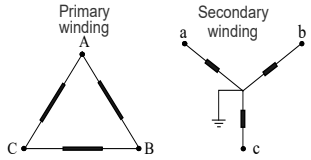
DISTRIBUTION COMMISSIONING FORM (DCF) 3.2 – Non-MPS MK II Distribution transformer commissioning



The *Distribution Commissioning Forms Guideline (EDM 34137510)* must be referenced for guidance when completing this form.

Purpose: This form is used to record the required test results when commissioning replacement or new non-modular package substation (non-MPS) ground-mounted transformers up to 1,000 kVA.

Notes: The following tests and checks must be carried after installation and before the transformer is put into service.

Address		**Work Package No.**	
Manuf. Serial No.		**SPIDAWeb Pick ID:**	

1. Insulation Resistance Test

Record the insulation resistance test results after 1 minute of testing.

Insulation resistance test on the transformer winding (Short circuit all winding terminals of the same voltage level together)					
	Test Connection	Test Voltage	Actual result	Expected Results	
	Primary/HV to tank	2.5 kV	Ω	>1 GΩ	
	Primary/HV to Secondary/LV	1 kV	Ω	>100 MΩ	
	Secondary/LV to tank	1 kV	Ω	>100 MΩ	

2. Handover of Responsibility for the Completion of Item 1

I hereby certify that item 1 has been completed with satisfactory results.			
Tested by		BNA	
Signature		Date & Time	

3. Installation and Construction Checks

Inspect the following: • rating plate • tank and bushings • tap setting • oil level • HV terminations • LV terminations • neutral connection • /N-E connections	Transformer installed as per construction standards and applicable design drawings.	☐
	Earthing correctly installed. *DCF 4.1 - Earthing system resistance testing* attached.	☐
	Transformer matches system voltage.	☐
	Transformer tap is at the position as per network planning or previously installed transformer. Tap position:	☐
	Transformer oil level satisfactory (if visible).	☐
	Transformer bushings and tank in good condition (no oil leaks).	☐
	HV cables properly terminated and connected on transformer HV bushings. Drain wires in place. HV screens bolted to the HV earth bar.	☐
	The dead-end plugs are correctly installed (transformers with 2 sets of HV bushings).	☐
	LV cables properly terminated and connected.	☐
	Check Neutral is connected and earthed via the N-E link connections.	☐
	All SPIDAWeb labels fitted and numbered correctly as per SPIDAWeb sheet.	☐
	LV connections to the transformer LV bushings are correct as per construction standards (for new connection) or phase indicator tags (recommissioning).	☐

4. MCCB Settings Check (for 630kVA and 1000kVA non-MPS transformer)

Check the following to confirm correct MCCB settings have been applied. (For 630kVA and 1000kVA transformers). If settings are incorrect, adjust the MCCB to suit.	Confirm transformer make, Tyree or ETEL	Tyree/ETEL
	Confirm transformer configuration (either single or parallel)	Single/Parallel
	Confirm supply arrangement (either district or sole use)	District/Sole Use
	Confirm that the correct MCCB settings as per DCCR 1-00-5 and DCCR 1-00-6 have been applied. If settings are incorrect, adjust the MCCB to suit.	630kVA/1000kVA
	Take a photo of the MCCB with settings applied	

5. Handover of Responsibility for the Completion of Items 1, 3 & 4

I confirm that items 1, 3 and 4 have been completed with satisfactory results.			
Tested by		BNA	
Signature		Date & Time	

6. Energisation of Transformer without Load

- Check that the transformer LV is not connected to the LV network.
- Check the HV fuse rating before energising the transformer HV.
- Conduct a voltage and phase rotation test on the LV once the transformer is energised.

Open all LV fuse ways, including the transformer disconnector.					☐
Confirm the correct HV fuse type and rating. Record fuse rating A					☐
Energise the transformer HV as per HV switching program (and check for abnormal noise). Record the **switching program number:**					☐
Conduct a voltage and phase rotation test on the LV side of the transformer, preferably at the LV disconnect (MCCB), and record results below. (Acceptable results in brackets.)					☐
R to N V	W to N V	B to N V	Phase-to-neutral voltages (226–254 V)		☐
R to W V	W to B V	B to R V	Phase-to-phase voltages (390–440 V)		☐
Phase rotation test (123 or ABC or RWB)			Phase rotation test result:		☐

7. LV Phase Out Test

Phase out at points of interconnection between other transformers to ensure interconnections can be made. Expected results are given.
Record test results

1. If the LV conductors are energised from an interconnected transformer, conduct the phase-out test at the new transformer's LV disconnector frame.
2. If the LV conductors are not energised, proceed to item 8 (ENERGISATION OF THE LV NETWORK), and conduct the phase-out test on normally open points where it can be interconnected from another transformer.

	R	W	B	N
R	0	415	415	240
W	415	0	415	240
B	415	415	0	240
N	240	240	240	0

8. Energisation of the LV Network

Conduct a voltage test on the LV side of the transformer (with load).	If applicable, ensure all short-circuiting equipment is removed from the LV network.				☐
	If applicable, check that the LV fuses are healthy.				☐
	Energise the LV circuits in accordance with the LV switching schedule. Record the switching schedule number:				☐
	Ensure that the LV network is returned to its normal operating configuration. If applicable, ensure that the LV circuits are not interconnected with any other transformers and are supplied only from the supply transformers.				☐
	Conduct a voltage test on the LV disconnector (MCCB) of the new transformer to ascertain whether the transformer supply is within statutory limits during load conditions and record results.				
	R to N V	W to N V	B to N V	Phase-to-neutral voltages (226–254 V)	
	R to W V	W to B V	B to R V	Phase-to-phase voltages (390–440 V)	
	Record final tap position (if changed)				☐
	Conduct a service connection test on all installations where the service connections have been disturbed.				☐

9. Handover of Responsibility

I confirm that all items have been completed with satisfactory results and transfer control to the network operating authority.			
Commissioned by		BNA	
Signature		Date & Time	

1. Ensure the work area is left tidy with no hazards to the public.
2. Hand over responsibility to the operating authority.
3. The completed form must be returned to the project file/work pack**.**