

## ***Databank-Technical Bulletin***

### **Production Discontinuation of the FX2N series of PLCs**

Thanks to the loyal support of our customers, the MELSEC-F series of PLCs has been and continues to be very successful. At this time we would like to announce that the production of the FX2N series PLC as well as certain expansion products will be ending in the upcoming future. This document will explain the terms for the discontinuation of production as well as give recommendations for substitute products.

Recommendations for substitute products are based upon specifications such as the number of inputs/outputs, program memory, and input/output type. Select substitute products based on the requirements of the individual system in question, which may differ from the product recommended here.

Additionally, evaluate the selection of substitute products based on the functions available, where certain products may fit individual systems better than others.

Consult with your local Mitsubishi Electric representative for further details on substitute products.

Product	Order acceptance	Production discontinuation	Repair acceptance
FX2N main units, expansion products	Until September, 2012 END	September, 2012 END	Until September, 2019 END
FX2N interface blocks			
FX0-10LDR			

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### **1. Models for which production will be discontinued**

The production of the FX2N series main unit as well as selected expansion equipment and other related products will be discontinued. The production of FX2N interface blocks FX2N-16LNK-M and FX2N-CNV-IF will also be discontinued. The production of the FX0-10LDR will also be discontinued. Tables in section 4 "Reference Data" list applicable models.

### **2. Reasons for discontinuing production**

Recently, electronic components of the FX2N PLC have become increasingly difficult to obtain. Part of the reason for this is that stricter process regulations have become the standard in recent years. With a limited amount of parts available, it becomes difficult to ensure maintenance expectations for the products. For this reason, production will be discontinued.

### **3. Switching to substitute products**

For most products, there is an equivalent substitute product available that will match the functionality of the FX2N series product. To smooth the transition process, there will be a repair period of 7 years from discontinuation of production (plan is for September, 2019). However, this date is subject to change based upon the availability of replacement parts.

### **4. Reference Data**

#### **Reference Data 1: List of products for which production will be discontinued with recommended substitutes, as well as a list of products for which production will not be discontinued.**

[Cautions on Selection]

The following table lists products based on the number of inputs and outputs as well as the output type. For the recommended substitute products, confirm all specifications with the applicable product manuals. Take care to address the following points:

- If the program or the wiring needs to be changed based upon the configuration of expansion equipment.
- If, based upon the substitute product used, the entire system needs to be reconfigured.

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### 1. Products for which production will be discontinued, as well as recommended substitution models.

