WECON AE30-4DA Analog Input Expansion Module User Manual

1 Introduction

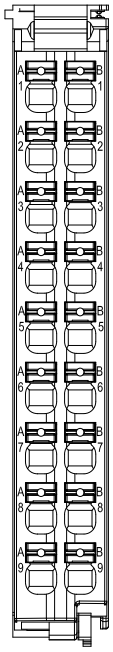
The AE30-4DA (4-channel analog output) is designed for acquiring analog signals such as voltage and current. It is compatible with our company's A500 series PLCs and modular devices.

Supported host software version: **2.8.21 or higher.**

Supported PLC firmware version: **2.322.101 or higher.**

Note: The total power consumption of the A500 series PLC and all connected expansion modules must not exceed 48W.

2 Terminal Description

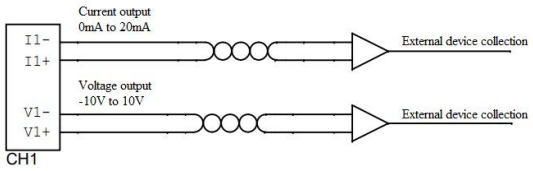


<AE30-4DA>

V1+	A1	B1	V2+
I1+	A2	B2	I2+
VI1-	A3	B3	VI2-
V3+	A4	B4	V4+
I3+	A5	B5	I4+
VI3-	A6	B6	VI4-
·	A7	B7	·
·	A8	B8	·
·	A9	B9	·

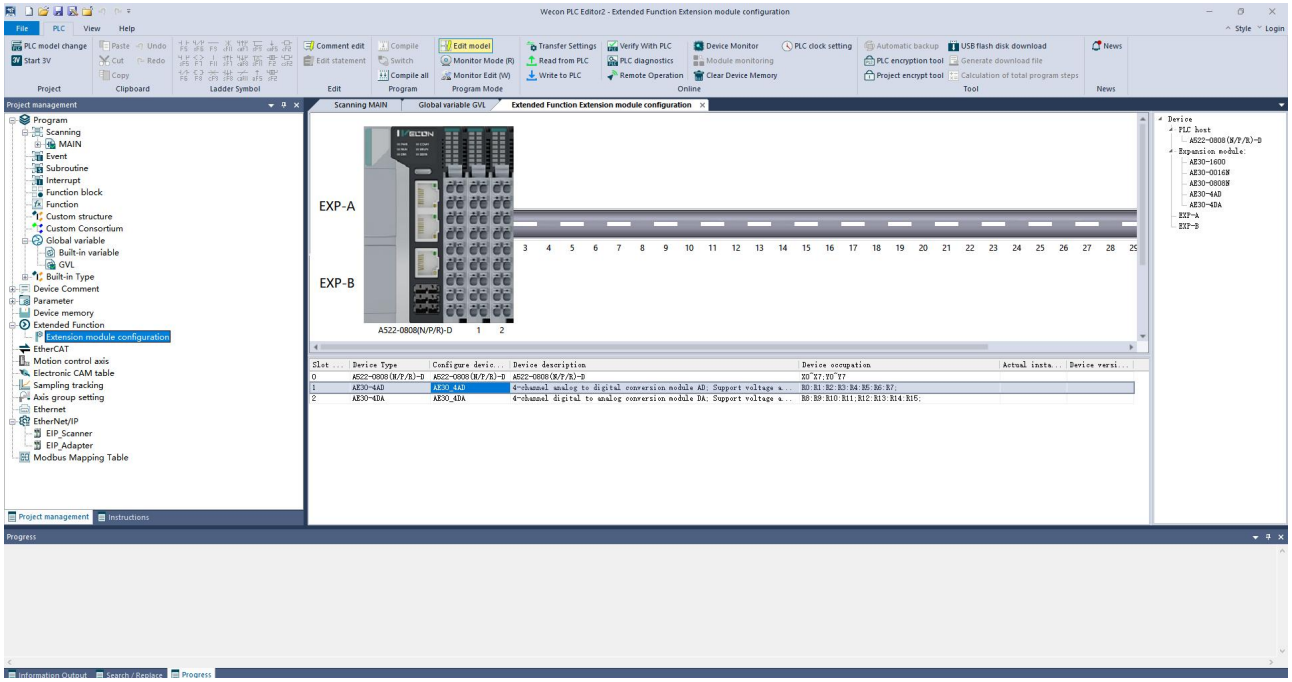
3 Parameter specifications

3.1 4AD input specifications

Project	Specification requirements
Output type	Analog output
Output circuit composition	
Output mode	Voltage/current
Output channel	4
Resolution	1/20000, hardware can meet 16bit resolution
Voltage output range	-10V-10V
Voltage output load	≥2KΩ
Voltage output diagnosis	Can not support
Current output range	0-20mA, 4-20mA
Current output load	≤500Ω
Current output diagnosis	Can not support
Comprehensive precision	±0.5 %
Conversion speed	Approximately 800us
Power supply	Interface power supply, DC 24V±10%, 175mA

