

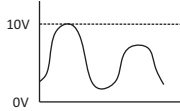
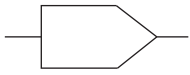
## Module Datasheet

### Introduction

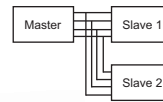
SensOper MC-EX-AQ4 Analog Output module is an expansion module that can be use with MC-CPU-CM4-Gx CPU module. This module was implemented for send 0-10V and 0-20mA Analog signals. This expansion module include SPI interface with an address configurable DIP switches for establish communication with CPU module. 13 bit monotonic DAC supports up to four outputs in this module. The module expansion is supported by board-to-board connector with 40 pins.

### Features

13 Bit Monotonic DAC    0-10V Voltage Output    0-20mA Current Output    Address Configurable    SPI Communication    On-Chip Diagnosis



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### Expansion

This module supports maximum two units for single Bus expansion.

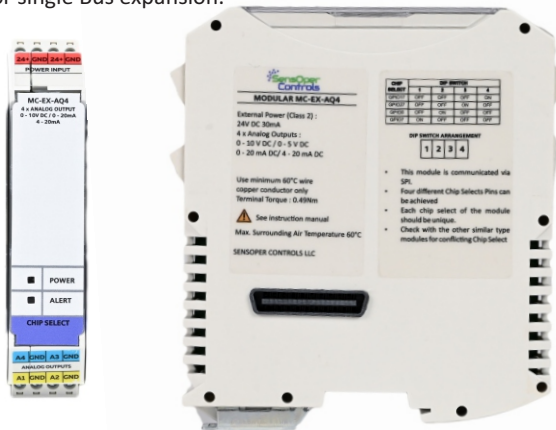


Figure 1: Front and Side view of Analog Output module

### Specifications

Table 1: Analog Output expansion module specifications

Range of Products	Modular Industrial Controller
Product Type	I/O Expansion
Programming	AD74413R via SPI
Address Configuration	DIP Switches / Selectable chip select
Resolution	13- Bit
Output Count	4 x Analog 0-10V/0-20mA
Accuracy	±2 % FSR
I/O Expandability	40 pin board to board connectivity

### Electrical & Mechanical

Table 2: Analog Output expansion module Electrical Characteristics

Electrical	
Rated Supply Voltage	24V DC
Power Consumption	32.6 - 40.4 W

Table 3: Analog Output expansion module Mechanical Characteristics

Mechanical	
Electrical Connection	Removable screw terminal block for inputs and outputs(pitch 5.08 mm)
Mounting	Top hat TH35-15 rail conforming to IEC 60715 Top hat type TH35-7.54 rail conforming to IEC 60715
Height	113.6 mm
Depth	99.60 mm
Width	22 mm
Module Weight	0.21 kg