#### (1) FX2N series main unit

Discontinued Products		➔	Recommended Substitute Model	
Model Code	Model Name		Model Code	Model Name
09M201	FX2N-16MR-ES/UL		09S202	FX3U-16MR/ES
09M203	FX2N-16MT-ESS/UL		09S219	FX3U-16MT/ESS
09M204	FX2N-32MR-ES/UL		09S203	FX3U-32MR/ES
09M206	FX2N-32MT-ESS/UL		09S220	FX3U-32MT/ESS
09M207	FX2N-48MR-ES/UL		09S204	FX3U-48MR/ES
09M209	FX2N-48MT-ESS/UL		09S221	FX3U-48MT/ESS
09M210	FX2N-64MR-ES/UL		09S205	FX3U-64MR/ES
09M212	FX2N-64MT-ESS/UL		09S222	FX3U-64MT/ESS
09M213	FX2N-80MR-ES/UL		09S206	FX3U-80MR/ES
09M215	FX2N-80MT-ESS/UL		09S223	FX3U-80MT/ESS
09M216	FX2N-128MR-ES/UL		09S229	FX3U-128MR/ES
09M218	FX2N-128MT-ESS/UL		09S233	FX3U-128MT/ESS
09M250	FX2N-16MR-DS		09S234	FX3U-16MR/DS
09M251	FX2N-16MT-DSS		09S244	FX3U-16MT/DSS
09M233	FX2N-32MR-DS		09S235	FX3U-32MR/DS
09M234	FX2N-32MT-DSS		09S245	FX3U-32MT/DSS
09M235	FX2N-48MR-DS		09S236	FX3U-48MR/DS
09M236	FX2N-48MT-DSS		09S246	FX3U-48MT/DSS
09M237	FX2N-64MR-DS		09S237	FX3U-64MR/DS
09M238	FX2N-64MT-DSS		09S247	FX3U-64MT/DSS
09M239	FX2N-80MR-DS		09S238	FX3U-80MR/DS
09M240	FX2N-80MT-DSS		09S248	FX3U-80MT/DSS
09M271	FX2N-16MT-E/UL		09S214	FX3U-16MT/ES
09M272	FX2N-32MT-E/UL		09S215	FX3U-32MT/ES
09M273	FX2N-48MT-E/UL		09S216	FX3U-48MT/ES
09M274	FX2N-32MS-E/UL		09S296	FX3U-32MS/ES
09M275	FX2N-48MS-E/UL		09S297	FX3U-64MS/ES
09M064	FX2N-16MR-UA1/UL		09S294	FX3U-32MR/UA1
09M066	FX2N-32MR-UA1/UL		09S294	FX3U-32MR/UA1
09M067	FX2N-48MR-UA1/UL		09S295	FX3U-64MR/UA1
09M068	FX2N-64MR-UA1/UL		09S295	FX3U-64MR/UA1
09M001	FX2N-16MR		09S202	FX3U-16MR/ES
09M002	FX2N-16MS		09S296	FX3U-32MS/ES
09M003	FX2N-16MT		09S214	FX3U-16MT/ES
09M007	FX2N-32MR		09S203	FX3U-32MR/ES
09M008	FX2N-32MS		09S296	FX3U-32MS/ES
09M009	FX2N-32MT		09S215	FX3U-32MT/ES
09M010	FX2N-48MR		09S204	FX3U-48MR/ES
09M011	FX2N-48MS		09S297	FX3U-64MS/ES
09M012	FX2N-48MT		09S216	FX3U-48MT/ES
09M013	FX2N-64MR		09S205	FX3U-64MR/ES
09M014	FX2N-64MS		09S297	FX3U-64MS/ES
09M015	FX2N-64MT		09S217	FX3U-64MT/ES
09M016	FX2N-80MR		09S206	FX3U-80MR/ES
09M017	FX2N-80MS		09S297	FX3U-64MS/ES
			+09M082	+FX2N-8EX
			+09M043	+FX2N-16EYS
09M018	FX2N-80MT		09S218	FX3U-80MT/ES
09M019	FX2N-128MR		09S229	FX3U-128MR/ES
09M021	FX2N-128MT		09S231	FX3U-128MT/ES

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Discontinued Products		➔	Recommended Substitute Model	
Model Code	Model Name		Model Code	Model Name
09M026	FX2N-32MR-D		09S235	FX3U-32MR/DS
09M027	FX2N-32MT-D		09S240	FX3U-32MT/DS
09M028	FX2N-48MR-D		09S236	FX3U-48MR/DS
09M029	FX2N-48MT-D		09S241	FX3U-48MT/DS
09M030	FX2N-64MR-D		09S237	FX3U-64MR/DS
09M031	FX2N-64MT-D		09S242	FX3U-64MT/DS
09M032	FX2N-80MR-D		09S238	FX3U-80MR/DS
09M033	FX2N-80MT-D		09S243	FX3U-80MT/DS

### (2) FX2N series expansion equipment

Discontinued Products			
Model Code	Model Name	Model Code	Model Name
09M301	FX2N-16SW	09M304	FX2N-64SW
09M302	FX2N-32SW	09M305	FX2N-80SW
09M303	FX2N-48SW	09M306	FX2N-128SW

The production of FX2N-\*\*SW models will be ending along with that of the main unit, in September 2012. There is no substitute product available.

### (3) FX2N series interface equipment

Discontinued Products		➔	Recommended Substitution Product	
Model Code	Model Name		Model Code	Model Name
09M135	FX2N-16LNK-M		09M187	FX2N-64CL-M
09M111	FX2N-CNV-IF		No recommended substitute	
09M159	FX2N-16CCL-M		09S363	FX3U-16CCL-M

The production of these interface products will be ending along with that of the main unit, in September 2012.

-For the FX2N-16LNK-M, it is recommended that the system be investigated to determine if the FX2N-64CL-M would be a suitable substitute.

### (4) Other expansion equipment

Discontinued Products		➔	Recommended Substitution Product	
Model Code	Model Name		Model Code	Model Name
09K870	FX0-10LDR		09S349	FX-30P

The production of the FX0-10LDR will end in September 2012.

-For any FX series, the FX-30P can handle data transfer.

-For the FX1S, FX1N, FX3 series, the FX-30P can be used or dedicated memory cassettes can perform data transfer.

