TECHNICAL BULLETIN

[Issue No.] T99-0021 **[Page]** 1/4
[Title] Acquirement of RINA Certificate and Relevant Restrictions **[Date of Issue]** Dec, '02

[Relevant Models] RINA-Certificated MELSEC-AnS Series Models

Thank you for your continuous patronage to Mitsubishi programmable logic controllers, MELSEC-AnS series.

We are pleased to inform that the MELSEC-AnS series*1 has acquired the Type Approval Certificate on programmable logic controller models from RINA (Registro Italiano Navale), based on new rules set forth in 2001 (IACS UR E10 Ver. 3/2001).
*1 n=1,2

In the IACS UR E10 Ver. 3, some stringent restrictions, such as emission of 24dB or less (@3m) in a frequency range from 156 to 165MHz, have been newly added. However, the globally accredited organization, RINA (Registro Italiano Navale) has approved that the MELSEC-AnS series satisfy the requirements.

The following is the details of the RINA certificate:

Item	Description
Accreditation organization	Registro Italiano Navale
Certificate No.	MAC/31601CS1
Category	Programmable Logic Controllers
Rules	RINA Rules PtC,Ch3,Sec6 (International Association of Classification Societies' Unified Requirements (IACS UR) E10 Ver.3)
Term of validity	Effective until Oct. 5, 2005

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When using the MELSEC-AnS series as a RINA-accredited system, please observe the following restrictions.

1. 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 of the fixing part so that both exposed surfaces will come into contact.

(c) When using an inner plate, ensure electric contact with the control panel. Remove the coating of the bolt-fixing rea of both the inner plate and control panel to ensure conductivity in the largest area as possible.

(d) Ground the control panel with a thick ground cable (Cross-sectional area: 2 mm^2 or more).

(e) The diameter of cable holes in the control panel must be 10cm or less.
Eliminate space between the control panel and its door as much as possible since radio waves are leaked from the space.
Attach some EMI gaskets to fill up the space and suppress the leakage of radio waves.

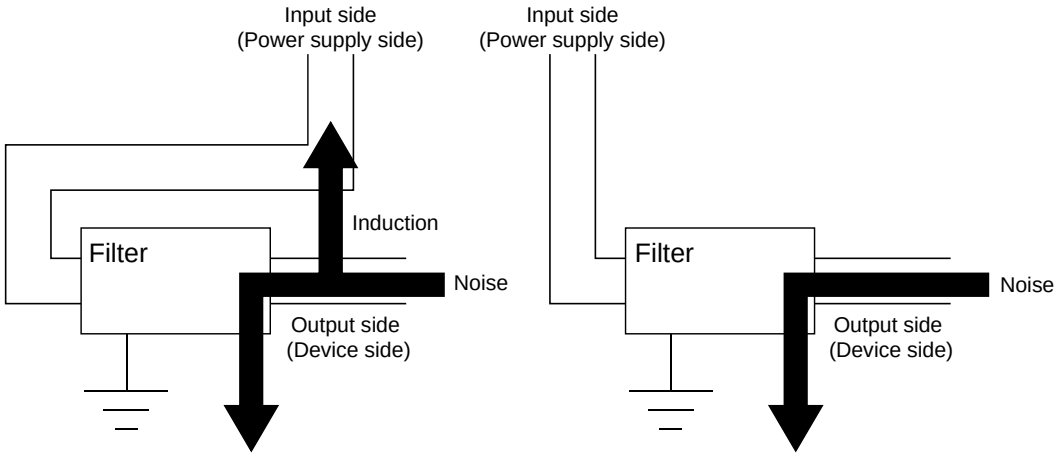
2. Cable

As a cable coming out from the control panel will release noise by functioning like an antenna, make sure to use a shield cable. (See [1] in Fig. 1.)

3. Noise filter

Make sure to attach a noise filter to the power cable. (See [2] in Fig.2.)
It is recommended to use the DENSEI-LAMBDA MB series.

(1) Do not install the input and output cables of the noise filter together to prevent the input noise inducting into the output cable.



(a) Installing the input and output cables together will cause noise induction.

(b) Bundling the input and output cables will cause noise induction.

(2) Connect the noise filter's ground terminal to the control panel with the shortest cable as possible (approx. 10cm (3.94 in.) or less).

