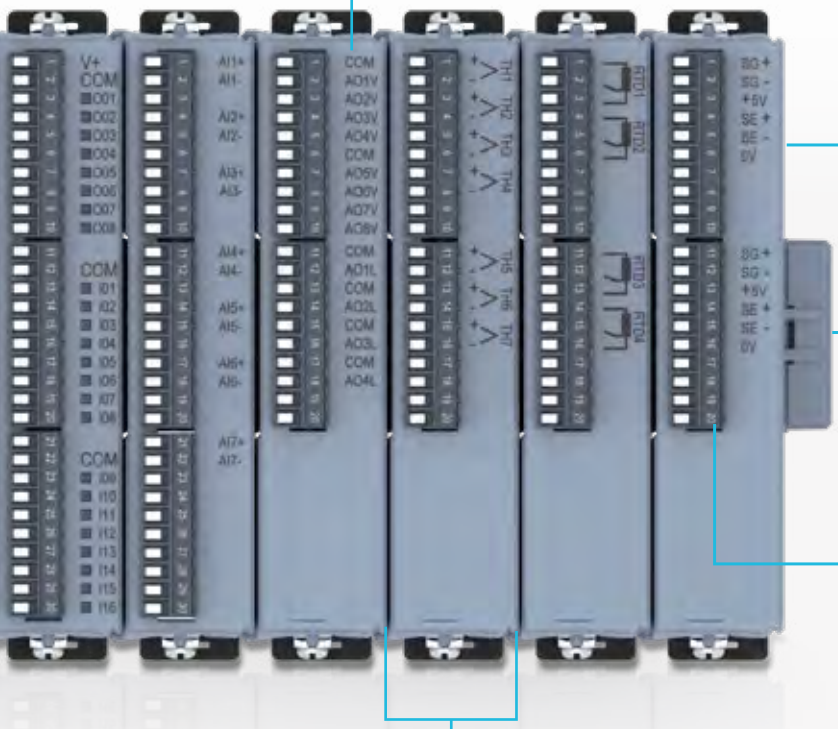
Visual status indication.

Add more flexibility to develop your automation

The PLC500 Programmable Controller was developed on a platform that allows the interchangeability of the MOD expansion boards used in the RUW100 line of remote units. That provides high flexibility and synergy between our product line, all of which following the Plug & Play concept.

Complete line of expansions
The same expansion boards used in the RUW100 remote units can be used in the PLC500.

Expansion boards with numerous possibilities
- Thermocouple (J, K and T)
- Thermistor (Pt-100 and Pt-1000)
- Load cell
- Relay outputs
- Digital inputs and outputs
- Analog inputs and outputs



Cover for protection of the expansions
It allows isolating the contact from the external environment, increasing the durability of the expansions.

