

## Tehničke specifikacije

### Performance Parameters

Specification	EM231, 4AI×TC	EM231, 8AI×TC
<b>Physical Features</b>		
Dimensions(W×H×D)	71.2×80×62mm	71.2×80×62mm
Power Loss(dissipation)	1.7W	1.7W
<b>Power Consumption</b>		
From +5V(from I/O bus)	87mA	
From L+	60 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 power ; SF: ON=module fault, Blink=input signal error, OFF=normal;	
<b>Analog Input Features</b>		
Input type	Floating Thermocouple	
Input range	TC type(select one per module): S, T, R, E, N, K, J Voltage range: +/-80mV	
Number of analog input points	4 points	8 points
<b>Isolation</b>		
Field to Logic	500V AC	
Field to 24V DC	500V AC	
24V DC to logic	500V AC	
Common mode input range (input channel to input channel)	120V AC	
Common mode rejection	>120dB@120V AC	
<b>Input resolution</b>		

Temperature	0.1°C/0.1°F	
Voltage	15 bits plus sign	
Measuring principle	Sigma-Delta	
Module update time for all channel	425ms	825ms
wire length to sensor, maximum	100 m	
Wire loop resistance	100Ω	
Suppression of interference	85dB@ 50Hz/60Hz/400Hz	
Data word format	Voltage: -27648 to +27648	
Input impedance	≥1MΩ	
Maximum input voltage	30V DC	
Input filter attenuation	-3dB@ 21kHz	
Basic error	0.1% FS(Voltage)	
Repeatability	0.05% FS	
Cold junction error	±1.5°C	
24V DC supply voltage range	20.4 to 28.8 VDC	

#### Configuration

- DIP Switches Configuration

The EM231 TC modules provide a convenient, isolated interface to seven thermocouple types: J, K, E, N, S, T, and R, which also allow the CTS7-200 PLC to connect low level analog signals of 80mV range. You should use the DIP switched to select the thermocouple type, open wire check, temperature scale, cold junction compensation and burnout direction. All thermocouples connect to a module must be of the same type.

The configuration DIP switches are located on the right bottom of the modules, as shown in the figure 1 and Figure 2, the EM231 4TC module has a 8-pin switches and the EM231 8TC module has a 6-pin switches.

For the DIP switch settings to take effect, you need to power cycle the PLC or the 24V power supply.

Figure 1 EM231 4AI×TC

Figure 2 EM231 8AI×TC

Selecting the thermocouple type by setting DIP switch 1 to switch 8 as shown in Table 1 and Table 2 for the EM231 4TC Module, and Selecting the thermocouple type by setting DIP switch 1 to switch 6 as shown in Table 1 and Table 2 for the EM231 8TC Module.

For the EM231 4TC Module, DIP switch 4 is not used, it should be set to the off position. For the EM231 8TC Module, the open wire check is always enable.

Table 1 Selecting the Thermocouple Type

Thermocouple Type	SW1	SW2	SW3
J (Default)	0	0	0
K	0	0	1
T	0	1	0
E	0	1	1
R	1	0	0
S	1	0	1
N	1	1	0
+/- 80mV	1	1	1

Table 2 Selecting the others

Feature	EM231 4AI×TC		EM231 8AI×TC	
	position	status	position	status
Burnout Direction	SW5	0: Upscale (+3276.7degrees) 1: Downscale (-3276.8degrees)	SW4	0: Upscale (+3276.7degrees) 1: Downscale (-3276.8degrees)
Open Wire Check	SW6	0: enable, 1: disable	always enable	
Scale Select	SW7	0:Celsius (°C), 1:Fahrenheit (°F)	SW5	0:Celsius (°C), 1:Fahrenheit (°F)
Cold Junction Enable	SW8	0: enable 1:disable	SW6	0: enable 1:disable

### Software Configuration

The EM231 8AI×TC module has different beginning input address in different slot and its address is not in AIW but in VW, you can calculate the address by the following formula,

