## ARTESYN

T $\quad \begin{array}{lllllllllll}\mathrm{E} & \mathrm{C} & \mathrm{H} & \mathrm{N} & \mathrm{O} & \mathrm{L} & \mathrm{O} & \mathbf{G} & I & \mathrm{E} & \mathrm{S}\end{array}$

[ 2 YEAR WARRANTY ] C ( $\boldsymbol{\epsilon}$ (LVD)

## LX200 SERIES

Flexible single and muliple outputs

- 200W continuous, 300W peak output power
- Industry standard footprint, low profile
- Conducted noise to meet EN55022 class B
- AC and DC input voltage options in same package
- Efficiency up to 88\%
- Optional power sharing/VME signals board
- Autoranging input option

The LX200 series offers 200 Watts of continuous output power in a low profile industry standard footprint. With two single output options and a flexible multiple output version, the series can address most power requirements as standard. The design is specifically tailored to allow full flexibility and modifications to meet customer applications can be implemented with relative ease. The LX200 AC input series meets the safety requirements of EN60950, VDE0805, UL1950 and CSA C22.2 No. 950. Input conducted noise levels meet the requirements of FCC and EN55022 class B. LX200 series power supplies are ideal for use in applications such as point-of-sale equipment, central and public telecom power systems and network equipment.

SPECIFICATION
All specifications are typical at nominal input, full load at $25^{\circ} \mathrm{C}$ unless otherwise stated

| OUTPUT SPECIFICATIONS |  |
| :---: | :---: |
| Voltage adjustability | Vout on singles $-8 \% /+16 \%$ <br> +5 V output on multiple $\pm 20 \%$ |
| Remote sense | $\pm 10 \%$ |
| Line regulation (LL to HL, FL) | Single outputs $\pm 0.2 \%$ <br> Multiple: +5 V output $\pm 0.2 \%$ <br> Multiple: aux. outputs, Note 5 $\pm 0.5 \%$ |
| Load regulation ( $20 \%$ to $100 \% \mathrm{FL}$ ) | Single outputs: $\pm 0.2 \%$ <br> M ultiple: +5 V output $\pm 1.0 \%$ <br> Multiple: -5 V output $\pm 4.0 \%$ <br> Multiple: $\pm 12 \mathrm{~V}, 24 \mathrm{~V}$, Note 5 $\pm 2.0 \%$ |
| Cross regulation | 5A load step on main output $\quad 1.0 \%$ Auxiliary outputs, Note 5 |
| Transient response | 25\% di/dt 1\% max. dev., 1ms recov. |
| Temperature coefficient | Main/single output $\pm 0.02 \% /{ }^{\circ} \mathrm{C}$ <br> Multiple: auxiliary outputs $\pm 0.04 \% /{ }^{\circ} \mathrm{C}$ |
| Overvoltage protection | Main/single output 130\% $\pm 10 \%$ Vout |
| Output power limit | Multiples: <br> primary power limited  <br> Singles: <br> current foldback 105\%-120\% lout |
| Short circuit protection | All outputs Yes |
| INPUT SPECIFICATIONS |  |
| Input voltage range See Note 3 | LX200-46xx models, 175 to 264VAC <br> (230VAC version)  <br> LX200-76xx models, 98 to 132 VAC <br> autorange version 190 to 264 VAC <br> Drop-out voltage 90 VAC |
| Input frequency | $50 \mathrm{~Hz} / 60 \mathrm{~Hz}$ |
| Input surge current | 25A max. |
| Safety ground leakage current | $115 \mathrm{VAC}, 60 \mathrm{~Hz}$ 1.6 mA <br> $230 \mathrm{VAC}, 50 \mathrm{~Hz}$ 2.5 mA |
| Remote OFF | Logic 0 on $\overline{\mathrm{ROF}}$ |

