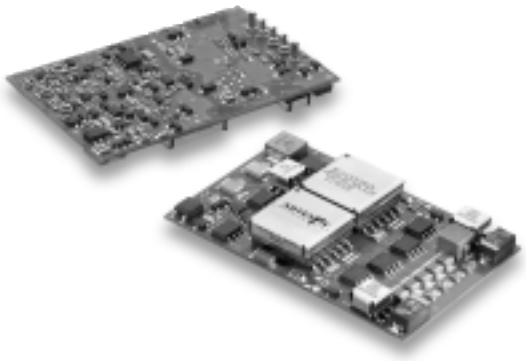
ARTESYN TECHNOLOGIES

EXQ50 SERIES

Single output

NEW Product



[2 YEAR WARRANTY]

- **High efficiency topology, 90% at 5V and 86.5% typical at 1.8V**
- **Low profile, open-frame package**
- **Industry standard footprint**
- **Wide operating temperature, -40°C to +90°C (with derating)**
- **90% to 110% output trim**
- **No minimum load**
- **Remote on/off**

EXQ50 series high-efficiency, open-frame, isolated DC/DC converters have an industry standard quarter-brick footprint and a height of just 0.4 inches. The converters provide up to 50 Watts of output power, are capable of delivering very high current at low voltages, and offer exceptional power densities for today's high-end applications. The first four models in the series feature an input voltage range of 33 to 75VDC and are available with output voltages of 5.0V, 3.3V, 2.5V or 1.8V. The output voltage of each model is adjustable from 90% to 110% of its nominal value. Typical efficiencies are 90% for the 5V model, 89% for the 3.3V, 88% for the 2.5V and 86.5% for the 1.8V. All EXQ50 series converters have a remote on/off capability, and are fully protected against over-voltage, over-temperature and short-circuit conditions. Featuring full international safety approval, including EN60950 (TÜV Product Service) and UL/cUL 60950, EXQ50 series converters reduce compliance costs and time to market.

SPECIFICATION

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

OUTPUT SPECIFICATIONS		
Total error	(See Note 8)	4.5%
Set point accuracy		±2.0% max.
Line regulation	Low line to high line	0.3% max.
Load regulation	Full load to min. load	0.3% max.
Voltage adjustability		90% to 110%
Output remote sense range	(See Note 9)	10%
Minimum load		0A
Overshoot	At turn-on and turn-off	None
Undershoot		None
Ripple and noise	5Hz to 20MHz	120mV pk-pk 30mV rms
Transient response (See Note 1)		5% max. deviation 200µs recovery to within total error band
INPUT SPECIFICATIONS		
Input voltage range	48Vin nominal	33 to 75VDC
Input current	No load Remote OFF	60mA 25mA
Input current (max.) (See Note 3)		1.73A max. @ Io max. and Vin = 33
Input reflected ripple	(See Note 5)	110mA (pk-pk)
Active high remote ON/OFF Logic compatibility ON OFF		(See Note 7) Open collector ref to -input Open circuit or <12VDC <1.2VDC
Undervoltage lockout	Power up Power down	32.5V 30.5V
Start-up time (See Note 6)	Power up Remote ON/OFF	10ms 3ms

EMC CHARACTERISTICS		
Conducted emissions	EN55022 (See Note 2) EN55022 (See Note 2)	Level A Level B
Radiated emissions	EN55022	Level A
Immunity:		
ESD air	EN61000-4-2	8kV, 15kV
ESD contact	EN61000-4-2	6kV, 8kV
EFT DC Input	EN61000-4-4,	2kV (NP)
Radiated field enclosure	EN61000-4-3	10V/m
Conducted (DC power)	EN61000-4-6	10V (NP)
Conducted (signal)	EN61000-4-6	10V (NP)
Input transients	ETS 300 132-2, ETR 283	
GENERAL SPECIFICATIONS		
Efficiency		See table
Operational insulation	Input/output	1500VDC
Switching frequency	Fixed	350kHz
Approvals and standards (See Note 4)		EN60950 (TÜV Product Service) UL/cUL60950
Material flammability		UL94V-0
Weight		25g (0.88oz)
MTBF	MIL-HDBK-217F @ 40°C, 100% load ground benign	>292,000 hours
ENVIRONMENTAL SPECIFICATIONS		
Thermal performance	Operating temp. Non-operating	-40°C to +90°C -40°C to +125°C

International Safety Standard Approvals

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

TÜV Product Service. Certificate No. B 01 11 38572 029

36 to 50 Watt
High Efficiency DC/DC converters

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OVP	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION[10]		MODEL NUMBER [7]
							LINE	LOAD	
36W	33-75VDC	2.3VDC	1.8V	0A	20A	86.5%	±0.3%	±0.3%	EXQ50-48S1V8
50W	33-75VDC	3.0VDC	2.5V	0A	20A	88.0%	±0.3%	±0.3%	EXQ50-48S2V5
50W	33-75VDC	3.9VDC	3.3V	0A	15A	89.0%	±0.3%	±0.3%	EXQ50-48S3V3
50W	33-75VDC	6.0VDC	5.0V	0A	10A	90.0%	±0.3%	±0.3%	EXQ50-48S05

Notes

1 di/dt = 0.1A/µs, Vin = 48VDC, Tc = 25°C, load change = 0.5 lo max. to 0.75 lo max. and 0.75 lo max. to 0.5 lo max.
2 The EXQ50 meets level A and level B conducted emissions only with external components connected before the input pins to the converter. See Application Note 120 for details.
3 Recommended input fusing is a 3.15A HRC 200V rated fuse.
4 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
5 Measured with no external Pi filter. Significant reduction possible with external filter.
6 Start-up into resistive load.
7 Active low remote On/Off is available. Standard product is active high. When ordering active low parts, designate with the Suffix '-R', e.g EXQ50-48S3V3-R.
8. This parameter is calculated at worst case line, load, temperature and initial settings.
9. This is inclusive of the output trim range. If 6.0% trim-up is used, for example, then only 4.0% output sense is available.
10. Maximum, not typical, specification.

PROTECTION		
Short circuit protection	(<20mΩ short)	Continuous
Overvoltage protection		Non-latching clamp
TELECOM SPECIFICATION		
Central office interface A		ETS300-132-2, input voltage and current requirements

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

PIN CONNECTIONS	
PIN NUMBER	FUNCTION
1	+Vin
2	On/Off
3	-Vin
4	-Vout
5	-Sense
6	Trim
7	+Sense
8	+Vout