



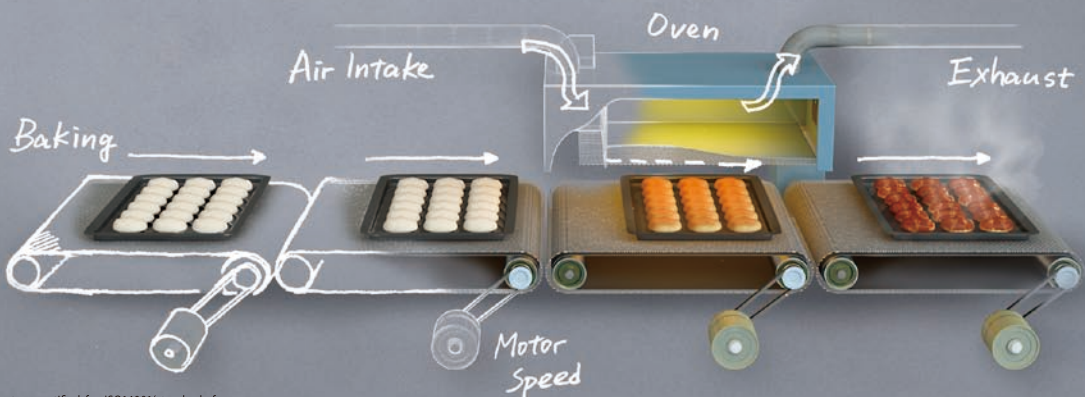
**MITSUBISHI
ELECTRIC**

PROGRAMMABLE LOGIC CONTROLLERS

FX Analog Family



FX Analog solution



Mitsubishi Electric Corporation Himeji Works is a factory certified for ISO14001(standards for environmental management systems) and ISO9001(standards for quality assurance management systems)



**Empowering
Industries**

A tradition
in refining
excellence.



Ease of use

Control systems that require minimum setup and keep program development time to a minimum.



Flexible

A configurable design that permits open communication, large I/O handling, as well as precise positioning and analog control, creating systems that mold to customer requirements.



Affordable

A high performance to cost ratio makes economical design solutions for a diverse range of applications a reality. These features combined with Mitsubishi Electric's legacy in quality and reliability ensures that the 3rd generation of controller will continue to be at the forefront of the compact PLC market and provide customers with a leading edge.



Customer Confidence

With a design philosophy spanning more than quarter of a century, a customer base spread across the globe, a host of industrial certifications and almost 9 million CPUs sold, the *FX3 series* continues to sustain its position as the compact PLC of choice.

FX3 series Analog

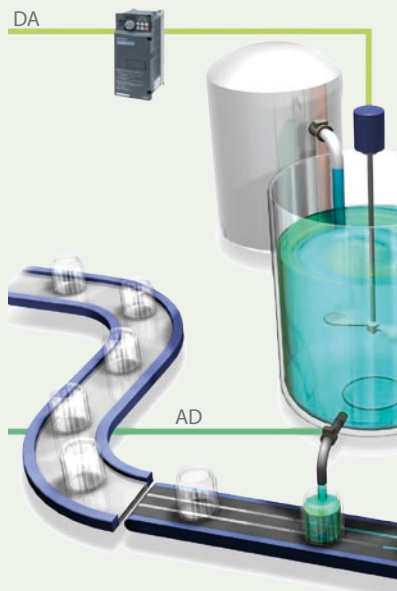
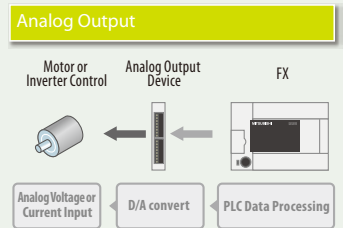
FX3 series and Analog Control

The *FX3 series* makes analog control simpler than ever. Custom tailor your *FX3 series* to match your application requirements. Choose from the basic expansion boards, the direct addressing adapters, or the powerful CPU-integrated special function blocks. This level of flexibility ensures that you get the perfect solution for your system needs and your budget.



What is Analog Control anyways?

