EXA40 Series

Single output

ARTESYN TECHNOLOGIES

- **High efficiency topology, 91% typical at 5V**
- **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**

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 18-36VDC and 36-75VDC. Typical efficiencies are 91% for the 5V output, 88% for the 3.3V, 86% for the 2.75V and 84% for the 1.8V. 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.

CE (LVD) VDE

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)	2V75, 3V3, 5V outputs 1V8 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 20MHz bandwidth		100mV pk-pk max. 20mV rms max.
Temperature coefficient		±0.01%/°C
Transient response Peak dev. settling time	50% to 75% and back to 1.0%, no external cap.	100mV 250µs
Short circuit protection (See Note 5)		Continuous automatic recovery

INPUT SPECIFICATIONS

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

INPUT SPECIFICATIONS

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

EMC CHARACTERISTICS (Continued)

Radiated emissions	EN55022 (See Design Note 102)	Level B
ESD air	EN61000-4-2, level 3	
ESD contact	EN61000-4-2, level 4	
Surge (500V)	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	1500VDC
Input fuse 24V Input fuse 48V	(See Note 8)	3.5A slow blow 2.0A slow blow
Switching frequency	Fixed	300kHz
Approvals and standards (See Notes 7, 8, 9)		EN60950 UL1950 CSA C22.2 No. 950
Weight		25g (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 to 9 Hz, 3mm disp. 9 to 200Hz 1g Method 204 cond. A
Shock, Class 3M5	IEC-68-2-29 MIL-STD-202F	Method 213B cond. A

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ARTESYN TECHNOLOGIES

For the most current data and application support visit www.artesyn.com/powergroup/products.htm

INPUT VOLTAGE	OUTPUT VOLTAGE (2)	NOMINAL OUTPUT VOLTAGE	OUTPUT CURRENT (MAX.)	TYPICAL EFFICIENCY	MODEL NUMBER (1,3)
18-36VDC	1.5 to 2.0V	1.8V	8.0A	84%	EXA40-24S1V8
18-36VDC	2.5 to 3.0V	2.75V	8.0A	87%	EXA40-24S2V75
18-36VDC	3.0 to 3.6V	3.3V	8.0A	88%	EXA40-24S3V3
18-36VDC	4.5 to 5.5V	5.0V	8.0A	90%	EXA40-24S05
36-75VDC	1.5 to 2.0V	1.8V	8.0A	84%	EXA40-48S1V8
36-75VDC	2.5 to 3.0V	2.75V	8.0A	86%	EXA40-48S2V75
36-75VDC	3.0 to 3.6V	3.3V	8.0A	88%	EXA40-48S3V3
36-75VDC	4.5 to 5.5V	5.0V	8.0A	91%	EXA40-48S05

Notes

1 True latching OVP is available as an option. Please add the suffix '-V' to the model number, **e.g. EXA40-24S1V8-V**. 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 1ms (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 ≤20mΩ.
6 TVS spec : 6V8 @ 10mA, 10V5 @ 57A
4V1 @ 1mA, 7V3 @ 50A
7 Maximum continuous output power.
40 Watts for S05 models
26.4 Watts for S3V3 models
22 Watts for S2V75 models
14.4 Watts for S1V8 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 24S05 and 48S05 models.

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

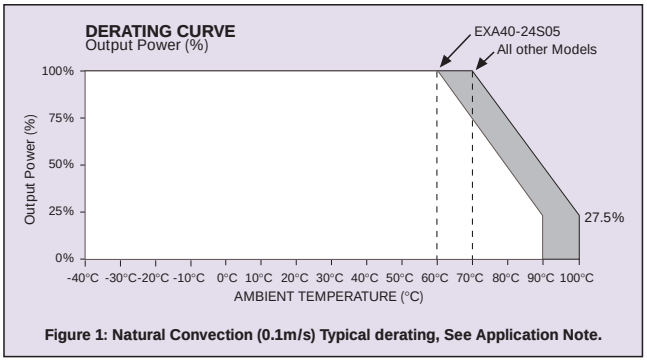

Figure 1: Natural Convection (0.1m/s) Typical derating, See Application Note.

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

EXTERNAL OUTPUT TRIMMING (10)

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