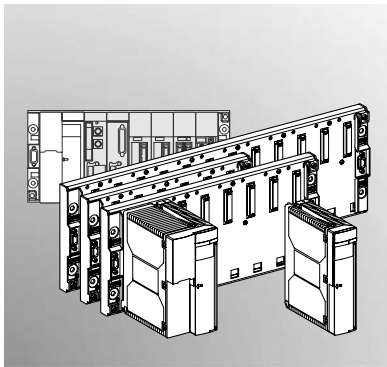
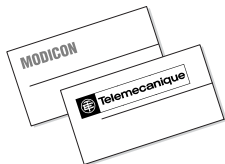


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TSX Premium TSX RKY/TSX PSY

Racks/Power Supplies
Racks/Versorgungen
Racks/Alimentations
Bastidores/Alimentaciones
Rack/Alimentazioni

Quick Reference Guide
Kurzanleitung
Instruction de service
Guía de referencias rápidas
Guida di riferimento rapido



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GRUPE SCHNEIDER

■ Merlin Gerin ■ Modicon ■ Square D ■ Telemecanique

General safety advice for users 2www.DataSheet4U.com**TSX RKY•• Standard racks and TSX RKY••E extendable racks** 4

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1 General

This manual is intended for personnel technically qualified to install, operate and maintain the products which are described herein. For advanced use of these products please contact your nearest sales office for additional information.

The contents of this manual are not contractual and cannot under any circumstance extend or restrict contract warranty clauses.

2 Qualification of personnel

Only **qualified personnel** are authorized to install, operate or maintain the products. Any work performed by an unqualified person or non-observance of the safety instructions contained in this document or attached to the equipment may jeopardize the safety of personnel and/or cause irreparable damage to equipment.

3 Warnings

Warnings serve to prevent specific risks encountered by personnel and/or equipment. They are indicated in the documentation and on the products by different warning symbols.

Caution

Indicates that not following instructions or ignoring the warning may cause serious personal injury, death and/or serious damage to equipment.

Important or

Indicates that not following a specific instruction may lead to minor injury and/or damage to equipment.

Comment

Highlights important information relating to the product, its operation or its accompanying documentation.

4 Conformity of use

The products described in this manual **conform to the European Directives** (*) to which they are subject (CE marking). However, they can only be used correctly in the context of the applications for which they are intended (described in the various documents) and when connected to approved third party products.

(*) DEMC and DLV Directives, concerning Electromagnetic Compatibility and Low Voltage.

5 Installing and setting up equipment

It is important to observe the following rules when installing and starting up equipment. In addition, if the installation includes digital links, it is essential to follow the basic wiring rules, given in the user's guide, **reference TSX DG GND** or in the **TSX DR NET** manual, part C.

- Safety instructions must be followed meticulously. These instructions are in the documentation or on the equipment being installed and set up.
- The type of equipment defines the way in which it should be installed :
 - a flush-mountable device (for example, a process control terminal) must be flush-mounted,
 - a device which is to be built in (for example, a PLC) must be placed in a cabinet or enclosure,
 - the casing of a laptop or portable device (for example, a programming terminal or a notebook) must remain closed,

- If the device is permanently connected, its electrical installation must include a device to isolate it from the power supply and a circuit-breaker to protect it against overcurrents and isolation faults. If this is not the case, the power socket must be grounded and be easily accessed. **The device must be connected to the protective ground.**
- If the device is supplied with 24 or 48 VDC, the low voltage circuits must be protected. Only use power supplies which conform to the standards currently in force.
- Check that the supply voltages remain within the tolerance ranges defined in the technical characteristics of the devices.
- All measures must be taken to ensure that any power return (immediate, warm or cold) does not lead to a dangerous state which may place personnel or the installation at risk.
- Emergency stop devices must remain effective in all the device's operating mods, even those which are abnormal (for example, when a wire becomes disconnected). Resetting these devices must not cause uncontrolled or improper restarts.
- Cables which carry signals must be located where they do not cause interference with the control system functions by capacitive, inductive or electromagnetic interference.
- Control system equipment and their control devices must be installed in such a way as to ensure that they are protected against unintentional operation.
- Appropriate safety measures must be taken for the inputs and outputs, to prevent improper states in the control system device, if no signal is received.

6 Equipment operation

The operational safety and availability of a device is its ability to avoid the appearance of faults and to minimize their effects if they occur.

A fault inside the control system is known as :

- passive, if it results in an open output circuit (no command is sent to the actuators).
- active, if it results in a closed output circuit (a command is sent to the actuators).

From the safety point of view, a given fault is dangerous or not depending on the type of command given during normal operation. A passive fault is dangerous if the normal command is the operation of an alarm. An active fault is dangerous if it maintains or activates an undesirable command.

The system designer must **use devices external to the PLC** to protect against active faults inside the PLC, whether they are indicated or not.

7 Electrical and thermal characteristics

Details of the electrical and thermal characteristics of devices are given in the associated technical documents (installation manuals, service instructions).

8 Maintenance

Troubleshooting procedure

- Control system equipment should only be repaired by qualified personnel (after sales service engineer, or technician approved by Schneider Automation). Only certified replacement parts or components should be used.
- Before performing any operation on equipment, always disconnect the power supply and mechanically lock any moving parts.

Replacement and recycling of used batteries

Use batteries of the same type as the originals and dispose of defective batteries in the same way as toxic waste.

