

NX-series Analog Input Unit

NX-AD

CSM_NX-AD_DS_E_1_1

Wide Lineup to Meet Various Analog Control and Measurement Needs: from High-speed Synchronous Control to General Purpose

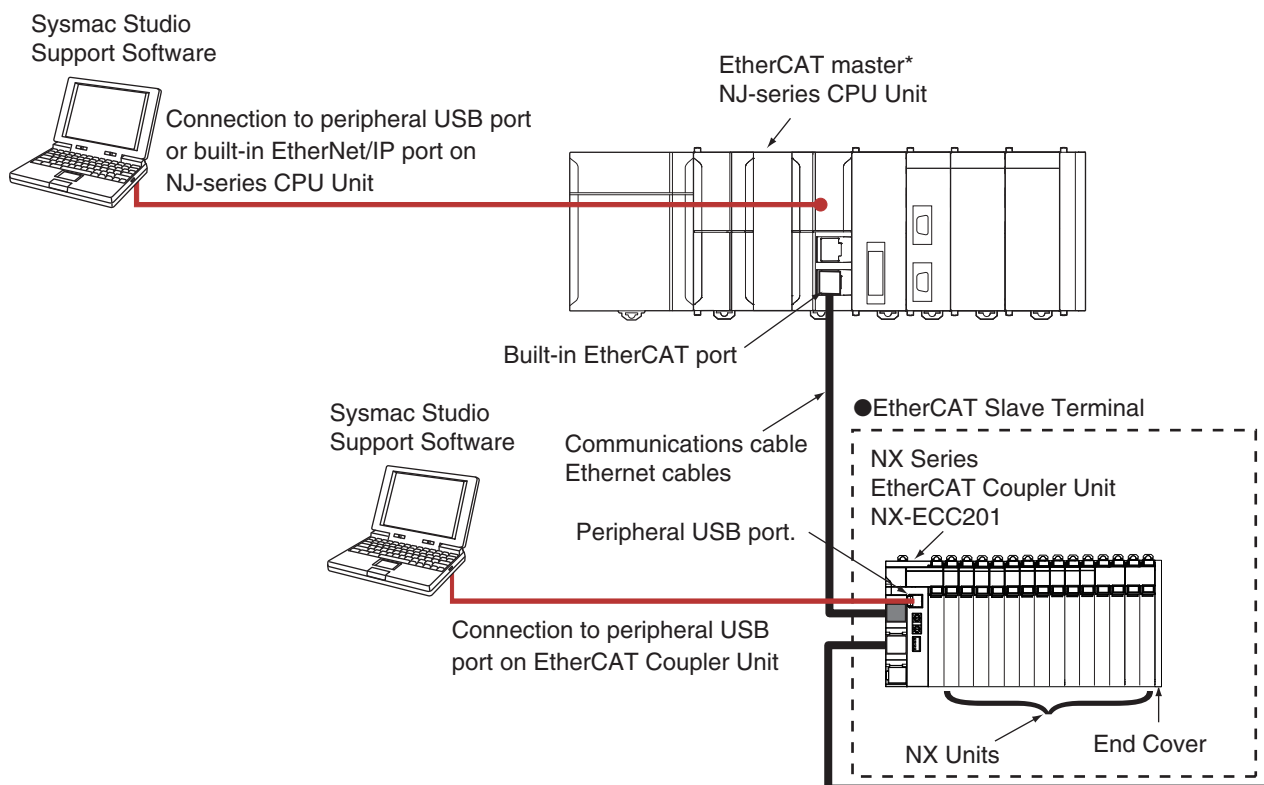
- NX-series Analog Input Unit
- This unit can be used as an ECAT slave by connecting with the ECAT Coupler.
- Voltage and current input models are available.



Features

- Input up to eight analog signals with one Unit.
- Free-run refreshing or I/O synchronous refreshing can be selected for refreshing with the EtherCAT Coupler Unit.
- The lineup includes the model which achieves sampling speed of 10 μ s and resolution of 1/30000, ideal for high-speed measurement and high-speed, high-precision control.
- Difference voltage/current input types and single-ended voltage/current input types are available.
- The removable screwless terminal block improves maintenance.
- Screw-less clamp terminal block significantly reduces wiring work.
- 12-mm-wide unit can save space.

System Configuration



* OMRON CJ1W-NC□81/□82 Position Control Units cannot be connected to the EtherCAT Slave Terminal even though they support EtherCAT.



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Ordering Information

International Standards

- The standards are abbreviated as follows: U: UL, U1: UL (Class I Division 2 Products for Hazardous Locations), C: CSA, UC: cULus, UC1: cULus (Class I Division 2 Products for Hazardous Locations), CU: cUL, N: NK, L: Lloyd, CE: EC Directives, and KC: KC Registration.
- Contact your OMRON representative for further details and applicable conditions for these standards.

Analog Input Unit

Unit type	Product Name	Specification									NX Unit power consumption	Model	Standards
		Capacity	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			
NX Series Analog Input Unit	Voltage Input Unit 	2 points	-10 to +10V	1/8000	-4000 to 4000	±0.2% (full scale)	Single-ended input	250 μs/point	1MΩ min.	Free-Run refreshing	1.05W max.	NX-AD2603	UC1, CE, KC
							Differential Input				1.05W max.	NX-AD2604	
		4 points		1/30000	-15000 to 15000	±0.1% (full scale)	Differential Input	10 μs/point		Switching Synchronous I/O refreshing and Free-Run refreshing	1.05W max.	NX-AD2608	
							Single-ended input			250 μs/point	Free-Run refreshing	1.10W max.	
		8 points		1/30000	-15000 to 15000	±0.1% (full scale)	Differential Input	10 μs/point			Switching Synchronous I/O refreshing and Free-Run refreshing	1.10W max.	
							Single-ended input			250 μs/point	Free-Run refreshing	1.15W max.	
	Current Input Unit 	2 points	4 to 20mA	1/8000	0 to 8000	±0.2% (full scale)	Single-ended input	250 μs/point	250Ω		Free-Run refreshing	0.90W max.	
							Differential Input			0.90W max.		NX-AD2204	
		4 points		1/30000	0 to 30000	±0.1% (full scale)	Differential Input	10 μs/point		Switching Synchronous I/O refreshing and Free-Run refreshing	0.90W max.	NX-AD2208	
							Single-ended input			250 μs/point	Free-Run refreshing	0.90W max.	
		8 points		1/30000	0 to 30000	±0.1% (full scale)	Differential Input	10 μs/point			Switching Synchronous I/O refreshing and Free-Run refreshing	0.95W max.	
							Single-ended input			250 μs/point	Free-Run refreshing	1.05W max.	
85Ω	1/8000	0 to 8000	±0.2% (full scale)	Differential Input	10 μs/point	Free-Run refreshing	1.05W max.	NX-AD4204					
				Single-ended input		250 μs/point	Switching Synchronous I/O refreshing and Free-Run refreshing	1.10W max.	NX-AD4208				

Option

Product Name	Specification	Model	Standards
Cording Pins	For 10 Units (Terminal Block: 30 pins, Unit: 30 pins)	NX-AUX02	---

Accessories


Not included.

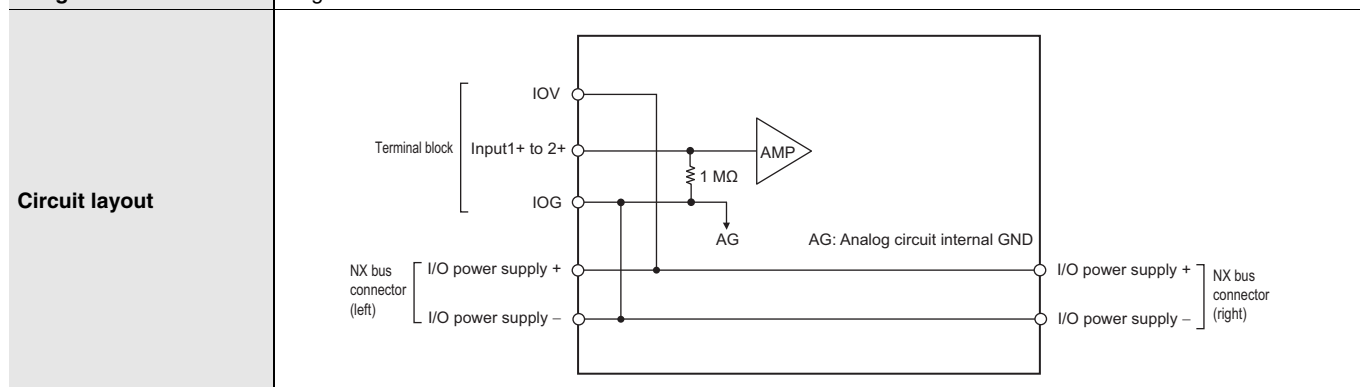
General Specification

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	Conforms to IEC 60068-2-27. 147 m/s ² , 3 times each in X, Y, and Z directions	
Applicable standards		cULus: Listed UL508 and ANSI/ISA 12.12.01 EC: EN 61131-2 and C-Tick, KC Registration

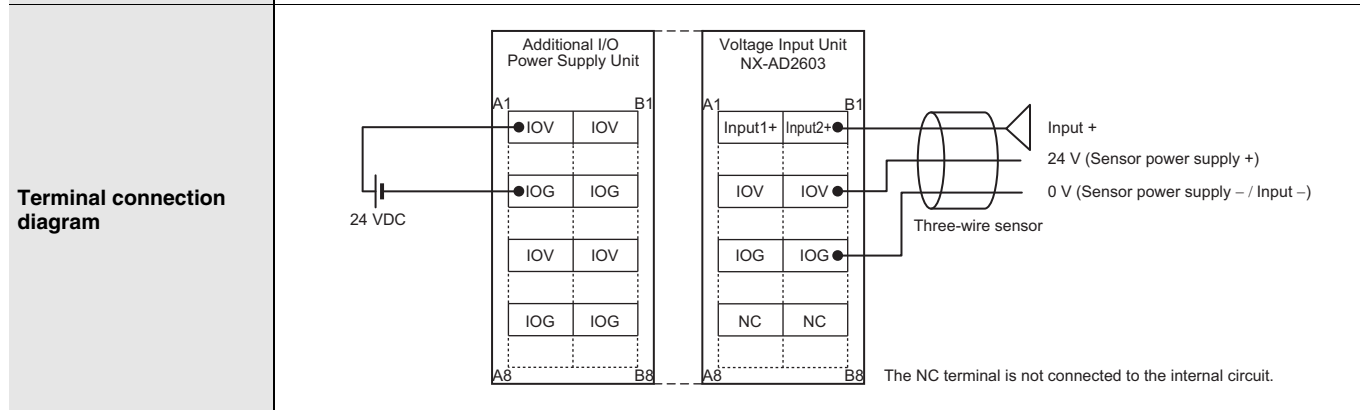
Analog Input Unit Specifications

Voltage Input Unit 2 points NX-AD2603

Unit name	Voltage Input Unit	Model	NX-AD2603	
Capacity	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	1.05 W max.	I/O current consumption	No consumption	
Weight	70 g max.			