Analog control is used in a broad range of industries. In simple terms, it enables a discrete signal to provide control within a PLC system. Basic examples of analog control include collection of sensory data from fluid levels and the control of a motor's speed. Systems can be developed and configured to each user's needs and requirements. There are 3 basic categories of analog control; analog to digital (A/D), digital to analog (D/A), and temperature control and measurement.



Analog Control in action

Here we have a typical system example. A thermocouple (TC) monitors the temperature of the heating element, and maintains a certain temperature in the orange liquid based on the input temperature from the sensor (PT). Then a flow meter (A/D) measures the amount of fluid that is pumped in into the blue liquid. An inverter is controlled (D/A) to power an electric motor to agitate the blue liquid and a second flow meter (A/D) measures the amount of liquid going into each container.

Standards and International Acceptance

Compliance with CE and UL/cUL standards enables users worldwide to put faith in the FX brand. The FX range is also certified to a variety of shipping approvals that include Lloyds, German Lloyds, American Bureau of Shipping, Registro Italiano Navale, DET Norse Veritas, Bureau Veritas, and Nippon Kaiji Kyokai.



Platform – A new benchmark in analog control

Standard Functions



Standard analog control functions allow for simple control of analog related processes. Voltage and current levels can be input and output by A/D and D/A channels respectively. A standard range of 0V to 10V DC and 4mA to 20mA DC is provided, with many units having extended ranges.

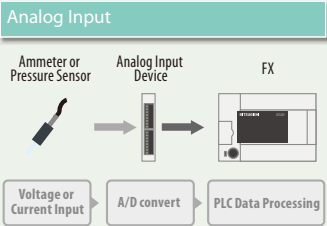


Temperature levels from a thermocouple or platinum temperature sensors can be input to the temperature units. Depending on the acquisition device the temperature input can be -100 to 1300°C (-100 to 2400 °F).

The FX3U-3A-ADP and FX2N-5A are hybrid A/D D/A units. They have channels for both analog input as well as analog output. The FX2N-8AD is a hybrid analog input unit. The channels of analog input can also be used for temperature input.

Averaging of input data can be performed in all FX3 series PLCs receiving an analog input. This allows for source inconsistencies to be smoothed out as the user can specify the amount of time to perform averaging of analog values over to provide stable data.

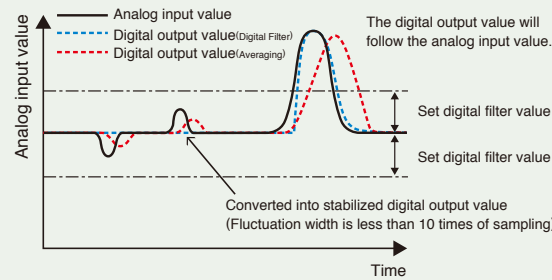
Conversion of data from the analog unit to the PLC happens fast. For all channels of any FX3U series analog unit it takes just 200µs for the FX3U or FX3UC to convert data, or 250µs for the FX3G.



Advanced Functions

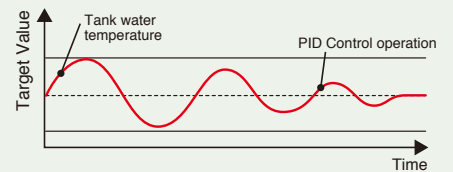
Analog special function blocks incorporate an embedded CPU within the module. This added processing power allows the module to work independent from the PLC's CPU and perform advanced analog control functions.

Digital Filtering – Digital filtering can be implemented to reduce the amount of noise. This function is available in the FX3U-4AD and FX3UC-4AD. See the figure below.

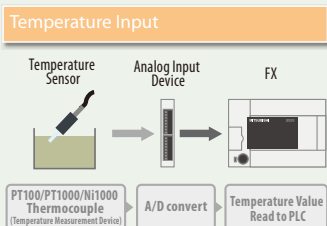
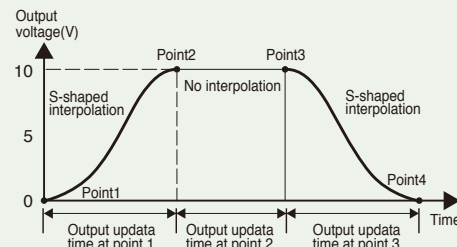


PID Control – Allows for automated error corrections based on PID (proportional integral derivative) control algorithms that can be set up by the user or set automatically with the Auto-tuning function. Other features include set upper/lower limit values to control the output and alarm output for specified input and output variations. See the figure below. **Specialized Temperature Control** – The FX3U-4LC* is the new specialized module providing 4 channels of fast and precise temperature input or output.

