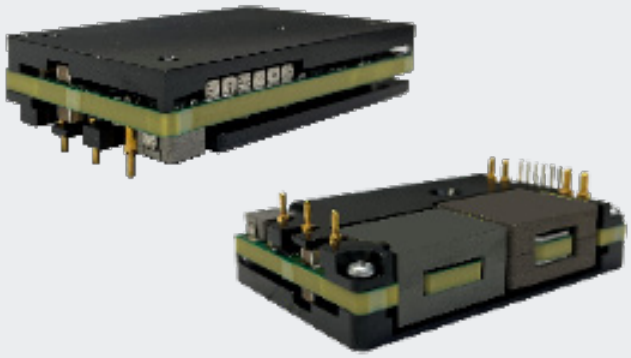
ARTESYN NDQ1600 SERIES

1600W Quarter-Brick DC-DC Converter



Advanced Energy's Artesyn NDQ1600 series quarter-brick non-isolated DC-DC converter provides a single regulated low noise output and function for a digital-controlled PMBus interface module. It delivers up to 1600 W with 12 VDC output voltage. The Ultra-high 97.7% peak efficiency and excellent thermal management, and operational ambient temperature range of -40 to +85 DegC makes it an ideal choice for use in datacom and telecommunication applications that can employ a Non-isolated power conversion function 40 to 60 VDC input to 12.15 V output.

SPECIAL FEATURES

- 1600 W continuous power
- Ultra high efficiency: 97.7% peak
- 40 to 60 VDC telecomm input range
- Base-plate for contact cooling or heatsink mountingo
- Fixed switching frequency
- Pre-bias start-up capability
- Parrallel operation, droop current sharing/active current sharing option
- PMBus™ function
- Remote control function (negative logic)
- Excellent thermal performance
- High reliability
- RoHS 3.0
- Input under voltage protection
- Input over voltage protection
- Output over voltage protection
- Output over current protection
- Over temperature protection
- PMBus Communication

SAFETY/COMPLIANCE

- Designed to meet IEC62368
- CE
- UL94 V-0 materials

AT A GLANCE

Total Power

1600 W

Input Voltage

40 to 60 VDC

Single Output

Single

PMBus® Power Management. Defined.

