

EXA40 Series

Single output

- High efficiency topology, 91% typical at 5 V
- Approved to EN60950, UL1950, CSA C22.2 No. 950
- Operating ambient temperature of -40 °C to +70 °C (natural convection)
- Complies with ETS 300 019-1-3/2-3
- Complies with ETS 300 132-2 input voltage and current requirements
- Fully compliant with ETS 300 386-1
- RoHS Compliant



The EXA40 Series, comprising 8 different models is targeted specifically at the telecommunications, industrial electronics, mobile Telecommunications and distributed power markets. The series offers two wide input voltage ranges of 18 Vdc to 36 Vdc and 36 Vdc to 75 Vdc. Typical efficiencies are 91% for the 5 V output, 88% for the 3.3 V, 86% for the 2.75 V and 84% for the 1.8 V. The series has been designed primarily for Telecommunications applications and complies with ETS 300 386-1 immunity and emission standards for high priority of service class. In addition the series complies with ETS 300 019-1-3 environmental standards (all classes) including shock, vibration, humidity and thermal performance. A high level of reliability has been designed into all models through the extensive use of conservative derating criteria. Remote enable and overtemperature shutdown are included as standard while true latching OVP is available as an option.



2 YEAR WARRANTY

All specifications are typical at nominal input, full load at 25 °C unless otherwise stated

SPECIFICATIONS

OUTPUT SPECIFICATIONS

Voltage adjustability (See Note 10)	2.75 V, 3.3 V, 5 V 1.8 V output	±10% min. +12/-17% min.
Voltage accuracy		±1.0%
Line regulation	Low line to high line	+0.05%
Load regulation	Full load to no load	+0.20%
Minimum load		0%
Ripple and noise 20 MHz bandwidth		100 mV pk-pk max. 20 mV rms max.
Temperature coefficient		±0.01%/°C
Transient response	50% to 75% and back	100 mV
Peak dev. settling time	to 1.0%, no external cap.	250 µs
Short circuit protection (See Note 5)		Continuous automatic recovery

INPUT SPECIFICATIONS

Input voltage range	24 Vin nominal 48 Vin nominal	18-36 Vdc 36-75 Vdc
Input current	No load Remote OFF	100 mA max. 4 mA max.
UVLO turn ON voltage	All inputs (See Note 4)	94%
UVLO turn OFF voltage	All inputs (See Note 4)	86%
Start-up time	Nominal line	50 ms
Active high remote ON/OFF Logic compatibility		Open Collector ref. to -input
ON	Open circuit voltage	4.5 Vdc
OFF		<1.0 Vdc

INPUT SPECIFICATIONS

ETS 300 386-1 table 5		
Conducted emissions (See Design Note 102)	EN55022, internal filter and two 4 µF film capacitors EN55022, external filter	Level A Level B

EMC CHARACTERISTICS (Cont.)

Radiated emissions	EN55022 (See Design Note 102)	Level B
ESD air	EN61000-4-2, level 3	
ESD contact	EN61000-4-2, level 4	
Surge (500 V)	EN61000-4-5, level 3, 4	
Fast transients	EN61000-4-4, level 3, 4	
Radiated immunity	EN61000-4-3, level 3	
Conducted immunity	EN61000-4-6, level 3	

GENERAL SPECIFICATIONS

Efficiency		See table
Basic insulation	Input/output	1500 Vdc
Input fuse 24 V	(See Note 8)	3.5 A slow blow
Input fuse 48 V		2.0 A slow blow
Switching frequency	Fixed	300 kHz
Approvals and standards (See Notes 7, 8, 9)		EN60950 UL1950 CSA C22.2 No. 950
Weight		25 g (0.88 oz)
MTBF (See Design Note 102)	MIL-HDBK-217	250,000 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating ambient temperature Non-operating	-40 °C to +70 °C, See curves -55 °C to +105 °C
Over temperature shutdown	Loss of Function Self-Recovery (LFS)	75 °C to +85 °C
ETS 300 019-2-3		Classes T3.1 to T3.5
Air temperature	Low: IEC 68-2-1 High: IEC 68-2-2 Change: IEC 68-2-1	-40 °C +70 °C -40 °C to +70 °C
Relative humidity	IEC 68-2-56 IEC 68-2-30	10% to 100% RH Condensation
Vibration, Class 3M5	IEC68-2-6 MIL-STD-202F	2-9 Hz, 3 mm disp. 9-200 Hz 1 g Method 204 cond. A
Shock, Class 3M5	IEC-68-2-29 MIL-STD-202F	Method 213B cond. A