*Available from spring 2010.



Output Pattern – Using a table an output pattern can be configured allowing an analog signal to be output according to the data table for automating control sequences. The function is available exclusively in the FX3U-4DA.





The *FX3 series* can be expanded with 3 different analog options:

Expansion Board - *Basic expandability*

with 1 or 2 channels for basic analog control*

- Basic CPU function expansion
- No additional installation space required
- Direct CPU access

* : Available for FX3G and FX1S

Expansion Boards Lineup

Analog

- FX3G-2AD-BD
- FX1N-2AD-BD
- FX3G-1DA-BD
- FX1N-1DA-BD

Analog Setpoint

- FX3G-8AV-BD
- FX1N-8AV-BD

FX3G-2AD-BD

Special Adapter - *Standard expandability*

with 3 or 4 channels for standard analog or temperature control*

- Standard high-speed functions
- Direct programming
- Space saving installation
- Galvanic insulation of the signals

* : Available for FX3U, FX3UC and FX3G

Adapters Lineup

Analog

- FX3U-4AD-ADP
- FX3U-4DA-ADP
- FX3U-3A-ADP

Temperature

- FX3U-4AD-PT-ADP
- FX3U-4AD-TC-ADP
- FX3U-4AD-PTW-ADP
- FX3U-4AD-PNK-ADP

FX3U-4AD-ADP

Special Function Blocks - *Advanced solution*

with 2 to 8 channels for advanced analog or temperature control with up to 16 bit resolution and digital filtering*

- Advanced function expansion
- Embedded CPU for PLC scan time independent operation
- Integrated memory
- Access via From/To instruction
- Special FX3UC units available

* : Available for FX3U, FX3UC and FX3G

Special Function Blocks Lineup

Analog

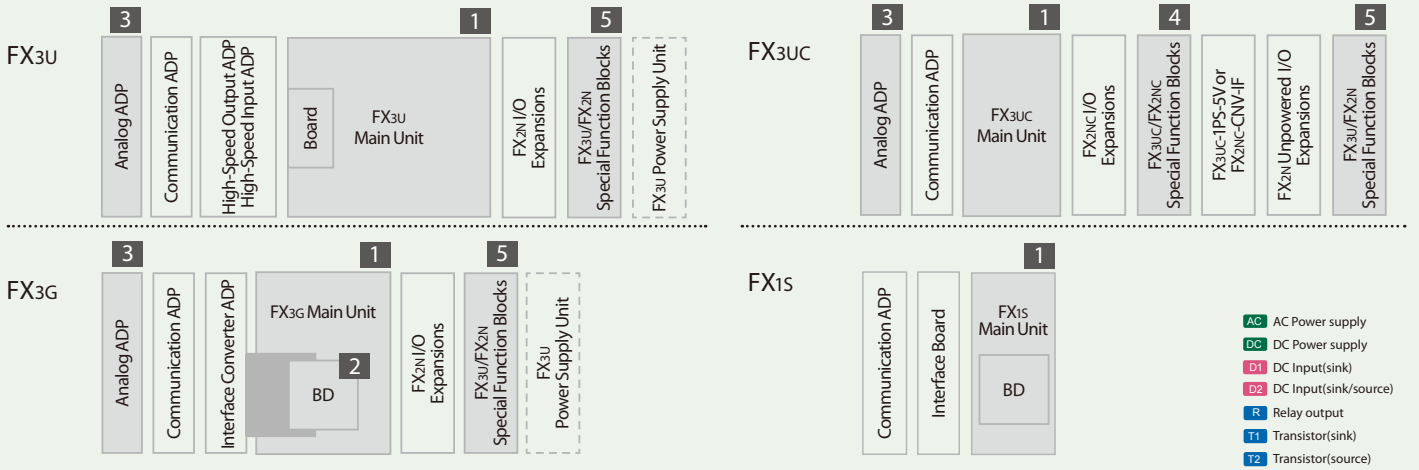
- FX2N-2AD
- FX3U-4AD
- FX2N-2DA
- FX3U-4DA
- FX2N-5A
- FX2N-8AD
- FX3UC-4AD
- FX2NC-4DA

