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NX-series Analog I/O Unit

NX-AD/DA

CSM_NX-AD_DA_DS_E_2_2

Analog inputs and outputs to meet all machine control needs, from general purpose to high-speed synchronous control

- Connect to other NX I/O Units and EtherCAT® Coupler Units using the high-speed NX-bus
- Separate modules for voltage and current

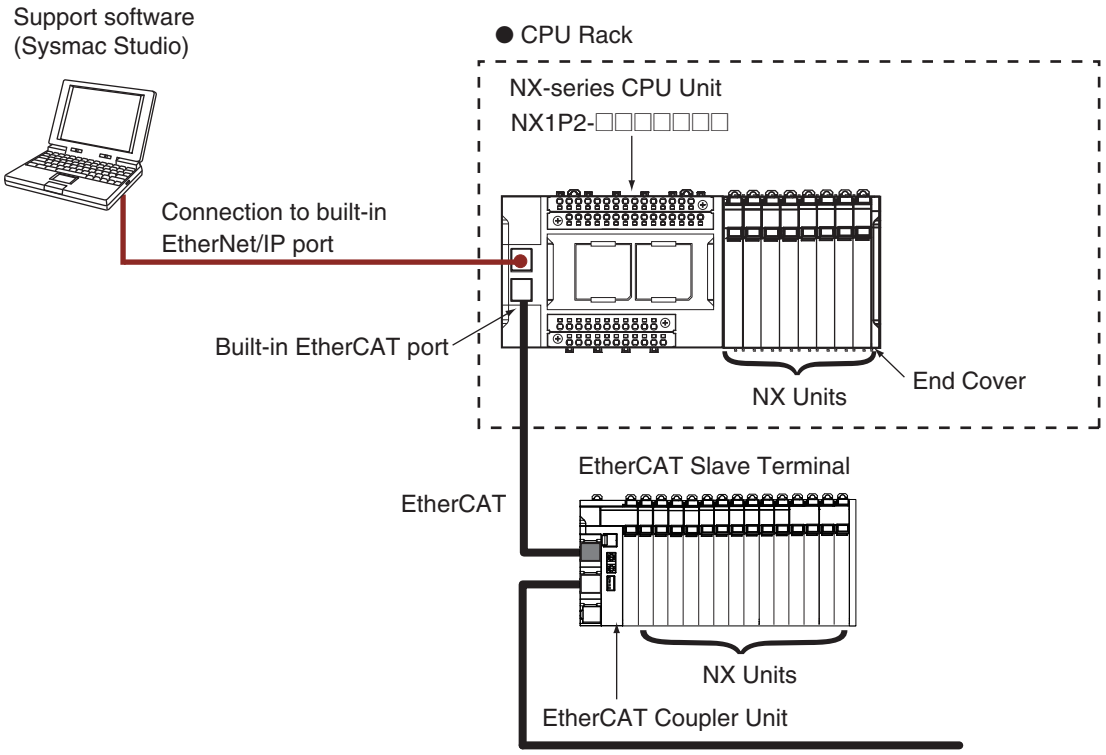
Features

- Up to eight analog inputs per unit (NX-AD)
- Up to four analog outputs per unit (NX-DA)
- Free-run refreshing or synchronous I/O refreshing with the NX1P2 CPU Unit or EtherCAT Coupler Unit
- Sampling times down to 10 μs per channel and high resolution of 1/30,000
- Single-ended or differential input (NX-AD)
- Selecting channel to use, moving average, input disconnection detection, over range/under range detection, and user calibration
- Detachable front connector with screwless Push-In Plus terminals for easy installation and maintenance
- Compact with a width of 12 mm per unit
- Connect to the CJ PLC using the EtherNet/IP™ bus coupler

System Configurations

Connected to a CPU Unit or Communication Control Unit

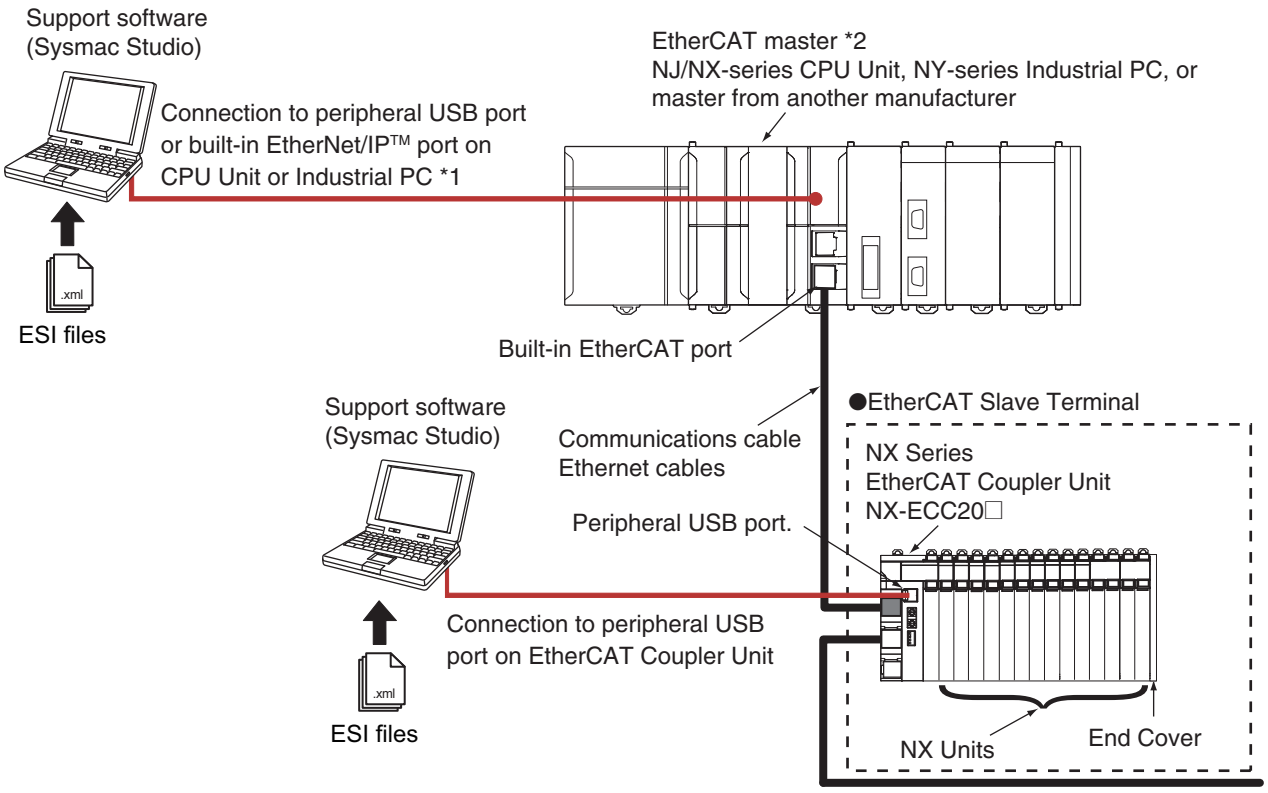
The following figure shows a system configuration when NX Units are connected to an NX-series CPU Unit.



Note: For whether an NX Unit can be connected to the CPU Unit, refer to the version information.

Connected to an EtherCAT Coupler Unit

The following figure shows an example of the system configuration when an EtherCAT Coupler Unit is used as a Communications Coupler Unit.