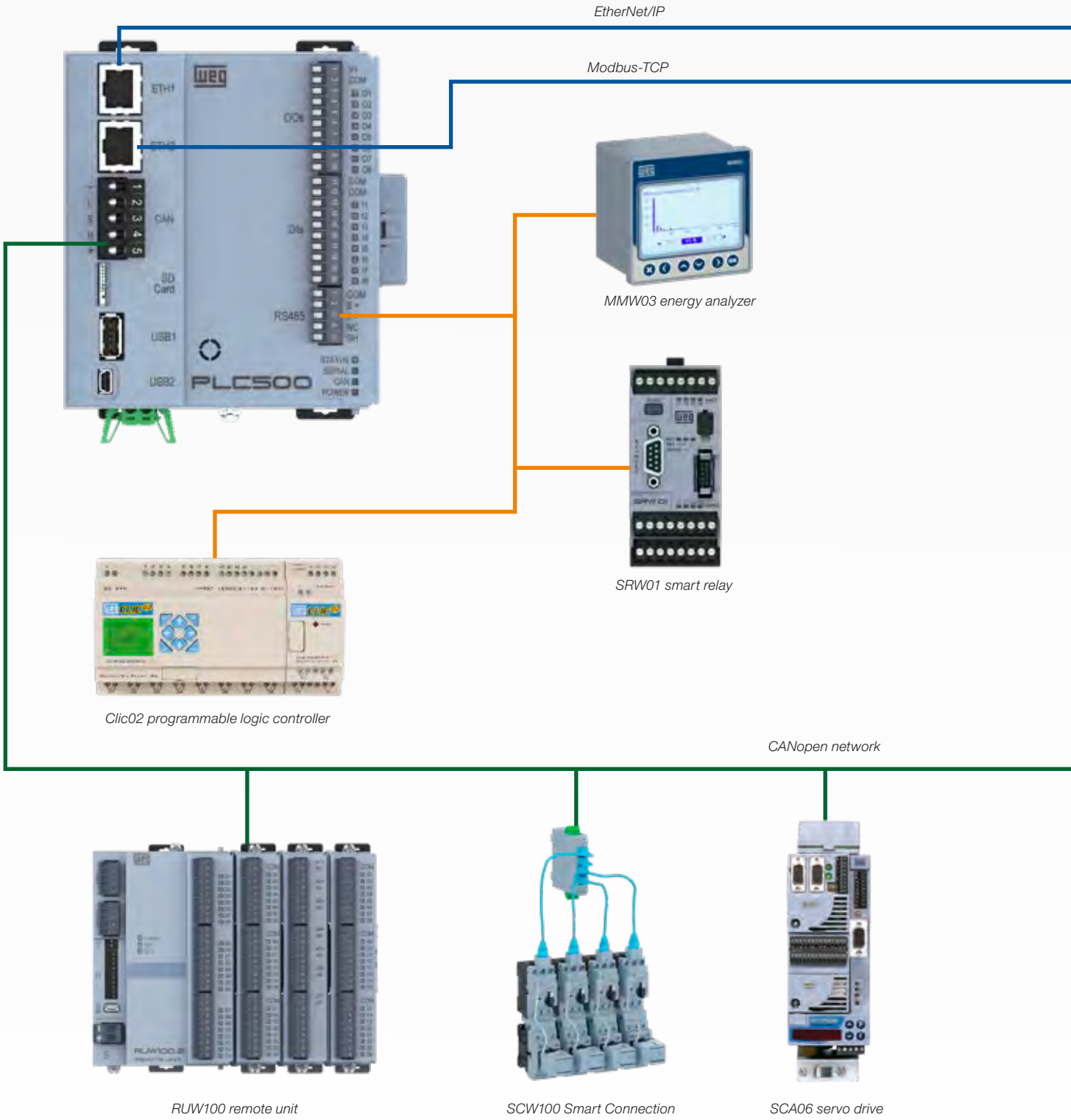
Quick connectors
Power supply, inputs and outputs.

Gain more space when installing your solution
Only 25 mm expansion boards.

To learn more, access or click here.

Increase your productivity with flexibility and high performance

Communication



MQTT

WEG Smart Machine

WCD-ED300 edge computing device

cMTx human-machine interface

Modbus-TCP

WCD-SWU-5-Tx switch

Modbus-TCP

TPW04 programmable logic controller

Supervisory system

SSW07 Soft-Starter

SSW900 Soft-Starter

CFW500 VSD

CFW900 VSD

EtherCAT

EtherNet/IP

Complete, reliable, connected and efficient

Especially developed for machine manufacturers, WEG Smart Machine is WEG's Cloud Computing-Based platform that allows OEMs to monitor the performance and operation of their machines anywhere in the world.
WEG Smart Machine, by means of the PLC500 and WCD-ED300 Gateway, enables machine manufacturers to offer new services to their customers and machine operators, such as remote assistance and operation alerts through configurable alarms, maintenance schedules, among other services, always observing the business rules established on a case-by-case basis between the manufacturers and their customers.

Main features

- Cloud-based solution: software always up-to-date, enabling updated information in real time, anywhere.
- Optimal use of resources.
- Reduced machine downtime and higher performance.
- Configurable and customizable dashboards and reports, with various graphic and analytical views.
- OEE monitoring and creation of KPIs.
- Collection, view and history of process and production data.
- Customizable anomaly alarms, which can be sent by email and SMS.
- Simplified machine location.
- Co-creation of applications.
- Integration with other platforms, such as ERP, MES.
- Creation of new business models for machine manufacturers: opportunity to sell service to end customers.
- Development of predictive maintenance and control strategies (connectivity with WEG Motor Scan).
- Monitoring of machine devices, such as sensors, PLCs, drives and operating interfaces.