Temperature

- FX2N-2LC
- FX3U-4LC

FX3U-4AD FX3UC-4AD

Configuration rules/expandability



1 FX3U Main Units 16-128 I/O

FX3U-16M[] T/ES: AC D2 T1
 FX3U-32M[] T/ESS: AC D2 T2
 FX3U-48M[] R/ES: AC D2 R
 FX3U-64M[] T/D/S: DC D2 T1
 FX3U-80M[] T/DSS: DC D2 T2
 FX3U-128M[] R/D/S: DC D2 R

1 FX3UC Main Units 16-96 I/O

FX3UC-16MT/[]
 FX3UC-32MT/[]
 FX3UC-64MT/[]
 FX3UC-96MT/[]
 D: DC D1 T1
 DSS: DC D2 T2

1 FX3G Main Units 14-60 I/O

FX3G-14M[] T/ES: AC D2 T1 T/D/S: DC D2 T1
 FX3G-24M[] T/ESS: AC D2 T2 T/DSS: DC D2 T2
 FX3G-40M[] R/ES: AC D2 R R/D/S: DC D2 R
 FX3G-60M[]

Note: FX3G DC units are available from Spring 2010.

1 FX1S Main Units 10-30 I/O

FX1S-10M[] R-ES/UL AC D2 R
 FX1S-14M[] T-ESS/UL AC D2 T2
 FX1S-20M[] R-DS DC D2 R
 FX1S-30M[] T-DSS DC D2 T2

2 Expansion Boards

Analog
 FX3G-2AD-BD
 FX3G-1DA-BD
 FX1N-2AD-BD
 FX1N-1DA-BD

Analog Setpoint
 FX3G-8AV-BD
 FX1N-8AV-BD

3 Special Adapters

Analog
 FX3U-4AD-ADP
 FX3U-4DA-ADP
 FX3U-3A-ADP

Temperature
 FX3U-4AD-PT-ADP
 FX3U-4AD-TC-ADP
 FX3U-4AD-PTW-ADP
 FX3U-4AD-PNK-ADP

4 Special Function Blocks

(for the FX3UC PLC)

Analog
 FX3UC-4AD
 FX2NC-4DA

5 Special Function Blocks

Analog
 FX2N-2AD
 FX3U-4AD
 FX2N-2DA
 FX3U-4DA
 FX2N-5A
 FX2N-8AD

Temperature
 FX2N-2LC
 FX3U-4LC

Group	Function	Product Name	FX3U	FX3UC	FX3G	FX1S	Description				
2 Expansion Boards	Analog Board	FX3G-2AD-BD			✓		Input	Input Type	Output	Output Type	Note
		FX3G-1DA-BD			✓		2	Volt/Current	1	Volt/Current	Max. 12bit resolution
		FX1N-2AD-BD				✓	2	Volt/Current	1	Volt/Current	Max. 12bit resolution
		FX1N-1DA-BD				✓	2	Volt/Current	1	Volt/Current	Max. 12bit resolution
	Analog Setpoint	FX3G-8AV-BD				✓		8 analog setpoint potentiometers with 8bit			
		FX1N-8AV-BD				✓		8 analog setpoint potentiometers with 8bit			
3 Special Adapters	Analog	FX3U-3A-ADP*3	✓ *2	✓	✓ *2		Input	Input Type	Output	Output Type	Note
		FX3U-4AD-ADP	✓ *2	✓	✓ *2		2	Volt/Current	1	Volt/Current	Max. 12 bit resolution
		FX3U-4DA-ADP	✓ *2	✓	✓ *2		4	Volt/Current	4	Volt/Current	12 bit resolution
	Temperature Sensor Input	FX3U-4AD-PT-ADP	✓ *2	✓	✓ *2		Input	Input Type	Output	Output Type	Note
		FX3U-4AD-PTW-ADP	✓ *2	✓	✓ *2		4	Pt100	–	–	-50°C to +250°C
		FX3U-4AD-PNK-ADP	✓ *2	✓	✓ *2		4	Pt1000/Ni1000	–	–	-50°C to +250°C Pt1000 -40°C to +110°C Ni1000
		FX3U-4AD-TC-ADP	✓ *2	✓	✓ *2		4	Thermocouple	–	–	-100°C to + 600°C J-type -100°C to +1000°C K-type
4 5 Special Function Blocks	Analog	FX2N-2AD	✓	✓ *1	✓		Input	Input Type	Output	Output Type	Note
		FX3U-4AD	✓	✓ *1	✓		2	Volt/Current	–	–	12 bit resolution
		FX3UC-4AD		✓			4	Volt/Current	–	–	Max. 15 bit resolution
		FX2N-8AD	✓	✓ *1	✓		4	Volt/Current/TC	–	–	Max. 14 bit resolution
		FX2N-2DA	✓	✓ *1	✓		–	–	2	Volt/Current	12 bit resolution
		FX3U-4DA	✓	✓ *1	✓		–	–	4	Volt/Current	15 bit resolution
		FX2NC-4DA		✓			–	–	4	Volt/Current	Max. 11 bit resolution
	FX2N-5A	✓	✓ *1	✓		4	Volt/Current	1	Volt/Current	Input: Max. 14bit Output: Max.12bit res.	
	Temperature Control	FX2N-2LC	✓	✓ *1	✓		Input	Input Type	Output	Output Type	Note
		FX3U-4LC	✓	✓ *1	✓		2	Pt/TC	2	Digital outputs	Temperature controller
							4	Pt/TC/Volt	4	Digital outputs	Temperature controller