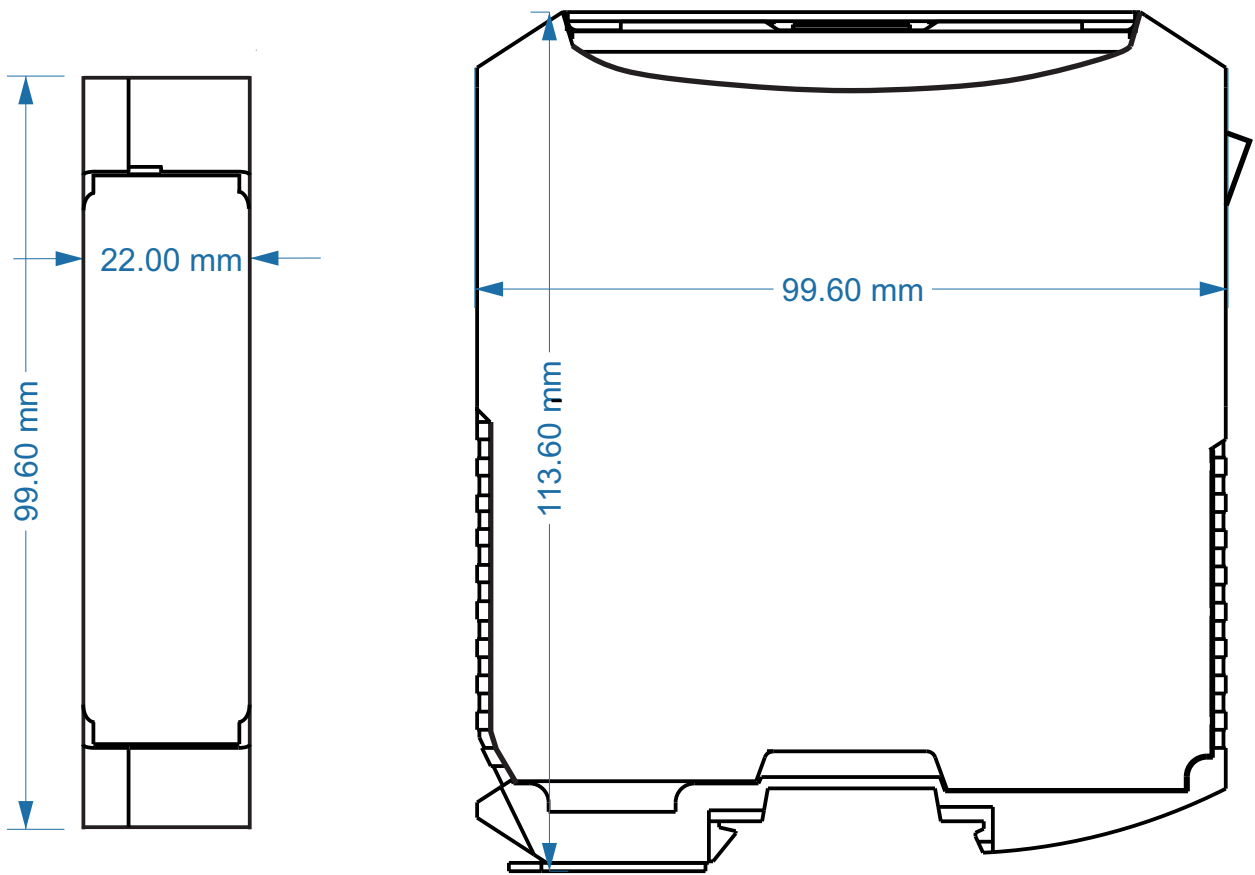
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### Environmental

**Table 4:** Analog Output expansion module Compatible Environmental Features

Relative Humidity	10-95% without consideration in operation
IP Degree of Protection	IP 20
Operating Temperature	-10 to +85 Celsius (14 to 185 Fahrenheit)
Storage Temperature	-25 to +85 Celsius (-13 to 185 Fahrenheit)
Operating Altitude	0 to 2000m
Storage Altitude	0 to 3000m
Stock Resistance	15 gn for 11 ms