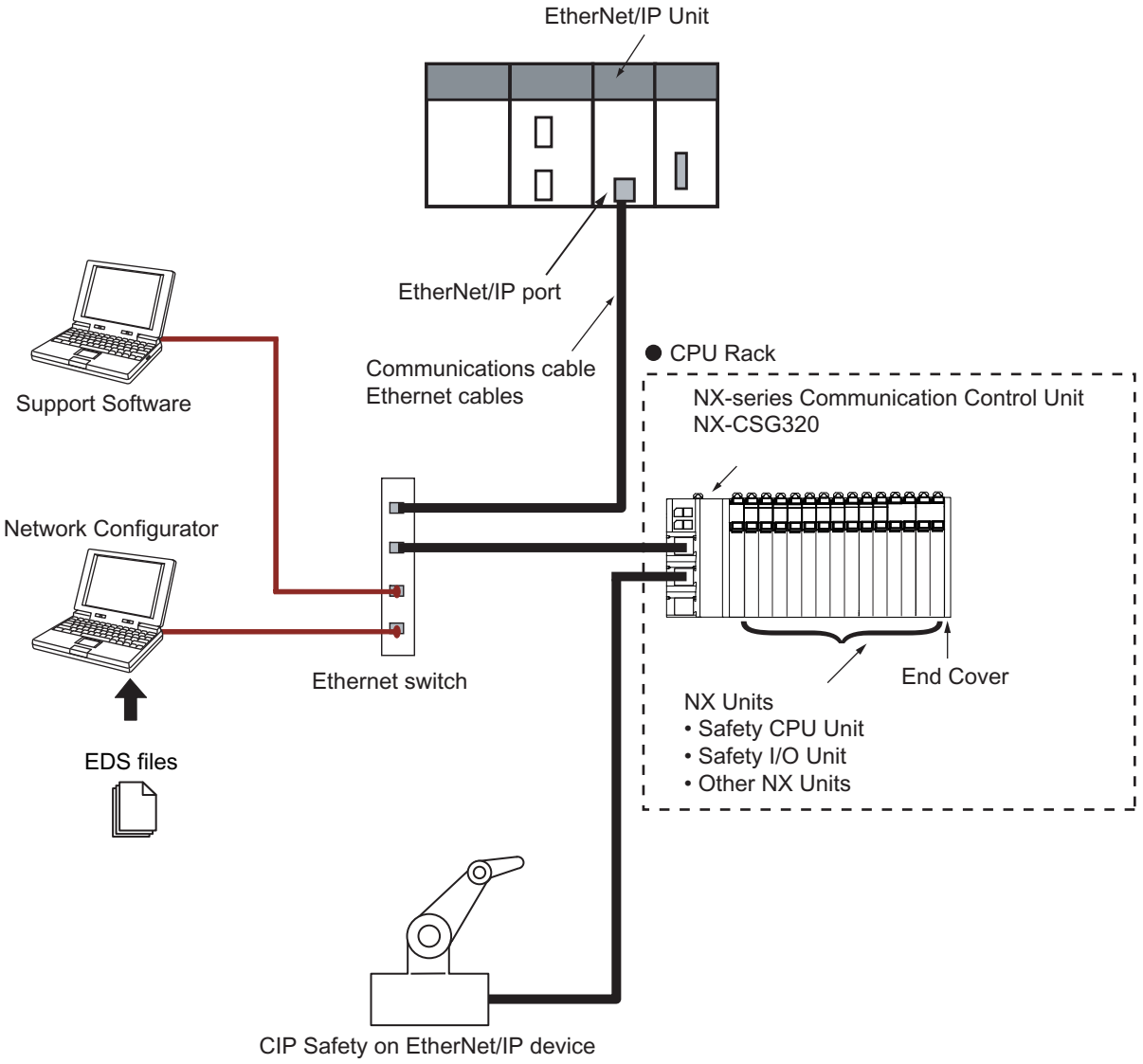


*1. The connection method for the Sysmac Studio depends on the model of the CPU Unit or Industrial PC.
*2. An EtherCAT Slave Terminal cannot be connected to any of the OMRON CJ1W-NC□81/□82 Position Control Units even though they can operate as EtherCAT masters.

Note: For whether an NX Unit can be connected to the Communications Coupler Unit, refer to the version information.

System Configuration in the Case of a Communication Control Unit

The following figure shows a system configuration when a group of NX Units is connected to an NX-series Communication Control Unit. To configure a Safety Network Controller, mount the Safety CPU Unit, which is one of the NX Units, to the CPU Rack of the Communication Control Unit.



Note: For whether an NX Unit can be connected to the Communication Control Unit, refer to the version information.

Model Number Structure

NX-□□□□□□
(1) (2) (3) (4)

(1) Unit type

No.	Specification
AD	Analog input
DA	Analog output

(2) Number of points

No.	Specification
2	2 points
3	4 points
4	8 points

(3) I/O range

No.	Specification
1	---
2	4 to 20 mA
6	-10 to +10 V

(4) Other specifications

Analog Input Units

No.	Resolution	Conversion time	Input method	I/O refreshing method	
				Free-Run refreshing *1 only	Switching synchronous I/O refreshing *2 and Free-Run refreshing
03	1/8000	250 μs/point	Single-ended	Yes	---
04	1/8000	250 μs/point	Differential	Yes	---
08	1/30000	10 μs/point	Differential	---	Yes

***1** Free-Run refreshing
*2 Synchronous I/O refreshing

Analog Output Units

No.	Resolution	Conversion time	I/O refreshing method	
			Free-Run refreshing *1 only	Switching synchronous I/O refreshing *2 and Free-Run refreshing
03	1/8000	250 μs/point	Yes	---
05	1/30000	10 μs/point	---	Yes

***1** Free-Run refreshing
*2 Synchronous I/O refreshing

Ordering Information

Applicable standards

Refer to the OMRON website (www.ia.omron.com) or ask your OMRON representative for the most recent applicable standards for each model.

Analog Input Units

Product name	Specification									Model
	Number of points	Input range	Resolution	Conversion value, decimal number (0 to 100%)	Over all accuracy (25°C)	Input method	Conversion time	Input impedance	I/O refreshing method	
Voltage Input type 	2 points	-10 to +10 V	1/8000	-4000 to 4000	±0.2% (full scale)	Single-ended input	250 µs/ point	1 MΩ min.	Free-Run refreshing	**NX-AD2603**
						Differential input				**NX-AD2604**
			1/30000	-15000 to 15000	±0.1% (full scale)	Differential input	10 µs/ point		Selectable Synchronous I/O refreshing or Free-Run refreshing	**NX-AD2608**
	4 points		1/8000	-4000 to 4000	±0.2% (full scale)	Single-ended input	250 µs/ point		Free-Run refreshing	**NX-AD3603**
						Differential input				**NX-AD3604**
			1/30000	-15000 to 15000	±0.1% (full scale)	Differential input	10 µs/ point		Selectable Synchronous I/O refreshing or Free-Run refreshing	**NX-AD3608**
	8 points		1/8000	-4000 to 4000	±0.2% (full scale)	Single-ended input	250 µs/ point		Free-Run refreshing	**NX-AD4603**
						Differential input				**NX-AD4604**
			1/30000	-15000 to 15000	±0.1% (full scale)	Differential input	10 µs/ point		Selectable Synchronous I/O refreshing or Free-Run refreshing	**NX-AD4608**
Current Input type 	2 points	4 to 20 mA	1/8000	0 to 8000	±0.2% (full scale)	Single-ended input	250 µs/ point	250 Ω	Free-Run refreshing	**NX-AD2203**
						Differential input				**NX-AD2204**
			1/30000	0 to 30000	±0.1% (full scale)	Differential input	10 µs/ point		Selectable Synchronous I/O refreshing or Free-Run refreshing	**NX-AD2208**
	4 points		1/8000	0 to 8000	±0.2% (full scale)	Single-ended input	250 µs/ point		Free-Run refreshing	**NX-AD3203**
						Differential input				**NX-AD3204**
			1/30000	0 to 30000	±0.1% (full scale)	Differential input	10 µs/ point		Selectable Synchronous I/O refreshing or Free-Run refreshing	**NX-AD3208**
	8 points		1/8000	0 to 8000	±0.2% (full scale)	Single-ended input	250 µs/ point	85 Ω	Free-Run refreshing	**NX-AD4203**
						Differential input				**NX-AD4204**
			1/30000	0 to 30000	±0.1% (full scale)	Differential input	10 µs/ point		Selectable Synchronous I/O refreshing or Free-Run refreshing	**NX-AD4208**

Analog Output Units

Product name	Specification							Model
	Number of points	Output range	Resolution	Output setting value, decimal number (0 to 100%)	Over all accuracy (25°C)	Conversion time	I/O refreshing method	
Voltage Output type 	2 points	-10 to +10 V	1/8000	-4000 to 4000	±0.3% (full scale)	250 µs/point	Free-Run refreshing	**NX-DA2603**
			1/30000	-15000 to 15000	±0.1% (full scale)	10 µs/point	Selectable Synchronous I/O refreshing or Free-Run refreshing	**NX-DA2605**
	4 points		1/8000	-4000 to 4000	±0.3% (full scale)	250 µs/point	Free-Run refreshing	**NX-DA3603**
			1/30000	-15000 to 15000	±0.1% (full scale)	10 µs/point	Selectable Synchronous I/O refreshing or Free-Run refreshing	**NX-DA3605**
Current Output type 	2 points	4 to 20 mA	1/8000	0 to 8000	±0.3% (full scale)	250 µs/point	Free-Run refreshing	**NX-DA2203**
			1/30000	0 to 30000	±0.1% (full scale)	10 µs/point	Selectable Synchronous I/O refreshing or Free-Run refreshing	**NX-DA2205**
	4 points		1/8000	0 to 8000	±0.3% (full scale)	250 µs/point	Free-Run refreshing	**NX-DA3203**
			1/30000	0 to 30000	±0.1% (full scale)	10 µs/point	Selectable Synchronous I/O refreshing or Free-Run refreshing	**NX-DA3205**

Optional Products

Product name	Specification	Model
Unit/Terminal Block Coding Pins	For 10 Units (Terminal Block: 30 pins, Unit: 30 pins)	**NX-AUX02**

Product name	Specification				Model
	No. of terminals	Terminal number indications	Ground terminal mark	Terminal current capacity	
Terminal Block	8	A/B	None	10 A	**NX-TBA082**
	12				**NX-TBA122**
	16				**NX-TBA162**

Accessories

Not included.