4. Ferrite core

Ferrite cores should be attached to all of the cables (including power cables) coming out from the control panel.

(1) Power cable

Twist the power cables (including grounding wires).
Attach a ferrite core to the twisted power cables at the position closest to the power supply module as possible. (See [3] in Fig.1.)
If attached at an improper position, the ferrite core will not function effectively.
It is recommended to use Tokin's ESD-SR-25.

(2) Signal cable

Attach a ferrite core to the signal cable (shield cable) inside the control panel at the position closest to the cable hole. (See [4] in Fig.1.)
If attached at an improper position, the ferrite core will not function effectively.
It is recommended to use Tokin's ESD-SR-25.

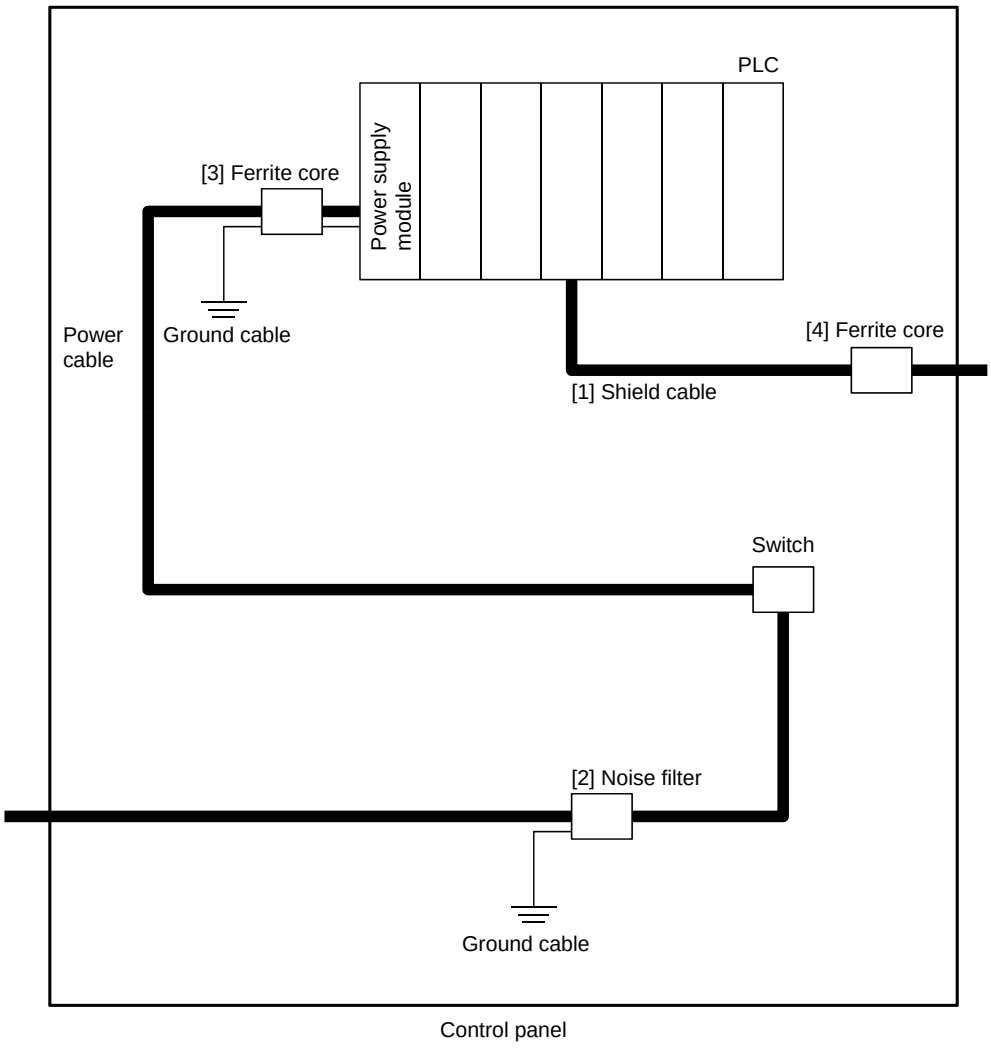


Fig. 1. Example of Noise Filter, and Ferrite Cores Set inside Control Panel