For more information about WEG Smart Machine, please contact the Digital & Systems sales team.

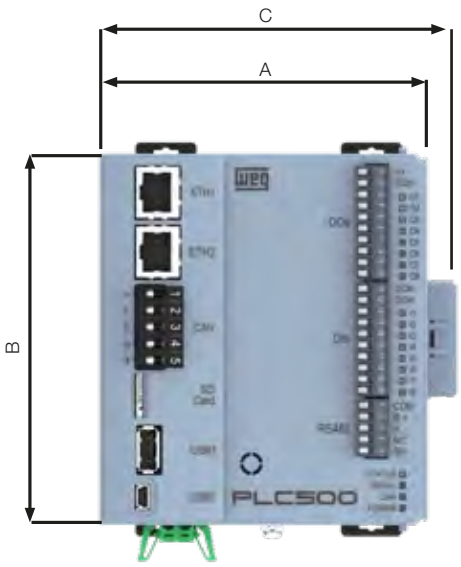
Specification

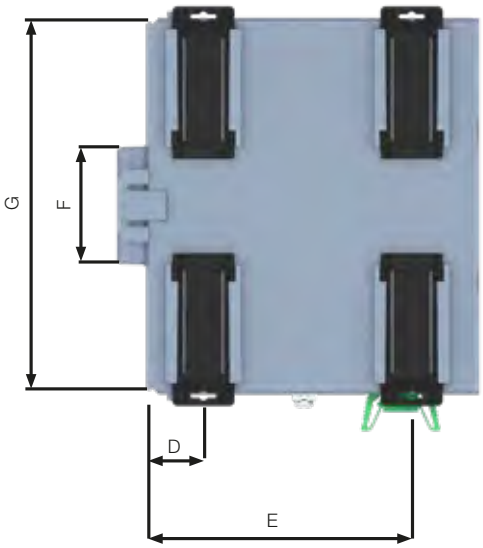
Versions		PLC500	PLC500ED
Power supply		24 V dc (V min.: 20.4 V dc / V max.: 28.8 V dc)	
		Power supply: minimum recommended capacity 3 A	
		CPU consumption in normal operation: 150 mA (without accessories and without active communication networks). This value may vary due to CPU mounting plus expansion boards.	
Processor		Dual core @ 1 GHz + coprocessor @ 200 MHz	
Scan cycle time	100 thousand instructions	Total time 1.19ms	
	Per instruction	0.012 µs	
Memory	RAM	1 GB	
	Flash	4 GB	
	Data	8 MB	64 MB
	Code	16 MB	16 MB
	Retentive	64 KB	64 KB
	Persistent	16 kB	16 kB
Maximum instruction capacity		Approximately 6 million simple instructions	
Axis control		N/A	N/A
Digital inputs		8 DI x PNP	
		Fast inputs: DI1 to DI4 - 150 kHz per channel	
		Maximum input voltage of 28.8 V	
		High level: Vin ≥ 10 V dc	
		Low level: Vin ≤ 5 V dc	
		Consumption @ 24 V dc: 2.1 mA	
		Insulation voltage: 500 V	
		Max. number of DIs via expansion boards: 200 points + remote units via Fieldbus	
Digital outputs		8 DO x PNP	
		Recommended voltage V+: 24 V dc	
		Maximum voltage V+: 28.8 V dc	
		Maximum frequency of PWM outputs (DO1, DO2 and DO3): 300 kHz	
		Maximum current of outputs DO1...DO3: 100 mA/output	
		Maximum current of outputs DO4...DO8: 500 mA/output	
		Max. number of DOs via expansion boards: 200 points + remote units via Fieldbus	
Communication ports	Serial CAN	CANopen (master) Maximum number of slaves: 127	
	Serial RS485	Modbus-RTU (master/slave) Maximum number of slaves: 247	
	Ethernet	2 x Gigabit Ports 10/100/1,000 (RJ45) - Modbus-TCP (master/slave) - EtherNet/IP (adapter) - EtherCAT (client) Maximum number of Modbus slaves: undefined Eth1 and Eth2 ports have different IP address numbers	
	Mini USB device	Program transfer and monitoring by emulating an ethernet port	
	USB host	USB 2.0 (use with a flash drive)	
	MicroSD card	Max.: 128 GB (optional accessory: 8 GB card code: 16352814)	
Maximum number of expansion boards		8 [1]	
Software		CODESYS® (V 3.5 SP18 or later - free)	
Cloud solutions		WEG Smart Machine - WEGnology Access: https://www.weg.net/institutional/BR/pt/solutions/digital-solutions	
Programming language		LD (ladder) - ST (structured text) - IL (instruction list) - SFC (sequential function chart) - FBD (function block diagram)	
Operating temperature		0 °C to 45 °C (32 °F to 113 °F)	
Storage temperature		-25 °C to 60 °C (-13 °F to 140 °F)	
Protection rating		IP20	
Pollution degree		2 (according to EN 50178 and UL 508C), with non-conductive pollution.	
Altitude		1,000 m (3,300 ft). Above 1,000 m to 4,000 m (3,300 ft to 13,200 ft), the output current must be derated by 1% for every 100 m (328 ft).	
Mounting		On DIN rail or on panel with screws	
Certifications		CE - UKCA	
Dimensions (H x W x D) (Inch)		129.8 x 101.6 x 106.9 mm (5.11 x 4 x 4.2 mm)	
Weight		0.540 Kg (1.19 lbs)	

