■ Analog temperature input adapters

☑ FX3S ☑ FX3G ☑ FX3GC ☑ FX3GE ☑ FX3U ☑ FX3UC ☑ FX5U ☑ FX5UC
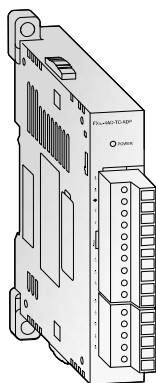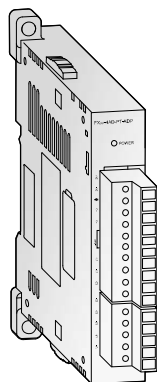
The analog input adapters for thermocouples are used for processing temperatures. They have 4 independent inputs for detecting signals from thermocouples of various types.

The FX3U/FX5U-4AD-PT-ADP, FX3U-4AD-PTW-ADP and FX3U-4AD-PNK-ADP analog input adapters enable the connection of up to four resistance thermometers to the PLC system.

FX3U-4AD-TC-ADP

FX3U-4AD-PT-ADP

| Specifications		FX3U-4AD-TC-ADP	FX3U-4AD-PT-ADP	FX3U-4AD-PTW-ADP	FX3U-4AD-PNK-ADP	FX5-4AD-PT-ADP	FX5-4AD-TC-ADP
Applicable for		Base units FX3S, FX3G, FX3GC, FX3GE, FX3U, FX3UC				Base units FX5U, FX5UC	
Analog inputs		4 (thermocouples, J or K type)	4 (Pt100)		4 (Pt1000 or Ni1000)	4	
Compensated temperature range °C		-100–600 (J)/ -100–1000 (K)	-50–250	-100–600	-50–250 (Pt1000)/ -40–110 (Ni1000)	-200–850 (Pt100)/ -60–250 (Ni100)	-40–750(J)/ -200–1200 (K)/ 0–1600(R, S)
Digital outputs		-1000–6000 (J)/ -1000–10000 (K)	-500–2500	-1000–6000	-500–2500 (Pt1000)/ -400–1100 (Ni1000)	-2000–8500 (Pt100)/ -600–2500 (Ni100)	-400–7500 (J)/ -2000–12000 (K)/ 0–16000 (R, S)
Resolution °C		0.3 (J)/0.4 (K)	0.1	0.2–0.3	0.1		0.1 (K,J,T), 0.1–0.3 (B,R,S)
Fullscale overall accuracy		±0.5 % (fullscale)	±0.5–1.0 % (fullscale)*			±0.4–2.4 °C (fullscale)*	±2.8–7.2 °C (fullscale)*
Power supply	5 V DC	15 mA (from base unit)				10 mA	
	24 V DC	45 mA	50 mA			20 mA	
Related I/O points		0					
Weight kg		0.1					
Dimensions (WxHxD) mm		17.6x90(106)x89.5				17.6x90(106)x74(89.1)	
Order information Art. no.		165273	165272	214173	214172	304298	304299

* Dependent on the ambient temperature

Notes: When connecting the FX3 analog adapters to a FX3G, FX3S or FX3U base unit, a communications adapter is required. A direct connection without adapter is possible if these modules are connected to a FX3GC, FX3GE or FX3UC base unit.

■ Analog I/O adapters

☑ FX3S ☑ FX3G ☑ FX3GC ☑ FX3GE ☑ FX3U ☑ FX3UC ☐ FX5U ☐ FX5UC
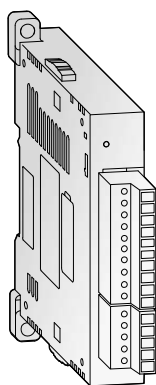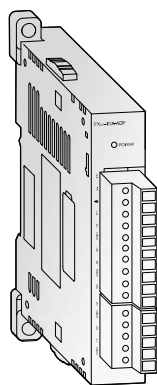
The analog input adapter FX3U-4AD-ADP is mounted on the left side of the base unit and extends a controller of the FX3 series with 4 analog inputs.

The analog output adapter FX3U-4DA-ADP is mounted on the left side of a FX3 series base unit and provides four analog outputs.

