MITSUBISHI ELECTRIC

TECHNICAL BULLETIN

FAM-A-0096-A

Removal of the UL Mark from MELSEC-F Series Terminal Blocks

■Date of Issue

October 2024

■Relevant Models

MELSEC-F series terminal blocks

Thank you for your continued support of micro programmable controllers, MELSEC-F series.
The MELSEC-F series terminal blocks will be changed to be UL non-compliant. This technical bulletin informs you that the UL mark will be removed from applicable models.
There is no impact on the general specifications, performance specifications, functions, and external dimensions due to the change.

1 RELEVANT MODELS

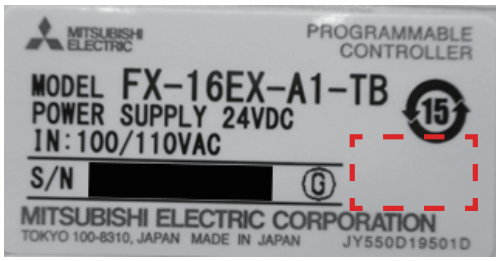
Product	Model
MELSEC-F series terminal blocks	FX-16EYT-TB, FX-16EYT-ESS-TB/UL, FX-16EYS-ES-TB/UL, FX-16EX-A1-TB, FX-16EX-A1-TB/UL

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
NAGOYA WORKS: 1-14, YADA-MINAMI 5-CHOME, HIGASHI-KU, NAGOYA 461-8670, JAPAN

2 DETAILS ON THE CHANGE

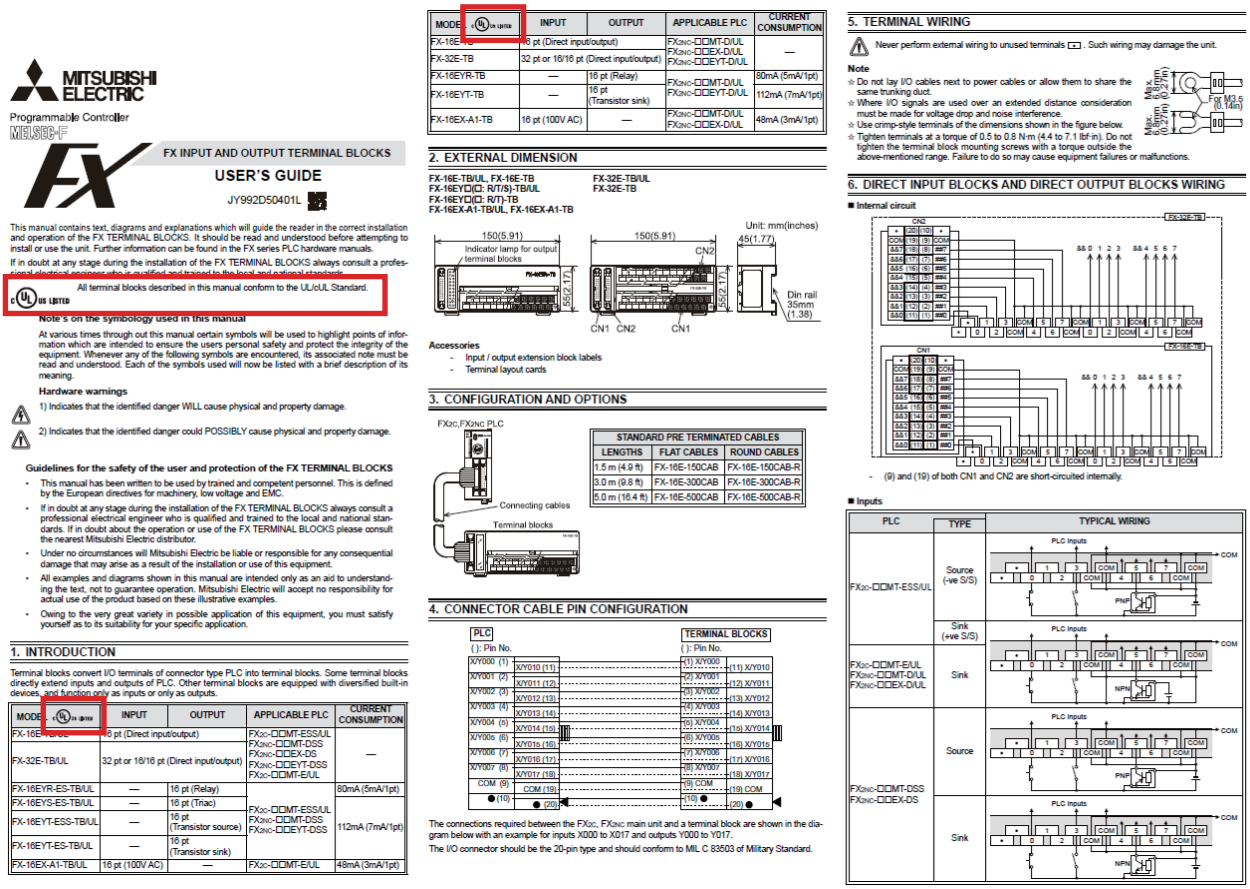
Nameplate

The UL mark will be removed from the name plate as follows.

