

**CG Power and Industrial Solutions Limited****Switchgear Division: Power Systems**

A-3 MIDC, Ambad, Nashik 422 010, Maharashtra, India

T: +91 253 238 2271-75 F: +91 253 238 1247

TEST CERTIFICATE**FOR****SF6 GAS CIRCUIT BREAKER**

TYPE	120-SFM-32B
CUSTOMER	APPLIED PROJETCS LLC
P.O. No.	GCB-190123 DATED: 19.01.2023
W.O.No	SX8275
BREAKER SR.No.	X312995

RATING

RATED VOLTAGE	110	kV
RATED CURRENT	3150	A
RATED FREQUENCY	50	Hz
RATED SHORT CIRCUIT CURRENT	40	kA
RATED POWER FREQUENCY WITHSTAND VOLTAGE	275	kV
RATED IMPULSE WITHSTAND VOLTAGE	650	kV p
RATED SF6 GAS PRESSURE (AT 20 °C)	7.3	kg/sq cm - gauge
AUXILARY A.C CIRCUIT VOLTAGE	1 PH, 50 HZ, 230	V AC
CONTROL CIRCUIT VOLTAGE	220	VDC
RATED SHORT TIME CURRENT (FOR 3 SEC)	40	kA
RATED OPERATING CYCLE	0-0.3SEC-CO-3MIN-CO	

This is to certify that the above circuit breaker has been tested for routine tests in accordance with the relevant clauses of **IEC 62271-100** insofar as they are applicable and has passed the tests successfully.

For CG Power and Industrial Solutions Ltd.

DATE-11-07-2023

for Q.A. DEPARTMENT

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FORMAT NO : S3/FT-03



CG Power and Industrial Solutions Limited

Switchgear Division: Power Systems

A-3 MIDC, Ambad, Nashik 422 010, Maharashtra, India

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ROUTINE TESTS

BREAKER SR. NO.: X312995

1) MECHANICAL OPERATION TESTS:

a	At minimum control voltage (5 open and close operations)	154/187	V D.C
b	At maximum control voltage (5 open and close operations)	242	V D.C
c	At rated control voltage (5 open and close operations)	220	V D.C

RESULT: All operations were satisfactory and no part has sustained damage.

2) POWER FREQUENCY DRY VOLTAGE WITHSTAND TESTS:

Location of applied voltage	Applied voltage	Remark
Live parts to Ground & Between Terminals	275KV FOR 1MIN	Withstood
Control and Auxiliary Circuit to Ground	2KV FOR 1SEC	Withstood

3) RESISTANCE OF THE MAIN CIRCUIT:

PHASE R	29.2	micro ohms
PHASE Y	28.8	micro ohms
PHASE B	29.1	micro ohms

4) GAS PRESSURE SWITCHES

Operations checked and found **satisfactory**.

ADDITIONAL INFORMATION :

SF6 GAS LEAK TEST	Satisfactory
CONSTRUCTION, DIMENSIONS, CONTROL AND AUXILIARY WIRING CHECK AS PER APPROVED DRAWINGS	Satisfactory

ATTACHED ANNEXURE-A



ANNEXURE-A

RESULTS OF SPEED-TIME TEST

Type	120-SFM-32B
W.O.	SX8275
Sr.No.	X312995

Control voltage (VDC)	Operation	Timing in (msec)			Mismatch in msec	Speed (m/s)
		R / A	Y / B	B / C		
220	C	89.2	88.4	88.7	0.8	2.16
242	Cmax	88.1	88.2	87.9	0.3	2.24
187	Cmin	89.7	89.5	90.4	0.9	2.16
220	CO	44.6	45.1	45.1	NA	NA
220	OCO	230.2	230.2	229.2	NA	NA
220	O	28.3	28.1	28.2	0.2	4.70
242	Omax	26.1	26.3	26.3	0.2	4.69
154	Omin	30.7	31.4	31.3	0.7	4.80

For CGPISL

For QA dept.

