

## Technical Bulletin

### FX2N to FX3U Conversion Hardware Considerations

#### Hardware Considerations

- FX2N series and FX3U series comparison and replacement considerations. Important points on hardware. When replacing, please check the manuals for each model in detail.

Important points on the major differences between FX2N and FX3U hardware

Item	Difference		Important Points
	FX2N Series	FX3U Series	
Lengthwise distance between mounting holes	10mm less than exterior length	Depends on I/O size	FX2N and FX3U have different mounting hole positions. (See dimension in Figure 1 on the next page)
Battery used and mounting position	F2-40BL lithium thionyl chloride primary battery	FX3U-32BL lithium manganese dioxide primary battery	Different model name (shape). Different mounting position.
Battery power	3.6V nominal voltage	3.0V nominal voltage	Please be careful when using special device D8005 (battery voltage).
Hardware input filter (digital filter is 0) - High-speed counter - Input interrupt function - Pulse catch function	X0,X1: 20 $\mu$ s X2~ X7: 50 $\mu$ s X10~ X17: 200 $\mu$ s*  *10ms for 16 I/O point base units	X0~ X5: 5 $\mu$ s X6,X7: 50 $\mu$ s X10~ X17: 200 $\mu$ s*  *10ms for 16 I/O point base units	FX3U may catch input noise not detected in the FX2N.  Please take noise countermeasures externally if necessary.

FX1, FX2 expansion	Expansion possible using FX2N-CNV-IF	Expansion not possible	
485-BD, 485ADP terminal resistors	Shipped with BD or ADP, choose and mount	Built in BD or ADP, change by selector switch	For the FX3U, the resistance value can be changed using the selector switch.
485-BD, 485ADP wire size	AWG26~ 16	AWG22~ 20	Wire thickness that can be used is different. If the wires are thick, they might not be usable in the FX3U. (See Table 1 cable size)

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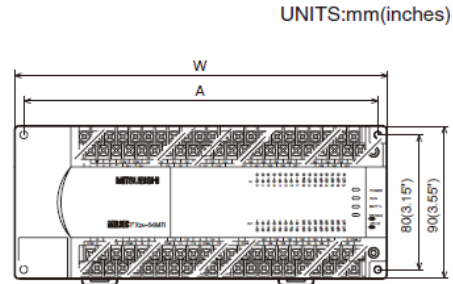
Figure 1: Dimensions

Be careful when replacing FX2N with FX3U, as their dimensions are different.

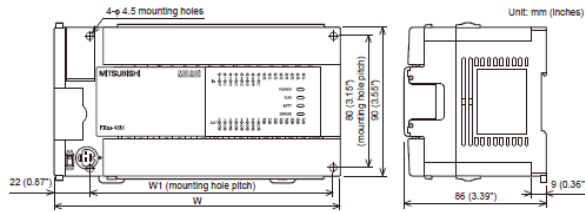
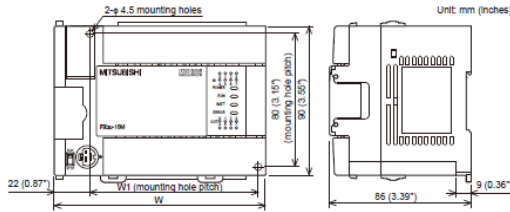
- Difference - 1mm height difference
- Lengthwise distance between mounting screws (W1 = FX3U, A = FX2N) is different

FX2N series base unit

UNIT		mm	inches	mm	inches
		± 0.2	± 0.01	± 0.2	± 0.01
		A = W - 10mm(0.40")		H	
FX2N-16MH★	2-Φ (→)	120	4.73	87	3.43
FX2N-32MH★					
FX2N-32EH★					
FX2N-48MH★, FX2N-32MR-UA1/UL	4-Φ (→)	172	6.78		
FX2N-48EH★					
FX2N-64MH★, FX2N-48MR-UA1/UL FX2N-48ER-UA1/UL		210	8.27		
FX2N-80MH★, FX2N-64MR-UA1/UL		275	10.83		
FX2N-128M★		340	13.39		



FX3U series base unit



Series	Model name	W: mm (inches)	W1: mm (inches)
FX3u-16M□	FX3u-16MR/ES	130 (5.12")	103 (4.06")
	FX3u-16MT/ES		
	FX3u-16MT/ESS		
	FX3u-16MR/DS		
	FX3u-16MT/DS		
	FX3u-16MT/DSS		
FX3u-32M□	FX3u-32MR/ES	150 (5.91")	123 (4.85")
	FX3u-32MT/ES		
	FX3u-32MT/ESS		
	FX3u-32MS/ES		
	FX3u-32MR/DS		
	FX3u-32MT/DS		
	FX3u-32MT/DSS		
	FX3u-32MR/UA1 <sup>1)</sup>		

Series	Model name	W: mm (inches)	W1: mm (inches)
FX3u-48M□	FX3u-48MR/ES	182 (7.17")	103 (4.06")
	FX3u-48MT/ES		
	FX3u-16MT/ESS		
	FX3u-48MR/DS		
	FX3u-48MT/DS		
	FX3u-48MT/DSS		
FX3u-64M□	FX3u-64MR/ES	220 (8.67")	123 (4.85")
	FX3u-64MT/ES		
	FX3u-64MT/ESS		
	FX3u-64MS/ES		
	FX3u-64MR/DS		
	FX3u-64MT/DS		
	FX3u-64MT/DSS		
	FX3u-64MR/UA1		
FX3u-80M□	FX3u-80MR/ES	285 (11.23")	258 (10.16")
	FX3u-80MT/ES		
	FX3u-80MT/ESS		
	FX3u-80MR/DS		
	FX3u-80MT/DSS		
FX3u-128M□	FX3u-128MR/ES	350 (13.78")	323 (12.72")
	FX3u-128MT/ES		
	FX3u-128MT/ESS		

<sup>1)</sup> FX3u-32MR/UA1 uses 4-Φ4.5 mounting holes.  
The position of the mounting hole is equivalent to FX3u-48M□

Table 1: European terminal block cable sizes

Use shielded, twisted-pair cable to connect RS-485 communication devices.

Follow tightening torque and wire sizes shown below.

	Wire size for 1 wire to 1 terminal	Wire size for 2 wires to 1 terminal	Pin terminal with insulation sleeve (wire size)	Tightening torque	Insulating sheath stripping length*
FX2N-485-BD	AWG26~ AWG16		Cannot be used	0.6N·m	6mm
FX2NC-485ADP	AWG26~ AWG16	AWG26~ AWG20	Cannot be used	0.4~ 0.5N·m	8mm
FX3U-485-BD FX3U-485ADP	AWG22~ AWG20	AWG22	Can be used	0.22~ 0.25N·m	9mm

\*Only when terminating a wire as is

Refer to "FX Series User's Manual" [data communication edition] for details.