Some items require additional expansion modules in order to function where other connection rules and requirements may apply. For more details, refer to the respective product manuals.

*1: For connection to an FX3UC main unit, the FX2NC-CNV-IF interface adapter or the FX3UC-1PS-5V power supply unit is required.

*2: To connect to the FX3U main unit a FX3U BD board is required. For connection to a FX3G is the FX3G-CNV-ADP required.

*3: The FX3U-3A-ADP is supported in FX3U PLCs version 2.61 or later and FX3G PLCs version 1.20 or later.

Specifications

DA	1CH Expansion Board		1CH Expansion Board		2CH Special Function Block		4CH Adapter	
	FX1N-1DA-BD		FX3G-1DA-BD		FX2N-2DA		FX3U-4DA-ADP	
Analog Output Range (External load resistance)	0 to 10V DC (2k to 1MΩ)	4 to 20mA (500Ω or less)	0 to 10V DC (2k to 1MΩ)	4 to 20mA (500Ω or less)	0 to 5V DC, 0 to 10V DC (2k to 1MΩ)	4 to 20mA (400Ω or less)	0 to 10V DC (5k to 1MΩ)	4 to 20mA (500Ω or less)
Resolution	2.5mV	8μA	2.5mV	8μA	2.5mV	4μA	2.5mV	4μA
Digital Input	12 bits (voltage), 11 bits (current)		12 bits (voltage), 11 bits (current)		12 bit		12 bit	
Overall Accuracy *1	±1%		±0.5% (20 to 30°C), ±1.0% (0 to 55°C)		±1%		±0.5% (20 to 30°C), ±1.0% (0 to 55°C)	
Conversion Time	Approx.10ms (D/A conversion is started after the END instruction)		60 μs, data updated every scan time		4ms/ 1 channel		FX3U(C) : 200μs *7 FX3G : 250μs *7	
Isolation	None		None		See Notes below: *3 and *4		See Notes below: *3, *4 and *6	
No. of Occupied I/O	0 points		0 points		8 I/O points		0 I/O points	

