



LV METERING EQUIPMENT TESTS

SCTS 81

SUBSTATION:.....CIRCUIT:.....of.....

IMPORT MPAN

EXPORT MPAN

SITE ADDRESS.....

UNIT TYPE

UNIT SERIAL NUMBER.....

REASON FOR COMMISSIONING..... NEW / REPLACEMENT METERING EQUIPMENT

METERING TRANSFORMERS AT DEFINED METERING POINT (DMP).....YES/NO.....

NO OF PHASES ON SUPPLY.....TWO/THREE

CT TESTS

SERIAL NO. L1.....L2..... L3.....

CT CLASS:CT RATIO 1:/.....

IR VALUE: RATED BURDEN.....VA

| | | | | | | |
|-----------------------------------|----|----|----|----|----|----|
| Polarity (P1 To CB) (Y/N) | L1 | | L2 | | L3 | |
| dc Loop Resistance (CT Cable Run) | L1 | Ω | L2 | Ω | L3 | Ω |
| Loop Burden (CT Cable Run) | L1 | VA | L2 | VA | L3 | VA |

NOTE: This is the Burden of the CT Secondary wiring to the test block and does not include the meter

| PHASE | INJECTED CURRENT | PRIMARY CURRENT | SECONDARY CURRENT | | | | | | |
|---------|------------------|-----------------|------------------------|-------------|-------------|---------------------------|-----|-----|-----|
| | | | LV MCCB TERMINAL BLOCK | | | METERING PANEL TEST BLOCK | | | |
| | | | D11/ D10 | D31/ D30 | D51/ D50 | D11 | D31 | D51 | D70 |
| L1 | | | | | | | | | |
| L2 | | | | | | | | | |
| L3 | | | | | | | | | |
| L1 – L2 | | | | | | | | | |
| L1 – L3 | | | | | | | | | |

CONFIRM CT EARTHED

CONFIRM CT SHORT **APPLIED / REMOVED** AT TEST BLOCK OF FRAME (DELETE AS APPLICABLE)



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VOLTAGE TESTS

WIRING POLARITY TEST – CONFIRM CONTINUITY FROM BUSBAR TO TERMINAL

WIRING TEST L1-E11 L2-E31 L3-E51

CONFIRM E70 EARTHED

CONFIRM FEEDER STATE AFTER TESTS ACTIVE / INACTIVE

INSTALLED METERING EQUIPMENT AS PER BSC CoP

CONFIRM COP LABEL COMPLETED ON FRAME

PRINT NAME..... CONTACT NUMBER.....

COMPANY.....

SIGNATURE

DATE OF TEST.....



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APPENDIX 1

NOTES ON CT BURDEN

Calculation of burden is based on wiring loop DC resistance and CT operating at full load.

You should allow 0.5VA for the metering equipment.

EG.

5A CT with a DC cable loop measurement of 0.28ohms

$$\begin{aligned}P &= I^2R \\&= 5^2 \times 0.281 \\&= 7.04VA\end{aligned}$$

2.5mm² has a nominal resistance of 7.41mΩ/metre (mΩ/m), so a typical run of 19 metre (38 meter loop) will give a loop resistance of 0.281 ohms, and is seen as the maximum loop that can be installed on 2.5mm².

If longer runs are required consideration should be given to doubling cores on the multicore cable or using CTs with a 1A secondary.



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APPENDIX 2 - Metering Test Forms – Explanatory Notes

All testing carried out will be in accordance with the BSC Code of Practice 4. This Code of Practice relates to the requirements for the Calibration, sample Calibration, Commissioning of Metering Equipment and the maintaining of associated records with respect to the above for Settlement purposes.

This CoP defines the minimum requirements that participants must meet when carrying out the above.

Circuit Name x of y

The name of the equipment being fed from the switchgear should be placed here e.g. Transformer, Customer LV etc.. The x of y will typically be 1 of 1. New installation would only have one feeder per MPAN, some older sites do have multiple CT's summated onto a single meter. In this instance a second set of test sheets should be completed for the second set of equipment, so the sheets would be marked 1 of 2 and 2 of 2. This would be seen as an exception, and only likely on re-tests of old sites

Metering transformers (CTs) at Defined Metering Point

The Defined Metering Point for transfer of energy from the Northern Powergrid system to a customer is at the point of supply, so in most cases this will be TRUE. In exceptional circumstances the metering transformers may be placed at another position, HV side of transformer for an LV point of supply, so the metering transformers will not be at the defined metering point, so FALSE.

There are some special cases applicable here, National Grid or IDNO interfaces for example, in these cases please consult the Metering section.

No of Phases on Supply

Typically at LV this will be THREE, some LV sites may be split phase so TWO.

This is NOT the number of metering CT's.

CT Class and Burden

This information will be found on the CT rating plate

COP 3 and 5 is Class 0.5S and 7.5VA.

CT Ratio

The values must be written as full load primary current to secondary current values e.g. 800/5, 1200/5 etc.

Confirm Feeder State

This is at meter level and is the state of the equipment following completion of testing i.e. whether the supply is energised and electricity is passing to/from the customer's plant/apparatus to/from the DMP. This will typically be INACTIVE, as the customer will not be taking a supply. Typically only sites that have been live and have had CT changes will be left as ACTIVE



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Metering Equipment as per COP

The BSC Code of Practice documents state different COP's dependent upon the capacity of the connection, as follows:

| | |
|-------|--|
| COP 1 | Capacity exceeding 100MVA |
| COP 2 | Capacity greater than 10MVA but not exceeding 100MVA |
| COP 3 | Capacity greater than 1MVA but not exceeding 10MVA |
| COP 5 | Maximum demand up to and including 1MW |

Metering Frame Label

All CT details should be entered on the Metering Frame label which is located on the inside of the swing door. This enables MOP's to check details without having to access the primary equipment.

Test Sheet Sign Off

The full name of the test engineer, in legible capitals should be inserted here, along with employed company and Full Mobile Contact Number.

The date of the test entered is the date at which ALL tests on the sheet have been completed.