Presentation

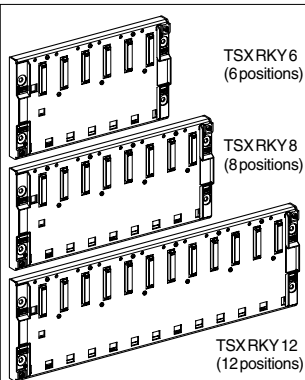
TSX RKY•• racks provide the following functions:

- mechanical functions: they are used for fitting all PLC station modules (power supply, processor, discrete I/O, etc) and can be fitted in enclosures, on the machine frame or on panels,
- electrical functions: they have an integral bus, called BusX which distributes the power supplies required for each module in the same rack and the service signals and data for the whole PLC station if it comprises a number of racks.

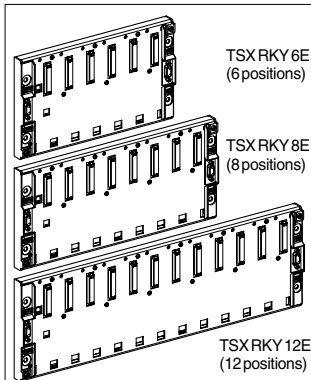
Two rack families (standard and extendable) are available in 3 modularities (6, 8, 12 positions):

- standard racks: these are used to make up a PLC station limited to **a single rack**,
- extendable racks: these are used to make up a PLC station which can contain **a maximum of 8 racks**, distributed on the BusX, whose maximum length must not exceed 50 meters. BusX continuity from one rack to another is provided by a bus extension cable with special characteristics.

Standard racks

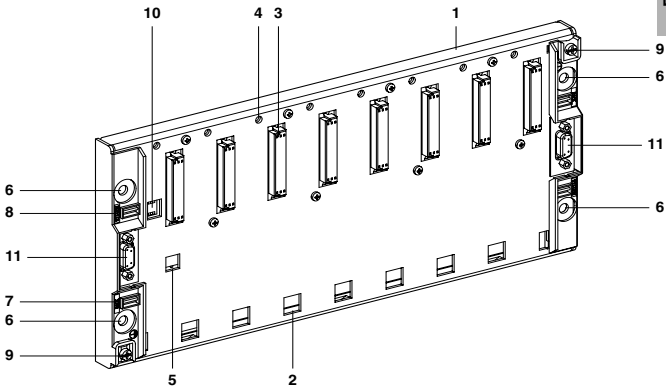


Extendable racks



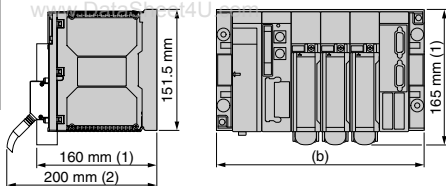
Physical description

The rack shown below is a TSX RKY 8E extendable rack. Standard racks do not comprise micro-switches (label 10) and 9-pin SUBD connectors (label 11).



- 1 Metal plate acting as support for the BusX electronic card and protection for the bus against EMI/ESD interference, module support and mechanical reinforcement for the rack.
- 2 Apertures for anchoring the module pins.
- 3 48-pin female 1/2 DIN connectors for connecting the rack to the modules. They are protected by covers which should be removed before the modules are installed. The connector located furthest to the left and marked PS is always dedicated to the rack power supply module; the other connectors marked 00 to XX can take all the other type of modules.
- 4 Tapped holes for the module fixing screw.
- 5 Aperture which ensures correct location when a power supply module is fitted which cannot be mounted in any other position.
- 6 Holes for M6 screw for fitting the rack on a support.
- 7 Location for marking the rack address.
- 8 Location for marking the station network address.
- 9 Ground terminals for grounding the rack.
- 10 Micro-switches for coding the rack address. These micro-switches are only present on TSX RKY 6E/8E/12E extendable racks.
- 11 9-pin female SUBD connectors for locating BusX remotely on another rack. These connectors are only present on TSX RKY 6E/8E/12E extendable racks.

Dimensions



- (1) modules with screw terminal blocks
 (2) maximum depth with all types of module and associated connections

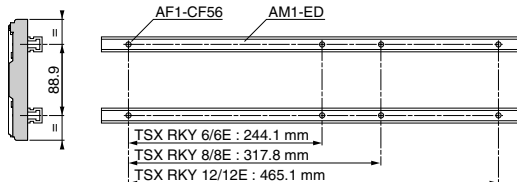
Rack references

| | (b) in mm |
|-----------------------|-----------|
| TSX RKY 6/6E | 261.6 mm |
| TSX RKY 8/8E | 335.3 mm |
| TSX RKY 12/12E | 482.6 mm |

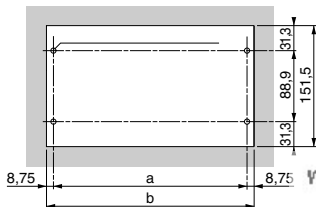
Mounting / Fixing

• Mounting on a 35mm wide DIN rail

Fix with 4 M6x25 screws + washers and AF1-CF56 1/4 turn sliding nuts



• Mounting on panel : cut-out (dimensions in mm)

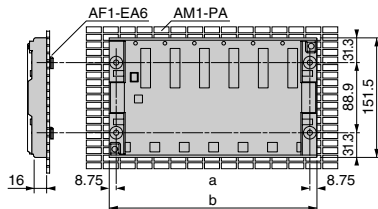


| Rack references | a | b |
|-----------------------|-------|-------|
| TSX RKY 6/6E | 244.1 | 261.6 |
| TSX RKY 8/8E | 317.8 | 335.3 |
| TSX RKY 12/12E | 465.1 | 482.6 |

a and b dimensions in millimeters

Mounting/fixing(cont'd)

- Mounting on AM1-PA Telequick perforated mounting plate

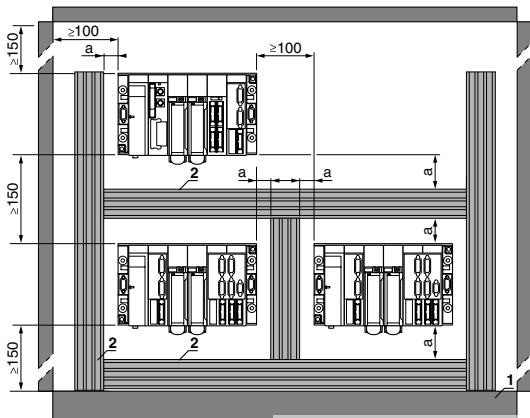


Fix the rack with 4 M6x25 screws + washer and AF1-EA6 clip nuts.