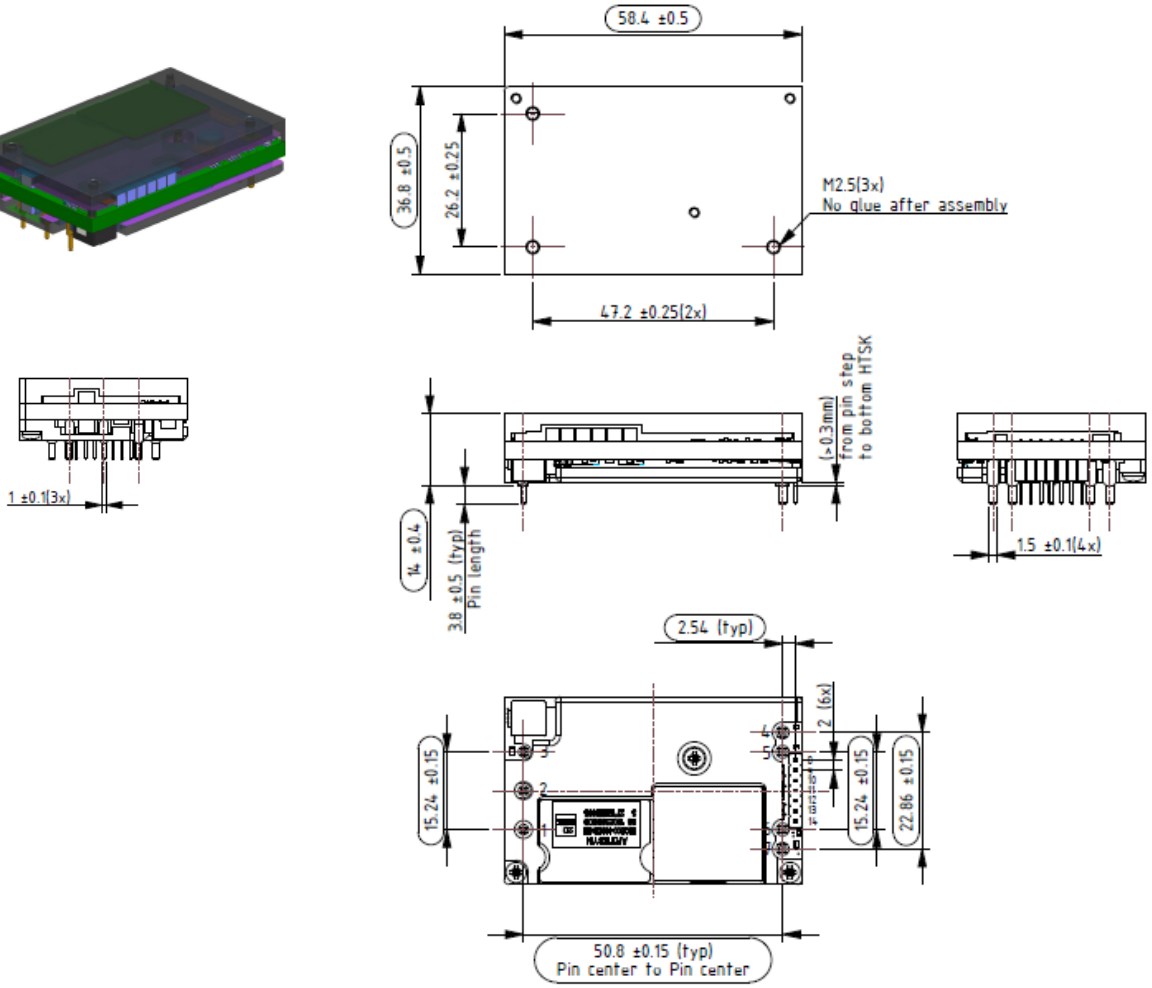
ELECTRICAL SPECIFICATIONS

Input	
Input Voltage Range	40 to 60 VDC
Input UVLO	Turn-on: 39 VDC typ Turn-off: 37 VDC typ Hysteresis: 2 VDC
Over Voltage (OVP) Set Point	65 VDC nominal (+/-5VDC)
Efficiency (50 Vin, 25°C ambient)	96.8% at 100% load 97.7% at 50% power
Isolation	Efficiency
Output	
Output Voltage Set Point	12.45 VDC nominal
Output Current Maximum	132 A continouous
Output Power	1600 W continuous
Output Voltage Adjustment Range	9.6 to 13.2 V
Output Regulation Load regulation Line regulation	 +/-300 mV maximum +/-30 mV maximum
Output Noise & Ripple	150 mV pk-pk
Short Circuit Protection	Protected, no damage to occur, Hiccup mode
Over Current Point	160 A typical, Hiccup mode
Over Temperature (OTP) protection	115 deg C baseplate temperature. 5 degC hysteresis
Control	
Enable	TTL compatible (negative logic), default is negative polarity enable.
PMBus	Digital control functions provided

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-40°C to +85°C
Storage temperature	-55°C to +125°C
Humidity	95% non-condensing. Operating.

MECHANICAL DRAWING



Unit: mm(inch)
TOLERANCE: X.X mm±0.5mm [X.XX in.± 0.02in.]
X.XX mm±0.25mm[X.XXX in.±0.01in.]

PIN DESIGNATIONS

Pin#	Pin Name	Function
1	Vin+	Positive input voltage
2	CNT	Remote ON/OFF control
3	GND	Negative input voltage
4	GND	Negative output voltage
5	GND	Negative output voltage
6	Vo+	Positive output voltage
7	Vo+	Positive output voltage
8	PG	Power Good
9	-Remote Sense/Sig-ground[1]	Negative remote sense/signal ground
10	DATA	PMBus data signal
11	SMBAlert	PMBus interface
12	CLK	PMBus clock signal
13	Addr	PMBus address
14	+Remote Sense/Current Share[1]	Positive remote sense/current share

Note 1 - Pin 9, 14 of NDQ1600-48S12BP-6I should be +/-Remote Sense.

Pin 9, 14 of NDQ1600-48S12BP-6IA should be Sig-ground, Current Share.

PIN LENGTH OPTIONS

Device Code Suffix	Pin Length
-4	4.8 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

ORDERING INFORMATION

Model Number	Output Voltage Set Point	Output Current	RoHS Status	PMBus™	Active Current Sharing / Remote Sense
NDQ1600-48S12B[1]P[2]-6[3]L[6]I[4]	12.15 VDC	132 A	RoHS 3.0	Yes	Remore Sense
NDQ1600-48S12B[1]P[2]-6[3]I[4]A[5]	12.15 VDC	132 A	RoHS 3.0	Yes	Active Current Sharing

Note:

1. B = Baseplate
2. P = Positive enable. Negative enable is no ‘character’
3. 6 = 3.8 mm pin length
4. I = PMBus interface
5. A = Active current sharing/Remote sense with droop current sharing is no ‘character’
6. L = RoHS 3.0

THERMAL CONSIDERATION

The unit is of single-PCB construction with baseplate component added to the top side of the modules assembly

EFFICIENCY CURVE (TBD)

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.

PRECISION | POWER | PERFORMANCE | TRUST

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