Notes: 1) For further information on mounting limitations, refer to the product user manual (chapter 13 - Expansion Modules).
2) MicroSD card not included.

Dimensions

Dimension reference	A	B	C	D	E	F	G	H	I
Dimension in mm (in)	101.7 (4)	115 (4.53)	110.7 (4.36)	20.6 (0.81)	84.7 (3.33)	35.8 (1.41)	115 (4.53)	101.7 (4)	89.5 (3.52)
Fixing screw	M3 Ø 3.1 (0.122)								



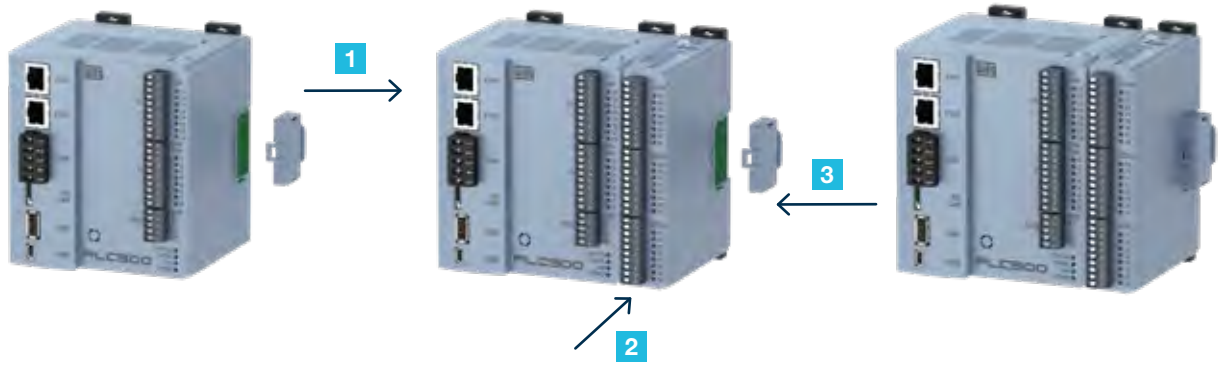


Expansions modules simple and quick installation

Expansion modules

Connecting the expansion modules is quick and simple:

1. Remove the module cover.
2. Add the new expansion by moving it in the direction indicated in the image below.
3. Finally, attach the cover to the last expansion module.