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### 2. Products that will be continue to be produced

#### (1) FX2N series

Model Code	Model Name	Model Code	Model Name	Model Code	Model Name	Model Code	Model Name
09M036	FX2N-32ER	09M087	FX2N-8EYT-H	09M115	FX2N-1PG	09M219	FX2N-32ER-ES/UL
09M037	FX2N-32ES	09M042	FX2N-16EYR	09M163	FX2N-10PG	09M220	FX2N-32ET-ESS/UL
09M038	FX2N-32ET	09M044	FX2N-16EYT	09M156	FX2N-10GM	09M221	FX2N-48ER-ES/UL
09M046	FX2N-48ER	09M051	FX2N-16EYT-C	09M157	FX2N-20GM	09M222	FX2N-48ET-ESS/UL
09M048	FX2N-48ET	09M043	FX2N-16EYS	09M117	FX2N-232IF	09M241	FX2N-48ER-DS
09M054	FX2N-48ER-D	09M144	FX2N-2AD	09M136	FX2N-32CCL	09M242	FX2N-48ET-DSS
09M055	FX2N-48ET-D	09M113	FX2N-4AD	09M187	FX2N-64CL-M	09M089	FX2N-8ER-ES/UL
09M070	FX2N-48ER-UA1/UL	09M161	FX2N-8AD	09M110	FX2N-CNV-BC	09M088	FX2N-8EX-ES/UL
09M084	FX2N-8ER	09M143	FX2N-2DA	09M101	FX2N-CNV-BD	09M226	FX2N-16EX-ES/UL
09M082	FX2N-8EX	09M114	FX2N-4DA	09M102	FX2N-8AV-BD	09M090	FX2N-8EYR-ES/UL
09M083	FX2N-8EX-UA1/UL	09M192	FX2N-5A	09M105	FX2N-422-BD	09M091	FX2N-8EYT-ESS/UL
09M041	FX2N-16EX	09M162	FX2N-2LC	09M103	FX2N-232-BD	09M223	FX2N-16EYR-ES/UL
09M049	FX2N-16EX-C	09M119	FX2N-4AD-TC	09M104	FX2N-485-BD	09M225	FX2N-16EYT-ESS/UL
09M050	FX2N-16EXL-C	09M118	FX2N-4AD-PT	09M172	FX2N-ROM-E1	09M121	FX2N-1PG-E
09M085	FX2N-8EYR	09M116	FX2N-1HC			09M127	FX2N-1RM-E-SET
09M086	FX2N-8EYT	09M123	FX2N-1RM-SET				

#### (2) Dedicated FX2N series main unit connectable expansion equipment

Model Code	Model Name	Model Code	Model Name	Model Code	Model Name
09K041	FX-EEPROM-4	09K631	FX0N-30EC	09D062	F2-40BL
09K042	FX-EEPROM-8	09K261	FX0N-65EC		
09M112	FX-EEPROM-16	09K264	FX0N-3A		

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## Reference Data 2: Points regarding substitution of products

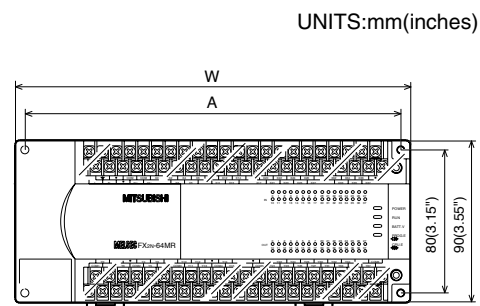
This section pertains to hardware related aspects when switching from the FX2N series to the FX3U series.

### 1. Exterior Dimensions

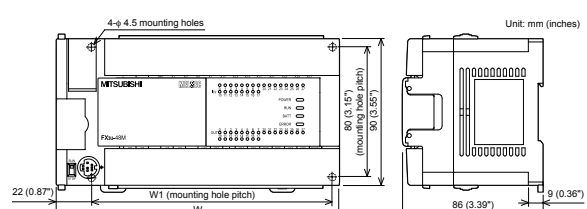
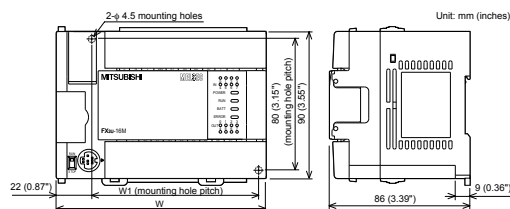
Differences: The height is different by 1mm.  
 The W1/A measurement for screw placement is different.