4 User Guide

4.1 Usage with A500 Main Unit



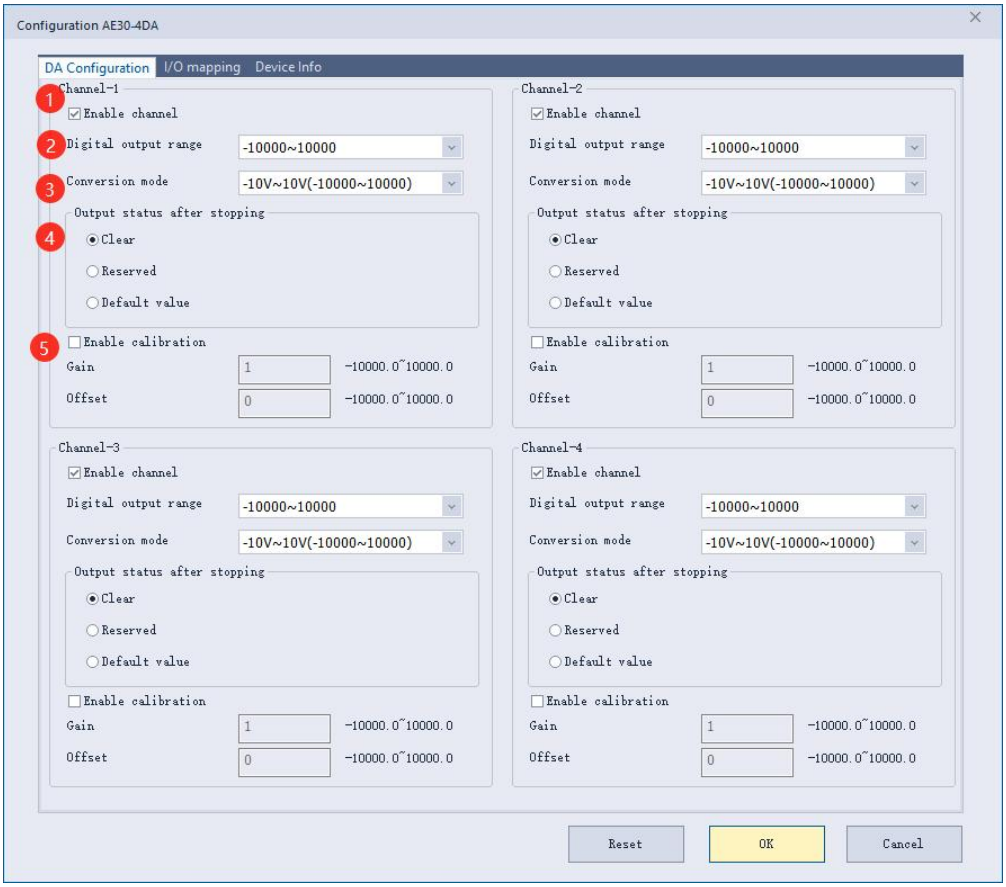
Host Computer Expansion Module Configuration Process Description:

① Double-click the expansion module configuration option to open the configuration interface.

② Add modules according to the model and position of the currently connected modules on the host unit.

③ Double-click the module in the current slot to open the parameter configuration interface.

DA Configuration



① **Enable Channel:** Configures whether the current expansion module channel is active.
②**Digital Output Range:** Default setting: -10000~10000, which proportionally scales the output function of the current conversion mode. Supported output ranges: -10000~10000, -20000~20000, -32000~32000, -27648~27648.
③**Conversion mode:** The default setting is ADV conversion mode, the measurement range is-10V-10V (-10000-10000);
④**Output status after stopping:** When the PLC is in the stop status, the output status of the module channel mainly includes the following three types:
Output cleared: When PLC STOP, the output voltage/current of the module channel is 0V/0uA;
The output holds: When PLC STOP, the module channel output holds the digital output value set by the corresponding channel in the current I/O mapping device;
Output presets: When PLC STOP, the module channel outputs the voltage/current value corresponding to the preset digital or the preset analog.
⑤**Enable calibration:** When the actual output analog of the module channel deviates greatly from the analog measured by the high-precision multimeter, it can be used to improve the output precision and accuracy.
For modules with calibration enabled, the channel value is calculated as follows: Channel input digital=actual voltage output corresponding digital*gain+offset
For example:
When the input digital of the channel is 10000, the measured output voltage of the channel by the high-precision multimeter is 9950mV (the corresponding digital is 9950);

When the channel input digital is -10000, the measured output voltage of the channel by the high-precision multimeter is -9950mV (the corresponding digital is-9950);
Assume gain as a and offset as b

$$\begin{cases} 9950*a+b=10000 \\ -9950*a+b=-10000 \end{cases}$$ the result is $$\begin{cases} a=1.005025 \\ b=0.00125 \end{cases}$$.

The derivation formula is as follows:
Gain = (channel input digital quantity 1-channel input digital quantity 2)/ (multimeter measured digital 1-multimeter measured digital 2)
Offset=channel input digital-actual voltage output corresponding digital *gain

I/O Mapping

By default, the channels of the current module are mapped to the R soft elements based on the number of channels. The following example shows the mapping of analog input physical values from channels CH1 to CH4 to R0–R3 soft elements, with status codes mapped to R4–R7.