



中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
DL25PTB00019

型式认可证书
CERTIFICATE OF TYPE APPROVAL

兹证明本证书所述制造厂具备按照下列标准的要求生产本证书所列产品的能力和条件。

This is to certify that the manufacturer stated in the certificate meets the requirements of the standards listed below and is available with the ability and conditions to produce the products described in the certificate.

制造厂/Manufacturer

三菱电机大连机器有限公司
MITSUBISHI ELECTRIC DALIAN INDUSTRIAL PRODUCTS CO.,LTD.

地址/Address

中国大连经济技术开发区东北三街5号
Dongbei3-5,Dalian Economic & Technical Development Zone, Dalian China

产品名称/Product

变频器
Frequency Converter

附加标志/Notations

无/Nil.

认可标准/Approval Standard

1. 中国船级社《钢质海船入级规范》第4篇第3章
Chapter 3, Part Four of China Classification Society Rules for Classification of Sea-Going Steel Ships

用于/Intended for

船舶与海上设施/Ships and Offshore Installations

产品明细/Product Description

变频器/Frequency Converter (M0001)

| 名称/Name | 属性(值)/Value | 单位/Unit |
|------------------|--------------------------|---------|
| 型号/Type | 见附页 See additional pages | |
| 规格/Specification | 见附页 See additional pages | |



证书有效期至/This Certificate is valid until 2030年09月21日/ Sep. 21,2030

发证机构/中国船级社大连分社
Issued by CCS Dalian Branch

签发日期 2025年09月19日
Date Sep. 19,2025

本证书根据中国船级社规范和相关规定签发。所有证书页为一个整体,必须同时使用。纸质证书每页均须由本社盖章方为有效,电子证书含数字签名方为有效,本证书复印件无效。任何单位和个人均不应摘录或节选本证书的部分内容。有关方对所持证书的真实性有疑问时,可以向本社检验机构咨询。本证书凡是未注明版本的规范,其(发证时)最新版本适用于本证书。
This Certificate is issued pursuant to the Rules of the Society and related regulation. All pages of the certificate are taken as a whole and are used simultaneously. No paper certificate page is valid without bearing the stamp of the Society, no electronic certificates is valid without the digital signature, and no copied form of the certificate is regarded as valid. Any part of the certificate is not to be extracted or abridged by any unit or individual in any form. Related parties who are doubted about the authenticity of the certificate may inquire of the Society or its offices. For Rules with no version indication, their latest version (at the time of issuance of the certificate) applies to the certificate.



Form No: T01.

联系方式/Contact Us, 见本社官方网站/See official web site of the Society (<http://www.ccs.org.cn>)

UTN:P025-58113616

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No. : NP14A03322/NP15A03137

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No. : W-1395-17CNL-E

试验报告日期/ Test Report Date : 2017-05-22

试验单位/ Laboratory: 中认(沈阳)北方实验室有限公司 CQC North Laboratory (Shenyang) Co.,Ltd.

试验单位地址/ Test Address: 中国辽宁省沈阳市沈阳经济技术开发区四号街14甲2号 No.14A-2,No.4 Street,Shenyang Economic Technique Development Area, Shenyang,Liaoning,China

试验报告编号/ Test Report No. : W-1395-17CNL

试验报告日期/ Test Report Date : 2017-06-19

试验单位/ Laboratory: 中认(沈阳)北方实验室有限公司 CQC North Laboratory (Shenyang) Co.,Ltd.

试验单位地址/ Test Address: 中国辽宁省沈阳市沈阳经济技术开发区四号街14甲2号 No.14A-2,No.4 Street,Shenyang Economic Technique Development Area, Shenyang,Liaoning,China

试验报告编号/ Test Report No. : W-1394-17CNL-E

试验报告日期/ Test Report Date : 2017-05-22

试验单位/ Laboratory: 中认(沈阳)北方实验室有限公司 CQC North Laboratory (Shenyang) Co.,Ltd.