### Module Dimensions



**Figure 2:** Front view and Side view Dimensions of Analog Output module

### Module Datasheet

#### Module Expansion

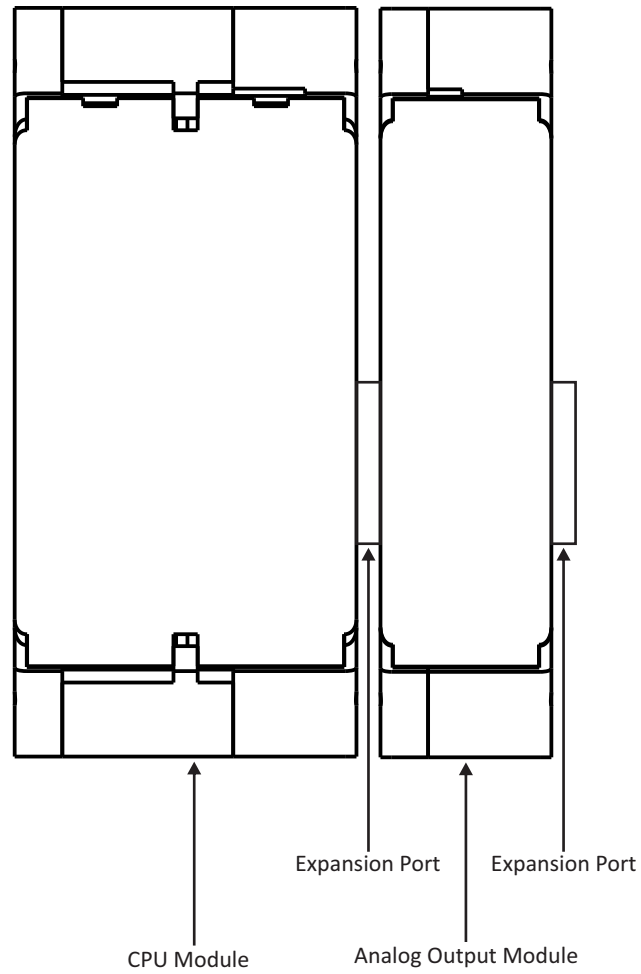


Figure 3: Expansion Modules connect with CPU Module

MC-EX-AQ4 module have Male and Female port can be connected with CPU module or another expansion modules .



Figure 4: Expansion Port male and female ports

## Module Datasheet

### Wiring Diagram of Power up and Output Terminals

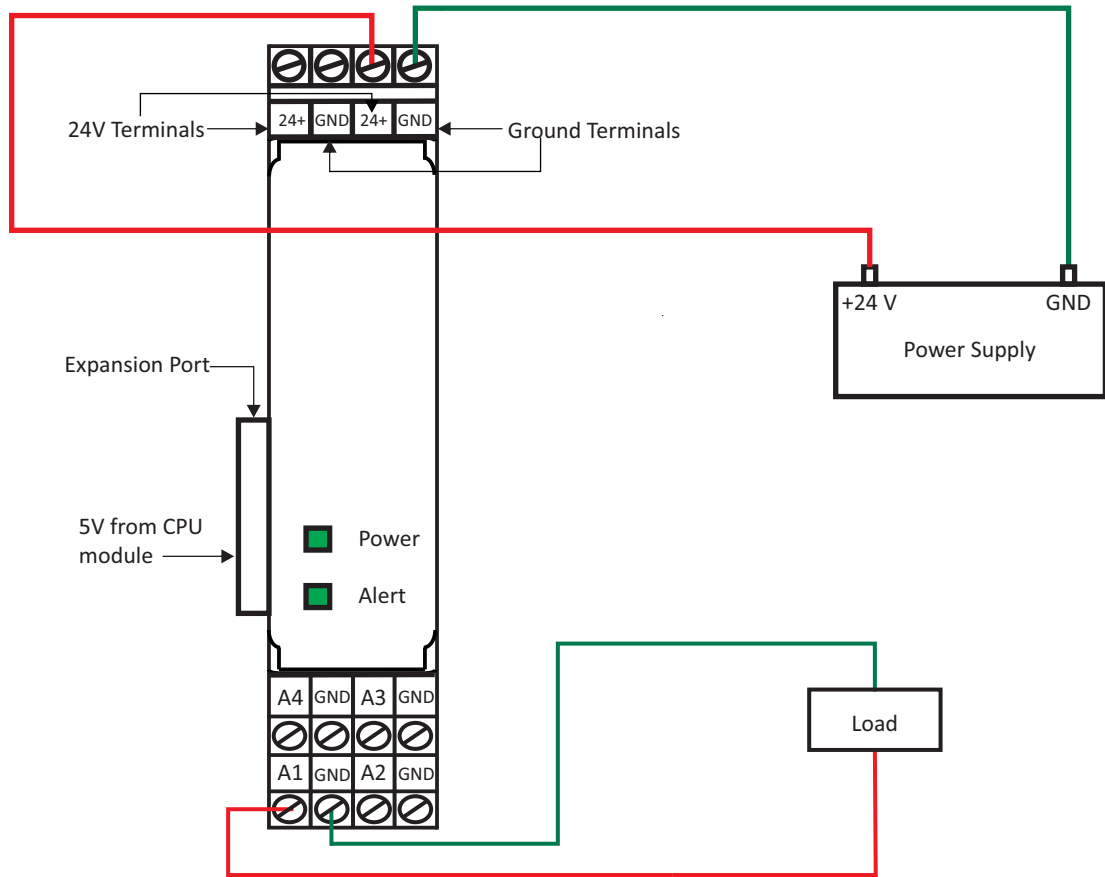


Figure 5: The wiring diagram of the MC-EX-AQ4 Module.

Figure 5 shows how to power up the Module. Module operation will voltage provide via power supply. If the wiring is correctly done the Power indication LED will turn on.

