



America

CERTIFICATE

No. U8V 17 06 34962 277

Holder of Certificate: **SynQor Inc.**

155 Swanson Road
Boxborough MA 01719-1316
USA

**Production
Facility(ies):**

34962

Certification Mark:



Product:

DC converter
DC to DC Converter

Model(s):

NQ Series
(see certificate attachment for model and rating information
and License conditions.)

Parameters:

Rated Input Voltage:	9-90 V DC
Rated Output Voltage:	0-90 V DC
Rated Output Current:	26 A Max.
Rated Input Power:	2000 W Max.

**Tested
according to:**

CAN/CSA C22.2 No.60950-1:2007/A2:2014
UL 60950-1:2007/A2:2014
EN 60950-1:2006/A2:2013

The product was voluntarily tested according to the relevant safety requirements noted above. It can be marked with the certification mark above. The mark must not be altered in any way. This product certification system operated by TÜV SÜD America Inc. most closely resembles system 3 as defined in ISO/IEC 17067. Certification is based on the TÜV SÜD "Testing and Certification Regulations". TÜV SÜD America Inc. is an OSHA recognized NRTL and a Standards Council of Canada accredited certification body.

Test report no.:

72128244-000

Date, 2017-06-14

Page 1 of 6



Attachment to Certificate U8V 17 06 34962 277



America

SynQor, Inc.
155 Swanson Road
Boxborough, MA 01719-1316

High Voltage NiQor Converters

<u>NQ</u> I	<u>60</u> II	<u>W</u> III	<u>60</u> IV	<u>Q</u> V	<u>G</u> VI	<u>C</u> VII	<u>20</u> VIII	<u>Nxx</u> IX	<u>-G</u> X
I	<u>Product</u> NQ – NiQor Series								
II	<u>Input Voltage</u> 20 = 9-20 Vdc 60 = 9-60 Vdc 40 = 9-40 Vdc 90 = 9-90 Vdc								
III	<u>Operational Mode</u> T = Buck W = Buck / Boost								
IV	<u>Output Voltage</u> 20 = 0 – 20 Vdc 60 = 0 – 60 Vdc 40 = 0 – 40 Vdc 90 = 0 – 90 Vdc								
V	<u>Package Size</u> E = Eighth Brick H = Half Brick Q = Quarter Brick								
VI	<u>Performance level</u> G = Giga P = Peta T = Tera								
VII	<u>Thermal design</u> C = Encased w/ Threaded Base plate D = Encased w/ Non-Threaded Base plate V = Encased w/ Flanged Base plate								
VIII	<u>Output Current</u> XX = 05 – 55 A max								
IX	<u>Options</u> Non safety options								
X	6/6 RoHS G = 6/6 RoHS compliance								

Maximum Power Ratings:

NQ20x20E	400W max	NQ40W40EP	900 W max
NQ40x40ET	600W max	NQ60W60EP	900 W max
NQ60x60ET	600W max	NQ40W40QT	1500 W max
NQ20x20QG	800W max	NQ90W90QT	1500 W max
NQ40x40QG	800W max	NQ90W90EP	900 W max
NQ60x60QG	800W max	NQ40W40HGx55	2200 W max
NQ60x60QT	1500 W max		
NQ60x60HG	2000W max		
NQ90x90HG	2000W max		

Maximum output power is only available at maximum input and maximum output voltage. At all other operating points the power is limited by the input current limit which is the same as the maximum output current.

Test Report No: 72128244-000

Date, 2017-06-14
U8V 17 06 34962 277

Page 2 of 6



Attachment to Certificate U8V 17 06 34962 277



SynQor, Inc.
155 Swanson Road
Boxborough, MA 01719-1316

Part Number Nomenclature Half Brick

<u>MCOTS-N</u> I	<u>28V</u> II	<u>60</u> III	<u>H</u> IV	<u>G</u> V	<u>D</u> VI	<u>M</u> VII	<u>xxx</u> VIII	<u>-G</u> IX
I	<u>Product</u>	MCOTS-N – MiLCOTs Non-isolated Series						
II	<u>Input Voltage</u>	28V = 9 - 60 Vdc, Output 2000 Watts max 28VE = 9 - 90 Vdc, Output 2000 Watts max						
III	<u>Output Voltage</u>	60 = 0 - 60 Vdc minimum 90 = 0 - 90 Vdc maximum						
IV	<u>Package Size</u>	H = Half Brick						
V	<u>Performance level</u>	G = Giga M = Mega K = Kilo						
VI	<u>Thermal design</u>	Options include but are not limited to: D = Normal Non-Threaded F = Flanged N = Normal Threaded						
VII	<u>Screening</u>	Burn-in duration, etc (Non safety)						
VIII	<u>Options</u>	Suffix letters and/or numbers denoting non-safety critical functions such as, but not limited to, positive or negative logic, pin length, etc.						
IX	<u>6/6 RoHS</u>	G = 6/6 RoHS Compliance						