## ELECTROMAGNETIC COMPATIBILITY SPECIFICATIONS



ENVIRONMENTAL SPECIFICATIONS

| Thermal performance | Operating $0^{\circ} \mathrm{C}$ to $+700^{\circ} \mathrm{C}$ <br> Non-operating $-25^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ <br> $0^{\circ} \mathrm{C}$ to $+40^{\circ} \mathrm{C}$ ambient, 200 W <br> convection cooled  <br> $40^{\circ} \mathrm{C}$ to $70^{\circ} \mathrm{C}$ ambient, Derate linearly <br> convection cooled to $25 \%$ full load <br> Peak ( $0^{\circ} \mathrm{C}$ to $40^{\circ} \mathrm{C}$, max. 10 s ) 300 W |
| :---: | :---: |
| Relative humidity | Non-condensing $5 \%$ to $95 \%$ RH |
| Altitude | Operating 10,000 feet max. <br> Non-operating 30,000 feet max. |
| Vibration | Operating, $5-50 \mathrm{~Hz}$ 0.05 mm pk-pk <br> Operating, $50-100 \mathrm{~Hz}$ 0.025 mm pk pk <br> Non-operating 100 mm drop on <br>  chassis face |

# 200 Watt AC/DC universal input switch mode power supplies 

| OUTPUT <br> VOLTAGE | OUTPUT CURRENTS |  | RIPPLE |  | MODEL NUMBER (3) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MAX (1) | PEAK (2) | RMS | PK-PK | 230VAC |  |
| +5.0 V | 20.0 A | 40.0 A | $0.2 \%$ | $2.0 \%$ | AUTORANGE |  |
| -5.0 V | 4.0 A | 10.0 A | $0.2 \%$ | $2.0 \%$ |  |  |
| -12.0 V | 4.0 A | 10.0 A | $0.2 \%$ | $2.0 \%$ |  |  |
| +12.0 V | 8.0 A | 20.0 A | $0.2 \%$ | $2.0 \%$ |  |  |
| +24.0 V | 4.0 A | 10.0 A | $0.2 \%$ | $2.0 \%$ |  |  |
| $24.0 \mathrm{~V}(4)$ | 9.0 A | - | $0.1 \%$ | $1.0 \%$ | LX200-7620 |  |
| $48.0 \mathrm{~V}(4)$ | 4.5 A | - | $0.1 \%$ | $1.0 \%$ | LX200-4617 | LX200-7617 |


| PIN CONNECTIONS |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| PIN NO | INPUT | MULTI O/P | SINGLE O/P | SIGNALS |
| 1 | Earth | PS | PS | $\overline{\text { SRS }}$ |
| 2 | N/C | $\overline{\text { ACF }}$ | $\overline{\text { ACF }}$ | $\overline{\text { ACF }}$ |
| 3 | Neutral | $\overline{\text { SRS }}$ | $\overline{\text { SRS }}$ | $\overline{\text { DCF }}$ |
| 4 | N/C | $\overline{\text { ROF }}$ | $\overline{\text { ROF }}$ | PM |
| 5 | Live | +5 VS | 0 VS | PS |
| 6 | N/C | +5 V | 0 V | $\overline{\text { ROF }}$ |
| 7 | 115 V | +5 V | 0 V | +VS |
| 8 | Link | +5 V | 0 V | 0 V |
| 9 | N/C | 0 V | 0 V | - |
| 10 | N/C | 0 V | 0 V | - |
| 11 | N/C | 0 V | $+\mathrm{V}_{\text {out }}$ | - |
| 12 | N/C | -5 V | $+\mathrm{V}_{\text {out }}$ | - |
| 13 | N/C | -12 V | $+\mathrm{V}_{\text {out }}$ | - |
| 14 | N/C | +12 V | $+\mathrm{V}_{\text {out }}$ | - |
| 15 | N/C | +24 V | +VS | - |

