Test Report issued under the responsibility of:

TEST REPORT
IEC 61008-1
Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs)
Part 1: General rules

Report Number. .....:	GYB-ESH-P21051894
Date of issue .....:	2021-06-28
Total number of pages.....:	28 pages
Tested by.....:	Rosy Zheng
Reviewed by.....:	Wei Gao
Approved by.....:	Stone Shi
Name of Testing Laboratory.....:	The Comprehensive Technical Service Center (Yueqing Branch) of Wenzhou Customs
Applicant's name.....:	ZHEJIANG GEYA ELECTRICAL CO., LTD
Address .....:	Wenzhou Bridge Industral Zone, Beibaixiang Twon, Yueqing City, Zhejiang Province, China 325603
Test specification:	
Standard .....:	IEC 61008-1:2010+A1:2012+A2:2013
	IEC 61008-2-1:1990 (First Edition)
	EN 61008-1:2012+A1:2014+A2:2014+A11:2015+A12:2017
	EN 61008-2-1:1994+A11:1998
Test procedure.....:	Partial tests
Non-standard test method…….:	See summary of testing page 3

Test item description .....:	RCCB
Trade Mark .....:	GEYA
Manufacturer.....:	ZHEJIANG GEYA ELECTRICAL CO., LTD
	Wenzhou Bridge Industral Zone, Beibaixiang Twon, Yueqing City, Zhejiang Province, China 325603
Model/Type reference .....:	GYL10
Ratings .....:	See pages 6 & 7

List of Attachments (including a total number of pages in each attachment):

EU—GD IEC61008 1H see Annex Nº.1

EN 61008-1:2012/A11:2015 addition requirement see Annex Nº.2

EN 61008-1:2012/A12:2017 addition requirement see Annex Nº.3

Summary of testing:

Standard used:

-IEC 61008-1:2010+A1:2012+A2:2013

-IEC 61008-2-1:1990 (First Edition)

-EN 61008-1:2012+A1:2014+A2:2014+A11:2015+A12:2017

-EN 61008-2-1:1994+A11:1998

This test report is to verified the GYL10 product capable of operating where more severe climatic conditions prevail -25°C to +60°C, the correct operation at low ambient air temperatures -25°C is tested according to the EN 61008 sequence G1 and the correct operation at high ambient air temperatures +60°C is tested according to the EN 61008 sequence G_0 but the upper temperature is set at +60°C which is subject to agreement between manufacturer and user.

-All the samples satisfy to the clauses examined.

Tests performed (name of test and test clause):

Number of pole	Type	A_1	A_2	B	C	D0+D1	D0	D2	E	F	G0	G1	EMC tests		
											EN Standard Modify		H	I	J
1P+N Inc=6000A	63A TypeA 30mA	-	-	-	-	-	-	-	-	-	3	3	-	-	-
	16A TypeA 300mA	-	-	-	-	-	-	-	-	-	3	3	-	-	-
3P+N Inc=6000A	63A TypeA 30mA	-	-	-	-	-	-	-	-	-	3	3	-	-	-
	16A TypeA 300mA	-	-	-	-	-	-	-	-	-	3	3	-	-	-

Testing location:

The Comprehensive Technical Service Center (Yueqing Branch) of Wenzhou Customs

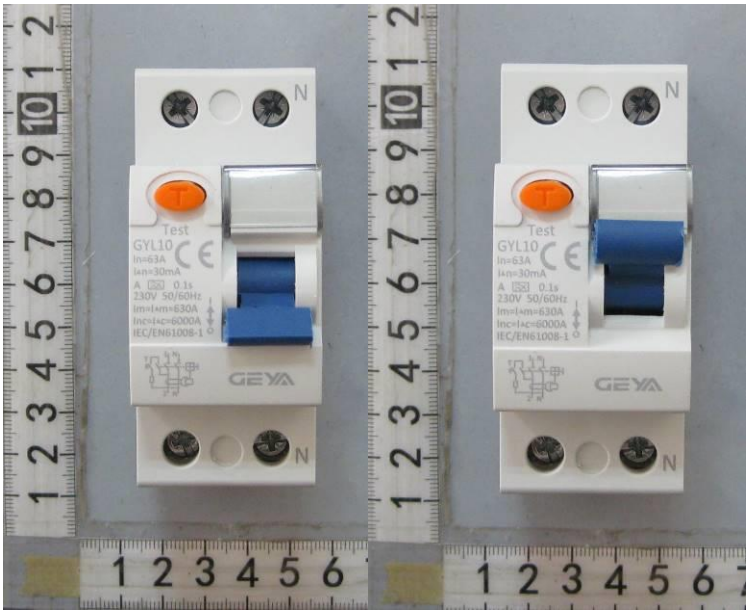
Inspection and Quarantine Mansion, jingang Avenue, Liushi, Yueqing, Wenzhou, Zhejiang, P.R.China