(a and b dimensions : see table on previous page).

Installation rules

TSX RKY••• racks must be installed horizontally and on a vertical plane.



a ≥ 50mm

1 housing or enclosure

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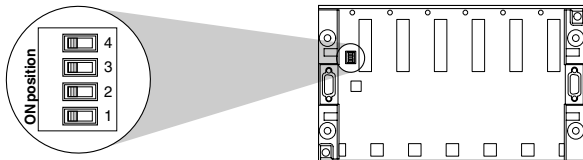
Addressing racks in a PLC station

- Station made up of a standard rack □

A station is always limited to a single rack and the rack address is therefore implicit and always has the value 0.

- Station made up of extendable racks □

For each station rack, 4 micro-switches located on the rack are used to assign an address to the rack. The address should be coded before the module power supply is inserted.



| Rack addresses | | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 |
|----------------------------|---|--------|--------|--------|--------|--------|--------|--------|--------|
| | 4 | | | | | | | | |
| Position of micro-switches | 3 | | | | | | | | |
| | 2 | | | | | | | | |
| | 1 | | | | | | | | |
| | | ON OFF | ON OFF | ON OFF | ON OFF | ON OFF | ON OFF | ON OFF | ON OFF |

Assigning addresses to the various racks:

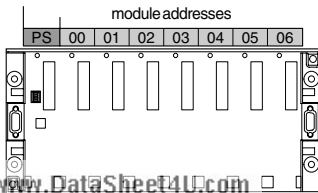
- Address 0: this address is always assigned to the rack which holds the processor, as this rack can be in any position in the daisy chain,
- Addresses 1 to 7: these can be assigned to all the other station racks, in any order.

Module addresses

A module address is geographical and will depend on the position of the module in the rack. The address of each position is indicated above each connector. The connector marked PS is always dedicated to the power supply.

Module addresses according to rack modularity :

- TSX RKY 6/6E racks: addresses 00 to 04,
- TSX RKY 8/8E racks: addresses 00 to 06,
- TSX RKY 12/12E racks: addresses 00 to 10,



Example: module addresses on
TSX RKY 8E rack

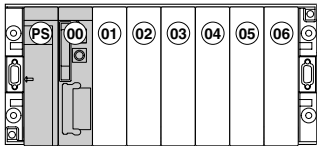
Installing modules

• On a standard or extendable rack with address 0

The rack with addresses 0 must hold a power supply module and the processor module. Since TSX Premium PLCs can have two types of power supply (standard format or double format), the position of the processor will depend on the type of power supply being used.

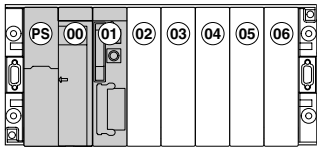
Using a standard format power supply module:

- the power supply module always occupies position PS,
- the processor module must be installed in position 00,
- the other modules should be installed from position 01 onwards.



Using a double format power supply module:

- the power supply module always occupies positions PS and 00,
- the processor module must be installed in position 01.
- the other modules should be installed from position 02 onwards.

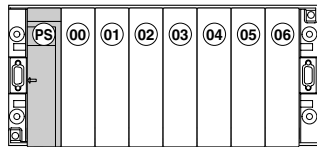


• On an extendable rack with addresses 1 to 7

Each rack must have a power supply module, whether standard or double format.

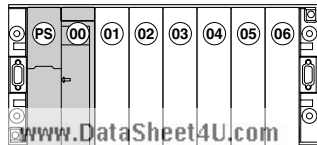
Using a standard format power supply module:

- the power supply module always occupies the position PS,
- the other modules should be installed from position 01 onwards.



Using a double format power supply:

- the power supply module always occupies positions PS and 00,
- the other modules should be installed from position 02 onwards.

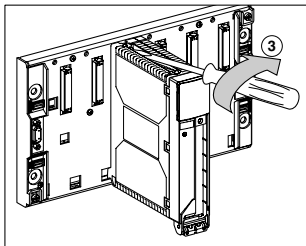
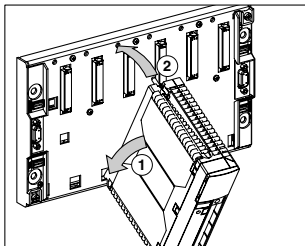


Mounting modules and terminal blocks

Modules can be inserted and removed while powered up with the exception of the processor module and some PCMCIA communication cards.

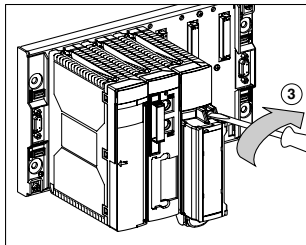
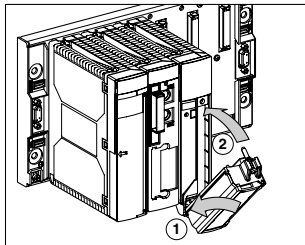
! Insertion/removal of a powered-up module must be performed by screwing or unscrewing the module manually, with the terminal block or HE10 connector disconnected and the sensor/preactuator power supply cut if this is greater than 48V.

