

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Programmable Electronic System**with type designation(s)
Programmable Logic Controller FC6A Series

Issued to

IDEC Corporation
Osaka City Osaka Pref., Japan

is found to comply with

Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

Temperature	B
Humidity	B
Vibration	A
EMC	A
Enclosure	Required protection according to the Rules to be provided upon installation onbaord

This Certificate is valid until **2017-09-14**.Issued at **Busan** on **2015-09-15**for **DNV GL**DNV GL local station: **Kobe**Approval Engineer: **Byoung So Lee**-----
Baeg Soon Choi
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

Programmable controllers FC6A Series, including:

Description	Type	Specification
CPU Modules	FC6A-M16R1	DC Power Supply, 8-DC Input, 8-Relay Output
	FC6A-M16R4	DC Power Supply, 8-DC Input, 8-Relay Output
	FC6A-M16R1E	DC Power Supply, 8-DC Input, 8-Relay Output
	FC6A-M16R4E	DC Power Supply, 8-DC Input, 8-Relay Output
	FC6A-M16P1	DC Power Supply, 8-DC Input, 8-Transistor Source Output
	FC6A-M16P4	DC Power Supply, 8-DC Input, 8-Transistor Source Output
	FC6A-M16P1E	DC Power Supply, 8-DC Input, 8-Transistor Source Output
	FC6A-M16P4E	DC Power Supply, 8-DC Input, 8-Transistor Source Output
	FC6A-M32P3	DC Power Supply, 16-DC Input, 16-Transistor Source Output
	FC6A-M32P3E	DC Power Supply, 16-DC Input, 16-Transistor Source Output
	FC6A-C16R1A	AC Power Supply, 9-DC Input, 7-Relay Output
	FC6A-C16R1AE	AC Power Supply, 9-DC Input, 7-Relay Output
	FC6A-C24R1A	AC Power Supply, 14-DC Input, 10-Relay Output
	FC6A-C24R1AE	AC Power Supply, 14-DC Input, 10-Relay Output
	FC6A-C40R1A	AC Power Supply, 24-DC Input, 16-Relay Output
	FC6A-C40R1AE	AC Power Supply, 24-DC Input, 16-Relay Output
	FC6A-C16P1C	DC Power Supply, 9-DC Input, 7- Transistor Source Output
	FC6A-C16P1CE	DC Power Supply, 9-DC Input, 7- Transistor Source Output
	FC6A-C24P1C	DC Power Supply, 14-DC Input, 10-Transistor Source Output
	FC6A-C24P1CE	DC Power Supply, 14-DC Input, 10-Transistor Source Output
	FC6A-C40P1C	DC Power Supply, 24-DC Input, 16-Transistor Source Output
	FC6A-C40P1CE	DC Power Supply, 24-DC Input, 16-Transistor Source Output
Input Modules	FC6A-N08B1	DC Power Supply(Intenal), 8-DC Input
	FC6A-N08B4	DC Power Supply(Intenal), 8-DC Input
	FC6A-N16B1	DC Power Supply(Intenal), 16-DC Input
	FC6A-N16B4	DC Power Supply(Intenal), 16-DC Input
	FC6A-N16B3	DC Power Supply(Intenal), 16-DC Input
	FC6A-N32B3	DC Power Supply(Intenal), 32-DC Input
	FC6A-N08A11	DC Power Supply(Intenal), 8-AC Input
	FC6A-N08A14	DC Power Supply(Intenal), 8-AC Input
Output Modules	FC6A-R081	DC Power Supply(Intenal), 8-Relay Output
	FC6A-R084	DC Power Supply(Intenal), 8-Relay Output
	FC6A-R161	DC Power Supply(Intenal), 16-Relay Output
	FC6A-R164	DC Power Supply(Intenal), 16-Relay Output
	FC6A-T08P1	DC Power Supply(Intenal), 8-Transistor Source Output
	FC6A-T08P4	DC Power Supply(Intenal), 8-Transistor Source Output
	FC6A-T16P1	DC Power Supply(Intenal), 16-Transistor Source Output
	FC6A-T16P4	DC Power Supply(Intenal), 16-Transistor Source Output
	FC6A-T16P3	DC Power Supply(Intenal), 16-Transistor Source Output
	FC6A-T32P3	DC Power Supply(Intenal), 32-Transistor Source Output
	FC6A-T08K1	DC Power Supply(Intenal), 8-Transistor Sink Output
	FC6A-T08K4	DC Power Supply(Intenal), 8-Transistor Sink Output

	FC6A-T16K1	DC Power Supply(Internal), 16-Transistor Sink Output
	FC6A-T16K4	DC Power Supply(Internal), 16-Transistor Sink Output
	FC6A-T16K3	DC Power Supply(Internal), 16-Transistor Sink Output
	FC6A-T32K3	DC Power Supply(Internal), 32-Transistor Sink Output
I/O Mixture Modules	FC6A-M08BR1	DC Power Supply(Internal), 4-DC Input, 4-Relay Output
	FC6A-M08BR4	DC Power Supply(Internal), 4-DC Input, 4-Relay Output
	FC6A-M24BR1	DC Power Supply(Internal), 16-DC Input, 8-Relay Output
	FC6A-M24BR4	DC Power Supply(Internal), 16-DC Input, 8-Relay Output
	FC6A-TYS4	DC Power Supply(Internal), 12-DC Input, 8-Transistor Source Output
Analog Modules	FC6A-J2C1	2-Analog Input
	FC6A-J2C4	2-Analog Input
	FC6A-J4A1	4-Analog Input
	FC6A-J4A4	4-Analog Input
	FC6A-J8A1	8-Analog Input
	FC6A-J8A4	8-Analog Input
	FC6A-K2A1	2-Analog Output
	FC6A-K2A4	2-Analog Output
	FC6A-K4A1	4-Analog Output
	FC6A-K4A4	4-Analog Output
	FC6A-L06A1	4-Analog Input, 2-Analog Output
	FC6A-L06A4	4-Analog Input, 2-Analog Output
	FC6A-L03CN1	2-Analog Input, 1-Analog Output
	FC6A-L03CN4	2-Analog Input, 1-Analog Output
	FC6A-J4CN1	4-Analog Input
	FC6A-J4CN4	4-Analog Input
	FC6A-J8CU1	8-Analog Input
	FC6A-J8CU4	8-Analog Input
	FC6A-F2MR1	2-Analog Input, 2-Relay Output
	FC6A-F2MR4	2-Analog Input, 2-Relay Output
	FC6A-F2M1	2-Analog Input, 2-Analog Output or 2-Transistor Output
	FC6A-F2M4	2-Analog Input, 2-Analog Output or 2-Transistor Output
Option Modules	FC6A-PJ2A	2-Analog Input
	FC6A-PK2AV	2-Analog Output
	FC6A-PK2AW	2-Analog Output
	FC6A-PJ2CP	2-Analog Input
	FC6A-PC1	2-Serial Communications (RS232C/RS485)
	FC6A-PC2	2-Serial Communications (RS232C/RS485)

Factories for production;

Shinko Industries Co., Ltd.
501-19 Fukushima, Sanda, Hyogo, 669-1313 Japan

IDEC IZUMI Taiwan Corporation
No.87, Swi Kuan Road, Chu Hou Village, Jen Wu Country, Kaohsiung Hsien, 814 Taiwan

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Product certificate.

Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1.

The certification test is to be performed at the manufacturer of the application system according to an approved test program before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

Clause for application software control.

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation Tests carried out

Tests according to Standard for Certification No. 2.4.

Periodical assessment

The scope of the retention/renewal survey is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the survey are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Retention survey is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE