Schneider □□□ Series Service Manual

140AVI03000C

1. Description

The Schneider Electric 140AVI03000C is an analog input module designed for use with the Modicon Quantum series. It provides eight differential analog inputs, facilitating precise data acquisition in automated systems.

2. Specifications

Specification	Value
Manufacturer	**Schneider Electric**
Product	**Line Modicon Quantum**
Part	**Number 140AVI03000C**
EAN	**3595861136151**
Product	**Analog Input Module**
Analog	**Input Number 8**
Input	**Type Differential**
Addressing	**Requirement 9 Input Words**
Absolute	**Max. Input 50 V DC**
Input	**Impedance 250 Ohm**
Isolation	**between Channels and Bus 500 Vrms**
Update	**Time 10 ms**
Marking	**CE**
Local	**Signalling Through LED**
Bus	**Current Requirement 280 mA**
Power	**Dissipation 2.2 W**
Resistance	**to Electrostatic Discharge 4 kV / 8 kV**
Resistance	**to Electromagnetic Fields 10 V/m**

3. Product Information

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Technical specifications for 140AVI03000C

Manufacturer Schneider Electric

Product Line Modicon Quantum

Part Number 140AVI03000C

EAN 3595861136151

Product Analog Input Module

Analog Input Number 8

Input Type Differential

Addressing Requirement 9 Input Words

Absolute Max. Input 50 V DC

Input Impedance 250 Ohm

Isolation between Channels and Bus 500 Vrms

Update Time 10 ms

Marking CE

Local Signalling Through LED

Bus Current Requirement 280 mA

Power Dissipation 2.2 W

Resistance to Electrostatic Discharge 4 kV / 8 kV

Resistance to Electromagnetic Fields 10 V/m

Description

The 140AVI03000C module from Schneider Electric functions as an analog input unit within the Modicon Quantum series. It is equipped with eight differential analog inputs, which are fundamental for accurate voltage measurements in process automation. This module necessitates nine input words for addressing, making integration into systems straightforward. The module can handle an absolute maximum input voltage of up to 50 volts DC. Each input has a specified impedance of 250 Ohm, which allows for optimal signal processing. Additionally, isolation between each channel and the bus is rated at 500 Vrms, ensuring effective noise and interference reduction. The update rate for the inputs is recorded at 10 ms, providing efficient response times essential for real-time applications.

Local visual indication is accomplished through built-in LED signaling, allowing for quick status checks without additional equipment. The device demands a bus current of 280 mA for its operation and exhibits a power dissipation level of 2.2 watts. Weighing 0.3 kg, this compact module can fit into various control systems.

In terms of durability, the 140AVI03000C is resistant to electrostatic discharge, rated at both 4 kV and 8 kV, alongside electromagnetic field resistance of up to 10 V/m. This ensures reliability and stability in industrial environments where electrical noise and fluctuations are prevalent. Overall, the Schneider Electric 140AVI03000C analog input module is crafted for precise data handling and robust performance.

Range of Product

Modicon Quantum automation platform

Product or Component Type

Analogue input module

Type of filter

Single pole low pass - 3 dB at 847 Hz +/- 20 %

Complementary

Analogue input number

8

Input type

Differential

Addressing requirement

9 input words

Analogue input type

Bipolar current 20 mA

Bipolar voltage +/- 10 V

Bipolar voltage +/- 5 V

Unipolar current 0...20 mA

Unipolar voltage 0...10 V

Unipolar voltage 0...5 V

Analogue input resolution

16 bits +/- 10 V

16 bits +/- 5 V

16 bits 0...10 V

16 bits 0...20 mA

16 bits 0...5 V

16 bits 20 mA

Linear measuring range

(input range) x 1.024 V

(input range) x 1.024 mA

Absolute maximum input

50 V DC

25 mA

Input impedance

> 20 Ohm voltage

250 MOhm +/- 0.03 %

Absolute accuracy error

+/- 0.03 %

+/- 0.05 % of full scale maximum

Linearity error

+/- 0.008 %

Accuracy drift according to temperature

+/- 0.0015 % of full scale/°C

<= 0.004 % of full scale /°C

Common mode rejection

> - 80 dB 60 Hz

Isolation between channels and bus

500 Vrms AC 60 s

750 V DC

Isolation between channels

135 Vrms AC

200 V DC

Update time

10 ms

Fault type

Broken wire 4...20 mA

Overtacking scale 1...5 V

Marking

CE

Local signalling

1 LED (green) for bus communication is present (Active)

1 LED (red) for external fault

8 LEDs (green) for channel is turned on

8 LEDs (red) for channel fault

Bus current requirement

280 mA

Power dissipation in W

2.2 W

Module format

Standard

Net Weight

0.7 lb(US) (0.3 kg)

Environment

Protective treatment

Conformal coating Humiseal 1A33

Standards

UL 508

CSA C22.2 No 142

Product Certifications

FM Class 1 Division 2

cUL

Resistance to electrostatic discharge

4 kV contact IEC 801-2

8 kV on air IEC 801-2

Resistance to electromagnetic fields

9.1 V/m (10 V/m) 80...1000 MHz IEC 801-3

Ambient Air Temperature for Operation

32...140 °F (0...60 °C)

Ambient Air Temperature for Storage

-40...185 °F (-40...85 °C)

Relative Humidity

95 % without condensation

Operating altitude

<= 16404.2 ft (5000 m)

Ordering and shipping details

Category

US1PC2118155

Discount Schedule

PC21

GTIN

3595861136151

Returnability

No

Packing Units

Unit Type of Package 1

PCE

Nbr. of units in pkg.

1

Package 1 Height

2.0 in (5.0 cm)

Package 1 Width

6.5 in (16.5 cm)

Package 1 Length

12.2 in (31.0 cm)

Package weight(Lbs)

16.7 oz (474.0 g)