

Schneider Series Service Manual

TSXAEY1614

1. Description

The TSXAEY1614, part of Schneider Electric's TSX Micro PLC series, features 16 analog input channels, allowing for precise thermocouple and voltage measurements. With a conversion resolution of 16 bits, the module effectively monitors a variety of input types, supporting multiple thermocouple standards alongside voltage inputs, ensuring versatile application capability.

2. Specifications

Specification	Value
Manufacturer	Schneider Electric
Product	Line TSX Micro PLCs
Part	Number TSXAEY1614
EAN	3389110876321
Weight	1.00 lbs (0.45 kg)
Analog	Input Channels 16 high-level inputs
Analog/Digital	Conversion 16 bits
Input	Types Thermocouple (B, E, J, K, L, N, R, S, T, U), Voltage (+/- 80 mV)
Nominal	Read Cycle Time 70 ms per channel
Measurement	Error Varies by thermocouple type, e.g., 0.8°C for thermocouple E at 25°C
Isolation	1000 Vrms between channels and bus, 1000 Vrms between channels and ground
Common	Mode Voltage 250 V AC or 280 V AC between channels, 250 V DC between channels and earth
Electrical	Connection 2 connectors SUB-D 25
Input	Overvoltage Protection -15 to 15 V at state 0, -30 to 30 V at state 1
Current	Consumption 300 mA at 5 V DC
Module	Format Standard
Operating	Temperature 0 to 60°C
Storage	Temperature -25 to 70°C
Relative	Humidity 10 to 95% without condensation for operation
Range	of Product
Modicon	Premium Automation Platform
Product	or Component Type
Analog	input module
Analog	

3. Product Information

The TSXAEY1614, part of Schneider Electric's TSX Micro PLC series, features 16 analog input channels, allowing for precise thermocouple and voltage measurements. With a conversion resolution of 16 bits, the module effectively monitors a variety of input types, supporting multiple thermocouple standards alongside voltage inputs, ensuring versatile application capability.

Technical specifications for TSXAEY1614

Manufacturer Schneider Electric

Product Line TSX Micro PLCs

Part Number TSXAEY1614

EAN 3389110876321

Weight 1.00 lbs (0.45 kg)

Analog Input Channels 16 high-level inputs

Analog/Digital Conversion 16 bits

Input Types Thermocouple (B, E, J, K, L, N, R, S, T, U), Voltage (+/- 80 mV)

Nominal Read Cycle Time 70 ms per channel

Measurement Error Varies by thermocouple type, e.g., 0.8°C for thermocouple E at 25°C

Isolation 1000 Vrms between channels and bus, 1000 Vrms between channels and ground

Common Mode Voltage 250 V AC or 280 V AC between channels, 250 V DC between channels and earth

Electrical Connection 2 connectors SUB-D 25

Input Overvoltage Protection -15 to 15 V at state 0, -30 to 30 V at state 1

Current Consumption 300 mA at 5 V DC

Module Format Standard

Operating Temperature 0 to 60°C

Storage Temperature -25 to 70°C

Relative Humidity 10 to 95% without condensation for operation

Range of Product

Modicon Premium Automation platform

Product or Component Type

Analog input module

Analogue input number

16

Analogue input type

Thermocouple thermocouple B

Thermocouple thermocouple E

Thermocouple thermocouple J

Thermocouple thermocouple K

Thermocouple thermocouple L

Thermocouple thermocouple N

Thermocouple thermocouple R

Thermocouple thermocouple S

Thermocouple thermocouple T

Thermocouple thermocouple U

Voltage +/- 80 mV

Analog/digital conversion

16 bits

Complementary

Nominal read cycle time

70 ms per channel

Measurement error

0.8 °C thermocouple E 25 °C

0.9 °C thermocouple J 25 °C

0.9 °C thermocouple L 25 °C

1 °C thermocouple K 25 °C

1 °C thermocouple T 25 °C

1 °C thermocouple U 25 °C

1.1 °C thermocouple N 25 °C

1.2 °C thermocouple E 0...60 °C

1.3 °C thermocouple T 0...60 °C

1.3 °C thermocouple U 0...60 °C

1.4 °C thermocouple J 0...60 °C

1.4 °C thermocouple L 0...60 °C

www.sparetechplc.com

1.6 °C thermocouple K 0...60 °C
1.7 °C thermocouple N 0...60 °C
2.1 °C thermocouple R 25 °C
2.2 °C thermocouple S 25 °C
2.4 °C thermocouple R 0...60 °C
2.5 °C thermocouple B 25 °C
3.7 °C thermocouple S 0...60 °C
4 °C thermocouple B 0...60 °C
Isolation between channels and bus
1000 Vrms
Isolation between channels and ground
1000 Vrms
Common mode between channels
250 V AC or 280 V AC
Common mode between channels and earth
250 V DC
Input overvoltage protection
-15...15 V at state 0 250 Ohm
-30...30 V at state 1 250 Ohm
Electrical connection
2 connectors SUB-D 25
Overcurrent
-30...30 mA at state 1 250 kOhm
Marking
CE
Current consumption
300 mA 5 V DC
Module format
Standard
Net Weight
0.77 lb(US) (0.35 kg)
Environment
Standards
NFC 42-330
IEC 1131
DIN 43710
IEC 751
DIN 43760
IEC 584
Product Certifications
DNV
RMRS
LR
ABS
RINA
BV
GL
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

www.sparetechplc.com

IP20
Pollution degree
2
Ordering and shipping details
Category
22558-TSX PREMIUM, ATRIUM & PL7 PRO
Discount Schedule
PC22
GTIN
3389110876321
Returnability
No
Country of origin
FR
Packing Units
Unit Type of Package 1
PCE
Nbr. of units in pkg.
1
Package 1 Height
2.2 in (5.5 cm)
Package 1 Width
7.09 in (18.0 cm)
Package 1 Length
10.2 in (26.0 cm)
Package weight(Lbs)
15.8 oz (447.0 g)
Description

The Schneider Electric TSXAEY1614 is a sophisticated analog input module belonging to the TSX Micro PLCs series. This unit is equipped with 16 high-level input channels, delivering high-resolution measurements with a capability of 16-bit analog-to-digital conversion. The input types supported include various thermocouples such as B, E, J, K, L, N, R, S, T, and U, in addition to voltage measurements of +/- 80 mV, making it versatile for different industrial applications.

Operational efficiency is enhanced with a nominal read cycle time of 70 ms for each channel, allowing for timely data retrieval. Measurement error tolerance varies between different thermocouple types; for example, thermocouple E has an error of 0.8°C at 25°C, ensuring accuracy based on the type of sensor utilized. The module features robust isolation at 1000 Vrms, effectively separating both between channels and the bus, as well as between channels and the ground.

The TSXAEY1614 also provides protection against common mode voltages, managing up to 250 V AC or 280 V AC between channels, and 250 V DC relative to the earth connection. Electrical connections are established through two SUB-D 25 connectors, which allow for straightforward wiring. Input overvoltage protection ranges from -15 to 15 V at state 0 and -30 to 30 V when in state 1, enhancing operational safety.

In terms of power consumption, this module requires 300 mA at a 5 V DC supply. It exhibits a standard module format, weighing 0.35 kg, making it suitable for various installations. Operating temperature specifications range from 0 to 60°C, while storage temperatures can fall between -25 to 70°C. Moreover, the device supports a relative humidity range of 10 to 95%, provided condensation is absent during operation. This combination of reliable performance characteristics makes the TSXAEY1614 a valuable asset in diverse automation systems.