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Find the *Schneider Electric / Telemecanique TSX-DST-1682* at our website: *Click HERE*

Characteristics :
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References :
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Description

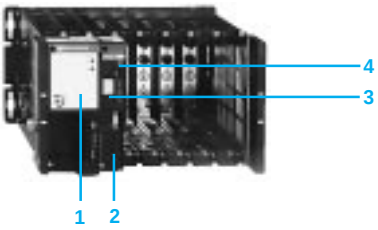
The TSX 47-10/47-20/47-25 base configurations are modular sequential PLCs which can accept all discrete I/O interfaces. They are available in two formats :

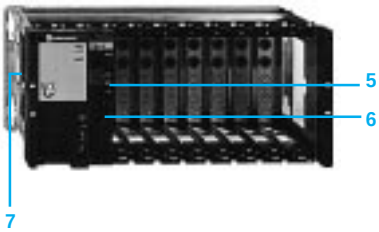
- Short rack, with 5 slots available for TSX 47-J/ and TSX 47-20J.
- Standard rack, with 8 slots available for TSX 47-10 and TSX 47-20/47-25.

Each TSX 47-10/47-20/47-25 base configuration can be extended by a direct I/O extension rack which increases the maximum number of slots to 16.

Sequential PLCs can also accept counting and analogue interfaces as well as the TELWAY network module. The TSX 47-20J and TSX 47-20/47-25 PLCs also support two intelligent modules.

Description of the base configuration





The base configuration comprises a short or standard rear mounted rack incorporating :

1 Power supply ∿ 110/240 V, 50/60 Hz, TSX SUP 40 (or TSX SUP 702 with TSX 47-25 PLC) or ⎓ 24/48 V, TSX SUP 41/42 (see page 42202/3)

2 A processor with a 2 K byte protected internal RAM data memory. It comprises :

3 A slot for a user memory cartridge (32 K byte cartridge supplied with TSX 47-25 PLC)

4 Green RUN lamp (program running)

5 Three red lamps :
- CPU processor fault
- MEM memory cartridge fault
- I/O fault

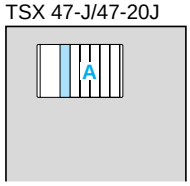
6 A 9-way SUB-D type connector for terminal connection (20 mA current loop)

7 A direct extension connector for the TSX 47-10 and TSX 47-20 configurations (see page 42307/3)

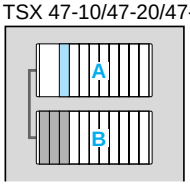
Note : The TSX SCM 2116 UNI-TELWAY module is supplied with the TSX 47-25.

Maximum configurations

TSX 47-J/47-20J



TSX 47-10/47-20/47-25



- TSX 47-J and TSX 47-20J PLCs :
  The maximum configuration is limited to the PLC base rack.
- TSX 47-10 and TSX 47-20/47-25 PLCs :
  The maximum configuration is limited to the PLC base rack with the addition of a direct I/O extension.

A PLC base.

B TSX RKE 7/8 direct I/O extension.

The 24 and 32 point modules can only be used in the base rack. When used in this way, the corresponding direct extension rack slot must be left empty.

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Functions

Memory structure

Internal RAM memory

The internal RAM memory of the PLC processor supports the application data handled by the PLC. This memory is battery-backed for 5 weeks and is divided into 2 zones.

- **Bit memory**
  This memory contains the image of all the bit objects.

System bits	24	Function block output bits	128
Discrete I/O	(1)	Internal bits	256
Grafcet steps	96	Fault bits	1 per I/O module

- **Word memory** (16 bits)
  This memory is intended to hold all PL7-2 application word objects.

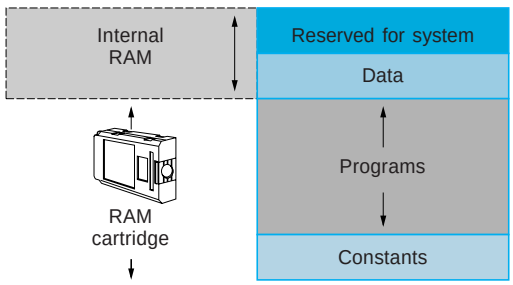
Internal words (2)	1024	Grafcet step activity times	96
Intelligent module words (TSX 47-20J/20)	2 x 16	System words	4
TELWAY network common words	16 x 4	–	–