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INPUT VOLTAGE	OUTPUT VOLTAGE ⁽²⁾	NOMINAL OUTPUT VOLTAGE	OUTPUT CURRENT (MAX.)	TYPICAL EFFICIENCY	MODEL NUMBER ^(1,3,11,12)
18-36 Vdc	1.5-2.0 V	1.8 V	8.0 A	84%	EXA40-24S1V8J
18-36 Vdc	2.5-3.0 V	2.75 V	8.0 A	87%	EXA40-24S2V75J
18-36 Vdc	3.0-3.6 V	3.3 V	8.0 A	88%	EXA40-24S3V3J
18-36 Vdc	4.5- 5.5 V	5.0 V	8.0 A	90%	EXA40-24S05J
36-75 Vdc	1.5-2.0 V	1.8 V	8.0 A	84%	EXA40-48S1V8J
36-75 Vdc	2.5-3.0 V	2.75 V	8.0 A	86%	EXA40-48S2V75J
36-75 Vdc	3.0-3.6 V	3.3 V	8.0 A	88%	EXA40-48S3V3J
36-75 Vdc	4.5 -5.5 V	5.0 V	8.0 A	91%	EXA40-48S05J

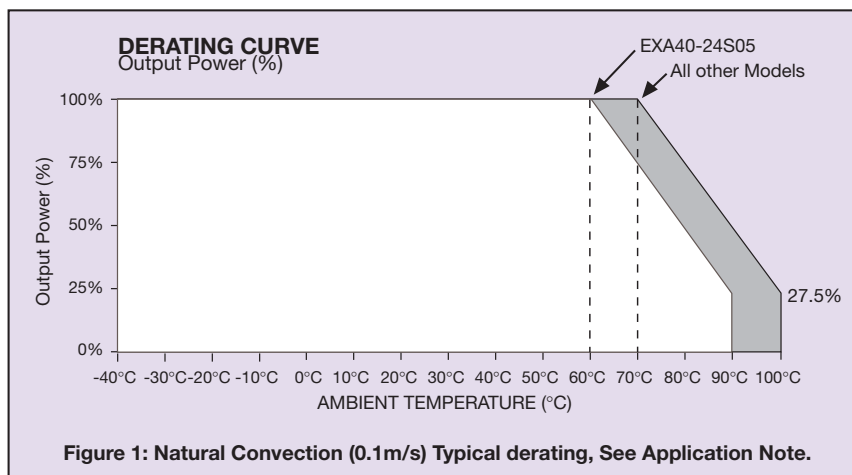
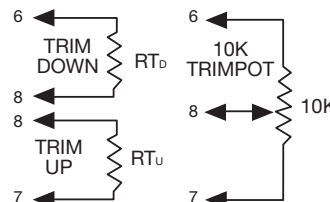
Notes

- 1 True latching OVP is available as an option. Please add the suffix '-V' to the model number, e.g. **EXA40-24S1V8-VJ**. Additional alphanumeric suffixes maybe added to indicate minor modifications not affecting the safety approvals.
- 2 Guaranteed minimum output voltage range.
- 3 Latching OVP response time is 1 ms (typical). OVP latch is reset by toggling remote ON/OFF or by recycling the input voltage.
- 4 Figures are percentage of minimum input voltage.
- 5 Rshort ≤ 20 m Ω .
- 6 TVS spec : 6V8 @ 10 mA, 10V5 @ 57 A
4V1 @ 1 mA, 7V3 @ 50 A
- 7 Maximum continuous output power.
40 Watts for S05J models
26.4 Watts for S3V3J models
22 Watts for S2V75J models
14.4 Watts for S1V8J models.
- 8 User must provide recommended fuses in order to comply with safety approvals.
- 9 Maximum temperature on components Q100, Q102 and Q103 not to exceed 120 °C. See Application Note 101 for details.
- 10 For continuous operation below 88%, minimum input voltage trimming up >5% is not recommended on the 24S05J and 48S05J models.
- 11 The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 12 NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at <http://www.artesyn.com/powergroup/products.htm> to find a suitable alternative.