试验单位地址/ Test Address: 中国辽宁省沈阳市沈阳经济技术开发区四号街14甲2号 No.14A-2,No.4 Street,Shenyang Economic Technique Development Area, Shenyang,Liaoning,China

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试验报告编号/ Test Report No. : W2021015110100003/W2021015110100004

试验报告日期/ Test Report Date : 2021-01-21

试验单位/ Laboratory: 大连产品质量检验检测研究院有限公司 Dalian Product Quality Inspection and Testing Institute Co. Ltd.

试验单位地址/ Test Address: 大连市开发区铁山东路102号 No. 102, Tieshan East Road, Dalian Development Zone

试验报告编号/ Test Report No. : MDI-CCS-A800-21008

试验报告日期/ Test Report Date : 2021-08-11

试验单位/ Laboratory: 三菱电机大连机器有限公司 MITSUBISHI ELECTRIC DALIAN INDUSTRIAL PRODUCTS CO.,LTD.

试验单位地址/ Test Address: 中国大连经济技术开发区东北三街5号 Dongbei3-5,Dalian Economic & Technical Development Zone, Dalian China

试验报告编号/ Test Report No. : MDI-CCS-20250904

试验报告日期/ Test Report Date : 2025-09-04

试验单位/ Laboratory: 三菱电机大连机器有限公司 MITSUBISHI ELECTRIC DALIAN INDUSTRIAL PRODUCTS CO.,LTD.

试验单位地址/ Test Address: 中国大连经济技术开发区东北三街5号 Dongbei3-5,Dalian Economic & Technical Development Zone, Dalian China

认可后的产品检验方式/ Method of Product Inspection after Approval

1. 按规范只认可不进行产品检验的产品(功率50kW以下)/The product approved only in term of the rules(Power below 50kW):

认可后的产品检验由制造厂按本社批准的产品检验计划进行检验,经检验合格后由制造厂签发合格证明,并连同该产品的本社认可证书复印件一并交付用户,制造厂对产品符合公约、法规、本社规范和本社认可的标准规定负责。

After approval, product inspection should be carried out by the Manufacturer in accordance with the product inspection scheme approved by the Society. Upon satisfactory inspection, and the Quality Certificate issued by the Manufacturer should be provided to the purchaser together with the copy of the approval certificate issued by the Society. The manufacturer should take responsibility for the product being in compliance with the convention, statutory regulation, the Society rules and the standard accepted by the Society.

2. 按规范认可后应进行产品检验的产品(功率50kW及以上)/The product should be inspected in term of the rules(Power 50kW and above):

认可后的产品检验应由本社验船师根据本社规范规定按批准的产品检验计划进行检验,经检验合格后由本社颁发船

用产品证书。

After approval, product inspection should be carried out by the Surveyor of the Society in accordance with the approved product inspection scheme, and the Marine Product Certificate will be issued by the Society upon satisfactory inspection.

认可保持条件/ Maintenance Requirements of Approval

1. 型式认可后, 如果产品及其重要零部件的设计、所用材料或制造方法有所改变, 且影响到产品的主要特性、特征; 或产品的性能指标有所更改, 且超过认可的范围, 则有关图纸和文件应经检验机构审批。并在检验机构认为必要时, 经本社检验人员见证有关试验和进行检查, 其结果应能证实仍符合认可条件。

After type approval, if there are changes to the design, materials used or manufacturing method of the product and important components and such changes affect major characteristics and properties of the product, or property indexes of the product are changed and exceed the scope of approval, related drawings and documents are to be examined and approved by the concerned survey office. Where deemed necessary by the survey office, the surveyor to the Society will go to witness relevant tests and conduct inspection and the results should be able to demonstrate compliance with the approval conditions.

2. 工厂的质量管理体系应保持有效运行, 并且与认可时一致。如果质量管理体系发生改变, 应经原体系认证机构审核并报本社批准。

The quality management system of the factory shall be ensure effective operation, and shall be the same as the situation of approval. If there are any changes to the quality management system, auditing of the original certification organization for quality management system and the society's approval shall be obtained.

