

Schneider Series Service Manual

140AIO33000

1. Description

The Schneider Electric 140AIO33000 is an intrinsically safe analog output module from the Modicon Quantum series. It supports 8 outputs with an accuracy of $\pm 0.2\%$ at a reference temperature of 25°C.

2. Specifications

Specification	Value
Manufacturer	Schneider Electric
Product	Type Intrinsically Safe Analog Output Module, Modicon Quantum
Product	Line Modicon Quantum
Part	Number 140AIO33000
EAN	3595860026071
Weight	2.00 lbs (0.91 kg)
Number	of Outputs 8
Accuracy	$\pm 0.2\%$ of full scale at 25°C
Maximum	Loop Resistance 500 Ohm
Accuracy	Drift 40 ppm/°C
Protection	Type Internal Fuse
Linearity	± 1 LSB
Marking	CE, II1 G/D-EEx ia IIC
Power	Dissipation 12.5 W
Update	Time 4 ms
Bus	Current Requirement 2.5 A
Setting	Time 1 ms to $\pm 0.1\%$ of final value
Module	Format Standard

3. Product Information

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Technical specifications for 140AIO33000

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Product Type Intrinsically Safe Analog Output Module, Modicon Quantum

Product Line Modicon Quantum

Part Number 140AIO33000

EAN 3595860026071

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Accuracy $\pm 0.2\%$ of full scale at 25°C

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Accuracy Drift 40 ppm/°C

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Linearity ± 1 LSB

Marking CE, II1 G/D-EEx ia IIC

Power Dissipation 12.5 W

Update Time 4 ms

Bus Current Requirement 2.5 A

Setting Time 1 ms to $\pm 0.1\%$ of final value

Module Format Standard

Range of product

Modicon Quantum automation platform

Product or component type

Intrinsically safe analog output module

Software designation

Concept V2.2 and above

ProWORX

Unity Pro

Complementary

Product destination

In conjunction with products for zone 20, 21 or 22

Analogue output number

8

Analogue output range

0...20 mA 0 to 20000 points

0...25 mA 0 to 25000 points

4...20 mA 15 bits, 0 to 16000 points

4...20 mA 15 bits, 0 to 4095 points

Maximum loop resistance

500 Ohm

Absolute accuracy error

$\pm 0.2\%$ of full scale 77 °F (25 °C)

Accuracy drift according to temperature

40 ppm/°C

≤ 70 ppm/°C

Linearity

± 1 LSB

Update time

4 ms

Setting time

1 ms to $\pm 0.1\%$ of the final value

Isolation between channels and bus

1780 Vrms 60 s AC

Fault type

Open circuit 4...20 mA

Power dissipation in W

12.5 W

Hot swapping fallback

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Not allowed per intrinsic safety standards

Protection type

Internal fuse

Marking

CE

II1 G/D-EEEx ia IIC

Bus current requirement

2.5 A

Module format

Standard

Net weight

0.7 lb(US) (0.3 kg)

Environment

Standards

CSA C22.2 No 142

UL 508

EN 50020

EN 50014

Directive ATEX 94/9/EC

EN 50039

EN 50281-1-1

EN 50284

Dust zone

Outside zone

Product certifications

hazardous location class 1, division 1 groups A, B, C

SIRA 02ATEX2345X

C-Tick.1

FM Class 1 Division 2

Resistance to electrostatic discharge

4 kV contact IEC 801-2

8 kV on air IEC 801-2

Resistance to electromagnetic fields

9.1 V/d (10 V/m) 80...2000 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

<= 5000 m

Description

The 140AIO33000 module from Schneider Electric is an intrinsically safe analog output module, specifically designed for application within the Modicon Quantum series. This component encompasses 8 output channels, facilitating efficient control in various systems. With an accuracy rating of $\pm 0.2\%$ of full scale, the module offers reliable data transmission, especially when calibrated at 25 °C. It showcases a maximum loop resistance of 500 Ohm.

Temperature fluctuations can affect the performance of electronic devices. However, the accuracy drift for this module is limited to 40 ppm/°C, ensuring that outputs remain stable across temperature changes. Adding to its safety features, an internal fuse safeguards the module against potential overloads.

This unit demonstrates linearity within ± 1 Least Significant Bit (LSB) and is marked as compliant with CE and II1 G/D-EEEx ia IIC standards. Expected power dissipation during operation is 12.5 W while its lightweight design keeps the total weight to just 0.30 kg. The module features a rapid response time with an update period of 4 ms and a setting time down to 1 ms with an adjustment to $\pm 0.1\%$ of the final output value. It requires a bus current of 2.5 A for optimal performance. Designed in a standard module format, the 140AIO33000 is suited for integration into various control systems, enhancing operational efficiency.

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