

INSTALLATION AND CONNECTION

 This section contains the instructions needed for correct installation of THYRITOP 500 controllers on the machine/control panel and for correct connection of the power supply, inputs, outputs and interfaces.

 **CAREFULLY READ THE FOLLOWING WARNINGS BEFORE INSTALLING THE INSTRUMENT!**
Disregard of such warnings could create electrical safety and electromagnetic compatibility problems, as well as void the warranty.

ELECTRICAL POWER SUPPLY

- the controller DOES NOT have an On/Off switch: the user must install switch/isolator conforming to safety requisites (CE mark) to cut off the power supply up-line of the controller. The switch must be installed in the immediate vicinity of the controller in easy reach of the operator. A single switch can be used for multiple devices.
- the earth connection must be made with a specific lead
- if the product is used in applications with risk of harm to persons or damage to machines or materials, it MUST be equipped with auxiliary alarm devices.

It is advisable to provide the ability to check for tripped alarms during regular operation.

NOTES ON ELECTRICAL SAFETY AND ELECTROMAGNETIC COMPATIBILITY

CE MARKING: EMC (electromagnetic compatibility) conformity in compliance with Directive 2014/30/EU and following modifications.

Series THYRITOP 500 controllers are mainly intended for industrial use, installed on panels or control panels of production process machines or systems.

For purposes of electromagnetic compatibility, the most restrictive generic standards have been adopted, as shown on the table.

LV (low voltage) conformity in compliance with Directive 2014/35/EU.

EMC conformity has been verified with the connections indicated on table 1 (see user's Manual).

RECOMMENDATIONS FOR CORRECT INSTALLATION FOR PURPOSES OF EMC

Instrument power supply

- The power supply for the electronic instrumentation on the panels must always come directly from a cut-off device with fuse for the instrument part.
- Electronic instrumentation and electromechanical power devices such as relays, contactors, solenoids, etc., MUST ALWAYS be powered by separate lines.
- When the power supply line of electronic instruments is heavily disturbed by switching of thyristor power groups or by motors, you should use an isolation transformer only for the controllers, grounding its sheathing.
- It is important for the system to be well-grounded:
 - voltage between neutral and ground must not be > 1V
 - Ohmic resistance must be < 6Ω;
- If the grid voltage is highly unstable, use a voltage stabilizer.
- In proximity of high-frequency generators or arc welders, use adequate grid filters.
- The power supply lines must be separate from instrument input and output lines.
 - Supply from Class II or from limited energy source.

Input and output connections

Before connecting or disconnecting any connection, always check that the power and control cables are isolated from voltage.

Appropriate devices must be provided: fuses or automatic switches to protect power lines.

The fuses present in the module function solely as a protection for the THYRITOP 500 semiconductors.

- Connected outside circuits must be doubly isolated.
- it's necessary to:
 - physically separate the input cables from those of the power supply, outputs, and power connections.
 - use braided and shielded cables, with sheathing grounded at a single point.

Installation notes

Use the extra-rapid fuse indicated in the catalogue according to the connection example equipped.
Moreover, the applications with solid-state units require a safety automatic switch to section the load power line. To ensure maximum reliability, the device must be correctly installed in the panel in such a way as to obtain adequate heat exchange between the heat sink and the surrounding air under conditions of natural convection.

Fit the device vertically (maximum angle 10° to the vertical axis)

- Vertical distance between a device and the panel wall >100mm
- Horizontal distance between a device and the panel wall at last 20mm
- Vertical distance between a device and the next one at last 300mm.
- Horizontal distance between a device and the next one at last 20mm.

Check that the cable holder runners do not reduce these distances, in this case fit the cantilever units opposite the panel so that the air can flow vertically on the dissipator without any obstacles.

