

Modicon Premium automation platform

PCMCIA memory extension cards

Unity

Presentation

PCMCIA memory extension cards are used to extend the internal RAM capacity of Premium processors and Atrium slot PLCs.

Some of the cards can also be used on Quantum and Micro processors. Depending on the model, these cards can host:

- Application program, symbols and constants
- Additional application data
- Or both

PCMCIA memory extension cards

All the cards are inserted into PCMCIA slot no. 0 on Premium processors and Atrium slot PLCs, i.e.:

- The upper slot on processors
- The internal slot on slot PLCs

Two of these SRAM data storage memory cards can also be inserted into slot no. 1, i.e.:

- The lower slot on processors
- The external slot on slot PLCs

These cards support three types of data storage:

- Application storage: Program, symbols and constants in a common space (128 Kb to 7168 Kb, depending on the card model):
 - TSX MRP P●●●K for SRAM memories
 - TSX MFP P●●●K/M for Flash EPROM memories
- Storage of the application and additional data, with 192 Kb to 7 Mb of application space and 7 Mb to 0 Kb of data storage space for additional data. The limit between these 2 spaces is configurable. The configurable cards are:
 - TSX MRP C●●●K/M for SRAM memories
 - TSX MCP C●●●K/M for Flash EPROM and SRAM memories
- Storage of additional data, provided by 4 Mb or 8 Mb TSX MRP F00●M SRAM memory cards

These cards use 2 technologies:

- Battery-backed SRAM

Used in particular in the creation and debugging phases for the application program.

These cards support:

- All of the application's transfer and modification services in online mode
- Additional data storage

The memory is backed up by a removable battery integrated into the PCMCIA card.

A second auxiliary battery is present to enable the main battery to be replaced without loss of data.

- Flash EPROM

Used once debugging of the application program is complete. It enables:

- Backup battery life restrictions to be overcome
- A global application transfer to be performed

If it is used, the application cannot be modified in online mode.

Program modification in online mode

Only extension cards on which the program is stored in SRAM memory (TSX MRP P●●●K/M. and TSX MRP C●●●K/M) support online program modification.

Users of processors fitted with memory extension cards who wish to modify or add program data in online mode must follow the two recommendations below:

- Structure the application program in a number of sections of a reasonable size
- Where possible, select one of the two extension cards recommended in the table below:

Premium processors Atrium slot PLCs	TSX P57 C● TSX P57 0●	TSX P57 1●	TSX P57 2● TSX PCI 57 2●	TSX P57 3● TSX PCI 57 3●	TSX P57 4●	TSX P57 5●
Cards recommended for program modification in online mode	All TSX MRP P●●●K and TSX MRP C●●●K/M/7	TSX MRP P224K/P384K, all TSX MRP C●●●K/M/7	All TSX MRP C●●●K/M/7		TSX MRP C002M, TSX MRP C003M, TSX MRP C007M	

Modicon Premium automation platform

PCMCIA memory extension cards

Unity

Reminder of the memory characteristics of processors and slot PLCs

Memory capacities without PCMCIA extension card (data, program, symbols, and constants in internal RAM memory):

Premium processors Atrium slot PLCs	TSX P57 C●0244/ 0244M	TSX P57 104/154M/ 1634M	TSX 57 204/ 2634M	TSX PCI 57 204M	TSX P57 254	TSX P57 304/ 3634M	TSX P57 354M	TSX PCI 57 354M	TSX P57 454/ 4634M	TSX P57 554/ 5634M
In internal RAM	96 Kb	96 Kb	160 Kb	160 Kb	192 Kb	192 Kb	208 Kb	208 Kb	320 Kb	640 Kb

Memory capacities with PCMCIA extension card(s) (data in internal RAM memory; program, symbols, constants, and data storage on PCMCIA card):

Premium processors Atrium slot PLCs	TSX P57 0244M	TSX P57 104/154M/ 1634M	TSX 57 204/ 2634M	TSX PCI 57 204M	TSX P57 254	TSX P57 304/ 3634M	TSX P57 354M	TSX PCI 57 354M	TSX P57 454/ 4634M	TSX P57 554/ 5634M
Data in internal RAM	96 Kb	96 Kb	160 Kb	160 Kb	192 Kb	192 Kb	208 Kb	208 Kb	440 Kb	896 Kb
PCMCIA extension (program, symbols and constants)	128 Kb	224 Kb	768 Kb	768 Kb	768 Kb	1792 Kb	1792 Kb	1792 Kb	2048 Kb	7168 Kb
Data storage on PCMCIA (1)	256 Kb		16,384 Kb, limited to 8192 Kb if the TSX MRP F008M PCMCIA card is used							

References

Premium TSX P57 C●/0●/1●/2●/3●/4●/5● processors and Atrium TSX PCI 57 2●/3● slot PLCs support the memory extension cards listed below.

