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[Artesyn Embedded Technologies](#)

[CXA20-48D05](#)

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# CXA20 Series

## Single and dual output

DC-DC CONVERTERS | 20 W DC-DC Converters

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- 4:1 input voltage range
- No minimum load on singles
- 6 A on 3.3 V output (@ 48 Vin) at 50 °C in still air
- Wide operating temperature with overtemperature protection
- ±10% output voltage trim
- Remote On/Off control
- Overvoltage protection
- Available RoHS compliant



The CXA20 is a new 20 W addition to the CXA family of open-frame, isolated, dc-dc converters. The five model series features a 4:1 input voltage range of 18 Vdc to 75 Vdc, making it suitable for a wide variety of communications and distributed power applications. With its 2.0 x 1.6 inch industry standard footprint, the CXA20 provides an easy upgrade option for new and existing Artesyn customers seeking a high-performance, cost-effective power supply. The CXA20 is available in output voltages of 3.3 V, 5 V, 12 V, ±5 V and ±12 V. The 3.3 V version delivering up to 6 A is fully rated to 20 W. Typical efficiency for the CXA20 is 83%. The CXA20 offers remote ON/OFF as well as overvoltage, overtemperature and short circuit protection features.



2 YEAR WARRANTY

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

### SPECIFICATIONS

#### OUTPUT SPECIFICATIONS

Voltage accuracy		±1.0%
Line regulation (LL to HL)	Singles/dual positives	±0.1%
	Dual negatives	±0.1%
Load regulation (not incl. cross reg.)	Full load to minimum load	
	S3V3	±0.2%
	Singles/dual positives	±0.1%
	Dual negatives	±0.1%
Minimum load	Singles	None
	Duals (for imbalanced loads)	10%
Ripple and noise 20 MHz bandwidth	S3V3, S05, D05	75 mV pk-pk max.
	S12, D12	100 mV pk-pk max.
	All models	20 mV rms max.
Temperature coefficient		±0.02%/°C
Overvoltage protection	See Application Note 107	
Short circuit protection Short <20 mΩ	Hiccup	Continuous
		automatic recovery
Transient response	25% load step	±2.0% max. dev., 300 μs recovery to within total error band
Load cross regulation (See Note 1)	10% load to full load, either output	±7.0%

#### INPUT SPECIFICATIONS

Input voltage range	48 Vin nominal	18-75 Vdc
Input fuse	HRC recommended	2.0 A
Max. input rise and fall time	48 V ETS300-132	5 V/ms
UVLO turn ON voltage (See Note 4)		92%
UVLO turn OFF voltage (See Note 4)		86%
Remote ON/OFF Logic compatibility	CMOS/TTL/Open Collector	
ON	Open circuit or >2 Vdc	
OFF	<1.2 Vdc	

#### EMC CHARACTERISTICS

ETS 300 386-1 table 5		
Conducted emissions	EN55022, ext. cap. (Note 5)	Level A
	EN55022, external filter, VDE0878, 48V models	Level B
Radiated emissions	EN55022-B	See App. Note 107
Immunity:		
ESD air	EN61000-4-2 8 kV (NP), 15 kV (RP)	
ESD contact	EN61000-4-2 6 kV (NP), 8 kV (RP)	
EFT DC power	EN61000-4-4 2 kV (NP), 4 kV (LFS)	
EFT signal	EN61000-4-4 1 kV (NP), 2 kV (LFS)	
Radiated field enclosure	EN61000-4-3 10 V/m (NP)	
Surges indoor signal	EN61000-4-5 500 V (RP)	
Conducted (dc power)	EN61000-4-6 10 V (NP)	
Conducted (signal)	EN61000-4-6 10 V (NP)	
Input transients	ETS 300 132-2, ETR 283	

#### GENERAL SPECIFICATIONS

Efficiency	See table	
Overtemp. shutdown	120 °C	
Isolation voltage	Input/output test voltage	1500 Vdc
Switching frequency	Fixed	400 kHz
Approvals and standards (See Notes 6,7,8)	EN60950	
	UL1950 File No. E136005	
Material flammability	UL94V-0	
Weight	26 g (0.92 oz)	
MTBF (Representative model 48S05J @ 48 Vin)	MIL-HDBK-217F	3,485,000 hours
	Parts stress method	
	Ground Benign @ 25 °C	

#### ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating ambient temperature	-40 °C to +60 °C, (See Note 9)
	Non-operating	-55 °C to +125 °C
ETS 300 019-2-3	Classes T3.1, 3.2, 3.3, 3.5	
Air temperature	Low: IEC 68-2-1	-40 °C
	High: IEC 68-2-2	+60 °C
	Change: IEC 68-2-14	-40 °C to +60 °C
Relative humidity	IEC 68-2-56	10% to 100% RH
	IEC 68-2-30	Condensation

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INPUT VOLTAGE	OUTPUT VOLTAGE	OVERVOLTAGE PROTECTION (2,3)	OUTPUT CURRENT (MAX.)	TYPICAL EFFICIENCY	MODEL NUMBER (10,11)
18-75 Vdc	3.3 V	3.7 V	6 A	80%	CXA20-48S3V3J
18-75 Vdc	5 V	6.67 V	4 A	83%	CXA20-48S05J
18-75 Vdc	12 V	14.25 V	1.66 A	83%	CXA20-48S12J
18-75 Vdc	±5 V	6.67 V	2 A ea.	84%	CXA20-48D05J
18-75 Vdc	±12 V	14.25 V	0.83 A ea.	84%	CXA20-48D12J

### Notes

- Negative output voltage deviation when either load is changed.
- For TVS/Zener specifications please see Application Note 107.
- On dual output models, OVP protection is on positive outputs only.
- With respect to minimum input voltage.
- With one external 4 µF capacitor across the input.
- Unit provides basic insulation up to the 75 Vdc maximum input voltage.
- Maximum continuous output power not to exceed 20 Watts.
- User must provide 2 A HRC (recommended) in line fuse in order to comply with safety approvals.
- Download Application Note 107 and the full data sheet from our website.
- 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.
- 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.

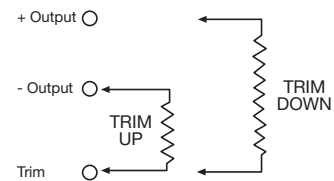
PIN CONNECTIONS		
PIN NUMBER	SINGLE OUTPUT	DUAL OUTPUT
1	+ Input	+ Input
2	- Input	- Input
3	No Pin	No Pin
4	Remote On/Off	Remote On/Off
5	No Pin	+ Output
6	+ Output	Common
7	- Output	- Output
8	Trim	Trim

### MAX. TEMPERATURES FOR FULL RATED OUTPUT CURRENT

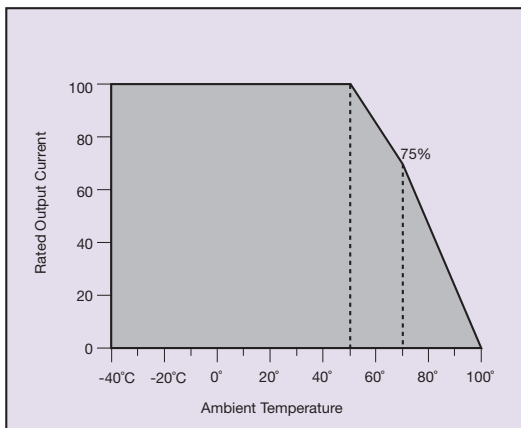
MODEL	FULL Vin RANGE	Vin <60 Vdc
48S3V3J	50 °C	50 °C
48S05J	55 °C	60 °C
48S12J	50 °C	55 °C
48D05J	55 °C	60 °C
48D12J	50 °C	60 °C

### EXTERNAL OUTPUT TRIMMING

All models can be externally trimmed by ±10% using either method shown below. See Application Note 107 for details.



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



Derating Curve Output Current vs Temperature S3V3J  
 Natural Convection (<0.1 m/s airflow)

### International Safety Standard Approvals



UL/cUL CAN/CSA 22.2 No. 60950-00 : UL 60950  
 File No. E174104  
 VDE Certificate No.112836. File No. 10401-3336-0154  
 CB Report and Certificate to IEC60950, Licence No. 121914

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