DISTRIBUTION COMMISSIONING TEST SHEET – SINGLE PHASE PAD/POLE MOUNTED TRANSFORMER
HPC-4DL-07-0029-2014

This commissioning test sheet covers the checking, testing and commissioning of all replacement or new installations of single-phase pad/pole-mounted transformers up to 50 kVA before energisation.

NOTE: Tests must be carried out after the installation, alteration or repair and before putting back to service.
SAFETY: At all times maintain suitable clearance to all other electrical equipment and verify planned escape routes.
In preparation for the tests, wherever possible, disconnect the cables from the equipment on both sides and make the area safe.

DATE:		**Project No.**		**Name of Officer**	
Transformer Location:					

1. TRANSFORMER DESCRIPTION

Rated Voltages	kV	V	Rated kVA	kVA	Stock code		Serial Number	

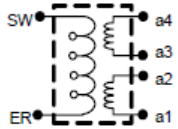
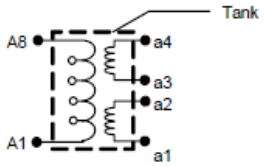
2. VISUAL INSPECTION AND SAFETY CHECK

Inspect the following: • Rating plate • Tank and bushings • Tap setting • HV terminations • LV terminations • Neutral connection • MEN/N-E connections	1	Check that the installation complies with the distribution construction standards and applicable design drawings (especially correct orientation as per DSM 3).			☐
	2	Check that Public Safety has been considered (e.g. cabinets secured and locked, anti-climbing devices applied, trip hazards removed where applicable).			☐
	3	Check the supply to the transformer, that it is switched off and isolated.			☐
	4	Confirm (with approved testing device) that the transformer is de-energised.			☐
	5	Ensure that the earth system is complete, undamaged and bonded to earth points.			☐
	6	Check that the nearest conductive material is at least two (2) metres away from the earth ring/system (take a photo if possible)	Measured distance	m	☐
	7	Transformer voltage rating matches system voltage.			☐
	8	Transformer tap is at the position of previously installed transformer or per network planning requirements.			☐
	9	Transformer tank and bushings in good condition (no oil leaks).			☐
	10	HV cables are properly terminated and connected on transformer bushings (if applicable).			☐
	11	The dead-end plugs are the correct voltage rating and correctly installed (transformer with 2 sets of HV bushings).			☐
	12	LV cables are properly terminated and connected on transformer LV bushings (if applicable).			☐

	13	Check neutral connected to neutral bar, earth connected to earth bar, check MEN link present.	☐
	14	All labels fitted and numbered correctly.	☐
	15	LV lead connections to the transformer LV bushing are correct as per construction standards (for new connection).	☐

3. INSULATION RESISTANCE AND CONTINUITY TESTS

1	Ensure that the earth resistance has been tested and is acceptable.	☐
2	Ensure that the high voltage (HV) and low voltage (LV) windings of the transformer are de-energised.	☐
3	Ensure all electrical connections have been disconnected, **including MEN link.**	☐

		Test Connection	Test Voltage	Expected Results	Test Results
 Single Bushing	4. Using an insulation resistance tester for a minimum of 1 minute for a stable reading test the following: Discharge after each IR test.	A8 to tank (two bushings only)	2.5 kV	>1,000 MΩ	Ω
		SW/A8 to a1	1 kV	>100 MΩ	Ω
		SW/A8 to a3	1 kV	>100 MΩ	Ω
		Tank to a1	1 kV	>100 MΩ	Ω
		Tank to a3	1 kV	>100 MΩ	Ω
 Two Bushing	5. Continuity:	SW/A8 to ER/A1	1 kV	0 Ω	Ω
		a1 to a2	1 kV	0 Ω	Ω
		a3 to a4	1 kV	0 Ω	Ω

6	Reconnect phase cables, tighten bolts with recommended torque stated below.	☐
7	Reconnect neutral cables, tighten bolts with recommended torque stated below.	☐
8	Reconnect neutral-to-earth links, tighten bolts with recommended torque stated below.	☐

Suggested bolt torques:
- M10 stainless steel bolts: 38 Nm
- M12 stainless steel bolts: 66 Nm
- M14 stainless steel bolts: 106 Nm
- M16 stainless steel bolts: 162 Nm

4. ENERGISATION OF TRANSFORMER WITHOUT LOAD

NOTE Highest risk of failure of a transformer is at energisation – ensure escape plan in place and JRA reflects potential hazard.

Check that the transformer LV is not connected to the LV network Check the HV fuse rating before energizing the transformer HV	If applicable, check that the HV fuses are correct.	Fuse Rating	A	☐
	If applicable, ensure all short-circuiting equipment has been removed from the LV network			☐
	Energise the transformer HV as per HV switching program (check for abnormal noise)	Program No.		☐
	Measure voltage at the secondary/LV side	Expected values: 226-254 V for 240 V connections	_____V	

5. ENERGISATION OF TRANSFORMER WITH LOAD

If applicable, check that the LV fuses are correct			☐
Energise the LV circuits as per LV switching program.	Program No.		☐
Check and record the secondary (LV) voltage.		V	☐
Disconnect the transformer from any interconnected transformer (if applicable).			☐
Conduct a service connection test on all installations where the service connection have been disturbed.			☐
When erecting a new or reconstructed LV apparatus, check the voltage at an existing LV point, if possible. Phase out any newly fitted LV disconnectors and check them for sound operation.			☐

6. OPERATIONAL HANDOVER

The commissioning officer must ensure that all checks are completed and the test results comply with the minimum standards.

I hereby certify that all sections have been completed with satisfactory results and transfer responsibility to the network operating authority. This equipment is ready to be **SAFELY** energised.

Commissioning Officer: _____ Pay Number: _____

Signature: _____ Date: DD/MM/YY Time: HH:MM

1. Ensure the work area is left tidy with no hazards to the public.
2. Hand over responsibility to the operating authority
3. Return this sheet to the project/working file as a record of commissioning and as a document required for the Handover Certificate.

IMPORTANT: PLEASE ATTACH AS-BUILT DRAWINGS AND DATASHEETS TO THIS SHEET AND SEND TO RELEVANT ASSET MANAGER