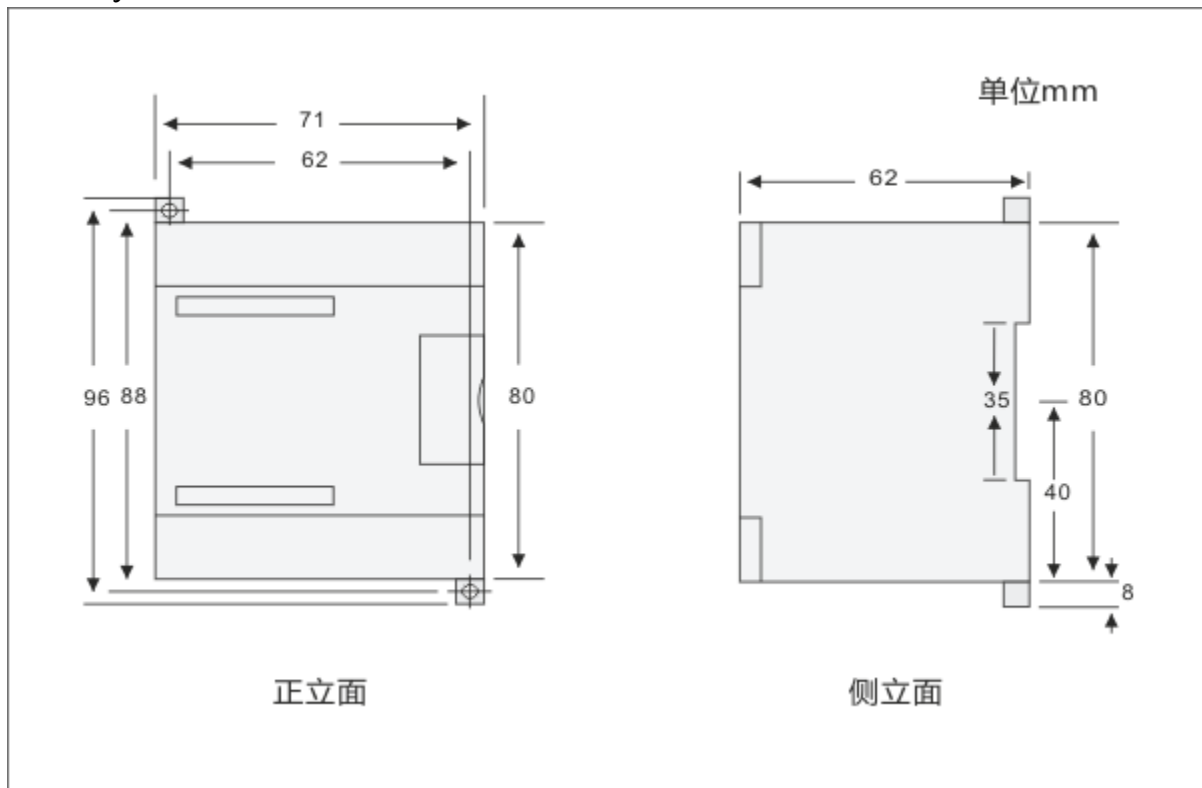
$$x(VWx) = a \times 64 + b \times 2 \quad (a \text{ is the slot no., and } b \text{ is the point no.)}$$

Table 2 Address for the EM231 8AI×TC

VWx	Point 0	Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7
Slot 0	VW0	VW2	VW4	VW6	VW8	VW10	VW12	VW14
Slot 1	VW64	VW66	VW68	VW70	VW72	VW74	VW76	VW78
Slot 2	VW128	VW130	VW132	VW134	VW136	VW138	VW140	VW142
Slot 3	VW192	VW194	VW196	VW198	VW200	VW202	VW204	VW206
Slot 4	VW256	VW258	VW260	VW262	VW264	VW266	VW268	VW270
Slot 5	VW320	VW322	VW324	VW326	VW328	VW330	VW332	VW334
Slot 6	VW384	VW386	VW388	VW390	VW392	VW394	VW396	VW398

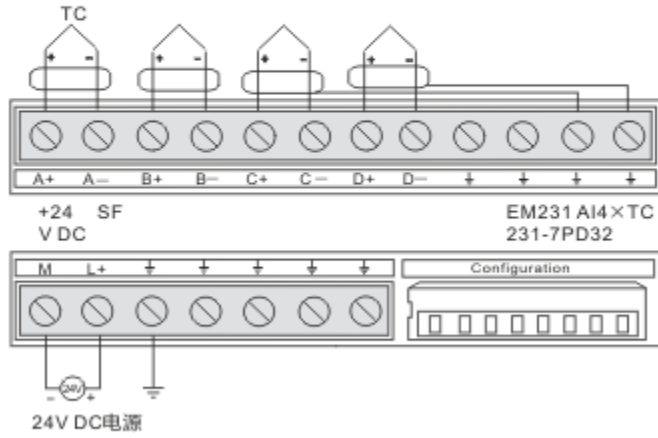
Notice: Because the offset address of Td2X text display is also in VW0, so If you need to use Td2X text display in your system, please don't put the EM231 8AI×TC module in slot 0, or the td2X will not work normally. SIEMENS TD200 text displayer is same as TD2X.(SIEMENS is the trademark of SIEMENS AG.)

Dimenzije



Šema povezivanja

CTS7 231-7PD32 热电偶输入



CTS7 231-7PF32 热电偶输入

