

TEST CERTIFICATE

Issued to: GE Industrial solutions
Represented by:
GE Industrial Belgium bvba
Nieuwevaart 51
9000 Gent
Belgium

For the product: Low-voltage switchgear and controlgear assembly

Trade name: GE

Type/Model: VMS

Ratings: I_{nA} max. 900 A, main busbar max. 1100 A, U_e 415 V, U_i max. 1000 V,
 U_{imp} max. 8 kV, IP43, IP44, IP55, IP65, IK06 / IK08
 I_{cw} max. 30 kA – 1,0 s, I_{cc} max. 25 kA at 415 V
For more details see annex

Manufactured by: GE Power Controls Sp. Z o.o.
Ul. Leszczyńska 6
43-300 Bielsko-Biala
Poland

Subject: Design verification

Requirements: Complete Design verification (Construction and Performance) according to the
IEC 61439-2:2011
Clause 10.2.2, 10.2.3, 10.2.6, 10.2.7, 10.3, 10.4, 10.5, 10.6*, 10.7, 10.8, 10.9,
10.10.2.3.5, 10.10.2.3.7a, 10.11, 10.12, 10.13

Remarks: * The examination of the compliance of components in the assembly, with
their relevant product standard, is not part of this project

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in report no. 2159738.03-INC, dated 30 June, 2013.

The examination has been carried out on one single specimen of the product, submitted by the manufacturer. The Attestation does not include an assessment of the manufacturer's production. Conformity of his production with the specimen tested by DEKRA is not the responsibility of DEKRA.

Arnhem, 30 October, 2013

Number: 2159738.102

DEKRA Certification B.V.


H.E.M. Barends
Certification Manager

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Overview of product evaluation according to IEC 61439-2:

IEC 61439-2 Clause	Clause description	Tested ratings	Results
10.2	Strength of material and parts		
10.2.2	Resistance to corrosion	All ferrous metals, Severity test A: indoor	Pass
10.3	Properties of insulating materials		
10.2.3.1	Verification of thermal stability of enclosures		Pass
10.2.3.2	Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects	Insulating materials retaining current-carrying parts in position: 960 °C Other insulating materials: 650 °C	Pass
10.2.6	Mechanical impact	Panel without hinged is IK08. Panel with hinged is IK06	Pass
10.2.7	Marking		Pass
10.3	Degree of protection of assembly	IP43, IP44, IP55, IP65	Pass
10.4	Clearances and creepage distances	<p>Main busbar system with: busbar support 828322, busbar support 853077 and busbar support 855084: Clearances > 8 mm, based on Uimp = 8 kV</p> <p>VMS 630 and 1250: Incoming unit and outgoing MCCB's Clearances > 8 mm, based on Uimp = 8 kV Outgoing MCB's Clearances > 3 mm, based on Uimp = 4 kV</p> <p>Main busbar system with: busbar support 828322, busbar support 853077 and busbar support 855084: Creepage distances > 16 mm, based on Ui = 1000 V, pollution degree 3, material group IIIa.</p> <p>VMS 630 and 1250: Incoming unit and busbar system: Creepage distances > 16 mm, based on Ui = 1000 V, pollution degree 3, material group IIIa Outgoing MCCB's: > 10 mm, based on Ui = 690 V, pollution degree 3, material group IIIa Outgoing MCB's: > 6,3 mm, based on Ui = 440 V, pollution degree 3, material group IIIa</p>	Pass
10.5	Protection against electric shock and integrity of protective circuits		
10.5.2	Effective earth continuity between the exposed conductive parts of the assembly and the protective circuit	Enclosure of insulation material	N/A
10.5.3	Short-circuit withstand strength of the protective circuit	<p>Busbar system with busbar support 828322: Icw 9 kA - 0,3 s up to 18 kA - 1,0 s</p> <p>Busbar system with busbar support 853077: Icw 12,84 kA - 1,0 s up to 15 kA - 1,0 s</p> <p>Busbar system with busbar support 855084: Icw 6 kA - 1,0 s</p> <p>Complete assemblies VMS 630: 15 kA at 240 V protected with outgoing units</p> <p>Complete assemblies VMS 1250 15 kA at 240 V protected with outgoing units</p>	Pass
10.6*	Incorporation of switching devices and components		Pass
10.7	Internal electrical circuits and connections		Pass
10.8	Terminals for external conductors		Pass

10.9	Dielectric properties		
10.9.2	Power-frequency withstand voltage	<p>Main busbar system with: busbar support 828322, busbar support 853077 and busbar support 855084: 1000 V</p> <p>VMS 630 and VMS 1250 Incoming unit and busbar: 1000 V Outgoing MCCB's: 690 V Outgoing MCB's: 440 V</p>	Pass
10.9.3	Impulse withstand voltage	<p>Main busbar system with: busbar support 828322, busbar support 853077 and busbar support 855084: 8 kV</p> <p>VMS 630 and VMS 1250 Incoming unit and busbar: 8 kV Outgoing MCCB's: 8 kV Outgoing MCB's: 4 kV</p>	Pass
10.9.4	Testing of enclosures made of insulating material		Pass
10.10	Verification of temperature rise		
10.10.2.3.5	Verification of the complete assembly	<p>Incoming unit: VMS 630: 870 A VMS 1250: 900 A</p> <p>Outgoing units: See report</p> <p>Rated diversity factor 1,0</p>	Pass
10.10.2.3.7	Verification considering individual functional units and the main and distribution busbars separately as well as the complete assembly	<p>Main busbar system with: busbar support 828322: 200 – 630 A busbar support 853077: 630 and 1100 A busbar support 855084: 160 A</p>	Pass
10.11	Short-circuit withstand strength	<p>Busbar system with busbar support 828322: Icw 15 kA - 0,3 s up to 30 kA – 1,0 s</p> <p>Busbar system with busbar support 853077: Icw 20,8 kA – 1,0 s up to 25 kA – 1,0 s</p> <p>Busbar system with busbar support 855084: Icw 10 kA – 0,5 s</p> <p>Complete assemblies VMS 630: 25 kA at 415 V</p> <p>Complete assemblies VMS 1250 25 kA at 415 V</p>	Pass
10.12	Electromagnetic compatibility (EMC)		Pass
10.13	Mechanical operation	Rotary handles 200 times	Pass

* The examination of the compliance of components in the assembly with their relevant product standard is not part of this product evaluation.