## OVERLOAD/SHORT CIRCUIT PROTECTION

The overload/short circuit protection mechanisms are different for the single output models and the multiple output model.
The single output models will current limit when the output load reaches 105-120\% of maximum load during overload or short circuit conditions. The unit will operate in a constant current mode making the single output models suitable for battery charging applications.
The multiple output model uses a power limiting function. When the total output power reaches 300W the outputs will foldback to the values detailed below:

| Output |  |
| :--- | :--- |
| +5 V |  |
|  | Foldback Value |
| +15 A continuous |  |
| +24 V |  |
| -5 A continuous |  |
| -12 V |  |

The outputs will not foldback until the total output power exceeds the maximum power limits. This allows the units to have a peak power capability but it requires that care must be taken not to permanently overload any individual output. The $+5 \mathrm{~V},+12 \mathrm{~V}$ and +24 V outputs are not individually protected and it is recommended that the maximum continuous load does not exceed the value given in the output specifications. The -5 V and -12 V outputs are individually protected by a 4A Multi Fuse ${ }^{T M}$ and the maximum continuous load should not exceed the value given in the output specifications.

## Notes

1 The multiple output LX200 has a continuous output power rating of 200W.
The single-output versions have a continuous output power rating of 216W.
2 Peak power figures for individual outputs on the multiple output unit are for less than 10 seconds duration. The overall peak power for the unit is 300 W for 10 seconds duration.
3 The LX200 is available with a standard 230VAC input operation (order LX200-46xx) or the input board can be fitted with an autorange circuit which automatically senses the input voltage and switches to the appropriate voltage range (order LX200-76xx).
4 Single output models are adjustable $-8 \%,+16 \%$.
5 A $10 \%$ load on the main output is necessary to maintain regulation on the auxiliaries at full load (multiple output model).
6 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
7 Consideration should be given to measuring the temperature on the main transformer (T1) when the power supply is installed in end-use equipment. The measured temperature on T 1 must not exceed $90^{\circ} \mathrm{C}$. For further information on the LX200 safety approvals, contact Computer Products.

## Options

- DC input models for 24 V and 48 V operation are detailed on the LX200, LX350 and LX550 series DC/DC converter data sheet on page 170.
- A cover and signals board are available as options. To order, add the suffixes '-C', '-S' respectively, see table below.

| OPTIONS | SUFFIX | EXAMPLE |
| :--- | :---: | :--- |
| None |  | LX200-76xx |
| Cover | $-C$ | LX200-76xx-C |
| Signals | - S | LX200-76xx-S |
| Cover and Signals | $-C-S$ | LX200-76xx-C-S |

## SIGNALS (OPTIONAL)

An optional signals board supplies the following VME utility bus signals: ACF (AC Fail) Logic 1 to 0 transition occurs $>10 \mathrm{~ms}$ before outputs fall below $80 \%-85 \%$ of nominal in the event of input failure.
$\overline{\text { DCF }}$ (DC Fail) Logic 0 occurs if output falls below $85 \%-95 \%$ of nominal.
SRS (System Reset) Logic 1 for system OK (AC and DC good and reset times [200ms])
PM Power Monitor signal, proportional to the output power, ratio of $20 \mathrm{mV} / \mathrm{W} \pm 10 \%$.
PS Power Share connections, to be joined for parallel operation of two or more units, ensuring equal power share. For power share operation unit outputs need to be set to $\pm 5 \%$ of each other and should be connected in star configurations with the load as star centre.

## 200 Watt AC/DC universal input switch mode power supplies

## Mechanical notes

A Input and output connectors are 15 way terminal block, 5 mm pitch.
Signals board option is 8 way, single row right angle $0.1^{\prime \prime}$, M olex
910210128, this mates with 901471108 or equivalent.
B Customer fixing screws (A) are M3 isometric. They must not penetrate into unit by more than 5 mm .


ALL DIMENSIONS IN INCHES (mm)

## International Safety Standard Approvals

Multiple output and 24 V Single output units are approved to these standards. Safety approval pending for 48 V output model. See Note 7

EN60950/VDE0805 Reg. File No. 90371

- UL1950 File No. E136005
(S) CSA C22.2 No. 950 File No. LR41062C/LR101320


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