User memory cartridge

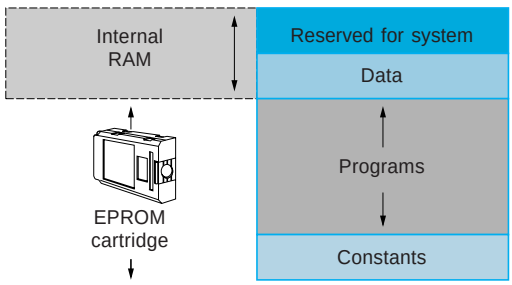
This memory supports the program and the constants relating to the PL7-2 application. The size of the memory allocated to the constants is fixed at 2 K bytes.
With a capacity of 8 to 32 K bytes (8 bits), this removable memory is mounted on the PLC processor. Two types of cartridge are available :
- Battery-backed RAM memory cartridge (5 weeks) in modules of : 8, 16, 32 K bytes.
- EPROM memory cartridge in modules of : 8, 16, 32 K bytes.

The designer can, according to his needs, select one of two possible solutions.

Solution 1

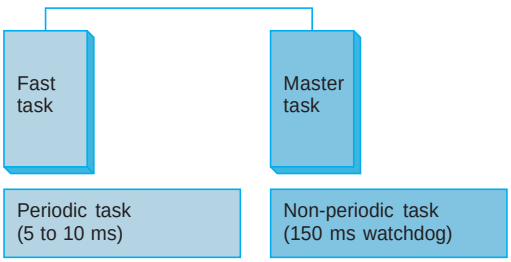


Solution 2



Software structure

The TSX 47 sequential PLCs are programmed in PL7-2 graphic languages : Ladder and Grafcet.



Dual-task structure :
- A master task. This non-periodic task is monitored by a 150 ms watchdog. It can be programmed in Ladder and/or in Grafcet.
- A fast task. This optional task allows short duration data to be processed at a higher execution rate. It can only be programmed in Ladder language.

PL7-2 software is available on a cartridge for the TSX T407 terminal or on PC compatible diskettes (under PL7-DOS user interface, under MINI X-TEL or X-TEL software workshop).

(1) 256 for TSX 47-10/20, 160 for TSX 47-J/20J.
(2) Direct access to the first 128 words, by table transfer for the remaining words.

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Characteristics, dimensions

Presentation :
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Environment

Temperature	Operation + 5...+ 55 °C, storage -25...+ 70 °C
Altitude	0...2000 m
Degree of protection	IP 20 conforming to IEC 664 and NF C 20040

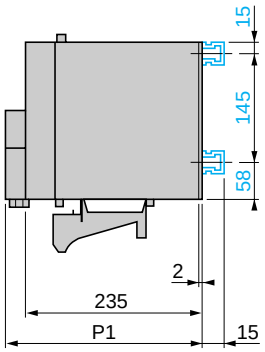
Characteristics

Type of PLC	**TSX 47-J**	**TSX 47-10**	**TSX 47-20J**	**TSX 47-20**	**TSX 47-25**
Functions					
Max no. of discrete I/O	160	256	160	256	
No. of intelligent modules	0	0	2 (in base rack)		4
Max no. of slots	5	16	5	16	
No. of direct extensions	0	1	0	1	
Discrete I/O interfaces					
4/8 or 16 points	Yes	Yes	Yes	Yes	
24 or 32 points	Yes	Yes (1)	Yes	Yes (1)	
Analogue interfaces	TSX ADT 20 ●, TSX AST 200,				
Counting interface	TSX AXT 200				
Intelligent modules	No	No	Yes (mounted in the first 4 slots)		
Analogue measurement system	–	–	TSX AEM 41●, TSX AEM 811/821		
Analogue outputs	–	–	TSX ASR 40●		
Counting, positioning	–	–	TSX CCM 100, TSX DTM 100, TSX DMR 1652		
Axis control	–	–	No	No	
Asynchronous link	–	–	TSX SCM 20●●, TSX SCM 22●● (except TSX SCM●●13)		
Communication modules					
UNI-TELWAY bus	No	No	TSX SCM 21●6		TSX SCM 2116 integral
TELWAY network	TSX MPT 104 (only one module can be mounted on any one slot of the base rack)				

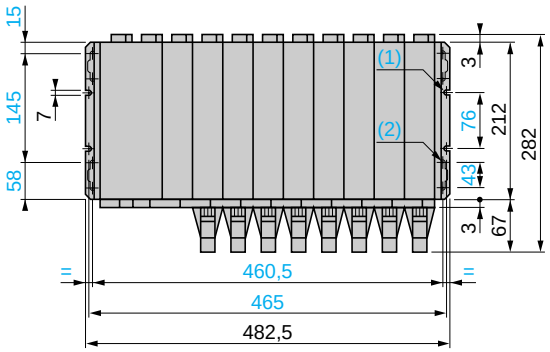
Dimensions

Rear mounting racks (mounted on 35 mm wide rails)

