



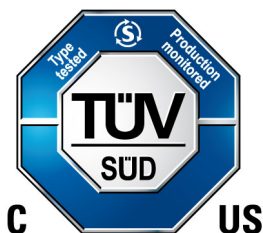
America

CERTIFICATE

No. U8V 034962 0299 Rev. 03

Holder of Certificate: **SynQor Inc.**
 155 Swanson Road
 Boxborough MA 01719-1316
 USA

Certification Mark:



Product: DC converter
 DC to DC Converter

This product was voluntarily tested to the relevant safety requirements referenced on this certificate. 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.: 72147978-200

Date, 2020-11-03

(William J. Stinson)



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No. U8V 034962 0299 Rev. 03

Model(s): InQor, RailQor and MILCOT series

Brand Name: SynQor

Tested according to: CAN/CSA C22.2 No.60950-1:2007/A2:2014
EN 60950-1:2006/A2:2013
UL 60950-1:2007/R:2014-10

Production Facility(ies): 034962

Parameters: IQ1B120QTC12NRSG
Rated Input Voltage: 66-160 V DC
Rated Output Voltage: 12 V DC max
Rated Output Current: 12.0 A
Rated Output Wattage: 150 W max



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CERTIFICATE

No. U8V 034962 0299 Rev. 03

Part Number Nomenclature Full Brick

IQ	4H	120	F	T	C	50	NRS	G
I	II	III	IV	V	VI	VII	VII	IX

- I Product IQ – InQor Series
- II Input Voltage 4H = 180-425 Vdc, Output 600 Watts, 80 Amps max
- III Output Voltage 3 Numbers denoting output voltage in tenths of a volt
050 = 5.0 Vdc minimum
480 = 48.0 Vdc maximum
- IV Package Size F = Full Brick
- V Performance level T = Tera
G = Giga
M = Mega
K = Kilo
- VI Thermal design Options include but are not limited to:
C = Encased
D = Non-Threaded Inserts
V = Flanged Baseplate
- VII Output Current Two digits specifying output current (80 Amps max)
- VIII Options Suffix letters and/or numbers denoting non-safety critical functions such as, but not limited to, positive or negative logic, pin length, etc.
- XI 6/6 RoHS G = 6/6 RoHS Compliance

Custom Part #
CQ0140100 270-330 Vin, 32 Vout, 600W



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CERTIFICATE

No. U8V 034962 0299 Rev. 03

Part Number Nomenclature Quarter Brick

IQ	1B	120	Q	T	C	12	NRS	G
I	II	III	IV	V	VI	VII	VIII	IX

- I Product IQ – InQor Series
- II Input Voltage 64 = 18-135 Vdc, Output 100 Watts max
 68 = 12-150 Vdc, Output 26.5 Watts max
 70 = 34-135 Vdc, Output 150 Watts max
 72 = 42-110 Vdc, Output 150 Watts max
 90 = 34-160 Vdc, Output 120 Watts max
 1B = 66-160 Vdc, Output 150 Watts max
 4H = 180-425 Vdc, Output 150 Watts max
 2H = 90-210 Vdc, Output 150 Watts max
- III Output Voltage 3 Numbers denoting output voltage in tenths of a volt
 018 = 1.8 Vdc minimum
 480 = 48.0 Vdc maximum
- IV Package Size Q = Quarter Brick
- V Performance level T = Tera
 G = Giga
 M = Mega
 K = Kilo
- VI Thermal design Options include but are not limited to:
 C = Encased
 D = Non-Threaded Inserts
 V = Flanged Baseplate
- VII Output Current X = 0 – 4 (40 Amps max)
 Y = 0 – 9 or A – J (A = .0, B = .1 ... J = .9)
 Example: 24 = 24 Amps, 03 = 3 Amps, 2F = 2.5 Amps
- VIII Options Suffix letters and/or numbers denoting non-safety critical
 functions such as, but not limited to, positive or negative logic,
 pin length, etc.
- XI 6/6 RoHS G = 6/6 RoHS Compliance