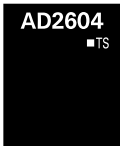


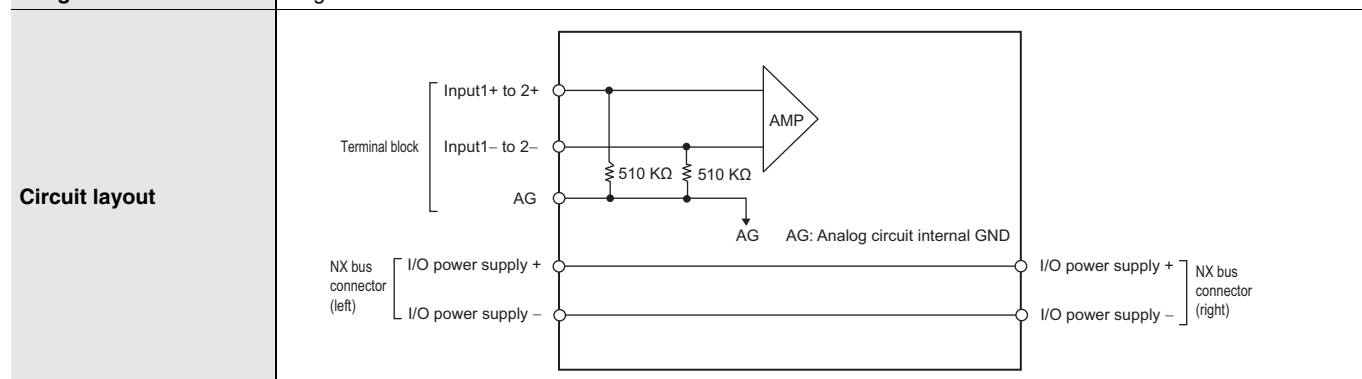
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



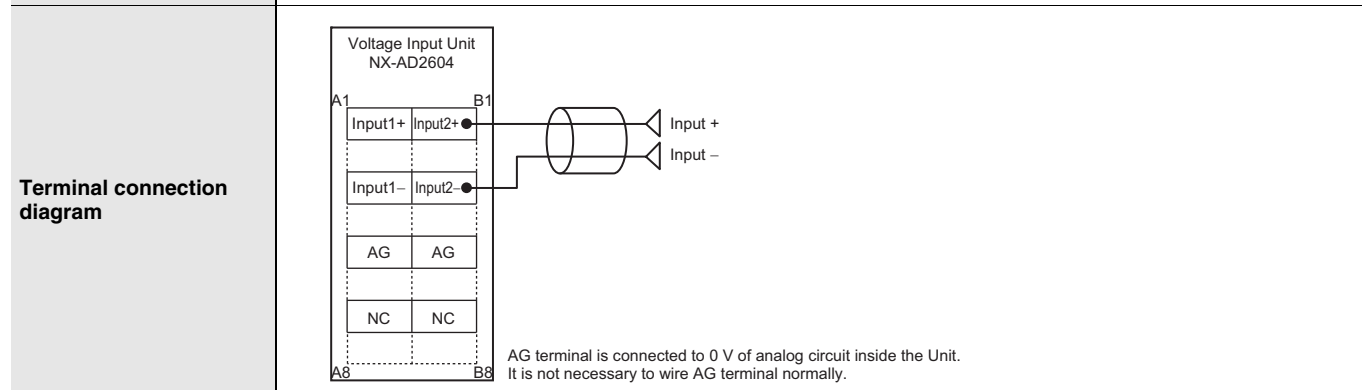
Input disconnection detection
 Not supported.

Voltage Input Unit 2 points NX-AD2604

Unit name	Voltage Input Unit	Model	NX-AD2604	
Capacity	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	1.05 W max.	I/O current consumption	No consumption	
Weight	70 g max.			




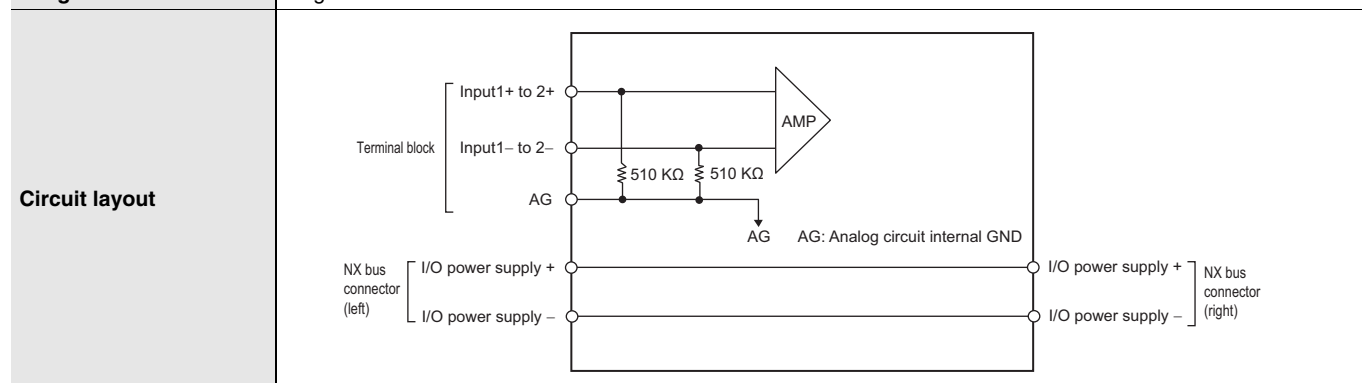
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



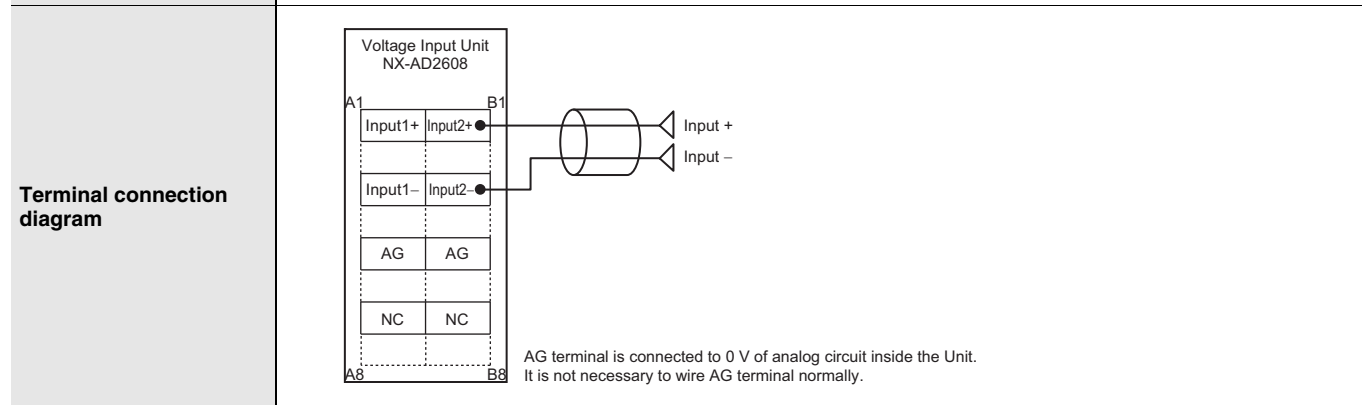
Input disconnection detection
 Not supported.

Voltage Input Unit 2 points NX-AD2608

Unit name	Voltage Input Unit	Model	NX-AD2608	
Capacity	2 points	External connection terminals	Screwless clamping terminal block (8 terminals)	
I/O refreshing method	Switching Synchronous I/O refreshing and Free-Run refreshing			
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	1.05 W max.	I/O current consumption	No consumption	
Weight	70 g max.			




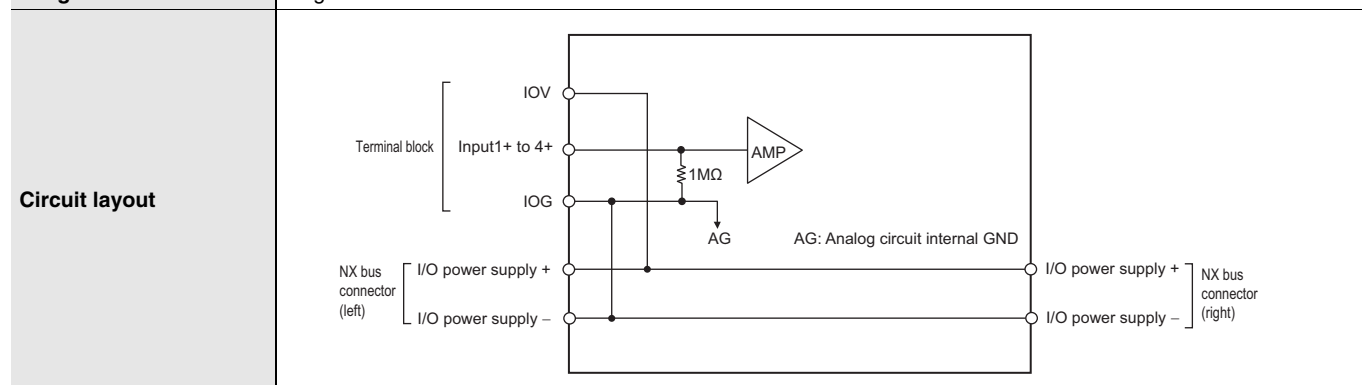
Installation orientation and restrictions
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 Restrictions: No restrictions



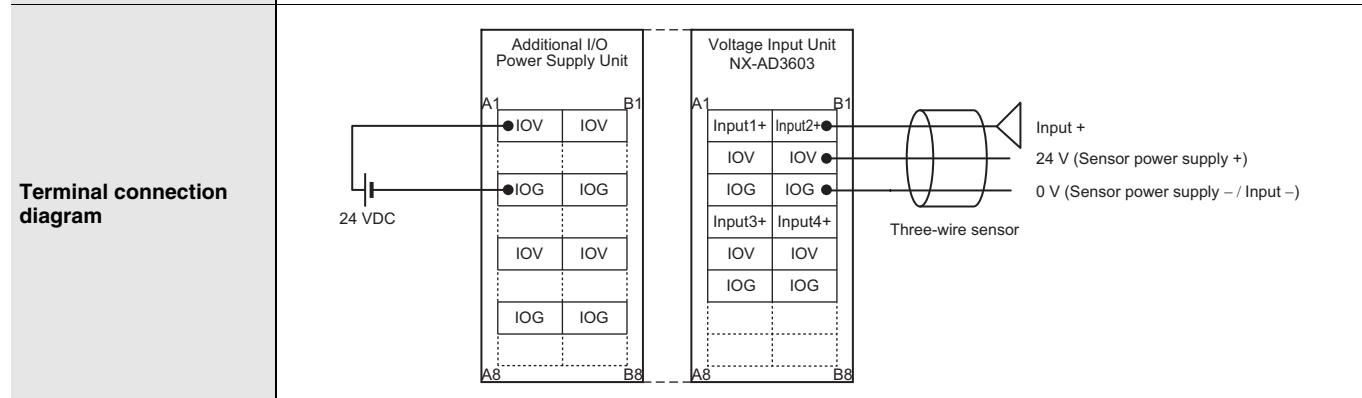
Input disconnection detection
 Not supported.

