

Date

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2024-01-17

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Scope of accreditation

Testing according to SS-EN ISO/IEC 17025:2018

Hitachi Energy Sweden AB

Ludvika

Accreditation number

1297

High Power Laboratory

A000448-002

Electrical testing

High power electrical testing

<i>Method</i>	<i>Parameter</i>	<i>Material</i>	<i>Flex</i>	<i>Type of flex</i>	<i>Field</i>	<i>Note</i>
ANSI/IEEE C62.11	Ageing	Arresters	Yes	2	No	sub-clause 7.2.2.3 and 8.5
	Electrical function verification	Arresters	Yes	2	No	sub-clause 8.2, 8.12, 8.13, 8.14, 8.15, 8.16, 8.17, 8.18 and 8.21
IEC 60044-6	Electrical current	Instrument transformers	Yes	2	No	sub-clause 7.3.2
IEC 60044-8	Electrical current	Instrument transformers	Yes	2	No	sub-clause 8.1
	Temperature rise	Instrument transformers	Yes	2	No	sub-clause 8.2
IEC 60076-5	Electrical current	Transformers	Yes	2	No	sub-clause 4
IEC 60076-6	Electrical current	Transformers	Yes	2	No	sub-clause 8.9.13, 9.10.10 and 12.8.18
IEC 60099-1	Electrical function verification	Arresters	Yes	2	No	sub-clause 8.7
IEC 60099-4	Ageing	Arresters	Yes	2	No	sub-clause 8.4, 8.6 and Annex B
	Electrical function verification	Arresters	Yes	2	No	sub-clause 7.2, 8.3, 8.4, 8.5, 8.7, 8.8, 8.9.1, 8.9.2, 8.10, 8.15, 10.8.10 and Annex H
IEC 60099-8	Electrical function verification	Arresters	Yes	2	No	sub-clause 6.8, 8.3, 8.5 and 8.6
IEC 60099-9	Ageing	Arresters	Yes	2	No	sub-clause 9.11, 9.13 and Annex A
	Electrical function verification	Arresters	Yes	2	No	sub-clause 8.2, 9.10, 9.12, 9.14, 9.15 Annex B
IEC 60137	Electrical current	Insulators	Yes	2	No	sub-clause 8.9
	Mechanical strength	Insulators	Yes	2	No	sub-clause 8.10
	Temperature rise	Insulators	Yes	2	No	sub-clause 8.8
	Tightness	Insulators	Yes	2	No	sub-clause 9.9
IEC 60143-2	Ageing	Arresters	Yes	2	No	sub-clause 4.3.3.2.4 and 4.3.3.2.7

Electrical testing

High power electrical testing

Method	Parameter	Material	Flex	Type of flex	Field	Note
IEC 60143-2	Electrical function verification	Arresters	Yes	2	No	sub-clause 4.3.3.2.2, 4.3.3.2.3, 4.3.3.2.5 and 4.3.3.2.6
IEC 60214-1	Electrical current	Tap changer	Yes	2	No	sub-clause 5.2.4
	Electrical function verification	Tap changer	Yes	2	No	sub-clause 5.2.3 and 5.2.5
	Temperature rise	Tap changer	Yes	2	No	sub-clause 5.2.2
IEC 60282-1	Electrical function verification	Switchgear	Yes	2	No	sub-clause 13 and 14
	Temperature rise	Switchgear	Yes	2	No	sub-clause 12
IEC 60282-2	Electrical function verification	Switchgear	Yes	2	No	sub-clause 8.6 and 8.7
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 8.8
	Temperature rise	Switchgear	Yes	2	No	sub-clause 8.5
IEC 60466	Electrical current	Switchgear	Yes	2	No	sub-clause 6.5
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 6.106
	Electrical voltage	Switchgear	Yes	2	No	sub-clause 6.1.10
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 6.102
	Resistance	Switchgear	Yes	2	No	sub-clause 6.4
	Temperature rise	Switchgear	Yes	2	No	sub-clause 6.3
IEC 61230	Electrical current	Switchgear	Yes	2	No	sub-clause 5.7
IEC 61467	Electrical function verification	Switchgear	Yes	2	No	
IEC 61869-1	Electrical function verification	Instrument transformers	Yes	2	No	sub-clause 6.9 and 7.4.6
	Mechanical strength	Instrument transformers	Yes	2	No	sub-clause 7.4.5
	Temperature rise	Instrument transformers	Yes	2	No	sub-clause 7.2.2
IEC 61869-2	Electrical current	Instrument transformers	Yes	2	No	sub-clause 7.2.201
	Electrical voltage	Instrument transformers	Yes	2	No	sub-clause 7.3.204
	Temperature rise	Instrument transformers	Yes	2	No	sub-clause 7.2.2.201 to 7.2.2.206
IEC 61869-3	Electrical current	Instrument transformers	Yes	2	No	sub-clause 7.2.301
	Temperature rise	Instrument transformers	Yes	2	No	sub-clause 7.2.2
IEC 61869-5	Electrical current	Instrument transformers	Yes	2	No	sub-clause 7.2.502 and 7.2.504

