

Schneider TSXAEY414 Manual

Brand	Schneider
Product Series	Schneider
Product Type	Analog input module

Description

The TSXAEY414 from Schneider Electric is a TSX Micro PLC equipped for diverse input types. It supports a range of measurements and features comprehensive voltage isolation, ensuring high operational integrity.

Technical specifications for TSXAEY414

Manufacturer Schneider Electric

Product Line TSX Micro PLCs

Part Number TSXAEY414

EAN 3389110756951

Weight 1.00 lbs (0.45 kg)

Common Mode Voltage 415 V AC or 200 V DC between channels, 240 V AC or 110 V DC between channels and earth

Isolation 2830 Vrms between channels and bus, 1750 Vrms between channels and ground

Measurement Error Varies by input type, e.g., 0.13% of full scale for 0-400 Ohm at 25°C

Input Types Current (4-20 mA), Voltage (+/- 10 V, 0-10 V, 0-5 V, 1-5 V), Thermocouple (B, E, J, K, L, N, R, S, T, U), Resistor (0-400 Ohm, 0-3850 Ohm), Temperature probe (Pt 100, Pt 1000, Ni 1000)

Nominal Read Cycle Time 550 ms

Analog/Digital Conversion 16 bits

Analog Input Channels 4 high-level inputs

Relative Humidity 10 to 95% without condensation for operation

Storage Temperature -25 to 70°C

Operating Temperature 0 to 60°C

Current Consumption 660 mA at 5 V DC

Module Format Standard

Electrical Connection Screw terminal block

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

Description

The Schneider Electric TSXAEY414 module is part of the TSX Micro PLCs series, designed to perform well in a variety of measurement applications. It manages common mode voltages reaching 415 V AC or 200 V DC across channels and achieves significant isolation with 2830 Vrms between channels and bus. This assistance provides operational safety in various environments.

In terms of performance metrics, the measurement error fluctuates based on the selected input type. For instance, at 25°C, the error can achieve accuracy within 0.13% for a 0-400 Ohm measurement. Input options include a wide array of types: current inputs from 4-20 mA, voltage inputs covering +/- 10 V, 0-10 V, 0-5 V, and 1-5 V, as well as various thermocouple types such as B, J, K, and others. There are also options for resistive inputs and temperature probes, including Pt 100 and Pt 1000.

The module performs a nominal read cycle time of 550 ms and employs a 16-bit conversion for more precise analog/digital transitioning. It features four high-level analog input channels, enabling versatile application use. Additionally, the TSXAEY414 requires operating temperatures between 0 and 60°C and can be stored safely at temperatures as low as -25°C or as high as 70°C.

When it comes to environmental performance, it is built to operate under relative humidity levels of 10% to 95%, avoiding

condensation. The current consumption for operation is 660 mA at 5 V DC, ensuring efficient energy use. The modular standard format supports easy installation. The device connects through a screw terminal block for simple wiring.

For its protection capabilities, it includes input overvoltage protection that accommodates -30 to 30 V during state 1 and -15 to 15 V for state 0, protecting against possible voltage spikes that may compromise functional integrity.