CAUTION: Hazardous internal voltages and high temperatures. Ensure that unit is not user accessible.

EXTERNAL OUTPUT TRIMMING ⁽¹⁰⁾

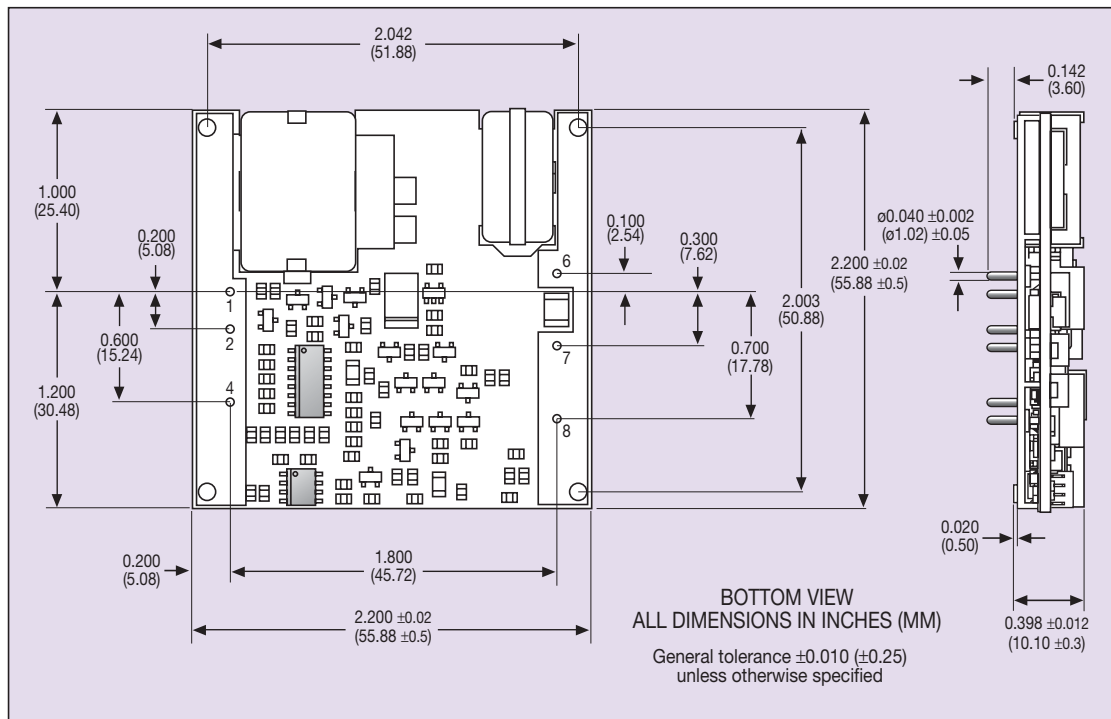
All models can be externally trimmed by using the method shown below.



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PIN CONNECTIONS	
PIN NO.	SINGLE OUTPUT
1	+ Input
2	- Input
4	Remote ON/OFF
6	+ Output
7	- Output
8	Trim

International Safety Standard Approvals



UL/cUL CAN/CSA 22.2 No. 60950-00 : UL 60950
File No. E174104



VDE Certificate No.112836. File No. 10401-3336-0129

CB Report and Certificate to IEC60950, Certificate No. DE1-31103

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Please consult our website for the following items: ✓ Application Note ✓ Longform Data Sheet

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