TS-PC500 Programmable Controller
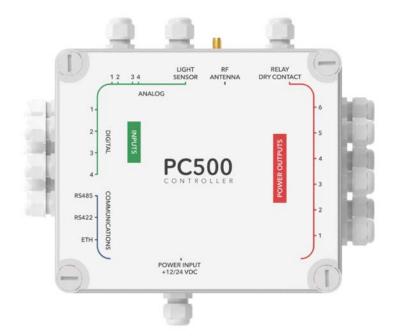
General Description

The TS-PC500 Programmable Controller allows you to set all the operating parameters of road studs or road signs. The controller's menus are dynamic and will be presented depending on the user-selected configuration. The configuration can be made directly on the controller's display menu or via configuration software that allows you to set all the operating parameters via a USB interface.

The TS-PC500 Plus version allows expansion boards to be installed, making it possible to extend the features of the TS-PC500.
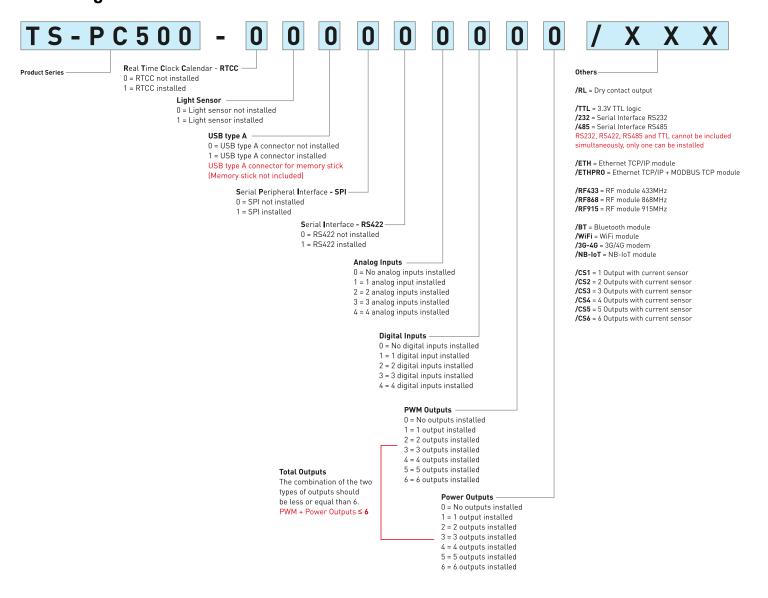
Features

- Microcontroller based technology
- Firmware update available through USB connection
- Hardware upgrade by connectable expansion boards
- Adaptive controller to numerous applications
- Configuration via LCD display and navigation buttons or via configuration software
- Ability to schedule different configurations due to its high precision real time clock
- High diversity of communications available TTL, RS232, RS422, RS485, USB, SPI, ETHERNET, RF 433/868/915 MHZ, LORA
- 12V or 24V input power with over voltage and short circuit protection
- Digital outputs with short circuit and over temperature protection, available in 24V, 12V
- Digital inputs with voltage isolation, driven by voltage or dry contact
- Digital outputs: up to 6
- Relay output: dry contact
- Digital inputs: up to 4
- Analog inputs: up to 4
- Optional light sensor
- Protection index: IP65 (depending on the configuration)
- Certifications: CE & RoHS

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Product specifications may be subject to change without prior notice. Verify current specifications when ordering. © Traffic Safety Corp. | 11/3/2021

Ordering Information

T S - P C 5 0 0 - 0 0 0 0 0 0 0 0 0 0 / X X X

Product Series

Real **T**ime **C**lock **C**alendar - **RTCC**
0 = RTCC not installed
1 = RTCC installed

Light Sensor
0 = Light sensor not installed
1 = Light sensor installed

USB type A
0 = USB type A connector not installed
1 = USB type A connector installed
USB type A connector for memory stick
(Memory stick not included)

Serial **P**eripheral **I**nterface **- SPI**
0 = SPI not installed
1 = SPI installed

Serial **I**nterface **- RS422**
0 = RS422 not installed
1 = RS422 installed

Analog Inputs
0 = No analog inputs installed
1 = 1 analog input installed
2 = 2 analog inputs installed
3 = 3 analog inputs installed
4 = 4 analog inputs installed

Digital Inputs
0 = No digital inputs installed
1 = 1 digital input installed
2 = 2 digital inputs installed
3 = 3 digital inputs installed
4 = 4 digital inputs installed