#### ■FX2N series main unit

UNIT		mm ± 0.2	inches ±0.01	mm ± 0.2	inches ± 0.01
		A = W-10mm(0.40")		H	
FX2N-16M□	2-φ 4.5 mounting holes	120	4.73	87	3.43
FX2N-32M□		140	5.52		
FX2N-32E□					
FX2N-48M□, FX2N-32MR-UA1/UL	4-φ 4.5 mounting holes	172	6.78		
FX2N-48E□					
FX2N-64M□, FX2N-48MR-UA1/UL FX2N-48ER-UA1/UL		210	8.27		
FX2N-80M□, FX2N-64MR-UA1/UL		275	10.83		
FX2N-128M□		340	13.39		



#### ■FX3U series main 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**	182 (7.17")	155 (6.11")	

Series	Model name	W: mm (inches)	W1: mm (inches)
FX3U-48M□	FX3U-48MR/ES	182 (7.17")	155 (6.11")
	FX3U-48MT/ES		
	FX3U-48MT/ESS		
	FX3U-48MR/DS		
	FX3U-48MT/DS		
FX3U-48MT/DSS			
FX3U-64M□	FX3U-64MR/ES	220 (8.67")	193 (7.60")
	FX3U-64MT/ES		
	FX3U-64MT/ESS		
	FX3U-64MS/ES		
	FX3U-64MR/DS		
	FX3U-64MT/DS		
	FX3U-64MT/DSS		
FX3U-64MR/UA1	285 (11.23")	258 (10.16")	
FX3U-80M□	FX3U-80MR/ES	285 (11.23")	258 (10.16")
	FX3U-80MT/ES		
	FX3U-80MT/ESS		
	FX3U-80MR/DS		
	FX3U-80MT/DS		
	FX3U-80MT/DSS		
FX3U-128M□	FX3U-128MR/ES	350 (13.78")	323 (12.72")
	FX3U-128MT/ES		
	FX3U-128MT/ESS		

\*1. FX3U-32MR/UA1 uses 4-φ4.5 mounting holes.

The position of the mounting hole is equivalent to FX3U-48M□

- 1) Accessories
  - Dust proof protection sheet
  - Manual supplied with product
- 2) Installation
  - 35 mm (1.38") wide DIN rail or Direct installation (with screws) (M4 x 2)

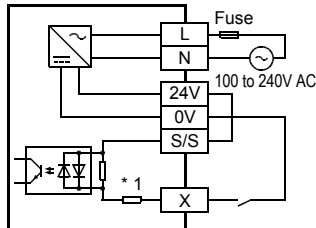
- 1) Accessories
  - Dust proof protection sheet
  - Manual supplied with product
- 2) Installation
  - 35 mm (1.38") wide DIN rail or Direct installation (with screws) (M4 x 4)

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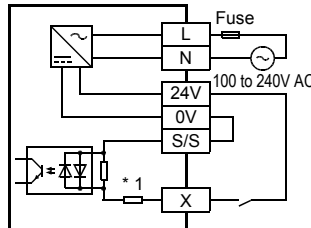
### 2. Sink/source terminal wiring

The inputs of the FX3U series require that appropriate sink/source wiring be carried out for applicable situations

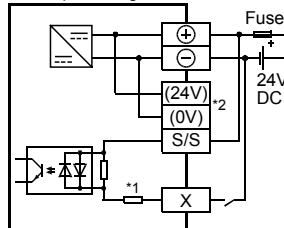
- AC power supply type  
Sink input wiring



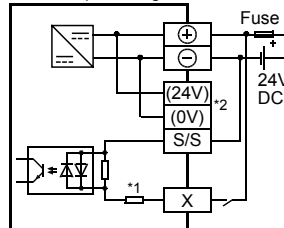
- Source input wiring



- DC power supply type  
Sink input wiring



- Source input wiring



\*1. Input impedance

\*2. Do not connect (0V) and (24V) terminals.

### 3. European terminal block cable size

Differences: The size of the connector of the RS-485 communication cable shown below is different between the FX2N or FX2NC series product and the FX3U series product.

	Wire size when inserting 1 cable	Wire size when inserting 2 cables	Wire ferrule (wire size)	Tightening torque	Insulation sheath* thickness
FX2N-485-BD	AWG26 ~ AWG16		Unavailable	0.6N·m	6mm
FX2NC-485ADP	AWG26 ~ AWG16	AWG26 ~ AWG20	Unavailable	0.4 ~ 0.5N·m	8mm
FX3U-485-BD	AWG22 ~ AWG20		Available (AWG22 ~ AWG20)	0.22 ~ 0.25N·m	9mm
FX3U-485ADP-MB	AWG22				

\*: The insulation sheath thickness dimension applies when wiring is connected using wire ferrule. For further information regarding the differences between products, refer to the FX User's Manual: Data Communication Edition.