3. 认可证书有效期内, 如果出现可能导致本社取消认可的情况, 工厂应及时采取有效的纠正措施。

Within the validity of the approval certificate, if cases occur that may cause the Society to withdraw the approval, the manufacturer should take corrective actions in a prompt and effective manner.

4. 在认可证书有效期内, 本社检验人员可在未经事先通知的情况下对工厂的产品制造过程进行审核, 以验证产品的生产是否符合业经本社批准的图纸和文件。工厂应予以配合。

Within the validity of the approval certificate, the surveyor to the Society may pay unannounced audit to the manufacturing process of the product in order to confirm whether it is in compliance with the drawings and documents approved by the Society. The factory should provide an active cooperation and necessary for the surveyor.

5. 如果属于获得型式认可B 模式证书, 且无需颁发船用产品证书/等效证明文件的情况, 证书获得者应接受本社每年一次的定期审核, 定期审核日为认可证书期满之日对应的每一周年日, 检查工作应在周年日的前后三个月内进行。

If belong to the situation of the product has type approval mode B certificate, and marine product certificate/equivalent document is not necessary, those who have obtained the certificate should be subject to periodical audit every year. The date of periodical audit shall be each anniversary date which corresponds to the date of expiry of the relevant certificate and the periodical audit shall be done within a time span of three months before and after the annual surveillance date.

备注/Remarks

本社已审核了产品厂无石棉声明, 但本社的审核不免除产品厂按照合同关系向订货方保证产品无石棉的责任。
The declaration of asbestos-free submitted by manufacturer has been reviewed by the Society.
However, liability of the manufacturer to guarantee the products are asbestos-free to purchaser under contract will not be exempted.

本证书由原型式认可证书 (No. DL21PTB00010) 换新并替代原证书。

This certificate is renewed from and supersedes the previous Type Approval Certificate No. DL21PTB00010.

中国船级社大连分社

CCS Dalian Branch

注: 本证书含有附页, 共3页

Note: The certificate is attached with additional 3 page(s)

产品明细

Products Description

容量为 280K 及以下的变频器（标准型号）/Inverters whose capacity is up to 280K (Standard model)

