

# 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<br>Dual negatives                                      | ±0.1%<br>±0.1%   |
| Load regulation (not incl. cross reg.) | Full load to minimum load<br>S3V3<br>Singles/dual positives<br>Dual negatives | ±0.2%<br>±0.1%<br>±0.1%  |
| Minimum load                           | Singles<br>Duals (for imbalanced loads)                                       | None<br>10%  |
| Ripple and noise 20 MHz bandwidth      | S3V3, S05, D05<br>S12, D12<br>All models                                      | 75 mV pk-pk max.<br>100 mV pk-pk max.<br>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.,<br>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 |     |

### EMC CHARACTERISTICS

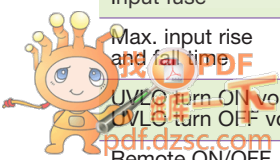
|                          |   |                    |
|--------------------------|---|--------------------|
| ETS 300 386-1 table 5    |   |                    |
| Conducted emissions      | EN55022, ext. cap. (Note 5)<br>EN55022, external filter,<br>VDE0878, 48V models | Level A<br>Level B |
| Radiated 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<br>UL1950 File No. E136005 |
| Material flammability                       |   | UL94V-0                            |
| Weight                                      |   | 26 g (0.92 oz)                     |
| MTBF (Representative model 48S05J @ 48 Vin) | MIL-HDBK-217F<br>Parts stress method<br>Ground Benign @ 25 °C | 3,485,000 hours                    |

### ENVIRONMENTAL SPECIFICATIONS

|                     |  |  |
|---------------------|--|--|
| Thermal performance | Operating ambient temperature<br>Non-operating             | -40 °C to +60 °C,<br>(See Note 9)<br>-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<br>High: IEC 68-2-2<br>Change: IEC 68-2-14 | -40 °C<br>+60 °C<br>-40 °C to +60 °C                   |
| Relative humidity   | IEC 68-2-56  | 10% to 100% RH   |



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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         |

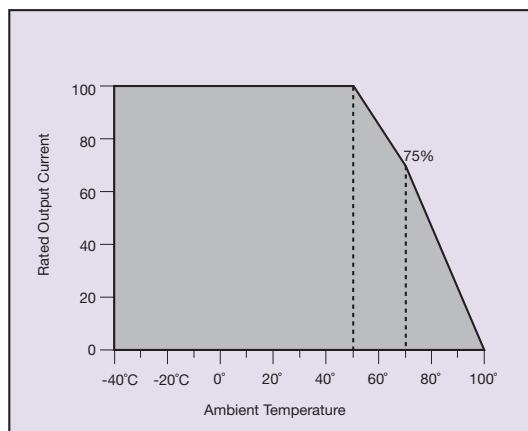
### Notes

- 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

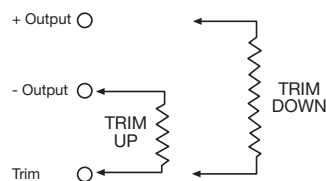
| MODEL   | FULL Vin RANGE | Vin <60 Vdc |
|---------|----------------|-------------|
| 48S3V3J | 50 °C          | 50 °C       |
| 48S05J  | 55 °C          | 60 °C       |
| 48S12J  | 50 °C          | 55 °C       |
| 48D05J  | 55 °C          | 60 °C       |
| 48D12J  | 50 °C          | 60 °C       |



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

### 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.**

### 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

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