

TEST CERTIFICATE

Issued to: Schneider Electric
5 Avenue Raymond Chanas
38320 Eybens
France

For the product: Low-voltage Switchgear and Controlgear assembly / Power Factor Correction bank

Trade name: Schneider Electric

Type/Model: VarSet 400 – 500 kvar Capacitor Bank

Ratings: 400 - 500 kvar at 415 V
 I_{cw} 50 kA - 1 s, incoming MCCB I_{cc} 50 kA at 415 V
 U_e 415 V, U_i 690 V, U_{imp} 6 kV, IP21
for more details see annex

Manufactured by: Schneider Electric
12A, Hosur road
Attibele Industrial Area
Neralur Post, Bangalore
India

Subject: Design verification

Requirements: IEC 61439-1:2011 / IEC 61439-2:2011, clauses 10.2 - 10.13
IEC 61921:2003

Remarks: -

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in report no. 2222038.04-INC, dated 26 November 2018.

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, 26 November 2018

Number: 2222038.103

DEKRA Certification B.V.



H.R.M. Barends
Certification Manager

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Overview of product evaluation according to IEC 61439-2:

IEC 61439-2 Clause	IEC 61921 Clause	Clause description	Tested ratings	Results
10.2		Strength of material and parts		
10.2.2		Resistance to corrosion	Severity test A: indoor	Pass
10.2.3		Properties of insulating materials		Pass
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
10.2.5		Lifting	125 % of the weight of the assembly	Pass
10.2.6		Mechanical impact	IK10	Pass
10.2.7		Marking	Engraved plates	Pass
10.3	7.2.7	Degree of protection of assembly	IP21 (full assembly IP31, except: roof top ventilation IP21)	Pass
10.4	7.2.5	Clearances and creepage distances	Clearances > 5,5 mm Creepage distances > 10 mm	Pass
10.5	7.2.4	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	R<0,1 Ohms	Pass
10.5.3		Short-circuit withstand strength of the protective circuit	PE tested I _{cc} 30 kA / 240 V	Pass
10.6		Incorporation of switching devices and components	The examination of the compliance of components in the assembly, with their relevant product standard, is not part of this project	Pass
10.7		Internal electrical circuits and connections		Pass
10.8		Terminals for external conductors		Pass
10.9	7.2.2	Dielectric properties		
10.9.2		Power-frequency withstand voltage	U _i = 690 V	Pass
10.9.3		Impulse withstand voltage	U _{imp} 6 kV (main circuit)	Pass
10.10	7.2.1	Verification of temperature rise limits at 52 °C ambient temperature	Current level 500 kvar config: 779 A (1,12 * I _n)	Pass
10.11	7.2.3	Short-circuit withstand strength	Main busbar: I _{cw} 50 kA – 1,0 s Incoming unit: I _{cc} 50 kA at 415 V Functional units (MCCBs + contactors): I _{cc} 50 kA at 415 V	Pass
10.12		EMC	No test required, environment A	Pass
10.13	7.2.6	Mechanical operation	200 operations	Pass

Product details:

	Description
Incoming circuit ¹⁾	1x MCCB 500 kvar config: NS1250N 3 poles, 1250 A Manufacturer: Schneider Electric
Capacitor bank stage ratings	2 x 25 kvar, 415 V 50 Hz 1 x 50 kvar, 415 V 50 Hz 4 x 100 kvar, 415 V 50 Hz
Capacitor units	3 Phase Delta connected with discharge resistor. Ambient temperature class D (-25... 55 °C), Capacitor 25 kvar (34.4 kvar, 525 V): BLRCH344A413B52 Capacitor 50 kvar (68.8 kvar, 525 V) : BLRCH344A413B52 Capacitor 100 kvar (136.8 kvar, 525 V) : BLRCH456A547B52 Manufacturer: Schneider Electric
MCCBs	2x NSX100N, TM50D, 3 poles, 50 A 1x NSX100N, TM100D, 3 poles, 100 A 4x NSX250N, TM200D, 3 poles, 200 A Manufacturer: Schneider Electric
Contactors	Contactor-for 25 kvar, 230V coil: TeSys LC1E40U5 Contactor-for 50 kvar, 230V coil: TeSys LC1E95U5 Contactor-for 100 kvar, 230V coil: TeSys LC1E160U5 Manufacturer: Schneider Electric
Detuned reactor	3 phase type, Iron core Electrical insulation class H 25 kvar (14%), Network 400 V, 50 Hz Type: LVR14250A40T 50 kvar (14%), Network 400 V, 50 Hz: Type LVR14500A40T 100 kvar (14%), Network 400 V, 50 Hz: Type LVR14X00A40T Manufacturer: Schneider Electric
P.F. Controller	Varplus Logic Controller VPL12N (400 up to 500 kvar), Electronic type Manufacturer: Schneider Electric
Main busbar	2 x 30 x 10 mm Cu per phase
PE bar	2 x 30 x 5 mm Cu
Note:	
1)	bottom connection or top connection

Applicant : Schneider Electric
5 Avenue Raymond Chanas
38320 Eybens
France

Application Date : 23 November 2018

Order Number : 2232915.00-INC

Product : Low-voltage switchgear and controlgear assembly / Power Factor Correction bank

Trade name : Schneider Electric

Type/Model : VarSet 400 – 500 kvar Capacitor Banks

Arnhem, 26 November 2018

Manufacturer/ Production sites: Schneider Electric
12A, Hosur road
Attibele Industrial Area
Neralur Post, Bangalore
India

Subject : Design verification

Requirements : IEC 61439-1 :2011 / IEC 61439-2:2011, clauses 10.2 - 10.13
IEC 61921:2003

Remark : -

Conclusion : The product complies with the specified requirements

Tested by : H.G.M. Kormelink



Checked by : H.L. Schendstok



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