| 产品型号 Type | | 输入电压 Input voltage | 输入电流 Input current | | | | 输入频率 Input frequency | 输出电压 Output voltage | 输出电流 Output current | | | | 输出频率 Output frequency | 电机容量 Motor capacity | | | | 防护等级 Degree of protection |
|------------------------------|-----------------------------|-----------------------|-----------------------|--------|--------|--------|-------------------------|------------------------|------------------------|--------|--------|--------|--------------------------|------------------------|---------|---------|---------|------------------------------|
| 设计容量 Capacity designation | 设计电流 Current designation | 3-Phase AC (V) | SLD (A) | LD (A) | ND (A) | HD (A) | Hz | 3-Phase AC (V) | SLD (A) | LD (A) | ND (A) | HD (A) | Hz | SLD (kW) | LD (kW) | ND (kW) | HD (kW) | |
| FR-A840-0.4K-# | FR-A840-00023-# | 380-500 | 3.2 | 3 | 2.3 | 1.4 | 50/60 | 380-500 | 2.3 | 2.1 | 1.5 | 0.8 | 0.2-590 | 0.75 | 0.75 | 0.4 | 0.2 | IP20 |
| FR-A840-0.75K-# | FR-A840-00038-# | | 5.4 | 4.9 | 3.7 | 2.3 | | | 3.8 | 3.5 | 2.5 | 1.5 | | 1.5 | 1.5 | 0.75 | 0.4 | |
| FR-A840-1.5K-# | FR-A840-00052-# | | 7.8 | 7.3 | 6.2 | 3.7 | | | 5.2 | 4.8 | 4 | 2.5 | | 2.2 | 2.2 | 1.5 | 0.75 | |
| FR-A840-2.2K-# | FR-A840-00083-# | | 10.9 | 10.1 | 8.3 | 6.2 | | | 8.3 | 7.6 | 6 | 4 | | 3.7 | 3.7 | 2.2 | 1.5 | |
| FR-A840-3.7K-# | FR-A840-00126-# | | 16.4 | 15.1 | 12.3 | 8.3 | | | 12.6 | 11.5 | 9 | 6 | | 5.5 | 5.5 | 3.7 | 2.2 | |
| FR-A840-5.5K-# | FR-A840-00170-# | | 22.5 | 22.3 | 17.4 | 12.3 | | | 17 | 16 | 12 | 9 | | 7.5 | 7.5 | 5.5 | 3.7 | |
| FR-A840-7.5K-# | FR-A840-00250-# | | 31.7 | 31 | 22.5 | 17.4 | | | 25 | 23 | 17 | 12 | | 11 | 11 | 7.5 | 5.5 | |
| FR-A840-11K-# | FR-A840-00310-# | | 40.3 | 38.2 | 31 | 22.5 | | | 31 | 29 | 23 | 17 | | 15 | 15 | 11 | 7.5 | |
| FR-A840-15K-# | FR-A840-00380-# | | 48.2 | 44.9 | 40.3 | 31 | | | 38 | 35 | 31 | 23 | | 18.5 | 18.5 | 15 | 11 | |
| FR-A840-18.5K-# | FR-A840-00470-# | | 58.4 | 53.9 | 48.2 | 40.3 | | | 47 | 43 | 38 | 31 | | 22 | 22 | 18.5 | 15 | |
| FR-A840-22K-# | FR-A840-00620-# | | 76.8 | 75.1 | 56.5 | 48.2 | | | 62 | 57 | 44 | 38 | | 30 | 30 | 22 | 18.5 | IP00 |
| FR-A840-30K-# | FR-A840-00770-# | | 97.6 | 89.7 | 75.1 | 56.5 | | | 77 | 70 | 57 | 44 | | 37 | 37 | 30 | 22 | |
| FR-A840-37K-# | FR-A840-00930-# | | 115 | 106 | 91 | 75.1 | | | 93 | 85 | 71 | 57 | | 45 | 45 | 37 | 30 | |
| FR-A840-45K-# | FR-A840-01160-# | | 141 | 130 | 108 | 91 | | | 116 | 106 | 86 | 71 | | 55 | 55 | 45 | 37 | |
| FR-A840-55K-# | FR-A840-01800-# | | 180 | 144 | 134 | 108 | | | 180 | 144 | 110 | 86 | | 75/90 | 75 | 55 | 45 | |
| FR-A840-75K-# | FR-A840-02160-# | | 216 | 180 | 144 | 110 | | | 216 | 180 | 144 | 110 | | 110 | 90 | 75 | 55 | |
| FR-A840-90K-# | FR-A840-02600-# | | 260 | 216 | 180 | 144 | | | 260 | 216 | 180 | 144 | | 132 | 110 | 90 | 75 | |
| FR-A840-110K-# | FR-A840-03250-# | | 325 | 260 | 216 | 180 | | | 325 | 260 | 216 | 180 | | 160 | 132 | 110 | 90 | |
| FR-A840-132K-# | FR-A840-03610-# | | 361 | 325 | 260 | 216 | | | 361 | 325 | 260 | 216 | | 185 | 160 | 132 | 110 | |
| FR-A840-160K-# | FR-A840-04320-# | | 432 | 361 | 325 | 260 | | | 432 | 361 | 325 | 260 | | 220 | 185 | 160 | 132 | |
| FR-A840-185K-# | FR-A840-04810-# | | 481 | 432 | 361 | 325 | | | 481 | 432 | 361 | 325 | | 250 | 220 | 185 | 160 | |
| FR-A840-220K-# | FR-A840-05470-# | | 547 | 481 | 432 | 361 | | | 547 | 481 | 432 | 361 | | 280 | 250 | 220 | 185 | |
| FR-A840-250K-# | FR-A840-06100-# | | 610 | 547 | 481 | 432 | | | 610 | 547 | 481 | 432 | | 315 | 280 | 250 | 220 | |
| FR-A840-280K-# | FR-A840-06830-# | | 683 | 610 | 547 | 481 | | | 683 | 610 | 547 | 481 | | 355 | 315 | 280 | 250 | |

- 备注/Note:
1. 根据设计容量和设计电流，产品有两种型号名称；两种产品除了型号名称外没有区别。
There are two model designations, capacity designation and current designation; the products have no difference except its model name.