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TEST CERTIFICATE**FOR****SF6 GAS CIRCUIT BREAKER**

TYPE	120-SFM-32B
CUSTOMER	APPLIED PROJETCS LLC
P.O. No.	GCB-190123 DATED: 19.01.2023
W.O.No	SX8275
BREAKER SR.No.	X312996

RATING

RATED VOLTAGE	110	kV
RATED CURRENT	3150	A
RATED FREQUENCY	50	Hz
RATED SHORT CIRCUIT CURRENT	40	kA
RATED POWER FREQUENCY WITHSTAND VOLTAGE	275	kV
RATED IMPULSE WITHSTAND VOLTAGE	650	kV p
RATED SF6 GAS PRESSURE (AT 20 °C)	7.3	kg/sq cm - gauge
AUXILIARY A.C CIRCUIT VOLTAGE	1PH,50HZ,230	V AC
CONTROL CIRCUIT VOLTAGE	220	VDC
RATED SHORT TIME CURRENT (FOR 3 SEC)	40	kA
RATED OPERATING CYCLE	0-0.3SEC-CO-3MIN-CO	

This is to certify that the above circuit breaker has been tested for routine tests in accordance with the relevant clauses of **IEC 62271-100** insofar as they are applicable and has passed the tests successfully.

For CG Power and Industrial Solutions Ltd.

DATE-06-07-2024

for Q.A. DEPARTMENT

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FORMAT NO : S3/FT-03



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A-3 MIDC, Ambad, Nashik 422 010, Maharashtra, India

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ROUTINE TESTS

BREAKER SR. NO.: X312996

1) MECHANICAL OPERATION TESTS:

a	At minimum control voltage (5 open and close operations)	154/187	V D.C
b	At maximum control voltage (5 open and close operations)	242	V D.C
c	At rated control voltage (5 open and close operations)	220	V D.C

RESULT: All operations were satisfactory and no part has sustained damage.

2) POWER FREQUENCY DRY VOLTAGE WITHSTAND TESTS:

Location of applied voltage	Applied voltage	Remark
Live parts to Ground & Between Terminals	275KV FOR 1MIN	Withstood
Control and Auxiliary Circuit to Ground	2KV FOR 1SEC	Withstood

3) RESISTANCE OF THE MAIN CIRCUIT:

PHASE R	29.4	micro ohms
PHASE Y	28.9	micro ohms
PHASE B	29.5	micro ohms

4) GAS PRESSURE SWITCHES

Operations checked and found **satisfactory**.

ADDITIONAL INFORMATION :

SF6 GAS LEAK TEST	Satisfactory
CONSTRUCTION, DIMENSIONS, CONTROL AND AUXILIARY WIRING CHECK AS PER APPROVED DRAWINGS	Satisfactory

ATTACHED ANNEXURE-A



ANNEXURE-A

RESULTS OF SPEED-TIME TEST

Type	120-SFM-32B
W.O.	SX8275
Sr.No.	X312996

Control voltage (VDC)	Operation	Timing in (msec)			Mismatch in msec	Speed (m/s)
		R / A	Y / B	B / C		
220	C	89.0	89.1	88.5	0.6	2.19
242	Cmax	87.4	88.3	87.5	0.9	2.20
187	Cmin	89.4	90.0	89.9	0.6	2.16
220	CO	45.9	45.1	46.0	NA	NA
220	OCO	228.0	227.5	228.2	NA	NA
220	O	25.7	25.8	26.2	0.5	4.78
242	Omax	25.4	24.5	25.4	0.9	4.77
154	Omin	29.6	29.5	29.9	0.4	4.74

For CGPISL

For QA dept.

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TEST CERTIFICATE**FOR****SF6 GAS CIRCUIT BREAKER**

TYPE	120-SFM-32B
CUSTOMER	APPLIED PROJETCS LLC
P.O. No.	GCB-190123 DATED: 19.01.2023
W.O.No	SX8275
BREAKER SR.No.	X312997

RATING

RATED VOLTAGE	110	kV
RATED CURRENT	3150	A
RATED FREQUENCY	50	Hz
RATED SHORT CIRCUIT CURRENT	40	kA
RATED POWER FREQUENCY WITHSTAND VOLTAGE	275	kV
RATED IMPULSE WITHSTAND VOLTAGE	650	kV p
RATED SF6 GAS PRESSURE (AT 20 °C)	7.3	kg/sq cm - gauge
AUXILARY A.C CIRCUIT VOLTAGE	1PH,50HZ,230	V AC
CONTROL CIRCUIT VOLTAGE	220	VDC
RATED SHORT TIME CURRENT (FOR 3 SEC)	40	kA
RATED OPERATING CYCLE	0-0.3SEC-CO-3MIN-CO	

This is to certify that the above circuit breaker has been tested for routine tests in accordance with the relevant clauses of **IEC 62271-100** insofar as they are applicable and has passed the tests successfully.

