[1] # TYPE EXAMINATION CERTIFICATE

[2] **Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU**

[3] Type Examination Certificate Number: **DEMKO 21 ATEX 2235X Rev. 1**

[4] Product: **Titan X Transformers**

[5] Manufacturer: **Hammond Power Solutions Inc.**

[6] Address: **595 Southgate Dr., Guelph Ontario N1G 3W6 Canada**

[7] This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] UL International Demko A/S certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.

The examination and test results are recorded in confidential report no. **US/UL/ExTR21.0122/01.**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN IEC 60079-7: 2015 +A1:2018**

except in respect of those requirements listed at item 18 of the Schedule.

[10] If the sign "**X**" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

[11] This Type examination certificate relates only to the design of the specified product, and not to specific items of product subsequently manufactured.

[12] The marking of the product shall include the following:

II 3 G Ex ec IIC T3 Gc

Certification Manager
Jan-Erik Storgaard

This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

Date of issue: 2021-12-03
Re-issued: 2022-11-22

Certification Body
UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark
Tel. +45 44 85 65 65, info.dk@ul.com, www.ul.com

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Schedule
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[15] Description of Product:
Titan X dry type potted three phase transformers having the following nomenclature:

I	II	III	IV	V	VI	VII	VIII	IX	X	XI
T	X	2	A	0045	K	B	K	B	6	F

I – Transformer family designation:

T – Titan

II – Type:

X – IECEx, ATEX and UKEx

III – Generation:

2 – Current designs

IV – System voltage (Primary – Secondary):

A – 3 Phase, Delta – Wye-N
B – 3 Phase, Wye-N – Delta
C – 3 Phase, Delta – Delta/CT
D – 3 Phase, Delta – Delta

V – kVA rating:

0006 – 6 kVA
0009 – 9 kVA
0015 – 15 kVA
0030 – 30 kVA
0045 – 45 kVA
0075 – 75 kVA

VI – Primary voltage rating, Vac:

G – 380D
H – 400D
J - 415D
K – 480D
P – 600D or 600Y
Q – 480D or 600D
U – 690D

Where:
D = Delta
Y = Wye-N

VII – Secondary voltage rating, Vac:

B – 208Y/120
C – 230Y/133
D – 240D, 240Y/139 or 240D/120CT
E – 220Y/127
G – 380Y/220
H – 400Y/231
K – 480Y/277
P – 600Y/347
U – 690Y/400

Where:
D = Delta
Y = Wye-N
CT = Centre Tap

VIII – Coil winding material and electrostatic shield:

K – Copper windings and electrostatic shield included

IX – Temperature rise and coil insulation Class:

B - 80°C rise and 180°C insulation Class
F - 115°C rise and 180°C insulation Class

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X – Frequency:

5 – 50/60 Hz
6 – 60 Hz

XI – Enclosure environmental type rating:

F – Type 4
G – Type 4X utilizing 304 stainless steel enclosure
H – Type 4X utilizing 316 stainless steel enclosure

Note: Transformers having primary and/or secondary voltage rating and/or kVA rating other than the ratings specified under nomenclature suffixes V, VI and VII but within the limits identified in the Rating section are not identified in accordance with the above nomenclature but are identified by a six digit numerical part no. and are marked with such part no.

Temperature range:
The ambient temperature range is -25°C to +40°C or -25°C to +51°C.

Note: -25°C to +51°C ambient temperature range applies to all transformers rated for 50/60 Hz marked with nomenclature suffix IX value “B” or “F” (denoting 80°C or 115°C temperature rise respectively) and 60 Hz rated transformers marked with nomenclature suffix IX value “B” denoting 80°C temperature rise.

-25°C to +40°C ambient temperature range applies to all other transformers.

Electrical data

Primary Voltage:
208D/Y-690D/Y Vac, 50/60 Hz.

Voltage tap configurations: 90%, 92.5%, 95%, 97.5%, 100%, 102.5%* and 105%**.

* 102.5% tap not available for 6 kVA transformers rated more than 673 Vac.
** 105% tap not available for 6 kVA transformers rated more than 657 Vac.

Secondary Voltage:
208D/Y-690D/Y Vac, 50/60 Hz

Where:
D = Delta
Y = Wye-N

kVA ratings: 6 to 75 kVA.

Routine tests:
Each transformer is subjected to the dielectric strength test of clause 7.1 of EN 60079-7, Edition 5.1 (2017-08). Testing consists of the following tests:

1. Test voltage at 50 or 60 Hz equaling to the transformer rated primary voltage plus __* multiplied by two plus 1000 Vac is to be applied between the transformer primary coils and enclosure ground connection terminal connected together and the transformer secondary coils for 60 seconds.

   * __ may be 0, 2.5% or 5% depending on the maximum primary voltage tap provided on the transformer.

2. Test voltage at 50 or 60 Hz equaling to the transformer rated secondary voltage multiplied by two plus 1000 Vac is to be applied between the transformer secondary coils and enclosure ground connection terminal connected together and the transformer primary coils for 60 seconds.

[16] Descriptive Documents
The scheduled drawings are listed in the report no. provided under item no. [8] on page 1 of this Type Examination Certificate.

[17] Special Conditions of Use:

- The transformer enclosure non-metallic coating presents an electrostatic discharge hazard. Ensure the transformer is earthed and clean the enclosure with damp cloth only.
- Cable glands, cables and conductors used for field wiring of the transformers shall be rated for minimum service temperature of 111°C for transformers marked for 40°C maximum ambient temperature and 122°C for transformers marked for 51°C maximum ambient temperature.
- Field wiring device (cables, cable glands) installed through the transformer enclosure shall be ATEX certified components as applicable, complying with Ex ec method of protection and rated IP66.
- Transformers rated higher than 6 kVA will require a minimum clearance of 7 mm which shall be maintained between all installed connection lugs (including washers, nuts and bolts) and the nearest live parts opposite in polarity and between all installed connection lugs (including washers, nuts and bolts) and the nearest earthed dead metal parts.

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Essential Health and Safety Requirements
The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

Additional information
The Titan X Transformers have in addition passed the tests for Ingress Protection to IP66 in accordance with EN60529:1991+A1:2000+A2:2013.