2. SLD:超轻负载/Super Light Duty;LD:轻型负载/Light Duty; ND:一般负载（初始值）/Normal Duty（initial setting）; HD:重型负载 Heavy Duty。

3. “-#”代表后缀字母和数字/The “-#” means alphanumeric suffix。

4. 变频器输入端应安装滤波器。
The filter shall be installed at the input of the converter.

产品明细
Products Description

容量为 315K 及以上的变频器（分离式）/Inverters whose capacity is 315K or more (Separated converter type)

| 产品型号 Type | | 输入电压 Input voltage | 输出电压 Output voltage | 输出电流 Output current | | | | 输出频率 Output frequency | 电机容量 Motor capacity | | | | 防护等级 Degree of protection |
|------------------------------|-----------------------------|-----------------------|------------------------|------------------------|-----------|-----------|-----------|--------------------------|------------------------|------------|------------|------------|------------------------------|
| 设计容量 Capacity designation | 设计电流 Current designation | DC | 3-Phase AC | SLD (A) | LD (A) | ND (A) | HD (A) | Hz | SLD (kW) | LD (kW) | ND (kW) | HD (kW) | |
| FR-A842-315K-# | FR-A842-07700-# | 430-780V | 380-500V | 770 | 683 | 610 | 547 | 0.2-590 | 400 | 355 | 315 | 280 | IP00 |
| FR-A842-355K-# | FR-A842-08660-# | | | 866 | 770 | 683 | 610 | | 450 | 400 | 355 | 315 | |
| FR-A842-400K-# | FR-A842-09620-# | | | 962 | 866 | 770 | 683 | | 500 | 450 | 400 | 355 | |
| FR-A842-450K-# | FR-A842-10940-# | | | 1094 | 962 | 866 | 770 | | — | 500 | 450 | 400 | |
| FR-A842-500K-# | FR-A842-12120-# | | | 1212 | 1094 | 962 | 866 | | — | — | 500 | 450 | |

整流单元/Converter Units

| 产品型号 Type | 输入电压 Input voltage | 输入电流 Input current | 输入频率 Input frequency | 输出电压 Output voltage | 防护等级 Degree of protection |
|----------------|-----------------------|-----------------------|-------------------------|------------------------|------------------------------|
| FR-CC2-H315K-# | 380-500V (3-Phase AC) | 610A | 50/60 Hz | 430-780VDC | IP00 |
| FR-CC2-H355K-# | | 683A | | | |
| FR-CC2-H400K-# | | 770A | | | |
| FR-CC2-H450K-# | | 866A | | | |
| FR-CC2-H500K-# | | 962A | | | |

备注/Note:

- 1.根据设计容量和设计电流，产品有两种型号名称；两种产品除了型号名称外没有区别。
There are two model designations, capacity designation and current designation; the products have no difference except its model name.
- 2.“-#”代表后缀字母和数字。
The "-#" means alphanumeric suffix.
- 3.SLD:超轻负载/Super Light Duty;LD:轻型负载/Light Duty; ND:一般负载（初始值）/Normal Duty（initial setting）; HD:重型负载 Heavy Duty。
- 4.型号开头为“FR-A842”的分离式变频器应根据电机容量选用相应的整流单元。
The separated converter type beginning with “FR-A842” is to be used together with the corresponding converter units according to the applied motor capacity.
- 5.整流单元输入端应安装滤波器。
The filter shall be installed at the input of the converter units.

