

INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No .:	IECEx UL 21.0116X	Page 1 of 4	Certificate history:
Status:	Current	Issue No: 1	Issue 0 (2021-12-03)
Date of Issue:	2022-11-22		
Applicant:	Hammond Power Solutions Inc 595 Southgate Dr. Guelph Ontario N1G 3W6 Canada		
Equipment:	Dry type potted three phase transformers, Tita	an X, TX2*******.	
Optional accessory	:		
Type of Protection:	Increased Safety "ec"		
Marking:	Ex ec IIC T3 Gc		
	-25°C to +40°C or -25°C to +51°C		
Approved for issue Certification Body:	on behalf of the IECEx	∟ucy Frieders	
Position:		Staff Engineer	
Signature:		·	
(for printed version)			
Date: (for printed version)			
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Certificate issue	d by:		
UL LLC	Deed		Solutions

United States of America



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Date of issue:	2022-11-22	Issue No: 1
Manufacturer:	Hammond Power Solutions Inc 595 Southgate Dr. Guelph Ontario N1G 3W6 Canada	
Manufacturing locations:	Hammond Power Solutions Inc 595 Southgate Dr. Guelph Ontario N1G 3W6 Canada	Hammond Power Solutions S.A. de C.V. Ave. Avante #810, Parque Industrial Guadalaupe Guadalaupe, Nuevo Leon C.P. 67190 Mexico
This certificate is iss IEC Standard list be found to comply with Rules, IECEx 02 an	sued as verification that a sample(s), rep slow and that the manufacturer's quality in the IECEx Quality system requiremen d Operational Documents as amended	presentative of production, was assessed and tested and found to comply with the system, relating to the Ex products covered by this certificate, was assessed and ts.This certificate is granted subject to the conditions as set out in IECEx Scheme

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements Edition:7.0

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e" Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

US/UL/ExTR21.0122/00

US/UL/ExTR21.0122/01

Quality Assessment Report:

US/UL/QAR21.0017/00



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Dry type potted three phase transformers.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

2022-11-22

- 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 IECEx 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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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

2022-11-22

Issue 1: Ambient temperature range of -25°C to +51°C added for the Titan X transformers and drawing updates to reflect this change. Additionally, minor correction to transformer assembly drawings.

Annex:

Annex to IECEx UL 21.0116X Issue 1.pdf

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С	ertific	ate No	D.:		IE	ECEx U	L 21.01	16X				lssue No.: 1 Page 1 of 5	
<u>TY</u>	<u>PE D</u>	ESIGN	IATIC	<u>)N</u>									
Tita	an X t	hree p	hase	transfo	rmers	having	the follo	owing r	nomen	clature:			
I	П	III	IV	V	VI	VII	VIII	IX	Х	XI			
т	Х	2	А	0045	к	В	к	В	6	F			
- ا	Trans	sforme	er fami	ilv desio	natior	ו:							
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	1 – 1	itan											
–	Туре	e:											
	X – II	ECEx,	АТЕХ	(and U	KEx								
-	– Ger	eratio	n:										
	2 – C	urrent	desic	ns									
		anon	accie	,									
IV ·	– Sys	tem vo	oltage	(Prima	ry – S	econda	ry):						
/	A – 3	Phase	e, Delt	a – Wy	e-N								
l	B – 3	Phase	e, Wye	e-N – Del	elta ta/CT								
I	D – 3	Phase	e, Delt	a – Del	ta/C1								
V -	- kVA	rating	:										
(006	– 6 kV	Δ										
(0009	– 9 kV	A										
(0015	– 15 k	VA										
(0030	– 30 k	VA										
(0045 0075	– 45 K – 75 k	va VA										
	-												



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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



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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

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 1: 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.

Note 2: -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.

PARAMETERS RELATING TO THE SAFETY

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.



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MARKING

Marking has to be readable and indelible; it has to include the following indications:

HP5	Hammond Power Solut 595 Southgate Guelph ON, N10	ions Drive 3W6	HPS Dry Type Encap Transformateur de Part No. TX	Tita ^{sulated} Type 2A0	In™X Transfo Sec End 015K	ormer capsulé (BKF	DEMKO 21 IECEx U Ex ec	 II 3G ATEX 2235X JL 21.0116X IIC T3 GC UKCA Certificate No. UL21UKEX2340X
Cust. Ref. Ref. du Client	3	Serial No. No. de Serie HV/HT	480V	VOLTS	CURRENT	% RATED VOLTAGE % TENSION NOMINALE	CONNECTION EACH PHASE CONNEXION PAR PHASE	HAZARDOUS LOCATIONS CLASS 1, ZONE 2 GROUP IIC, T3
Type [Cooling Refroidissement [kVA [- AN 15	BIL Term Bornes LV/BT	10 kV H1 H2 H3 208Y/120V 41.6A	504 492 480 468 456 444 432	17.2 17.6 18.0 18.5 19.0 19.5 20.0	105 102.5 100 97.5 95 92.5 90	1 23 4 5 6 7	ELECTROSTATIC SHIELD
Echauffement Echauffement Temp Class Classe Temp Winding Enroulement	115 °C 180 °C CU	BIL Term Bornes 	10 kV X0 X1 X2 X3 -25° C<=Tamb<=+40° C					WARNING/ATTENTION: - DRUGSION HAZARD. DO NOT DISCONNECT EQUIPMENT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS FREE OF IGNITABLE CONCENTRATIONS. - POTENTIAL ELECTROSTATIC CHARGING HAZARD. REFER THE INSTALLATION MANUAL.
Frequency Frequence Hz Impedance % 9_135 °C Encl Type Type De Coffrage Weight Ibs /ka	60 2.3 IP66 295/134]]]			H2 H3	×:	2 2 2 2 2 2 2 2 2 2 2 2 2 2	- RISQUE DECXPLOSION, NE PAS DÉBRANCHER PENDANT QUE LE CIRCUIT EST SOUS TENSION OU À MOINS QUE LEEMPLACEMENT NE SOIT EXEMPT DE CONCONTRATIONS INFLAMMABLES - DAIGER POTENTEL DE CHARGE ELECTROSTATIQUE SE RÉFERER AU MANUEL D'INSTALLATION SEISMIC QUALIFICATIONS: <u>OSP-0136-102/16C</u> 2018/ASCE 7-16

Ambient temperature range marked on the marking plate is as follows:

Ambient Temperature Range	Transformer Models
-25°C to +51°C	All models rated 50/60 Hz having 80°C or 115°C temperature rise and all models rated 60 Hz with 80°C temperature rise.
-25°C to +40°C	All other models.

WARNINGS :

POTENTIAL ELECTROSTATIC CHARGING HAZARD. REFER THE INSTALLATION MANUAL



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ROUTINE EXAMINATIONS AND TESTS

Each piece of equipment defined above has to have successfully passed before delivery:

- Each transformer is subjected to the dielectric strength test of clause 7.1 of IEC 60079-7, Edition 5.1. 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.

LIST OF CERTIFIED COMPONENTS

The following additional previous editions of Standards noted under the "Standards" section of this Certificate were applied to integral Components as itemized below. There are no significant safety related changes between these previous editions and the editions noted under the "Standards" section.

Product	Certificate Number	Standards
Breather drain Part no. DP-E M20, manufactured by Ex Innovations, Trading as Redapt.	IECEx SIR 08.0024X	IEC 60079-0:2007 IEC 60079-7:2006