

# CXA20 Series

## Single and dual output

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



The CXA20 is a new 20W 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 to 75VDC, 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 3.3V, 5V, 12V, ±5V and ±12V. The 3.3V version delivering up to 6A is fully rated to 20W. Typical efficiency for the CXA20 is 83 percent. 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 20MHz bandwidth       | S3V3, S05, D05<br>S12, D12<br>All models                                      | 75mV pk-pk max.<br>100mV pk-pk max.<br>20mV rms max.          |
| Temperature coefficient                |   | ±0.02%/°C   |
| Overvoltage protection                 |   | See Application Note 107                                      |
| Short circuit protection Short <20mΩ   | Hiccup  | Continuous automatic recovery                                 |
| Transient response                     | 25% load step   | ±2.0% max. dev.,<br>300µs 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               | 48Vin nominal   | 18 to 75VDC   |
| Input fuse                        | HRC recommended | 2.0A  |
| Max. input rise and fall time     | 48V ETS300-132  | 5V/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<br>Open circuit or >2VDC<br><1.2VDC |

#### EMC CHARACTERISTICS

|                          |  |   |
|--------------------------|--|---|
| ETS 300 386-1 table 5    |  |   |
| Conducted emissions      | EN55022, ext. cap. (Note 5)<br>EN55022, external filter,<br>VDE0878, 48V models<br>EN55022-B | Level A<br>Level B<br>See App. Note 107 |
| Radiated emissions       |  |   |
| Immunity:                |  |   |
| ESD air                  | EN61000-4-2 8kV (NP), 15kV (RP)  |   |
| ESD contact              | EN61000-4-2 6kV (NP), 8kV (RP)   |   |
| EFT DC power             | EN61000-4-4 2kV (NP), 4kV (LFS)  |   |
| EFT signal               | EN61000-4-4 1kV (NP), 2kV (LFS)  |   |
| Radiated field enclosure | EN61000-4-3 10V/m (NP)   |   |
| Surges indoor signal     | EN61000-4-5 500V (RP)  |   |
| 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                          |
| Overtemp. shutdown                        |  | 120°C                              |
| Isolation voltage                         | Input/output test voltage                                    | 1500VDC                            |
| Switching frequency                       | Fixed  | 400kHz                             |
| Approvals and standards (See Notes 6,7,8) |  | EN60950<br>UL1950 File No. E136005 |
| Material flammability                     |  | UL94V-0                            |
| Weight                                    |  | 26g (0.92 oz)                      |
| MTBF (Representative model 48S05 @ 48Vin) | MIL-HDBK-217F<br>Parts stress method<br>Ground Benign @ 25°C | 400,000 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<br>IEC 68-2-30                                 | 10% to 100% RH<br>Condensation                     |

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For the most current data and application support visit [www.artesyn.com/powergroup/products.htm](http://www.artesyn.com/powergroup/products.htm)

| INPUT VOLTAGE | OUTPUT VOLTAGE | OVERVOLTAGE PROTECTION (2,3) | OUTPUT CURRENT (MAX.) | TYPICAL EFFICIENCY | MODEL NUMBER |
|---------------|----------------|------------------------------|-----------------------|--------------------|--------------|
| 18-75VDC      | 3.3V           | 3.7V                         | 6.0A                  | 80%                | CXA20-48S3V3 |
| 18-75VDC      | 5.0V           | 6.67V                        | 4.0A                  | 83%                | CXA20-48S05  |
| 18-75VDC      | 12V            | 14.25V                       | 1.66A                 | 83%                | CXA20-48S12  |
| 18-75VDC      | ±5V            | 6.67V                        | 2.0A ea.              | 84%                | CXA20-48D05  |
| 18-75VDC      | ±12V           | 14.25V                       | 0.83A ea.             | 84%                | CXA20-48D12  |

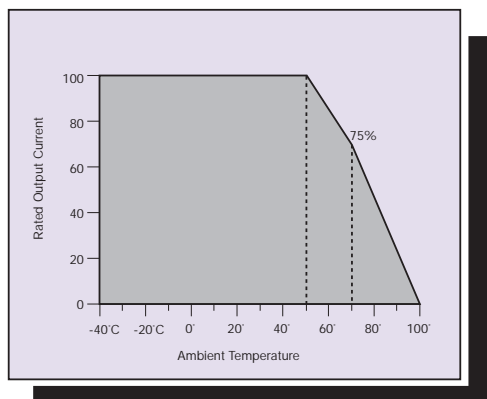
## Notes

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

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

## MAX. TEMPERATURES FOR FULL RATED OUTPUT CURRENT

| MODEL  | FULL $V_{in}$ RANGE | $V_{in} < 60VDC$ |
|--------|---------------------|------------------|
| 48S3V3 | 50°C                | 50°C             |
| 48S05  | 55°C                | 60°C             |
| 48S12  | 50°C                | 55°C             |
| 48D05  | 55°C                | 60°C             |
| 48D12  | 50°C                | 60°C             |



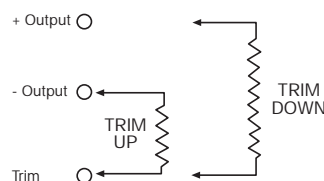
Derating Curve Output Current vs Temperature S3V3  
Natural Convection (<0.1m/s airflow)

## 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          |

## EXTERNAL OUTPUT TRIMMING

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



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