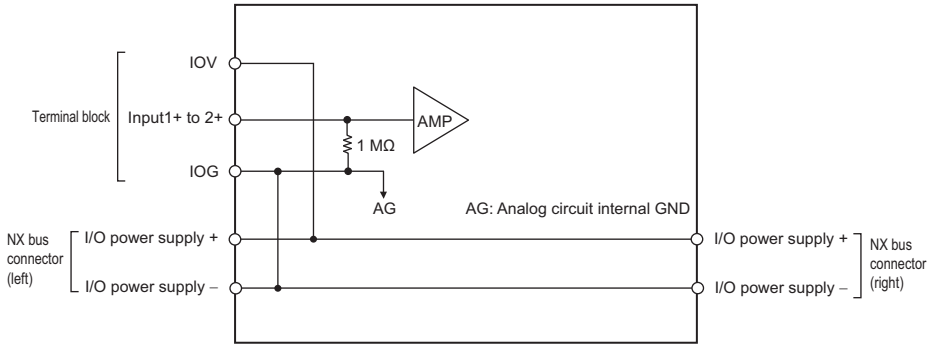
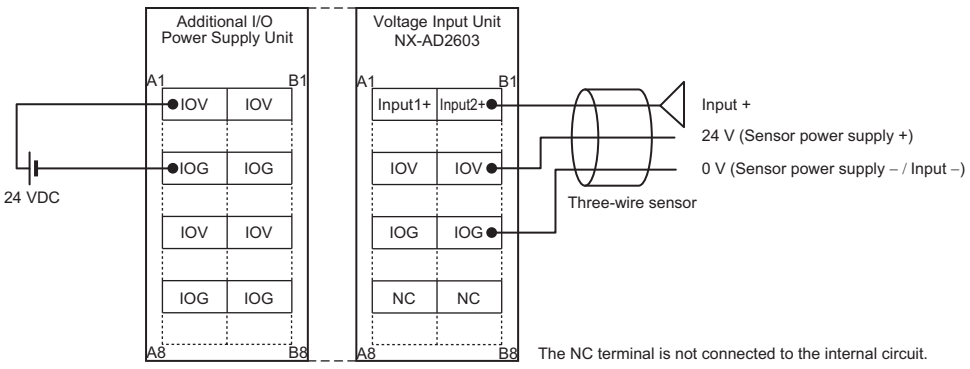
General Specifications

Item		Specification
Enclosure		Mounted in a panel
Grounding method		Ground to 100 Ω or less
Operating environment	Ambient operating temperature	0 to 55°C
	Ambient operating humidity	10% to 95% (with no condensation or icing)
	Atmosphere	Must be free from corrosive gases.
	Ambient storage temperature	−25 to 70°C (with no condensation or icing)
	Altitude	2,000 m max.
	Pollution degree	2 or less: Conforms to JIS B3502 and IEC 61131-2.
	Noise immunity	2 kV on power supply line (Conforms to IEC61000-4-4.)
	Overvoltage category	Category II: Conforms to JIS B3502 and IEC 61131-2.
	EMC immunity level	Zone B
	Vibration resistance	Conforms to IEC 60068-2-6. 5 to 8.4 Hz with 3.5-mm amplitude, 8.4 to 150 Hz, acceleration of 9.8 m/s^2, 100 min each in X, Y, and Z directions (10 sweeps of 10 min each = 100 min total)
	Shock resistance	IConforms to IEC 60068-2-27. 147 m/s^2, 3 times each in X, Y, and Z directions
Applicable standards *		cULus: Listed (UL508), ANSI/ISA 12.12.01, EU: EN 61131-2, C-Tick or RCM, KC Registration, NK, LR

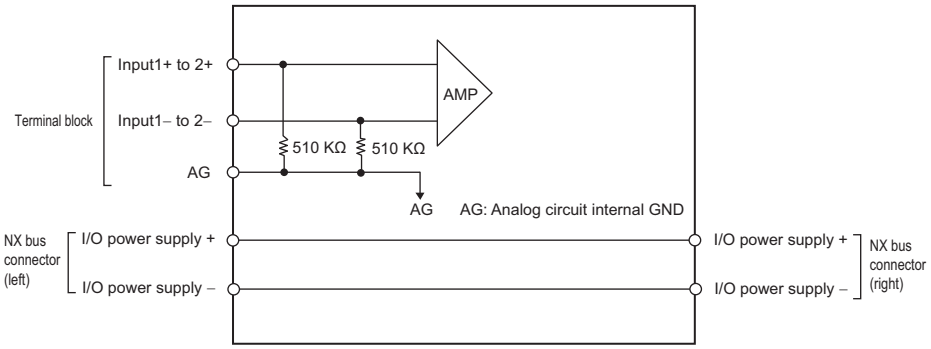
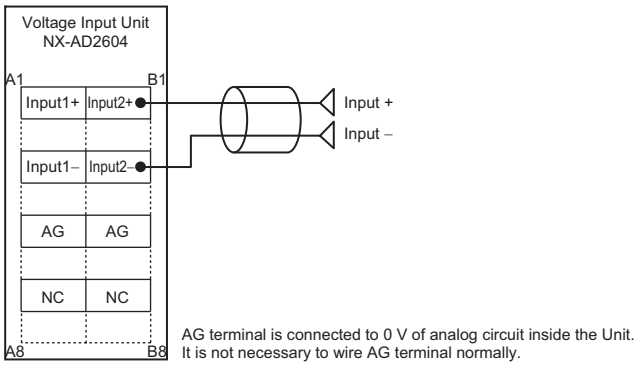
* Refer to the OMRON website (www.ia.omron.com) or ask your OMRON representative for the most recent applicable standards for each model.

Analog Input Unit Specifications

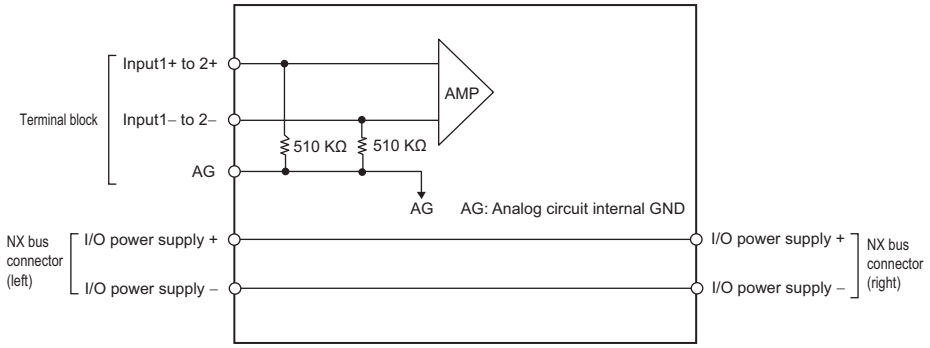
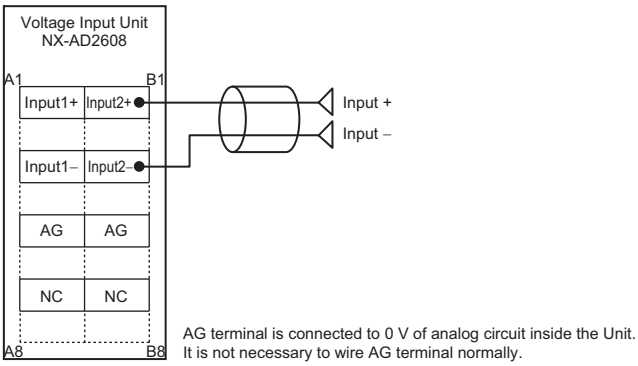
Analog Input Unit (voltage input type) 2 points NX-AD2603

Unit name	Analog Input Unit (voltage input type)	**Model**		NX-AD2603
Number of points	2 points	**External connection terminals**		Screwless clamping terminal block (8 terminals)
I/O refreshing method	Free-Run refreshing			
Indicator	TS indicator 	**Input method**		Single-ended input
		Input range		-10 to +10 V
		Input conversion range		-5 to 105% (full scale)
		Absolute maximum rating		±15 V
		Input impedance		1 MΩ min.
		Resolution		1/8000 (full scale)
		Overall accuracy	**25°C**	±0.2% (full scale)
			0 to 55°C	±0.4% (full scale)
		Conversion time		250 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**		Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**		510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	Supply from the NX bus	**Current capacity of I/O power supply terminal**		IOV: 0.1 A/terminal max., IOG: 0.1 A/terminal max.
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.35 W max. • Connected to a Communications Coupler Unit 1.05 W max.	**I/O current consumption**		No consumption
Weight	70 g max.			
Circuit layout				
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions			
Terminal connection diagram				
Input disconnection detection	Not supported.			

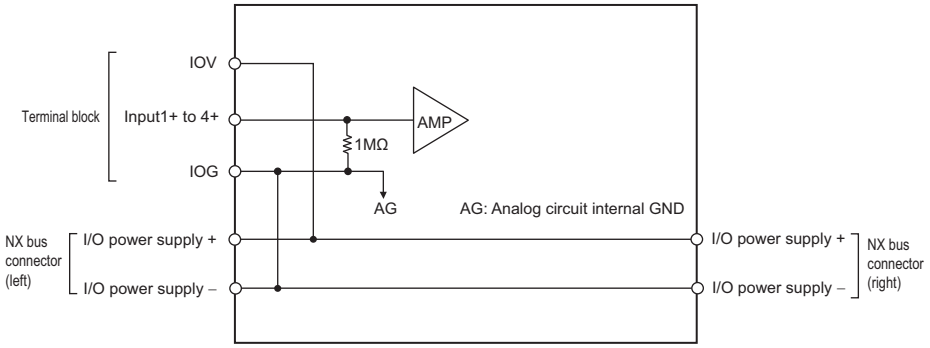
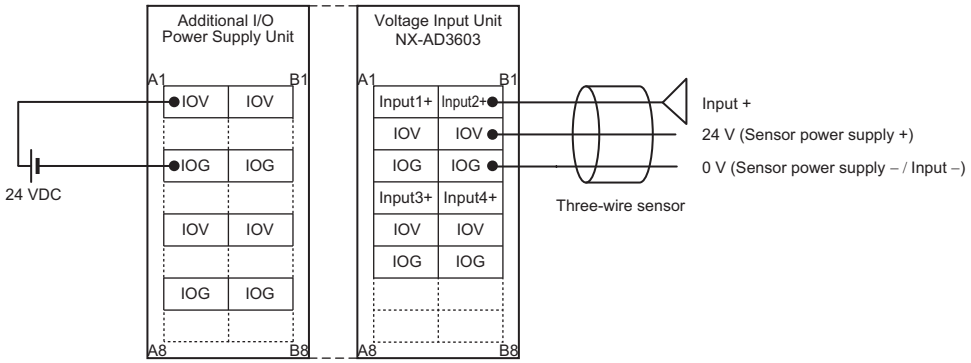
Analog Input Unit (voltage input type) 2 points NX-AD2604