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No. U8V 034962 0299 Rev. 03

MILCOTs 270 Quarter Brick Part Nomenclature

MCOTS -C	270	12	Q	T	N	M	xxx
I	II	III	IV	V	VI	VII	VII

I	Product	MCOTS-C – MILCOTs Converters
II	Input Voltage	150 = 90-210 Vdc, Output 150 Watts max. 270 = 155-425 Vdc, Output 150 Watts max
III	Output Voltage	3 Characters denoting output voltage in volts R = Decimal point 1R8 = 1.8 Vdc minimum 9R9 = 9.9 Vdc maximum
IV	Package Size	Q = Quarter Brick (40 Amps max)
V	Performance level	K = Kilo M = Mega G = Giga T = Tera
VI	Thermal design	Options include but not limited to: F = Flanged N = Normal
VII	Screening Level	Burn-in duration, etc (Non safety)
VIII	Options	Blank to 3 characters denoting non-safety options such as, but not limited to, positive or negative logic, pin configuration, etc.



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CERTIFICATE

No. U8V 034962 0299 Rev. 03

MILCOTs 270 Quarter Brick Part Nomenclature

MCOTS-C	270	12	Q	T	N	M	xxx
I	II	III	IV	V	VI	VII	VII

I	Product	MCOTS-C – MILCOTs Converters
II	Input Voltage	150= 90-210 Vdc, Output 150 Watts max 270 = 155-425 Vdc, Output 150 Watts max
III	Output Voltage	2 Characters denoting output voltage in volts 05 = 5 Vdc minimum 48 = 48 Vdc maximum
IV	Package Size	Q = Quarter Brick (30 Amps max)
V	Performance level	K = Kilo M = Mega G = Giga T = Tera
VI	Thermal design	Options include but not limited to: F = Flanged N = Normal
VII	Screening Level	Burn-in duration, etc (Non safety)
VIII	Options	Blank to 3 characters denoting non-safety options such as, but not limited to, positive or negative logic, pin configuration, etc.



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No. U8V 034962 0299 Rev. 03

Part Number Nomenclature Quarter Brick

RQ	1B	240	Q	M	C	02	NRS	G
I	II	III	IV	V	VI	VII	VIII	IX

- I Product RQ – RailQor Series
- II Input Voltage 68 = 12-155 Vdc, Output 26 Watts max
72 = 42-110 Vdc, Output 150 Watts max
1B= 66-160 Vdc, Output 150 Watts max
90 = 34-160 Vdc, Output 120 Watts max
- III Output Voltage 3 Numbers denoting output voltage in tenths of a volt

018 = 1.8 Vdc minimum
480 = 48.0 Vdc maximum
- IV Package Size Q = Quarter Brick
- V Performance level T = Tera
G = Giga
M = Mega
K = Kilo
- VI Thermal design Options include but are not limited to:

C = Encased
V = Flanged Baseplate
- VII Output Current 2 Numbers denoting output current in Amps

25 = 25 Amps maximum
- VIII Options Suffix letters and/or numbers denoting non-safety critical functions such as, but not limited to, positive or negative logic, pin length, etc.
- XI 6/6 RoHS G = 6/6 RoHS Compliance

Model Number	Input voltage	Output voltage	Output Current	Output Power	Baseplate max °C
*RQ1B560QTV03NRS-G	66-160 Vdc	56 Vdc	2.6 Amax	145 Wmax	100