Electrical testing

High power electrical testing

<i>Method</i>	<i>Parameter</i>	<i>Material</i>	<i>Flex</i>	<i>Type of flex</i>	<i>Field</i>	<i>Note</i>
IEC 61869-5	Ferroresonance	Instrument transformers	Yes	2	No	sub-clause 7.2.503
	Temperature rise	Instrument transformers	Yes	2	No	sub-clause 7.2.2
IEC 62271-1	Electrical current	Switchgear	Yes	2	No	sub-clause 7.6
	Electrical voltage	Switchgear	Yes	2	No	sub-clause 7.10.5 and 7.2.12
	Resistance	Switchgear	Yes	2	No	sub-clause 7.4.4
	Temperature rise	Switchgear	Yes	2	No	sub-clause 7.5
	Tightness	Switchgear	Yes	2	No	sub-clause 7.8
IEC 62271-100	Electrical current	Switchgear	Yes	2	No	sub-clause 7.6
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 7.102 to 7.112
	Electrical voltage	Switchgear	Yes	2	No	sub-clause 7.2.11 and 7.2.12
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 7.101.2
		Switchgear	Yes	2	Yes	sub-clause 7.101.3 and 7.101.5
	Mechanical strength	Switchgear	Yes	2	No	sub-clause 6.106
	Resistance	Switchgear	Yes	2	No	sub-clause 7.4
	Temperature rise	Switchgear	Yes	2	No	sub-clause 7.5
Tightness	Switchgear	Yes	2	No	sub-clause 7.8	
IEC 62271-101	Electrical function verification	Switchgear	Yes	2	No	
IEC 62271-102	Electrical current	Switchgear	Yes	2	No	sub-clause 7.6
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 7.101, 7.106 and 7.107
	Electrical voltage	Switchgear	Yes	2	No	sub-clause 7.10 and 7.2.12
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 7.102
		Switchgear	Yes	2	Yes	sub-clause 7.103 and 7.104
	Mechanical strength	Switchgear	Yes	2	No	sub-clause 7.6
	Resistance	Switchgear	Yes	2	No	sub-clause 7.4
	Temperature rise	Switchgear	Yes	2	No	sub-clause 7.5
Tightness	Switchgear	Yes	2	No	sub-clause 7.8	

Electrical testing

High power electrical testing

Method	Parameter	Material	Flex	Type of flex	Field	Note
IEC 62271-103	Electrical current	Switchgear	Yes	2	No	sub-clause 6.6
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 6.101
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 6.102
	Resistance	Switchgear	Yes	2	No	sub-clause 6.4
	Temperature rise	Switchgear	Yes	2	No	sub-clause 6.5
IEC 62271-104	Electrical current	Switchgear	Yes	2	No	sub-clause 6.6
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 6.102 and 6.104 to 6.110
	Electrical voltage	Switchgear	Yes	2	No	sub-clause 6.10.6
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 6.101.1 to 6.101.4
		Switchgear	Yes	2	Yes	sub-clause 6.101.5
	Resistance	Switchgear	Yes	2	No	sub-clause 6.4
	Temperature rise	Switchgear	Yes	2	No	sub-clause 6.5
Tightness	Switchgear	Yes	2	No	sub-clause 6.8	
IEC 62271-105	Electrical function verification	Switchgear	Yes	2	No	sub-clause 6.101
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 6.102
	Resistance	Switchgear	Yes	2	No	sub-clause 6.4
	Temperature rise	Switchgear	Yes	2	No	sub-clause 6.5
IEC 62271-108	Electrical current	Switchgear	Yes	2	No	sub-clause 7.6
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 7.102 to 7.113
	Mechanical function verification	Switchgear	Yes	2	Yes	sub-clause 7.101 and 7.112
	Resistance	Switchgear	Yes	2	No	sub-clause 7.4
	Temperature rise	Switchgear	Yes	2	No	sub-clause 7.5
	Tightness	Switchgear	Yes	2	No	sub-clause 7.8
IEC 62271-109	Electrical current	Switchgear	Yes	2	No	sub-clause 7.6
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 7.102 to 7.103