Voltage Input Unit 4 points NX-AD3603

Unit name	Voltage Input Unit	Model	NX-AD3603	
Capacity	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	1.10 W max.	I/O current consumption	No consumption	
Weight	70 g max.			




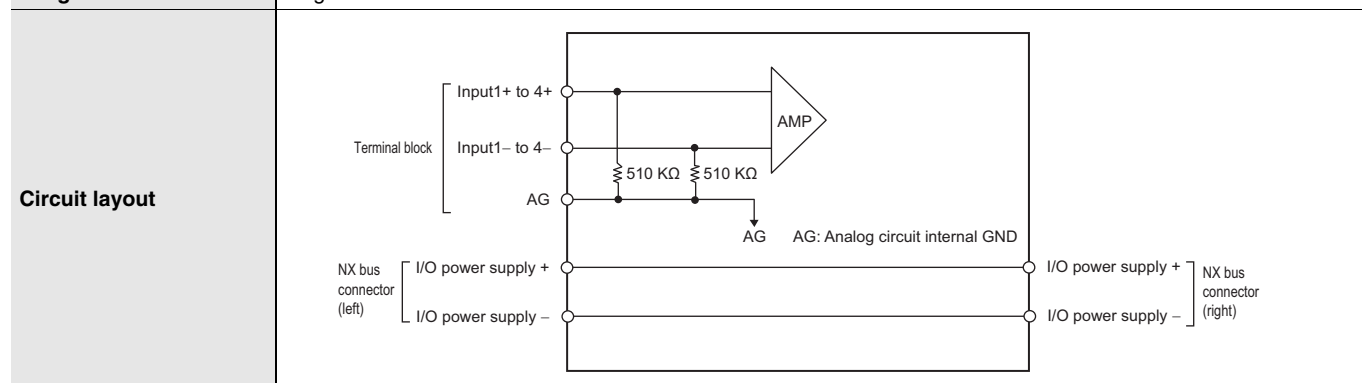
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



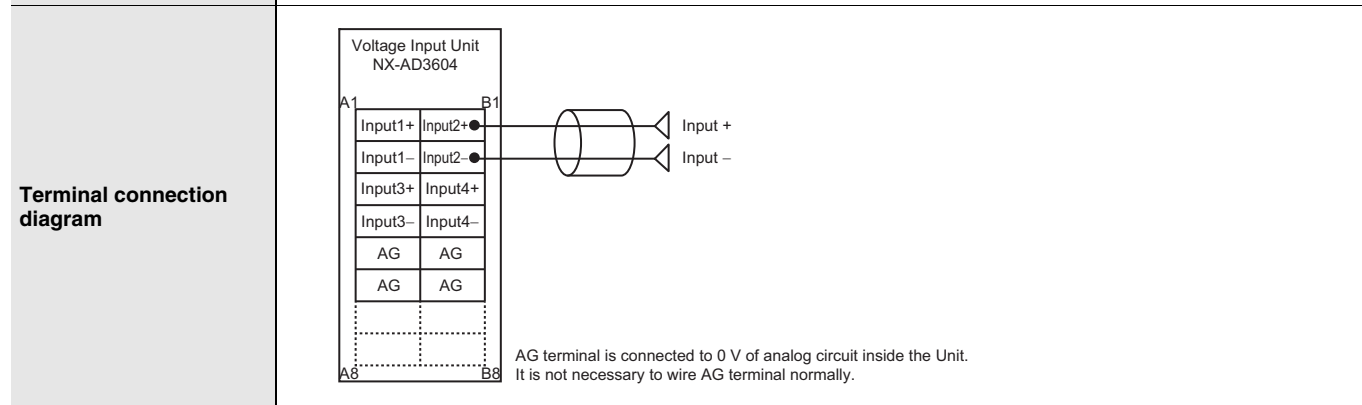
Input disconnection detection
 Not supported.

Voltage Input Unit 4 points NX-AD3604

Unit name	Voltage Input Unit	Model	NX-AD3604	
Capacity	4 points	External connection terminals	Screwless clamping terminal block (12 terminals)	
I/O refreshing method	Switching Synchronous I/O refreshing and 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	1.10 W max.	I/O current consumption	No consumption	
Weight	70 g max.			

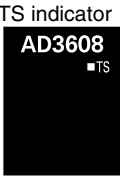


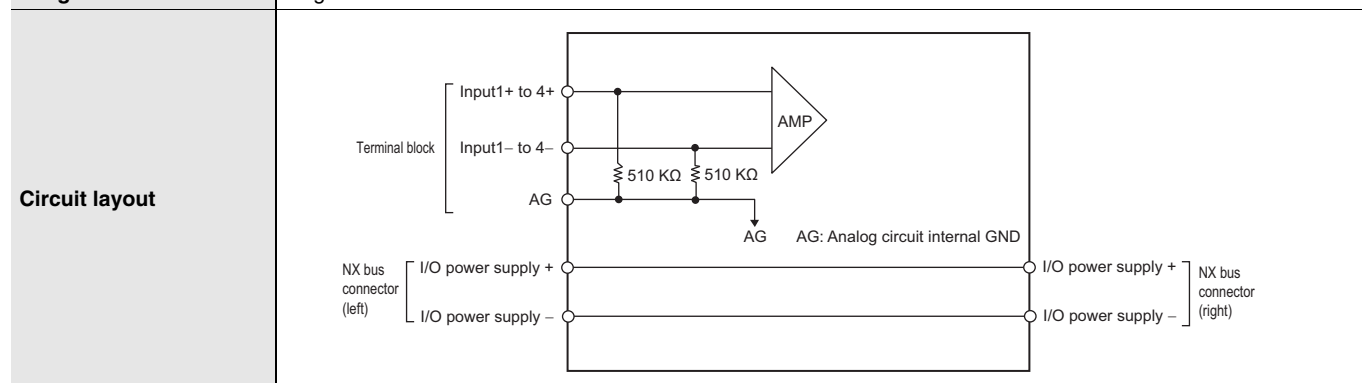
Installation orientation and restrictions
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 Restrictions: No restrictions



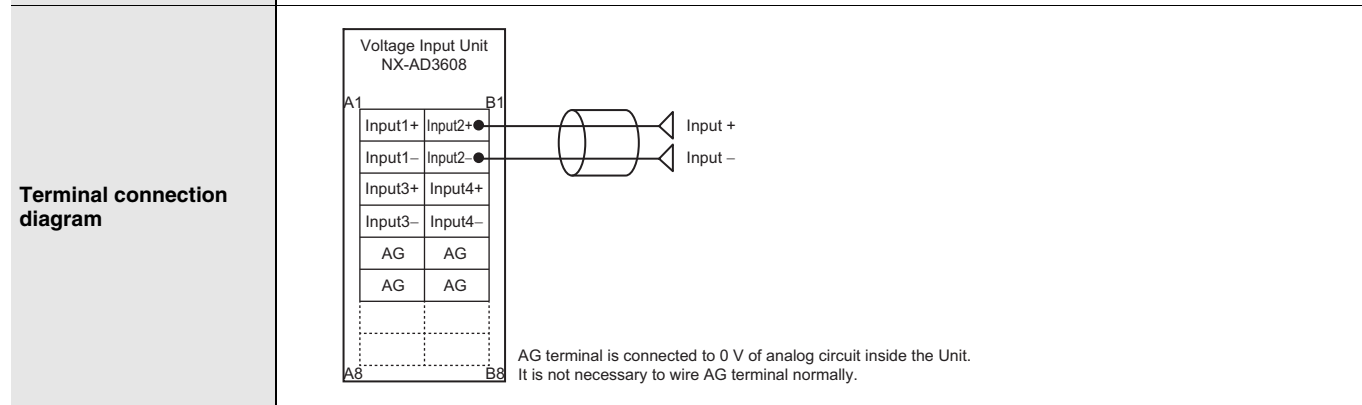
Input disconnection detection
 Not supported.

Voltage Input Unit 4 points NX-AD3608

Unit name	Voltage Input Unit	Model	NX-AD3608	
Capacity	4 points	External connection terminals	Screwless clamping terminal block (12 terminals)	
I/O refreshing method	Switching Synchronous I/O refreshing and Free-Run refreshing			
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	1.10 W max.	I/O current consumption	No consumption	
Weight	70 g max.			

