

ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ CERTIFIKAT ◆ 認證證書 ◆ CERTIFICATE ◆ CERTIFICATE



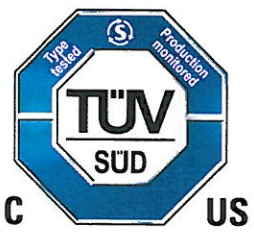
America

# CERTIFICATE

No. U8V 034962 0301 Rev. 00

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

**Certification Mark:**



**Product:** **DC converter**  
**DC to DC Converter**

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.:** 72136751-200

**Date,** 2018-09-11

( William J. Stinson )



America

# CERTIFICATE

No. U8V 034962 0301 Rev. 00

**Model(s):** InQor Series  
MILCOT Series  
(see model nomenclature and ratings)

**Brand Name:** SynQor

**Tested according to:** CAN/CSA C22.2 No. 60950-1:2007/A2:2014-10  
EN 60950-1:2006/A2:2013  
UL 60950-1:2007/R2014-10

**Production Facility(ies):** 034962

**Parameters:**

Rated Input Voltage:	18-36 V DC
Rated Output Voltage:	15 V DC max
Rated Output Current:	3.0 A
Rated Output Wattage:	50 Watts max

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No. U8V 034962 0301 Rev. 00

## IQ/WQ Series Nomenclature Sixteenth Bricks

IQ	24	050	S	M	C	XY	N	-G	
I	II	III	IV	V	VI	VII	VIII	IX	
I	Product			IQ – InQor Series WQ – WirelessQor					
II	Input Voltage			12 = 9-22 Vdc, Output 50 Watts max, 300 LFM 18 = 9-36 Vdc, Output 50 Watts max, 300 LFM 24 = 18-36 Vdc, Output 50 Watts max, 300 LFM 28 = 16-40 Vdc, Output 50 Watts max, 300 LFM 36 = 18-75 Vdc, Output 50 Watts max, 300 LFM 48 = 34-75 Vdc, Output 50 Watts max, 300 LFM					
III	Output Voltage			3 Numbers denoting output voltage in tenths of a volt 012 = 1.2 Vdc minimum 150 = 15.0 Vdc maximum					
IV	Package Size			S = Sixteenth Brick					
V	Performance level			M = Mega K = Kilo					
VI	Thermal design			(Examples but not limited to:) A = Open Frame C = Encased					
VII	Output Current			X = 0 – 2 (25 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			Non safety options					
XI	6/6 RoHS			G = 6/6 RoHS Compliance					

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# CERTIFICATE

## No. U8V 034962 0301 Rev. 00

### IQ/WQ Series Nomenclature Eighth Bricks

IQ	24	050	E	M	C	XY	N	-G
I	II	III	IV	V	VI	VII	VIII	IX

I	Product								IQ – InQor Series WQ – WirelessQor
II	Input Voltage								24 = 18-36 Vdc, Output 75 Watts max, 300 LFM
III	Output Voltage								3 Numbers denoting output voltage in tenths of a volt 018 = 1.8 Vdc minimum 240 = 24.0 Vdc maximum
IV	Package Size								E = Eighth Brick
V	Performance level								G = Giga M = Mega K = Kilo
VI	Thermal design								(Examples but not limited to:) A = Open Frame C = Encased
VII	Output Current								X = 0 – 2 (25 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								Non safety options
XI	6/6 RoHS								G = 6/6 RoHS Compliance

