

# TECHNICAL BULLETIN

[Issue No.] FA-A-0013

[Title] Acquisition of Lloyd's Type Approval Certificate

[Relevant Models] MELSEC-Q series\*

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[Date of Issue] Nov, '07

Thank you for your continued support of Mitsubishi programmable controllers, MELSEC-Q series.

We are pleased to inform that the MELSEC-Q series has acquired the Type Approval Certificate on Programmable Controller from Lloyd's Register of Shipping, based on new rules set forth in 2001 (IACS UR E10 Ver. 3/2001).

In the IACS UR E10 Ver.3, some stringent restrictions have been added, such as: Emission (electromagnetic interference) must be 24dB (@3m) or less in a frequency range from 156 to 165MHz. However, the internationally respected organization, Lloyd's Register of Shipping has approved that the MELSEC-Q series satisfies the requirements.



## 1. Lloyd's certification

The following explains the approved Lloyd's certification.

### Acquired certification

Item	Description
Accreditation organization	Lloyd's Register of Shipping
Certificate No.	02/10042 (E3)
Category	Programmable Controller (ENV1, ENV2)
Rule	Type Approval System Test Specification Number 1 (IACS UR E10 Ver.3 of International Association of Classification Societies Unified Requirements)
Term of validity	Until November 17, 2012

### Certification details

Item	Description	Remarks
Temperature	5 to 55°C	-
Humidity	Less than 95%	-
Vibration	0.7G (13.2 to 100Hz)	Refer to Section 2. Requirements (1).
EMC	Any given place on vessel (including bridge and deck)	Refer to Section 2. Requirements from (2) to (7).

\*: For approved models, please go to MELFANSweb website: <http://www.MitsubishiElectric.co.jp/melfansweb/english>

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## 2. Requirements

When using the MELSEC-Q series as Lloyd's-approved system, make sure to observe the following requirements.

### (1) Base unit installation

Purchase DIN rail adapter to install the Q3□SB, Q3□B, Q5□B, Q6□B or Q00JCPU on DIN rail.

Attach the Q3□SB, Q3□B, Q5□B, Q6□B or Q00JCPU on DIN rail and fix it to a control panel by tightening screws at the four corners.

However, when using the Q6DIN1A, tightening screws at the four corners is unnecessary.

Base unit	DIN rail adapter
Q38B, Q312B, Q68B, Q612B	Q6DIN1, Q6DIN1A
Q35B, Q65B, Q00JCPU	Q6DIN2, Q6DIN1A
Q32SB, Q33SB, Q35SB, Q33B, Q52B, Q55B, Q63B	Q6DIN3, Q6DIN1A

Fix the QA1S6□B or QA6□B to a control panel by tightening screws at the four corners.

### (2) Control panel

(a) The control panel must be conductive.

(b) When fixing a top or bottom plate of the control panel with bolts, remove the coating from the fixing area on the plate so that the surfaces can contact.

(c) When using an inner plate, ensure electric interengagement with the control panel.

Remove the coating of the fixing bolt area of both the inner plate and control panel to ensure conductivity as large area as possible.

(d) Ground the control panel with thick ground cable (2 mm<sup>2</sup> or more).

(e) To reduce the leaking of radio wave, fill up the space between the control panel and its door as small as possible.

Affix EMI gaskets between the control panel and its door.

The diameter of holes on the control panel must be 10cm (3.94 inch) or less.

### (3) Cables

Always use shielded cables since cables work as an antenna and emit a noise when pulled out from the control panel.

### (4) Noise filter

When using the Q61P, always attach noise filter on the power supply line. Connect the noise filter of MXB series manufactured by DENSEI-LAMBDA K.K. and NAH-472 series manufactured by COSEL CO., LTD. in series.

### (5) Ferrite cores

Always attach ferrite cores to all cables including power line that are pulled out from the control panel.

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### (6) Equipment maintenance

To use the MELSEC-Q series as Lloyd's-approved product, works such as maintenance and inspection must be done by maintenance worker.

The maintenance worker designates a person who has taken appropriate education and training, has work experience, can catch hazards in operation, and can avoid them.

### (7) Warming up

Use temperature input module such as thermocouple and resistance temperature detector after 30-minute warming up.