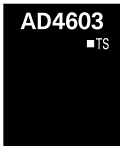


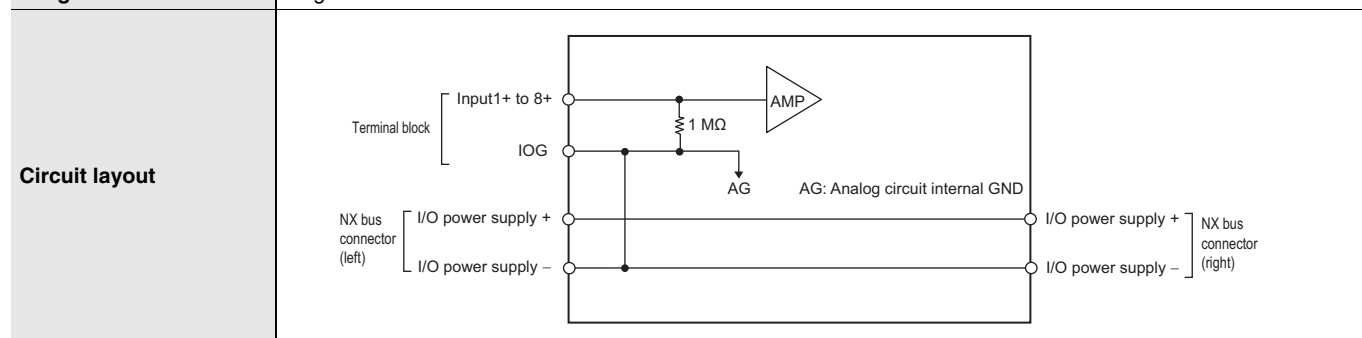
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



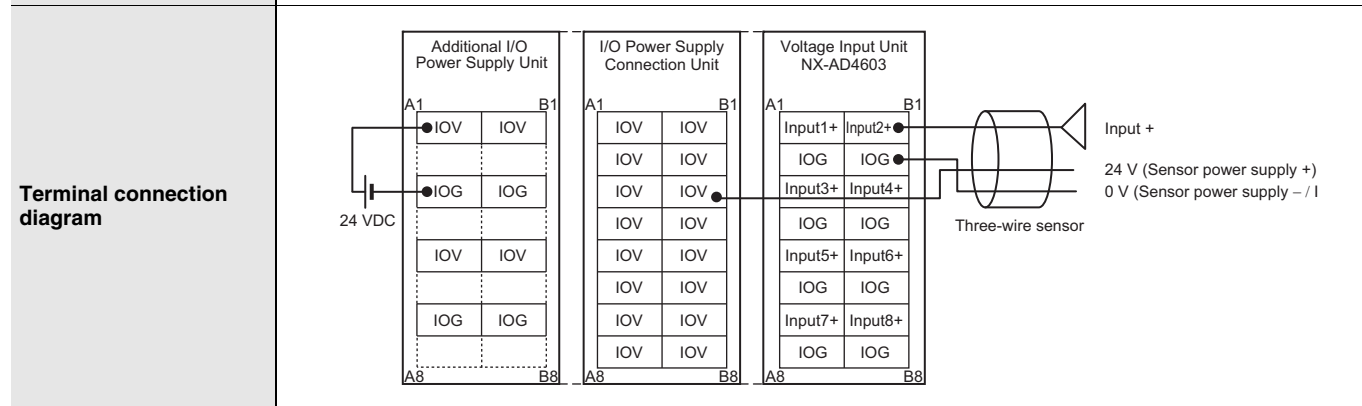
Input disconnection detection
 Not supported.

Voltage Input Unit 8 points NX-AD4603

Unit name	Voltage Input Unit	Model	NX-AD4603	
Capacity	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)
			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	I/OG: 0.1 A/terminal max.	
NX Unit power consumption	1.15 W max.	I/O current consumption	No consumption	
Weight	70 g max.			

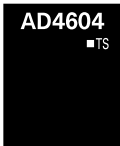


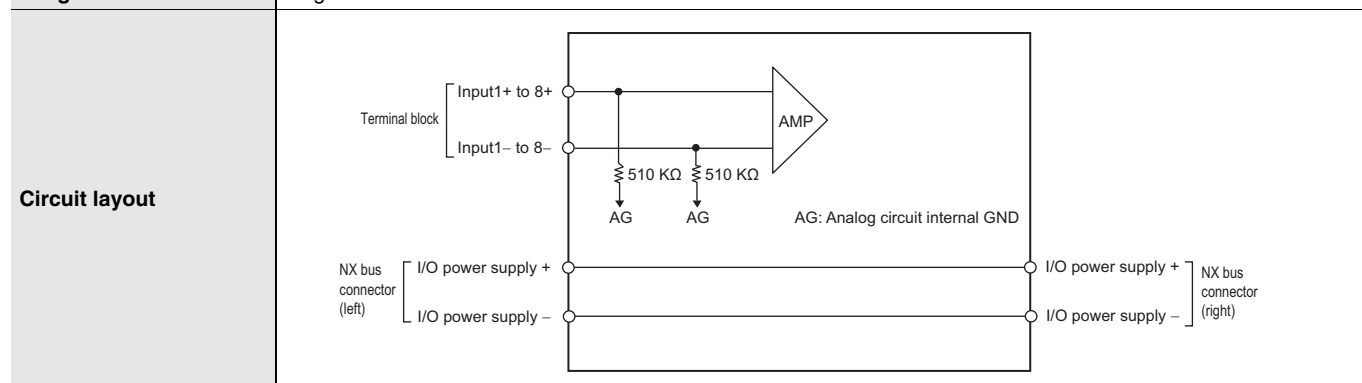
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



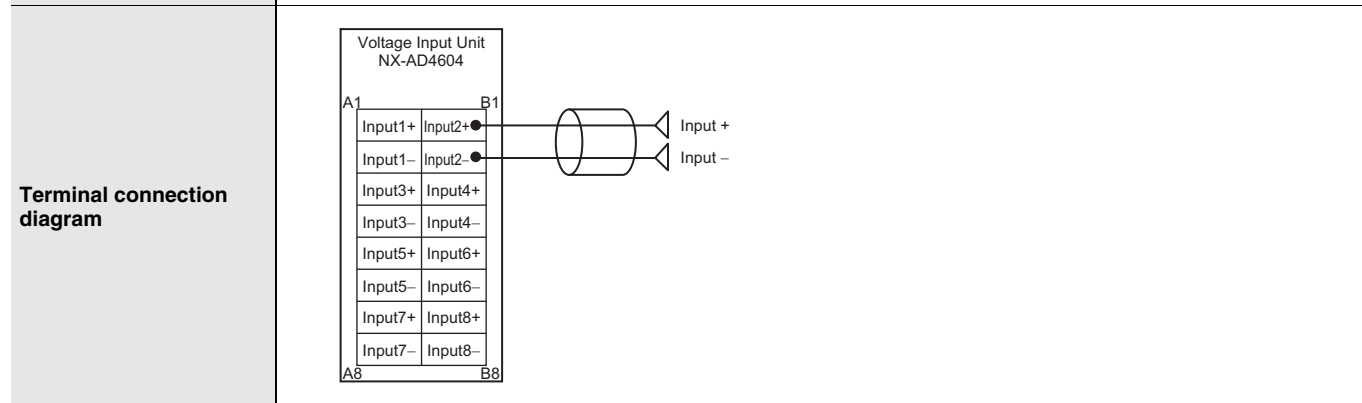
Input disconnection detection
 Not supported.

Voltage Input Unit 8 points NX-AD4604

Unit name	Voltage Input Unit	Model	NX-AD4604	
Capacity	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	1.15 W max.	I/O current consumption	No consumption	
Weight	70 g max.			

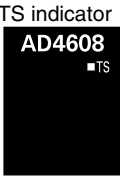


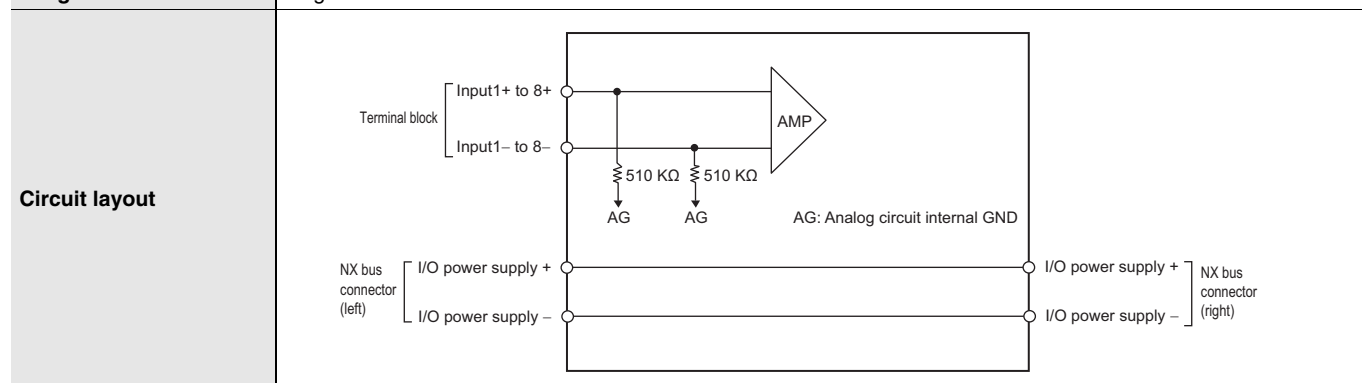
Installation orientation and restrictions
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 Restrictions: No restrictions



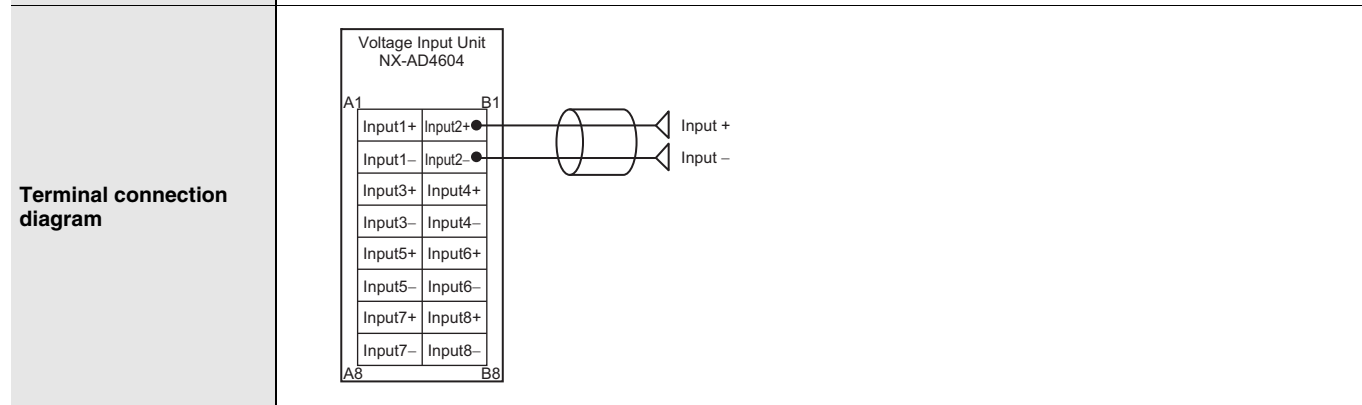
Input disconnection detection
 Not supported.

Voltage Input Unit 8 points NX-AD4608

Unit name	Voltage Input Unit	Model	NX-AD4608	
Capacity	8 points	External connection terminals	Screwless clamping terminal block (16 terminals)	
I/O refreshing method	Switching Synchronous I/O refreshing and Free-Run refreshing			
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	1.15 W max.	I/O current consumption	No consumption	
Weight	70 g max.			