Specification

The user easily and quickly installs the expansion modules on the PLC500 through the Plug & Play concept. When the PLC500 is powered up, the electronic circuit identifies the number of connected expansions, the model and the firmware version of each one. They also receive an address according to their position so that it is possible to access them through the communication bus.

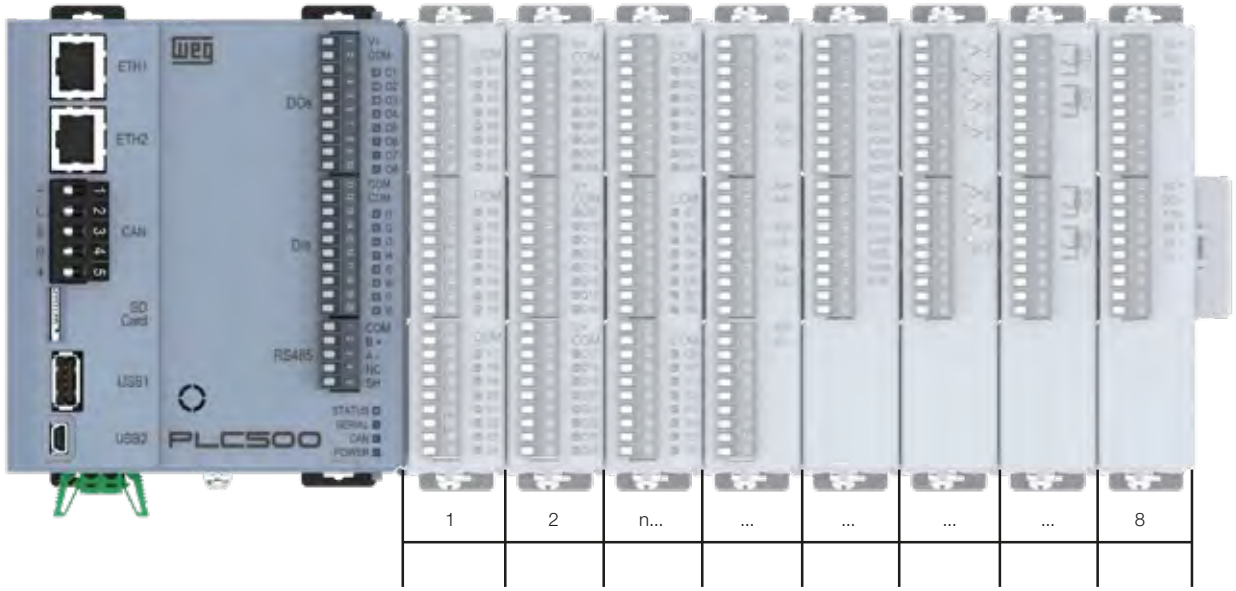
Expansion units

Reference	Inputs					Outputs			
	Bidirectional digital	Voltage or current analog	J, K and T type thermocouple	Pt-100 and Pt-1000 type thermistor	Load cells	Isolated digital PNP (500 mA)	Analog in voltage (0-10 V) or current (0 - 20 mA)	Analog in voltage (0 - 10 V)	Relay output
MOD1.00	24	-	-	-	-	-	-	-	-
MOD1.10	-	-	-	-	-	24	-	-	-
MOD1.20	8	-	-	-	-	16	-	-	-
MOD1.30	16	-	-	-	-	8	-	-	-
MOD2.00	-	7	-	-	-	-	-	-	-
MOD3.00 [1]	-	-	-	-	-	-	4	4	-
MOD4.00	-	-	7	-	-	-	-	-	-
MOD5.00	-	-	-	4	-	-	-	-	-
MOD6.00	-	-	-	-	2	-	-	-	-
MOD7.00 [2]	-	-	-	-	-	-	-	-	6

Notes: 1) The installation of MOD3.00 expansions on the PLC500 is limited to three; however, other digital input/output, analog input, thermocouple and load cell expansions can be installed up to the limit of eight boards. If there are two MOD3.00 expansions installed, it is not possible to install MOD7.00 expansions. If there is only one MOD3.00 expansion installed, it is possible to install up to three MOD7.00 expansions, and it is also possible to install other expansion models up to the limit of the PLC500.