Electrical testing

High power electrical testing

Method	Parameter	Material	Flex	Type of flex	Field	Note
IEC 62271-109	Electrical voltage	Switchgear	Yes	2	No	sub-clause 7.2.12
	Mechanical function verification	Switchgear	Yes	2	Yes	sub-clause 7.101.2, 7.101.3 and 7.101.5
	Resistance	Switchgear	Yes	2	No	sub-clause 7.4
	Temperature rise	Switchgear	Yes	2	No	sub-clause 7.5
	Tightness	Switchgear	Yes	2	No	sub-clause 7.8
IEC 62271-110	Electrical function verification	Switchgear	Yes	2	No	sub-clause 4.4
IEC 62271-200	Electrical current	Switchgear	Yes	2	No	sub-clause 6.6
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 6.106
	Electrical voltage	Switchgear	Yes	2	No	sub-clause 6.2.10 to 6.2.11
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 6.102
	Resistance	Switchgear	Yes	2	No	sub-clause 6.4
	Temperature rise	Switchgear	Yes	2	No	sub-clause 6.5
	Tightness	Switchgear	Yes	2	No	sub-clause 6.8
IEC 62271-203	Electrical current	Switchgear	Yes	2	No	sub-clause 7.6
	Electrical function verification	Switchgear	Yes	2	No	Annex B and sub-clause 6.103
	Electrical voltage	Switchgear	Yes	2	No	sub-clause 7.2.11 and 7.2.12
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 7.102
	Resistance	Switchgear	Yes	2	No	sub-clause 7.5.5
	Temperature rise	Switchgear	Yes	2	No	sub-clause 7.5
	Tightness	Switchgear	Yes	2	No	sub-clause 7.8
IEC 62271-205	Electrical current	Switchgear	Yes	2	No	sub-clause 6.6
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 6.101.2
		Switchgear	Yes	2	Yes	sub-clause 6.101.3 and 6.101.4
	Mechanical strength	Switchgear	Yes	2	No	sub-clause 6.101.5
Resistance	Switchgear	Yes	2	No	sub-clause 6.4	

Electrical testing

High power electrical testing

Method	Parameter	Material	Flex	Type of flex	Field	Note
IEC 62271-205	Temperature rise	Switchgear	Yes	2	No	sub-clause 6.5
IEC 62271-302	Electrical current	Switchgear	Yes	2	No	sub-clause 6.6
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 6.102 to 6.115
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 6.101.2
		Switchgear	Yes	2	Yes	sub-clause 6.101.2.5 and 6.101.2.6
	Resistance	Switchgear	Yes	2	No	sub-clause 6.4
	Temperature rise	Switchgear	Yes	2	No	sub-clause 6.5
	Tightness	Switchgear	Yes	2	No	sub-clause 6.8
IEC 62271-310	Electrical function verification	Switchgear	Yes	2	No	
IEC/IEEE 65700-19-03	Mechanical strength	Switchgear	Yes	2	No	sub-clause 8.6
	Temperature rise	Switch	Yes	2	No	sub-clause 8.5
	Tightness	Switchgear	Yes	2	No	sub-clause 9.10
IEEE 824	Ageing	Arresters	Yes	2	No	sub-clause 7.3.1.1
	Electrical function verification	Arresters	Yes	2	No	sub-clause 7.3.1.3
IEEE C37.09	Electrical current	Switch	Yes	2	No	sub-clause 4.8.5.3
	Electrical function verification	Switch	Yes	2	No	sub-clause 4.6, 4.7, 4.8, 4.10, 4.11, 4.12 and 4.14
	Electrical voltage	Switch	Yes	2	No	sub-clause 4.8.5.4.3 and 4.8.6.7
	Mechanical function verification	Switch	Yes	2	Yes	sub-clause 4.13
	Temperature rise	Switch	Yes	2	No	sub-clause 4.4
IEEE C37.122	Electrical current	Switchgear	Yes	2	No	sub-clause 5.8.1.6
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 5.8.1.12
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 5.8.1.8
	Temperature rise	Switchgear	Yes	2	No	sub-clause 5.8.1.1
IEEE C37.20	Electrical current	Switchgear	Yes	2	No	sub-clause 5.2.3 and 8.2.2.3
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 5.2.4 and 6.4.8