- Mounting modules with screw terminal blocks



- Fitting a screw terminal block on a module

The first time a screw terminal block is mounted on a module the terminal block has to be coded with the type of module on which it is mounted. This is done by transferring 2 coding devices from the module onto the screw terminal block. This mechanical code prohibits any subsequent mounting of the terminal block with this code on any other type of module



Note: When replacing a module already in position on the rack with another module, the screw terminal block on the old module already has coding devices which relate to the module. Two things may happen:

- **Module failure, to be replaced by a module of the same type** : so that the screw terminal block can be installed on the new module, the coding devices on the new module must first be removed before the screw terminal block can be fitted,
- **Replacing a module with another type of module** : first remove the old coding devices on the screw terminal block before continuing with the mounting procedure described above.

Composition of a PLC station

• Based on TSX RKY 6/8/12 standard racks

The standard racks are used to make up a PLC station limited to a **single rack**.

• Based on TSX RKY 6E/8E/12E extendable racks

The extendable racks enable you to make up a PLC station containing a **maximum of 8 racks** (2 racks with a TSX P57 10 processor, 8 racks with a TSX P57 20 processor). The racks can have the same product reference or different product references, and are connected by BusX extension cables (label 1). BusX should have a line terminator (label 2) fitted at each end.

- BusX extension cables

The racks are interconnected by TSX CBY••0K BusX cables connected to the 9-pin SUB D connector located on the right or left-hand side of each extendable rack.

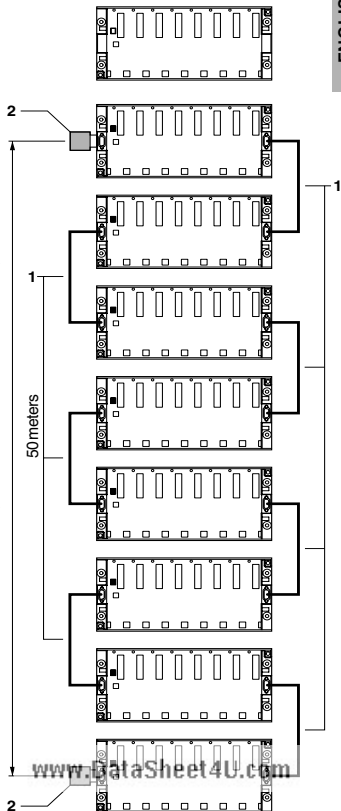
It does not matter whether the cable coming in from a rack or the green cable going out to another rack is connected to the right or left connector.

- line terminator

The two extendable racks at the end of BusX **must** be fitted with a TSX TLY line terminator on the unused 9-pin SUB D connector.

- maximum cable length

The total length of all the TSX CBY••0K cables used in a PLC station must never exceed 50 meters.



BusX extension cables TSX CBY ••0K

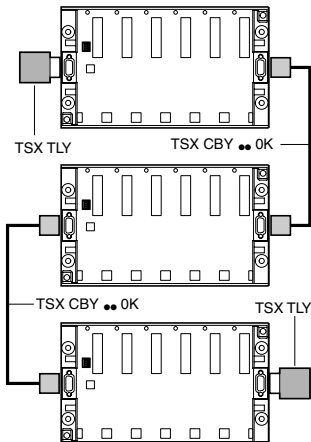
These cables ensure the continuity of BusX from one extendable rack to another. They are fitted with 9-pin SUB D connectors at each end.

Note: these cables do not carry any supply voltage, as each rack has its own power supply module.

| References | Length |
|--------------|-----------|
| TSX CBY 010K | 1 meter |
| TSX CBY 030K | 3 meters |
| TSX CBY 050K | 5 meters |
| TSX CBY 120K | 12 meters |
| TSX CBY 180K | 18 meters |
| TSX CBY 280K | 28 meters |
| TSX CBY 380K | 38 meters |

⚠ The total length of all the cables used in a PLC station must not exceed 50 meters.

⚠ All the station racks must be powered down prior to inserting or removing a TSX CBY••0K cable.

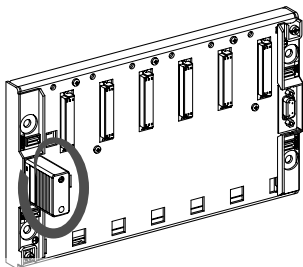


Line terminator TSX TLY

When using extendable racks, BusX must be fitted with a line terminator at each end. This line terminator is made up of a 9-pin SUB D connector and a cover containing the adaptor elements. It fits onto the connector not used by the extendable racks, located at the end of the line (see the simplified schematic above).

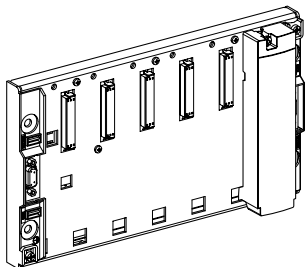
Note: when using a single extendable rack, a line terminator must be fitted on each 9-pin SUB D connector on the rack.

⚠ All the station racks must be powered down prior to inserting or removing a line terminator.



Protective cover for an unoccupied position

If there are any unoccupied positions on a rack, it is advisable to fit a TSX RKA 02 cover in this position.



