TEST REPORT

Applicant :

Eaton Electrical
2210 Laurens Highway
Greenwood, South Carolina 29648
USA

Application Date : 17-10-2005

Order Number : 2087370-QUA/IND

Subject : low-voltage busway

Trademark : EATON I Cutler Hammer

Type(s) : Pow-R-Way III 4000A

Arnhem, February 3, 2006

Manufacturer/ Production sites: Eaton Electrical, 2210 Laurens Highway, Greenwood, South Carolina 29648, USA

Test Requirements 1EC 60439-2, 3rd ed. 2000-03. Clauses: 8.2.1, 8.2.2, 8.2.3, 8.2.4, 8.2.5, 8.2.7, 8.2.9, 8.2.10, 8.2.12 and 8.2.13.

Tested by : H.L Schendstok

Checked by : H.H.M. Versteegen

Overview of tests : See Page 3

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1 General

Ratings

Low-voltage Busway

Manufacturer	: EATON **I** Cutler-Hammer
Type	: Pow-R-Way **III** 4000 A
Rated current Rated voltage Rated insulation voltage	: 4500 A : 660 V : 1000 V : 12 kV & 8 kV (see summary)
Rated impulse withstand voltage	: 120 kA 1,0 s
Rated short time withstand current	: IP55
Degree of protection	

Summary of testplan & results

IEC 60439-2, subclauses and description		Result
8.2.1 verification of temperature rise limits	Rated operational current [In]	4500 A
8.2.2 Verification of Dielectric properties	Rated insulation voltage [Ui]	1000 V
	Rated impulse Voltage [Uimp] - Flange - Feeder busway - Plug-in busway	 12 kV 12 kV 8 kV
8.2.3 Verification of short-circuit strength	Rated SC-withstand current [Im]	120 kA — **1** sec
8.2.4 Verification of effectiveness of protective circuit	All measured points < 0,1 0	OK
8.2.5 Verification of clearances and creepage distances	All distances > 16 mm	OK
8.2.7 Verification of the degree of protection		1P55
8.2.9 Verification of electrical characteristics	N1 electrical characteristics at the rated current	R20oc: 12.3 ,u0/m Z: 14.9 pil/m R: 13.1 p0/m • X: 7.05 p0/m
	N2 electrical characteristics under fault conditions	Phase to N Z: 68.4 pQ/m R: 56.8 pWrn X: 38.1 pi"2/m
		Phase to earth Z: 55.8 p0/m R: 46.9 p0/m X: 30.3 p0/rn
8.2.10 Verification of structural strength	Normal mechanical loads	OK
8.2.12 Verification of crushing resistance	Normal mechanical loads	OK
8.2.13 Verification of resistance of insulating materials to abnormal heat	Glow wire test 850°C, on all insulating materials	OK

Summary of type tests

- Verification of temperature-rise limits, clause 8.2.1 of IEC 60439-2
- Verification of dielectric properties, 8.2.2 of IEC 60439-2
- Verification of short-circuit strength, 8.2.3 of IEC 60439-2
- Verification of the effectiveness of the protective circuit, 8.2.4 of IEC 60439-2
- Verification of clearances and creepage distances, 8.2.5 of IEC 60439-2
- Verification of the degree of protection, 8.2.7 of IEC 60439-2
- Verification of electrical characteristics of busbar trunking system, 8.2.9 of IEC 60439-2
- Verification of structural strength, 8.2.10 of IEC 60439-2
- Verification of crushing resistance, 8.2.12 of IEC 60439-2
- Verification of the resistance of insulating materials to abnormal heat, 8.2.13 of IEC 60439-2

Location of the tests

The tests were carried out in Prof. Ir. Damstra Laboratorium in Hengelo, The Netherlands, unless otherwise stated.

Tests were carried out by

P. van Gestel Prof. Ir. Damstra Laboratorium, Hengelo, The Netherlands

Manufacturer's representatives during tests

D.V. Taylor Eaton Electrical, Greenwood, South Carolina, USA

The tests were observed by

H.L. Schendstok KEMA Quality B.V., Arnhem, The Netherlands

General notes on tests

The frequency during the tests was 50 Hz.

2 Dimensions

The tested object is a copper 3-phase, 4-wire with 100% ground and 100% Neutral. (100% ground consists of a 50% internal bus and 50% integral ground)
The 4000A system has two bars per phase. (2 parallel 2000A systems)

The dimensions of the copper busbars are:

Ll, L2, L3 & N: 2 parallel bars of (6.4 x 139.7) [mm]
Internal ground bus: 2 parallel bars of (3.2 x 139.7) [mm]

External dimensions are stated in the relevant part of this report.