Unit name	Analog Input Unit (voltage input type)	**Model**		NX-AD2604
Number of points	2 points	**External connection terminals**		Screwless clamping terminal block (8 terminals)
I/O refreshing method	Free-Run refreshing			
Indicator	TS indicator 	**Input method**		Differential Input
		Input range		-10 to +10 V
		Input conversion range		-5 to 105% (full scale)
		Absolute maximum rating		±15 V
		Input impedance		1 MΩ min.
		Resolution		1/8000 (full scale)
		Overall accuracy	**25°C**	±0.2% (full scale)
			0 to 55°C	±0.4% (full scale)
		Conversion time		250 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**		Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**		510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	No supply	**Current capacity of I/O power supply terminal**		Without I/O power supply terminals
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.35 W max. • Connected to a Communications Coupler Unit 1.05 W max.	**I/O current consumption**		No consumption
Weight	70 g max.			
Circuit layout				
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions			
Terminal connection diagram	 AG terminal is connected to 0 V of analog circuit inside the Unit. It is not necessary to wire AG terminal normally.			
Input disconnection detection	Not supported.			

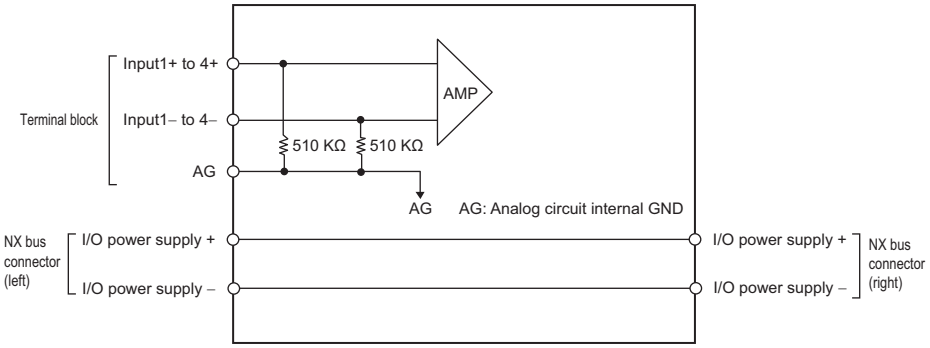
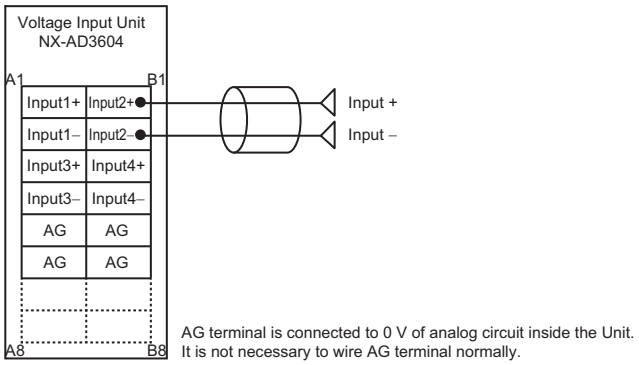
Analog Input Unit (voltage input type) 2 points NX-AD2608

<table>
<tr><td>Unit name</td><td>Analog Input Unit (voltage input type)</td><td colspan="2">Model</td><td>NX-AD2608</td></tr>
<tr><td>Number of points</td><td>2 points</td><td colspan="2">External connection terminals</td><td>Screwless clamping terminal block (8 terminals)</td></tr>
<tr><td>I/O refreshing method</td><td colspan="4">Selectable Synchronous I/O refreshing or Free-Run refreshing</td></tr>
<tr><td rowspan="8">Indicator</td><td rowspan="8">TS indicator
  </td><td colspan="2">Input method</td><td>Differential Input</td></tr>
<tr><td colspan="2">Input range</td><td>-10 to +10 V</td></tr>
<tr><td colspan="2">Input conversion range</td><td>-5 to 105% (full scale)</td></tr>
<tr><td colspan="2">Absolute maximum rating</td><td>±15 V</td></tr>
<tr><td colspan="2">Input impedance</td><td>1 MΩ min.</td></tr>
<tr><td colspan="2">Resolution</td><td>1/30000 (full scale)</td></tr>
<tr><td rowspan="2">Overall accuracy</td><td>25°C</td><td>±0.1% (full scale)</td></tr>
<tr><td>0 to 55°C</td><td>±0.2% (full scale)</td></tr>
<tr><td colspan="2">Conversion time</td><td>10 μs/point</td></tr>
<tr><td>Dimensions</td><td>12 (W) x 100 (H) x 71 (D)</td><td colspan="2">Isolation method</td><td>Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)</td></tr>
<tr><td>Insulation resistance</td><td>20 MΩ min. between isolated circuits (at 100 VDC)</td><td colspan="2">Dielectric strength</td><td>510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.</td></tr>
<tr><td>I/O power supply method</td><td>No supply</td><td colspan="2">Current capacity of I/O power supply terminal</td><td>Without I/O power supply terminals</td></tr>
<tr><td>NX Unit power consumption</td><td>• Connected to a CPU Unit or Communication Control Unit
1.35 W max.
• Connected to a Communications Coupler Unit
1.05 W max.</td><td colspan="2">I/O current consumption</td><td>No consumption</td></tr>
<tr><td>Weight</td><td colspan="4">70 g max.</td></tr>
<tr><td>Circuit layout</td><td colspan="4">  </td></tr>
<tr><td>Installation orientation and restrictions</td><td colspan="4">Installation orientation:
• Connected to a CPU Unit or Communication Control Unit: Possible in upright installation.
• Connected to a Communications Coupler Unit: Possible in 6 orientations.
Restrictions: No restrictions</td></tr>
<tr><td>Terminal connection diagram</td><td colspan="4"> 
AG terminal is connected to 0 V of analog circuit inside the Unit.
It is not necessary to wire AG terminal normally.</td></tr>
<tr><td>Input disconnection detection</td><td colspan="4">Not supported.</td></tr>
</table>

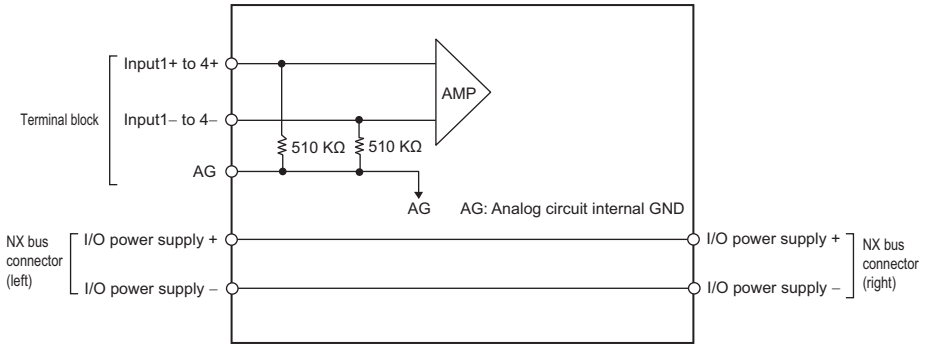
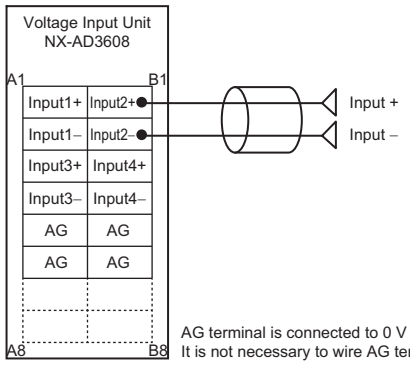
Analog Input Unit (voltage input type) 4 points NX-AD3603

Unit name	Analog Input Unit (voltage input type)	**Model**		NX-AD3603
Number of points	4 points	**External connection terminals**		Screwless clamping terminal block (12 terminals)
I/O refreshing method	Free-Run refreshing			
Indicator	TS indicator 	**Input method**		Single-ended input
		Input range		-10 to +10 V
		Input conversion range		-5 to 105% (full scale)
		Absolute maximum rating		±15 V
		Input impedance		1 MΩ min.
		Resolution		1/8000 (full scale)
		Overall accuracy	**25°C**	±0.2% (full scale)
			0 to 55°C	±0.4% (full scale)
		Conversion time		250 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**		Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**		510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	Supply from the NX bus	**Current capacity of I/O power supply terminal**		IOV: 0.1 A/terminal max., IOG: 0.1 A/terminal max.
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.35 W max. • Connected to a Communications Coupler Unit 1.10 W max.	**I/O current consumption**		No consumption
Weight	70 g max.			
Circuit layout				
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions			
Terminal connection diagram				
Input disconnection detection	Not supported.			

