MITSUBISHI ELECTRIC

TECHNICAL BULLETIN

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Special Coated Products for MELSEC MX Controller MX-R Model, MELSEC iQ-R Series, MELSEC-Q/L Series, and Network-Related Products

■Date of Issue

June 2014 (Ver. B: May 2025)

■Relevant Models

MELSEC MX controller MX-R model, MELSEC iQ-R series models, MELSEC-Q/L series models, and network-related products

Thank you for your continued support of Mitsubishi Electric products; FA Integrated Controller MELSEC MX controller MX-R model, programmable controller MELSEC iQ-R series and MELSEC-Q/L series, and network-related products.
This technical bulletin provides the information on the special coated products for MELSEC MX controller MX-R model, MELSEC iQ-R series models, MELSEC-Q/L series models, and network-related products.

1 SPECIAL COATED PRODUCTS

If FA Integrated Controllers and programmable controllers are used in an environment with corrosive gas, it may cause failure due to aging corrosion.
Accordingly, we offer special coated products highly resistant to a corrosive gas. As a special coating, polyurethane moisture-proof coating is applied to the technically-possible parts. When using a programmable controller in the place where a corrosive gas tends to occur, such as a tire manufacturing plant and sewage treatment equipment, using the special coated product is recommended. Although the products ensure high resistance to a corrosive gas, operations under the above-mentioned environment are not guaranteed.

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2 ENVIRONMENTAL REGULATION OF CORROSIVE GAS

2.1 Corrosive Gas

In IEC 60721-3-3:1994*1, 'Corrosive gas' means sea salt, sulfur dioxide, hydrogen sulfide, chlorine, hydrogen chloride, hydrofluoric acid, ammonia, ozone, and nitrogen oxides as shown in the following table.

2.2 Environment With Corrosive Gas

According to IEC60721-3-3:1994*1 class 3C2, the corrosive gas concentration is regulated as shown in the following table.

Environmental parameter	Unit	3C2	
		Mean value	Maximum value
a) Sea salt	None	Salt mist	
b) Sulfur dioxide	cm^3/m^3	0.11	0.37
c) Hydrogen sulphide		0.071	0.36
d) Chlorine		0.034	0.1
e) Hydrogen chloride		0.066	0.33
f) Hydrofluoric acid		0.012	0.036
g) Ammonia		1.4	4.2
h) Ozone		0.025	0.05
i) Nitrogen oxides		0.26	0.52

*1 In IEC60721-3-3:2019 revised from IEC60721-3-3:1994, the environmental classification based on gas concentration were deleted. However, IEC60721-3-3:1994 class 3C2 is widely recognized as the definition for the environment with corrosive gas. Therefore, we will continue to use the definition.

3 INSPECTION RESULT OF THE SPECIAL COATED PRODUCTS

We have confirmed the proper operation of the special coated products for the period equivalent to ten years for the MELSEC MX controller MX-R model, MELSEC iQ-R series, and MELSEC-L series and for the period equivalent to eight years for the MELSEC-Q series, as the result of the mixed gas accelerated test that simulates the environment of the corrosive state with representative products under the 3C2 environment with corrosive gas. Note that, since the actual operating environment does not always necessarily match the 3C2 environment, the product is likely to fail earlier than anticipated depending on the operating environment.

In addition, communication errors or incorrect inputs/outputs may occur in an FA Integrated Controller or a programmable controller due to corrosion of cables or devices connecting to the controller. Select suitable peripherals for the operating environment and replace them at the appropriate time.

4 OTHERS

For details on the delivery schedule and how to order, please contact your local Mitsubishi representative.

REVISIONS

Version	Date of Issue	Revision
—	June 2014	First edition
A	November 2023	Available for e-Manual Viewer Added network-related products to relevant models. Corrected descriptions on the environmental regulation of corrosive gas.
B	May 2025	Added MELSEC MX Controller MX-R model to the relevant models.

TRADEMARKS