

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-22340-02-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 08.03.2024

Date of issue: 08.03.2024

Holder of accreditation certificate:

Hitachi Energy Germany AG
Havellandstraße 10-14, 68309 Mannheim

with the location

Hitachi Energy Germany AG
Werk Halle / Isolieröllabor
Trafoweg 4, 06112 Halle (Saale) Germany

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the general with the principles of DIN EN ISO 9001.

Tests in the fields of:

chemical and physical-chemical testing of mineral oil and related products; electrical, physical and chemical testing of new and used insulating oils in transformers, transducers and switchgear

This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at <https://www.dakks.de>.

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electrical, physical and chemical testing of new and used insulating oils in transformers, transducers and switchgear

DIN EN 60156: 1996-03 (VDE 0370-5: 1996-03)	Insulating liquids - Determination of the breakdown voltage at power frequency - Test method
DIN EN 60247: 2005-01 (DIN-VDE 0380-2: 2005-01)	Insulating liquids - Measurement of relative permittivity, dielectric dissipation factor ($\tan \delta$) and d.c. resistivity
DIN EN 60422: 2013-11 (VDE 0370-2: 2013-11)	Mineral insulating oils in electrical equipment - Supervision and maintenance guidance
DIN EN 60567: 2012-08 (VDE 0370-9: 2012-08)	Oil-filled electrical equipment - Sampling of gases and analysis of free and dissolved gases - Guidance
DIN EN IEC 60599: 2023-08 (VDE 0370-7: 2023-08)	Mineral oil-filled electrical equipment in service - Guidance on the interpretation of dissolved and free gases analysis
DIN EN 60814: 1999-03 (VDE 0370-20: 1999-03)	Insulating liquids - Oil-impregnated paper and pressboard - Determination of water by automatic coulometric Karl Fischer titration
DIN IEC 60944: 1995-01 (VDE 0374-2: 1995-01)	Guide for the maintenance of silicone transformer liquids
DIN EN 61203: 1995-06 (VDE 0375-2: 1995-06)	Synthetic organic esters for electrical purposes - Guide for maintenance of transformer esters in equipment
DIN EN 62021-1: 2004-06 (VDE 0370-31: 2004-06)	Insulating liquids - Determination of acidity - Part 1: Automatic potentiometric titration
ASTM D 971: 2020	Standard Test Method for Interfacial Tension of Insulating Liquids Against Water by the Ring Method
DIN 51423-1: 2010-02	Testing of mineral oils - Part 1: Measurement of the relative refractive index with the precision refractometer
DIN ISO 2049: 2001-06	Petroleum products - Determination of colour (ASTM scale)

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Page 2 of 3

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

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Abbreviations used:

ASTM	American Society for Testing and Materials
DIN	Deutsches Institut für Normung e.V. – German institute for standardization e.V.
EN	European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardisation
VDE	VDE Verband der Elektrotechnik Elektronik Informationstechnik e. V. – VDE Association for Electrical, Electronic & Information Technologies

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Page 3 of 3

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