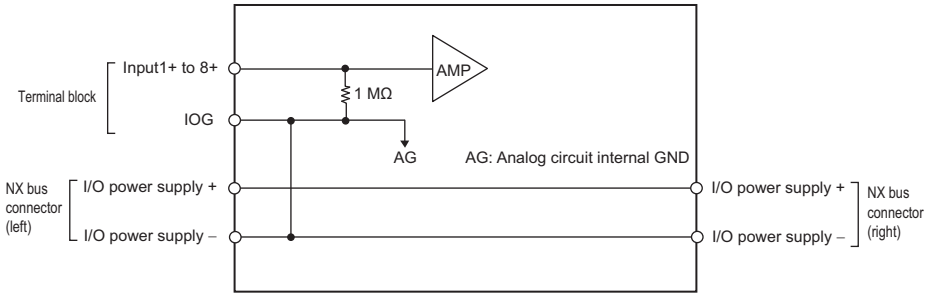
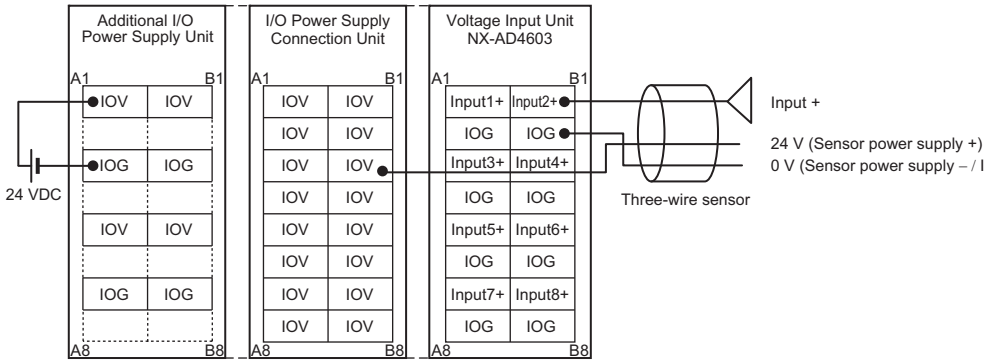
Analog Input Unit (voltage input type) 4 points NX-AD3604

Unit name	Analog Input Unit (voltage input type)	**Model**		NX-AD3604
Number of points	4 points	**External connection terminals**		Screwless clamping terminal block (12 terminals)
I/O refreshing method	Free-Run refreshing			
Indicator	TS indicator 	**Input method**		Differential Input
		Input range		-10 to +10 V
		Input conversion range		-5 to 105% (full scale)
		Absolute maximum rating		±15 V
		Input impedance		1 MΩ min.
		Resolution		1/8000 (full scale)
		Overall accuracy	**25°C**	±0.2% (full scale)
			0 to 55°C	±0.4% (full scale)
		Conversion time		250 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**		Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**		510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	No supply	**Current capacity of I/O power supply terminal**		Without I/O power supply terminals
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.35 W max. • Connected to a Communications Coupler Unit 1.10 W max.	**I/O current consumption**		No consumption
Weight	70 g max.			
Circuit layout				
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions			
Terminal connection diagram	 AG terminal is connected to 0 V of analog circuit inside the Unit. It is not necessary to wire AG terminal normally.			
Input disconnection detection	Not supported.			

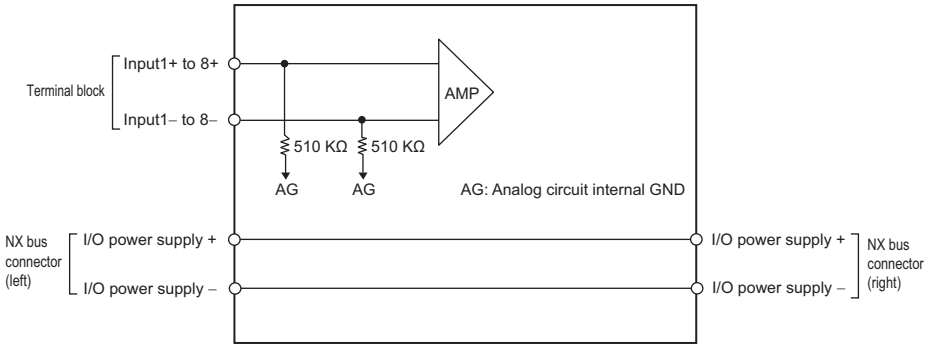
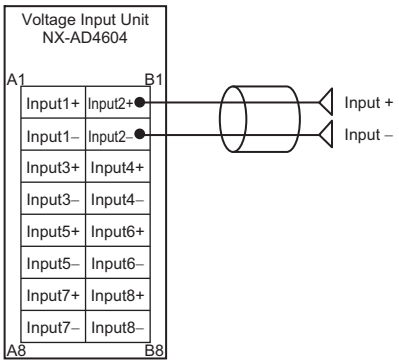
Analog Input Unit (voltage input type) 4 points NX-AD3608

Unit name	Analog Input Unit (voltage input type)	**Model**		NX-AD3608
Number of points	4 points	**External connection terminals**		Screwless clamping terminal block (12 terminals)
I/O refreshing method	Selectable Synchronous I/O refreshing or Free-Run refreshing			
Indicator	TS indicator 	**Input method**		Differential Input
		Input range		-10 to +10 V
		Input conversion range		-5 to 105% (full scale)
		Absolute maximum rating		±15 V
		Input impedance		1 MΩ min.
		Resolution		1/30000 (full scale)
		Overall accuracy	**25°C**	±0.1% (full scale)
			0 to 55°C	±0.2% (full scale)
		Conversion time		10 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**		Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**		510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	No supply	**Current capacity of I/O power supply terminal**		Without I/O power supply terminals
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.45 W max. • Connected to a Communications Coupler Unit 1.10 W max.	**I/O current consumption**		No consumption
Weight	70 g max.			
Circuit layout				
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions			
Terminal connection diagram	 AG terminal is connected to 0 V of analog circuit inside the Unit. It is not necessary to wire AG terminal normally.			
Input disconnection detection	Not supported.			

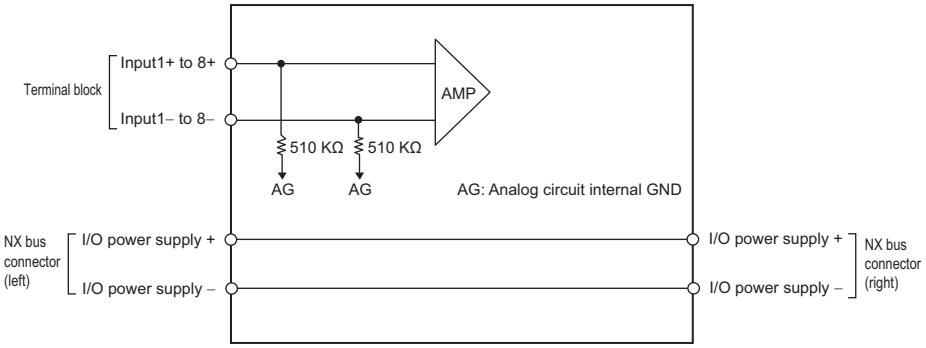
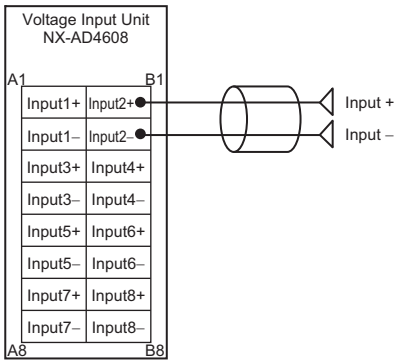
Analog Input Unit (voltage input type) 8 points NX-AD4603

Unit name	Analog Input Unit (voltage input type)	**Model**	NX-AD4603
Number of points	8 points	**External connection terminals**	Screwless clamping terminal block (16 terminals)
I/O refreshing method	Free-Run refreshing		
Indicator	TS indicator 	**Input method**	Single-ended input
		Input range	-10 to +10 V
		Input conversion range	-5 to 105% (full scale)
		Absolute maximum rating	±15 V
		Input impedance	1 MΩ min.
		Resolution	1/8000 (full scale)
		Overall accuracy 25°C	±0.2% (full scale)
		Overall accuracy 0 to 55°C	±0.4% (full scale)
		Conversion time	250 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**	Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	Supply from the NX bus	**Current capacity of I/O power supply terminal**	IOG: 0.1 A/terminal max.
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.45 W max. • Connected to a Communications Coupler Unit 1.15 W max.	**I/O current consumption**	No consumption
Weight	70 g max.		
Circuit layout			
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions		
Terminal connection diagram			
Input disconnection detection	Not supported.		