Summary of compliance with National Differences: CENELEC

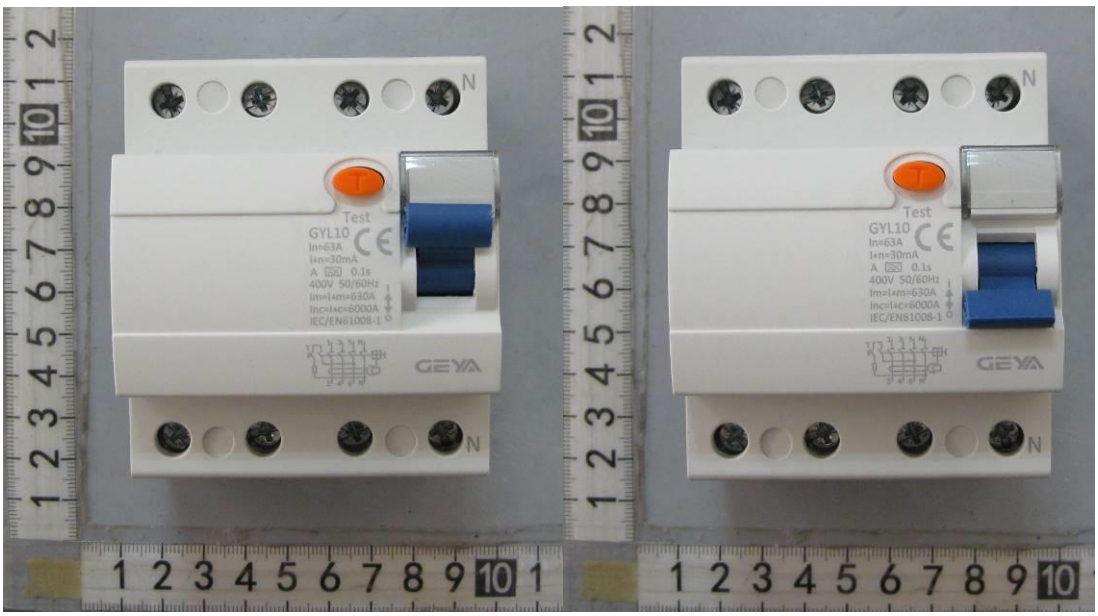
☒**The product fulfils the requirements of EN 61008-1:2012+A1:2014+A2:2014+A11:2015 +A12:2017 and EN 61008-2-1:1994+A11:1998**

Copy of marking plate:

1P+N



3P+N



Test item particulars.....:	
Classification of RCCBs functionally dependent on the line voltage .....:	No
Opening automatically in case of failure of the line voltage.....:	No
- reclosing automatically when the line voltage is restored .....:	~~Yes~~ / No
- not reclosing automatically when the line voltage is restored .....:	~~Yes~~ / No
Not opening automatically in case of failure of the line voltage.....:	No
- able to trip in a hazardous situation arising on failure of line voltage .....:	~~Yes~~ / No
- not able to trip in a hazardous situation arising on failure of line voltage .....:	~~Yes~~ / No
Type of RCCB .....:	
- type AC.....:	Yes / ~~No~~
- type A .....:	Yes / ~~No~~
- independent of the line voltage.....:	Yes / ~~No~~
- dependent on the line voltage.....:	~~Yes~~ / No
- without time delay .....:	Yes / ~~No~~
- with time delay: type S .....:	~~Yes~~ / No
- enclosed.....:	Yes / ~~No~~
- unenclosed.....:	~~Yes~~ / No
- IP number .....:	20
- for fixed installation .....:	Yes/ ~~No~~
- for mobile installation .....:	~~Yes~~ / No
Number of poles.....:	1P+N and 3P+N
Ambient air temperature (°C).....:	-25 ºC to +60ºC See Summary of testing page 3
Method of mounting .....:	On rail (IP20)
Method of connection.....:	Not associated with the mechanical mounting
Rated residual operating current (A) .....:	30mA; 100mA; 300mA
Rated current (A).....:	16A;20A;25A;32A;40A;50A;63A
Rated voltage (V) .....:	230/240V~(1P+N); 400/415V~(3P+N)
Rated impulse withstand voltage (U_{imp})	4kV
Nature of supply.....:	~
Rated frequency (Hz).....:	50Hz

Rated making and breaking capacity (A) ..... :	500A for In:16A;20A;25A;32A;40A;50A;10In for In:63A
Rated residual making and breaking capacity (A) ..... :	500A for In:16A;20A;25A;32A;40A;50A;10In for In:63A
Rated conditional short-circuit current (A)..... :	Inc=6000A
Rated conditional residual short-circuit current (A) .... :	IΔc=6000A
Type of terminal ..... :	Pillar terminal
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N/A
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement ..... :	F (Fail)
Testing..... :	
Date of receipt of test item..... :	2021-05-26
Date (s) of performance of tests ..... :	2021-05-26 to 2021-06-28

General remarks:

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

General product information:

1P+N and 3P+N
230/240V~(1P+N); 400/415V~(3P+N)
Type AC and Type A
In=16A;25A;40A;63A; Inc=IΔc=6000A
500A for In:16A;20A;25A;32A;40A;50A;10In for In:63A
IΔn= 30mA;100mA;300mA
IΔno =15mA;50mA;150mA
Grid distance = 50 mm
Ui= 500V
Uimp=4kV
Material group=IIIa
Screw diameter=5,9mm
50Hz

IEC 61008-1			
Clause	Requirement + Test	Result - Remark	Verdict

	TEST SEQUENCE G (3 samples) **In=63A IΔn =30mA 1P+N A type**	**G0-1**	**G0-2**	**G0-3**	**P**

9.22	**Verification of reliability**		
9.22.1	Climatic test based on Clause 4 of IEC 60068-2-3:2000 and IEC 60068-3-4:		
	- number of cycles: 28	28 cycles	P
	- test temperature: upper temperature 55 °C ± 2 °C	Set at +60 °C	P
	Initial verification:		P
9.9.2.3	- maximum break time at $I_{\Delta n}$ (ms) .....:	G0-1 – 26ms G0-2 – 29ms G0-3 – 28ms	P
	No value exceeds the specified limiting value		P
	Additional test for type S:		
	- minimum non-actuating time (ms) at: $I_{\Delta n}$; 0,13 s :	G1 - G2 - G3 -	N/A
	No tripping during tests		N/A
	Climatic test: no tripping during 28 cycles test .....:		P
	Final verification: the RCCB shall trip with a test current of 1,25 $I_{\Delta n}$ (ms) .....:	G0-1 – 26ms G0-2 – 21ms G0-3 – 18ms	P

