IDEC

MicroSmart 4pt Analog Output Module

Features

- 4-pt Analog Output Module
- 0-10V DC, 4-20mA, 12-bit resolution
- Applicable standards:
  UL508, ANSI/ISA 12.12.01-2007
  EN61131-2 2007
 CSA 22.2 No, 142 No, 213
- UL listed, CE marking

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General Specifications

|	FC4A-K4A1
Rated Power Voltage	24V DC
Allowable Voltage Range	20.4 to 28.8V DC
Connector on Mother Board	MC1.5/11-G-3.81BK (Phoenix Contact)
Connector Insertion/Removal Durability	100 times minimum
Internal Current Draw	65mA (5V DC)
	0mA (24V DC)
External Current Draw (Note)	130mA (24V DC)
Weight (Approx.)	100g

Note: The external current draw is the value when all analog inputs are used and the analog output value is at 100%.

Dimensions (mm)

3.8 23.5 14.6 70.0

90.0
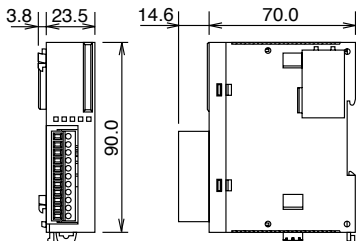
Terminal Arrangement & Wiring Diagram

Applicable Terminal Block: FC4A-PMT11P (supplied with module)

Terminal No.	Channel
+	24V DC
–	
FG	
+	OUT0
–	
+	OUT1
–	
+	OUT2
–	
+	OUT3
–	
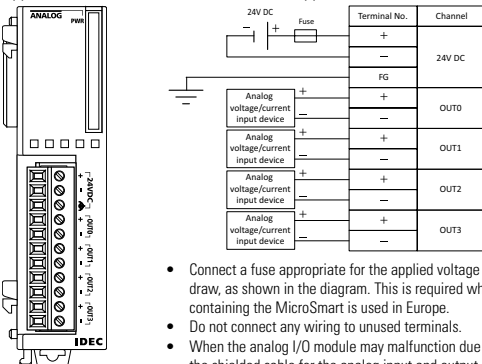
- Connect a fuse appropriate for the applied voltage and current draw, as shown in the diagram. This is required when equipment containing the MicroSmart is used in Europe.
- Do not connect any wiring to unused terminals.
- When the analog I/O module may malfunction due to noise, use the shielded cable for the analog input and output and connect both ends of the shield to a ground.

Output Specifications

		FC4A-K4A1
Output Range	Voltage	0 to 10V DC
	Current	4 to 20mA
Load	Load Impedance	1k Ω minimum (voltage), 300Ω maximum (current)
	Applicable Load Type	Resistive load
DA Conversion	Settling Time	2ms/ch (Note 1)
	Total Output System Transfer Time	2ms x channels + 1 scan time
Output Error	Maximum Error at 25°C	±0.2% of full scale
	Temperature Coefficient	±0.15% of full scale/°C
	Repeatability after Stabilization Time	±0.5% of full scale
	Output Voltage Drop	±1% of full scale
	Non-lineality	±0.2% of full scale
	Output Ripple	20mV maximum
	Overshoot	0%
	Total Error	±1% of full scale
Data	Digital Resolution	4096 increments (12 bits)
Output Value of LSB	Voltage	2.5mV
	Current	4µA
	Data Type in Application Program	0 to 4095
		Optional: −32768 to 32767 (selectable for each channel) (Note 2)
	Monotonicity	Yes
	Current Loop Open	Not detectable
Noise Resistance	Maximum Temporary Deviation during Electrical Noise Tests (Note 3)	±4% maximum
	Recommended Cable for Noise Immunity	Twisted pair cable
	Crosstalk	2 LSB maximum
Isolation		Between input and power circuit: Transformer isolated
		Between input and internal circuit: Photocoupler isolated
Effect of Improper Output Connection		No damage
Selection of Analog Output Signal Type		Using programming software
Calibration or Verification to Maintain Rated Accuracy		Not available

Note 1: Rise time is not included.
Note 2: The data processed in the analog I/O module can be linear-converted to a value between −32768 and 32767. The optional range designation, and analog I/O data minimum and maximum values can be selected using data registers allocated to analog I/O modules.
Note 3: For analog I/O modules of version 200 or higher, the value represents when 1 kV is directly applied to the power supply line and a 1 kV clamp voltage is applied to I/O lines. For analog I/O modules earlier than version 200, the value represents when a 500V clamp voltage is applied to the power supply and I/O lines.