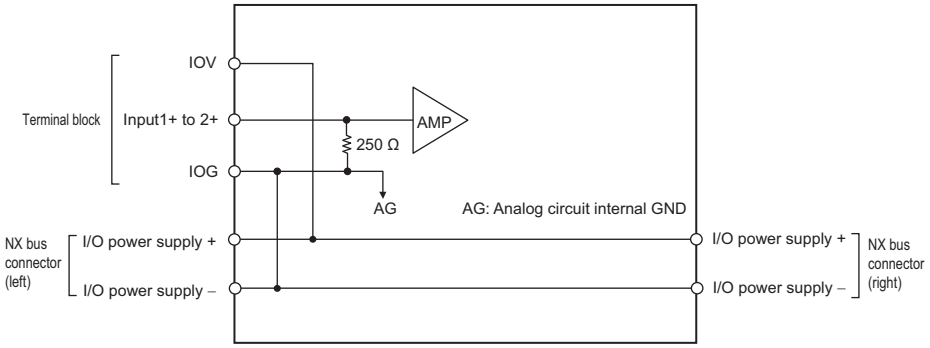
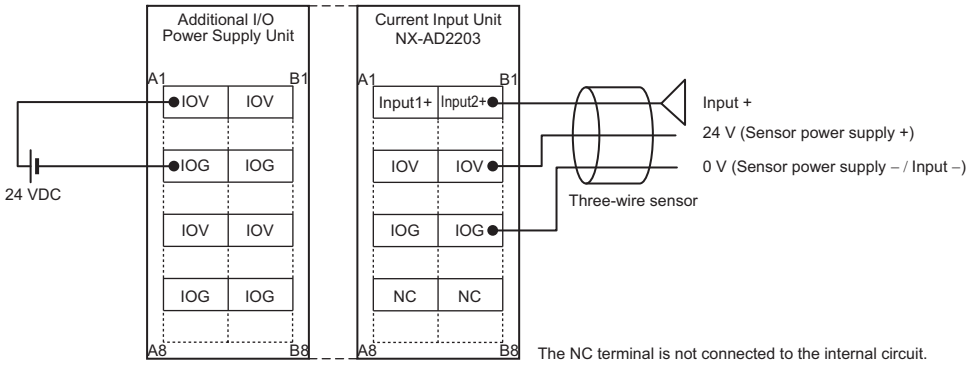
Analog Input Unit (voltage input type) 8 points NX-AD4604

Unit name	Analog Input Unit (voltage input type)	**Model**		NX-AD4604
Number of points	8 points	**External connection terminals**		Screwless clamping terminal block (16 terminals)
I/O refreshing method	Free-Run refreshing			
Indicator	TS indicator 	**Input method**		Differential Input
		Input range		-10 to +10 V
		Input conversion range		-5 to 105% (full scale)
		Absolute maximum rating		±15 V
		Input impedance		1 MΩ min.
		Resolution		1/8000 (full scale)
		Overall accuracy	**25°C**	±0.2% (full scale)
			0 to 55°C	±0.4% (full scale)
		Conversion time		250 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**		Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**		510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	No supply	**Current capacity of I/O power supply terminal**		Without I/O power supply terminals
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.45 W max. • Connected to a Communications Coupler Unit 1.15 W max.	**I/O current consumption**		No consumption
Weight	70 g max.			
Circuit layout				
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions			
Terminal connection diagram				
Input disconnection detection	Not supported.			

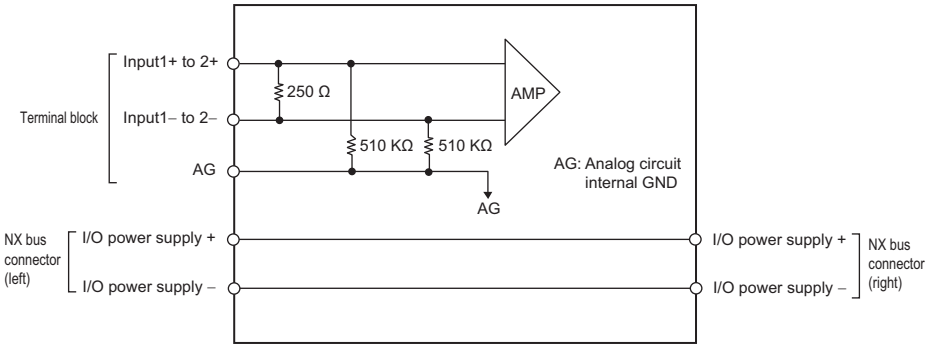
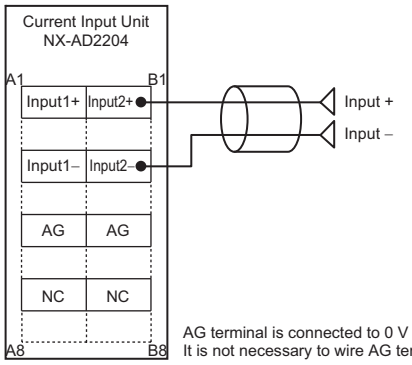
Analog Input Unit (voltage input type) 8 points NX-AD4608

Unit name	Analog Input Unit (voltage input type)	**Model**		NX-AD4608
Number of points	8 points	**External connection terminals**		Screwless clamping terminal block (16 terminals)
I/O refreshing method	Selectable Synchronous I/O refreshing or Free-Run refreshing			
Indicator	TS indicator 	**Input method**		Differential Input
		Input range		-10 to +10 V
		Input conversion range		-5 to 105% (full scale)
		Absolute maximum rating		±15 V
		Input impedance		1 MΩ min.
		Resolution		1/30000 (full scale)
		Overall accuracy	**25°C**	±0.1% (full scale)
			0 to 55°C	±0.2% (full scale)
		Conversion time		10 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**		Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**		510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	No supply	**Current capacity of I/O power supply terminal**		Without I/O power supply terminals
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.45 W max. • Connected to a Communications Coupler Unit 1.15 W max.	**I/O current consumption**		No consumption
Weight	70 g max.			
Circuit layout				
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions			
Terminal connection diagram				
Input disconnection detection	Not supported.			

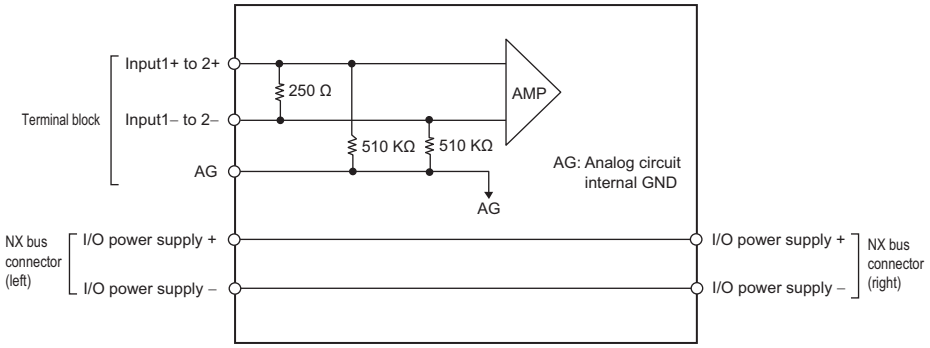
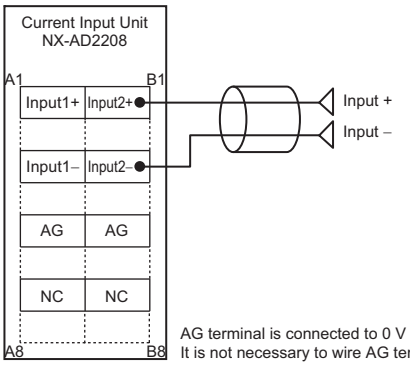
Analog Input Unit (current input type) 2 points NX-AD2203

Unit name	Analog Input Unit (current input type)	**Model**		NX-AD2203
Number of points	2 points	**External connection terminals**		Screwless clamping terminal block (8 terminals)
I/O refreshing method	Free-Run refreshing			
Indicator	TS indicator 	**Input method**		Single-ended input
		Input range		4 to 20 mA
		Input conversion range		-5 to 105% (full scale)
		Absolute maximum rating		±30 mA
		Input impedance		250 Ω min.
		Resolution		1/8000 (full scale)
		Overall accuracy	**25°C**	±0.2% (full scale)
			0 to 55°C	±0.4% (full scale)
		Conversion time		250 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**		Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**		510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	Supply from the NX bus	**Current capacity of I/O power supply terminal**		IOV: 0.1 A/terminal max., IOG: 0.1 A/terminal max.
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.25 W max. • Connected to a Communications Coupler Unit 0.90 W max.	**I/O current consumption**		No consumption
Weight	70 g max.			
Circuit layout				
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions			
Terminal connection diagram				
Input disconnection detection	Supported.			

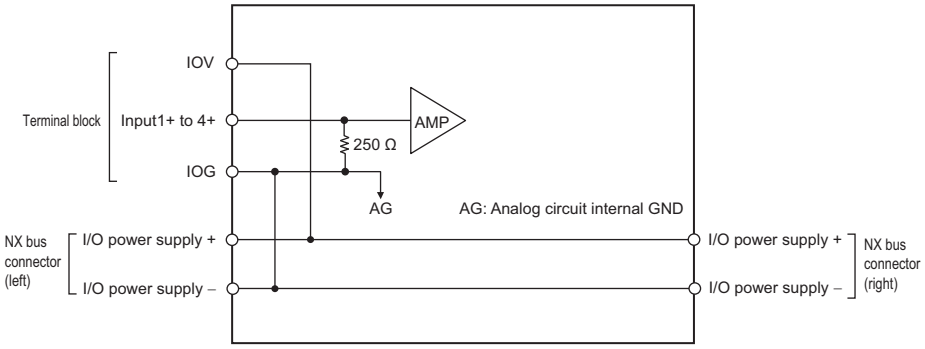
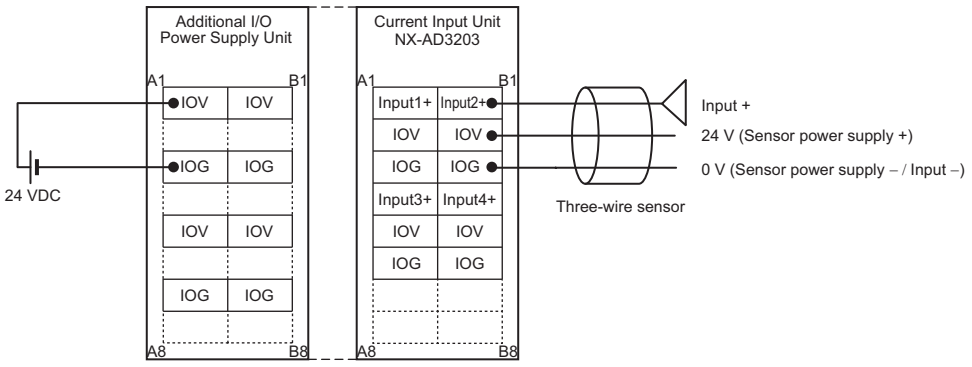
Analog Input Unit (current input type) 2 points NX-AD2204