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No. U8V 034962 0299 Rev. 03

Part Number Nomenclature Half Brick

IQ	1B	120	H	P	C	21	NRS	G
I	II	III	IV	V	VI	VII	VII	IX

- I Product IQ – InQor Series
- II Input Voltage
 - 64 = 18-135 Vdc, Output 200 Watts max
 - 68 = 12-150 Vdc, output 53 Watts max
 - 70 = 34-135 Vdc, Output 240 Watts max
 - 72 = 42-110 Vdc, Output 255 Watts max
 - 90 = 34-160 Vdc, Output 228 Watts max
 - 1B = 66-160 Vdc, output 255 Watts max
 - 4H = 180-425 Vdc, Output 300 Watts max
- III Output Voltage
 - 3 Numbers denoting output voltage in tenths of a volt
 - 018 = 1.8 Vdc minimum
 - 480 = 48.0 Vdc maximum
- IV Package Size H = Half Brick
- V Performance level
 - P = Peta
 - T = Tera
 - G = Giga
 - M = Mega
 - K = Kilo
- VI Thermal design
 - Options include but are not limited to:
 - C = Encased
 - D = Non-Threaded Inserts
 - V = Flanged Baseplate
- VII Output Current
 - X = 0 – 6 (70 Amps max)
 - Y = 0 – 9 or A – J (A = .0, B = .1 ... J = .9)
 - Example: 24 = 24 Amps, 03 = 3 Amps, 2F = 2.5 Amps
- VIII Options
 - Suffix letters and/or numbers denoting non-safety critical functions such as, but not limited to, positive or negative logic, pin length, etc.
- XI 6/6 RoHS
 - G = 6/6 RoHS Compliance

Custom Special:

Model Number	Input voltage	Output voltage	Output Current	Output Power	Airflow
IQ24600HZx08	20-32 Vdc	60 Vdc	8.4 Amax	504 Wmax	1250LFM
IQ241C0HZx04	20-32 Vdc	120 Vdc	4.2 Amax	504 Wmax	1050 LFM



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No. U8V 034962 0299 Rev. 03

MILCOTs 270 Half Brick Part Nomenclature

MCOTS -C	270	12	H	T	N	M	xxx
I	II	III	IV	V	VI	VII	VIII

- I Product MCOTS-C – MILCOTs Converters
- II Input Voltage 270 = 155-425 Vdc, Output 300 Watts max
270N = 240-280 Vdc, Output 400 watts max
- III Output Voltage 3 Characters denoting output voltage in volts
R = Decimal point
1R8 = 1.8 Vdc minimum
9R9 = 9.9 Vdc maximum
- IV Package Size H = Half Brick (70 Amps max)
- V Performance level K = Kilo
M = Mega
G = Giga
T = Tera
- VI Thermal design Options include but not limited to:
F = Flanged
N = Normal
- VII Screening Level Burn-in duration, etc (Non safety)
- VIII Options Blank to 3 characters denoting non-safety options such
as, but not limited to, positive or negative logic, pin
configuration, etc.



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No. U8V 034962 0299 Rev. 03

MILCOTs 270 Half Brick Part Nomenclature

MCOTS-C	270	12	H	T	N	M	xxx
I	II	III	IV	V	VI	VII	VIII

I	Product	MCOTS-C – MILCOTs Converters
II	Input Voltage	270 = 155-425 Vdc, Output 300 Watts max 270N = 240-280 Vdc, Output 400 Watts max 270M = 220-310 Vdc, Output 396 Watts max
III	Output Voltage	2 Characters denoting output voltage in volts 05 = 5 Vdc minimum 48 = 48 Vdc maximum
IV	Package Size	H = Half Brick (50 Amps max)
V	Performance level	K = Kilo M = Mega G = Giga T = Tera
VI	Thermal design	Options include but not limited to: F = Flanged N = Normal
VII	Screening Level	Burn-in duration, etc (Non safety)
VIII	Options	Blank to 3 characters denoting non-safety options such as, but not limited to, positive or negative logic, pin configuration, etc.



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CERTIFICATE

No. U8V 034962 0299 Rev. 03

Part Number Nomenclature Half Brick

RQ	1B	240	H	P	C	10	NRS	G
I	II	III	IV	V	VI	VII	VIII	IX

- I Product RQ – RailQor Series

- II Input Voltage 68 = 12-155 Vdc, Output 100 Watts max
 72 = 42-110 Vdc, Output 255 Watts max
 90 = 34 -160 Vdc, Output 300 Watts max
 1B = 66-160 Vdc, Output 325 Watts max

- III Output Voltage 3 Numbers denoting output voltage in tenths of a volt
 018 = 1.8 Vdc minimum
 480 = 48.0 Vdc maximum

- IV Package Size H = Half Brick

- V Performance level P = Peta
 T = Tera
 G = Giga
 M = Mega
 K = Kilo
 E = Exa

- VI Thermal design Options include but are not limited to:
 C = Encased
 V = Flanged Baseplate

- VII Output Current 2 Numbers denoting output current in Amps
 60 = 60 Amps maximum

- VIII Options Suffix letters and/or numbers denoting non-safety critical
 functions, such as, but not limited to, positive or negative logic,
 pin length, etc.