For CG Power and Industrial Solutions Ltd.

DATE-06-07-2024

for Q.A. DEPARTMENT

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FORMAT NO : S3/FT-03

**ROUTINE TESTS**

BREAKER SR. NO.: X312997

1) MECHANICAL OPERATION TESTS:

a	At minimum control voltage (5 open and close operations)	154/187	V D.C
b	At maximum control voltage (5 open and close operations)	242	V D.C
c	At rated control voltage (5 open and close operations)	220	V D.C

RESULT: All operations were satisfactory and no part has sustained damage.

2) POWER FREQUENCY DRY VOLTAGE WITHSTAND TESTS:

Location of applied voltage	Applied voltage	Remark
Live parts to Ground & Between Terminals	275KV FOR 1MIN	Withstood
Control and Auxiliary Circuit to Ground	2KV FOR 1SEC	Withstood

3) RESISTANCE OF THE MAIN CIRCUIT:

PHASE R	29.7	micro ohms
PHASE Y	28.6	micro ohms
PHASE B	29.2	micro ohms

4) GAS PRESSURE SWITCHESOperations checked and found **satisfactory**.**ADDITIONAL INFORMATION :**

SF6 GAS LEAK TEST	Satisfactory
CONSTRUCTION, DIMENSIONS, CONTROL AND AUXILIARY WIRING CHECK AS PER APPROVED DRAWINGS	Satisfactory

ATTACHED ANNEXURE-A



ANNEXURE-A

RESULTS OF SPEED-TIME TEST

Type	120-SFM-32B				
W.O.	SX8275				
Sr.No.	X312997				

Control voltage (VDC)	Operation	Timing in (msec)			Mismatch in msec	Speed (m/s)
		R / A	Y / B	B / C		
220	C	95.9	95.7	95.3	0.6	2.22
242	Cmax	94.3	94.4	95.1	0.8	2.20
187	Cmin	96.8	96.2	96.5	0.6	2.17
220	CO	44.1	44.7	44.0	NA	NA
220	OCO	226.4	227.0	226.3	NA	NA
220	O	26.0	26.2	25.4	0.8	4.73
242	Omax	24.4	25.2	24.7	0.8	4.73
154	Omin	29.2	29.2	29.7	0.5	4.81

For CGPISL

For QA dept.

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TEST CERTIFICATE**FOR****SF6 GAS CIRCUIT BREAKER**

TYPE	120-SFM-32B
CUSTOMER	APPLIED PROJETCS LLC
P.O. No.	GCB-190123 DATED: 19.01.2023
W.O.No	SX8275
BREAKER SR.No.	X312998

RATING

RATED VOLTAGE	110	kV
RATED CURRENT	3150	A
RATED FREQUENCY	50	Hz
RATED SHORT CIRCUIT CURRENT	40	kA
RATED POWER FREQUENCY WITHSTAND VOLTAGE	275	kV
RATED IMPULSE WITHSTAND VOLTAGE	650	kV p
RATED SF6 GAS PRESSURE (AT 20 °C)	7.3	kg/sq cm - gauge
AUXILARY A.C CIRCUIT VOLTAGE	1PH,50HZ,230	V AC
CONTROL CIRCUIT VOLTAGE	220	VDC
RATED SHORT TIME CURRENT (FOR 3 SEC)	40	kA
RATED OPERATING CYCLE	0-0.3SEC-CO-3MIN-CO	

This is to certify that the above circuit breaker has been tested for routine tests in accordance with the relevant clauses of **IEC 62271-100** insofar as they are applicable and has passed the tests successfully.