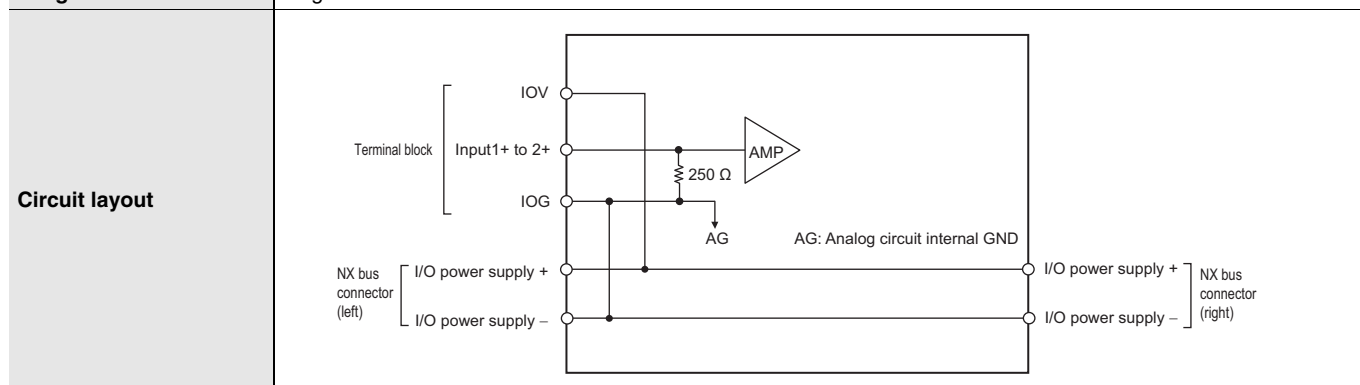
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



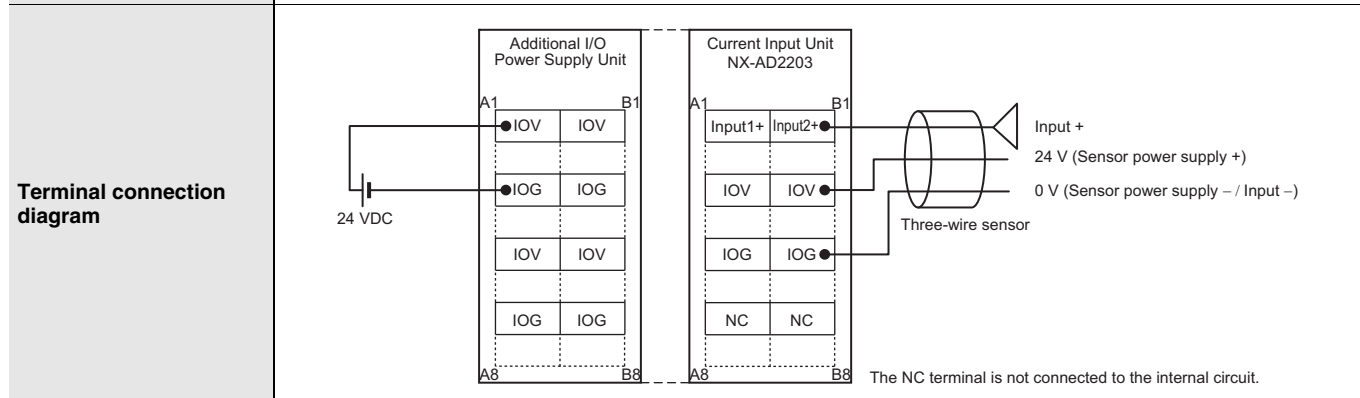
Input disconnection detection
 Not supported.

Current Input Unit 2 points NX-AD2203

Unit name	Current Input Unit	Model	NX-AD2203	
Capacity	2 points	External connection terminals	Screwless clamping terminal block (8 terminals)	
I/O refreshing method	Switching Synchronous I/O refreshing and 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	0.90 W max.	I/O current consumption	No consumption	
Weight	70 g max.			




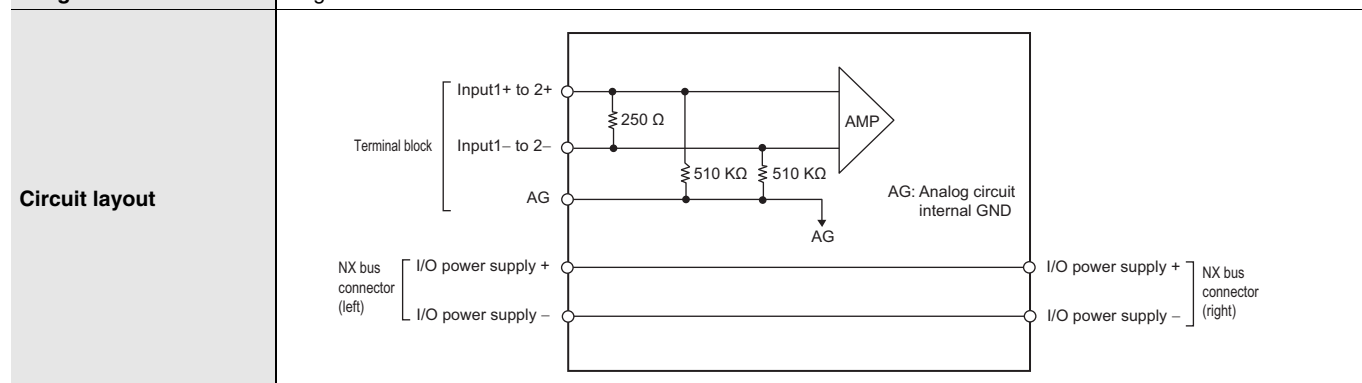
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



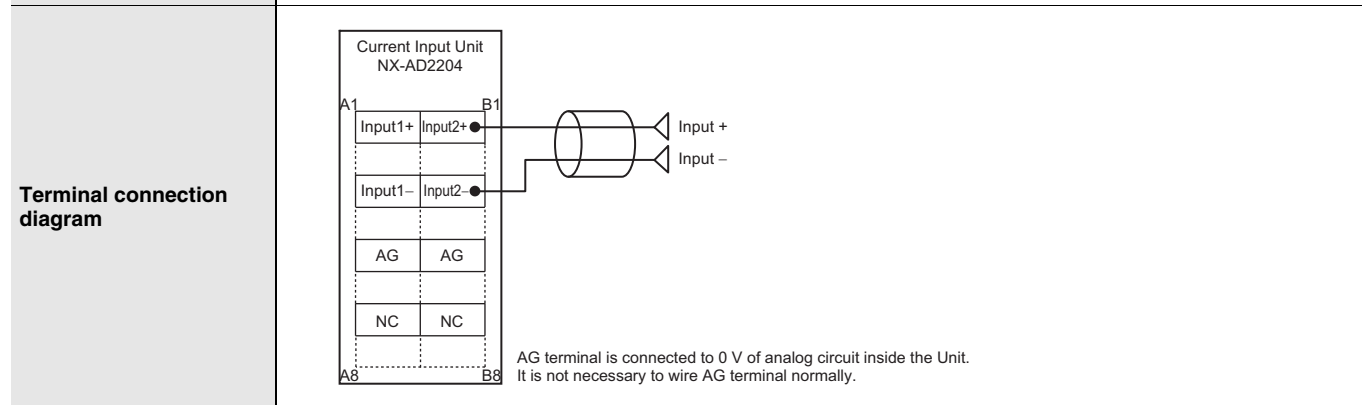
Input disconnection detection
 Supported.

Current Input Unit 2 points NX-AD2204

Unit name	Current Input Unit	Model	NX-AD2204	
Capacity	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)
			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	0.90 W max.	I/O current consumption	No consumption	
Weight	70 g max.			




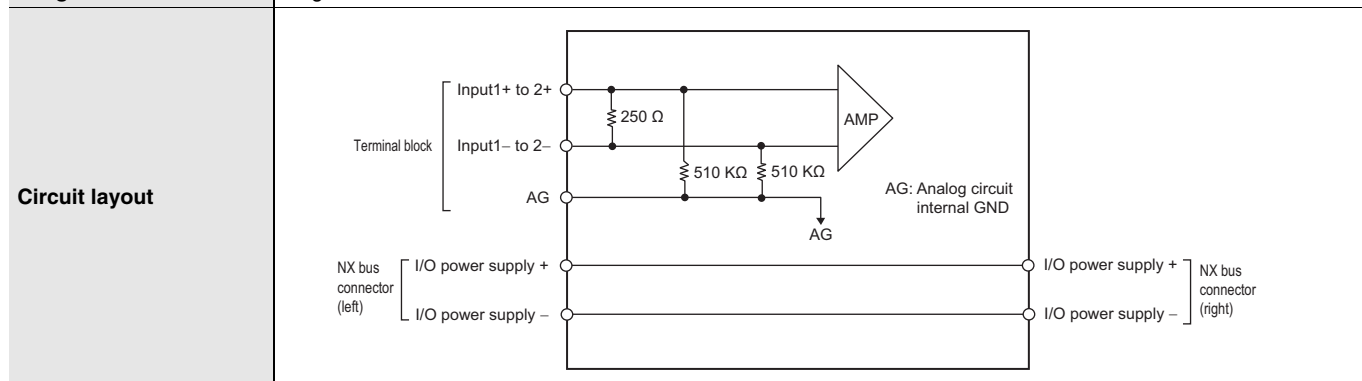
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



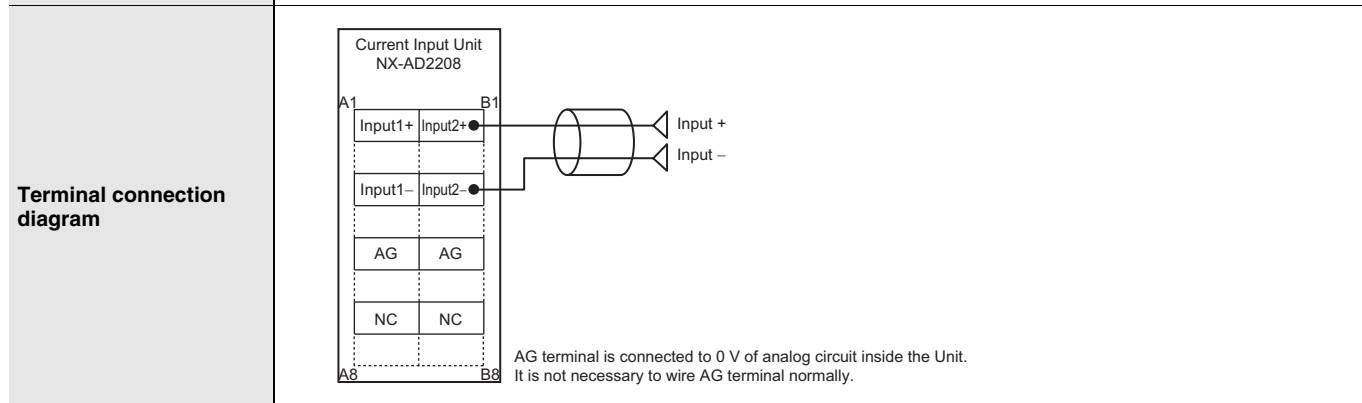
Input disconnection detection
 Supported.