Unit name	Analog Input Unit (current input type)	**Model**	NX-AD2204
Number of points	2 points	**External connection terminals**	Screwless clamping terminal block (8 terminals)
I/O refreshing method	Free-Run refreshing		
Indicator	TS indicator 	**Input method**	Differential Input
		Input range	4 to 20 mA
		Input conversion range	-5 to 105% (full scale)
		Absolute maximum rating	±30 mA
		Input impedance	250 Ω min.
		Resolution	1/8000 (full scale)
		Overall accuracy 25°C	±0.2% (full scale)
		Overall accuracy 0 to 55°C	±0.4% (full scale)
		Conversion time	250 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**	Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	No supply	**Current capacity of I/O power supply terminal**	Without I/O power supply terminals
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.25 W max. • Connected to a Communications Coupler Unit 0.90 W max.	**I/O current consumption**	No consumption
Weight	70 g max.		
Circuit layout			
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions		
Terminal connection diagram	 AG terminal is connected to 0 V of analog circuit inside the Unit. It is not necessary to wire AG terminal normally.		
Input disconnection detection	Supported.		

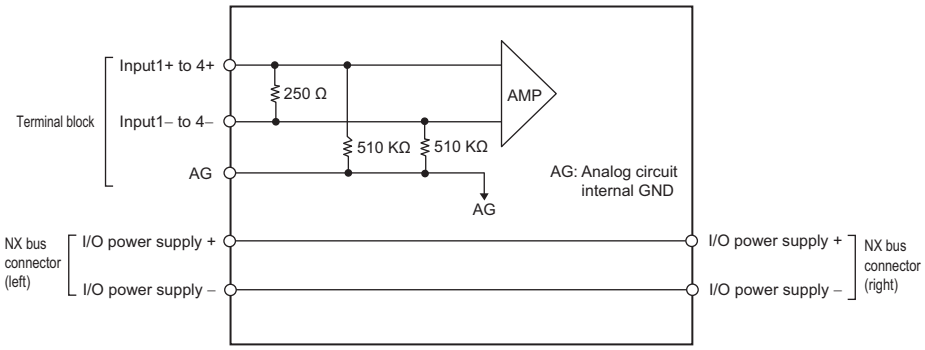
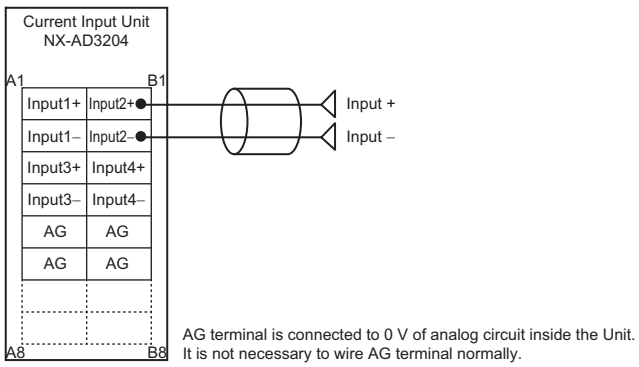
Analog Input Unit (current input type) 2 points NX-AD2208

Unit name	Analog Input Unit (current input type)	**Model**		NX-AD2208
Number of points	2 points	**External connection terminals**		Screwless clamping terminal block (8 terminals)
I/O refreshing method	Selectable Synchronous I/O refreshing or Free-Run refreshing			
Indicator	TS indicator 	**Input method**		Differential Input
		Input range		4 to 20 mA
		Input conversion range		-5 to 105% (full scale)
		Absolute maximum rating		±30 mA
		Input impedance		250 Ω
		Resolution		1/30000 (full scale)
		Overall accuracy	**25°C**	±0.1% (full scale)
			0 to 55°C	±0.2% (full scale)
		Conversion time		10 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**		Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**		510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	No supply	**Current capacity of I/O power supply terminal**		Without I/O power supply terminals
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.25 W max. • Connected to a Communications Coupler Unit 0.90 W max.	**I/O current consumption**		No consumption
Weight	70 g max.			
Circuit layout				
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions			
Terminal connection diagram	 AG terminal is connected to 0 V of analog circuit inside the Unit. It is not necessary to wire AG terminal normally.			
Input disconnection detection	Supported.			

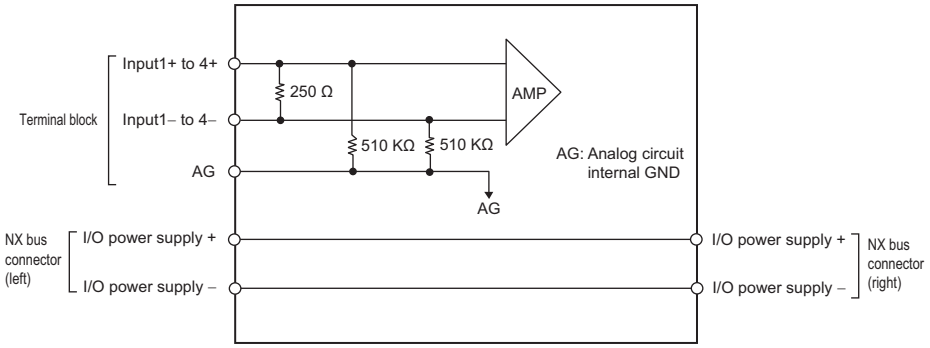
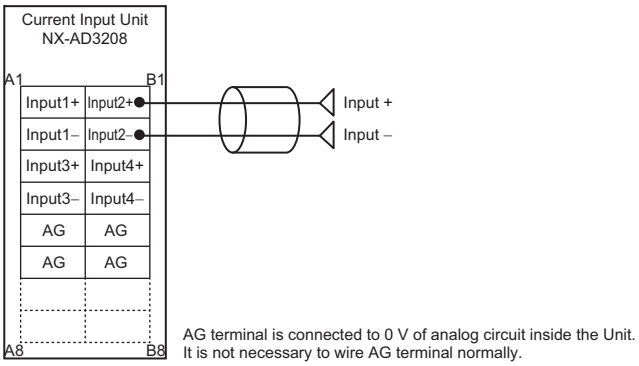
Analog Input Unit (current input type) 4 points NX-AD3203

Unit name	Analog Input Unit (current input type)	**Model**	NX-AD3203
Number of points	4 points	**External connection terminals**	Screwless clamping terminal block (12 terminals)
I/O refreshing method	Free-Run refreshing		
Indicator	TS indicator 	**Input method**	Single-ended input
		Input range	4 to 20 mA
		Input conversion range	-5 to 105% (full scale)
		Absolute maximum rating	±30 mA
		Input impedance	250 Ω min.
		Resolution	1/8000 (full scale)
		Overall accuracy 25°C	±0.2% (full scale)
		Overall accuracy 0 to 55°C	±0.4% (full scale)
		Conversion time	250 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**	Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	Supply from the NX bus	**Current capacity of I/O power supply terminal**	IOV: 0.1 A/terminal max., IOG: 0.1 A/terminal max.
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.25 W max. • Connected to a Communications Coupler Unit 0.90 W max.	**I/O current consumption**	No consumption
Weight	70 g max.		
Circuit layout			
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions		
Terminal connection diagram			
Input disconnection detection	Supported.		

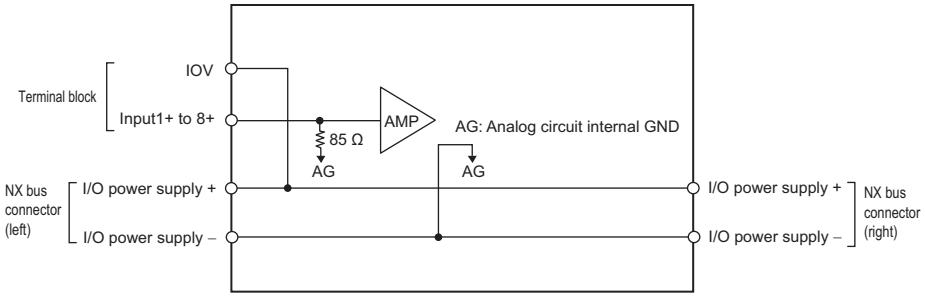
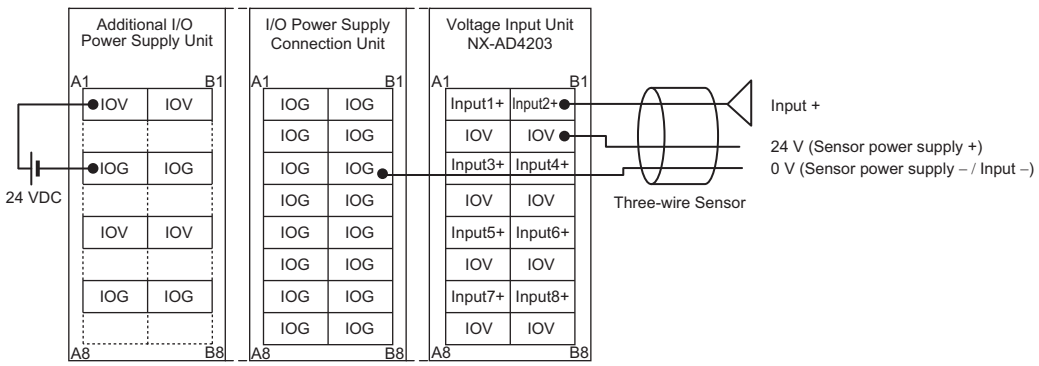
Analog Input Unit (current input type) 4 points NX-AD3204

