

# TEST CERTIFICATE

Issued to: Tekpan Teknik Elektrik Kumanda Pano San. ve Turizm Tic. As.  
Kemalpaşa O.S.B.  
İstiklal Mah.17 SK No. 8, Ulucak Kemalpaşa  
İzmir  
Turkey

For the product: Low-voltage switchgear and controlgear assembly

Trade name: Tekpan / PDS

Type/Model: Teos Series (plus+/standard) 4000A -Fixed&Withdrawable MCC

Ratings:  $I_{nA}$  2970 A (at normal ambient),  $I_{nA}$  2500 A (at 50 °C ambient),  
 $U_e$  415 V,  $U_i$  max. 1000 V,  $U_{imp}$  max. 12 kV, IP40  
 $I_{cw}$  max. 80 kA - 1 s,  $I_{cc}$  max. 25 kA at 415 V  
For more details see annex

Manufactured by: Tekpan Teknik Elektrik Kumanda Pano San. ve Turizm Tic. As.  
Kemalpaşa O.S.B.  
İstiklal Mah.17 SK No. 8, Ulucak Kemalpaşa  
İzmir  
Turkey

Subject: Design verification

Requirements: IEC 61439-2:2020  
Clauses 10.2, 10.3, 10.4, 10.5.3, 10.6, 10.7, 10.8, 10.9, 10.10.2.3.5,  
10.11, 10.12

Remarks: -

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in report no. 2220729.01-INC, dated 22 September 2020.

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, 22 September 2020

Number: 2220729.100

DEKRA Certification B.V.

F.S. Strikwerda  
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	Severity test A: indoor	Pass
10.2.3	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
10.2.5	Lifting		Pass
10.2.8	Mechanical operation	200 operations	Pass
10.3	Degree of protection of assembly	IP40	Pass
10.4	Clearances and creepage distances	Clearances > 14 mm / 8 mm / 3 mm, based on Uimp = 12 kV / 8 kV / 4 kV; Creepage distances > 16 mm / 12,5 mm / 10 mm, based on Ui = 1000 V / 800 V / 690 V, pollution degree 3, material group IIIa.	Pass
10.5	Protection against electric shock and integrity of protective circuits		
10.5.3	Short-circuit withstand strength of the protective circuit	Icw 60 kA - 1 s (horizontal PE busbar) Icw 48 kA - 1 s (vertical PE busbar in cable compartment section 3 Feeder Module Fixed) Icw 36 kA - 1 s (vertical PE busbar in cable compartment section 4 Feeder Module Withdrawable&MCC)	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	Ui 1000 V: - Main busbar and distribution busbar - ACBs 4000 A and 2500 A - MCCBs 1600 A, 1000 A, 630 A, 400 A  Ui 800 V: - MCCB 250 A - MCCB 160 A withdrawable - DSD 110 kW withdrawable - DOL 55 kW withdrawable  Ui 690 V: - DSD 75 kW, 55 kW, 30 kW withdrawable - DOL 30 kW, 15 kW withdrawable	Pass
10.9.3	Impulse withstand voltage	Uimp 12 kV: - Main busbar and distribution busbar - ACB 2500 A - MCCBs 1600 A, 1000 A, 630 A, 400 A  Uimp 8 kV: - ACB 4000 A - MCCB 250 A - MCCB 160 A withdrawable - DSD 110 kW withdrawable - DOL 55 kW withdrawable  Uimp 4 kV: - DSD 75 kW, 55 kW, 30 kW withdrawable - DOL 30 kW, 15 kW withdrawable	Pass
10.9.5	External operating handles of insulating material		Pass