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### 4. Device Comparison ( ) indicates there is a difference between the FX2N and FX3U

Device		FX2N series		FX3U series		
Type	Use	Number	Total	Number	Total	
M	Auxiliary relay	General use [Variable]	M0 ~ M499	500 devices	M0 ~ M499	500 devices
		Latched [Variable]	M500 ~ M1023	524 devices	M500 ~ M1023	524 devices
		Latched [Fixed]	M1024 ~ M3071	2048 devices	M1024 ~ M7679	6656 devices
		Special Use	M8000 ~ M8255	256 devices	M8000 ~ M8511	512 devices
S	State	Initial State(General use) [Variable]	S0 ~ S9	10 devices	S0 ~ S9	10 devices
		General use [Variable]	S10 ~ S499	490 devices	S10 ~ S499	490 devices
		Latched [Variable]	S500 ~ S899	400 devices	S500 ~ S899	400 devices
		Announce use (Latched) [Variable]	S900 ~ S999	100 devices	S900 ~ S999	100 devices
		Latched [Fixed]	—	—	S1000 ~ S4095	3096 devices
T	Timer	100ms	T0 ~ T191	192 devices	T0 ~ T191	192 devices
		100ms (subroutine/interrupt)	T192 ~ T199	8 devices	T192 ~ T199	8 devices
		10ms	T200 ~ T245	46 devices	T200 ~ T245	46 devices
		1ms retentive	T246 ~ T249	4 devices	T246 ~ T249	4 devices
		100ms retentive	T250 ~ T255	6 devices	T250 ~ T255	6 devices
		1ms	—	—	T256 ~ T511	256 devices
C	Counter	General use (16 bit) [Variable]	C0 ~ C99	100 devices	C0 ~ C99	100 devices
		Latched up-counter (16-bit) [Variable]	C100 ~ C199	100 devices	C100 ~ C199	100 devices
		General use bi-directional counter (32 bit) [Variable]	C200 ~ C219	20 devices	C200 ~ C219	20 devices
		Latched bi-directional counter (32 bit) [Variable]	C220 ~ C234	15 devices	C220 ~ C234	15 devices
	High-speed counter	1-phase 1-counting input bi-directional (32 bit)[Variable]	C235 ~ C255 60kHz 2 devices +10kHz 4 devices	6 devices	C235 ~ C255 100kHz 6 devices+ 10kHz 2 devices	8 devices
		1-phase 2-counting inputs bi-directional (32 bit)[Variable]	C246 ~ C250 60kHz 1 devices or 10kHz 2 devices	2 devices	C246 ~ C250 100kHz 2 devices or 40kHz 2 devices	2 devices
		2-phase 2-counting inputs bi-directional (32 bit)[Variable]	C251 ~ C255 5kHz 2 devices	2 devices	C251 ~ C255 50kHz 2 devices or 40kHz 2 devices	2 devices
		D	Data register	General use (16 bit)[Variable]	D0 ~ D199	200 devices
Latched (16 bit)[Variable]	D200 ~ D511			312 devices	D200 ~ D511	312 devices
Latched (16 bit)[Fixed]	D512 ~ D7999			7488 devices	D512 ~ D7999	7488 devices
Special use (16 bit)	D8000 ~ D8255			256 devices	D8000 ~ D8511	512 devices
Index registers (16 bit)	V0 ~ V7, Z0 ~ Z7			16 devices	V0 ~ V7, Z0 ~ Z7	16 devices
Extension registers (16 bit)	—			—	R0 ~ R32767	32768 devices
Extension file registers (16 bit)	—			—	ER0 ~ ER32767 (when memory cassette equipped)	32768 devices
P	Pointer	For JUMP, CALL use	P0 ~ P127	128 devices	P0 ~ P4095	4096 devices
		Input interrupt	I0□□ ~ I50□	6 devices	I0□□ ~ I5□□	Total: 6
		Input delay interrupt	—	—	I0□□ ~ I5□□	devices
		Timer interrupt	I6□□ ~ I8□□	3 devices	I6□□ ~ I8□□	3 devices
		Counter interrupt	I010 ~ I060	6 devices	I010 ~ I060	6 devices



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### Revised History

Date	Revision	Description
3/2011	A	First Edition
7/2012	B	The model it became impossible to production continue is deleted.

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