PWM Outputs
0 = No outputs installed
1 = 1 output installed
2 = 2 outputs installed
3 = 3 outputs installed
4 = 4 outputs installed
5 = 5 outputs installed
6 = 6 outputs installed

Total Outputs
The combination of the two
types of outputs should
be less or equal than 6.
PWM + Power Outputs ≤ **6**

Power Outputs
0 = No outputs installed
1 = 1 output installed
2 = 2 outputs installed
3 = 3 outputs installed
4 = 4 outputs installed
5 = 5 outputs installed
6 = 6 outputs installed

Others

/RL = Dry contact output

/TTL = 3.3V TTL logic
/232 = Serial Interface RS232
/485 = Serial Interface RS485
RS232, RS422, RS485 and TTL cannot be included
simultaneously, only one can be installed

/ETH = Ethernet TCP/IP module
/ETHPRO = Ethernet TCP/IP + MODBUS TCP module

/RF433 = RF module 433MHz
/RF868 = RF module 868MHz
/RF915 = RF module 915MHz

/BT = Bluetooth module
/WiFi = WiFi module
/3G-4G = 3G/4G modem
/NB-IoT = NB-IoT module

/CS1 = 1 Output with current sensor
/CS2 = 2 Outputs with current sensor
/CS3 = 3 Outputs with current sensor
/CS4 = 4 Outputs with current sensor
/CS5 = 5 Outputs with current sensor
/CS6 = 6 Outputs with current sensor

Example: PC500 with light sensor, 2 digital inputs, 4 power outputs and Ethernet TCP/IP module
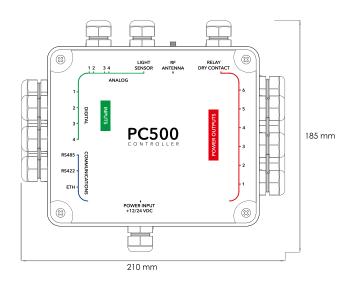
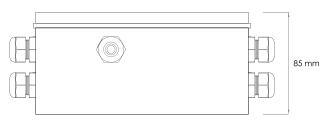**T S - P C 5 0 0 - 0 1 0 0 0 0 2 0 4 / E T H**

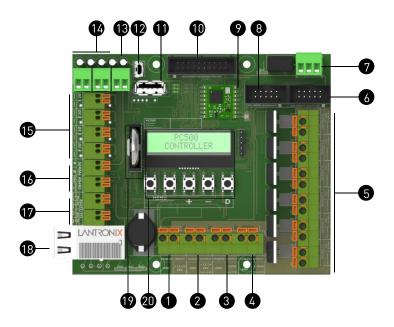**Example:** PC500 with light sensor, 3 digital inputs, 5 pwm outputs, 1 power output, relay and RS485 communication

T S - P C 5 0 0 - 0 1 0 0 0 0 3 5 1 / R L / 4 8 5

Technical Features

185 mm

210 mm

85 mm

Outputs Modes of Operation

Always On, Flashing or Sequential
(Other modes available upon request)

Electrical Features

Power Supply	12 V DC to 24V DC
Current Consumption	15 mA[1]
Output Voltage	12 V DC to 24V DC
Outputs Number	6 (Expandable up to 12)
Maximum Current by Output	2A
Total Maximum Output Current	10A
Working Temperature	-25 ºC to +85ºC

[1] Minimum Stand By consumption. The Stand By current consumption may increase depending of the PC500 configuration.

Mechanical Features

Enclosure Material: Thermoplastic
Dimensions: 8.3" x 7.3" x 3.3" (210 x 185 x 85mm)
Protection Index: IP65
Weight: 1.2 lb. (0.55 Kg)

Controller Details

1 - 12V DC or 24V DC Power Input
2 - 12V DC or 24V DC Power Output (max. 0.5A)
3 - 5V DC Power Output (max. 0.5A)
4 - 3.3V DC Power Output (max. 0.5A)
5 - Up to 6 Digital Outputs (Power or PWM)
6 - SPI Connector
7 - Dry Contact Relay Connector
8 - 10 Pin Expansion Connector
9 - Low Power RF 433/868/915 MHz Module
10 - 20 Pin Expansion Connector
11 - USB Type A connector
12 - Mini USB connector
13 - Light Sensor Input Connector
14 - Up to 4 Analog Inputs
15 - Up to 4 Digital Inputs
16 - RS485 Communication
17 - RS422 or TTL Communication
18 - Ethernet Communication Module
19 - High Precision Clock
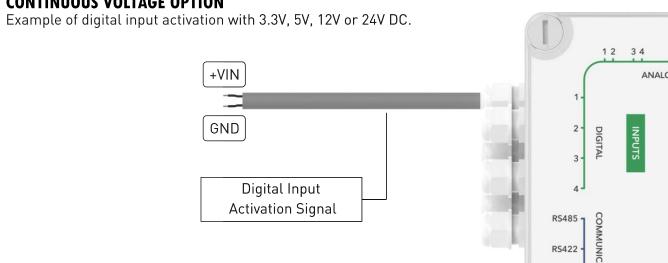**20** - Configuration Menus (LCD + Buttons)

