

## Data form for critical components and material information

Applicant name and address..... :	ZHEJIANG GEYA ELECTRICAL CO.,LTD. Wenzhou Bridge Industrial Zone,Beibaixiang Town, Yueqing City, Zhejiang Province, China 325603
Manufacturer name and address . :	ZHEJIANG GEYA ELECTRICAL CO.,LTD. Wenzhou Bridge Industrial Zone,Beibaixiang Town, Yueqing City, Zhejiang Province, China 325603
Name and address of factory / factories..... :	ZHEJIANG GEYA ELECTRICAL CO.,LTD. Wenzhou Bridge Industrial Zone,Beibaixiang Town, Yueqing City, Zhejiang Province, China 325603
Project-No./Report-No. .... :	874102105301-01
Test item description .....	Moulded case circuit breakers
Model/Type reference .....	GRM3DC-250U, GRM3DC-320HU, GRM3-250HU, GRM3-320HU
Device type .....	<u>component</u> / sub-assembly / equipment / system

Ratings .....	See appendix table 1
Connection to supply .....	<u>Permanent</u> / Detachable cord set / Non detachable cord set / Direct plug-in /None / Battery operated
Overvoltage category .....	I / II / <u>III</u> / IV
Pollution degree .....	1 / 2 / <u>3</u> / 4
Class of protection..... :	<input type="checkbox"/> Class I (PE connected) <input type="checkbox"/> Class II (isolated) <input type="checkbox"/> Class III
Product with funtional earthing .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> NA
Environmental conditions / Maximum ambient temperature .....	N.A.
Equipment mobility / Classification of installation and use..... :	transportable / portable / stationary / mobile / fixed / <u>permanently installed</u> / hand-held, body-worn / building-in
Operating conditions .....	<u>Continuous</u> / Short-time / Intermittent

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Overall size of equipment (mm) .... :	max. 180mm*107mm*126mm (for 3P)				
Mass of equipment (kg)..... :	about 2800g (for 3P)				
Degree of ingress protection (IEC 60529, UL 50 / UL 50 E) ..... :	IP00				
Noise emission [dB(A)]..... :	N.A.				
Vibration [m/s ²]	N.A.				
Connection to hydraulic power ..... :	N.A.				
Connection to pneumatic power... :	N.A.				
Connection to water installation ... :	N.A.				
Description of special features ..... :	N.A.				
Additional information for Laser equipment, classification according to IEC/EN 60825-1: N/A					
Type:	--	Wavelength:	--	Output power:	--
Class:	--	Pulse duration:	--		--
Data communication ports: --					
Wired ports ..... :	<input type="checkbox"/> N/A <input type="checkbox"/> USB <input type="checkbox"/> LAN <input type="checkbox"/> DALI <input type="checkbox"/> other:				
Wireless ports ..... :	<input type="checkbox"/> N/A <input type="checkbox"/> Wifi <input type="checkbox"/> Bluetooth <input type="checkbox"/> NFC <input type="checkbox"/> 4G/LTE <input type="checkbox"/> 5G <input type="checkbox"/> Other:				
Data Storage/ Processing ..... :	<input type="checkbox"/> N/A <input type="checkbox"/> Local <input type="checkbox"/> Cloud				

Additional IEC 60601-1 / EN 60601-1 / ANSI/AAMI ES60601-1 / CAN/CSA-C22.2 No. 60601-1: N/A	
Applied part type ..... :	<input type="checkbox"/> B <input type="checkbox"/> BF <input type="checkbox"/> CF <input type="checkbox"/> Defibrillation-Proof <input type="checkbox"/> No AP
Software Version..... :	
Device type ..... :	component / sub-assembly / equipment / system