IEC 61008-1			
Clause	Requirement + Test	Result - Remark	Verdict

	TEST SEQUENCE G (3 samples) **In=16A IΔn =300mA 1P+N A type**	**G0-7**	**G0-8**	**G0-9**	**P**

9.22	**Verification of reliability**		
9.22.1	Climatic test based on Clause 4 of IEC 60068-2-3:2000 and IEC 60068-3-4:		
	- number of cycles: 28	28 cycles	P
	- test temperature: upper temperature 55 °C ± 2 °C	Set at +60 °C	P
	Initial verification:		P
9.9.2.3	- maximum break time at $I_{\Delta n}$ (ms) .....:	G0-7 – 23ms G0-8 – 25ms G0-9 – 25ms	P
	No value exceeds the specified limiting value		P
	Additional test for type S:		
	- minimum non-actuating time (ms) at: $I_{\Delta n}$; 0,13 s :	G1 - G2 - G3 -	N/A
	No tripping during tests		N/A
	Climatic test: no tripping during 28 cycles test .....:		P
	Final verification: the RCCB shall trip with a test current of 1,25 $I_{\Delta n}$ (ms) .....:	G0-7 – 24ms G0-8 – 25ms G0-9 – 24ms	P

IEC 61008-1			
Clause	Requirement + Test	Result - Remark	Verdict

	TEST SEQUENCE G (3 samples) **In=63A IΔn =30mA 3P+N A type**	**G0-4**	**G0-5**	**G0-6**	**P**

9.22	**Verification of reliability**		
9.22.1	Climatic test based on Clause 4 of IEC 60068-2-3:2000 and IEC 60068-3-4:		
	- number of cycles: 28	28 cycles	P
	- test temperature: upper temperature 55 °C ± 2 °C	Set at +60 °C	P
	Initial verification:		P
9.9.2.3	- maximum break time at $I_{\Delta n}$ (ms) .....:	G0-4 – 28ms G0-5 – 25ms G0-6 – 29ms	P
	No value exceeds the specified limiting value		P
	Additional test for type S:		
	- minimum non-actuating time (ms) at: $I_{\Delta n}$; 0,13 s :	G1 - G2 - G3 -	N/A
	No tripping during tests		N/A
	Climatic test: no tripping during 28 cycles test .....:		P
	Final verification: the RCCB shall trip with a test current of 1,25 $I_{\Delta n}$ (ms) .....:	G0-4 – 24ms G0-5 – 27ms G0-6 – 21ms	P

IEC 61008-1			
Clause	Requirement + Test	Result - Remark	Verdict

	TEST SEQUENCE G (3 samples) **In=16A IΔn =300mA 3P+N A type**	**G0-10**	**G0-11**	**G0-12**	**P**

9.22	**Verification of reliability**		
9.22.1	Climatic test based on Clause 4 of IEC 60068-2-3:2000 and IEC 60068-3-4:		
	- number of cycles: 28	28 cycles	P
	- test temperature: upper temperature 55 °C ± 2 °C	Set at +60 °C	P
	Initial verification:		P
9.9.2.3	- maximum break time at $I_{\Delta n}$ (ms) .....:	G0-10 – 27ms G0-11 – 26ms G0-12 – 27ms	P
	No value exceeds the specified limiting value		P
	Additional test for type S:		
	- minimum non-actuating time (ms) at: $I_{\Delta n}$; 0,13 s :	G1 - G2 - G3 -	N/A
	No tripping during tests		N/A
	Climatic test: no tripping during 28 cycles test .....:		P
	Final verification: the RCCB shall trip with a test current of 1,25 $I_{\Delta n}$ (ms) .....:	G0-10 – 26ms G0-11 – 28ms G0-12 – 26ms	P

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX A (NORMATIVE)		
Test sequence and number of samples to be submitted for certification purposes Table A.1 - Test sequences		
Test sequence	**Clause or subclause**	**Test (or inspection)**
A_1	6 8.1.1 8.1.2 9.3 8.1.3 9.15 9.4 9.5 9.6 9.13 8.1.3 9.25	Marking General Mechanism Indelibility of marking Clearance and creepage distances (external parts only) Trip free mechanism Reliability of screws, current-carrying parts and connections Reliability of terminals for external conductors Protection against electric shock Resistance to heat Clearances and creepage distances (internal parts) Resistance to rusting
A_2	9.14	Resistance to abnormal heat and to fire
B	9.7.7.4 9.7.7.5 b) 9.7.1 9.7.2 9.7.3 9.7.4 9.7.7.2 9.7.5 9.7.6 9.8 9.22.2 9.23	Resistance of the insulation of open contacts and basic insulation against an impulse voltage in normal conditions Verification of the behaviour of components bridging the basic insulation Resistance to humidity Insulation resistance of the main circuit Dielectric strength of the main circuit Insulation resistance an dielectric strength of auxiliary circuits Verification of clearances with the impulse withstand voltage Secondary circuit of detection transformers Capability of control circuits connected to the main circuits etc. Temperature-rise Reliability at 40°C Ageing of electronic components
C	9.10	Mechanical and electrical endurance
D D_0	9.9	Residual operating characteristics
D D_1	9.17 9.19 9.11.2.3 a)b) 9.16 9.12 9.18	Behaviour in case of failure of the line voltage Unwanted tripping Behaviour in case of surge currents Performance at $I_{\Delta m}$ Test device Resistance to mechanical shock and impact Non-operating current under overcurrent conditions
D D_2	9.11.2.3 c)	Verification of the suitability of RCCBs for use in IT-systems
E	9.11.2.4 a)	Coordination at I_{nc}
	9.11.2.2	Performance at I_m
F	9.11.2.4 b)	Coordination at I_m
	9.11.2.4 c)	Coordination at $I_{\Delta c}$

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Clause	Requirement + Test	Result - Remark	Verdict

G	9.22.1	Reliability (climatic tests)
H [a)]	IEC 61543 Table 4 - T1.1 IEC 61543 Table 4 - T1.2 IEC 61543 Table 5 - T2.3	Harmonics, interharmonics Signalling voltage Surges
I	IEC 61543 Table 5 - T2.1 IEC 61543 Table 5 - T2.5 IEC 61543 Table 5 - T2.2	Conducted sine-wave voltages or currents Radiated electromagnetic field Fast transients (burst)
J	IEC 61543 Table 5 - T2.6 IEC 61543 Table 6 - T3.1	Conducted common mode disturbances in the frequency range lower than 150 kHz Electrostatic discharges
a) For devices containing a continuously operating oscillator, the test of CISPR 14-1 shall be carried out on the samples prior to the tests of this sequence. b) This test may be done on separate samples.		