For CG Power and Industrial Solutions Ltd.

DATE-08-07-2024

for Q.A. DEPARTMENT

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CG Power and Industrial Solutions Limited

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ROUTINE TESTS

BREAKER SR. NO.: X312998

1) MECHANICAL OPERATION TESTS:

a	At minimum control voltage (5 open and close operations)	154/187	V D.C
b	At maximum control voltage (5 open and close operations)	242	V D.C
c	At rated control voltage (5 open and close operations)	220	V D.C

RESULT: All operations were satisfactory and no part has sustained damage.

2) POWER FREQUENCY DRY VOLTAGE WITHSTAND TESTS:

Location of applied voltage	Applied voltage	Remark
Live parts to Ground & Between Terminals	275KV FOR 1MIN	Withstood
Control and Auxiliary Circuit to Ground	2KV FOR 1SEC	Withstood

3) RESISTANCE OF THE MAIN CIRCUIT:

PHASE R	28.8	micro ohms
PHASE Y	29.5	micro ohms
PHASE B	30.0	micro ohms

4) GAS PRESSURE SWITCHES

Operations checked and found **satisfactory**.

ADDITIONAL INFORMATION :

SF6 GAS LEAK TEST	Satisfactory
CONSTRUCTION, DIMENSIONS, CONTROL AND AUXILIARY WIRING CHECK AS PER APPROVED DRAWINGS	Satisfactory

ATTACHED ANNEXURE-A



ANNEXURE-A

RESULTS OF SPEED-TIME TEST

Type	120-SFM-32B				
W.O.	SX8275				
Sr.No.	X312998				

Control voltage (VDC)	Operation	Timing in (msec)			Mismatch in msec	Speed (m/s)
		R / A	Y / B	B / C		
220	C	92.3	92.2	92.7	0.5	2.16
242	Cmax	90.5	90.0	90.7	0.7	2.22
187	Cmin	93.0	93.4	92.8	0.6	2.19
220	CO	43.5	44.3	44.3	NA	NA
220	OCO	230.4	230.4	230.4	NA	NA
220	O	28.4	28.2	28.2	0.2	4.70
242	Omax	26.8	26.9	27.0	0.2	4.72
154	Omin	29.5	29.6	29.2	0.4	4.79

For CGPISL

For QA dept.

**TEST CERTIFICATE****FOR****SF6 GAS CIRCUIT BREAKER**

TYPE	120-SFM-32B
CUSTOMER	APPLIED PROJETCS LLC
P.O. No.	GCB-190123 DATED: 19.01.2023
W.O.No	SX8275
BREAKER SR.No.	X312999

RATING

RATED VOLTAGE	110	kV
RATED CURRENT	3150	A
RATED FREQUENCY	50	Hz
RATED SHORT CIRCUIT CURRENT	40	kA
RATED POWER FREQUENCY WITHSTAND VOLTAGE	275	kV
RATED IMPULSE WITHSTAND VOLTAGE	650	kV p
RATED SF6 GAS PRESSURE (AT 20 °C)	7.3	kg/sq cm - gauge
AUXILIARY A.C CIRCUIT VOLTAGE	1PH,50HZ,230	V AC
CONTROL CIRCUIT VOLTAGE	220	VDC
RATED SHORT TIME CURRENT (FOR 3 SEC)	40	kA
RATED OPERATING CYCLE	0-0.3SEC-CO-3MIN-CO	

This is to certify that the above circuit breaker has been tested for routine tests in accordance with the relevant clauses of **IEC 62271-100** insofar as they are applicable and has passed the tests successfully.

For CG Power and Industrial Solutions Ltd.

DATE-09-07-2024

for Q.A. DEPARTMENT

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FORMAT NO : S3/FT-03



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ROUTINE TESTS

BREAKER SR. NO.: X312999

1) MECHANICAL OPERATION TESTS:

a	At minimum control voltage (5 open and close operations)	154/187	V D.C
b	At maximum control voltage (5 open and close operations)	242	V D.C
c	At rated control voltage (5 open and close operations)	220	V D.C

RESULT: All operations were satisfactory and no part has sustained damage.

