

Schneider Series Service Manual

TSX3721001

1. Description

The Schneider Electric TSX3721001 is a controller module from the TSX Micro PLCs series equipped with a real-time clock. It features substantial memory capacities, including internal RAM for data and program storage and flash memory. This module supports complex applications and various communication protocols, ensuring flexibility in system design.

2. Specifications

Specification	Value
Manufacturer	Schneider Electric
Product	Line TSX Micro PLCs
Part	Number TSX3721001
EAN	3389110580518
Weight	1.00 lbs (0.45 kg)
Realtime	Clock Yes
Memory	Description Internal RAM with 20 Kwords data, Internal RAM (with PCMCIA card) with 128 Kwords program and data, Internal RAM with 128 Kwords data storage, and Flash with 15 Kwords data
Max.	Size of Object Areas 256 %Mi, 1 %MWi for internal words, 128 %KWi for constant words
Execution	Time for 1 K Instructions 5.88 ms for 100% Boolean without a PCMCIA card, 0.27 ms for 65% Boolean and 35% numerical without a PCMCIA card, 4 ms for 100% Boolean with a PCMCIA card, 0.266 ms for 65% Boolean and 35% numerical with a PCMCIA card
Application	Structure 1 fast task, 1 master task, and 16 event tasks
System	Overhead 1.6 ms for master task
Protection	Type Overload protection, Short-circuit protection
Total	Useful Secondary Power 16 W
Electromagnetic	Compatibility Electrostatic discharge per IEC 1000-4-2 level 3, Electromagnetic field immunity test

3. Product Information

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Technical specifications for TSX3721001

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Product Line TSX Micro PLCs

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EAN 3389110580518

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Realtime Clock Yes

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Application Structure 1 fast task, 1 master task, and 16 event tasks

System Overhead 1.6 ms for master task

Protection Type Overload protection, Short-circuit protection

Total Useful Secondary Power 16 W

Electromagnetic Compatibility Electrostatic discharge per IEC 1000-4-2 level 3, Electromagnetic field immunity test per IEC 1000-4-3 level 3, Resistance to fast transient per IEC 1000-4-4 level 3, Immunity to impulse waves per IEC 1000-4-5, Damped oscillatory wave per IEC 1000-4-12, Immunity to electromagnetic interference per IEC 61131-2

Primary Voltage 100-240 V AC (90-264 V AC)

Input Current 2 mA, < 60 A

Immunity to Microbreaks < 20 ms

Output Current 0.5 A

Number of Slots 3

Integrated Connection Type 1 serial link (TER/AUX) Uni-Telway 19.2 kbit/s, 1 Modbus RTU 19.2 kbit/s

Description

The TSX3721001 model from Schneider Electric's TSX Micro PLCs series operates as a controller module with a dedicated real-time clock. Its memory architecture is robust, consisting of internal RAM capable of 20 Kwords for data management, along with capacity expansions available when utilizing a PCMCIA card, allowing for 128 Kwords of program and data storage. There is also an additional 15 Kwords in flash memory for storing information.

Object areas are designed to accommodate up to 256 %Mi, with 1 %MWi allocated for internal data storage and 128 %KWi reserved for constant values. Execution times for processing instructions are efficient, offering 5.88 milliseconds for 100% Boolean operations without a PCMCIA card while supporting a reduced 0.266 milliseconds when using one, depending on the task's complexity.

The application structure consists of one fast task, one master task, and up to 16 event tasks, allowing versatile programming capabilities. The master task executes with a system overhead of 1.6 milliseconds, ensuring rapid response and reliability during operation. The device has an IP30 rating and complies with multiple electromagnetic compatibility standards to protect against interference and electrical noise.

Operating under a primary voltage range of 100 to 240 V AC, the controller draws an input current of only 2 mA while sustaining a maximum output current of 0.5 A. It is designed to withstand microbreaks of less than 20 milliseconds, improving its resilience. The unit features three integration slots, supporting a serial link with Uni-Telway at 19.2 kbit/s and Modbus RTU at the same rate, facilitating effective communication in automation systems while enhancing connectivity options.

Range of product

Modicon TSX Micro automation platform

Product or component type

Modular base controller

Primary voltage

100...240 V 90...264 V AC

Input current

2 mA 60 A

Immunity to microbreaks

20 ms

Output current

0.5 A

Complementary

Number of slots

3

Integrated connection type

1 serial link (TER/AUX) Uni-Telway 19.2 kbit/s

1 Modbus Modbus RTU 19.2 kbit/s

Realtime clock

With

Memory description

Flash 15 Kwords data

Internal RAM 20 Kwords data

Internal RAM (with PCMCIA card) 128 Kwords program and data

Internal RAM 128 Kwords data storage

Maximum size of object areas

128 %KWi constant words

256 %Mi

1 %MWi internal words

Execution time per instruction

0.13 μ s Boolean without PCMCIA card

4.5 μ s arithmetic REAL floating without PCMCIA card

0.19 μ s Boolean with PCMCIA card

4.5 μ s arithmetic REAL floating with PCMCIA card

Execution time for 1 Kinstruction

5.88 100 % Boolean without PCMCIA card

0.27 65 % Boolean and 35 % numerical without PCMCIA card

4 100 % Boolean with PCMCIA card

0.266 65 % Boolean and 35 % numerical with PCMCIA card

Application structure

16 event tasks

1 master task

1 fast task

System overhead

1.6 ms master task

Protection type

Overload protection

Short-circuit

Total useful secondary power

16 W

Electromagnetic compatibility

Electrostatic discharge IEC 1000-4-2 level 3

Electromagnetic field immunity test IEC 1000-4-3 level 3

Resistance to fast transient IEC 1000-4-4 level 3

Immunity to impulse waves IEC 1000-4-5

Damped oscillatory wave IEC 1000-4-12

Immunity to electromagnetic interference IEC 61131-2

Environment

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 operation

Operating altitude

0...2000 m

Width

13.4 in (341.4 mm)

Height

5.9 in (151 mm)

Depth

6.0 in (152 mm)

Net weight

3.79 lb(US) (1.72 kg)