There are two types of memory limit:

- One associated with the type of processor or slot PLC (see above)
- One associated with the model of PCMCIA memory card selected

The lowest of these two limits defines the memory capacity available to the user for his/her application.

PCMCIA memory extensions

Use on processor	Slot	Memory size		Reference	Weight kg
		Application	Data storage		
SRAM application memory extensions					
TSX 57 C● TSX 57 0●...57 4●	Slot 0	128 Kb	–	TSX MRP P128K	–
TSX PCI 57 2●/3●		224 Kb	–	TSX MRP P224K	–
		384 Kb	–	TSX MRP P384K	–
Configurable SRAM application/file memory extensions					
TSX 57 C● TSX 57 0●...57 4●	Slot 0	96...448 Kb	352...0 Kb	TSX MRP C448K	–
TSX PCI 57 2●/3●					
TSX 57 C● TSX 57 0●...57 5●	Slot 0	192...768 Kb	576...0 Kb	TSX MRP C768K	–
TSX PCI 57 2●/3●		192...1024 Kb	832...0 Kb	TSX MRP C001M	–
		192...1792 Kb	1600...0 Kb	TSX MRP C01M7	–
		192...2048 Kb	1856...0 Kb	TSX MRP C002M	–
		192...3072 Kb	2880...0 Kb	TSX MRP C003M	–
		192...7168 Kb	6976...0 Kb	TSX MRP C007M	–
Flash EPROM application memory extensions					
TSX 57 C● TSX 57 0●...57 4●	Slot 0	128 Kb	–	TSX MFP P128K	–
TSX PCI 57 2●/3●		224 Kb	–	TSX MFP P224K	–
		384 Kb	–	TSX MFP P384K	–
TSX 57 C● TSX 57 0●...57 5●	Slot 0	512 Kb	–	TSX MFP P512K	–
TSX PCI 57 2●/4●		1024 Kb	–	TSX MFP P001M▲	–
TSX 57 2●...57 5●,	Slot 0	2048 Kb	–	TSX MFP P002M▲	–
TSX PCI 57 2●/3●		4096 Kb	–	TSX MFP P004M▲	–
Flash EPROM and SRAM application/file memory extensions					
TSX 57 0●...57 4●,	Slot 0	224 Kb	256 Kb	TSX MCP C224K▲	–
TSX PCI 57 2●/3●					
TSX 57 C●	Slot 0	512 Kb	512 Kb	TSX MCP C512K▲	–
TSX 57 0●...57 5●,		2048 Kb	1024 Kb	TSX MCP C002M▲	–
TSX PCI 57 2●/3●					
SRAM file memory extensions					
TSX 57 2●...57 5●	Slot 0 or 1	–	4096 Kb	TSX MRP F004M▲	–
TSX PCI 57 2●/3●	(2)		8192 Kb	TSX MRP F008M	–
Flash EPROM backup card (3)					
TSX 57 C●	Slot 0	96 Kb	–	TSX MFP B096K	–
TSX 57 0●/1●					

Replacement parts

Description	Use	Type	Reference	Weight kg
Backup batteries	PCMCIA SRAM memory card	Main	TSX BAT M02	0.010
		Auxiliary	TSX BAT M03	–
Handle	PCMCIA memory card		TSX P CAP	0.030

(1) Intended for the storage of manufacturing recipes and production data. Capacity depending on PCMCIA card model.

(2) Memory extension card for file storage to be inserted into slot no. 0 if free, otherwise into slot no. 1. In the latter case, an application memory type or application memory and file storage type memory extension card is inserted into slot no. 0.

(3) This card is pre-loaded and can be used to update the application program on a Premium PLC without having to use a programming terminal (the entire program must be located in the internal RAM).