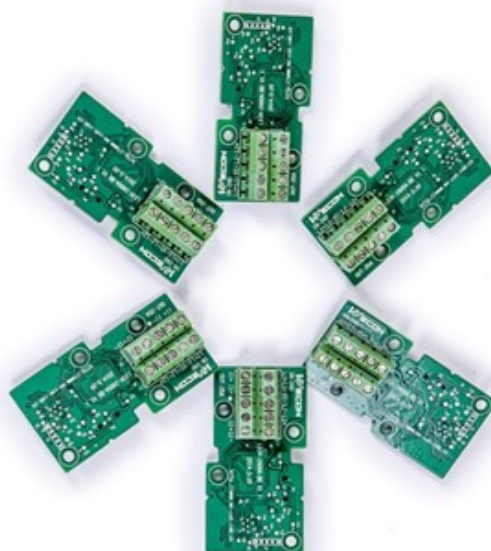




LX3V-2ADI-BD

User manual



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1. Mounting instruction

Make sure to power off the PLC before mounting the LX3V-2ADI-BD module and removing the top cover of PLC, screwed to the PLC.

Caution:

- 1) This BD module only support the following firmware versions or later. Users can check the PLC firmware version in D8001.
 - LX3VP:25103;
 - LX3VE: 25201;
 - LX3V-A2:25014;
 - LX3V-A1: 22006;
- 2) When mounting module to PLC, all the lights are blinking after power ON PLC, it means this PLC can't support LX3V-2ADI-BD, please purchased new PLC.
- 3) Please fixed BD module on the PLC, poor contact may lead to failure.
- 4) BD module and top cover of PLC's tightening torque is 0.3 ~ 0.6 N.m.

Warning:

Make sure to power off the PLC before mounting or removing the BD module and put the cover in right place.

2. Special feature

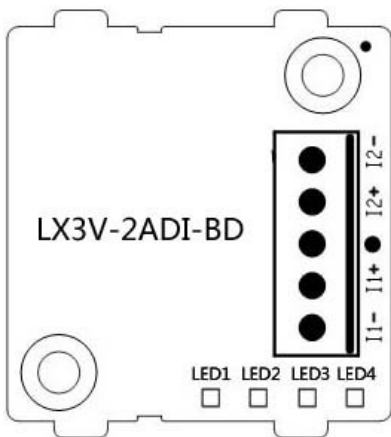
- 1) LX3V-2ADI-BD module equips with 2 channels analog input. This module will be mounted in the PLC.
- 2) The input current of LX3V-2ADI-BD module between 4 mA to 20mA, and the digital value will be saved in special system address, but the numerical relationship between input and output value cannot be changed.

Table 2-1 description of system address

Expansion port 1 (far away from PLC light)		
Address	Description	
M8112	The flag of switching Input mode in CH1 OFF: Current input mode (4mA~20mA, 0~2000)	ON: Retain
M8113	The flag of switching Input mode in CH2	

	OFF: Current input mode (4mA~20mA, 0~2000)	
D8112	The digital value of channel 1; (4mA~20mA, 0~2000)	
D8113	The digital value of channel 2; (4mA~20mA, 0~2000)	
Expansion port 2 (near PLC light)		
Address	Description	
M8116	The flag of switching Input mode in CH1 OFF: Current input mode (4mA~20mA, 0~2000)	ON: Retain
M8117	The flag of switching Input mode in CH2 OFF: Current input mode (4mA~20mA, 0~2000)	
D8116	The digital value of channel 1; (4mA~20mA, 0~2000)	
D8117	The digital value of channel 2; (4mA~20mA, 0~2000)	

3. Dimension



IN-2ADI input current range: 4-20mA	
I1+	Anode of the channel 1 current input
I1-	Cathode of the channel 1 current input
•	No connection
I2+	Anode of the channel 2 current input
I2-	Cathode of the channel 2 current input

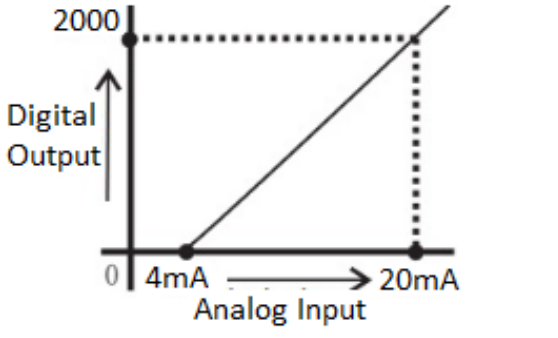
LED lights indicating:

- 1) LED1: power led power on always.
- 2) LED2: flashes when communications.
- 3) LED3 (AD 1): On indicates enable, OFF indicates disable, flicker indicates exceeding the measurement range.
- 4) LED4 (AD 2): On indicates enable, OFF indicates disable, flicker indicates exceeding the measurement range.
- 5) If the BD module plugged into the old firmware version when on the host, all LEDs will be flashing.