IEC 61439-2 Clause	Clause description	Tested ratings	Results
10.10.2.3.5	Verification of the complete assembly (at normal ambient)	Incoming unit Ing **: <ul style="list-style-type: none"> <li>- 2970 A (ACB 4000 A)</li> </ul> Outgoing units Ing **: <ul style="list-style-type: none"> <li>- 2500 A (ACB 2500 A)</li> <li>- 1000 A (MCCB 1600 A)</li> <li>- 900 A (MCCB 1000 A)</li> <li>- 500 A (MCCB 630 A)</li> <li>- 320 A (MCCB 400 A)</li> <li>- 250 A (MCCB 250 A)</li> </ul> Withdrawable outgoing units Ing **: <ul style="list-style-type: none"> <li>- 160 A (MCCB 160 A)</li> <li>- 104 A (DSD 110 kW)</li> <li>- 70 A (DSD 75 kW)</li> <li>- 32 A (DSD 55 kW)</li> <li>- 29 A (DSD 30 kW)</li> <li>- 125 A (DOL 55 kW)</li> <li>- 50 A (DOL 30 kW)</li> <li>- 26 A (DOL 15 kW)</li> </ul>	Pass
10.10.2.3.5	Verification of the complete assembly (at 50 °C ambient)	Incoming unit Ing **: <ul style="list-style-type: none"> <li>- 2500 A (ACB 4000 A)</li> </ul> Outgoing units Ing **: <ul style="list-style-type: none"> <li>- 2150 A (ACB 2500 A)</li> <li>- 825 A (MCCB 1600 A)</li> <li>- 780 A (MCCB 1000 A)</li> <li>- 420 A (MCCB 630 A)</li> <li>- 300 A (MCCB 400 A)</li> <li>- 190 A (MCCB 250 A)</li> </ul> Withdrawable outgoing units Ing **: <ul style="list-style-type: none"> <li>- 150 A (MCCB 160 A)</li> <li>- 84 A (DSD 110 kW)</li> <li>- 55 A (DSD 75 kW)</li> <li>- 22 A (DSD 55 kW)</li> <li>- 24 A (DSD 30 kW)</li> <li>- 110 A (DOL 55 kW)</li> <li>- 39 A (DOL 30 kW)</li> <li>- 21 A (DOL 15 kW)</li> </ul>	Pass
10.11**	Short-circuit withstand strength	Icw 80 kA - 1 s (main busbar) Icw 60 kA - 1 s (neutral busbar) Icw 80 kA - 1 s (distribution busbar section 3 Feeder Module Fixed) Icw 48 kA - 1 s (N distribution busbar section 3 Feeder Module Fixed) Icw 48 kA - 1 s (N cable compartment section 3 Feeder Module Fixed) Icw 60 kA - 1 s (distribution busbar section 4 Feeder Module Withdrawable&MCC) Icw 36 kA - 1 s (N cable compartment section 4 Feeder Module Withdrawable&MCC) Icc 25 kA at 415 V (withdrawable outgoing units DSD 110 kW, DSD 75 kW, MCCB 160 A) Icc 15 kA at 415 V (withdrawable outgoing units DSD 55 kW, DSD 30 kW, DOL 55 kW, DOL 30 kW)	Pass
10.12	Electromagnetic compatibility (EMC)		Pass

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

\*\* The position of the incoming and outgoing units is detailed in the Product Details table

\*\*\* Incoming unit ACB 4000 A and outgoing units ACB 2500 A, MCCB 1600 A, MCCB 1000 A, MCCB 630 A, MCCB 400 A, MCCB 250 A and DOL 15 kW are not part of this product evaluation (clause 10.11) as per manufacturer's request.

Applicant : Tekpan Teknik Elektrik Kumanda Pano San. ve Turizm Tic. As.  
Kemalpaşa O.S.B.  
İstiklal Mah.17 SK No. 8, Ulucak Kemalpaşa  
İzmir  
Turkey

Application Date : 11 February 2020

Order Number : 2220729.00-INC

Product : Low-voltage switchgear and controlgear assembly

Trade name : Tekpan / PDS

Type/Model : Teos Series (plus+/standard) 4000A -Fixed&Withdrawable MCC


Arnhem, 22 September 2020


Manufacturer/  
Production sites : Tekpan Teknik Elektrik Kumanda Pano San. ve Turizm Tic. As.  
Kemalpaşa O.S.B.  
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10.11, 10.12

Conclusion : The product complies with the specified requirements

Tested by : R. Verhagen 

Checked by : F. Fu 

RVer

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