Current Input Unit 2 points NX-AD2208

Unit name	Current Input Unit	Model	NX-AD2208	
Capacity	2 points	External connection terminals	Screwless clamping terminal block (8 terminals)	
I/O refreshing method	Switching Synchronous I/O refreshing and Free-Run refreshing			
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	0.90 W max.	I/O current consumption	No consumption	
Weight	70 g max.			




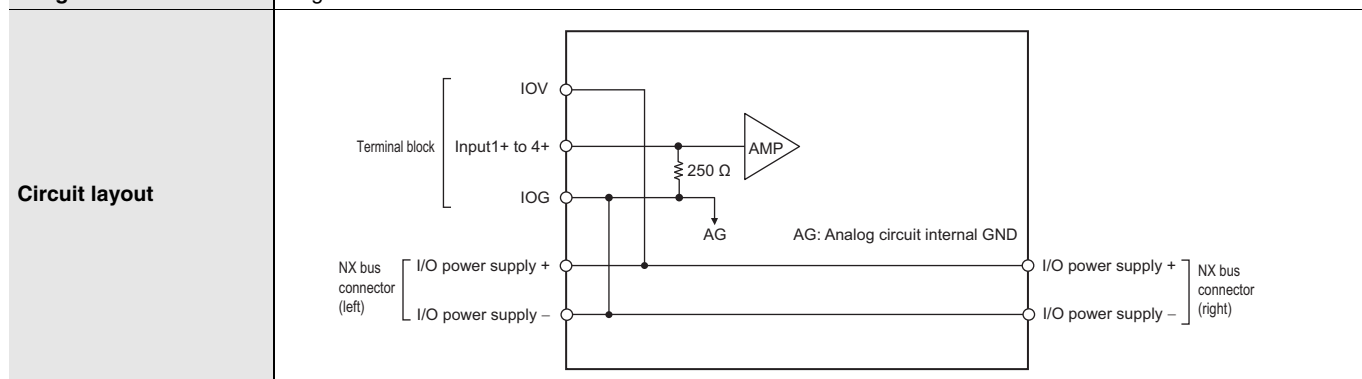
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



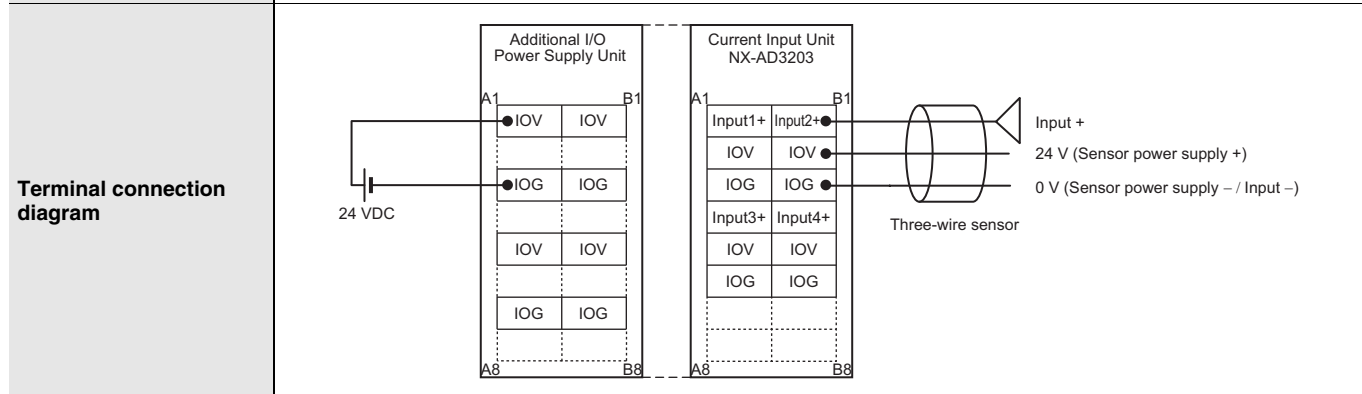
Input disconnection detection
 Supported.

Current Input Unit 4 points NX-AD3203

Unit name	Current Input Unit	Model	NX-AD3203	
Capacity	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)
			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	0.90 W max.	I/O current consumption	No consumption	
Weight	70 g max.			

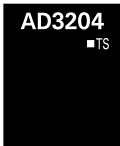


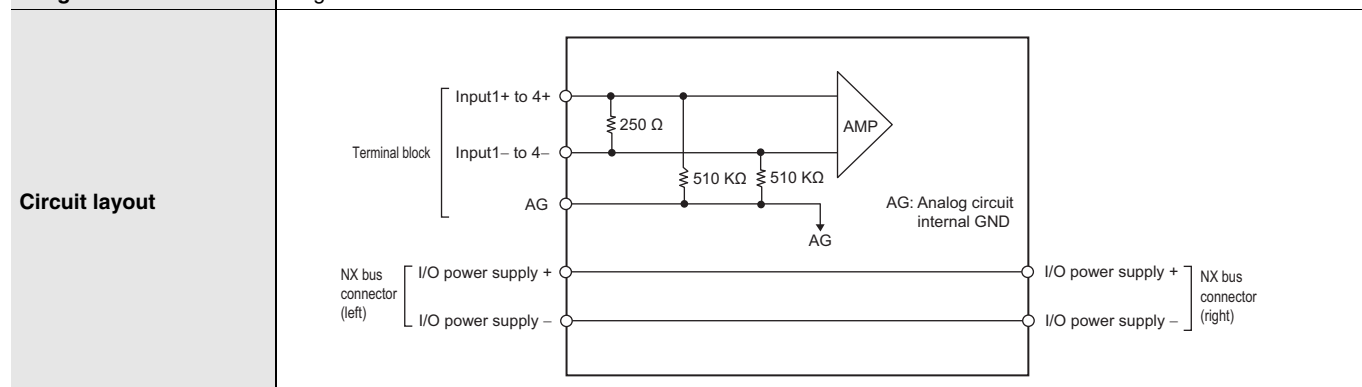
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



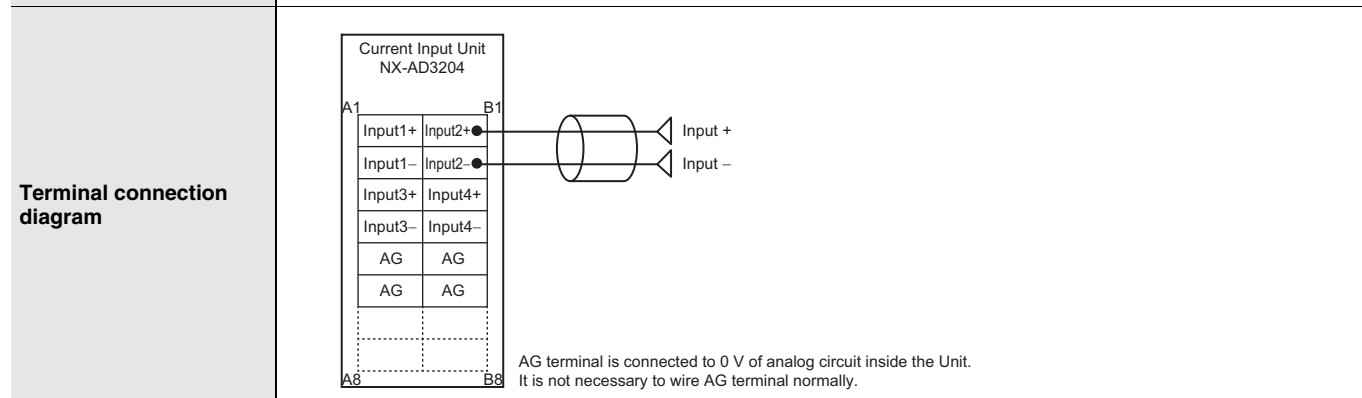
Input disconnection detection
 Supported.

Current Input Unit 4 points NX-AD3204

Unit name	Current Input Unit	Model	NX-AD3204	
Capacity	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)
			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	0.90 W max.	I/O current consumption	No consumption	
Weight	70 g max.			

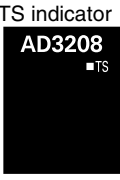


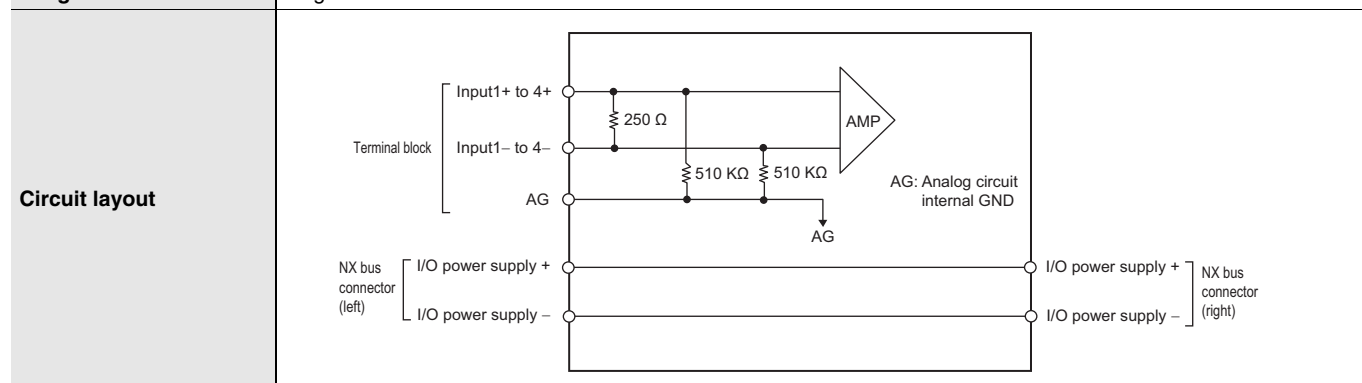
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



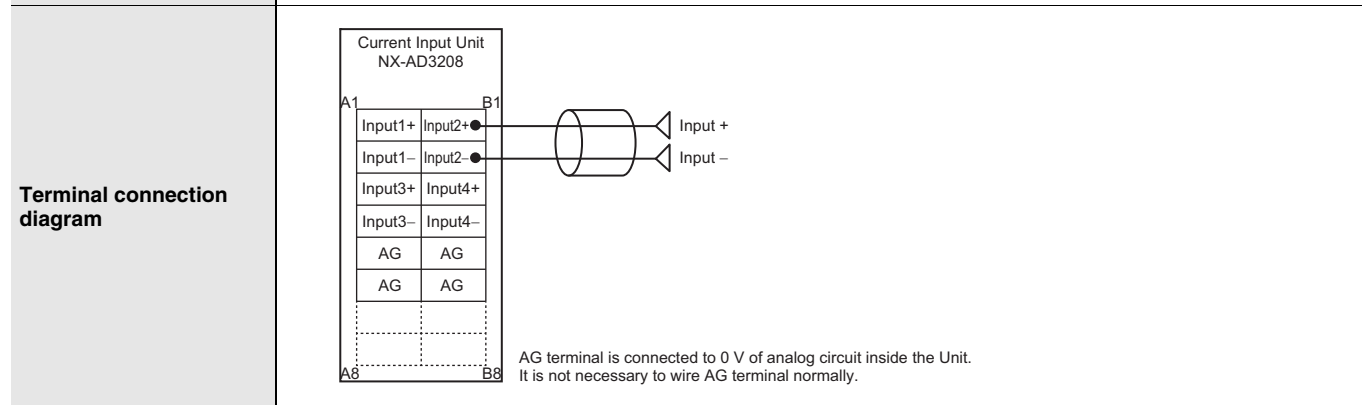
Input disconnection detection
 Supported.

