Analog Modules

Analog Input Modules

Model Number	FX5-4AD-ADP				FX5-4AD			
Stocked Item	S				S			
Certification	UL • cUL • CE (EMC)							
Applicable PLCs	FX5U/FX5UC/FX5UJ				FX5U/FX5UC/FX5UJ (*2)			
Number of Analog Input Points	4 points (4 channels)				4 points (4 channels)			
Analog Input Voltage	-10 to +10 VDC (input resistance 1 MΩ)							
Analog Input Current	-20 to +20 mA DC (input resistance 250Ω)							
Digital Output Value	14-bit binary value				16-bit signed binary (-32768 to +327670)			
Input Characteristics, Resolution (*1)	Analog Input Range		Digital Output Value	Resolution	Analog Input Range		Digital Output Value	Resolution
	Voltage	0 to 10 V	0 to 16000	625 µV	Voltage	0 to 10 V	0 to 32000	312.5 µV
		0 to 5 V	0 to 16000	312.5 µV		0 to 5 V	0 to 32000	156.25 µV
		1 to 5 V	0 to 12800	312.5 µV		1 to 5 V	0 to 32000	125 µV
		-10 to +10V	-8000 to +8000	1250 µV		-10 to +10V	-32000 to +32000	312.5 µV
	Current	0 to 20 mA	0 to 16000	1.25 µA	Current	0 to 20 mA	0 to 32000	625 nA
		4 to 20 mA	0 to 12800	1.25 µA		4 to 20 mA	0 to 32000	500 nA
		-20 to +20 mA	-8000 to +8000	2.5 µA		-20 to +20 mA	-32000 to +32000	625 nA
Accuracy (Accuracy for the Full Scale Digital Output Value)	Ambient temperature 25 ±5°C: within ±0.1 % (±16 digit); Ambient temperature 0 to 55°C: within ±0.2 % (±32 digit)				Ambient temperature 25°5°: within ±0.1% (±32 digits) Ambient temperature 0 to 55°: within ±0.2% (±64 digits) Ambient temperature -20 to 0°: within ±0.3% (±96 digits)			
Conversion Speed	Maximum 450 µs (The data is updated at every scan time of the PLC.)				80 µs/CH			
Absolute Maximum Input	Voltage: ±15 V, Current: ±30 mA							
Isolation Method	Between input terminal and PLC: Photocoupler Between input channels: Non-isolation							
Number of Occupied I/O Points	0 point (This number is not related to the maximum number of I/O points of the PLC)				8			
Weight (kg)	0.1				0.2			
Dimensions (W x H x D) mm	17.6 x 106 x 89.1				40 x 90 x 102.2			

Notes
1. For the input conversion characteristic refer to User's Manual.
2. FX5-CNV-IFC or FX5-C1PS-5V is necessary to connect FX5-4AD to the FX5UC CPU module.

Analog Input Module continued

Model Number	FX5-8AD (*3)			
Stocked Item	S			
Certification	UL • cUL • CE (EMC)			
Applicable PLCs	FX5U/FX5UC/FX5UJ (*2)			
Number of Analog Input Points	8 points (8 channels)			
Analog Input Voltage	-10 to +10 VDC (input resistance 1 MΩ)			
Analog Input Current	-20 to +20 mA DC (input resistance 250Ω)			
Digital Output Value	16-bit signed binary (-32000 to +32000)			
Input Characteristics, Resolution (*1)	Analog Input Range		Digital Output Value	Resolution
	Voltage	0 to 10 V	0 to 32000	312.5 µV
		0 to 5 V	0 to 32000	156.25 µV
		1 to 5 V	0 to 32000	125 µV
		-10 to +10V	-32000 to +32000	312.5 µV
	Current	0 to 20 mA	0 to 32000	625 nA
		4 to 20 mA	0 to 32000	500 nA
		-20 to +20 mA	-32000 to +32000	625 nA
Accuracy (Accuracy for the Full Scale Digital Output Value)	Ambient temperature 25 ± 5°C: within ±0.3% (±192 digits) Ambient temperature -20 to 55°C: within ±0.5% (±320 digits)			
Conversion Speed	Voltage/current: 1ms/ch, Thermocouple/RTD: 40ms/ch			
Absolute Maximum Input	Voltage: ±15 V, Current: ±30 mA			
Isolation Method	Between input terminal and PLC: Photocoupler Between input channels: Non-isolation			
Number of Occupied I/O Points	8			
Weight (kg)	0.3			
Dimensions (W x H x D) mm	50 x 90 x 102.2			