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# CERTIFICATE

No. U8V 034962 0301 Rev. 00

## IQ/WQ Series Nomenclature Quarter Brick

	IQ I	48 II	120 III	Q IV	T V	A VI	xy VII	N VIII	-G IX
I	Product	IQ - InQor Series WQ - WirelessQor							
II	Input voltage	12 = 9-22 Vdc, Output 105 Watts max, 300 LFM 18 = 9-36 Vdc, Output 105 Watts max 300 LFM 24 = 18-36 Vdc, Output 120 Watts max, 300 LFM 28 = 16-40 Vdc, Output 120 Watts max, 300 LFM 32 = 9-75 Vdc, Output 86 Watts max, 600 LFM 36 = 18-75 Vdc, Output 120 Watts max, 300 LFM 48 = 34-75 Vdc, Output 150 Watts max, 300 LFM							
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	(Examples but not limited to:) A = Open frame B = Baseplated C = Encased							
VII	Output Current	x = 0 - 4 (40 Amps max) y = 0 - 9 or A - J (A = .0, B = .1, J = .9) Ex: 24 = 24 Amps, 03 = 3 Amps, 2F = 2.5 Amps							
VIII	Options	Suffix letters and/or numbers denoting non-safety-critical options such as, but not limited to, positive or negative logic, pin configuration, etc.							
IX	6/6 RoHS G = 6/6 RoHS compliance								

### Customer Special

Model Number	Input voltage	Input Current	Output Voltage	Output Current	Output Power	Cooling
IQ24120QEx25	18-36 Vdc	18 A	12 V dc	25 A	300 W	600 LFM

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## IQ/WQ Series Nomenclature Half Brick

IQ	36	120	H	P	C	xy	N	-G
I	II	III	IV	V	VI	VII	VIII	IX

- I Product
  - IQ – InQor Series
  - WQ – WirelessQor
- II Input Voltage
  - 12 = 9-22 Vdc, Output 182 Watts max, 400 LFM
  - 18 = 9-36 Vdc, Output 182 Watts max, 400 LFM
  - (Exa, Zeta) 18 = 9-36 Vdc, Output 255 Watts max, 1700 LFM
  - 24 = 18-36 Vdc, Output 225 Watts max, 400 LFM
  - (Exa, Zeta) 24 = 18-36 Vdc, Output 500 Watts max, 800 LFM
  - 28 = 16-40 Vdc, Output 200 Watts max, 700 LFM
  - 32 = 9-75 Vdc, Output 165 Watts max, 700 LFM
  - (Exa, Zeta) 32 = 9-75 Vdc, Output 255 Watts max, 1700 LFM
  - 36 = 18-75 Vdc, Output 220 Watts max, 700 LFM
  - 48 = 34-75 Vdc, Output 255 Watts max, 700 LFM
  - (Exa, Zeta) 48 = 34-75 Vdc, Output 602 Watts max, 1300 LFM
- III Output Voltage
  - 3 Numbers denoting output voltage in tenths of a volt
  - 018 = 1.8 Vdc minimum
  - 480 = 48.0 Vdc maximum
  - Except: 500 = 50.0 Vdc (Exa, Zeta only)
- IV Package size
  - H = Half Brick
- V Performance level
  - P = Peta
  - E = Exa
  - Z = Zeta
  - T = Tera
  - G = Giga
  - M = Mega
  - K = Kilo
- VI Thermal design
  - Examples but not limited to:
  - A = Open frame
  - C = Encased
- VII Output Current
  - x = 0 – 6 (60 Amps max)
  - y = 0 – 9 or A – J (A = .0, B = .1 .. J = .9)
  - Ex: 24 = 24 Amps, 03 = 3 Amps, 2F = 2.5 Amps
- VIII Options
  - Suffix letters and/or numbers denoting non-safety critical options such as, but not limited to, positive or negative logic, pin configuration, etc.
- IX 6/6 RoHS G = 6/6 RoHS compliance

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# CERTIFICATE

No. U8V 034962 0301 Rev. 00

## MCOTS-C Series Nomenclature Quarter Brick

MCOTS-C -	28 -	12 -	Q	T -	N -	M	-xxx
I	II	III	IV	V	VI	VII	VIII

I	Product	MCOTS-C – MILCOTs Converters
II	Input Voltage	28 = 16-40 Vdc, Output 120 Watts max, 300 LFM 28V = 9-40 Vdc, Output 86 Watts max, 900 LFM 28VE = 9-70 Vdc, Output 86 Watts max, 600 LFM 48 = 34-75 Vdc, Output 150 Watts max, 300 LFM
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	(Examples 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 0301 Rev. 00