Range of Product

Modicon Premium Automation platform

Product or Component Type

Analog input module

Input level

Low level

Analogue input number

4

Analogue input type

Current 4...20 mA

Voltage +/- 10 V

Voltage 0...10 V

Voltage 0...5 V

Voltage 1...5 V

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

Resistor 0...3850 Ohm

Resistor 0...400 Ohm

Temperature probe Ni 1000 2 wires

Temperature probe Ni 1000 4 wires

Temperature probe Pt 100 2 wires

Temperature probe Pt 100 4 wires

Temperature probe Pt 1000 2 wires

Temperature probe Pt 1000 4 wires

Voltage - 13...63 mV

Voltage +/- 5 V

Analog/digital conversion

16 bits

Complementary

Nominal read cycle time

550 ms

Measurement error

0.13 % of full scale 0...400 Ohm 25 °C

0.16 % of full scale 0...10 V 25 °C

0.19 % of full scale - 13...63 mV 25 °C

0.22 % of full scale 0...3850 Ohm 25 °C

0.22 % of full scale 0...5 V 25 °C

0.27 % of full scale +/- 10 V 25 °C
0.27 % of full scale +/- 5 V 25 °C
0.27 % of full scale 0...400 Ohm 0...60 °C
0.27 % of full scale 1...5 V 25 °C
0.39 % of full scale 0...10 V 0...60 °C
0.44 % of full scale - 13...63 mV 0...60 °C
0.45 % of full scale 0...5 V 0...60 °C
0.45 % of full scale 4...20 mA 25 °C
0.48 % of full scale 0...3850 Ohm 0...60 °C
0.5 % of full scale +/- 10 V 0...60 °C
0.5 % of full scale +/- 5 V 0...60 °C
0.56 % of full scale 1...5 V 0...60 °C
0.86 % of full scale 4...20 mA 0...60 °C
1.5 °C thermocouple B external 25 °C
1.5 °C thermocouple E external 25 °C
1.5 °C thermocouple T external 25 °C
1.5 °C thermocouple U external 25 °C
1.8 °C thermocouple J external 25 °C
10.5 °C thermocouple K internal 0...60 °C
11 °C thermocouple R internal 0...60 °C
12 °C thermocouple S internal 0...60 °C
2 °C thermocouple L external 25 °C
2 °C thermocouple N external 25 °C
2.3 °C thermocouple K external 25 °C
3.1 °C thermocouple U external 0...60 °C
3.2 °C thermocouple E external 0...60 °C
3.2 °C thermocouple R external 25 °C
3.2 °C thermocouple T external 0...60 °C
3.4 °C thermocouple S external 25 °C
3.5 °C thermocouple B external 0...60 °C
3.5 °C thermocouple B internal 25 °C
3.8 °C thermocouple J external 0...60 °C
4.1 °C thermocouple L external 0...60 °C
4.3 °C thermocouple N external 0...60 °C
4.7 °C thermocouple K external 0...60 °C
5.4 °C thermocouple U internal 25 °C
6 °C thermocouple N internal 25 °C
6 °C thermocouple R internal 25 °C
6.1 °C thermocouple E internal 25 °C
6.6 °C thermocouple S internal 25 °C
6.6 °C thermocouple T internal 25 °C
7.3 °C thermocouple J internal 25 °C
7.3 °C thermocouple U internal 0...60 °C
7.5 °C thermocouple L internal 25 °C
7.7 °C thermocouple R external 0...60 °C
7.8 °C thermocouple K internal 25 °C
8.1 °C thermocouple B internal 0...60 °C
8.1 °C thermocouple E internal 0...60 °C
8.5 °C thermocouple S external 0...60 °C
8.7 °C thermocouple N internal 0...60 °C
8.8 °C thermocouple T internal 0...60 °C

9.5 °C thermocouple J internal 0...60 °C

9.8 °C thermocouple L internal 0...60 °C

1 °C Ni 1000 25 °C

1.2 °C Pt 100 25 °C

2 °C Ni 1000 0...60 °C

2.4 °C Pt 100 0...60 °C

2.5 °C Pt 1000 25 °C

5 °C Pt 1000 0...60 °C

Isolation between channels and bus

1780 Vrms

Isolation between channels and ground

1780 Vrms

Isolation between channels

2830 Vrms

Common mode between channels

415 V AC or 200 V DC

Common mode between channels and earth

240 V AC or 110 V DC

Input overvoltage protection

-15...15 V at state 0 250 Ohm

-30...30 V at state 1 250 Ohm

Electrical connection

Screw terminal block

Overcurrent

-30...30 mA at state 1 250 kOhm

Marking

CE

Current consumption

660 mA 5 V DC

Module format

Standard

Net Weight

0.71 lb(US) (0.32 kg)

Environment

Standards

DIN 43760

IEC 584

IEC 751

DIN 43710

NFC 42-330

IEC 1131

Product Certifications

DNV

BV

ABS

RMRS

RINA

GL

LR

Ambient Air Temperature for Operation

32...140 °F (0...60 °C)

www.AutoDCSTech.com

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**

22558-TSX PREMIUM, ATRIUM & PL7 PRO

Discount Schedule

PC22

GTIN

3389110756951

Returnability

No

Country of origin

FR

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