Marking

• Marking module positions on the rack

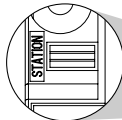
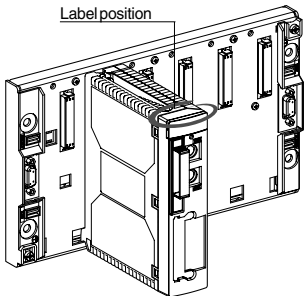
Each rack comes with a sheet of self-adhesive labels which can be used to mark the position of each module.

| | | | | | | | |
|----|----|----|----|----|----|----|----|
| PS | 00 | 01 | 02 | 03 | 04 | 05 | 06 |
| 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |

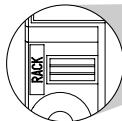
• Marking racks

Each rack is supplied with a pack of clip-on markers on a strip which can be used to mark the address of the rack in the station and the address of the network station.

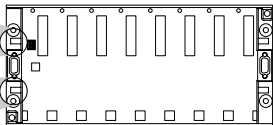
Label position



Station address
on a network



Rack address in
the station



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Presentation

TSX PSY**** power supply modules supply all the necessary voltages for modules installed on each TSX RKY*** rack. Each rack has its own power supply module.

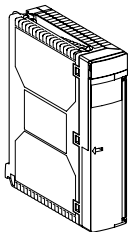
In order to meet the various requirements, several module types are available:

- Standard and double format modules for 110-220V AC supply,
- Standard and double format modules for 24V DC supply, non-isolated.
- Double format module for 24...48V DC supply, isolated.

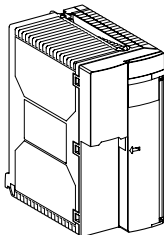
In addition, each module has auxiliary functions such as:

- A display block,
- An alarm relay,
- A slot which takes a battery for backing up the data in the processor internal RAM memory,
- A pencil-point type pushbutton which when pressed, simulates a power break, causing a warm restart of the application,
- 24VDC sensor power supply (only on modules powered by an AC supply).

Standard format module



Double format module

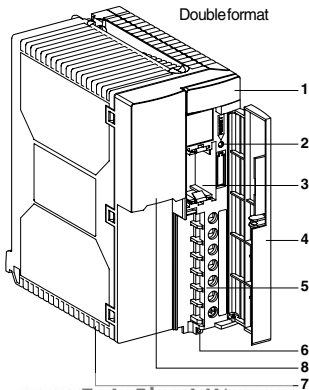
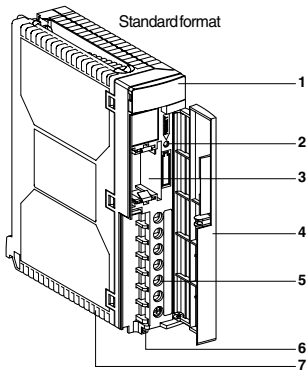


Catalog

| Module format | Supply network voltage | Total useful power | Sensor power supply | References |
|---------------|-------------------------------|--------------------|---------------------|--------------|
| standard | 100...240VAC | 26W | 24VDC/0.6A | TSX PSY 2600 |
| double | 100...120VAC/ 200...240VAC | 50W | 24VDC/0.9A | TSX PSY 5500 |
| standard | 24 VDC | 26W | – | TSX PSY 1610 |
| double | 24 VDC | 50W | – | TSX PSY 3610 |
| double | 24...48 VDC | 50W | – | TSX PSY 5520 |

Physical description

- 1 Display block comprising:
 - an OK indicator lamp (green), on if operation is normal,
 - a BAT indicator lamp (red), on when the battery is defective or missing,
 - a 24V indicator lamp (green), on when the sensor voltage is present and correct.
 Indicator lamp is only found on TSX PSY 2600/5500.
- 2 Pencil-point RESET button. Causes a warm restart of the application when pressed.
- 3 Slot which takes a battery for backing up the processor internal RAM memory.
- 4 Cover which protects the module front panel.
- 5 Screw terminal block for connection:
 - to the power supply,
 - of the alarm relay contact,
 - of the sensor power supply for TSX PSY 2600/5500 AC supply modules.
- 6 Hole for a cable clamp.
- 7 Fuse located under the module which protects:
 - the 24 VR voltage on the TSX PSY 3610 non-isolated power supply module.
 - the primary voltage on the other power supply modules.
- 8 110/220 voltage selector, present only on the TSX PSY 5500 power supply module. At the time of supply, the selector is set to 220.



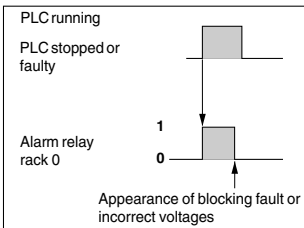
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Auxiliary functions

• **Alarm relay:** included in every power supply module, this relay has a volt-free contact which can be accessed on the module screw terminal block.

- Alarm relay of module located on the rack with the processor (rack 0):

In normal operation (PLC in RUN), the relay is activated and its contact closed (state 1). On every stop, even partial, appearance of a blocking fault, incorrect output voltages or disappearance of the supply voltage, the relay drops out and the contact opens (state 0).



- Alarm relay for modules located on other racks (racks 1 to 7):

In this case, when the power supply module is powered up and if the output voltages are correct, the alarm relay is activated and its contact closed (state 1). On disappearance of the supply voltage or if the output voltages are incorrect, the relay drops out (state 0).

These operating modes enable the contacts to be used in external positive safety circuits, such as the interlocking of preactuator power supplies.

• **Backup battery:** Protects the processor internal RAM memory. Supplied in the same packaging as the power supply module, it should be installed by the user, taking care to respect the polarity.

- Battery characteristics: thionyl lithium chloride battery, 3.6V / 0.8 Ah, size 1 / 2AA.