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Clause	Requirement + Test	Result - Remark	Verdict

Table A.2 - Number of samples for full test procedure

Test sequence [a]	Number of samples	Minimum number of accepted samples [b]	Maximum number of samples for repeated tests [c]
A_1	1	1	--
A_2	3	2	3
B	3	2	3
C	3	2	3
D	3	2 [d]	3
D_2	3	3	3
E	3	2 [d]	3
F	3	2 [d]	3
G	3	2	3
H [e]	3	2	3
I [e]	3	2	3
J [e]	3	2	3

a) In total a maximum of three test sequences may be repeated.

b) It is assumed that a sample which has not passed a test has not met the requirements due to workmanship or assembly defects which are not representative of the design.

c) In the case of repeated tests, all test results must be acceptable.

d) All samples shall meet the requirements in 9.9.2.1, 9.9.2.2, 9.9.2.3, 9.9.2.4, 9.9.2.5 and 9.11.2.3, as appropriate. In addition, permanent arcing or flashover between poles or between poles and frame shall not occur in any sample during tests of 9.11.2.2, 9.11.2.4 a), 9.11.2.4 b) or 9.11.2.4 c).

e) At the manufacturer's request, the same set of samples may be subjected to more than one of these test sequences.

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Clause	Requirement + Test	Result - Remark	Verdict

Table A.3 - Number of samples for simplified test procedure			
Test sequence	**Number of samples according to the number of poles [a) g)]**		
	2-poles [b) c)]	**3-poles [d) f) i)]**	**4-poles [e)]**
A_1	1 max. rating I_N min. rating $I_{\Delta N}$	1 max. rating I_N min. rating $I_{\Delta N}$	1 max. rating I_N min. rating $I_{\Delta N}$
A_2	3 max. rating I_N min. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$
B	3 max. rating I_N min. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$
C	3 max. rating I_N min. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$
$D_0 + D_1$	3 max. rating I_N min. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$
D_0	1 for all other ratings of $I_{\Delta N}$		
D_2	3 max. rating I_N min. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$
E	3 max. rating I_N min. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$
F	3 max. rating I_N min. rating $I_{\Delta N}$ 3 min. rating I_N max. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$ 3 min. rating I_N max. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$ 3 min. rating I_N max. rating $I_{\Delta N}$
G [j)]	3 max. rating I_N min. rating $I_{\Delta N}$ 3 min. rating I_N max. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$ 3 min. rating I_N max. rating $I_{\Delta N}$	3 max. rating I_N min. rating $I_{\Delta N}$ 3 min. rating I_N max. rating $I_{\Delta N}$
H			3 [h)] samples of the same rating I_N chosen at random min. rating $I_{\Delta N}$
I			3 [h)] samples of the same rating I_N chosen at random min. rating $I_{\Delta N}$
J			3 [h)] samples of the same rating I_N chosen at random min. rating $I_{\Delta N}$
a) If a test is to be repeated according to the minimum performance criteria of clause A.2, a new set of samples is used for the relevant test. In the repeated test all test results must be acceptable.			

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Clause	Requirement + Test	Result - Remark	Verdict

b) If only 3-pole or 4-pole RCCBs are submitted, this column shall also apply to a set of samples with the smallest number of poles.
c) Also applicable to 1-pole RCCBs with uninterrupted neutral and 2-pole RCCBs with 1 protected pole.
d) Also applicable to 3-pole RCCBs with two protected poles
e) Also applicable to 3-pole RCCBs with uninterrupted neutral and 4-pole RCCBs with 3 protected poles.
f) This column is omitted when 4-pole RCCBs have been tested.
g) If only one value of $I_{\Delta N}$ is submitted, min. rating $I_{\Delta N}$ and max. rating $I_{\Delta N}$ are replaced by $I_{\Delta N}$.
h) Only the highest number of current paths.
i) If a 3-pole RCCB with 4 current paths and a 4-pole RCCB are submitted, then only the 4-pole RCCB is tested,
with exception of the test of 9.8 of test sequence B for which both types are submitted to the test.
j) if the requirement to test max. rating In and minimum rating $I_{\Delta N}$ does not cover all the possible range of RCBOs, the minimum
$I_{\Delta N}$ shall in any case be chosen for the test.

Table A.4 - Test sequences for RCCBs of different classification according to 4.6

Test sequence	Number of samples according to the number of poles [a]		
	2-pole [b) c)]	3-pole [e)]	4-pole [d)]
$D_0 + D_1$	1 max. rating I_N min. rating $I_{\Delta N}$	1 max. rating I_N min. rating $I_{\Delta N}$	1 max. rating I_N min. rating $I_{\Delta N}$
D_0	1 for all other ratings of $I_{\Delta N}$ with max. $I_{\Delta N}$		

a) If a test is to be repeated according to the minimum performance criteria of clause A.2, a new set of samples is used for the relevant test. In the repeated test all test results must be acceptable.

b) If only 3-pole or 4-pole RCCBs are submitted, this column shall also apply to a set of samples with the smallest number of poles.

c) Also applicable to 1-pole RCCBs with uninterrupted neutral.

d) Also applicable to 3-pole RCCBs with uninterrupted neutral.

e) This column is omitted when 4-pole RCCBs are being tested.