Unit name	Analog Input Unit (current input type)	**Model**	NX-AD3204
Number of points	4 points	**External connection terminals**	Screwless clamping terminal block (12 terminals)
I/O refreshing method	Free-Run refreshing		
Indicator	TS indicator 	**Input method**	Differential Input
		Input range	4 to 20 mA
		Input conversion range	-5 to 105% (full scale)
		Absolute maximum rating	±30 mA
		Input impedance	250 Ω min.
		Resolution	1/8000 (full scale)
		Overall accuracy 25°C	±0.2% (full scale)
		Overall accuracy 0 to 55°C	±0.4% (full scale)
		Conversion time	250 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**	Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	No supply	**Current capacity of I/O power supply terminal**	Without I/O power supply terminals
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.25 W max. • Connected to a Communications Coupler Unit 0.90 W max.	**I/O current consumption**	No consumption
Weight	70 g max.		
Circuit layout			
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions		
Terminal connection diagram	 AG terminal is connected to 0 V of analog circuit inside the Unit. It is not necessary to wire AG terminal normally.		
Input disconnection detection	Supported.		

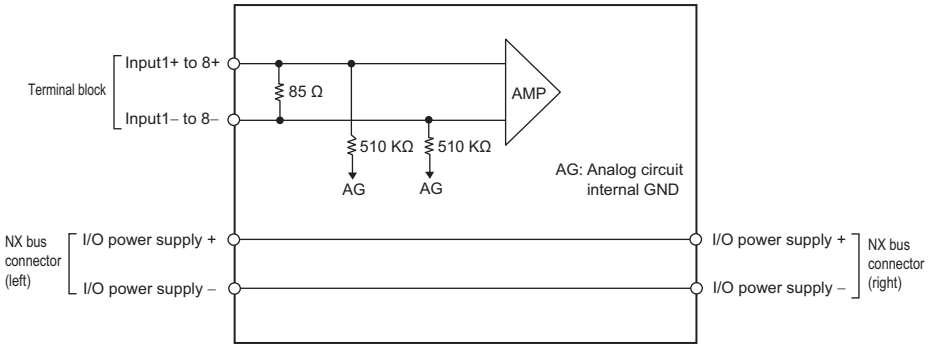
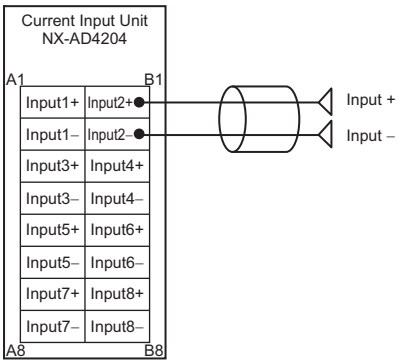
Analog Input Unit (current input type) 4 points NX-AD3208

Unit name	Analog Input Unit (current input type)	**Model**		NX-AD3208
Number of points	4 points	**External connection terminals**		Screwless clamping terminal block (12 terminals)
I/O refreshing method	Selectable Synchronous I/O refreshing or Free-Run refreshing			
Indicator	TS indicator 	**Input method**		Differential Input
		Input range		4 to 20 mA
		Input conversion range		-5 to 105% (full scale)
		Absolute maximum rating		±30 mA
		Input impedance		250 Ω min.
		Resolution		1/30000 (full scale)
		Overall accuracy	**25°C**	±0.1% (full scale)
			0 to 55°C	±0.2% (full scale)
		Conversion time		10 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**		Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**		510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	No supply	**Current capacity of I/O power supply terminal**		Without I/O power supply terminals
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.30 W max. • Connected to a Communications Coupler Unit 0.95 W max.	**I/O current consumption**		No consumption
Weight	70 g max.			
Circuit layout				
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions			
Terminal connection diagram	 AG terminal is connected to 0 V of analog circuit inside the Unit. It is not necessary to wire AG terminal normally.			
Input disconnection detection	Supported.			

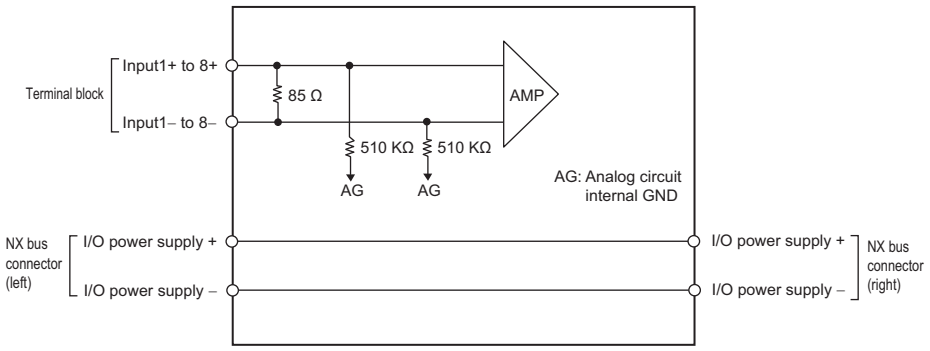
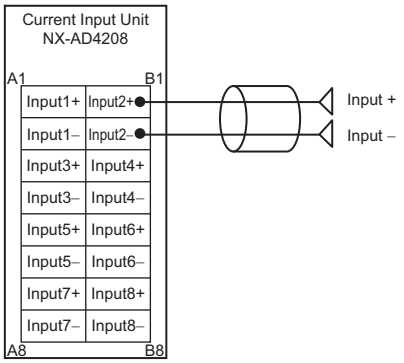
Analog Input Unit (current input type) 8 points NX-AD4203

Unit name	Analog Input Unit (current input type)	**Model**	NX-AD4203
Number of points	8 points	**External connection terminals**	Screwless clamping terminal block (16 terminals)
I/O refreshing method	Free-Run refreshing		
Indicator	TS indicator 	**Input method**	Single-ended input
		Input range	4 to 20 mA
		Input conversion range	-5 to 105% (full scale)
		Absolute maximum rating	±30 mA
		Input impedance	85 Ω
		Resolution	1/8000 (full scale)
		Overall accuracy 25°C	±0.2% (full scale)
		Overall accuracy 0 to 55°C	±0.4% (full scale)
		Conversion time	250 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**	Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	Supply from the NX bus	**Current capacity of I/O power supply terminal**	IOV: 0.1 A/terminal max.
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.40 W max. • Connected to a Communications Coupler Unit 1.05 W max.	**I/O current consumption**	No consumption
Weight	70 g max.		
Circuit layout			
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions		
Terminal connection diagram			
Input disconnection detection	Supported.		

Analog Input Unit (current input type) 8 points NX-AD4204

Unit name	Analog Input Unit (current input type)	**Model**	NX-AD4204
Number of points	8 points	**External connection terminals**	Screwless clamping terminal block (16 terminals)
I/O refreshing method	Free-Run refreshing		
Indicator	TS indicator 	**Input method**	Differential Input
		Input range	4 to 20 mA
		Input conversion range	-5 to 105% (full scale)
		Absolute maximum rating	±30 mA
		Input impedance	85 Ω
		Resolution	1/8000 (full scale)
		Overall accuracy 25°C	±0.2% (full scale)
		Overall accuracy 0 to 55°C	±0.4% (full scale)
		Conversion time	250 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**	Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	No supply	**Current capacity of I/O power supply terminal**	Without I/O power supply terminals
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.40 W max. • Connected to a Communications Coupler Unit 1.05 W max.	**I/O current consumption**	No consumption
Weight	70 g max.		
Circuit layout			
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions		
Terminal connection diagram			
Input disconnection detection	Supported.		

Analog Input Unit (current input type) 8 points NX-AD4208

Unit name	Analog Input Unit (current input type)	**Model**		NX-AD4208
Number of points	8 points	**External connection terminals**		Screwless clamping terminal block (16 terminals)
I/O refreshing method	Selectable Synchronous I/O refreshing or Free-Run refreshing			
Indicator	TS indicator 	**Input method**		Differential Input
		Input range		4 to 20 mA
		Input conversion range		-5 to 105% (full scale)
		Absolute maximum rating		±30 mA
		Input impedance		85 Ω
		Resolution		1/30000 (full scale)
		Overall accuracy	**25°C**	±0.1% (full scale)
			0 to 55°C	±0.2% (full scale)
		Conversion time		10 μs/point
Dimensions	12 (W) x 100 (H) x 71 (D)	**Isolation method**		Between the input and the NX bus: Power = Transformer, Signal = Digital isolator (no isolation between inputs)
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	**Dielectric strength**		510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
I/O power supply method	No supply	**Current capacity of I/O power supply terminal**		Without I/O power supply terminals
NX Unit power consumption	• Connected to a CPU Unit or Communication Control Unit 1.45 W max. • Connected to a Communications Coupler Unit 1.10 W max.	**I/O current consumption**		No consumption
Weight	70 g max.			
Circuit layout				
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit: Possible in upright installation. • Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions			
Terminal connection diagram				
Input disconnection detection	Supported.			