2) POWER FREQUENCY DRY VOLTAGE WITHSTAND TESTS:

Location of applied voltage	Applied voltage	Remark
Live parts to Ground & Between Terminals	275KV FOR 1MIN	Withstood
Control and Auxiliary Circuit to Ground	2KV FOR 1SEC	Withstood

3) RESISTANCE OF THE MAIN CIRCUIT:

PHASE R	29.6	micro ohms
PHASE Y	31.4	micro ohms
PHASE B	30.2	micro ohms

4) GAS PRESSURE SWITCHES

Operations checked and found **satisfactory**.

ADDITIONAL INFORMATION :

SF6 GAS LEAK TEST	Satisfactory
CONSTRUCTION, DIMENSIONS, CONTROL AND AUXILIARY WIRING CHECK AS PER APPROVED DRAWINGS	Satisfactory

ATTACHED ANNEXURE-A



ANNEXURE-A

RESULTS OF SPEED-TIME TEST

Type	120-SFM-32B
W.O.	SX8275
Sr.No.	X312999

Control voltage (VDC)	Operation	Timing in (msec)			Mismatch in msec	Speed (m/s)
		R / A	Y / B	B / C		
220	C	94.1	94.2	94.7	0.6	2.20
242	Cmax	94.3	93.8	93.9	0.5	2.21
187	Cmin	95.5	95.8	95.9	0.4	2.16
220	CO	39.5	39.5	40.1	NA	NA
220	OCO	231.6	232.2	231.7	NA	NA
220	O	28.1	27.2	28.2	1.0	4.78
242	Omax	26.8	26.1	27.1	1.0	4.74
154	Omin	29.7	30.3	30.4	0.7	4.81

For CGPL

For QA dept.

CG Power and Industrial Solutions Limited**Switchgear Division: Power Systems**

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**TEST CERTIFICATE****FOR****SF6 GAS CIRCUIT BREAKER**

TYPE	120-SFM-32B
CUSTOMER	APPLIED PROJETCS LLC
P.O. No.	GCB-190123 DATED: 19.01.2023
W.O.No	SX8275
BREAKER SR.No.	X313000

RATING

RATED VOLTAGE	110	kV
RATED CURRENT	3150	A
RATED FREQUENCY	50	Hz
RATED SHORT CIRCUIT CURRENT	40	kA
RATED POWER FREQUENCY WITHSTAND VOLTAGE	275	kV
RATED IMPULSE WITHSTAND VOLTAGE	650	kV p
RATED SF6 GAS PRESSURE (AT 20 °C)	7.3	kg/sq cm - gauge
AUXILIARY A.C CIRCUIT VOLTAGE	1PH,50HZ,230	V AC
CONTROL CIRCUIT VOLTAGE	220	VDC
RATED SHORT TIME CURRENT (FOR 3 SEC)	40	kA
RATED OPERATING CYCLE	0-0.3SEC-CO-3MIN-CO	

This is to certify that the above circuit breaker has been tested for routine tests in accordance with the relevant clauses of **IEC 62271-100** insofar as they are applicable and has passed the tests successfully.

For CG Power and Industrial Solutions Ltd.

DATE-09-07-2024

for Q.A. DEPARTMENT

PAGE 1 OF 2

FORMAT NO : S3/FT-03

**ROUTINE TESTS**

BREAKER SR. NO.: X313000

1) MECHANICAL OPERATION TESTS:

a	At minimum control voltage (5 open and close operations)	154/187	V D.C
b	At maximum control voltage (5 open and close operations)	242	V D.C
c	At rated control voltage (5 open and close operations)	220	V D.C

RESULT: All operations were satisfactory and no part has sustained damage.