产品明细
Products Description

变频器 (IP55 型式) /Inverters (IP55 compatible model)

| 产品型号 Type | | 输入电压 Input voltage | 输入电流 Input current | | 输入频率 Input frequency | 输出电压 Output voltage | 输出电流 Output current | | 输出频率 Output frequency | 电机容量 Motor capacity | | 防护等级 Degree of protection |
|------------------------------|-----------------------------|-----------------------|-----------------------|-----------|-------------------------|------------------------|------------------------|-----------|--------------------------|------------------------|------------|------------------------------|
| 设计容量 Capacity designation | 设计电流 Current designation | 3-Phase AC (V) | LD (A) | ND (A) | Hz | 3-Phase AC (V) | LD (A) | ND (A) | Hz | LD (kW) | ND (kW) | |
| FR-A846-0.4K-#2# | FR-A846-00023-#2# | 380-500 | 2.1 | 1.5 | 50/60 | 380-500 | 2.1 | 1.5 | 0.2-590 | 0.75 | 0.4 | IP55 |
| FR-A846-0.75K-#2# | FR-A846-00038-#2# | | 3.5 | 2.5 | | | 3.5 | 2.5 | | 1.5 | 0.75 | |
| FR-A846-1.5K-#2# | FR-A846-00052-#2# | | 4.8 | 4 | | | 4.8 | 4 | | 2.2 | 1.5 | |
| FR-A846-2.2K-#2# | FR-A846-00083-#2# | | 7.6 | 6 | | | 7.6 | 6 | | 3.7 | 2.2 | |
| FR-A846-3.7K-#2# | FR-A846-00126-#2# | | 11.5 | 9 | | | 11.5 | 9 | | 5.5 | 3.7 | |
| FR-A846-5.5K-#2# | FR-A846-00170-#2# | | 16 | 12 | | | 16 | 12 | | 7.5 | 5.5 | |
| FR-A846-7.5K-#2# | FR-A846-00250-#2# | | 23 | 17 | | | 23 | 17 | | 11 | 7.5 | |
| FR-A846-11K-#2# | FR-A846-00310-#2# | | 29 | 23 | | | 29 | 23 | | 15 | 11 | |
| FR-A846-15K-#2# | FR-A846-00380-#2# | | 35 | 31 | | | 35 | 31 | | 18.5 | 15 | |
| FR-A846-18.5K-#2# | FR-A846-00470-#2# | | 43 | 38 | | | 43 | 38 | | 22 | 18.5 | |
| FR-A846-22K-#2# | FR-A846-00620-#2# | | 57 | 44 | | | 57 | 44 | | 30 | 22 | |
| FR-A846-30K-#2# | FR-A846-00770-#2# | | 70 | 57 | | | 70 | 57 | | 37 | 30 | |
| FR-A846-37K-#2# | FR-A846-00930-#2# | | 85 | 71 | | | 85 | 71 | | 45 | 37 | |
| FR-A846-45K-#2# | FR-A846-01160-#2# | | 106 | 86 | | | 106 | 86 | | 55 | 45 | |
| FR-A846-55K-#2# | FR-A846-01800-#2# | | 144 | 110 | | | 144 | 110 | | 75 | 55 | |
| FR-A846-75K-#2# | FR-A846-02160-#2# | | 180 | 144 | | | 180 | 144 | | 90 | 75 | |
| FR-A846-90K-#2# | FR-A846-02600-#2# | | 216 | 180 | | | 216 | 180 | | 110 | 90 | |
| FR-A846-110K-#2# | FR-A846-03250-#2# | | 260 | 216 | | | 260 | 216 | | 132 | 110 | |
| FR-A846-132K-#2# | FR-A846-03610-#2# | | 325 | 260 | | | 325 | 260 | | 160 | 132 | |

备注/Note:

- 根据设计容量和设计电流，产品有两种型号名称；两种产品除了型号名称外没有区别。
There are two model designations, capacity designation and current designation; the products have no difference except its model name.
- "-#2#"代表后缀字母和数字。"2"代表内置 C2 等级滤波器。
The "-#2#" means alphanumeric suffix. The "2" means a built-in C2 class EMC filter.
- LD:轻型负载/Light Duty; ND:一般负载（初始值）/Normal Duty（initial setting）。
- 变频器输入端应安装磁环。
The ferrite core shall be installed at the input of the converter.