



Temperature Rise Options

IEC 61439 – Part 2

Temperature Rise I_{nA}

There are 3 options to achieving the assembly rating by test:

- Verification by test option a: (10.10.2.3.5)
- Verification by test option b: (10.10.2.3.6)
- Verification by test option c: (10.10.2.3.7)

Verification by test option a: (10.10.2.3.5)

Single test on the complete assembly

- All outgoing ways tested with an RDF of 1
- The rated current of each circuit is required to be stated by the original manufacturer
 - This rating is expected to be less than the maximum rating of the device.

Advantages

- Testing this way needs least number of tests to be performed.

Disadvantages

- This method of test is likely to result in the lowest rated current of each device
- Design Verification of future variants by derivation will be difficult using the data gathered during this test.

Verification by test option b: (10.10.2.3.6)

Each functional unit is tested to establish its rated current, then the Assembly is tested with a diversity factor applied.

- The rated current of each circuit is proven by the laboratory
- The complete assembly is tested whole, with an RDF applied to all of the outgoing ways, which may be lower than 1

Advantages

- Design Verification of future variants by derivation will be easier using the data gathered during this test.
- This method is likely to result in better ratings for each functional unit

Disadvantages

- This method requires significantly more tests to be carried out
- A definitive busbar rating is not available for future calculations

Verification by test option c: (10.10.2.3.7)

Each functional unit is tested to establish its rated current, main busbars and distribution busbars are tested to establish their rated current, then the Assembly is tested with a diversity factor applied.

- The rated current of each circuit is proven by the laboratory
- The rated current of the main busbars is proven by the laboratory
- The rated current of the distribution busbars is proven by the laboratory
- The complete assembly is tested whole, with an RDF applied to all of the outgoing ways, which may be lower than 1

Advantages

- Design verification of future variants by derivation will be easier using the data gathered during this test.
- This method is likely to result in better ratings for each functional unit
- A rating for the main busbars and distribution busbars will also be known

Disadvantages

- This method requires the highest number of tests to be carried out