Electrical testing

High power electrical testing

<i>Method</i>	<i>Parameter</i>	<i>Material</i>	<i>Flex</i>	<i>Type of flex</i>	<i>Field</i>	<i>Note</i>
IEEE C37.20	Temperature rise	Switchgear	Yes	2	No	sub-clause 5.2.2 and 8.2.2.2
IEEE C37.20.2	Electrical current	Switchgear	Yes	2	No	sub-clause 6.2.3 and 6.2.4
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 6.2.6
	Temperature rise	Switchgear	Yes	2	No	sub-clause 6.2.2
IEEE C37.20.3	Electrical current	Switchgear	Yes	2	No	sub-clause 6.2.3 and 6.2.4
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 6.2.5
	Temperature rise	Switchgear	Yes	2	No	sub-clause 6.2.2
IEEE C37.30	Electrical current	Switchgear	Yes	2	No	sub-clause 6
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 6
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 6
	Temperature rise	Switchgear	Yes	2	No	sub-clause 6
IEEE C37.34	Electrical current	Switchgear	Yes	2	No	sub-clause 8
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 9.2 and 9.3
	Mechanical function verification	Switchgear	Yes	2	No	sub-clause 11
	Temperature rise	Switchgear	Yes	2	No	sub-clause 6
IEEE C37.41	Electrical current	Switchgear	Yes	2	No	sub-clause 10
	Electrical function verification	Switchgear	Yes	2	No	sub-clause 6 and 12
IEEE C57.12.00	Electrical current	Transformers	Yes	2	No	sub-clause 7.1
IEEE C57.12.20	Electrical current	Transformers	Yes	2	No	sub-clause 6.1
IEEE C57.12.90	Electrical current	Transformers	Yes	2	No	sub-clause 12
IEEE C57.13	Electrical current	Transformers	Yes	2	No	sub-clause 8.6
	Resistance	Transformers	Yes	2	No	sub-clause 8.5
	Temperature rise	Transformers	Yes	2	No	sub-clause 8.7
IEEE C57.131	Electrical current	Tap changer	Yes	2	No	sub-clause 5.2.3
	Electrical function verification	Tap changer	Yes	2	No	sub-clause 5.2.2 and 5.2.4
	Mechanical function verification	Tap changer	Yes	2	No	sub-clause 5.2.5

Electrical testing

High power electrical testing

Method	Parameter	Material	Flex	Type of flex	Field	Note
IEEE C57.131	Temperature rise	Tap changer	Yes	2	No	sub-clause 5.2.1
IEEE C57.19.00	Temperature rise	Bushings	Yes	2	No	sub-clause 7.2.3
IEEE C62.1	Electrical function verification	Arresters	Yes	2	No	sub-clause 8.9 and 9.8
IEEE C93.1	Electrical current	Transformers	Yes	2	No	sub-clause 6.2.15 and 6.2.17
	Ferroresonance	Transformers	Yes	2	No	sub-clause 6.2.16
	Temperature rise	Transformers	Yes	2	No	sub-clause 6.2.14

Changes in the scope of accreditation are in bold.

The scope of accreditation is flexible as specified in this decision. The accredited body must always retain a current list of the scope for which it is accredited.

Type of flexible scope

- 1: - Introduce new version of standard method and make editorial changes to non-standard method
- 2: - Introduce new version of standard method and make editorial changes to non-standard method - Introduce new version and modifications of non-standard method. The procedure must be equivalent - Introduce new parameter/component/characteristics - Introduce new measurement range - Introduce new material/new products/matrices - Introduce new method equivalent to methods already in the accreditation decision