AD	2CH Expansion Board		2CH Expansion Board		2CH Special Function Block		4CH Adapter	
	FX1N-2AD-BD		FX3G-2AD-BD		FX2N-2AD		FX3U-4AD-ADP	
Analog Input Range (Input resistance)	0 to 10VDC (300kΩ)	4 to 20mA (250Ω)	0 to 10V DC (198.7kΩ)	4 to 20mA (250Ω)	0 to 5V DC, 0 to 10V DC (200kΩ)	4 to 20mA (250Ω)	0 to 10V DC,	4 to 20mA
Resolution	2.5mV	8μA	2.5mV	8μA	2.5mV	4μA	2.5mV	10μA
Digital Output	12 bits (voltage), 11 bits (current)		12 bits (voltage), 11 bits (current)		12 bit		12 bit	11 bit
Overall Accuracy *1	±1%		±0.5% (20 to 30°C), ±1.0% (0 to 55°C)		±1%		±0.5% (20 to 30°C), ±1.0% (0 to 55°C)	
Conversion Time	Approx.10ms[15ms×2channels] (D8112 or D8113 are updated after the END instruction)		180 μs, data updated every scan time		2.5 ms / 1 channel		FX3U(C) : 200μs *7 FX3G : 250μs *7	
Isolation	None		None		See Notes below: *3 and *4		See Notes below: *3, *4 and *6	
No. of Occupied I/O	0 points		0 points		8 I/O points		0 points	

Temperature	2CH Special Function Block		4CH Special Function Block		4CH Adapter	
	FX2N-2LC		FX3U-4LC		FX3U-4AD-TC-ADP	
Input Types	*12 Thermocouple type K, J, R, S, E, T, B, N, PL II, WRe5-26, U, and L, 3-wire platinum resistance Thermometer sensor(s) Pt100, and JPt100		*13 Thermocouple type K, J, R, S, E, T, B, N, PL II, WRe5-26, U, and L, 3-wire platinum resistance Thermometer sensor(s) Pt100, JPt100, Pt1000 Voltage input		K type thermocouple J type thermocouple	
Compensated range	Examples: • Type K: -100 to +1300(°C) / -100 to +2400 (°F) • Type J: -100.0 to +800.0(°C) / -100 to +2100(°F)		Examples: • Type K: -100 to +1300(°C) / -100 to +2400(°F) • Type J: -100.0 to +800.0(°C) / -100 to +2100(°F) • Voltage input: 0 to 10mVDC, 0 to 100mVDC		-100 to +1000(°C) / -148 to +1832(°F) -100 to +600(°C) / -148 to +1112(°F)	
Resolution	0.1°C / 0.1°F or 1°C / 1°F		Temperature input: 0.1°C / 0.1°F or 1°C / 1°F Voltage input: 1μV		0.4°C / 0.72°F 0.3°C / 0.54°F	
Digital Output	Examples: • Type K: -100 to +1300 (°C) / -100 to +2400 (°F) • Type J: -1000 to +8000 (°C) / -100 to +2100 (°F)		Examples: • Type K: -100 to +1300 (°C) / -100 to +2400 (°F) • Type J: -1000 to +8000 (°C) / -100 to +2100 (°F) • 0 to 10mVDC input: 0 to 10000		-1000 to +10000 (°C) / -1480 to +18320 (°F) -1000 to + 6000 (°C) / -1480 to +11120 (°F)	
Accuracy	±0.7% of range span ± 1 digit *11		±0.7% of range span ± 1 digit *11		±0.5% of full scale +1°C	
Conversion Time	500ms (Sampling time)		250ms (Sampling time)		FX3U(C) : 200μs *7 FX3G : 250μs *7	
Isolation	See Notes Below: *3, *4 and *6		See Notes Below: *3, *4 and *6		See Notes below: *3, *4 and *6	
No. of Occupied Points	8 I/O points		8 I/O points		0 points	
Notes	Control method: Two-position, PID(with auto-tuning), PI control		Control method: Two-position, PID(with auto-tuning)		—	

Notes: (For detailed information please refer to the respective product manuals).

*1: Percentage of full scale

*2: For Shipping approvals consult with respective manual

*3: A photocoupler is used to insulate the analog input or output area from the PLC.

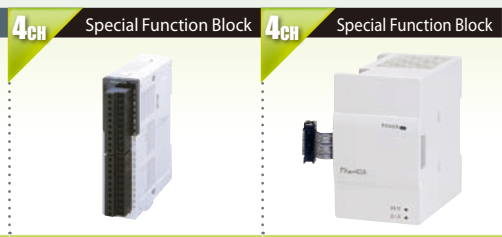
*4: Channels are not insulated from each other.

*5: FX2NC-CNV-IF required for FX2NC

*6: A DC/DC converter is used to insulate the power supply from the analog input or output.

*7: Data updated every PLC scan time

*8: If 1 or more channels use the digital filter(s), the time required for A/D conversion will be "5 ms x number of selected channels."