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Clause	Requirement + Test	Result - Remark	Verdict

Annex nº 1

ATTACHMENT TO TEST REPORT IEC 61008-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs)

Differences according to.....: EN 61008-1:2012+A1:2014+A2:2014 used in conjunction with EN 61008-2-1:1994 + A11:1998

modify:	**TEST SEQUENCE "G_0"** **In=63A IΔn =30mA 1P+N A type**	**G_{0-1}**	**G_{0-2}**	**G_{0-3}**	P
9.22	VERIFICATION OF RELIABILITY				P
9.22.1	Climatic test				P

modify:	**TEST SEQUENCE "G_0"** **In=16A IΔn =300mA 1P+N A type**	**G_{0-7}**	**G_{0-8}**	**G_{0-9}**	P
9.22	VERIFICATION OF RELIABILITY				P
9.22.1	Climatic test				P

modify:	**TEST SEQUENCE "G_0"** **In=63A IΔn =30mA 3P+N A type**	**G_{0-4}**	**G_{0-5}**	**G_{0-6}**	P
9.22	VERIFICATION OF RELIABILITY				P
9.22.1	Climatic test				P

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Clause	Requirement + Test	Result - Remark	Verdict

modify:	**TEST SEQUENCE "G_0"** **In=16A IΔn =300mA 3P+N A type**	**G_{0-10}**	**G_{0-11}**	**G_{0-12}**	P
9.22	VERIFICATION OF RELIABILITY				P
9.22.1	Climatic test				P

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Clause	Requirement + Test	Result - Remark	Verdict

	TEST SEQUENCE "G_1" (add the new test sequence) In=63A IΔn =30mA 1P+N A type	**#1**	**#2**	**#3**	
8	requirements for construction and operation				--
add: 8.Z1	BEHAVIOUR OF RCCBS AT LOW AMBIENT AIR TEMPERATURE				**--**
	RCCBs for use between -25°C and +40°C operate reliably at low ambient air temperature				P
add: 9.Z1	VERIFICATION OF THE CORRECT OPERATION AT LOW AMBIENT AIR TEMPERATURE FOR RCCBS FOR USE AT TEMPERATURES BETWEEN -25° C AND +40° C				**--**
	RCCBs mounted in enclosure with degree of protection IP 55 and connected for normal use				N/A
	RCCBs in a test chamber at +23°C ± 2°C and rH 90% ± 3%				P
	RCCBs in ON-position without load				P
	Five test cycles performed acc. to figure Z6				P
	No tripping during cycles				P
	At the end of last 6 h period at -25°C an a.c. residual current is passed through one pole (see figure 4a)				P
	- general type:	[ms]	[ms]	[ms]	--
	break time at 1,25 $I_{\Delta N}$ not exceeding the value for $I_{\Delta N}$ in table 1	25	24	22	P
	- S-type:	[ms]	[ms]	[ms]	--
	break time at 2,5 $I_{\Delta N}$ not exceeding the value for 2 $I_{\Delta N}$ in table 1				N/A
	Additionally for RCCBs of type A:				P
	Break time with pulsating d.c. residual currents of				P
	- 1,25 $I_{\Delta N}$ (general type)				P
	- 2,5 $I_{\Delta N}$ (S-type)				N/A
	Multiplied by:	[ms]	[ms]	[ms]	--
	1,4 for $I_{\Delta N}$ > 0,01 A	24	25	27	P
	2 for $I_{\Delta N} \leq$ 0,01 A				N/A
	at α = 0°el (test circuit figure 4b)				P
	After test possible to switch on the RCCB without presence of residual current				P

IEC 61008-1			
Clause	Requirement + Test	Result - Remark	Verdict

	TEST SEQUENCE "G_1" (add the new test sequence) **In=16A IΔn =300mA 1P+N A type**	**#4**	**#5**	**#6**	
8	requirements for construction and operation				--
add: 8.Z1	BEHAVIOUR OF RCCBS AT LOW AMBIENT AIR TEMPERATURE				**--**
	RCCBs for use between -25°C and +40°C operate reliably at low ambient air temperature				P
add: 9.Z1	VERIFICATION OF THE CORRECT OPERATION AT LOW AMBIENT AIR TEMPERATURE FOR RCCBS FOR USE AT TEMPERATURES BETWEEN -25° C AND +40° C				**--**
	RCCBs mounted in enclosure with degree of protection IP 55 and connected for normal use				N/A
	RCCBs in a test chamber at +23°C ± 2°C and rH 90% ± 3%				P
	RCCBs in ON-position without load				P
	Five test cycles performed acc. to figure Z6				P
	No tripping during cycles				P
	At the end of last 6 h period at -25°C an a.c. residual current is passed through one pole (see figure 4a)				P
	- general type:	[ms]	[ms]	[ms]	--
	break time at 1,25 $I_{\Delta N}$ not exceeding the value for $I_{\Delta N}$ in table 1	26	27	26	P
	- S-type:	[ms]	[ms]	[ms]	--
	break time at 2,5 $I_{\Delta N}$ not exceeding the value for 2 $I_{\Delta N}$ in table 1				N/A
	Additionally for RCCBs of type A:				P
	Break time with pulsating d.c. residual currents of				P
	- 1,25 $I_{\Delta N}$ (general type)				P
	- 2,5 $I_{\Delta N}$ (S-type)				N/A
	Multiplied by:	[ms]	[ms]	[ms]	--
	1,4 for $I_{\Delta N}$ > 0,01 A	28	15	24	P
	2 for $I_{\Delta N} \leq$ 0,01 A				N/A
	at α = 0°el (test circuit figure 4b)				P
	After test possible to switch on the RCCB without presence of residual current				P