- Dissipation of device thermic power with effects on installation room temperature.
- Thermal power dissipation with limits on installation room temperature.
- Requires exchange with external air or an air conditioner to transfer dissipated power outside the panel
- maximum limits of voltage and derived power of transients on the line, for which the solid state power unit contains protective devices (based on the model).
- presence of dispersion current in THYRITOP 500 in non-conducting state (current of a few mA due to RC Snubber circuit to protect the thyristor).
- Suitable for use on a circuit capable of delivering not more than 100,000A RMS Symmetrical Amperes, 600 Volts maximum when protected by class J fuses rated xxxA. (Refer to the *SCCR fuse protection table this report for the details of the current size fuses for each model)
- Use fuses only.

ATTENTION: The opening of the branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current-carrying parts and other components of the device should be examined and replaced if damaged. If burnout of the device occurs, the complete device must be replaced or equivalent.

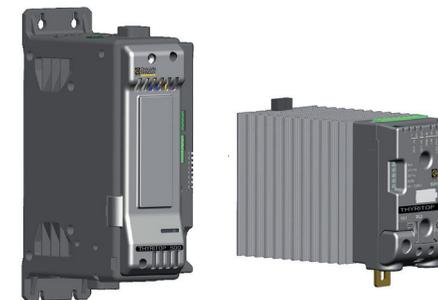
 **CA PYROCONTROLE assumes no liability for any damage to persons or property deriving from tampering, from incorrect or improper use, or from any use not conforming to the characteristics of the controller and to the instructions in this User Manual.**

CE	The devices are manufactured according to the Community Directives 2011/65/EU (RoHS) 2014/30/EU (EMC), 2014/35/EU (LVD) in reference to product standard: EN 50581:2012 e EN 60947-4-3:2014
UL	UL Pending

CHAUVIN ARNOUX
PYROCONTROLE

THYRITOP 500 SERIES

25 to 250 A power controllers



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INSTALLATION AND OPERATION MANUAL

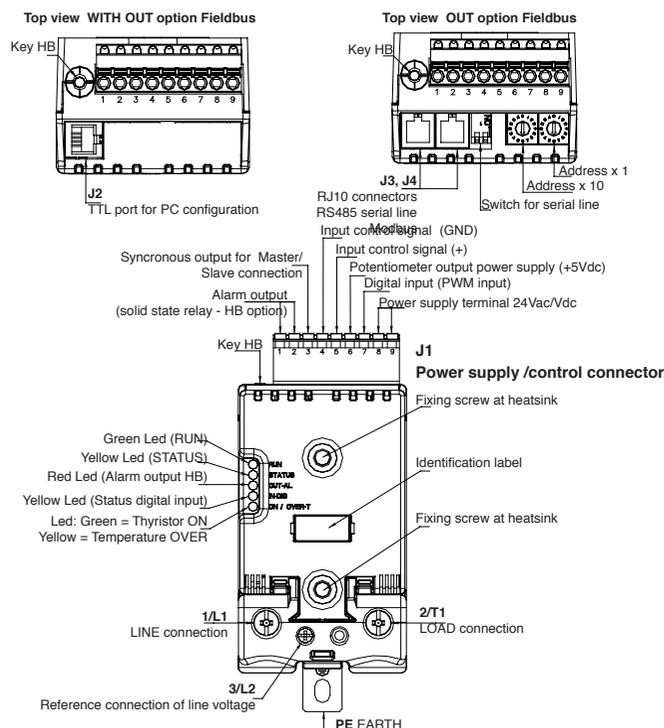
Recto	Installation and connection Electrical connections
Verso	Technical characteristics General characteristics Dimensions Template/Installation Derating curves