The analog input/output module FX3U-3A-ADP provides the user with two analog inputs and one analog output.
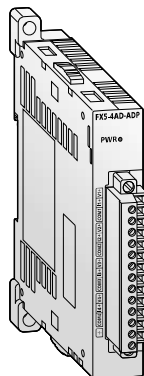
FX3U-4AD-ADP

FX3U-4DA-ADP

Specifications		FX3U-4AD-ADP	FX3U-4DA-ADP	FX3U-3A-ADP
Analog channels	Inputs	4	—	2
	Outputs	—	4	1
Analog range		0–10 V DC, 4–20 mA		
Resolution		2.5 mV/10 µA (12 bit/11 bit)	2.5 mV/4 µA (12 bit)	
Overall accuracy		±0.5 % */±1 %		±0.5–1 %*
Power supply	5 V DC	15 mA (from base unit)		20 mA (from base unit)
	24 V DC	40 mA	150 mA	90 mA
Related I/O points		0		
Weight kg		0.1		
Dimensions (WxHxD) mm		17.6x90(106)x89.5		17.6x90x89.5
Order information Art. no.		165241	165271	221549

* Dependent on the ambient temperature and signal quality

Notes: When connecting the analog adapters to a FX3G, FX3S or FX3U base unit, a communications adapter is required. A direct connection without adapter is possible if these modules are connected to a FX3GC, FX3GE or FX3UC base unit.

4

Special function modules

■ Analog I/O adapters

☐ FX3S ☐ FX3G ☐ FX3GC ☐ FX3GE ☐ FX3U ☐ FX3UC ☑ **FX5U** ☑ **FX5UC**

FX5-4AD-ADP
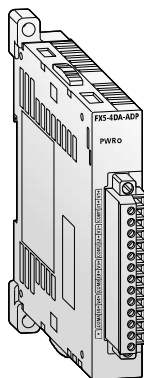
FX5-4DA-ADP

Up to four analog expansion adapters can be mounted on the left side of a FX5U CPU module or FX5UC CPU module.

A FX5-4AD-ADP provides four analog inputs and a FX5-4DA-ADP provides four analog outputs.

Specifications		FX5-4AD-ADP	FX5-4DA-ADP
Analog channels	Inputs	4	—
	Outputs	—	4
Analog range		-10–10 V DC, -20–20 mA	-10–10 V DC, 0–20 mA
Resolution		312.5 µV/1.125 µA (14 bit)	250 µV/1 µA (14 bit)
Overall accuracy		±0.1 %*/±0.3 %	±0.1 %*/±0.2 %
Power supply	5 V DC	10 mA (from base unit)	
	24 V DC	20 mA (from base unit)	160 mA (external power supply)
Related I/O points		0	
Weight	kg	0.1	
Dimensions (WxHxD)	mm	17.6x90(106)x89.1	
Order information	Art. no.	283559	283560

* Dependent on the ambient temperature and signal quality

■ Temperature control modules

☐ FX3S ☑ **FX3G** ☑ **FX3GC** ☑ **FX3GE** ☑ **FX3U** ☑ **FX3UC** ☑ **FX5U** ☑ **FX5UC**
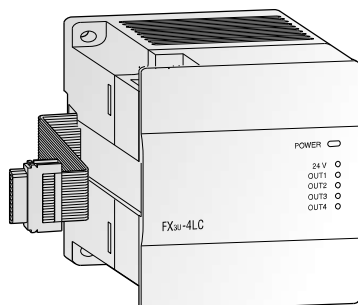
The temperature control module FX3U-4LC is equipped with four temperature input points and four transistor (open collector) output points. It is used to read temperature signals from thermocouples and Pt100 sensors, and performs PID output control.

The proportional band, the integral time and the derivative time can be easily set by auto tuning.

The channels are isolated against each other.

Self-diagnosis functions are provided, and the disconnection of heaters can be detected by current detection (CT).

The temperature control module FX5-4LC supports parameter transfer/automatic refreshing. The spring clamp terminal enables compact size and enhances vibration resistance.

Specifications		FX3U-4LC	FX5-4LC
Applicable for		Base units FX3G, FX3GC, FX3GE, FX3U, FX3UC, FX5U, FX5UC	Base units FX5U, FX5UC
Analog inputs		4 (Thermocouple and Pt100 sensors)	4 (Thermocouple, Pt100 and Pt1000 sensors)
Compensated temperature range	°C	-200–2300	
Digital outputs		4 NPN transistor open collector output points	
Resolution	°C	0.1 or 1	0.1 °C , 1.0 °C , 0.5 µV or 5.0 µV Varies depending on input range of used sensors
Fullscale overall accuracy		±0.3–0.7 % (fullscale, dependent on the ambient temperature)	
Power supply	5 V DC	160 mA (from base unit)	140 mA (from base unit)
	24 V DC	50 mA	25 mA
Related I/O points		8	
Dimensions (WxHxD)	mm	90x90x86	60x90x83
Order information	Art. no.	232806	312298