## MCOTS-C Series Nomenclature Quarter Brick

MCOTS-C -	28 -	12 -	Q	T -	N -	M	-xxx
I	II	III	IV	V	VI	VII	VIII

I	Product	MCOTS-C – MILCOTs Converters
II	Input Voltage	28 = 16-40 Vdc, Output 300 Watts max 28V = 9-40 Vdc, Output 86 Watts max, 900 LFM 28VE = 9-70 Vdc, Output 86 Watts max, 600 LFM 48 = 34-75 Vdc, Output 150 Watts max, 300 LFM
III	Output Voltage	2 Characters denoting output voltage in volts  05 = 5 Vdc minimum 50 = 50 Vdc maximum
IV	Package Size	Q = Quarter Brick (40 Amps max)
V	Performance level	K = Kilo M = Mega G = Giga T = Tera P = Peta E = Exa
VI	Thermal design	(Examples 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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## MCOTS-C Series Nomenclature Half Brick

MCOTS-C -	28 -	12 -	H	P -	N -	M -	xxx
I	II	III	IV	V	VI	VII	VIII

I	Product	MCOTS-C – MILCOTs Converters
II	Input Voltage	28 = 16-55 Vdc, Output 500 Watts max, 700 LFM 28E = 16-70 Vdc, 180 Watts max, 1500 LFM 28V = 9-40Vdc, Output 182 Watts max, 400 LFM 28VE = 9-70 Vdc, Output 165 Watts max, 700LFM 48 = 34-75 Vdc, Output 255 Watts max, 700 LFM
III	Output Voltage	3 Characters denoting output voltage in volts R = Decimal point  1R8 = 1.8 Vdc minimum 9R9 = 9.9 Vdc maximum 10R2 = 10.2 Vdc maximum
IV	Package Size	H = Half Brick (60 Amps max)
V	Performance level	K = Kilo                      P = Peta M = Mega                    E = Exa G = Giga                     Z = Zeta T = Tera
VI	Thermal design	(Examples 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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## MCOTS-C Series Nomenclature Half Brick

MCOTS-C -	28 -	12 -	H	P -	N -	M -	xxx
I	II	III	IV	V	VI	VII	VIII

I	Product	MCOTS-C – MILCOTs Converters
II	Input Voltage	
	(Exa, Zeta)	28 = 16-40 Vdc, Output 200 Watts max, 700 LFM
	(Exa, Zeta)	28 = 16-40 Vdc, Output 504 Watts max, 800 LFM
	(Exa, Zeta)	28V = 9-40Vdc, Output 182 Watts max, 400LFM
	(Exa, Zeta)	28V = 9-40Vdc, Output 255 Watts max, 900LFM
	(Exa, Zeta)	28VE = 9-70 Vdc, Output 165 Watts max, 700LFM
	(Exa, Zeta)	28VE = 9-70 Vdc, Output 255 Watts max, 1700 LFM
	(Exa, Zeta)	28E = 16-70 Vdc, Output 182 Watts max, 1500 LFM
	(Exa, Zeta)	28E = 16-70 Vdc, Output 400 Watts max, 1500 LFM
	(Exa, Zeta)	48 = 34-75 Vdc, Output 255 Watts max, 700 LFM
	(Exa, Zeta)	48 = 34-75 Vdc, Output 602 Watts max, 1300LFM
III	Output Voltage	(2 Characters denoting output voltage in volts)
		05 = 5 Vdc minimum
		50 = 50 Vdc maximum
IV	Package Size	H = Half Brick (60 Amps max)
V	Performance level	K = Kilo M = Mega G = Giga T = Tera
		P = Peta E = Exa Z = Zeta
VI	Thermal design	Examples 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. F = Full-feature C = High-Capacitance FC = High-Capacitor + Full-Feature

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# CERTIFICATE

No. U8V 034962 0301 Rev. 00

## MCOTS-C Series Nomenclature Sixteenth Brick

MCOTS-C -	28 -	12 -	S	M -	N -	M -	xxx
I	II	III	IV	V	VI	VII	VIII

I	Product	MCOTS-C – MILCOTs Converters
II	Input Voltage	28 = 16-40 Vdc, Output 50 Watts max 48 = 34-75 Vdc, Output 50 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	S = Sixteenth Brick (25 Amps max)
V	Performance level	K = Kilo M = Mega
VI	Thermal design	(Examples 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 0301 Rev. 00

