Schneider □□□ Series Service Manual

TSXP57453AM

1. Description

The TSXP57453AM from Schneider Electric is a double-format PLC module designed explicitly for the TSX Micro PLCs series. This controller provides a range of advanced features, boasting a fast task system overhead time of just 0.22 ms and a master task time of 1.15 ms, making it efficient for various applications.

2. Specifications

Specification	Value
Manufacturer	**Schneider Electric**
Product	**Line TSX Micro PLCs**
Part	**Number TSXP57453AM**
EAN	**3595863914382**
Weight	**1.00 lbs (0.45 kg)**
System	**Overhead 0.22 ms fast task, 1.15 ms master task**
Local	**Signalling LED (green) for processor running (RUN), 1 LED (red) for activity on Fipio bus (FIP), 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 the terminal port (TER)**
Current	**Consumption 1080 mA**
Module	**Format Double**
Environmental	**Standards RoHS compliance**
Processor	**Type Double-format PL7 processor**
Number	**of Racks Supports up to 16 racks with varying slot configurations**
Discrete	**I/O Capacity Up to 2040 I/O points**
Analog	**I/O Capacity Up to 256 I/O points**
Communication	**Options Includes Fipio manager, non-isolated serial links, CANopen, network modules, Fieldbus modules, and AS-Interface bus modules**
Memory	**Description Internal RAM (with PCMCIA card) 176 Kwords data, Internal RAM (without PCMCIA card) 96 Kwords prog**

3. Product Information

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Technical specifications for TSXP57453AM

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Product Line TSX Micro PLCs

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Analog I/O Capacity Up to 256 I/O points

Communication Options Includes Fipio manager, non-isolated serial links, CANopen, network modules, Fieldbus modules, and AS-Interface bus modules

Memory Description Internal RAM (with PCMCIA card) 176 Kwords data, Internal RAM (without PCMCIA card) 96 Kwords program and data, PCMCIA card 2048 Kwords additional data storage, PCMCIA card 992 Kwords program

Execution Time per Instruction 0.06 µs Boolean with PCMCIA card, 0.06 µs Boolean without PCMCIA card, 0.08 µs word or fixed-point arithmetic with PCMCIA card, 0.08 µs word or fixed-point arithmetic without PCMCIA card, 1.7 µs floating points with PCMCIA card, 1.7 µs floating points without PCMCIA card

Number of Instructions per ms 13.82 Kinst/ms 100% Boolean with PCMCIA card, 13.82 Kinst/ms 100% Boolean without PCMCIA card, 8.8 Kinst/ms 65% Boolean + 35% fixed arithmetic with PCMCIA card, 8.8 Kinst/ms 65% Boolean + 35% fixed arithmetic without PCMCIA card

Protective Treatment TC (ensures durability and reliability in various industrial environments)

Description

The TSXP57453AM model, a member of Schneider Electric's TSX Micro PLC series, is a versatile and efficient programmable logic controller. It features a system overhead of 0.22 milliseconds for fast tasks and 1.15 milliseconds for master tasks, facilitating rapid processing capabilities.

Local signaling includes a green LED indicating the processor's run status, several red LEDs signaling Fipio bus activity, I/O module faults, and processor/system errors, and a yellow LED for terminal port activity. Consuming 1080 mA of current, this double-format PL7 processor module is engineered to meet demanding control standards.

Designed with flexibility in mind, the TSXP57453AM can support up to 16 racks and can handle a total of 2040 discrete I/O points and 256 analog I/O points, making it valuable for complex automation tasks. Communication interfaces are comprehensive, including options for Fipio management, non-isolated serial links, CANopen, and multiple bus modules.

In terms of memory, the module features internal RAM that varies based on PCMCIA card presence: 176 K words for data and 96 K words for program and data without the card. If utilized, the PCMCIA card adds 2048 Kwords for additional data storage and 992 Kwords for programming requirements.

Instruction execution is efficient, with Boolean operations taking 0.06 microseconds and fixed-point arithmetic tasks requiring about 0.08 microseconds. Floating-point calculations take longer, at 1.7 microseconds. The module can process up to 13.82 K instructions per millisecond under 100% Boolean conditions and 8.8 K instructions with a mixed Boolean and fixed arithmetic operation.

Moreover, with a protective treatment rating of TC, this PLC module is designed to endure the rigors in industrial settings, ensuring longevity and reliable performance over time.

Range of Product

Modicon Premium Automation platform

Product or Component Type

Double-format PL7 processor

Software Designation

PL7 Junior/Pro

Complementary

Number of racks

16 4/6/8 slots

8 12 slots

Number of slots

96

64

128

Discrete I/O processor capacity

2040 I/O

Analogue I/O processor capacity

256 I/O

Number of application specific channel

64

Number of process control channel

20 up to 60 simple loops

Integrated connection type

Fipio manager (127 agents) SUB-D 9

Non isolated serial link 2 female mini DIN19.2/115 kbit/s)

Communication module processor capacity

2 fieldbus modules (1 if CANopen used)

8 AS-Interface bus modules

1 CANopen

4 network module

Memory description

Internal RAM (with PCMCIA card) 176 Kwords data

Internal RAM (without PCMCIA card) 96 Kwords program and data

PCMCIA card 2048 Kwords additional data storage

PCMCIA card 992 Kwords program

Maximum size of object areas

30.5 %MWi internal words located internal data

32 %KWi constant words located internal data

32768 %Mi located internal bits

Application structure

64 event tasks

1 fast task

1 master task

Execution time per instruction

0.06 µs Boolean with PCMCIA card

0.06 µs Boolean without PCMCIA card

0.08 µs word or fixed-point arithmetic with PCMCIA card

0.08 µs word or fixed-point arithmetic without PCMCIA card

1.7 µs floating points with PCMCIA card

1.7 µs floating points without PCMCIA card

Number of instructions per ms

13.82 Kinst/ms 100 % Boolean with PCMCIA card

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

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System overhead

0.22 ms fast task

1.15 ms master task

Marking

CE

Local signalling

1 LED (green) for processor running (RUN)

1 LED (red) for activity on Fipio bus (FIP)

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 the terminal port (TER)

Current consumption

1080 mA 5 V DC

Module format

Double

Net Weight

1.23 lb(US) (0.56 kg)

Environment

Standards

73/23/EEC

93/68/EEC

CSA C22.2 No 142

92/31/EEC

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

UL 508

IEC 61131-2

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

89/336/EEC

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

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

Product Certifications

BV

ABS

RINA

RMRS

DNV

GL

LR

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

Ordering and shipping details

Category

US1PC2222558

Discount Schedule

PC22

GTIN

3595863914382

Returnability

No

Packing Units

Unit Type of Package 1

PCE

Nbr. of units in pkg.

1

Package 1 Height

3.7 in (9.5 cm)

Package 1 Width

7.09 in (18.0 cm)

Package 1 Length

10.2 in (26.0 cm)

Package weight(Lbs)

22.9 oz (648.0 g)