2) POWER FREQUENCY DRY VOLTAGE WITHSTAND TESTS:

Location of applied voltage	Applied voltage	Remark
Live parts to Ground & Between Terminals	275KV FOR 1MIN	Withstood
Control and Auxiliary Circuit to Ground	2KV FOR 1SEC	Withstood

3) RESISTANCE OF THE MAIN CIRCUIT:

PHASE R	32.8	micro ohms
PHASE Y	33.4	micro ohms
PHASE B	30.9	micro ohms

4) GAS PRESSURE SWITCHESOperations checked and found **satisfactory**.**ADDITIONAL INFORMATION :**

SF6 GAS LEAK TEST	Satisfactory
CONSTRUCTION, DIMENSIONS, CONTROL AND AUXILIARY WIRING CHECK AS PER APPROVED DRAWINGS	Satisfactory

ATTACHED ANNEXURE-A

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ANNEXURE-A

RESULTS OF SPEED-TIME TEST

Type	120-SFM-32B
W.O.	SX8275
Sr.No.	X31300

Control voltage (VDC)	Operation	Timing in (msec)			Mismatch in msec	Speed (m/s)
		R / A	Y / B	B / C		
220	C	95.6	95.7	96.4	0.8	2.19
242	Cmax	94.4	95.2	94.6	0.8	2.20
187	Cmin	96.6	97.2	96.5	0.7	2.14
220	CO	44.8	44.5	44.0	NA	NA
220	OCO	225.0	225.9	226.2	NA	NA
220	O	28.1	28.8	28.3	0.7	4.76
242	Omax	27.4	27.9	27.8	0.5	4.78
154	Omin	30.5	30.6	31.2	0.7	4.79

For CGPISL

For QA dept.

**TEST CERTIFICATE****FOR****SF6 GAS CIRCUIT BREAKER**

TYPE	120-SFM-32B
CUSTOMER	APPLIED PROJETCS LLC
P.O. No.	GCB-190123 DATED: 19.01.2023
W.O.No	SX8275
BREAKER SR.No.	X313001

RATING

RATED VOLTAGE	110	kV
RATED CURRENT	3150	A
RATED FREQUENCY	50	Hz
RATED SHORT CIRCUIT CURRENT	40	kA
RATED POWER FREQUENCY WITHSTAND VOLTAGE	275	kV
RATED IMPULSE WITHSTAND VOLTAGE	650	kV p
RATED SF6 GAS PRESSURE (AT 20 °C)	7.3	kg/sq cm - gauge
AUXILIARY A.C CIRCUIT VOLTAGE	1PH,50HZ,230	V AC
CONTROL CIRCUIT VOLTAGE	220	VDC
RATED SHORT TIME CURRENT (FOR 3 SEC)	40	kA
RATED OPERATING CYCLE	0-0.3SEC-CO-3MIN-CO	

This is to certify that the above circuit breaker has been tested for routine tests in accordance with the relevant clauses of **IEC 62271-100** insofar as they are applicable and has passed the tests successfully.

For CG Power and Industrial Solutions Ltd.

DATE-10-07-2024

for Q.A. DEPARTMENT

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Switchgear Division: Power Systems

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ROUTINE TESTS

BREAKER SR. NO.: X313001

1) MECHANICAL OPERATION TESTS:

a	At minimum control voltage (5 open and close operations)	154/187	V D.C
b	At maximum control voltage (5 open and close operations)	242	V D.C
c	At rated control voltage (5 open and close operations)	220	V D.C

RESULT: All operations were satisfactory and no part has sustained damage.

2) POWER FREQUENCY DRY VOLTAGE WITHSTAND TESTS:

Location of applied voltage	Applied voltage	Remark
Live parts to Ground & Between Terminals	275KV FOR 1MIN	Withstood
Control and Auxiliary Circuit to Ground	2KV FOR 1SEC	Withstood

3) RESISTANCE OF THE MAIN CIRCUIT:

PHASE R	31.6	micro ohms
PHASE Y	29.0	micro ohms
PHASE B	30.3	micro ohms

4) GAS PRESSURE SWITCHES

Operations checked and found **satisfactory**.

