

TEST CERTIFICATE

Issued to: EAE Elektrik Asansör End.
Insaat San. ve Tic. A.S.
Akçaburgaz Mahallesi 119, Sokak No: 10
34510 Esenyurt / Istanbul
Turkey

For the product: Low-voltage busbar trunking system

Trade name: EAE

Type/Model: KXA27

Ratings: Ui 1000 V, Uimp 12 kV, Inc 2500 A at 50 Hz, IP55
Icw 80 kA - 1 s, 100 kA - 1 s
for more details see annex

Manufactured by: EAE Elektrik Asansör End.
Insaat San. ve Tic. A.S.
Akçaburgaz Mahallesi 119, Sokak No: 10
34510 Esenyurt / Istanbul
Turkey

Subject: Design verification

Requirements: IEC 61439-6: 2012
Clauses: 10.2, 10.3, 10.4, 10.5, 10.9, 10.10, 10.11, 10.101, 10.102 and Annex BB,
CC, and DD

Remarks: Busbar trunking system consists of flange, joint and straight lengths

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in report no. 2163009.13-INC, 12 November 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, 12 November 2013

Number: 2163009.112

DEKRA Certification B.V.

F.S. Strikwerda
Certification Manager

© Integral publication of this certificate and adjoining reports is allowed

DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem, The Netherlands
T +31 88 96 83000 F +31 88 96 83100 www.dekra-certification.com Company registration 09085396

Overview of product evaluation according to IEC 61439-6:

IEC 61439-6 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		
10.2.3.1	Verification of thermal stability of enclosures	Cover of tap-off facility	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	50J for busbar trunking system without tap-off facility IK08 for busbar trunking system with tap-off facility	Pass
10.2.7	Marking		Pass
10.2.101	Ability to withstand mechanical loads		
10.2.101.1	Test procedure for a straight busbar trunking unit	Heavy loads	Pass
10.2.101.2	Test procedure for a joint	Heavy loads	Pass
10.2.101.3	Resistance of the enclosure to crushing	Heavy loads	Pass
10.3	Degree of protection of assembly	IP55	Pass
10.4	Clearances and creepage distances	Clearances > 14 mm, based on U _{imp} = 12 kV; Creepage distances > 16 mm, based on U _i = 1000 V, pollution degree 3, material group IIIa.	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	Earth resistance < 0,1 Ω	Pass
10.5.3	Short-circuit withstand strength of the protective circuit	48 kA - 1 s when trunking enclosure is used as PE 60 kA - 1 s when separated PE busbar is used	Pass
10.9	Dielectric properties		
10.9.2	Power-frequency withstand voltage	U _i 1000 V	Pass
10.9.3	Impulse withstand voltage	U _{imp} 12 kV	Pass
10.10	Verification of temperature rise		
10.10.2.3.5	Test of a BT run	2500 A	Pass
10.11	Short-circuit withstand strength	when trunking enclosure is used as PE I _{cw} 80 kA - 1 s (3-phase) I _{cn} 48 kA - 1 s (neutral) when separated PE busbar is used I _{cw} 100 kA - 1 s (3-phase) I _{cn} 60 kA - 1 s (neutral)	Pass
10.101	Resistance to flame-propagation	Flame application time 40 min	Pass
10.102	Fire resistance in building penetrations	Fire resistance time 120 min	Pass

IEC 61439-6 Clause	Clause description	Tested ratings	Results																		
Annex BB	Phase conductor characteristics	$[\mu\Omega/m]$ X : 7 R ₂₀ : 21 R : 28 Z ₂₀ : 22 Z = Z ₍₁₎ = Z ₍₂₎ : 29	Pass																		
Annex CC	Fault-loop zero-sequence impedances	<table border="0"> <tr> <td></td> <td>Phase to Neutral [$\mu\Omega/m$]</td> <td>Phase to Earth [$\mu\Omega/m$]</td> </tr> <tr> <td>X_{(0)bx} :</td> <td>37</td> <td>56</td> </tr> <tr> <td>R_{(0)bx} :</td> <td>96</td> <td>118</td> </tr> <tr> <td>R_{(0)bx} :</td> <td>130</td> <td>159</td> </tr> <tr> <td>Z_{(0)bx} :</td> <td>103</td> <td>131</td> </tr> <tr> <td>Z_{(0)bx} :</td> <td>135</td> <td>168</td> </tr> </table>		Phase to Neutral [$\mu\Omega/m$]	Phase to Earth [$\mu\Omega/m$]	X _{(0)bx} :	37	56	R _{(0)bx} :	96	118	R _{(0)bx} :	130	159	Z _{(0)bx} :	103	131	Z _{(0)bx} :	135	168	Pass
	Phase to Neutral [$\mu\Omega/m$]	Phase to Earth [$\mu\Omega/m$]																			
X _{(0)bx} :	37	56																			
R _{(0)bx} :	96	118																			
R _{(0)bx} :	130	159																			
Z _{(0)bx} :	103	131																			
Z _{(0)bx} :	135	168																			
Annex DD	Fault-loop resistances and reactances	<table border="0"> <tr> <td></td> <td>Phase to Phase [$\mu\Omega/m$]</td> <td>Phase to Neutral [$\mu\Omega/m$]</td> <td>Phase to PE [$\mu\Omega/m$]</td> </tr> <tr> <td>X_{bx} :</td> <td>13</td> <td>20</td> <td>23</td> </tr> <tr> <td>R_{b20xx} :</td> <td>42</td> <td>44</td> <td>50</td> </tr> <tr> <td>R_{bx} :</td> <td>57</td> <td>60</td> <td>68</td> </tr> </table>		Phase to Phase [$\mu\Omega/m$]	Phase to Neutral [$\mu\Omega/m$]	Phase to PE [$\mu\Omega/m$]	X _{bx} :	13	20	23	R _{b20xx} :	42	44	50	R _{bx} :	57	60	68	Pass		
	Phase to Phase [$\mu\Omega/m$]	Phase to Neutral [$\mu\Omega/m$]	Phase to PE [$\mu\Omega/m$]																		
X _{bx} :	13	20	23																		
R _{b20xx} :	42	44	50																		
R _{bx} :	57	60	68																		

Product details:

Busbars		
3-phase		6 x 250 mm Aluminium conductor
Neutral		6 x 250 mm Aluminium conductor
PE		trunking enclosure or separated PE busbar of 6 x 250 mm Aluminium conductor

Note:

The operational current ratings above are given at 50 Hz, operational currents current at 50 Hz are applicable to 60 Hz for rated currents up to and including 800 A. For currents above 800 A, the rated current at 60 Hz shall be reduced to 95 % of that at 50 Hz (IEC 61439-1 clause 10.10.2.3.1).

The phase to PE impedances, resistances and reactances were measured on the busbar trunking system with enclosure used as PE.