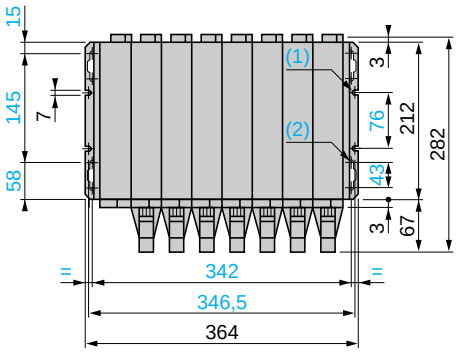
View of common rail



TSX 47 10●1/47 20●0/RKE 8



TSX 471101/47 2100/RKE 7



(1) 4 x Ø 7 mm
(2) 8 x Ø 7 mm

Type of module	P
Discrete I/O (with BLK terminal block)	235
Modules with TSX BLK 4 terminal block	267
TSX MPT 1074 module	262
TSX AXT/DTM 100 modules	275
TSX SCM modules	310

P1 = overall depth including connection

Note : when the racks are mounted in a cabinet or enclosure :
- the minimum distance between racks must be 150 mm
- the maximum distance between a rack and its extension is 800 mm

(1) 24 or 32 point modules only in the base rack. When a 24 or 32 point module occupies a slot at position n in the base rack, the slot in the same position n in the direct extension rack must be left empty.

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TSX 47 ●10●



TSX 47 ●0●●



TSX RAM ●● 8



TSX RPM ●● 8



TSX RKE 8



TSX CD D MTE 01E

Base configurations (1)

These base configurations comprise :
- A rack with 5 or 8 available slots
- A power supply
- A processor without user memory cartridge
- An installation manual

The TSX 47-25 configuration also includes a RAM user memory cartridge, TSX RAM 32 8 and a TSX SCM 2116 UNI-TELWAY module.
All slots have locating devices and backplane connector covers.

Power supply	PLC	Rack format	No. of available slots	Reference	Weight kg
∿ **110/220 V**	TSX 47-J	Short	5	**TSX 47 1101**	7.100
	TSX 47-20J	Short	5	**TSX 47 2100**	7.100
	TSX 47-10	Standard	8	**TSX 47 1001**	7.400
	TSX 47-20	Standard	8	**TSX 47 2000**	7.400
	TSX 47-25	Standard	8	**TSX 47 2500**	8.450
⎓ **24 V**	TSX 47-10	Standard	8	**TSX 47 1011**	7.200
	TSX 47-20	Standard	8	**TSX 47 2010**	7.200
⎓ **48 V**	TSX 47-10	Standard	8	**TSX 47 1021**	7.200
	TSX 47-20	Standard	8	**TSX 47 2020**	7.200

User memory cartridge

Type	Capacity	Reference	Weight kg
Battery-backed RAM (5 weeks protection)	16 K bytes	**TSX RAM 16 8**	0.075
	32 K bytes	**TSX RAM 32 8**	0.085
EPROM	16 K bytes	**TSX RPM 16 8**	0.065
	32 K bytes	**TSX RPM 32 8**	0.075

Direct extension assemblies

The direct extension assembly comprises an empty rack (unused slots fitted with covers) and 1.20 m long extension cable.

Rack format	Type of bus	No. of available slots	Reference	Weight kg
Short	Simplified	7	**TSX RKE 7**	2.100
Standard	Simplified	8	**TSX RKE 8**	3.300

Accessories and separate parts

Description	Sold in multiples of		Unit reference	Weight kg
Wire guide	10		**TSX RAC 10**	0.220
Backplane locating device	10		**TSX RAC 40**	0.025
Cover for empty slot (1 per slot)	10		**TSX RAC 50**	0.600
Earthing strip (essential for TSX BLK 4 terminal block)	1	Standard rack	**TSX RAC 20**	0.260
		Short rack	**TSX RAC 25**	0.240
Extraction tool for TSX 7 modules	1		**TSX MNC 30**	0.210

Documentation (in English)

Description	Manual format	Included with product	Reference	Weight kg
Installation manual TSX 47-10/47-20/47-25	A4 bound	TSX 47 ●●●●	**TSX D41 732**	0.440
TSX technical documentation	CD-ROM	To be ordered separately	**TSX CD D MTE 01E**	0.120

(1) PL7-2 application development and diagnostics software. See pages 46503/5 and 46200/2.

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