Notes
1. For the input conversion characteristic refer to User's Manual.
2. FX5-CNV-IFC or FX5-C1PS-5V is necessary to connect FX5-4AD to the FX5UC CPU module.
3. FX5-8AD accepts K, J, T, B, R, S type thermocouples and Pt100, Ni100 RTDs.

Analog Output Modules

Model Number	FX5-4DA-ADP				FX5-4DA			
Stocked Item	S				S			
Certification	UL • cUL • CE (EMC)							
Applicable PLCs	FX5U/FX5UC/FX5UJ							
Number of Analog Output Points	4 points (4 channels)							
Digital input	14-bit binary value				16-bit signed binary (-32768 to +32767)			
Analog Output Voltage	-10 to +10 VDC (external load resistance value 1kΩ to 1MΩ)							
Analog Output Current	0 to 20 mA DC (external load resistance value 0 to 500 Ω)							
Output Characteristics, Resolution (*1)	**Analog Output Range**		**Digital Value**	**Resolution**	**Analog Output Range**		**Digital Value**	**Resolution**
	Voltage	0 to 10 V	0 to 16000	625 µV	Voltage	0 to 10 V	0 to 32000	312.5 µV
		0 to 5 V	0 to 16000	312.5 µV		0 to 5 V	0 to 32000	156.3 µV
		1 to 5 V	0 to 16000	250 µV		1 to 5 V	0 to 32000	125 µV
		-10 to +10V	-8000 to +8000	1250 µV		-10 to +10V	-32000 to +32000	312.5 µV
	Current	0 to 20 mA	0 to 16000	1.25 µA	Current	0 to 20 mA	0 to 32000	625 nA
		4 to 20 mA	0 to 16000	1 µA		4 to 20 mA	0 to 32000	500 nA
Accuracy (Accuracy for the Full Scale Analog Output Value)	Ambient temp. 25 ±5°C: ±0.1 % (Volt. ±20 mV, Current ±20 µA) Ambient temp. 0 to 55°C: ±0.2 % (Voltage ±40 mV, Current ±40 µA)				Ambient temp. 25±5°C Within ±0.1% (volt. ±20 mV, current ±20 µA) Ambient temp. 0 to 55°C: Within ±0.2% (volt. ±40 mV, current ±40 µA) Ambient temp. -20 to 0°C: Within ±0.3% (volt. ±60 mV, current ±60 µA)			
Conversion Speed	Maximum 950 µs (The data will be updated at every scan time of the PLC.)				80 µs/CH			
Isolation Method	Between output terminal and PLC: Photocoupler; Between output channels: Non-isolation							
Number of Occupied I/O Points	0 point (This number is not related to the maximum number of I/O points of the PLC)				8 points			
Weight (kg)	0.1				0.2			
Dimensions (W x H x D) mm	17.6 x 106 x 89.1				40 x 90 x 102.2			

Note 1: For the output conversion characteristic refer to User's Manual.

Combination Analog Input Output Modules

Model Number		FX5-4A-ADP			
Stocked Item		S			
Certification		UL • cUL • CE (EMC)			
Applicable PLCs		FX5U/FX5UC/FX5UJ			
Analog Channels	Input	2			
	Output	2			
Input Characteristics, Resolution		**Analog input range**		**Digital output value**	**Resolution**
		Voltage	0 to 10 V	0 to 16000	625 µV
			0 to 5 V	0 to 16000	312.5 µV
			1 to 5 V	0 to 12800	312.5 µV
			-10 to +10 V	-8000 to +8000	1250 µV
		Current	0 to 20 mA	0 to 16000	1.25 µA
			4 to 20 mA	0 to 12800	1.25 µA
			-20 to +20 mA	-8000 to +8000	2.5 µA
Output Characteristics, Resolution		**Analog output range**		Digital value	Resolution
		Voltage	0 to 10 V	0 to 16000	625 µV
			0 to 5 V	0 to 16000	312.5 µV
			1 to 5 V	0 to 16000	250 µV
			-10 to +10 V	-8000 to +8000	1250 µV
		Current	0 to 20 mA	0 to 16000	1.25 µA
			4 to 20 mA	0 to 16000	1 µA
Weight (kg)		0.1			
Dimensions (W x H x D) mm		17.6 x 106 x 89.1			

Temperature Input Modules

Model Number		FX5-4AD-PT-ADP	FX5-4AD-TC-ADP	FX5-4LC
Stocked Item		S	S	S
Certification		UL • cUL • CE		
Applicable PLCs		FX5U/FX5UC/FX5UJ		
Analog Input Points		4 points		
Resistance Temperature Detector/Thermocouples		Pt100 /Ni100	K, J, T, B, R, S	Thermocouple: K, J, R, S, E, T, B, N JIS C 1602-1995, PL II, W5Re/W26Re, U, L Resistance thermometer: 3-wire Pt100 JIS C 1604-1997 3-wire JPt100 JIS C 1604-1981 2-wire/3-wire Pt1000 JIS C 1604-2013
Temperature Measuring Range		Pt100: -200 to +850°C Ni100: -60 to +250°C	K: -200 to +1200°C J: -40 to +750°C T: -200 to +350°C B: 600 to 1700°C R: 0 to 1600°C S: 0 to 1600°C	K: -200 to +1300˚C (-100 to +2400˚F) J: -200 to +1200˚C (-100 to +2100˚F) T: -200 to +400˚C (-300 to +700˚F) S: 0 to 1700˚C (0 to 3200˚F) R: 0 to 1700˚C (0 to 3200˚F) E: -200 to +1000˚C (0 to 1800˚F) B: 0 to 1800˚C (0 to 3000˚F) N: 0 to 1300˚C (0 to 2300˚F) PL II: 0 to 1200˚C (0 to 2300˚F) W5Re/W26Re: 0 to 2300˚C (0 to 3000˚F) U: -200 to +600˚C (-300 to +700˚F) L: 0 to 900˚C (0 to 1600˚F) Micro voltage input: DC0 to 10mV, DC0 to 100mV Pt100 (3-wire type): -200 to +600˚C (-300 to +1100˚F) JPt100 (3-wire type): -200 to +500˚C (-300 to +900˚F) Pt1000 (2-wire type/3-wire type): -200.0 to +650.0˚C (-328 to +1184˚F)
Digital Output		Pt100: -2000 to +8500 Ni100: -600 to +2500	K: -2000 to +12000 J: -400 to +7500 T: -2000 to +3500 B: 6000 to 17000 R: 0 to 16000 S: 0 to 16000	4 transistor outputs
Accuracy	25±5°C	Pt100: ±0.8°C Ni100: ±0.4°C	Varies according to thermocouple used. Please refer to the manual	
	-20 to 55°C	Pt100: ±2.4°C Ni100: ±1.2°C		
Resolution		0.1°C(0.2°F)	K/J/T: 0.1°C B/R/S: 0.3°C	0.1˚C (0.1˚F), 1.0˚C (1.0˚F), 0.5 µV, or 5.0 µV Varies depending on input range of used sensors
Conversion Speed		85 ms/channel		250 ms/4ch
Isolation Method		Between input terminal and CPU module: Photocoupler Between input channels: Non-isolation		The photocoupler is used to insulate the analog input area and transistor output area from the PLC. The DC/DC converter is used to insulate the power supply from the analog input area and transistor output area. Channels are insulated from each other.
Number of Occupied I/O Points		0		8
Dimensions (H x W x D) mm		106 x 17.6 x 89.1		90 x 60 x 102.2
Weight (kg)		0.1		0.3