2) The installation of MOD7.00 expansions on the PLC500 is limited to five; however, other digital input/output, analog input, thermocouple and load cell expansions can be installed up to the limit of eight modules. If there are five MOD7.00 expansions installed, it is not possible to install MOD3.00 expansions. If there are three (or fewer) MOD7.00 expansions installed, it is possible to install a MOD3.00 expansion, and it is also possible to install other expansion models up to the limit of the PLC500.

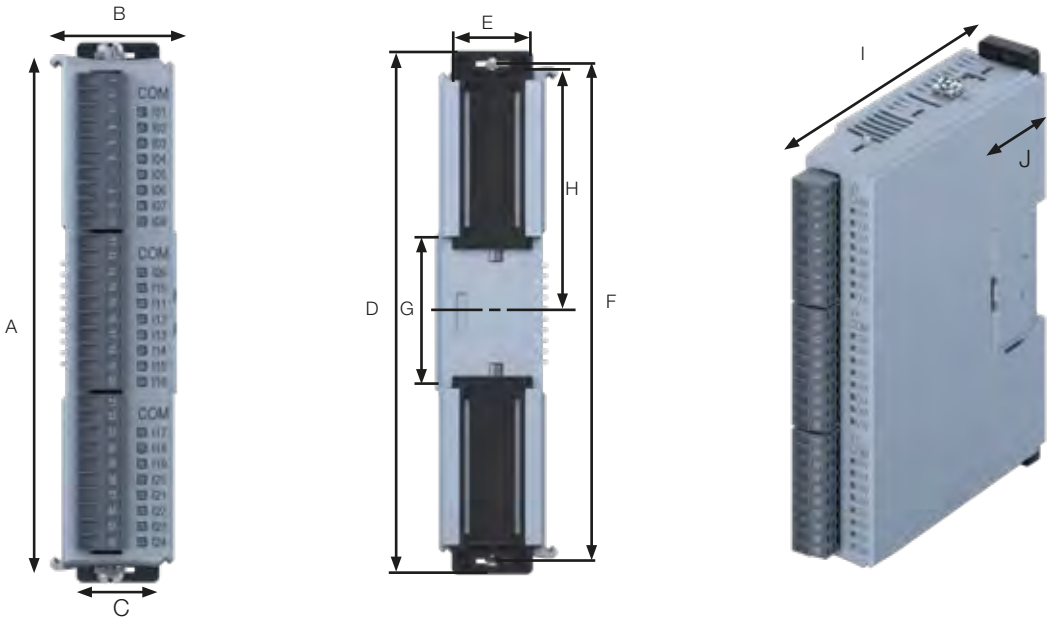
Expansions modules simple and quick installation



Dimensions

Expansions

Dimension reference	A	B	C	D	E	F	G	H	I	J
Dimension in mm (in)	115.7 (4.56)	25 (0.98)	19 (0.74)	123.1 (4.84)	19 (0.74)	117.1 (4.61)	35.5 (1.4)	57.9 (2.28)	89.4 (3.52)	31.6 (1.25)
Fixing screw	M3 Ø 3.1 (0.122)									



Notes

Global presence
is essential, as much as understanding your needs.

Global Presence

With more than 40,000 employees worldwide, WEG is one of the largest electric motors, electronic equipments and systems manufacturers. We are constantly expanding our portfolio of products and services with expertise and market knowledge. We create integrated and customized solutions ranging from innovative products to complete after-sales service.

WEG's know-how guarantees our ***PLC – PLC500 Programmable Logic Controller*** is the right choice for your application and business, assuring safety, efficiency and reliability.

- **Availability** is to have a global support network
- **Partnership** is to create solutions that suits your needs
- **Competitive edge** is to unite technology and inovation

Know More

High performance and reliable products to improve your production process.

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www.weg.net

+55 47 3276.4000
automacao@weg.net
Jaraguá do Sul - SC - Brazil

+1 262 252 1600
sales@grossautomation.com
roo ield Wisconsin A

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