

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

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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, and provides 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
Overtaking 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

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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)

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