Type Test Report

TEST OBJECT	Solid dielectric automatic circuit recloser
DESIGNATION	BR10-PR-27 3 poles 27 kV 800 A 16 kA 3 s 50 Hz/60 Hz
APPLICANT	BH SYSTEM Co., Ltd. 9-6, LS-ro 166beon-gil, Gunpo-si, Gyeonggi-do, 15807, Republic of Korea
MANUFACTURER	BH SYSTEM Co., Ltd. 9-6, LS-ro 166beon-gil, Gunpo-si, Gyeonggi-do, 15807, Republic of Korea
DATE OF TESTS	2019-01-09 ~ 2019-08-23
ISSUED NUMBER	19TC201721

The test object, constructed complying with the description, drawings and photographs incorporated in this Type Test Report has been subjected to the series of type tests in accordance with

IEC 62271-111: 2012

The values obtained and the general performance are considered to comply with the above Standard and to justify the ratings as listed on page No.4.
This Type Test Report applies only to the test object. The responsibility for conformity of any object having the same designations with that tested rests with the Manufacturer.
This Type Test Report comprises 251 sheets in total.

Prepared by Kim, Ji-hwan

Approved by
(Technical manager) Kim, Geun-yong

Date of issue **2019-09-20**

President

[DF-HH-7081-03/01]

Summary of tests

Standard IEC 62271-111: 2012

	Test Item(s)	Comment
6.2	Dielectric tests	Pass
6.4	Measurement of the resistance of circuits	Pass
6.5	Temperature-rise tests	Pass
6.6	Short-time withstand current and peak withstand current tests	Pass
6.7	Verification of the protection	Pass
6.11	X-radiation test procedure for vacuum interrupters	Pass
6.101	Line charging current and cable charging currrent interruption tests	Pass
6.103	Rated symmetrical interrupting current tests	Pass
6.105	Minimum tripping current tests	Pass
6.106	Partial discharge (corona) tests	Pass
6.108	Time-current tests	Pass
6.109	Mechanical duty test	Pass
6.111	Control electronic elements surge withstand capability (SWC) tests	Pass

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Contents

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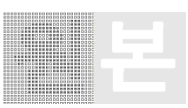
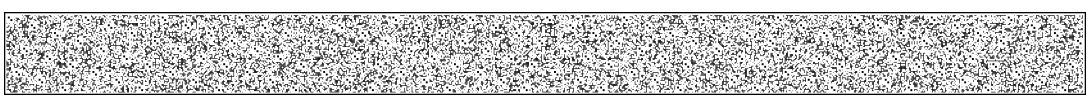
Ratings

Solid dielectric automatic circuit recloser

Number of poles	3 poles
Maximum voltage	27 kV
Normal current	800 A
Frequency	50 Hz/60 Hz
Power-frequency withstand voltage	60 kV
Lightning impulse withstand voltage	125 kV
Short-time withstand current	16 kA
Peak withstand current	41.6 kA
Duration of short-circuit	3 s
Short-circuit breaking current	16 kA
Short-circuit making current	41.6 kA
Operating sequence	O-0.5 s-CO-1 s-CO-1 s-CO
Line-charging and cable-charging current	
Line-charging	5 A
Cable-charging	25 A
Supply voltage	
Closing device	AC 220 V
Opening device	AC 220 V





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Identification of test object

Assigned by manufacturer

Solid dielectric automatic circuit recloser

Manufacturer	BH SYSTEM Co., Ltd.
Designation	BR10-PR-27
Serial No.	0001, 0002, 0003
Vacuum Interrupter	
Manufacturer	EATON
Designation	WL-36317
Serial No.	0001 : 09200000000139,09200000000125,09200000000130
	0002 : 09200000000158,09200000000119,09200000000127
	0003 : 09200000000150,09200000000143,09200000000153
Controller	
Manufacturer	BH SYSTEM Co., Ltd.
Designation	BR-10R
Serial No.	0001, 0002, 0003
Firmware version	2.40

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List of drawing(s)

The manufacturer has guaranteed that the test object submitted has been manufactured in accordance with the following drawings. KERI has verified that these drawings adequately represent the test object.
The following drawings have been included in this test report.

Ref. No.	Drawing No.(Rev. No.)	Title	Date
001	BH-2SREC-001(0)	Lay-out	2018-06-20
002	BH-2SREC-007(0)	Control cabinet	2018-06-20

The following drawings have been returned to the manufacturer and listed only for reference.

Ref. No.	Drawing No.(Rev. No.)	Title	Date
003	BH-2SREC-002(0)	Tank	2018-06-20
004	BH-2SREC-003(0)	Mechanism	2018-06-20
005	BH-2SREC-004(0)	Housing	2018-06-20
006	BH-2SREC-005(0)	CP, PT Position	2018-06-20
007	BH-2SREC-006(0)	Vacuum Interrupter	2018-06-20
008	BH-2SREC-008(0)	Inside control cabinet	2018-06-20
009	BH-2SREC-009(0)	Receptacle Diagram	2018-06-20
010	BH-2SREC-010(0)	Control Circuit Diagram	2018-06-20
011	BH-2SREC-011(0)	Connection Diagram	2018-06-20
012	BH-2SREC-012(0)	Name plate	2018-06-20
013	BH-2SREC-013(0)	Control name plate	2018-06-20
014	BH-2SREC-014(0)	NEMA Terminal	2018-06-20

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General

Tested by :

Kim, Kyung-hwan	KERI
Kim, Jung-yoon	KERI
Kim, Young-sung	KERI
Kim, Seung-min	KERI
Kwon, Tae-jin	KERI
Ryu, Jung-hyeon	KERI
Park, Young-ki	KERI

Witnessed by :

Cho, You-ho	BH SYSTEM Co., Ltd.
Jang, Byung-jo	BH SYSTEM Co., Ltd.

Measurement uncertainty

The measurement uncertainties listed below are the expanded uncertainties at the confidence level of approximately 95 % (coverage factor $k = 2$) guaranteed by KERI.

High power test

Current	5 %
Voltage	5 %

The others

The tests were carried out on the test object submitted by the applicant.

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Test results

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Test results

	Test item	Location	Page
23	Oscillatory and fast transient surge tests	KERI-C2	243
24	Simulated surge arrester operation test	KERI-C2	246

KERI-B1 : KERI High Power Evaluation Division(Changwon)

KERI-C2 : KERI High Voltage Evaluation Division(Ansan)

Above test items marked with # were performed at the applicant's designated site.

(#, Name of test site : BH SYSTEM Co., Ltd)

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1. Power-frequency dry voltage withstand tests

Test Date 2019-05-07

Test conditions

Serial no.	0002
Atmospheric conditions	18.3 °C, 26.0 % R.H., 1 023.5 hPa
Atmospheric correction factor	0.958
Specified test voltages	
Phase to earth and between phases	60 kV
Across open switching device	60 kV
Test frequency	60 Hz
Test duration	1 min

Test results

Voltage applications		Switching device	Test results
Phase to earth and between phases	Aa – BCbcF	Closed	Withstood
	Bb - ACacF		Withstood
	Cc – ABabF		Withstood
Across open switching device	A – BCabcF	Open	Withstood
	B – ACabcF		Withstood
	C – ABabcF		Withstood
	a – ABCbcF		Withstood
	b – ABCacF		Withstood
	c - ABCabF		Withstood

* A, B, C : Input terminals
* a, b, c : Output terminals
* F : Frame

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