## MCOTS-C Series Nomenclature Sixteenth Brick

MCOTS-C -	28 -	12 -	S	M -	N -	M -	xxx
I	II	III	IV	V	VI	VII	VIII

I	Product	MCOTS-C – MILCOTs Converters
II	Input Voltage	28 = 16-40 Vdc, Output 50 Watts max 48 = 34-75 Vdc, Output 50 Watts max
III	Output Voltage	2 Characters denoting output voltage in volts  05 = 5 Vdc minimum 48 = 48 Vdc maximum
IV	Package Size	S = Sixteenth Brick (10 Amps max)
V	Performance level	K = Kilo M = Mega
VI	Thermal design	Examples 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 0301 Rev. 00

## RQ Series Nomenclature Half Brick

RQ	18	150	H	P	C	12	NRS	G
I	II	III	IV	V	VI	VII	VIII	IX
I	Product		RQ – RailQor Series					
II	Input Voltage		18 = 9-36 Vdc, Output 180 Watts max 24 = 18-45 Vdc Output 500 Watts 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		H = Half Brick					
V	Performance level		P = Peta		M = Mega			
			T = Tera		K = Kilo			
			G = Giga		Z = Zeta			
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  36 = 36 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 0301 Rev. 00

## RQ Series Nomenclature Quarter Brick

RQ	18	240	Q	M	C	02	NRS	G
I	II	III	IV	V	VI	VII	VIII	IX
I	Product			RQ – RailQor Series				
II	Input Voltage			18 = 9-36 Vdc, Output 105 Watts max 36 = 18-75 Vdc, Output 50 watts 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			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  20 = 20 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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認證證書



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# CERTIFICATE

No. U8V 034962 0301 Rev. 00

## Part Number Nomenclature Demi Brick

MCOTS-C I	28 II	05 III	S IV	D V	M VI	N VII	M VIII	xxx IX
I	Product							MCOTS-C – MILCOTs Converters
II	Input Voltage							28 = 16-40 Vdc, Output 50 Watts
III	Output Voltage							2 to 3 Numbers denoting output voltage in volts  3R3 = 3.3 V dc minimum 28 = 28 Vdc maximum
IV								D = Dual Output (+/-15Vdc maximum) S = Single Output (28Vdc maximum)
V	Package Size							D = Demi Brick (15 Amps max)
VI	Performance level							K - Kilo M = Mega
VII	Thermal design							Options include but are not limited to:  F = Flanged N = Normal Threaded
VIII	Screening Level							Burn-in duration, etc (Non safety)
IX	Options							Three characters that denote non safety critical options such as, but not limited to, pin length, enable polarity, etc

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**License conditions:**

1. Input voltages greater than 60 Vdc are considered to be an unearthed hazardous voltage secondary circuit and the outputs are an ELV circuit.
2. Outputs voltage are considered to be SELV circuits if the input voltage is less than 60 Vdc and separated from primary circuits by reinforced insulation.
3. The abnormal testing was performed with the following external fuse value for Quarter Brick  
30A AGC (fast) for 12 V and 18 V input voltage units.  
20 A AGC (fast) for 24 V, 28 V, and 36 V input voltage units.  
15 A AGC (fast) for 48 V input voltage units.  
6 A AGC (fast) for 36 V (Mega Performance Level) input voltage units.  
If higher value fuses are used additional testing may be required.
4. The input circuits are separated for the output circuit and the basic plate by basic insulation based on 75 V working voltage.
5. The abnormal testing was performed with the following external fuse value for Half Brick:  
30A AGC (fast) for 12 V and 18 V input voltage units.  
40 A OT (Fast) for 24 V input voltage units for the 500 W half brick.  
25 A AGC (fast) for 32 V input voltage units.  
20 A AGC (fast) for 24 V, 28 V, 36 V and 48 V input voltage units.  
If higher value fuses are used additional testing may be required.
6. The abnormal testing was performed with the following external fuse value for eighth Brick and sixteenth bricks 20A AGC fast blow. If higher value fuses are used additional testing may be required