

VDE Prüf- und Zertifizierungsinstitut GmbH • Merianstraße 28 • D-63069 Offenbach

SHREEM ELECTRIC LTD.
GAT NO. 311, Near Ratnappaanna
Kumbhar Market Yard Gate, Mauje Agar
416 144 JAYSINGPUR - DIST KOLHAPUR
INDIA

Offenbach, 2014-06-05

Your ref.
Mr. D.G. Patil

Your letter
2013-07-12

Our ref. - please indicate
5015860-4690-0001/187969
CC2/bt-bue

Contact
Mr. Bretz
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Dear Mr. Patil,

Prüfbericht zur Information des Auftraggebers *Test Report for the Information of the applicant*

Produkt / Product Shunt power capacitor - three-phase unit in delta connection **Typ / Type FT-H250-R0440-S1R3**

Dieser Prüfbericht enthält das Ergebnis einer einmaligen Untersuchung an dem zur Prüfung vorgelegten Erzeugnis. Ein Muster dieses Erzeugnisses wurde geprüft, um die Übereinstimmung mit den nachfolgend aufgeführten Normen bzw. Abschnitten von Normen festzustellen. Die Prüfung wurde durchgeführt von 2014-02-11 bis 2014-05-14.

This test report contains the result of a singular investigation carried out on the product submitted. A sample of this product was tested to found the accordance with the thereafter listed standards or clauses of standards resp.

The testing was carried out from 2014-02-11 to 2014-05-14.

Der Prüfbericht berechtigt Sie nicht zur Benutzung eines Zertifizierungszeichens des VDE und berücksichtigt ausschließlich die Anforderungen der unten genannten Regelwerke.

The test report does not entitle for the use of a VDE Certification Mark and considers solely the requirements of the specifications mentioned below.



Wenn gegenüber Dritten auf diesen Prüfbericht Bezug genommen wird, muss dieser Prüfbericht in voller Länge an gleicher Stelle verfügbar gemacht werden.

Whenever reference is made to this test report towards third party, this test report shall be made available on the very spot in full length.

Applicant: SHREEM ELECTRIC LTD.
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INDIA

Manufacturer: SHREEM ELECTRIC LTD.
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416 144 JAYSINGPUR - DIST KOLHAPUR
INDIA

Test object: Shunt power capacitor
Three-phase unit in delta connection

Type: FT-H250-R0440-S1R3

Rated capacitance: Δ 3 x 137,08 μ F

Rated output: 25 kvar

Rated voltage: AC 440 V

Rated frequency: 50 Hz

Temperature category: D (Maximum ambient temperature 55 °C)

Applicable Specification

DIN EN 60831-1 (VDE 0560 Teil 46):2003-08

EN 60831-1:1996+A1:2003

IEC 60831-1:1996+A1:2002

DIN EN 60831-2 (VDE 0560 Teil 47):1997-09

EN 60831-2:1996

IEC 60831-2:1995

Shunt power capacitors of the self-healing type for a.c. systems having a rated voltage up to and including 1 kV



Test procedure

Sample no. 1	Thermal stability test ($t = 48$ h; $T = 55^{\circ}\text{C}$; $U = 1,2 \times U_N = 528$ V AC) Measurement of the tangent of the loss angle at elevated temperature
Sample no. 2 to no. 4	Voltage test between terminals ($U = 2,15 \times U_N = 946$ V AC) Voltage test between terminals and container ($U = 3,0$ kV AC) Lightning impulse voltage test between terminals and container ($U_{\text{peak}} = 8$ kV)
Sample no. 5 to no. 7	Discharge test
Sample no. 8 to no. 9	Ageing test Part a): $t = 750$ h $T = 50^{\circ}\text{C}$ $U = 1,25 \times U_N = 550$ V AC Part b): 1000 discharge cycles $I_{\text{peak}} = 7,6$ kA Part c): $t = 750$ h $T = 50^{\circ}\text{C}$ $U = 1,25 \times U_N = 550$ V AC
Sample no. 10 to no. 12	Self-healing test
Sample no. 13 to no. 14	Destruction test
Place of testing	The tests have been carried out at the VDE Testing and Certification Institute in Offenbach
Measuring and testing equipment:	The measuring and testing equipment used in the testing laboratory is calibrated before being put into service and thereafter according to an established programme



Test result

The samples of type FT-H250-R0440-S1R3, AC 440 V - 25 kvar did pass all of the above listed tests. This means that all requirements of DIN EN 60831-1 (VDE 0560 Teil 46):2003-08; EN 60831-1:1996+A1:2003; IEC 60831-1:1996+A1:2002 and DIN EN 60831-2 (VDE 0560 Teil 47):1997-09; EN 60831-2:1996; IEC 60831-2:1995 are fulfilled.

VDE Testing- and Certification Institute
CC2
Components and Cables



Andreas Bretz
Reviewer



Holger Roß
Test Engineer



A COMPANY OF THE **VDE** ASSOCIATION FOR ELECTRICAL, ELECTRONIC & INFORMATION TECHNOLOGIES

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Notified Body according to the Equipment and Product Safety Act (GPSG) for technical work equipment and consumer products. Notified body according to the EMC Directive 2004/108/EG for Electromagnetic Compatibility (EMC). Accredited by DAR accreditation bodies according to DIN EN ISO/IEC 17020, 17021, 17025 and DIN EN 45011. Accredited by: IEC – International Electrotechnical Commission – IEC/IEC/CB, IECQ and CENELEC – European committee for Electrotechnical Standardization – CCA, HAR, ENEC.