- XI 6/6 RoHS G = 6/6 RoHS Compliance



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CERTIFICATE

No. U8V 034962 0299 Rev. 03

Part Number Nomenclature Half Brick

MCOTS-B	270	31	H	T	N	M	xxx
I	II	III	IV	V	VI	VII	VII

- I Product MCOTS-B – MiLCOTs BusQor Series
- II Input Voltage 270 = 230-400Vdc, Output 1000 Watts max
- III Output Voltage 31 = 31Vdc
- IV Package Size H = Half Brick
- V Performance level
 - T = Tera
 - G = Giga
 - M = Mega
 - K = Kilo
- VI Thermal design Options include but are not limited to:
 - D = Normal Non-Threaded
 - F = Flanged
 - N = Normal Threaded
- VII Screening Burn-in duration, etc (Non safety)
- VIII Options Suffix letters and/or numbers denoting non-safety critical functions such as, but not limited to, positive or negative logic, pin length, etc.



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No. U8V 034962 0299 Rev. 03

Part Number Nomenclature Half Brick

MCOTS-B	270	31	F	T	N	M	xxx
I	II	III	IV	V	VI	VII	VII

- I Product MCOTS-B – MILCOTs BusQor Series
- II Input Voltage 270 = 230-400Vdc, Output 2000 Watts max
- III Output Voltage 31 = 31Vdc
- IV Package Size Full Brick
- V Performance Level T = Tera
- VI Thermal Design Options include but are not limited to:
 D = Normal Non-Threaded
 F = Flanged
 N = Normal Threaded
- VII Screening Burn-in duration, etc (Non safety)
- VII Options Suffix letters and/or numbers denoting non-safety critical functions such as, but not limited to positive or negative logic, pin length, etc



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No. U8V 034962 0299 Rev. 03

License conditions:

1. The abnormal testing was performed with the following external fuse value for Quarter Brick:
20 A ABC (fast) for 64 V input voltage units
10 A AGC (fast) for 70 V and 90 V input voltage units.
7 A AGC (fast) for 72 V input voltage units.
5 A AGC (Fast) for 110 V input voltage units.
3 A KLM (Fast) for the 425 V input voltage units
If higher value fuses are used additional testing may be required.
2. The input circuit is separated from the output circuit by reinforced insulation. The input circuit is separated from the base plate by basic insulation for a 425 Vdc working voltage.
3. The input circuits are separated for the output circuit by reinforced insulation based on 425 V working voltage and input circuits are separated from the base plate by basic insulation based on 425 V for the IQ4H.
4. The abnormal testing was performed with the following external fuse value for Half Brick:
20 A AGC (fast) for 64 V input voltage units.
15 A AGC (fast) for 70 V, 72 V and 90 V input voltage units.
8 A AGC (fast) for 160 V input voltage units.
5 A KLM (Fast) for the 425 V input voltage units.
If higher value fuses are used additional testing may be required.
5. The abnormal testing with the following fuse value for Full Brick Bus Converter (MCOTS-B):
20 A AGC (fast) for the 270 V input voltage units.
If higher value fuses are used additional testing may be required.
6. The reinforced parts will be finished goods rev C or higher. This applies to IQ64, IQ68, IQ70, IQ72, IQ90, and IQ1B quarter bricks only. (The basic insulated parts are currently at rev A or B)

The rev on the sample label is at the end of the serial number line, A01 where A is the rev and 01 is the manufacturing location, i.e. Boxborough
7. The reinforced parts for the IQ2H / IQ4H quarter brick only will be finished goods rev A or higher..
8. Model # IQ4H480QTCxx and IQ4H480HTCxx output is considered to be at a hazardous voltage level and not considered to be SELV.
9. The abnormal testing was performed with the following external fuse value for Full Brick:
5 A KLM (Fast) for the 425 V input voltage units.
If higher value fuses are used additional testing may be required
10. Quarter brick Rail Qor series Model Number RQ1B560QTV03NRS-G. The output is not consisted to be a SELV output. It does not meet all of the requirements of a SELV circuit.