FX2N-4DA		FX3U-4DA	
-10 to +10V DC (2k to 1MΩ)	0 to 20mA, 4 to 20mA (500Ω or less)	-10 to +10V DC (1k to 1MΩ)	0 to 20mA, 4 to 20mA (500Ω or less)
5mV	20μA	0.32mV	0.63μA
Signed 12 bit	10 bit	Signed 16 bit	15 bit
±0.5% (20 to 30°C), ±1.0% (0 to 55°C)		±0.5% (20 to 30°C), ±0.5% (0 to 55°C)	
2.1 ms / 4 channels		1ms / 4 channels	
See Notes below: *3, *4 and *6 8 I/O points		See Notes below: *3, *4 and *6 8 I/O points	



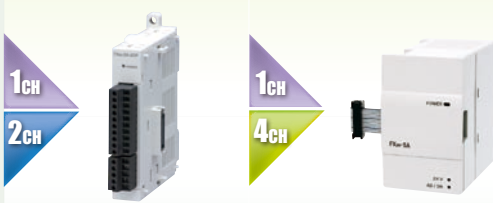
FX3U-4AD		FX3U-4AD	
-10 to +10V DC (200kΩ)	-20 to +20mA, 4 to 20mA (250Ω)	-10 to +10V DC, (200kΩ)	-20 to +20mA, 4 to 20mA (250Ω)
0.32mV	1.25μA	0.32mV	1.25μA
Signed 16 bit	Signed 15 bit	Signed 16 bit	Signed 15 bit
±0.3% (20 to 30°C), ±0.5% (0 to 55°C)	±0.5% (20 to 30°C), ±1.0% (0 to 55°C)	±0.3% (20 to 30°C), ±0.5% (0 to 55°C)	±0.5% (20 to 30°C), ±1.0% (0 to 55°C)
500 μs x No. of used channels *8		500 μs x No. of used channels *8	
See Notes below: *3, *4 and *6 8 I/O points		See Notes below: *3, *4 and *6 8 I/O points	



FX3U-4AD-PT-ADP	FX3U-4AD-PNK-ADP	FX3U-4AD-PTW-ADP
3-wire platinum resistance thermometer sensor(s) Pt100	2 or 3-wire Thermometer sensor(s) (Pt1000 or Ni1000)	3-wire platinum resistance thermometer sensor(s) Pt100
-50 to +250(°C) / -58 to +482(°F)	-50 to +250(°C) / -58 to +482(°F) (Pt1000) / -40 to +110(°C) / -40 to +230(°F) (Ni1000)	-100 to +600(°C) / -148 to +1112(°F)
0.1°C / 0.18°F	0.1°C / 0.2°F	0.2°C to 0.3°C / 0.4°F to 0.5°F
-500 to +2500(°C) / -5800 to +4820(°F)	-500 to +2500(°C) / -580 to +4820(°F) (Pt1000) / -400 to +1100(°C) / -400 to +2300(°F) (Ni1000)	-1000 to +6000(°C) / -1480 to +11120(°F)
±0.5% (20 to 30°C), ±1.0% (0 to 55°C)	±0.5% (20 to 30°C), ±1.0% (0 to 55°C)	±0.5% (20 to 30°C), ±1.0% (0 to 55°C)
FX3U(C): 200μs*7 FX3G: 250μs*7	FX3U(C): 200μs*7, FX3G: 250μs*7	FX3U(C): 200μs*7, FX3G: 250μs*7
See Notes below: *3, *4 and *6 0 points	See notes below *3, *4, and *6 0 points	See notes below *3, *4, and *6 0 points
—	—	—

DA/AD Hybrid

3CH Adapter FX3U-3A-ADP		5CH Special Function Block FX2N-5A	
0 to 10V DC (5k to 1MΩ)	4 to 20mA (500Ω or less)	-10 to +10V DC (2k to 1MΩ)	0 to 20mA, 4 to 20mA (500Ω or less)
2.5mV	4μA	5mV	20μA
12 bit		Signed 12 bit	10 bit
±0.5% (20 to 30°C), ±1.0% (0 to 55°C)		±0.5% (20 to 30°C), ±1.0% (0 to 55°C)	
FX3U(C): 80μs per input ch*7, FX3G: 90μs per input ch*7		2ms	
See below 0		See below See below	