General product information and other remarks:
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<p>Main label:</p>	<p>For example</p>
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<p><b>GRM3DC-320HU</b> DC1500V 320A</p> <table border="1"> <tr> <td>Ue(V)</td> <td>Icu/Ics(kA)</td> </tr> <tr> <td>1500</td> <td>20/20</td> </tr> </table> <p>Cat A +40°C</p> <p>运行前务必安装隔板</p>	Ue(V)	Icu/Ics(kA)	1500	20/20		<table border="1"> <tr> <td>Ue(V)</td> <td>Icu/Ics(kA)</td> </tr> <tr> <td>Ui</td> <td>1500V</td> </tr> <tr> <td>Uimp</td> <td>12kV</td> </tr> </table> <p>GB/T 14048.2 IEC/EN 60947-2</p>	Ue(V)	Icu/Ics(kA)	Ui	1500V	Uimp	12kV						
Ue(V)	Icu/Ics(kA)																	
1500	20/20																	
Ue(V)	Icu/Ics(kA)																	
Ui	1500V																	
Uimp	12kV																	
PUSH TO TRIP																		
<p><b>GRM3DC-320HU</b> DC1000V 320A</p> <table border="1"> <tr> <td>Ue(V)</td> <td>Icu/Ics(kA)</td> </tr> <tr> <td>1000</td> <td>20/20</td> </tr> <tr> <td>Ui</td> <td>1250V</td> </tr> <tr> <td>Uimp</td> <td>8kV</td> </tr> </table> <p>Cat A +40°C</p> <p>GB/T 14048.2 IEC/EN 60947-2</p>	Ue(V)	Icu/Ics(kA)	1000	20/20	Ui	1250V	Uimp	8kV		<p><b>GRM3DC-250HU</b> DC1000V 125A</p> <table border="1"> <tr> <td>Ue(V)</td> <td>Icu/Ics(kA)</td> </tr> <tr> <td>1000</td> <td>20/20</td> </tr> <tr> <td>Ui</td> <td>1250V</td> </tr> <tr> <td>Uimp</td> <td>8kV</td> </tr> </table> <p>Cat A +40°C</p> <p>GB/T 14048.2 IEC/EN 60947-2</p>	Ue(V)	Icu/Ics(kA)	1000	20/20	Ui	1250V	Uimp	8kV
Ue(V)	Icu/Ics(kA)																	
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<p><b>ZHEJIANG GEYA ELECTRICAL CO.,LTD.</b> Wenzhou Bridge Industrial Zone,Beibaixiang Town, Yueqing City, Zhejiang Province, China 325603</p>																		
IEC/EN 60947-2																		

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## Form



Product Service

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Description of model differences:	AC system (for GRM3-250HU and GRM3-320HU); General DC system (for GRM3DC-250HU and GRM3DC-320HU)
General information / Intended use:	Molded case circuit breakers for AC or DC system use, fixed installation.
Protective earth connection:	N/A
Drawing(s) / Picture(s):	See photo documentation

**Warning Markings (Safety, Security, ...):** N/A

#### Critical components and material information:

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard No. and Edition year	Mark(s) of conformity
1. Enclosure (base, cover, handle)	Zhejiang Zhenggu Plastic Co., Ltd. Yueqing Pengxing Electric Factory. Wenzhou Tuoqu Electric Co., Ltd. Yueqing City Haomei Electric Switch Accessory Factory	Base / middle: DMC Cover / handle: PA66	-	EN 60947-2:2017+A1:2020	Test with unit
2. Shaft	Zhejiang Zhenggu Plastic Co., Ltd. Yueqing Pengxing Electric Factory. Zhejiang Boteli New Material Technology Co., Ltd. Yueqing City Haomei Electric Switch Accessory Factory	DMC	-	EN 60947-2:2017+A1:2020	Test with unit
3. Tripping mechanism	Yueqing Gaoke Huanbao Electric Co., Ltd. Zhejiang Yuanou Electric Co., Ltd. Zhejiang Jianshen Electric Co., Ltd. Zhejiang Taixin Electric Co., Ltd.	SPCC	-	EN 60947-2:2017+A1:2020	Test with unit

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Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard No. and Edition year	Mark(s) of conformity
4. Main contact (fixed / moving)	Zhejiang Fuda Alloy Co., Ltd. Wenzhou Hongfeng Electric Alloy Co., Ltd. Shanghai Electric Co., Ltd. People Electric Factory	Fixed contact: AgWC12C 3 Moving contact: AgW50	-	EN 60947-2:2017+A1:2020	Test with unit
5. Sping (main contact)	Yueqing City Dongfeng Spring Manufacturing Co., Ltd. Yueqing City Hongli Spring Co., Ltd. Yueqing City Xingming Speing Factory Zhejiang Yuanhua Spring Technology Co., Ltd.	65Mn	-	EN 60947-2:2017+A1:2020	Test with unit
6. Thermo-magnetic tripping unit	Zhejiang Tiansheng Bimetal Technology Co., Ltd. Wenzhou Yada Bimetal Element Co., Ltd. Foshan Tongbao Precious Alloy Co., Ltd. Shanghai Songsen Special Material Co., Ltd.	5J20110 (FPA721-110) 5J1580 (FPA206-78)	-	EN 60947-2:2017+A1:2020	Test with unit
7. Arc disgustish device	Yueqing City Gaoke Huanbao Electronic Co., Ltd. Zhejiang Jianshen Electric Co., Ltd. Zhejiang Taixin Electric Co., Ltd. Yueqing City Changzheng Electric Co., Ltd.	QA235-A	-	EN 60947-2:2017+A1:2020	Test with unit
Supplementary information:					

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**NRTL - Unrecognized Safety relevant (critical) components subject to verification testing:**

Object / part No.	Verification tests to be conducted	Laboratory of testing / sampling
--	--	--
--	--	--
--	--	--