- Replacement part reference: TSX PLP 01.

- Data backed up for: 1 year

- Monitoring the state of the battery: In the event of a problem, the BAT indicator lamp lights up. In this case, change the battery immediately.

- Changing the battery: this must be carried out with the module powered up or immediately after it is powered down. In this last instance, the time for this operation is limited to 10 minutes, after which the data in the RAM memory may be lost.

As a preventive measure, the battery should be changed once a year.

• **Display:** 3 indicator lamps (OK, BAT, 24V) on TSX PSY 2600/5500 modules and 2 indicator lamps (OK, BAT) on TSX PSY 1610/3610/5520 modules.

- OK indicator lamp (green): on during normal operation, off if the output voltages are no longer present or correct,

- BAT indicator lamp (red): on if battery missing, run down, incompatible or wrong way round and off during normal operation,

- 24V indicator lamp (green): on during normal operation, off if the 24V sensor voltage is no longer present.

• **RESET pushbutton:** action on this pushbutton (press and release) effects a warm restart of the application.

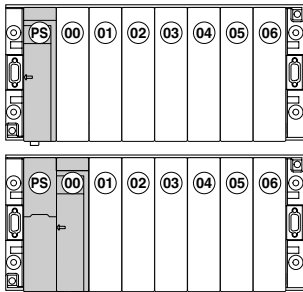
• **Sensor power supply:** available on TSX PSY 2600/5500 AC power supplies, it enables a 24 VDC sensor supply.



Installation / Mounting

- **Installation** www.DataSheet4U.com
 - TSX PSY 2600/1610 standard format power supply modules:
These are installed in the first slot of each TSX RKY rack and occupy position PS,
 - TSX PSY 3610/5500/5520 double format power supply modules:
These are installed in the first two slots of each TSX RKY rack and occupy positions PS and 00.

Note: the power supply modules are located in a system which ensures that it can only be installed in the slots designated above.



- **Insertion**: (see section on "mounting modules" in this document)

! When inserting or removing a TSX PSY**** power supply module, the external power supplies must be powered down.

Characteristics

- **Non-isolated power supplies for a DC supply**

| Module references | | TSX PSY 1610 | TSX PSY 3610 | |
|--------------------------------|--|--|-----------------------------|-----------------------------|
| Primary | Nominal voltages | 24 VDC | 24 VDC | |
| | Limit voltages (1) (ripple included) | 19.2...30 VDC (possible up to 34V during 1H / 24 H) | 19.2...30 VDC | |
| | Nominal current drawn | ≤ 1.5 A to 24V | ≤ 2.7 A to 24V | |
| | Initial power I _{inrush} up at 25°C (2) | ≤ 100 A to 24 V | ≤ 150 A | |
| | I _{it} on energization | 0.2 As to 24 V | 0.5 As to 24 V | |
| | I _{it} on energization | 12.5 A ² s to 24 V | 20 A ² s to 24 V | |
| | Accepted duration of micro-cuts | ≤ 1 ms | ≤ 1 ms | |
| | Integrated entry protection + (fuse located under the module) | via 5x20 fuse, time-delay, 3.5 A | no | |
| Secondary | Total useful power | 30 W | 50 W | |
| | 5 VDC output | Nominal voltage | 5 VDC | 5.1 VDC |
| | | Power | 15 W | 35 W |
| | 24VR output (3) (24V relay) | Nominal voltage | U _{primary} - 0.6V | U _{primary} - 0.6V |
| | | Power | 15 W | 19 W |
| Outputs protected against (4) | overloads/short-circuits/overvoltages | | | |
| Conformity to standards | | IEC 1131-2 | IEC 1131-2 | |

(1) for the power supply to "relay output" modules, the range is reduced to 21.6...26.4V.

(2) these values should be taken into account when calculating the size of line protection devices upstream of the power supply.

(3) 24 V Ⓢ output for supplying "relay output" module relays.

(4) the 24 VR output is protected by a fuse located under the module (4 A, 5x20, type M).

Characteristics(cont'd)**• Isolated power supplies for DC supply****Module references****TSX PSY 5520**

| | | | | |
|----------------------------------|--|---------------------------------------|--|---------|
| Primary | Nominal voltages | | 24...48 VDC | |
| | Limit voltages (including ripple) | | 19.2...60 VDC | |
| | Nominal current drawn | | ≤ 3 A to 24 V ≤ 1.5 A to 48 V | |
| | Initial power up at 25°C (1) | I inrush | ≤ 15 A to 24 V ≤ 15 A to 48 V | |
| | | It on energization | 7 As to 24 V 6 As to 48 V | |
| | | It on energization | 50 A ² s to 24 V 55 A ² s to 48 V | |
| | Accepted duration of micro-cuts | | ≤ 1 ms | |
| | Integrated protection on + input (fuse located under the module) | | via fuse, 5x20, time-delay type 5 A | |
| | Secondary | Total useful power | | 50 W |
| | | 5 VDC output | Nominal voltage | 5.1 VDC |
| Power | | | 35 W | |
| 24 VR output (2) (24 V relay) | | Nominal voltage | 24 VDC | |
| | | Power | 19 W | |
| Outputs protected against | | overloads/short-circuits/overvoltages | | |
| Conformity to standards | | IEC 1131-2 | | |
| Isolation | Dielectric withstand | primary/secondary | 2000V rms - 50/60 Hz - 1 min | |
| | | primary/ground | 2000V rms - 50/60 Hz - 1 min | |

(1) these values should be taken into account when calculating the size of line protection devices upstream of the power supply.

(2) 24 V --- output for supplying "relay output" module relays.