FX3U-3A-ADP		FX2N-5A	
0 to 10V DC (198.7kΩ)	4 to 20mA (250Ω)	-100 to +100mV DC, -10 to +10V DC (200kΩ)	-20 to +20mA, 4 to 20mA (250Ω)
2.5mV	5μA	50μV(±100mV), 0.32mV(±10V)	1.25μA(±20mA), 10μA(4 to 20mA)
12 bit		Signed 12 bit (±100mV), Signed 16 bit (±10V)	Signed 15 bit
±0.5% (20 to 30°C), ±1.0% (0 to 55°C)		±0.3% (20 to 30°C), ±0.5% (0 to 55°C)	±0.5% (20 to 30°C), ±1.0% (0 to 55°C)
FX3U(C): 40μs per output ch*7, FX3G: 50μs per output ch*7		1ms / Number of used channels	
See Notes below: *3 and *4 0 points		See Notes below: *3, *4 and *6 8 I/O points	

AD/Temperature Hybrid

8CH Special Function Block FX2N-8AD	
-10 to +10V DC (200kΩ)	-20 to +20mA, 4 to 20mA (250Ω)
0.63mV	2.5μA(±20mA) / 2μA(4 to 20mA)
Signed 15 bit	Signed 14 bit
±0.3% (20 to 30°C), ±0.5% (0 to 55°C)	
500μs / Number of used channels *9	
See below	
See below	



*14 FX2N-8AD		
K type thermocouple	J type thermocouple	T type thermocouple
-100 to +1200(°C) / -148 to +2192(°F)	-100 to +600(°C) / -148 to +1112(°F)	-100 to +350(°C) / -148 to +662(°F)
0.1°C / 0.1°F		
-1000 to +1200(°C) / -1480 to +2192(°F)	-1000 to +600(°C) / -1480 to +1112(°F)	-1000 to +350(°C) / -1480 to +662(°F)
±0.5% (0 to 55°C)		±0.7% (0 to 55°C)
40ms / Number of used channels		
See Notes below: *3, *4 and *6 8 I/O points		
—		

*9: If 1 or more channels use the thermocouple input(s), the input voltage/current data conversion speed will be "1 ms x number of selected channels."

*10: CTL-12-S36-8 or CTL-6-P-H (manufactured by U.R.D. Co., Ltd.)

*11: Cold contact temperature compensation error Within ±1.0°C (when using a thermocouple)

*12: Temperature input 2CH, Transistor output 2CH and CT input 2CH

*13: Temperature input 4CH, Transistor output 2CH and input 4CH

*14: Also can be used as TC for AD inputs or V/mA for temperature input.

Visualization

GRAPHIC OPERATION TERMINAL
GOT1000

Industrial control panels are increasingly turning into multifunctional human-machine interfaces. The GOT1000 family features 3 different series to provide the best fit of functionality for all kind of user requirements.

GT16

The all-in-one model

Multimedia Video RGB Network
Backup/restore Serial



15-inch XGA TFT
GT1695M 65,536 colors



12.1-inch SVGA TFT
GT1685M 65,536 colors



10.4-inch SVGA VGA TFT
GT1675M 65,536 colors



8.4-inch SVGA VGA TFT
GT1665M 65,536 colors

GT11

Standard functions for demanding users

Hand health Scripting Parts movement
System monitor

5.7-inch



QVGA TFT
GT1155 256 colors



QVGA STN
GT1155 256 colors



QVGA STN
GT1150 16 gray scales



QVGA Handy GOT/STN
GT1155HS 256 color
GT1150HS 16 gray scales

GT10

Affordability with basic functionality

Multi-language Multi action switch Recipe functions



5.7-inch QVGA STN
GT1055 256 colors
GT1050 16 blue scales



4.7-inch QVGA STN
GT1045 256 colors
GT1040 16 blue scales



4.5-inch STN GT1030
Monochrome Tricolor LED
[Green/Orange/Red] [White/Pink/Red]
Black Frame / White Frame



3.7-inch STN GT1020
Monochrome Tricolor LED
[Green/Orange/Red] [White/Pink/Red]
Black Frame / White Frame

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