Current Input Unit 4 points NX-AD3208

Unit name	Current Input Unit	Model	NX-AD3208	
Capacity	4 points	External connection terminals	Screwless clamping terminal block (12 terminals)	
I/O refreshing method	Switching Synchronous I/O refreshing and Free-Run refreshing			
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	0.95 W max.	I/O current consumption	No consumption	
Weight	70 g max.			

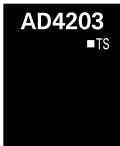


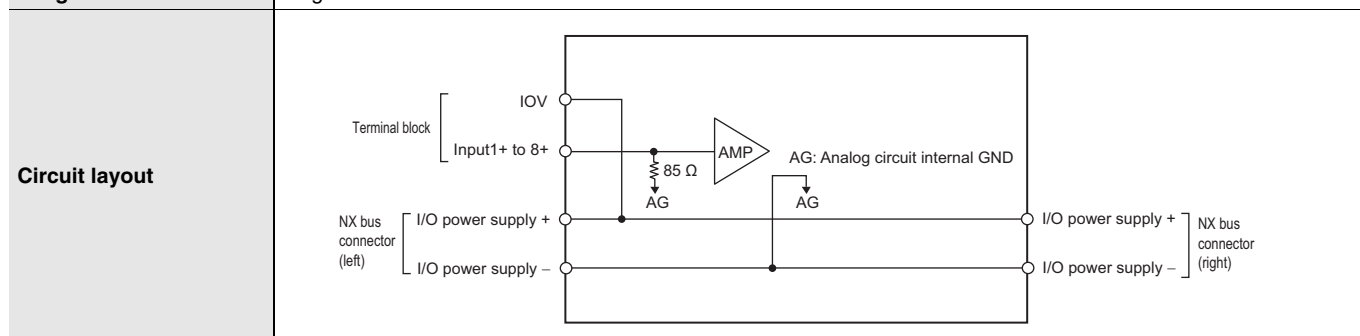
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



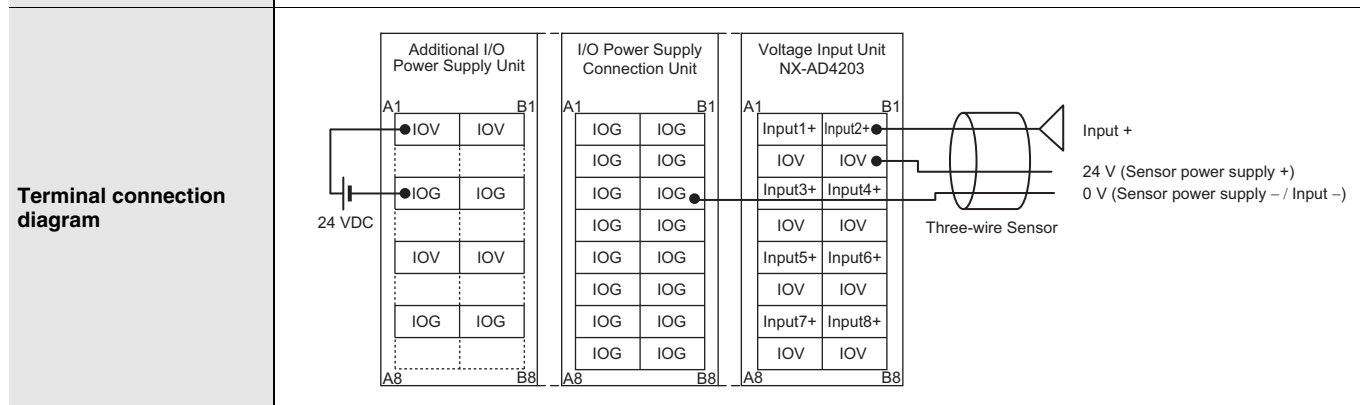
Input disconnection detection
 Supported.

Current Input Unit 8 points NX-AD4203

Unit name	Current Input Unit	Model	NX-AD4203	
Capacity	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)
			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	1.05 W max.	I/O current consumption	No consumption	
Weight	70 g max.			

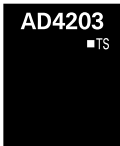


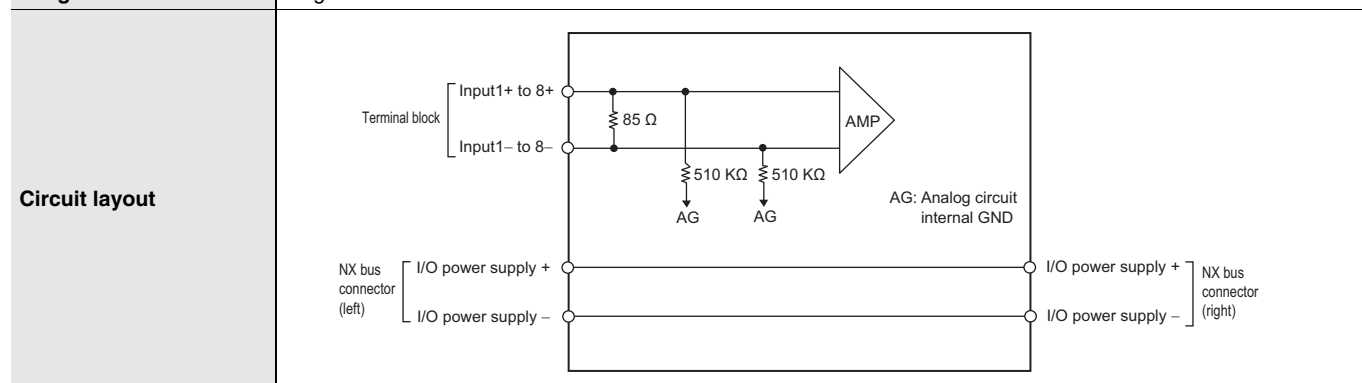
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



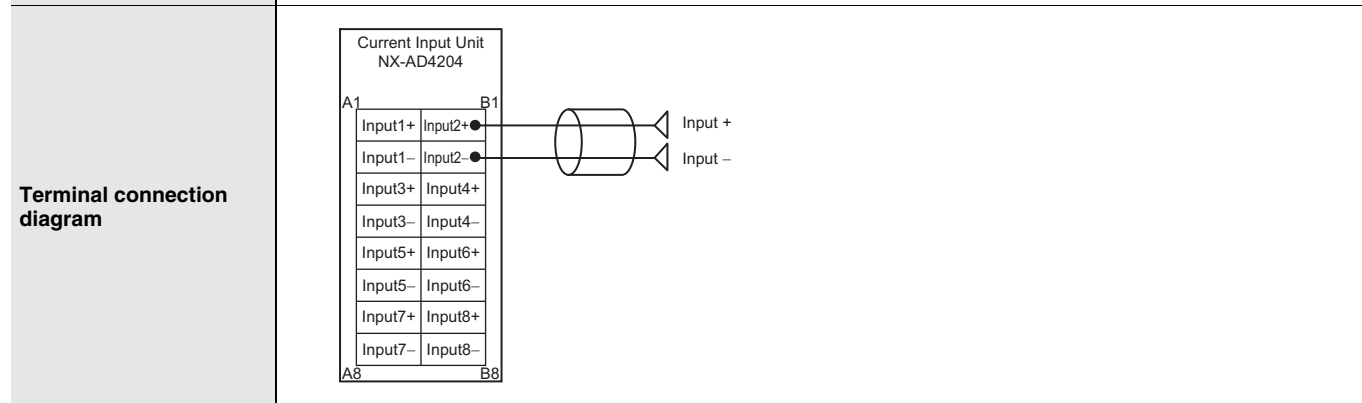
Input disconnection detection
 Supported.

Current Input Unit 8 points NX-AD4204

Unit name	Current Input Unit	Model	NX-AD4204	
Capacity	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)
			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	1.05 W max.	I/O current consumption	No consumption	
Weight	70 g max.			