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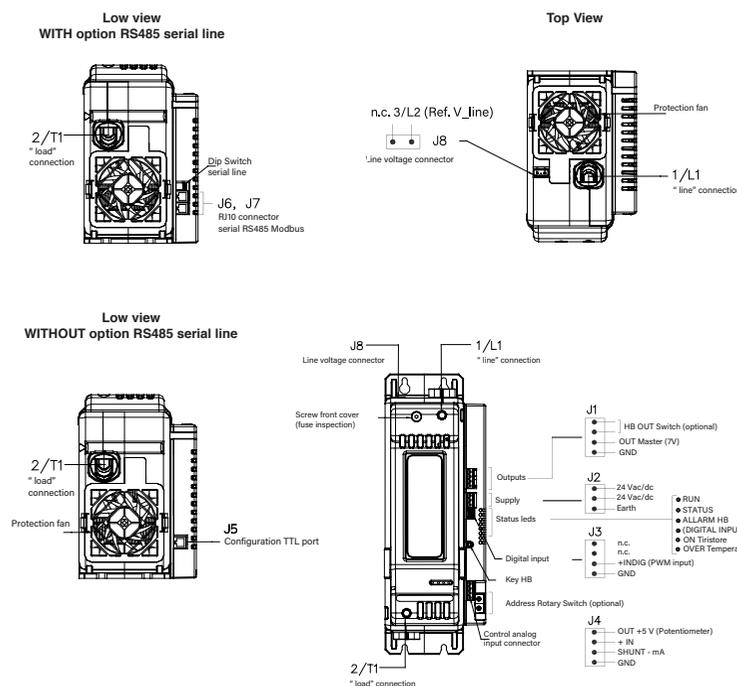
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ELECTRICAL CONNECTIONS

CONNECTIONS INPUT/OUTPUT THYRITOP 500 125-120A



CONNECTIONS INPUT/OUTPUT THYRITOP 500 150-250A



RECOMMENDED WIRE GAUGES

CURRENT LEVEL	TERMINAL	CABLE WIRE	WIRE TERMINAL	TIGHTENING TORQUE / TOOL
25A	1/L1, 2/T1, PE	4 mm ² 10 AWG	Wire terminal / Eye D. 6mm	2.5 Nm / Phillips screwdriver PH2 - PH3
40A	1/L1, 2/T1, PE	10 mm ² 7 AWG	Wire terminal / Eye D. 6mm	2.5 Nm / Phillips screwdriver PH2 - PH3
50A	1/L1, 2/T1, PE	10 mm ² 7 AWG	Wire terminal / Eye D. 6mm	2.5 Nm / Phillips screwdriver PH2 - PH3
60A	1/L1, 2/T1, PE	16 mm ² 5 AWG	Wire terminal / Eye D. 6mm	2.5 Nm / Phillips screwdriver PH2 - PH3
75A	1/L1, 2/T1, PE	25 mm ² 3 AWG	Wire terminal / Eye D. 6mm	2.5 Nm / Phillips screwdriver PH2 - PH3
90A	1/L1, 2/T1, PE	35 mm ² 2 AWG	Wire terminal / Eye D. 6mm	2.5 Nm / Phillips screwdriver PH2 - PH3
120A	1/L1, 2/T1, PE	50 mm ² 1/0 AWG	Wire terminal / Eye D. 6mm	2.5 Nm / Phillips screwdriver PH2 - PH3
-	3/L2 (Ref. Vline)	0.25 ... 2.5 mm ² 23...14 AWG	Wire terminal tip	0.5 ... 0.6 Nm / Screwdriver blade 0.6 x 3.5 mm
150A	1/L1, 2/T1	70 mm ² 2/0 AWG	Wire stripped for 25 mm or with crimped pre-insulated terminal tube CEMBRE PKC70022	6 Nm / No. 6 hex head wrench
200A	1/L1, 2/T1	95 mm ² 4/0 AWG	Wire stripped for 25 mm or with crimped pre-insulated terminal tube CEMBRE PKC95025	6 Nm / No. 6 hex head wrench
250A	1/L1, 2/T1	120 mm ² 250 AWG	Wire stripped for 25 mm	6 Nm / No. 6 hex head wrench
-	3/L2 (Ref. Vline)	0.25 ... 2.5 mm ² 23...14 AWG	Wire stripped for 8 mm or with tag terminal	0.5 ... 0.6 Nm / Flat-head screwdriver tip 0.6 x 3.5 mm

Note:
Cables must be copper "Stranded Wire" or "Compact-Stranded Wire" type with maximum operating temperature 60/75°C