**Routine Test (Safety, Security, ...): EN 60947-2:2017+A1:2020**

Model/Type reference:	Tests performed (name of test and test clause):	Test Details:	Test Points:	Test Values:
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--

Note examples of Test points /Test Values

- |   |                           |   |
|---|---------------------------|---|
| <b>Test Details:</b>  | <b>Test Points:</b>       | <b>Test Values / Limit(s):</b>                |
| <input checked="" type="checkbox"/> Dielectric Strength   | BI: L/N – Chassis         | Vac / 3820 Vdc 1 s                            |
| <input type="checkbox"/> Ground Continuity  | RI: L/N – Secondary       | Vac / Vdc s                                   |
| <input type="checkbox"/> Insulation Resistance  | AC-Inlet – Chassis and/or | A ; t ≥ 1 s ;                                 |
|   | BI: L/N – Chassis         | R < 0.1 Ohm (Ω)                               |
|   | RI: L/N – Secondary       | Vdc   |
| <input type="checkbox"/> Leakage Current  | Ground - PE               | R > 2 MOhm (MΩ)                               |
| <input type="checkbox"/> Touch Current  |                           | s   |
| <input type="checkbox"/> Polarity   |                           | Vdc   |
| <input checked="" type="checkbox"/> Other:  | Tripping characteristic   | s   |
|   |                           | mA  |
| <input type="checkbox"/> Verification that the tested software version no. will be installed in the test object (see critical component/software section)   |                           | mA  |
| <input type="checkbox"/> Verification that the listed components of the critical component section are unchanged (includes all kind of critical components e. g. components with functional safety functions) |                           | 8In (>0.2s); 12In (within 0.2s); 2In (4-7min) |

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**Test Report History:**

Rev	Project No.	History
00	874102105301-00	Initial Version, 2021-04-20
01	874102105301-01	Change technical parameter to: GRM3DC-250HU, GRM3DC-320HU: DC750V, DC1000V (2P appearance): Ics=Icu= 20kA; DC1000V, DC1250V, DC1500V (3P appearance): Ics=Icu=20kA; GRM3-250HU, GRM3-320HU: Ue: AC800V/1000V/1140V; Ui: 1150V AC800V: Ics=Icu=36.5kA; AC1000V/1140V: Ics=Icu=15kA

**Signature of the Certification Holder:**

Name, seal and signature of Certificate Holder:	
Date:	2022-03-10

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Appendix table 1:

<b>Proper standards/ Correct parameters of the product:</b>	
EN 60947-2:2017+A1:2020	
Models: GRM3-250HU, GRM3-320HU, GRM3DC-250HU, GRM3DC-320HU	
Interrupting medium:	Air
Intended for use:	AC system (for GRM3-250HU and GRM3-320HU); General DC system (for GRM3DC-250HU and GRM3DC-320HU)
Number of poles:	3 poles (for GRM3-250HU and GRM3-320HU); 2 poles and 3 poles appearance (for GRM3DC-250HU and GRM3DC-320HU)
Rated impulse withstand voltage (Uimp):	8kV (for GRM3-250HU, GRM3-320HU); 12kV (for GRM3DC-250HU and GRM3DC-320HU, 3 poles appearance); 8kV (for GRM3DC-250HU and GRM3DC-320HU, 2 poles appearance)
Rated insulation voltage (Ui):	1150V (for GRM3-250HU, GRM3-320HU); 1250V (for GRM3DC-250HU and GRM3DC-320HU, 2 poles appearance); 1500V (for GRM3DC-250HU and GRM3DC-320HU, 3 poles appearance)
Rated operational voltage (Ue):	AC800V, 1000V, 1140V (for GRM3-250HU, GRM3-320HU); DC250V, 500V, 750V, 1000V (for GRM3DC-250HU and GRM3DC-320HU, 2 poles appearance); DC1000V, 1250V, 1500V (for GRM3DC-250HU and GRM3DC-320HU, 3 poles appearance)
Rated current (In):	125A, 140A, 160A, 180A, 200A, 225A, 250A (for GRM3-250HU, GRM3DC-250HU); 280A, 315A, 320A (for GRM3-320HU, GRM3DC-320HU)
Rated service short-circuit breaking capacity (Ics):	36.5kA at AC800V, 15kA at AC1000V and AC 1140V (for GRM3-250HU and GRM3-320HU); 40kA at DC250/500V, 20kA at DC750/1000V (for GRM3DC-250HU and GRM3DC-320HU, 2 poles appearance); 20kA at DC1000V, 1250V, 1500V (for GRM3DC-250HU and GRM3DC-320HU, 3 poles appearance)
Rated ultimate short-circuit breaking capacity (Icu):	Same as Ics
Selectivity category:	A
Type of overcurrent release:	Thermal-magnetic
Suitable for isolation:	Yes

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