Schedule

Issue date: 24 October 2023
Valid until: 14 April 2025

NO: SAMM 765
(Issue 2, 24 October 2023 replacement of SAMM 765 dated 3 February 2022)

LABORATORY LOCATION: **HIGH VOLTAGE TEST LAB SDN. BHD.**
(PERMANENT LABORATORY) **LOT 6, JALAN PERMATA 2**
ARAB MALAYSIAN INDUSTRIAL PARK
71800 NILAI
NEGERI SEMBILAN
MALAYSIA

FIELD OF TESTING: **ELECTRICAL**

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

SCOPE OF TESTING: ELECTRICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Power Transformer up to 33 kV, Cast Resin & Oil Immersed Type	**Routine Test Transformer:** 1. Winding resistance	IEC 60076-11:2018 clause 14.2.1 IEC 60076-1:2011 clause 11.2
	2. Voltage ratio and check of phase displacement	IEC 60076-11:2018 clause 14.2.2 IEC 60076-1:2011 clause 11.3
	3. No-load loss and no-load current	IEC 60076-11:2018 clause 14.2.4 IEC 60076-1:2011 clause 11.5
	4. Short-circuit impedance and load-loss	IEC 60076-11:2018 clause 14.2.3 IEC 60076-1:2011 clause 11.4
	5. Dielectric test • Separate-source AC Withstand voltage test	IEC 60076-11:2018 clause 14.2.5 IEC 60076-3:2013+AMD1:2018 clause 10
	• Induced AC withstand voltage test	IEC 60076-11:2018 clause 14.2.6 IEC 60076-3:2013+AMD1:2018 clause 11.2
	6. Measurement of partial discharge (for cast resin transformer)	IEC 60076-11:2018 clause 14.2.7

Signatories:

1. **Ir. Leong Kin Yue**
2. **Badariah Mahbob**
3. **Norizan Rembun**

SCOPE OF TESTING: ELECTRICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Power Transformer up to 33 kV, Cast Resin & Oil Immersed Type	**Type Test of Transformer** 1. Lightning impulse test	IEC 60076-3:2013+AMD1:2018 clause 13 IEC 60076-11:2018 clause 14.3.1
	2. Temperature rise test (for cast resin transformer)	IEC 60076-11:2018 clause 14.3.2
	3. Temperature rise test (for oil transformer)	IEC 60076-2:2011 clause 7.3
Current Transformer (5 to 2000)/5 A, (5 to 2000)/1 A, Burden 2.5, 3.75, 5, 10 and 15 VA, Power Factor 0.8 to 1.0, Accuracy class 0.1, 0.2, 0.5, 1, 0.2S and 0.5S	**Accuracy Test** 1. Ratio error 2. Phase displacement error	IEC 61869-2:2012 clause 7.3.5
AC Metal-enclosed Switchgear 1 kV to 52 kV	**Type Test of Switchgear:** 1. Lightning impulse test	IEC 62271-200:2011 clause 6.2.6.2 IEC 62271-1:2017 clause 7.2.7.3
	2. Partial discharge test	IEC 62271-200:2011 clause 6.2.9 IEC 62271-1:2017 clause 7.2.10
	3. Power frequency voltage test	IEC 62271-200:2011 clause 6.2.6.1 IEC 62271-1:2017 clause 7.2.7.2
Gas-insulated metal-enclosed switchgear from 52 kV to 72.5 kV	**Type Test of Switchgear:** 1. Lightning impulse test	IEC 62271-203:2011 clause 6.2.6.2 IEC 62271-1:2017 clause 7.2.7.3

Signatories:

1. **Ir. Leong Kin Yue**
2. **Norizan Rembun**

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Single Phase & Three Phase Electronic Energy Meter Active Energy Class 0.2S, 0.5S, 1 & 2 Reactive Energy Class 2	1. Limit of error due to variation of current	IEC 62053-21:2020, clause 7.9 IEC 62053-22:2020, clause 7.9 IEC 62053-23:2020, clause 7.9
	2. Test of starting and no-load condition	IEC 62053-21:2020, clause 7.5 and clause 7.6 IEC 62053-22:2020, clause 7.5 and clause 7.6 IEC 62053-23:2020, clause 7.5 and clause 7.6
	3. Meter constant	IEC 62053-21:2020, clause 7.4 IEC 62053-22:2020, clause 7.4 IEC 62053-23:2020, clause 7.4

Signatories:

1. **Cheah Soon Toy**
2. **Ng Choo Poh**