ADDITIONAL INFORMATION :

SF6 GAS LEAK TEST	Satisfactory
CONSTRUCTION, DIMENSIONS, CONTROL AND AUXILIARY WIRING CHECK AS PER APPROVED DRAWINGS	Satisfactory

ATTACHED ANNEXURE-A



ANNEXURE-A

RESULTS OF SPEED-TIME TEST

Type	120-SFM-32B			
W.O.	SX8275			
Sr.No.	X313001			

Control voltage (VDC)	Operation	Timing in (msec)			Mismatch in msec	Speed (m/s)
		R / A	Y / B	B / C		
220	C	86.1	85.4	85.3	0.8	2.19
242	Cmax	84.9	84.4	84.4	0.5	2.17
187	Cmin	86.4	86.9	86.8	0.5	2.15
220	CO	38.1	37.3	38.3	NA	NA
220	OCO	226.0	226.1	227.0	NA	NA
220	O	28.3	28.4	28.1	0.3	4.71
242	Omax	27.4	27.3	26.7	0.7	4.70
154	Omin	29.8	29.9	30.3	0.5	4.73

For CGPISL

For QA dept.

**TEST CERTIFICATE****FOR****SF6 GAS CIRCUIT BREAKER**

TYPE	120-SFM-32B
CUSTOMER	APPLIED PROJETCS LLC
P.O. No.	GCB-190123 DATED: 19.01.2023
W.O.No	SX8275
BREAKER SR.No.	X313002

RATING

RATED VOLTAGE	110	kV
RATED CURRENT	3150	A
RATED FREQUENCY	50	Hz
RATED SHORT CIRCUIT CURRENT	40	kA
RATED POWER FREQUENCY WITHSTAND VOLTAGE	275	kV
RATED IMPULSE WITHSTAND VOLTAGE	650	kV p
RATED SF6 GAS PRESSURE (AT 20 °C)	7.3	kg/sq cm - gauge
AUXILARY A.C CIRCUIT VOLTAGE	1PH,50HZ,230	V AC
CONTROL CIRCUIT VOLTAGE	220	VDC
RATED SHORT TIME CURRENT (FOR 3 SEC)	40	kA
RATED OPERATING CYCLE	0-0.3SEC-CO-3MIN-CO	

This is to certify that the above circuit breaker has been tested for routine tests in accordance with the relevant clauses of **IEC 62271-100** insofar as they are applicable and has passed the tests successfully.

For CG Power and Industrial Solutions Ltd.

DATE-10-07-2024

for Q.A. DEPARTMENT

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**ROUTINE TESTS**

BREAKER SR. NO.: X313002

1) MECHANICAL OPERATION TESTS:

a	At minimum control voltage (5 open and close operations)	154/187	V D.C
b	At maximum control voltage (5 open and close operations)	242	V D.C
c	At rated control voltage (5 open and close operations)	220	V D.C

RESULT: All operations were satisfactory and no part has sustained damage.

2) POWER FREQUENCY DRY VOLTAGE WITHSTAND TESTS:

Location of applied voltage	Applied voltage	Remark
Live parts to Ground & Between Terminals	275KV FOR 1MIN	Withstood
Control and Auxiliary Circuit to Ground	2KV FOR 1SEC	Withstood

3) RESISTANCE OF THE MAIN CIRCUIT:

PHASE R	28.5	micro ohms
PHASE Y	29.4	micro ohms
PHASE B	29.3	micro ohms

4) GAS PRESSURE SWITCHESOperations checked and found **satisfactory**.**ADDITIONAL INFORMATION :**

SF6 GAS LEAK TEST	Satisfactory
CONSTRUCTION, DIMENSIONS, CONTROL AND AUXILIARY WIRING CHECK AS PER APPROVED DRAWINGS	Satisfactory

ATTACHED ANNEXURE-A

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ANNEXURE-A

RESULTS OF SPEED-TIME TEST

Type	120-SFM-32B			
W.O.	SX8275			
Sr.No.	X313002			

Control voltage (VDC)	Operation	Timing in (msec)			Mismatch in msec	Speed (m/s)
		R / A	Y / B	B / C		
220	C	87.1	86.3	86.8	0.8	2.19
242	Cmax	85.8	85.5	86.4	0.9	2.17
187	Cmin	89.5	89.7	89.2	0.5	2.15
220	CO	41.2	41.2	41.0	NA	NA
220	OCO	228.0	227.1	227.2	NA	NA
220	O	28.4	28.3	28.1	0.3	4.71
242	Omax	28.3	27.9	27.4	0.9	4.70
154	Omin	30.3	30.3	30.7	0.4	4.73

For CGPISL

For QA dept.