• Alarm relay contact

| | | | | | |
|--|--------------------------------------|--|--------|---------|---------|
| Limit operating voltage | | ~ 19...264 VAC or --- 10...30 VDC (1) | | | |
| AC load | Usual voltages | 24 VAC | 48 VAC | 110 VAC | 220 VAC |
| | Power on resistive load | 50 VA | 50 VA | 110 VA | 220 VA |
| | Power on inductive load | 24 VA | 24 VA | 50 VA | 110 VA |
| DC load | Usual voltages | 245 VDC | | | |
| | Power on resistive or inductive load | 24 W | | | |
| Isolation | contact/ground | 2000 Vrms - 50/60 Hz - 1 min | | | |
| Protection to be integrated on load terminals | | Is RC or MOV in C; flywheel diode in --- | | | |

(1) possible up to 34 VDC for 1 hour in 24.

Characteristics(cont'd)

• PowersuppliesforACsupply

Module references

| | | TSX PSY 2600 | TSX PSY 5500 | |
|---------------------------|---|--------------------------------|--------------------------------|------------------|
| Primary | Nominal voltages | 100...240 VAC | 100...120/200...240 VAC | |
| | Limit voltages | 85...264 VAC | 85...140/190...264 VAC | |
| | Nominal/limit frequencies | 50-60/47-63Hz | 50-60/47-63Hz | |
| | Apparent power | 50 VA | 150 VA | |
| | Nominal current drawn | | ≤ 0.5 A to 100V | ≤ 1.7 A to 100V |
| | | | ≤ 0.3 A to 240V | ≤ 0.5 A to 240V |
| | Initial I inrush power up at 25°C (1) | | ≤ 37 A to 100 V | ≤ 38 A to 100 V |
| | | | ≤ 75 A to 240 V | ≤ 38 A to 240 V |
| | | I _t on energization | 0.034 As to 100 V | 0.11 As to 100 V |
| | | I _t on energization | 0.067 As to 240 V | 0.11 As to 240 V |
| | I ² t on energization | 0.63 A ² s to 100 V | 4 A ² s to 100 V | |
| | | 2.6 A ² s to 240 V | 2 A ² s to 240 V | |
| | Accepted duration of micro-cuts | ≤ 10 ms | ≤ 10 ms | |
| | Integrated protection on phase (fuse located under the module) | via 5x20 fuse, time-delay type | via 5x20 fuse, time-delay type | |
| | | 4 A | 4 A | |
| Secondary | Total useful power | 26 W | 50 W | |
| | 5 VDC output | Nominal voltage | 5.1 VDC | 5.1 VDC |
| | | Power | 25 W | 35 W |
| | 24VR output (2) | Nominal voltage | 24 VDC | 24 VDC |
| | | Power | 15 W | 19 W |
| | 24VC output (3) | Nominal voltage | 24 VDC | 24 VDC |
| | | Power | 12 W | 19 W |
| Outputs protected against | overloads/short-circuits/overvoltages | | | |
| Conformity to standards | | IEC 1131-2 | IEC 1131-2 | |
| Isolation | Dielectric withstand | primary/secondary | 2000 Vrms - 50/60 Hz - 1min | |
| | | primary/ground | 2000 Vrms - 50/60 Hz - 1min | |

(1) these values should be taken into account when calculating the size of line protection devices upstream of the power supply.

(2) 24 V $\overline{\text{---}}$ output for supplying "relay output" module relays.

(3) 24 V $\overline{\text{---}}$ output for the sensor power supply. It cannot be paralleled with an external power supply.

• ServiceconditionsforTSX PremiumPLCs

Operation

| | |
|-------------------------------|-----------------------------------|
| Ambient operating temperature | 0°C to + 60°C |
| Relative humidity | 30% to 95% (without condensation) |
| Altitude | 0 to 2000 meters |

Storage

| | |
|---------------------|------------------|
| Storage temperature | - 25°C to + 70°C |
| Relative humidity | |

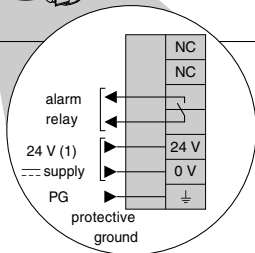
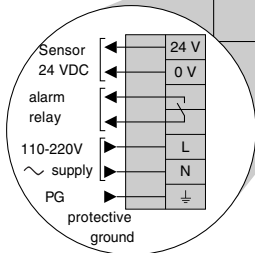
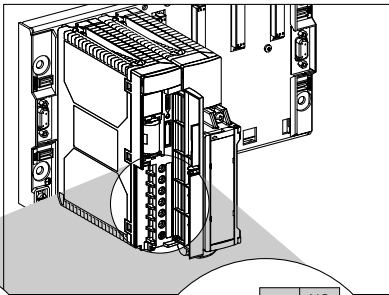
Connection rules

- Connections:** The power supply module screw terminal block is equipped with captive screw clamp terminals enabling the connection of 2 wires with maximum cross section of 2.5 mm². The wires exit vertically downwards, and can be secured with a cable clamp. For DC power supplies, limit the length of the connection cable to the supply to prevent any line losses (see below).

| Module references | Cable lengths |
|---------------------|---|
| TSX PSY 1610 | 30 meters (60 meters in total) with copper wires of 2.5 mm ² |
| 20 meters | (40 meters in total) with copper wires of 1.5 mm ² |
| TSX PSY 3610 / 5520 | 15 meters (30 meters in total) with copper wires of 2.5 mm ² |
| | 10 meters (20 meters in total) with copper wires of 1.5 mm ² |

- Protections:** Position a protection device and cut the power supply upstream of the PLC station.