IEC 61008-1			
Clause	Requirement + Test	Result - Remark	Verdict

	TEST SEQUENCE "G_1" (add the new test sequence) **In=63A IΔn =30mA 3P+N A type**	**#7**	**#8**	**#9**	
8	requirements for construction and operation				--
add: 8.Z1	BEHAVIOUR OF RCCBS AT LOW AMBIENT AIR TEMPERATURE				**--**
	RCCBs for use between -25°C and +40°C operate reliably at low ambient air temperature				P
add: 9.Z1	VERIFICATION OF THE CORRECT OPERATION AT LOW AMBIENT AIR TEMPERATURE FOR RCCBS FOR USE AT TEMPERATURES BETWEEN -25° C AND +40° C				**--**
	RCCBs mounted in enclosure with degree of protection IP 55 and connected for normal use				N/A
	RCCBs in a test chamber at +23°C ± 2°C and rH 90% ± 3%				P
	RCCBs in ON-position without load				P
	Five test cycles performed acc. to figure Z6				P
	No tripping during cycles				P
	At the end of last 6 h period at -25°C an a.c. residual current is passed through one pole (see figure 4a)				P
	- general type:	[ms]	[ms]	[ms]	--
	break time at 1,25 $I_{\Delta N}$ not exceeding the value for $I_{\Delta N}$ in table 1	25	26	25	P
	- S-type:	[ms]	[ms]	[ms]	--
	break time at 2,5 $I_{\Delta N}$ not exceeding the value for 2 $I_{\Delta N}$ in table 1				N/A
	Additionally for RCCBs of type A:				P
	Break time with pulsating d.c. residual currents of				P
	- 1,25 $I_{\Delta N}$ (general type)				P
	- 2,5 $I_{\Delta N}$ (S-type)				N/A
	Multiplied by:	[ms]	[ms]	[ms]	--
	1,4 for $I_{\Delta N}$ > 0,01 A	23	25	34	P
	2 for $I_{\Delta N} \leq$ 0,01 A				N/A
	at α = 0°el (test circuit figure 4b)				P
	After test possible to switch on the RCCB without presence of residual current				P

IEC 61008-1			
Clause	Requirement + Test	Result - Remark	Verdict

	TEST SEQUENCE "G_1" (add the new test sequence) In=16A IΔn =300mA 3P+N A type	**#10**	**#11**	**#12**	
8	requirements for construction and operation				--
add: 8.Z1	BEHAVIOUR OF RCCBS AT LOW AMBIENT AIR TEMPERATURE				**--**
	RCCBs for use between -25°C and +40°C operate reliably at low ambient air temperature				P
add: 9.Z1	VERIFICATION OF THE CORRECT OPERATION AT LOW AMBIENT AIR TEMPERATURE FOR RCCBS FOR USE AT TEMPERATURES BETWEEN -25° C AND +40° C				**--**
	RCCBs mounted in enclosure with degree of protection IP 55 and connected for normal use				N/A
	RCCBs in a test chamber at +23°C ± 2°C and rH 90% ± 3%				P
	RCCBs in ON-position without load				P
	Five test cycles performed acc. to figure Z6				P
	No tripping during cycles				P
	At the end of last 6 h period at -25°C an a.c. residual current is passed through one pole (see figure 4a)				P
	- general type:	[ms]	[ms]	[ms]	--
	break time at 1,25 $I_{\Delta N}$ not exceeding the value for $I_{\Delta N}$ in table 1	25	24	28	P
	- S-type:	[ms]	[ms]	[ms]	--
	break time at 2,5 $I_{\Delta N}$ not exceeding the value for 2 $I_{\Delta N}$ in table 1				N/A
	Additionally for RCCBs of type A:				P
	Break time with pulsating d.c. residual currents of				P
	- 1,25 $I_{\Delta N}$ (general type)				P
	- 2,5 $I_{\Delta N}$ (S-type)				N/A
	Multiplied by:	[ms]	[ms]	[ms]	--
	1,4 for $I_{\Delta N}$ > 0,01 A	24	15	19	P
	2 for $I_{\Delta N} \leq$ 0,01 A				N/A
	at α = 0°el (test circuit figure 4b)				P
	After test possible to switch on the RCCB without presence of residual current				P

IEC 61008-1			
Clause	Requirement + Test	Result - Remark	Verdict

Annex nº 2

ATTACHMENT TO TEST REPORT IEC 61008-1

Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs)

Differences according to.....: EN 61008-1:2012/A11:2015

	ANNEX ZB **Special national conditions**	N/A
Ireland	For RCCBs, functionally dependant on line voltage IEC 61008-2-2 applies in conjunction with Part 1.	N/A
Switzerland	In Switzerland, the use of RCCBs of type AC is not permitted.	N/A

IEC 61008-1			
Clause	Requirement + Test	Result - Remark	Verdict

Annex nº 3

ATTACHMENT TO TEST REPORT IEC 61008-1 Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs)
Differences according to.....: EN 61008-1:2012/A12:2017

