

## 120W MIL-COTS Quarter Brick Converters

### Features

- ◆ Standard Quarter Brick Footprint
- ◆ 9-40, 18-40VDC Inputs
- ◆ 5 to 48V Nominal Outputs
- ◆ Up to 91.5% Efficiency
- ◆ Up to 115°C Baseplate Temperature
- ◆ 2250VDC Isolation
- ◆ Encapsulated for Rugged Environments
- ◆ No optocouplers used
- ◆ Enhanced Screening Option
- ◆ Designed to meet MIL-STD-461; MIL-STD-1275; MIL-STD-704; Sec 16-18 of RTCA/DO-160 with FQx Filters<sup>2</sup>



### Key Market Segments & Applications



Specifications		HQA						
Model		5V	12V	15V	24V	28V	48V	
Nominal Output Voltage	VDC	5V	12V	15V	24V	28V	48V	
Input Voltage Range	VDC	9 - 40V					18 - 40V	
Input Current	A	16A Maximum						
Efficiency (100% load, 24V input)	%	90	90	89	87	89	91.5	
Output Voltage Adjustment	VDC	4.5 - 5.5	10.8 - 13.2	13.5 - 16.5	21.6 - 26.4	25.2 - 30.8	45.6 - 52.8	
Output Voltage Accuracy	%	±3%						
Ripple & Noise (max) pk-pk	mV	150	150	200	250	250	300	
Line Regulation (typ)	%	0.05	0.05	0.05	0.05	0.05	0.05	
Load Regulation (typ)	%	0.03	0.03	0.03	0.03	0.03	0.03	
Overcurrent Protection (typ)	A	37	14.5	12	6.2	5.2	4.0	
Overvoltage Protection (typ)	V	6.5	15	18	32	35	54	
Remote On/Off	-	Yes; Low = ON, Open = OFF						
Remote Sense	-	Yes			Not as standard			
Operating Temperature	°C	Standard screening: -40°C to +115°C, Enhanced screening: -55°C to +115°C						
Storage Temperature	°C	-65°C to +125°C						
Temperature regulation	%	0.5% across full temperature range						
Humidity (non condensing)	%RH	MIL-STD 883 Method 1004.7						
Cooling	-	Conduction, convection or forced air						
Isolation Voltage	VDC	Input to Output, Input to Baseplate, Output to Baseplate, 2250 VDC						
Isolation Resistance	-	>10M						
Vibration	-	MIL-STD-202G, Method 201A, Unpowered, sweep 1: 5 to 50 Hz at 0.5g, sweep 2: 50 to 500 Hz at 1.5g, three axis						
Shock	-	MIL-STD-202G, Method 213B, Table 213-1, Test Condition I, Unpowered, 50G half sine 6ms, three axis						
Safety Agency Certifications	-	IEC/EN/UL/CSA 62368-1, IEC/EN/UL/CSA 60950-1, CE Mark						
Qualification Methods	-	MIL-STD-883F and MIL-STD-202G						
Weight (Typ)	g	100 (Flanged version)						
Size (LxWxH)	in(mm)	Flanged version: 2.39 x 2.2 x 0.5" (60.6 x 55.9 x 12.7); Non-flanged version: 2.39 x 1.54 x 0.5" (60.6 x 39 x 12.7)						
Warranty	yrs	3 Years						

Note:

- 1) See Installation Manual for full details, test methods of parameters and application notes.
- 2) TDK Filter part numbers: FQA020ADC (EMI); FQB020ADC (EMI + Input Transient). Please refer to the Application Notes for details of the applicable Standards & Tests conducted.

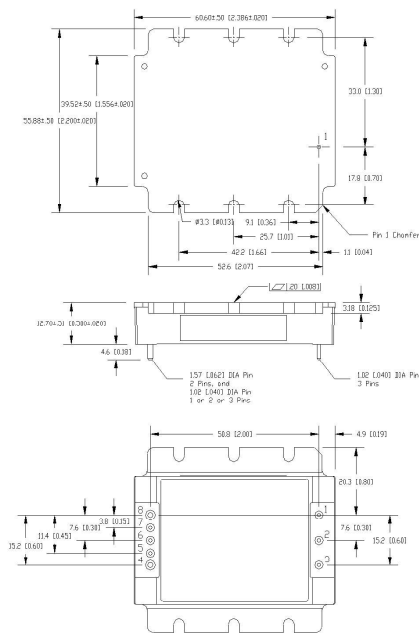
## Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Maximum Power (W)
HQA2W120W050V-007-S	9 - 40	5	24	120
HQA2W120W120V-007-S	9 - 40	12	10	120
HQA2W120W150V-007-S	9 - 40	15	8	120
HQA2W120W240V-007-S	9 - 40	24	5	120
HQA2W120W280V-007-S	9 - 40	28	4.2	118
HQA24120W480V-007-S	18 - 40	48	2.5	120

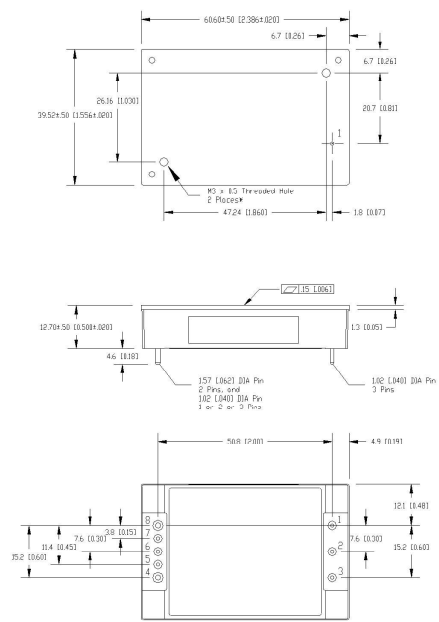
## Screening

Operation	S-Grade (Standard Screening)	M-Grade (Enhanced Screening)
Functional Test	Room and Hot Test	Cold, Room, and Hot Test
Burn in	Yes	Extended, 96 hour
Temperature Cycling	No	10 Cycles
Hi-Pot	2250VDC	2250VDC
Visual Inspection	Yes	Yes

## Outline Drawing Flange Version



## Outline Drawing Non-Flange Version



## Options

Version	Description
-007-S	Flanged Baseplate, Standard Screening
-N07-S	Non-Flanged Baseplate, Standard Screening
-007-M	Flanged Baseplate, Enhanced Screening
-N07-M	Non-Flanged Baseplate, Enhanced Screening

Standard Model  Contact factory for status

\*Contact factory for other Voltages or option codes

## Evaluation Board

Part #	Contents
FQX-HQA-EVK-D0	Evaluation board (no modules); fits either an FQA or FQB filter and two (2) HQA or GQA modules.

## Pinout

Pin	Function
1	Vin(+)
2	On/Off
3	Vin(-)
4	Vo(-)
5	Sense (-), available on Vo ≤ 15V models
6	Trim
7	Sense (+), available on Vo ≤ 15V models
8	Vo(+)

For Additional Information, please visit  
<https://product.tdk.com/info/en/products/power/index.html>

