

Tehničke specifikacije

Performance Parameters

Specification	EM231, 4 AI×12BIT
Physical Features	
Dimensions(W×H×D)	71.2×80×62mm
Power Loss(dissipation)	2W
Power Consumption	
From +5V(from I/O bus)	34 mA
From L+	40 mA
L+ voltage range,class 2 or DC sensor supply	20.4 ~ 28.8V DC
LED indicator	24 VDC Power Supply Good ON = no fault, OFF = no 24 VDC power
Analog Input Feature	
Number of analog input points	4 points
Isolation(field side to logic circuit)	Optical isolated: 500VAC, 1 minute
input type	Differential
Input Range	
Voltage(unipolar)	0 ~ 10V, 0 ~ 5V
Voltage(bipolar)	±5V, ±2.5V
Current	0 ~ 20 mA
Data Range	15 ~ 30V
Bipolar,full-scale range	0 ~ 32000
Unipolar, full-scale range	-32000~32000
Input Resolution	
Voltage(unipolar)	2.5 mV (0 ~ 10V) 1.25 mV (0~5V)
Voltage(bipolar)	2.5 mV (±5V)

	1.25 mV ($\pm 2.5V$)
Current	5 μ A (0 ~ 20mA)
Analog to digital conversion time	<300 μ s
Analog input step response	1.5ms
Common mode rejection	40dB , DC to 60Hz
Common mode voltage	Signal voltage + Common mode voltage < 12V
Input Impedance	$\geq 10M\Omega$
Input filter attenuation	-3db @ 3.1kHz
Maximum input voltage	30V
Maximum input current	30mA
ADC resolution	12BIT

Calibration and Configuration

- Location of the calibration and configuration switch

- Input Calibration

The calibration adjustment will affect the instrumentation amplifier stage which follows the analog multiplexer. so the calibration affects all user input channels. Variations exist in the component parameters of each input circuit before the analog multiplexer will cause slight differences in the reading values between different channels connected to the same input signal even after calibration.

If need to acquire the specifications contained in this data sheet, may be you need to enable analog input filters for all inputs of the module. Please select 64 or more samples to calculate the average value.

To calibrate the input, please use the following steps.

- a. Turn off the power to the module, select the desired input range.
- b. Turn on the power to the CPU and module. Allow the module to stabilize for at least 15 minutes.
- c. Using a transmitter, a voltage source, or a current source, connect a full-scale value signal to one of the input channels, read the value reported to the CPU.
- d. Adjust the GAIN potentiometer until the reading is 32000.

- Configuration

Table 1 shows how to configure the EM 231 module using the configuration DIP switches. Switches 1, 2, and 3 select the analog input range. All inputs are set to the same analog input range. In this table, ON is closed, and OFF is open. (SW4 to SW6 should be set to the OFF position)

Table 1 EM 231 Configuration Switch Table to select Analog Input Range

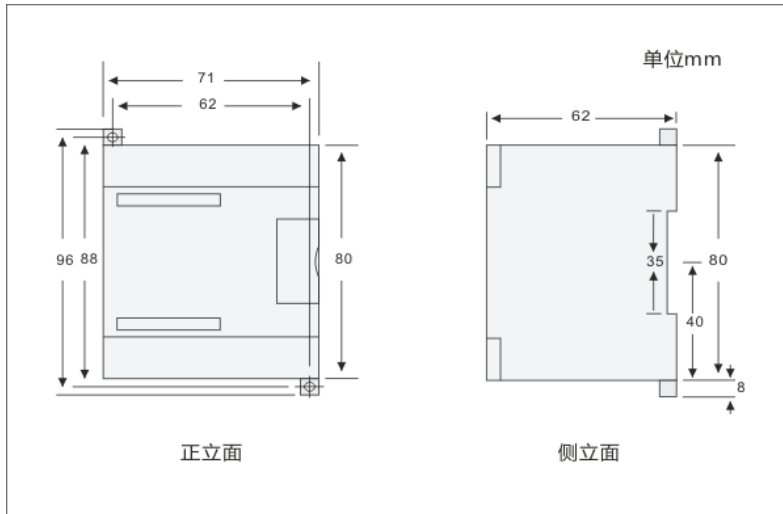
Unipolar			Full-S cale Input	Resolution
SW1	SW2	SW3		
ON	OFF	ON	0 to 10V	2.5mV
	ON	OFF	0 to 5V	1.25mV
			0 to 20mA	5 uA
Bipolar			Full-Scale Input	Resolution
SW1	SW2	SW3		
OFF	OFF	ON	± 5 V	2.5mV
	ON	OFF	± 2.5 V	1.25mV

Input Data Word Format

Važno

The 12 bits readings of the analog-to-digital converter (ADC) are left-justified in the input data word format. The MSB is the sign bit: zero indicates a positive data word value. In unipolar format, the three trailing zeros cause the data word to be changed by a count of eight for each one-count change in the ADC value. In bipolar format, the four trailing zeros cause the data word to be changed by a count of sixteen for each one count change in the ADC value.

Dimenzije



Šema spajanja