### CPU Module and Expansion Module GPIO Connection Diagram

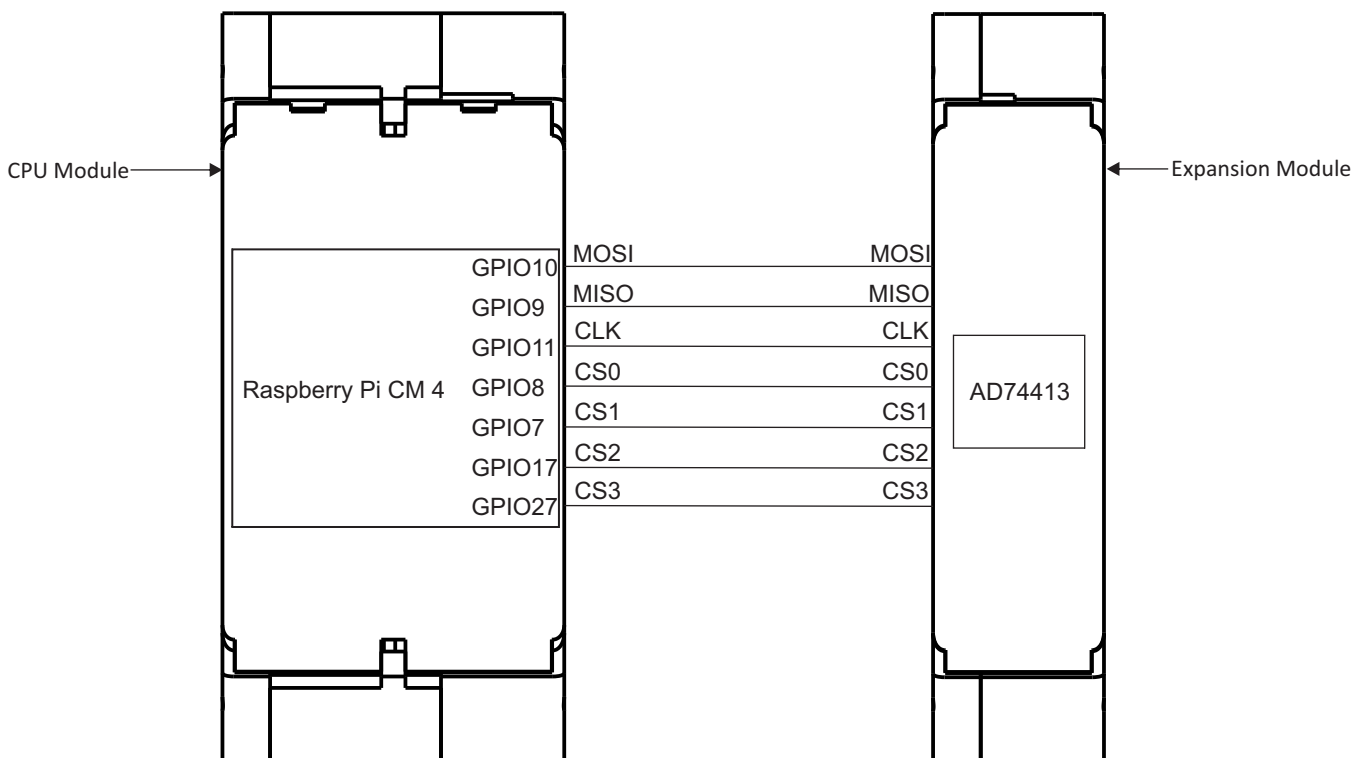


Figure 6: The GPIO connection with CPU module and Expansion Module.

### Module Datasheet

**Table 5:** The DIP switch setup

CHIP Select	DIP Switch			
	1	2	3	4
GPIO17	OFF	OFF	OFF	ON
GPIO27	OFF	OFF	ON	OFF
GPIO8	OFF	ON	OFF	OFF
GPIO7	ON	OFF	OFF	OFF

DIP Switch Arrangement



INPUT 1 - 4

**\*Read the Product label for more details about DIP switch configuration.**

## Module Datasheet

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### Revision History

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The table shown below include the revision history of this document.

Revision Number	Date	Substantial Changes
0	18/3/2022	First Edition of Startup guide
1	-	-

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