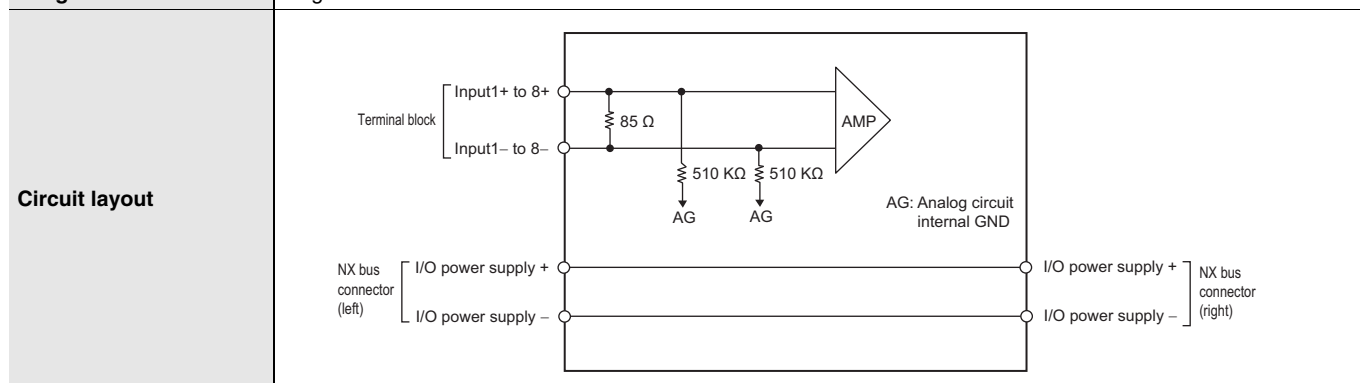
Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



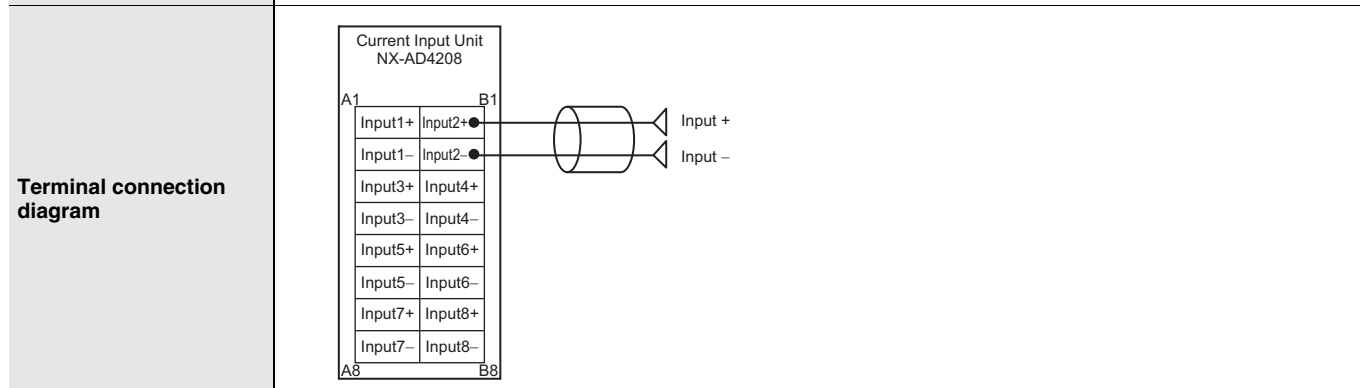
Input disconnection detection
 Supported.

Current Input Unit 8 points NX-AD4208

Unit name	Current Input Unit	Model	NX-AD4208	
Capacity	8 points	External connection terminals	Screwless clamping terminal block (16 terminals)	
I/O refreshing method	Switching Synchronous I/O refreshing and Free-Run refreshing			
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	1.10 W max.	I/O current consumption	No consumption	
Weight	70 g max.			



Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions



Input disconnection detection
 Supported.

Version Information

NX Series Analog Input Unit and Sysmac Studio

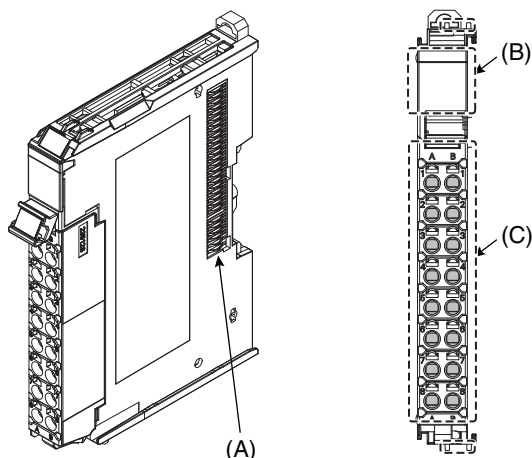
NX Series Analog Output Unit	Sysmac Studio	
	Version 1.05 or lower	Version 1.06 or higher
NX-AD□□□□	Not supported	Supported

External Interface

Analog Input Unit

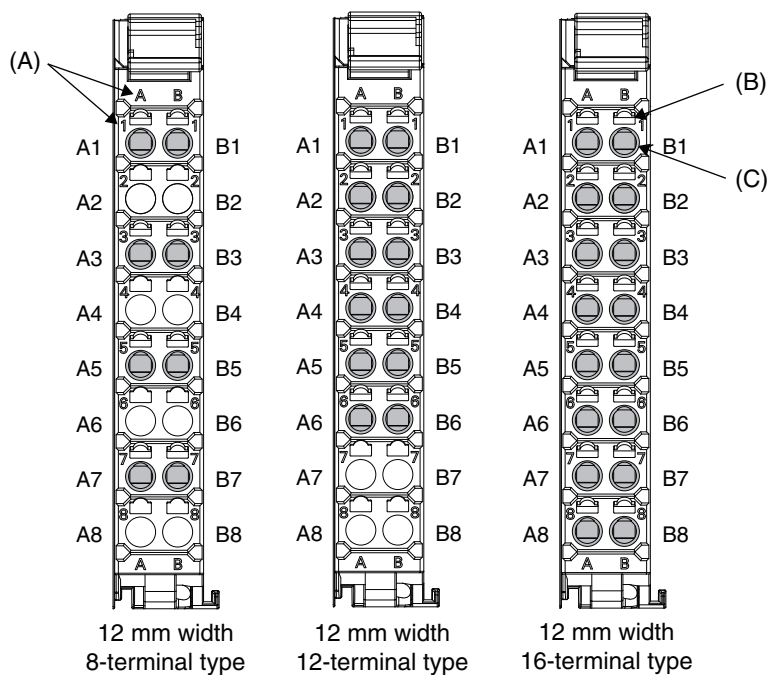
NX-AD□□□□

12mm Width



Symbol	Name	Function
(A)	NX bus connector	This connector is used to connect each Unit.
(B)	Indicators	The indicators show the current operating status of the Unit.
(C)	Terminal block	The terminal block is used to connect external devices. The number of terminals depends on the type of Unit.

Terminal Blocks



Symbol	Name	Function
(A)	Terminal number indications	Terminal numbers for which A to D indicate the column, and 1 to 8 indicate the line are displayed. The terminal number is a combination of column and line, so A1 to A8 and B1 to B8 are displayed. The terminal number indications are the same regardless of the number of terminals on the terminal block.
(B)	Release holes	Insert a flat-blade screwdriver into these holes to connect and remove the wires.
(C)	Terminal holes	The wires are inserted into these holes.

Applicable Wires

Using Ferrules

If you use ferrules, attach the twisted wires to them.

Observe the application instructions for your ferrules for the wire stripping length when attaching ferrules.

Always use one-pin ferrules. Do not use two-pin ferrules.

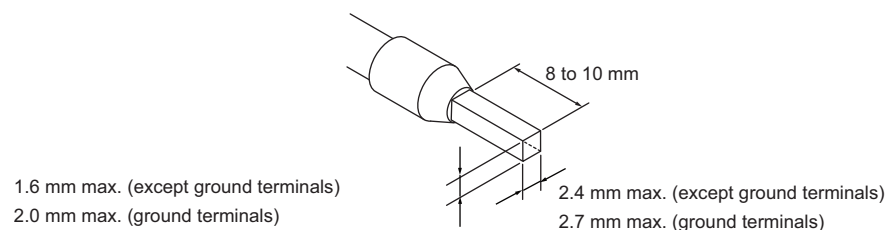
The applicable ferrules, wires, and crimping tool are given in the following table.

Terminal types	Manufacturer	Ferrule model number	Applicable wire (mm ² (AWG))	Crimping tool
Terminals other than ground terminals	Phoenix Contact	AI0,34-8	0.34 (#22)	Phoenix Contact (The figure in parentheses is the applicable wire size.) CRIMPFOX 6 (0.25 to 6 mm ² , AWG24 to 10)
		AI0,5-8	0.5 (#20)	
		AI0,5-10		
		AI0,75-8	0.75 (#18)	
		AI0,75-10		
		AI1,0-8	1.0 (#18)	
		AI1,0-10		
		AI1,5-8	1.5 (#16)	
Ground terminals		AI1,5-10		
Terminals other than ground terminals	Weidmuller	H0.14/12	0.14 (#26)	Weidmuller (The figure in parentheses is the applicable wire size.) PZ6 Roto (0.14 to 6 mm ² , AWG 26 to 10)
		H0.25/12	0.25 (#24)	
		H0.34/12	0.34 (#22)	
		H0.5/14	0.5 (#20)	
		H0.5/16		
		H0.75/14	0.75 (#18)	
		H0.75/16		
		H1.0/14	1.0 (#18)	
		H1.0/16		
		H1.5/14	1.5 (#16)	
		H1.5/16		

* Some AWG 14 wires exceed 2.0 mm² and cannot be used in the screwless clamping terminal block.

When you use any ferrules other than those in the above table, crimp them to the twisted wires so that the following processed dimensions are achieved.

Finished Dimensions of Ferrules

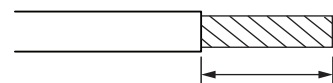


Using Twisted Wires/Solid Wires

If you use the twisted wires or the solid wires, the applicable wire range and conductor length (stripping length) are as follows.

Use the twisted wires to connect the ground wire to a ground of 100 Ω or less. Do not use the solid wires.

Terminal types	Applicable wires	Conductor length (stripping length)
Ground terminals	2.0 mm ²	9 to 10 mm
Terminals other than ground terminals	0.08 to 1.5 mm ² AWG28 to 16	8 to 10 mm



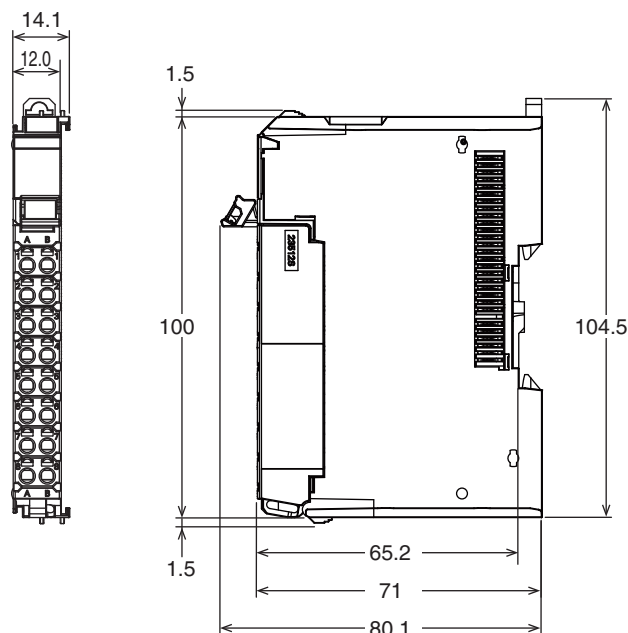
Conductor length (stripping length)

Dimensions

Analog Input Unit

NX-AD□□□□

12 mm Width



Related Manuals

Cat. No.	Model number	Manual name	Application	Description
W522	NX-AD□□□□ NX-DA□□□□ NX-TS□□□□	NX-series Analog I/O Units User's Manual	Learning how to use NX-series Analog I/O Units and Temperature Input Units	The hardware, setup methods, and functions of the NX-series Analog I/O Units and Temperature Input Units are described.

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