Note: Given that the DC power supplies have a very strong in-rush current, it is not advisable to use them on DC supplies with return current protection (fold back)



Power supply for an AC supply: TSXPSY2600/5500

Power supply for a DC supply: TSX PSY 1610/3610/5520

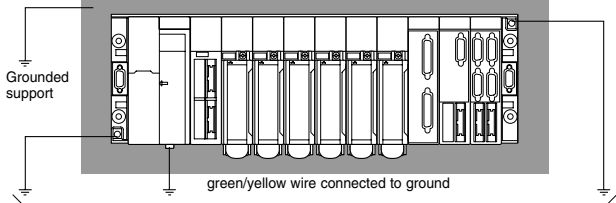
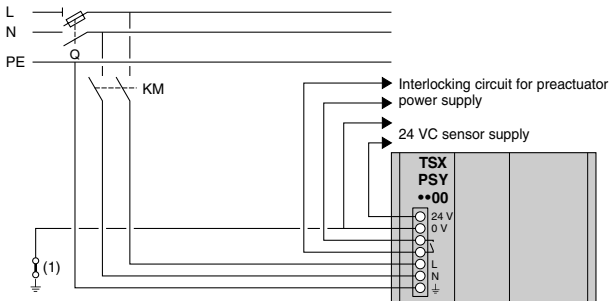


TSX PSY 5500: set the voltage selector position according to the mains voltage being used 110 or 220 VAC

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(1) 24...48 VDC for the TSX PSY 5520 power supply

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**Important****Power supply module connections**

Q general isolator

KM: line contactor or circuit-breaker

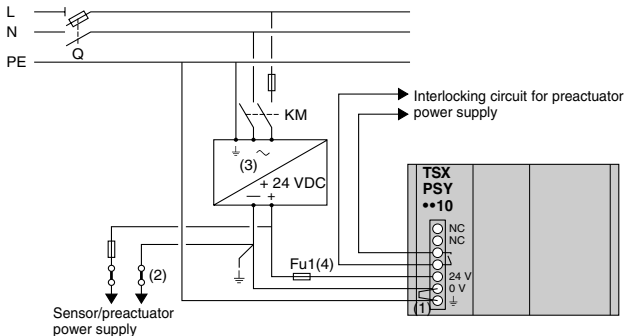
Protective fuse on the line connection, integrated in module: 4 A, time-delay type, 5x20

(1) isolation strip for locating ground fault.

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• **TSX PSY 1610/3610 power supply modules**

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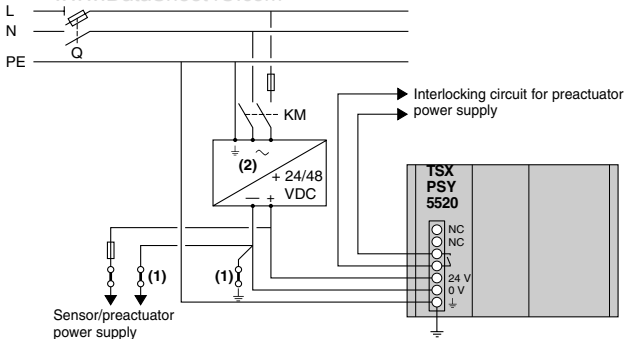
Q: general isolator

KM: line contactor or circuit-breaker

- (1) external shunt supplied with the module.
- (2) isolation strip for locating ground fault.
- (3) possibility of using a TSX SUP 1••1 process power supply
- (4) TSX PSY 3610: 4 A, time-delay type protective fuse,
TSX PSY 1610: protective fuse on + input, integrated in module : 3.5 A, time-delay time, 5x20.

• **TSXPSY5520 power supply module**

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Q general isolator

KM: line contactor or circuit-breaker

Protective fuse on the line connection, integrated in module: 5 A, time-delay type, 5x20

(1) isolation strip for locating ground fault.

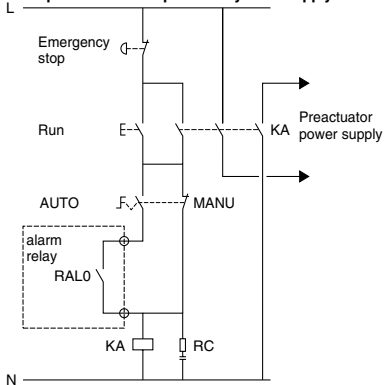
(2) possibility of using a TSX SUP 1••1 process power supply

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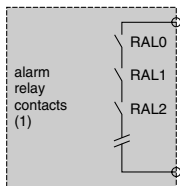
Alarm relay connections

Interlocking circuit for sensor/preactuator power supply

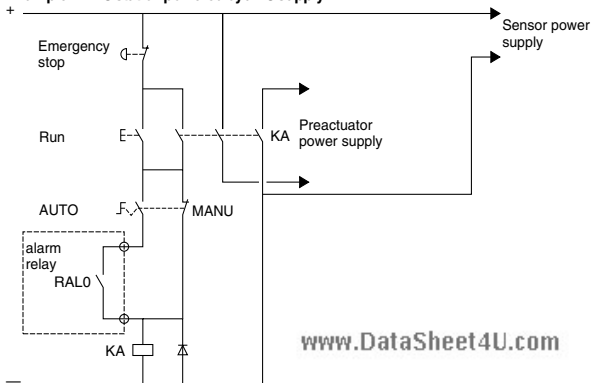
• Example 1: PLC station powered by an AC supply



(1) Connect all the alarm relay contacts for all the supplies of a PLC station in series.



• Example 2: PLC station powered by a DC supply



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