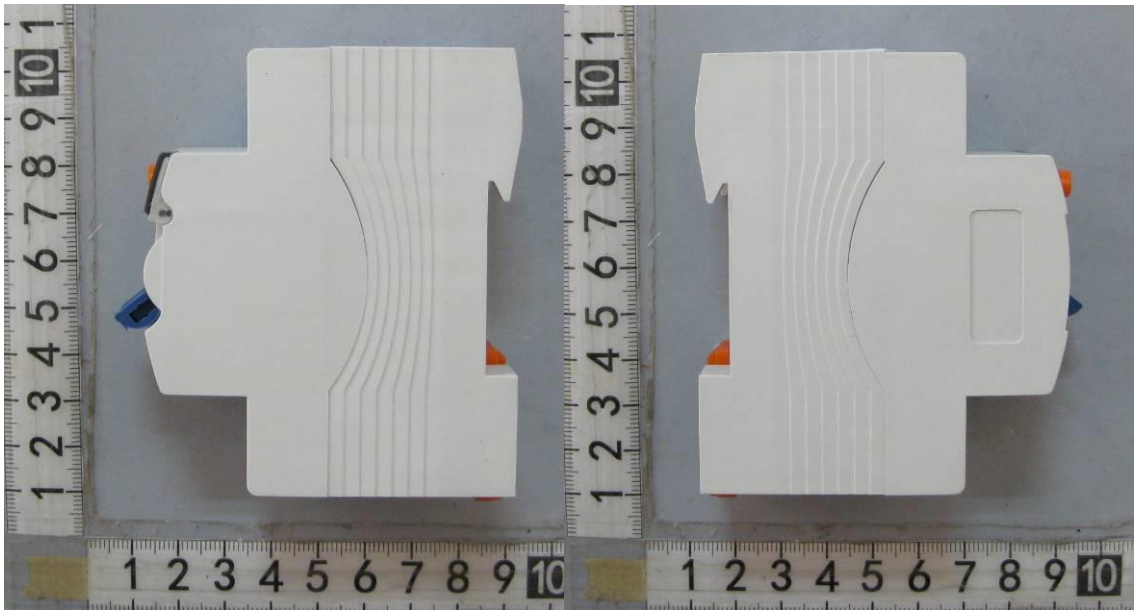
	ANNEX ZC **Special national conditions**	N/A
Belgium	The Belgian regulation for Electrical Installation (Art 251, part 5) requires that RCCB's≤ 40 A installed at the head-end in household electrical installation, upstream the firstovercurrent protection, shall withstand an I^2t value not less than 22,5 kA^2s at 3000 A andshall be additionally marked with at least the following data: "3000 A, 22,5 kA^2s".	N/A
	This marking shall remain visible after installation.	N/A

