

Schneider Series Service Manual

TSX-P57-204M

1. Description

The Schneider Electric TSX-P57-204M is a processor designed for use in the Modicon series. This unit supports a versatile rack configuration and processes various types of I/O, making it suitable for complex automation tasks.

2. Specifications

Specification	Value
Manufacturer	Schneider Electric
Product	Line Modicon
Part	Number TSX-P57-204M
EAN	3595863761573
Weight	0.69 lbs (0.31 kg)
Product	Processor
Number	of Racks 16 (4/6/8 slots), 8 (12 slots)
Number	of Slots 96, 128, 64
Discrete	I/O Processor Capacity 1024
Analog	I/O Processor Capacity 80
Number	of Application Specific Channels 24
Number	of Process Control Channels 10 (up to 30 simple loops)
Communication	Module Processor Capacity 4
Memory	Description Internal RAM 160 kb
Application	Structure 1 master task, 1 fast task, 64 event tasks
Execution	Time Per Instruction 0.19 µs for Boolean
System	Overhead 0.3 ms
Current	Consumption 850 mA
Degree	of Protection IP20

3. Product Information

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System Overhead 0.3 ms	
Current Consumption 850 mA	
Degree of Protection IP20	
Description	
The TSX-P57-204M processor from Schneider Electric's Modicon series caters to a wide range of automation needs. This processor can handle 16 racks. Configuration options include 4, 6, or 8 slots per rack, or 8 racks with each having 12 slots. It supports a total of 96, 128, or 64 slots for various modules, catering to diverse control functions. The discrete I/O processing capacity is robust, allowing for 1024 discrete I/O points, while the analog I/O capacity supports 80 analog inputs or outputs. Additionally, there are 24 application-specific channels available, facilitating tailored operational requirements.	
In terms of process control, this unit can manage up to 10 channels and execute up to 30 simple control loops. The communication module capacity includes four processors, enhancing data exchange within an integrated environment. For optimal task management, the processor has a memory configuration of 160 kb of internal RAM. Its application structure comprises one master task, a fast task for critical operations, and up to 64 event tasks, optimizing processing efficiency.	
The processor has a rapid execution time, processing each Boolean instruction in just 0.19 microseconds, which allows for efficient and timely responses in automation scenarios. System overhead is minimal, measured at 0.3 milliseconds. Power consumption for the unit is 850 mA, and it weighs 0.52 kg, making it manageable for installation. The IP20 rating signifies protection against solid objects larger than 12 mm but does not provide protection from water, necessitating placement in appropriate environmental conditions.	
Range of Product	
Modicon Premium Automation platform	
Product or Component Type	
Unity processor	
Software Designation	
Unity Pro	
Complementary	
Number of racks	
16 4/6/8 slots	
8 12 slots	
Number of slots	
96	
128	
64	
Discrete I/O processor capacity	
1024 I/O	
Analogue I/O processor capacity	
80 I/O	
Number of application specific channel	
24	
Number of process control channel	
10 up to 30 simple loops	
Integrated connection type	
Non isolated serial link 2 female mini DIN RS485)19.2 kbit/s)	
Communication module processor capacity	
4	

1

Memory description

Internal RAM (with PCMCIA card) 160 kB data

Internal RAM (with PCMCIA card) 768 kB program

Internal RAM (without PCMCIA card) 160 kB program and data

PCMCIA card 16384 kB additional data storage

Maximum size of object areas

64 %KWi constant words located internal data

64 %MWi internal words located internal data

64 kB (DFB and EFB function blocks) unlocated internal data

64 kB (elementary and derived data) unlocated internal data

8132 %Mi located internal bits

Application structure

1 master task

1 fast task

64 event tasks

Execution time per instruction

0.19 μ s Boolean without PCMCIA card

0.25 μ s word or fixed-point arithmetic without PCMCIA card

1.75...2.6 μ s floating points with PCMCIA card

1.75...2.6 μ s floating points without PCMCIA card

0.21 μ s Boolean with PCMCIA card

0.42 μ s word or fixed-point arithmetic with PCMCIA card

Number of instructions per ms

2.53 Kinst/ms 65 % Boolean + 35 % fixed arithmetic with PCMCIA card

3.7 Kinst/ms 100 % Boolean with PCMCIA card

3.71 Kinst/ms 65 % Boolean + 35 % fixed arithmetic without PCMCIA card

4.76 Kinst/ms 100 % Boolean without PCMCIA card

System overhead

0.3 ms fast task

1 ms master task

Marking

CE

Local signalling

1 LED (green) for processor running (RUN)

1 LED (red) for I/O module or configuration fault (I/O)

1 LED (red) for processor or system fault (ERR)

1 LED (yellow) for activity on TER or AUX terminal port (TER)

Current consumption

850 mA 5 V DC

Module format

Double

Net Weight

1.15 lb(US) (0.52 kg)

Environment

Standards

89/336/EEC

CSA C22.2 No 213 Class I Division 2 Group A

92/31/EEC

IEC 61131-2

CSA C22.2 No 213 Class I Division 2 Group B

73/23/EEC

CSA C22.2 No 213 Class I Division 2 Group C

CSA C22.2 No 142

93/68/EEC

UL 508

CSA C22.2 No 213 Class I Division 2 Group D

Product Certifications

LR

DNV
RMRS
ABS
GL
RINA
BV
Ambient Air Temperature for Operation
32...140 °F (0...60 °C)
Ambient Air Temperature for Storage
-13...158 °F (-25...70 °C)
Relative Humidity
10...95 % without condensation for operation
5...95 % without condensation for storage
Operating altitude
0...6561.68 ft (0...2000 m)
Protective treatment
TC
IP Degree of Protection
IP20
Pollution degree
2