ARTESYN ADQ700 SERIES

700 Watt Quarter Brick DC-DC Converter



ADQ700 series quarter-brick isolated DC-DC converters produce a single fully regulated 12 V output. Rated at 700 watts, these converters can deliver up to 58 amps output current and have no minimum load requirement. They have an input voltage range of 40 to 60 V and are primarily designed for use with standard 48 V supplies in computing and server applications, as well as regulated 48V supplies in communications equipment.

DATA SHEET

Total Power:

700 Watt (target)
(12 V @ 58 A)

Input Voltage:

40 to 60 VDC

Single Outputs:

12 V Nom

SPECIAL FEATURES

- 700 W continuous power
- Ultra high efficiency > 96%
- 40 - 60 Vdc Datacomm input range
- Baseplate optimized for contact cooling or heatsink mounting
- Open frame version optimized for air cooling
- Low ripple and noise
- Fixed switching frequency
- High capacitive load capability
- Pre-bias start-up capability
- High reliability
- RoHS 6 compliant
- UL94 V-0 materials
- Heatsink accesory pack can be ordered (heatsink, thermal pad and screws)
- DOSA footprint compliant
- PMBus® communication
- Droop and Parallel function (ADQ700-48S12B-8LIG)
- IPC9592 component stress compliant
- Two year warranty (consult factory for extended terms)

SAFETY

- TUV/CE 62368-1
- UL/cUL 60950-1

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ELECTRICAL SPECIFICATIONS

Input	
Input voltage	40 - 60 VDC
Input surge	80 V / 100 mSec
Input UVLO	Turn-on: 38.7 VDC Turn-off: 37 VDC Hysteresis: 2 VDC
Input OVP	Turn-off: 64.5 VDC Recovery point: 62.3 VDC Hysteresis: 2 VDC
I/O insulation	Basic insulation
I/O isolation	1500 VDC
Efficiency (48 Vin, 25 °C ambient)	96% @ 12 V (100% load and 50% load)
Output	
Output voltage	12 V nominal set point
Output voltage regulation	12 V ± 1%
Output current maximum	58 A for 12 V
Noise & ripple	At 12 V; 200 mV pk-pk max
Overtemperature protection	Baseplate: 110°C Open frame:120°C hot spot
Overvoltage protection method / OVP operation	Auto restart 13.8 V - 16 V window
Overcurrent protection method / OCP operation	Auto-restart 64 A - 82 A window
Isolation	
Enable	TTL compatible (negative logic)
PMBus connectivity	Connection port and control/monitoring available
Switching frequency	200 KHz
Pre-bias start-up	0% to 95% Vout

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-40°C to +85°C
Storage temperature	-55°C to +125°C
MTBF	1.5 Million hours

ORDERING INFORMATION

Model number	Input voltage	Output voltage set point	Output current	Efficiency
ADQ700-48S12-4L	40 to 60 Vdc	12 Vdc	58 A	96% (full load)
ADQ700-48S12-4LI	40 to 60 Vdc	12 Vdc	58 A	96% (full load)
ADQ700-48S12B-4L	40 to 60 Vdc	12 Vdc	58 A	96% (full load)
ADQ700-48S12B-4LI	40 to 60 Vdc	12 Vdc	58 A	96% (full load)
ADQ700-48S12B-8LIG	40 to 60 Vdc	12 Vdc	58 A	96% (full load)
ADQ700-48S12B-8LIO	40 to 60 Vdc	12 Vdc	58 A	96% (full load)

"B" = Baseplate
"I" = Digital Interface Option
"G" = Customer Code
"O" = Customer Code

PIN LENGTH OPTIONS

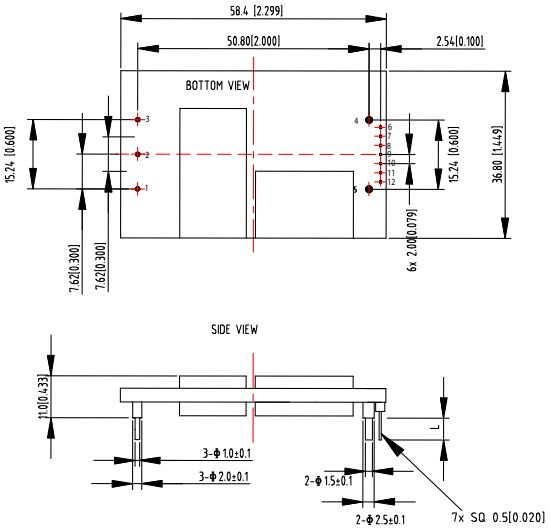
Device code suffix	L
-4	4.6 mm ± 0.25 mm
-6	3.8 mm ± 0.25 mm
-8	2.8 mm ± 0.25 mm
None	5.8 mm ± 0.25 mm

PIN DESIGNATIONS

Pin	Function	Function
1	Vin+	Positive input voltage
2	Remote On/Off	Remote control
3	Vin-	Negative input voltage
4	Vo-	Negative output voltage
5	Vo+	Positive output voltage
6	C2	Digital
7	Sig_Gnd	Digital
8	Data	Digital
9	SMBAlert	Digital
10	Clock	Digital
11	Addr1	Digital
12	Addr0	Digital

PIN DESIGNATIONS

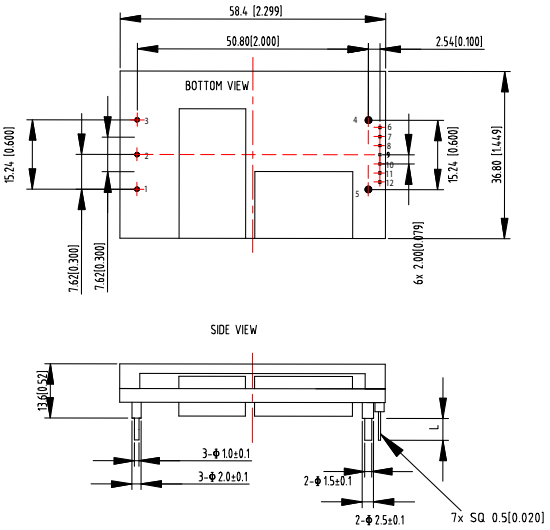
Open Frame Module



UNIT: mm[inch] BOTTOM VIEW: pin on upside L=4.60mm

TOLERANCE: X.Xmm±0.5mm[X.XX in.±0.02in.]
X.XXmm±0.25mm[X.XXX in.±0.01in.]

Baseplate Module



UNIT: mm[inch] BOTTOM VIEW: pin on upside L=4.60mm

TOLERANCE: X.Xmm±0.5mm[X.XX in.±0.02in.]
X.XXmm±0.25mm[X.XXX in.±0.01in.]

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

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