Model	Before change	After change
FX-16EYT-TB		
FX-16EYT-ESS-TB/UL		
FX-16EYS-ES-TB/UL		
FX-16EX-A1-TB		
FX-16EX-A1-TB/UL		

Included user's guide

The UL mark and descriptions of the UL mark, where they are framed in red, will be removed.



MITSUBISHI ELECTRIC

Programmable Controller

MELSEC-F

FX INPUT AND OUTPUT TERMINAL BLOCKS

USER'S GUIDE

JY992D50401L

This manual contains text, diagrams and explanations which will guide the reader in the correct installation and operation of the FX TERMINAL BLOCKS. It should be read and understood before attempting to install or use the unit. Further information can be found in the FX series PLC hardware manuals.

If in doubt at any stage during the installation of the FX TERMINAL BLOCKS always consult a profes-

All terminal blocks described in this manual conform to the UL/cUL Standard.

Note's on the symbology used in this manual

At various times through out this manual certain symbols will be used to highlight points of information which are intended to ensure the users personal safety and protect the integrity of the equipment. Whenever any of the following symbols are encountered, its associated note must be read and understood. Each of the symbols used will now be listed with a brief description of its meaning.

Hardware warnings

1) Indicates that the identified danger WILL cause physical and property damage.

2) Indicates that the identified danger could POSSIBLY cause physical and property damage.

Guidelines for the safety of the user and protection of the FX TERMINAL BLOCKS

- This manual has been written to be used by trained and competent personnel. This is defined by the European directives for machinery, low voltage and EMC.
- If in doubt at any stage during the installation of the FX TERMINAL BLOCKS always consult a professional electrical engineer who is qualified and trained to the local and national standards. If in doubt about the operation or use of the FX TERMINAL BLOCKS please consult the nearest Mitsubishi Electric distributor.
- Under no circumstances will Mitsubishi Electric be liable or responsible for any consequential damage that may arise as a result of the installation or use of this equipment.
- All examples and diagrams shown in this manual are intended only as an aid to understanding the text, not to guarantee operation. Mitsubishi Electric will accept no responsibility for actual use of the product based on these illustrative examples.
- Owing to the very great variety in possible application of this equipment, you must satisfy yourself as to its suitability for your specific application.

1. INTRODUCTION

Terminal blocks convert I/O terminals of connector type PLC into terminal blocks. Some terminal blocks directly extend inputs and outputs of PLC. Other terminal blocks are equipped with diversified built-in devices, and function only as inputs or only as outputs.

MODEL	INPUT	OUTPUT	APPLICABLE PLC	CURRENT CONSUMPTION
FX-16E-TB	16 pt (Direct input/output)		FXnc-□□MT-ESS/UL FXnc-□□MT-DSS FXnc-□□EX-DS FXnc-□□EYT-DSS FXnc-□□MT-E/UL	—
FX-32E-TB/UL	32 pt or 16/16 pt (Direct input/output)			
FX-16EYR-ES-TB/UL	—	16 pt (Relay)	FXnc-□□MT-E/UL FXnc-□□MT-DSS FXnc-□□EYT-DSS	80mA (5mA/1pt)
FX-16EYS-ES-TB/UL	—	16 pt (Triac)		
FX-16EYT-ESS-TB/UL	—	16 pt (Transistor source)		112mA (7mA/1pt)
FX-16EYT-ES-TB/UL	—	16 pt (Transistor sink)		
FX-16EX-A1-TB/UL	16 pt (100V AC)	—	FXnc-□□MT-E/UL	48mA (3mA/1pt)

MODEL	INPUT	OUTPUT	APPLICABLE PLC	CURRENT CONSUMPTION
FX-16E-TB	16 pt (Direct input/output)		FXnc-□□MT-D/UL FXnc-□□EX-D/UL FXnc-□□EYT-D/UL	—
FX-32E-TB	32 pt or 16/16 pt (Direct input/output)			
FX-16EYR-TB	—	16 pt (Relay)	FXnc-□□MT-D/UL FXnc-□□EYT-D/UL	80mA (5mA/1pt)
FX-16EYT-TB	—	16 pt (Transistor sink)		112mA (7mA/1pt)
FX-16EX-A1-TB	16 pt (100V AC)	—	FXnc-□□MT-D/UL FXnc-□□EX-D/UL	48mA (3mA/1pt)

2. EXTERNAL DIMENSION

FX-16E-TB/UL, FX-16E-TB
FX-16EYD(□: R/T/S)-TB/UL
FX-16EYD(□: R/T)-TB
FX-16EX-A1-TB/UL, FX-16EX-A1-TB

FX-32E-TB/UL
FX-32E-TB

Unit: mm(inches)

150(5.91) 150(5.91) 45(1.77)