Test Report No: 72128244-000

Date, 2017-06-14
U8V 17 06 34962 277

Page 3 of 6



Attachment to Certificate U8V 17 06 34962 277

SynQor, Inc.
155 Swanson Road
Boxborough, MA 01719-1316

Part Number Nomenclature Quarter Brick

<u>MCOTS-N</u>	<u>28V</u>	<u>40</u>	<u>Q</u>	<u>T</u>	<u>D</u>	<u>M</u>	<u>xxx</u>	<u>-G</u>
I	II	III	IV	V	VI	VII	VIII	IX

I	<u>Product</u>	MCOTS-N – MiLCOTs Non-isolated Series
II	<u>Input Voltage</u>	28V = 9 - 60 Vdc, Output 1500 Watts max 28VE = 9 - 90 Vdc, Output 1500 Watts max
III	<u>Output Voltage</u>	40 = 0 - 40 Vdc minimum 90 = 0 - 90 Vdc maximum
IV	<u>Package Size</u>	Q = Quarter Brick
V	<u>Performance level</u>	T = Tera
VI	<u>Thermal design</u>	Options include but are not limited to: C= Encased V = Flanged
VII	<u>Screening</u>	Burn-in duration, etc (Non safety)
VIII	<u>Options</u>	Suffix letters and/or numbers denoting non-safety critical functions such as, but not limited to, positive or negative logic, pin length, etc.
IX	<u>6/6 RoHS</u>	G = 6/6 RoHS Compliance

Test Report No: 72128244-000

Date, 2017-06-14
U8V 17 06 34962 277

Page 4 of 6



Attachment to Certificate U8V 17 06 34962 277



SynQor, Inc.
155 Swanson Road
Boxborough, MA 01719-1316

Part Number Nomenclature Eighth Brick

<u>MCOTS-N</u> I	<u>28V</u> II	<u>60</u> III	<u>E</u> IV	<u>P</u> V	<u>D</u> VI	<u>M</u> VII	<u>xxx</u> VIII	<u>-G</u> IX
I	<u>Product</u>	MCOTS-N – MiLCOTs Non-isolated Series						
II	<u>Input Voltage</u>	28V = 9 - 60 Vdc, Output 900 Watts max 28VE = 9-90 Vdc, Output 900 Watts max						
III	<u>Output Voltage</u>	60 = 0 - 60 Vdc minimum 90 = 0-90 Vdc maximum						
IV	<u>Package Size</u>	E = Eighth Brick						
V	<u>Performance level</u>	P = Peta						
VI	<u>Thermal design</u>	Options include but are not limited to: C= Encased V = Flanged						
VII	<u>Screening</u>	Burn-in duration, etc (Non safety)						
VIII	<u>Options</u>	Suffix letters and/or numbers denoting non-safety critical functions such as, but not limited to, positive or negative logic, pin length, etc.						
IX	<u>6/6 RoHS</u>	G = 6/6 RoHS Compliance						

Test Report No: 72128244-000

Date, 2017-06-14
U8V 17 06 34962 277

Page 5 of 6



Attachment to Certificate U8V 17 06 34962 277

SynQor, Inc.
155 Swanson Road
Boxborough, MA 01719-1316

License conditions –

When installed in the end product, consideration shall be given to the following:

1. If the input is considered to be SELV than the output circuit is considered to be SELV.
2. There is basic insulation from the input and output circuits to the baseplate for a working voltage of 90 Vdc
3. Input voltages greater than 60 Vdc are considered to be an unearthed hazardous voltage secondary circuit and the outputs are an ELV circuit
4. The output power of the HV NiQor is considered to be at a hazardous energy level.
5. All models are intended to be supplied from an isolated secondary circuit.
6. Abnormal and Component Failure Tests for High Voltage NiQor were conducted with the power supply input protected by a following fuses, If higher value fuses are used additional may be required:

NQ20-ETC – 25A, 312 type fuse
NQ40-ETC – 20A, 312 type fuse
NQ60-ETC – 20A, 312 type fuse
NQ20-QGC – 50A, AGU type fuse
NQ40-QGC – 40A, AGU type fuse
NQ60-QGC – 25A, 312 type fuse
NQ60-HGC – 50 A, OT50 type fuse
NQ90x90HG - 40A, AGU type fuse

Test Report No: 72128244-000

Date, 2017-06-14
U8V 17 06 34962 277

Page 6 of 6

