PowerLogic T500 Substation Controller

PS280

Power Supply Unit

Installation Guide

BQT8207701-00



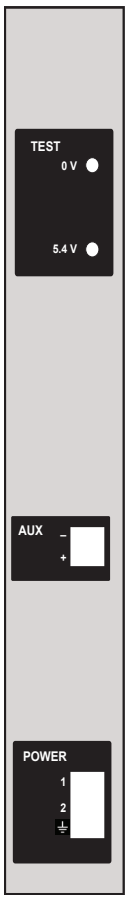
EMS71120 24 Vdc
EMS71130 48 Vdc
EMS71140 125 Vdc

NOTE

Electrical equipment must be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.
A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Description

The PS280 module of PowerLogic™ T500 range converts the input power into a regulated 5.4 VDC output in order to power the electronic control components of the modules installed within the backplane. Additionally, this module provides an auxiliary voltage for the polarization of the I/O interfaces of the acquisition modules.



NOTICE

HAZARD OF INAPPROPRIATE DEVICE INSTALLATION

- Do not expose the device to conditions exceeding the electrical values specified in this document.
- Install the device vertically in an electrical cabinet, in accordance with the local regulations in force.
- Use appropriate tools to mount the module (for example, suitable screwdriver).

Failure to follow these instructions can result in equipment damage.

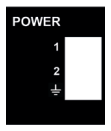
⚠⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices applicable to the installation site.
- Electrical equipment must be installed, operated, serviced and maintained only by qualified personnel. Do not perform such work until reading this entire set of instructions and checking the technical characteristics of the device.
- Never work alone.
- Turn off all power supplying this equipment before working on or inside it. Consider all sources of power, including the possibility of back feeding.
- Always use a properly rated voltage sensing device to confirm that the power is off.
- Start by connecting the device to the protective earth ground and to the functional ground.
- Screw tight all terminals, even those not in use.

Failure to follow these instructions will result in death or serious injury.

The PS280 includes the following components:

Port	Characteristics	Description
❶ **Input power supply** 	The following table shows how to make the connection according to the type of current: **POWER connector** / **Direct current** 1 – Positive 2 – Negative ⏚ – Functional ground	Input power supply voltage must be connected using the three-pole connector identified as POWER: ■ Model: Phoenix Contact Combicon: 3-MC 1.5/2 – ST-5.08. ■ Screw-terminals for cables with a maximum 2.5 mm² gauge. ■ Two terminals for direct or alternating current (1,2). ■ A terminal for functional ground.
❷ **Auxiliary output** 	It is available through a front two-pole connector with Phoenix Contact Combicon: 2-MC 1,5/2 – ST-3.5.	It is used to power an external device.
❸ **Test device** 	In order to make the system work properly, the voltage must be 5.4 V_{DC}.	It allows for a check of the level voltage on the bus, using a voltmeter.

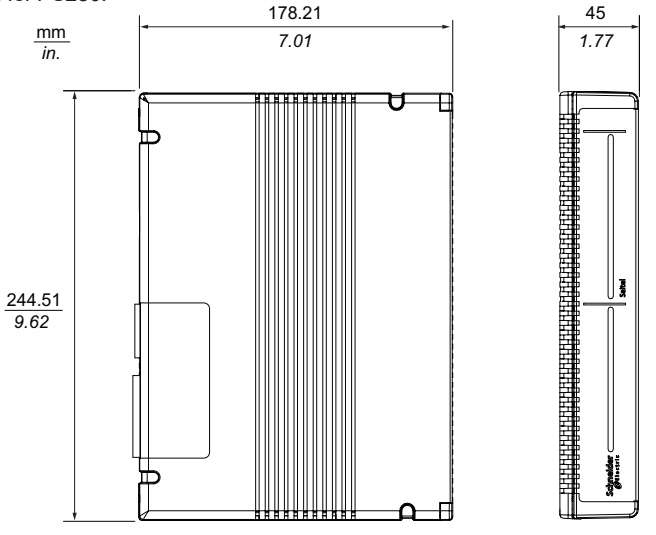
Cabling

Recommendations for cables of length less than 2.5 m.

❶	5 mm 0.19 in	1.5 mm² 15 AWG	0.5 N.m
❷	5 mm 0.19 in	1.5 mm² 15 AWG	0.5 N.m

Dimensions

External dimensions for PS280.



Module Location

The PS280 module supports two power supply configurations:
- **Simple**: the module is installed in position 1 (backplane slot 1 left-hand side).
- **Redundant**: two PS280 modules are installed in slots 1 and 2 in the backplane.