Indicator lamp for output terminal blocks

CN2 CN1 CN2 CN1

Din rail 35mm (1.38)

Accessories
- Input / output extension block labels
- Terminal layout cards

3. CONFIGURATION AND OPTIONS

FXnc,FXNC PLC

Connecting cables

Terminal blocks

STANDARD PRE TERMINATED CABLES		
LENGTHS	FLAT CABLES	ROUND CABLES
1.5 m (4.9 ft)	FX-16E-150CAB	FX-16E-150CAB-R
3.0 m (9.8 ft)	FX-16E-300CAB	FX-16E-300CAB-R
5.0 m (16.4 ft)	FX-16E-500CAB	FX-16E-500CAB-R

4. CONNECTOR CABLE PIN CONFIGURATION

PLC ( ): Pin No. — TERMINAL BLOCKS ( ): Pin No.

X/Y000 (1) — (1) X/Y000
X/Y001 (2) — X/Y010 (11) — (2) X/Y001 — (11) X/Y010
X/Y002 (3) — X/Y011 (12) — (3) X/Y002 — (12) X/Y011
X/Y003 (4) — X/Y012 (13) — (4) X/Y003 — (13) X/Y012
X/Y004 (5) — X/Y013 (14) — (5) X/Y004 — (14) X/Y013
X/Y005 (6) — X/Y014 (15) — (6) X/Y005 — (15) X/Y014
X/Y006 (7) — X/Y015 (16) — (7) X/Y006 — (16) X/Y015
X/Y007 (8) — X/Y016 (17) — (8) X/Y007 — (17) X/Y016
COM (9) — X/Y017 (18) — (9) COM — (18) X/Y017
● (10) — COM (19) — (10) ● — (19) COM
● (20) — (20) ●

The connections required between the FXnc, FXNC main unit and a terminal block are shown in the diagram below with an example for inputs X000 to X017 and outputs Y000 to Y017.
The I/O connector should be the 20-pin type and should conform to MIL C 83503 of Military Standard.

5. TERMINAL WIRING

Never perform external wiring to unused terminals . Such wiring may damage the unit.

Note

- Do not lay I/O cables next to power cables or allow them to share the same trunking duct.
- Where I/O signals are used over an extended distance consideration must be made for voltage drop and noise interference.
- Use crimp-style terminals of the dimensions shown in the figure below.
- Tighten terminals at a torque of 0.5 to 0.8 N·m (4.4 to 7.1 lbf·in). Do not tighten the terminal block mounting screws with a torque outside the above-mentioned range. Failure to do so may cause equipment failures or malfunctions.

Max. 6.7mm (0.26in) Max. 6.7mm (0.26in) For M3.5 (0.14in)

6. DIRECT INPUT BLOCKS AND DIRECT OUTPUT BLOCKS WIRING

■ Internal circuit

CN2 CN1 FX-32E-TB FX-16E-TB

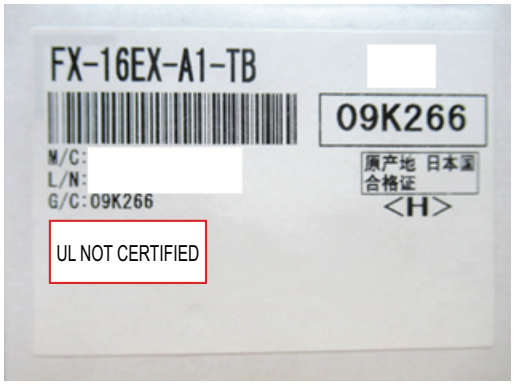
- (9) and (19) of both CN1 and CN2 are short-circuited internally.

■ Inputs

PLC	TYPE	TYPICAL WIRING
FXnc-□□MT-ESS/UL	Source (-ve S/S)	PLC Inputs, COM, PWR
	Sink (+ve S/S)	PLC Inputs, COM, PWR
FXnc-□□MT-E/UL FXnc-□□MT-D/UL FXnc-□□EX-D/UL	Sink	PLC Inputs, COM, NPN
FXnc-□□MT-DSS FXnc-□□EX-DS	Source	PLC Inputs, COM, PWR
	Sink	PLC Inputs, COM, NPN

Packaging box

A sticker for indication of UL non-compliant (Words of UL NOT CERTIFIED) will be applied.

Place to be attached	Before change (Example)	After change (Example)
Top side		
Side		

3 REASON FOR THE CHANGE

For electronic components used for the applicable models, it is revealed that the operating temperature at the application for the UL certification is lower than the general specifications.

4 SCHEDULE

The UL mark is not indicated on products manufactured from July 2024 onwards (Product number: 247**** or later).
Note that, depending on stock status, the products both with and without the mark may be distributed in the market around that time.

5 IMPACT ON EXISTING PRODUCTS

The products already shipped (Product number: 246**** or earlier) have been verified to be safe.

REVISIONS

Version	Date of Issue	Revision
A	October 2024	First edition

TRADEMARKS