GYL10

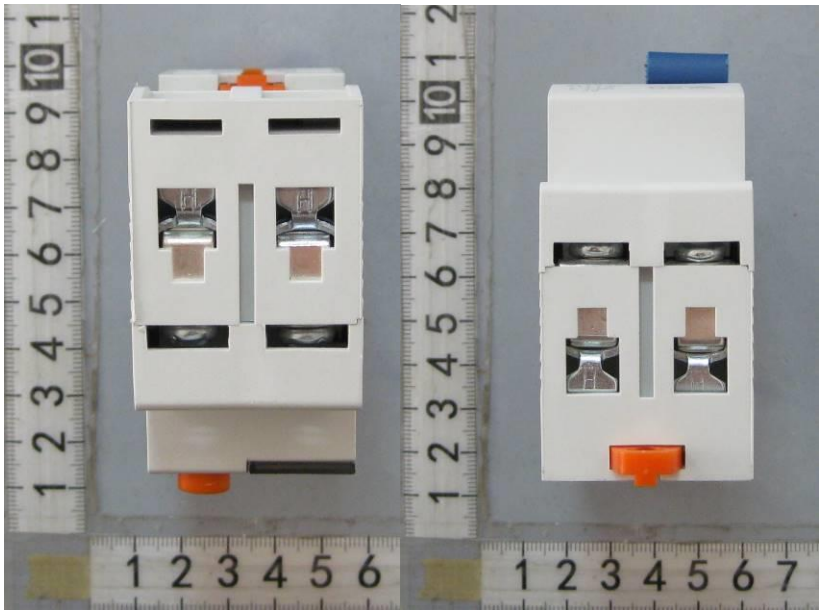
1P+N 63A A type 30mA

Over View

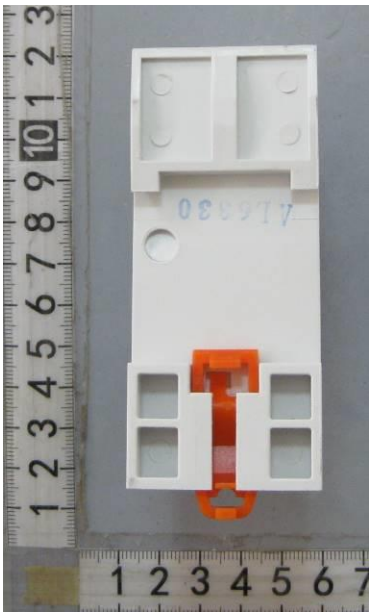
Side View



Side View

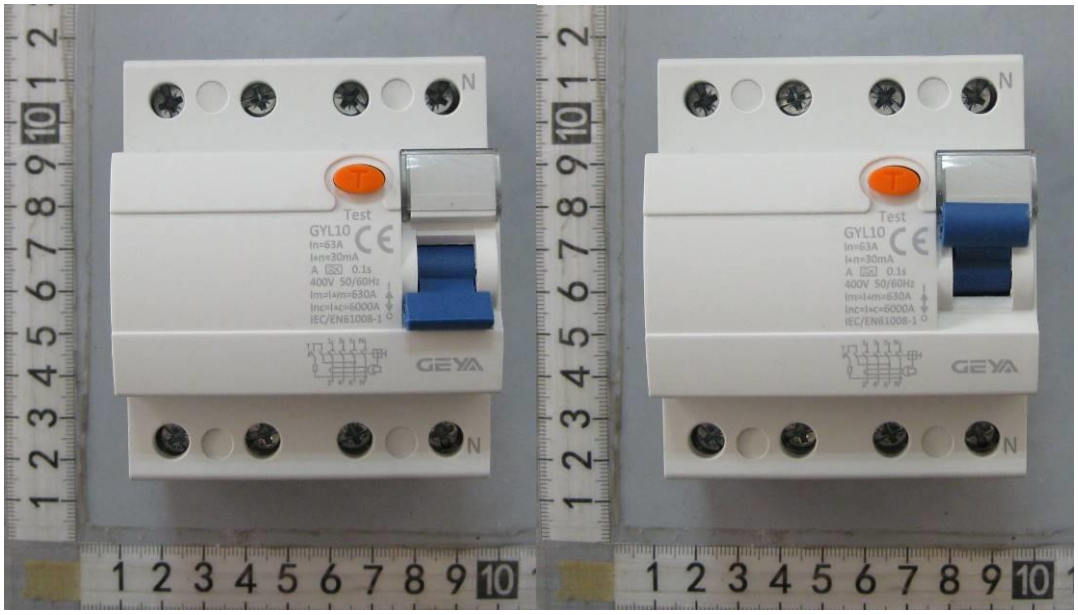


Bottom View

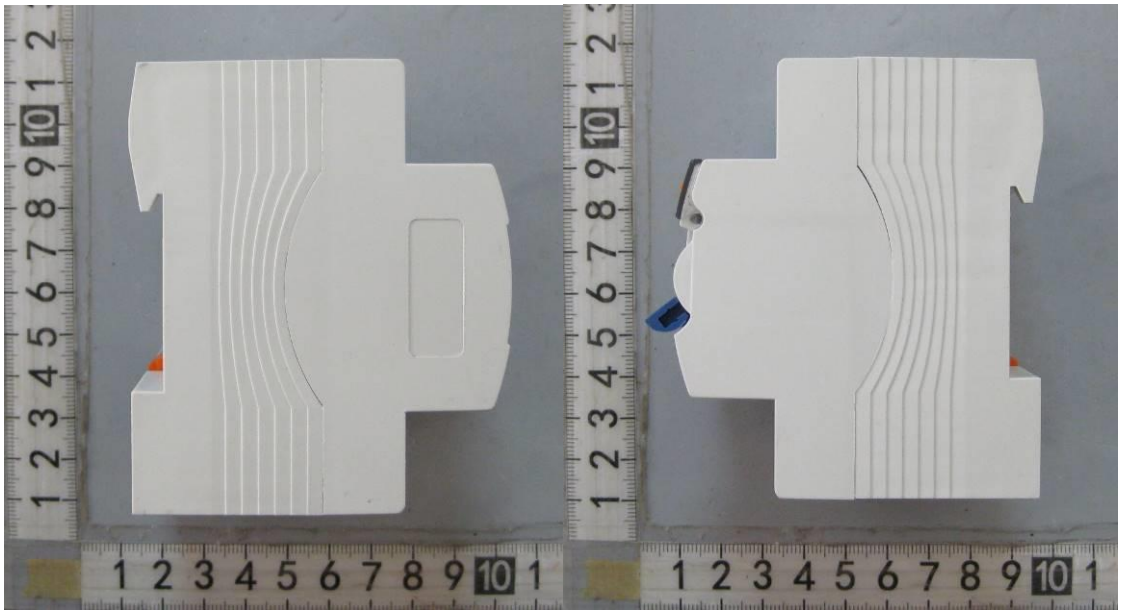


3P+N 63A A type 30mA

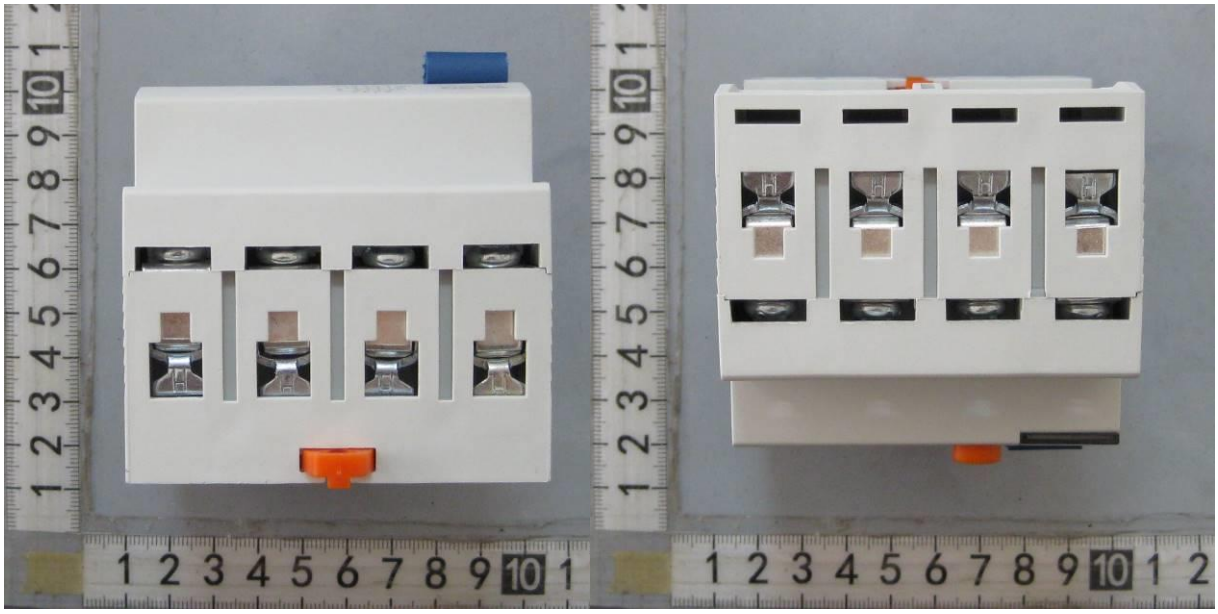
Over View



Side View



Side View



Bottom View