4. Specification

- 1) Please refer to the LX3V user manual for the general specification of LX3V-2ADI-BD;
- 2) LX3V-2ADI-BD is powered supply by LX3V main unit;
- 3) Performance

Table 4-1

Item	Specification
	Current input
Input range	DC 4-20mA (Input resistance:250Ω)
Digital output	12 bits binary
Resolution	8uA (4mA-20mA/2000)
Precision	±1% (4-20mA: ± 0.16mA)
AD conversion time	One PLC scanning cycle
Characteristic	
Insulation	No insulation in each PLC channel
Occupied points	None

5. Wiring

Caution:

- 1) Do not put the LX3V-2ADI-BD module near high-voltage power cable. Keep away the power cable at least 100mm;
- 2) Do not solder any terminal with the others device;
- 3) Do not connect any unsuitable cable;
- 4) Please fix cable;
- 5) Do not connect any unit to the unused terminal;

5.1 Suitable cable

Connect to output device with AWG25-16.
 Max tighten torque of terminal is 0.5 to 0.6N.m.

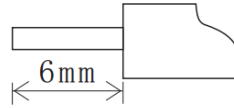
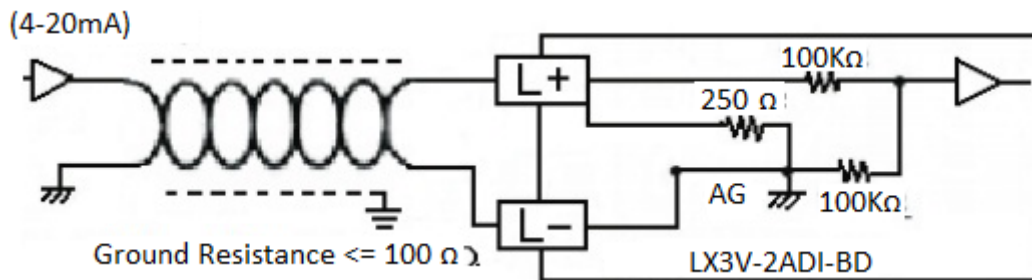


Table 5-1

Line type	Cross sectional area(mm ²)	End-of-pipe treatment
AWG26	0.1288	Stranded cable: stripped jacket, rub Conductor, then connect the cable.
.....	
AWG16	1.309	Single-core cable: stripped jacket, Then connect the cable.

5.2 Input



6. Example

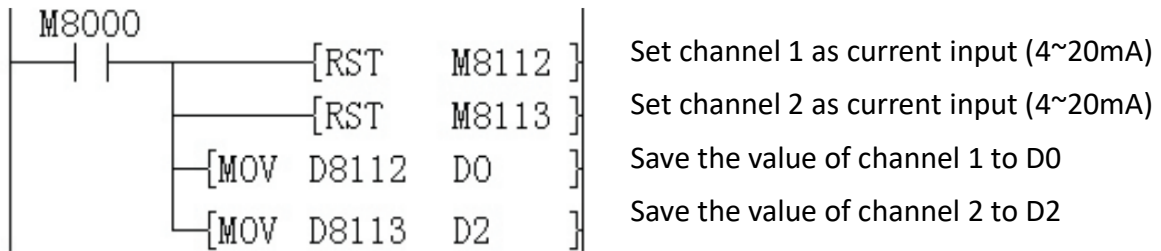
The analog value (4~20mA) in each channel will be saved in system address (D8112, D8113). It will be saved automatically when “END”, and convert into digital value.

6.1 Basic program

Caution:

- 1) Trigger M8122 and M8113, and set the characteristic of conversion.
- 2) Do not change the value of D8112 and D8113.

AD conversion:



6.2 Application example

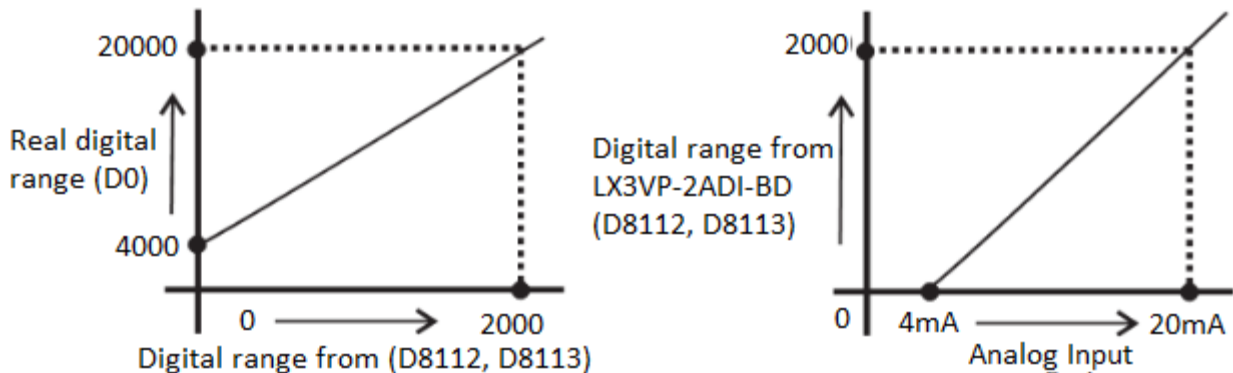
LX3V-2ADI-BD has no offset and gain function.

Caution:

- 1) There are extra program for multiplication and division, so the real accuracy and resolution of analog-digital conversion are different from product specifications;
- 2) The range for analog output is constant;

Current input mode

- 1) In current input mode, it changes the analog value (4-20mA) to digital value (0-2000). If users need 4000-20000 digital range, it requires a conversion.
- 2) As following program shows, the digital value is saved in D8112 and D8113, because the digital range is changed from 0-2000 to 4000-20000, so the resolution of LX3V-2ADI-BD is not 8uA.



- 3) Suppose the user needs 4000-20000, and save in D0, so $D0=8*(D8112 \text{ or } D8113) +4000$, the program as following shows.