Notes: To connect a FX3U-4LC to a FX3UC or FX3GC base unit, an adapter FX2N-CNV-IF or a power supply FX3UC-1PS-5V is required.
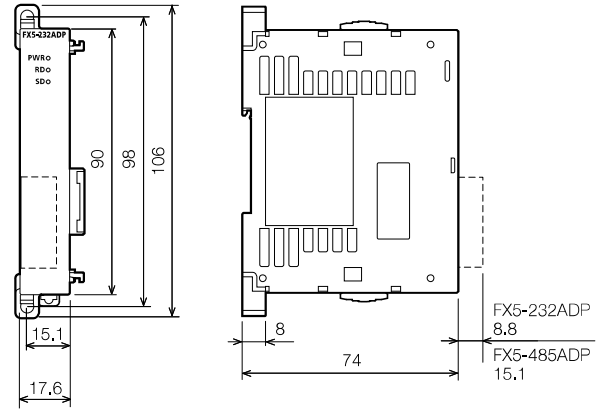For the connection of a FX5U-4LC to a FX5UC base unit, a FX5-CNV-IFC resp. FX5-C1PS-5V is required.

Expansion adapters FX5

☐ **MELSEC-F series** ☑ **MELSEC iQ-F series**

FX5-4AD-ADP/FX5-4DA-ADP
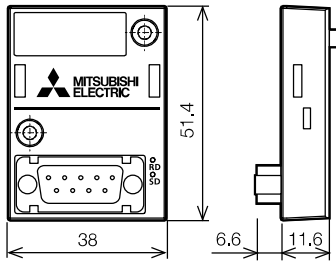FX5-4AD-PT-ADP/FX5-4AD-TC-ADP
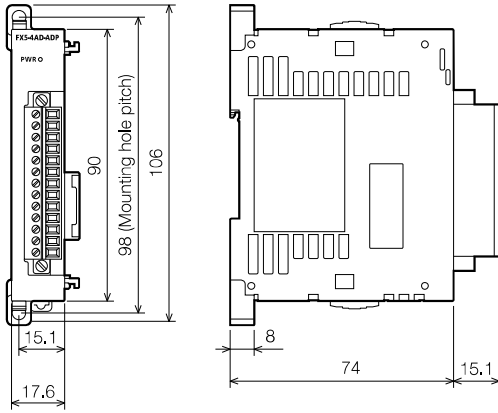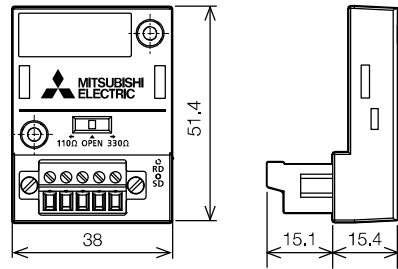
FX5-232ADP/FX5-485ADP

All dimensions in mm

Expansion boards FX5

☐ **MELSEC-F series** ☑ **MELSEC iQ-F series**
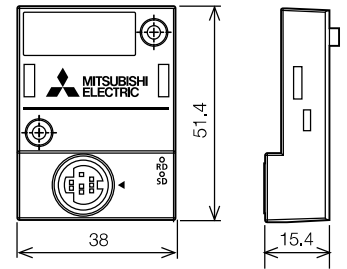
FX5-232-BD

FX5-485-BD

FX5-422-BD-GOT

All dimensions in mm

7

Dimensions

Special function modules FX3U/FX3UC

☑ **MELSEC-F series** ☐ **MELSEC iQ-F series**
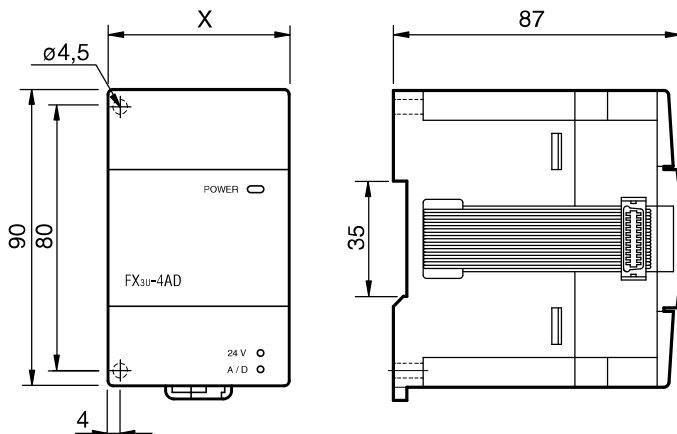
Type	X
FX3U-2HC	55
FX3U-3A-ADP	17.6
FX3U-4DA	55
FX3U-4AD	55
FX3U-4LC	90
FX3U-CF-ADP	45
FX3U-ENET	55
FX3U-CAN	43
FX3U-20SSC-H	55
FX3U-64CCL-M	55
FX3U-64DP-M	43
FX3U-1PSU-5V	55
FX3UC-4AD	20.2
FX3UC-1PS-5V	24.2
FX3U-1PG	43
FX3U-J1939	43

All dimensions in mm