Digital Input Activation Options

The digital inputs of the PC500 controller may be **driven by voltage or dry contact**.
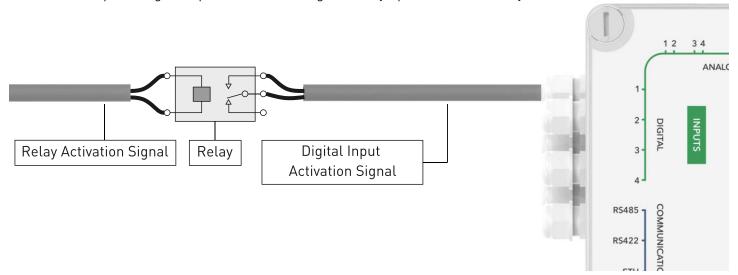If the digital inputs are to be driven by voltage, when ordering the selected voltage must be mentioned.
It's possible to select between 3.3V, 5V, 12V or 24V DC (default is 5V)

CONTINUOUS VOLTAGE OPTION
Example of digital input activation with 3.3V, 5V, 12V or 24V DC.

+VIN

GND

Digital Input
Activation Signal

1 2 3 4

ANALO

DIGITAL

INPUTS

1
2
3
4

RS485

RS422

COMMUNICATIO

DRY CONTACT OPTION
Example of digital input activation using normally open contact of relay.

Relay Activation Signal

Relay

Digital Input
Activation Signal

1 2 3 4

ANALO

DIGITAL

INPUTS

1
2
3
4

RS485

RS422

COMMUNICATIO

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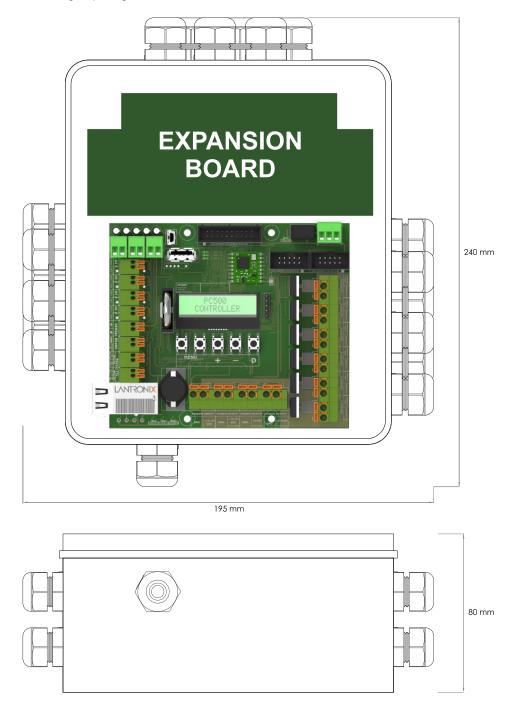Traffic Safety Corp., 2708 47th Ave.
Sacramento, CA, 95822, USA

Plus Version

The PC500 controller **Plus Version** refers to the standard version with an expansion board.
The plus version box is slightly larger.

DIMENSIONS

EXPANSION
BOARD

PC500
CONTROLLER

MENU   +   —   D

LANTRONIX

240 mm

195 mm

80 mm

Expansion Boards

Due to its expansion capability, it's possible to connect expansion boards to PC500 that add extra features in case that the ones already included in PC500 doesn't suit the needs of the project. Among other features, it's possible to add:

ADDING MORE COMMUNICATIONS

BT	Wi-Fi	3G/4G	NB-IoT

ADDING MORE INPUTS

DIGITAL INPUTS

ANALOG INPUTS

ADDING MORE OUTPUTS

DIGITAL OUTPUTS

OUTPUTS **WITH CURRENT SENSOR**

A   B   C

OTHERS BY REQUEST

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