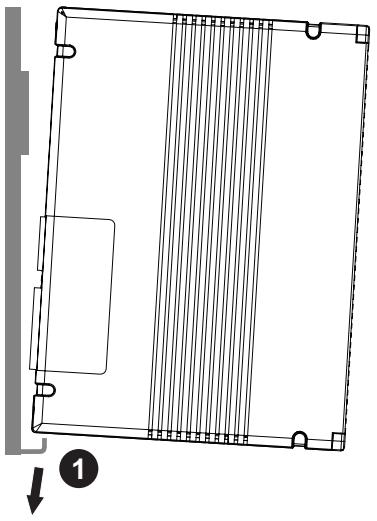


Installation

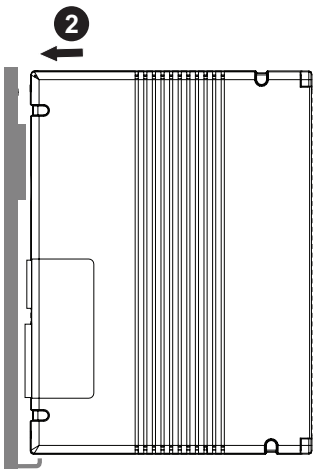
The PS280 module can be installed in a backplane (BP260) or a 19-inch chassis (BP270).

Installation in the BP260 backplane

1) Insert and push down the PS280 module in the BP260 backplane.



2) Clip it in.

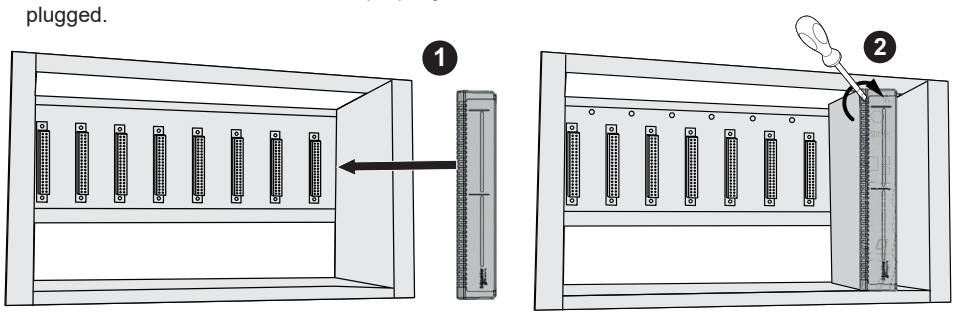


3) Fasten the top screw of the PS280 module in the backplane.

Installation in the BP270 chassis

1) Insert the PS280 module in the slot of the BP270 chassis. Check that the connector is properly plugged.

2) Fasten the top screw of the PS280 module in the chassis.



NOTE

The recommended torque value for the fastening screw is 4 N.m.

Operation

Once the PS280 is powered up, LEDs on the front panel indicate the operating status.

These indications and actions are summarized in the table below:

LED	Description of the indications and actions
PWR	Power status.
AUX	Auxiliary output installed.

The meaning of each LED indicator is listed in the table below:

PWR	AUX	Description
Fixed green	Fixed green	Power supply is powered. Auxiliary output is installed in the module.
	–	Power supply is powered. Auxiliary output is not installed in the module.
Off	–	The main power supply is not powered.

Grounding

The PS280 module includes a functional ground. Protective earth ground is present on the backplane/chassis.

NOTICE

HAZARD OF IMPROPER INSTALLATION

- A dedicated connection wire must be used to connect the backplane/chassis, in order to provide electric continuity to the installation protective earth ground.
- The cross-section size of the connection wire must be aligned with the certification tests.

Failure to follow these instructions can result in equipment damage.

Power Supply

NOTICE

HAZARD OF TERMINAL DAMAGE OR INCORRECT POWER SUPPLY

- Use appropriate tightening torques as indicated in this document when tightening connector screws.
- The power supply can be one or two PS280 modules or two external power supplies.
- When using an external power supply, the voltage input for the backplane is 5.4 Vdc. The external voltage input is not protected against overvoltage nor polarity inversion, so an incorrect wiring or an incorrect adjustment of the supply voltage could damage electronic parts

Failure to follow these instructions can result in equipment damage.

The PS280 module supplies the modules connected to the chassis or backplane.

Parameter Setting

Refer to BQT7944801 - T500 Platform User Manual for information about configuration.

NOTE

This equipment has been designed for use in substation environments and is not intended for use in home environments. It has been tested and complies with the limits indicated in the European directives associated with the CE Marking.

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