

[Issue No.] HIME-T-P-0023C

[Title] RINA Certificate Approval and Relevant Requirements FX3U Series PLC

[Date of Issue] October 2007 (Ver. C: January 2018)

[Relevant Models] MELSEC-F series

The following MELSEC-F FX3U Series products have also acquired the type approval certificate on the Programmable Logic Controller from RINA (Registro Italiano Navale).

- FX3U Series main unit
- FX3U Series special adapter
- FX3U Series expansion board
- FX3U Series memory cassette
- FX3U Series display module

1. Applicable Models

Type	Model Name
Main Units	FX3U-16MR/ES, FX3U-16MT/ES, FX3U-16MT/ESS, FX3U-32MR/ES, FX3U-32MT/ES, FX3U-32MT/ESS, FX3U-48MR/ES, FX3U-48MT/ES, FX3U-48MT/ESS, FX3U-64MR/ES, FX3U-64MT/ES, FX3U-64MT/ESS, FX3U-80MR/ES, FX3U-80MT/ES, FX3U-80MT/ESS, FX3U-128MR/ES, FX3U-128MT/ES, FX3U-128MT/ESS, FX3U-16MR/DS, FX3U-16MT/DS, FX3U-16MT/DSS, FX3U-32MR/DS, FX3U-32MT/DS, FX3U-32MT/DSS, FX3U-48MR/DS, FX3U-48MT/DS, FX3U-48MT/DSS, FX3U-64MR/DS, FX3U-64MT/DS, FX3U-64MT/DSS, FX3U-80MR/DS, FX3U-80MT/DS, FX3U-80MT/DSS
Special Adapters	FX3U-232ADP, FX3U-485ADP, FX3U-4AD-ADP, FX3U-4DA-ADP, FX3U-4AD-PT-ADP, FX3U-4AD-TC-ADP, FX3U-4HSX-ADP, FX3U-2HSY-ADP
Expansion Boards	FX3U-USB-BD, FX3U-232-BD, FX3U-485-BD, FX3U-422-BD, FX3U-CNV-BD
Memory Cassettes	FX3U-FLROM-16, FX3U-FLROM-64, FX3U-FLROM-64L
Display Module	FX3U-7DM

2. RINA certification

The following table explains the acquired RINA certification.

Acquired certification

Item	Description
Accreditation organization	Registro Italiano Navale
Certificate No.*	-
Category	Programmable logic controller
Test standard*	-
Term of validity*	-

* Please contact your local Mitsubishi Electric representative for the certificate No., test standard and term of validity.

Certification details

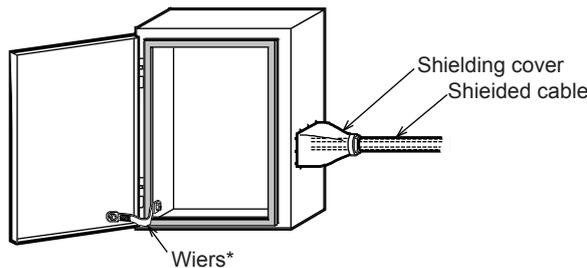
The RINA approved MELSEC-F FX3U Series main unit, Special adapter, Expansion board, Memory cassette and Display module must be used under the following environment.

Item	Description	Remarks
EMC	EMC: Any given place on vessel (Bridge and Deck Zone is excluded)	Refer to section 3.

3. Requirements

When using the MELSEC-F FX3U Series main unit, Special adapters, Expansion board, Memory cassette and Display module in a system requiring RINA approval, make sure the following requirements are observed:

- 1) Control cabinet
 - a) The control cabinet must be conductive.
 - b) Ground the control cabinet with the thickest possible grounding cable.
 - c) In order to suppress the leakage of radio waves, the control cabinet structure must have minimal openings. Also, wrap the cable holes with a shielding cover or other shielding devices. (See Fig. 1.)
 - d) To ensure that there is electric contact between the control cabinet and its door, connect the cabinet and its doors with thick wires. (See Fig. 1.)



* These wires are used to improve the conductivity between the door and control cabinet.

Fig.1. Control Cabinet Example

Mitsubishi's EMC tests have been carried out on a cabinet with the damping characteristics of 46.8 dB max. and 26.4 dB mean (measured by 3 m method with 30 MHz to 2 GHz).

2) Cables

- a) Use shielded cables for the cables that protrude out of the control cabinet.
- b) Connect the shields, such as the shielded cable and the shielding cover, to the grounded control cabinet.

REVISIONS

Revision	Date	Description
A	Oct. 2007	First Edition
B	Nov. 2015	Partial design change
C	Jan. 2018	Acquired certification is modified