### SNDBS400B

#### Ordering information

| SNDB | S | 400 | B | 03 |

#### DC-DC Converters Bus Converter

- **Power Module Value-added Type**
- **SNDBS400B03**
- **SNDBS400B05**
- **SNDBS400B07**
- **SNDBS400B12**
- **SNDBS400B15**
- **SNDBS400B18**
- **SNDBS400B24**
- **SNDBS400B28**

#### Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SNDBS400B03</th>
<th>SNDBS400B05</th>
<th>SNDBS400B07</th>
<th>SNDBS400B12</th>
<th>SNDBS400B15</th>
<th>SNDBS400B18</th>
<th>SNDBS400B24</th>
<th>SNDBS400B28</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX OUTPUT WATTAGE [W]</td>
<td>264</td>
<td>400</td>
<td>405</td>
<td>408</td>
<td>405</td>
<td>396</td>
<td>408</td>
<td>406</td>
</tr>
<tr>
<td>DC OUTPUT</td>
<td>3.3V 80A</td>
<td>5V 80A</td>
<td>7.5V 54A</td>
<td>12V 34A</td>
<td>15V 27A</td>
<td>18V 22A</td>
<td>24V 17A</td>
<td>28V 14.5A</td>
</tr>
</tbody>
</table>

#### Input

- **Voltage [V]**: DC200 - 400
- **Current [A]**: 1.19typ 1.72typ 1.68typ 1.67typ 1.66typ 1.61typ 1.67typ 1.63typ
- **Efficiency [%]**: 79typ 83typ 86typ 87typ 87typ 89typ 87typ 88typ

#### Output

- **Voltage [V]**: 3.3 5 7.5 12 15 18 24 28
- **Current [A]**: 80 80 54 34 27 22 17 14.5
- **Line Regulation [mV]**: 16max 20max 30max 40max 60max 60max 95max 95max
- **Load Regulation [mV]**: 150max 200max 300max 200max 200max 200max 700max 700max
- **Ripple [mVp-p]**: 80max 80max 100max 120max 120max 120max 120max 120max
- **Ripple Noise [mVp-p]**: 140max 140max 150max 150max 150max 150max 150max 150max
- **Temperature Regulation [mV]**: 35max 50max 75max 120max 120max 120max 120max 120max
- **Drift [mV]**: 16max 20max 30max 40max 40max 40max 40max 40max

#### Protection Circuit and Others

- **Overcurrent Protection**: Works over 105% of rating and recovers automatically
- **Overvoltage Protection [V]**: 4.00 - 5.50 5.75 - 7.00 8.60 - 10.50 13.80 - 16.80 17.25 - 21.00 20.70 - 25.20 27.60 - 33.60 32.20 - 39.20
- **Remote Sensing**: Provided
- **Remote On/Off**: Provided (Input side : ENA, Output side : RC2)

#### Isolation

- **Input-Output**: AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C)
- **Input-FG**: AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C)
- **Output-FG**: AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (20±15°C)

#### Environmental

- **Operating Temp., Hum. and Altitude**: -20 to +80°C (On aluminum base plate), 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max
- **Storage Temp., Hum. and Altitude**: -20 to +85°C, 20 - 95%RH (Non condensing), 9,000m (30,000 feet) max
- **Vibration**: 10 - 50Hz, 19.6ms² (2G), 3minutes period, 60minutes each along X, Y and Z axis
- **Impact**: 196.1ms² (20G), 11ms, once each along X, Y and Z axis

#### Safety

- **Agency Approvals**: UL60950-1, C-UL, EN60950-1

#### Others

- **Case Size/Weight**: 89 X 44.5 X 222mm [3.51 X 1.75 X 8.75 inches] (W X H X D) / 570g max
- **Cooling Method**: Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)

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* Please set short-pieces with 2-3 pins of CN8, when you do not use ENA. Refer to the manual.

*1 At rated input (DC280V) and rated load.

*2 Refer to Instruction manual for the measuring method of an electrical property.

*3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input / output.
**Block diagram**

![Block diagram for SNDBS400B](image)

**External view**

![External view of SNDBS400B](image)

- **Connector cover**: 5-Φ4.5 [Φ0.177]
- **Mounting hole**: 5-Φ4.5 [Φ0.177]
- **Name plate**: 5-Φ4.5 [Φ0.177]
- **Voltage adjust**: 5-Φ4.5 [Φ0.177]
- **Point A**: 5-Φ4.5 [Φ0.177]
- **Point B**: 5-Φ4.5 [Φ0.177]

- **Tolerance**: ±1 [±0.04]
- **Weight**: 570g max
- **Dimensions in mm, [ ]=inches**
- **PCB material/thickness**: FR-4 / 1.6mm [0.06]
- **Screw tightening torque**: 1.6N·m (16.9kgf-cm)max
- **Component positions and sizes are for your reference if they have no dimensions.**
- **Please connect safety ground to the base plate in 5-Φ4.5 [Φ0.177] hole.**
- **The following parts are attached at shipping from factory**
  - CN2: Housing for protection
  - CN3: Short-pieces for without remote sensing
  - CN7, CN8: Short-piece for setting
- **Keep drawing current per pin below 7A for CN1/CN2.**
# DC-DC Converters Bus Converter
## Power Module Value-added Type

**SNDBS700B**

### Ordering information

<table>
<thead>
<tr>
<th>Series name</th>
<th>Single output</th>
<th>Output wattage</th>
<th>B</th>
<th>Output voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNDB S 700 B 28</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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### Ordering Information

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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### Specifications

#### DC Output

<table>
<thead>
<tr>
<th>Model</th>
<th>SNDBS700B12</th>
<th>SNDBS700B24</th>
<th>SNDBS700B28</th>
<th>SNDBS700B36</th>
<th>SNDBS700B48</th>
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</thead>
<tbody>
<tr>
<td>Max Output Wattage [W]</td>
<td>696</td>
<td>696</td>
<td>700</td>
<td>702</td>
<td>696</td>
</tr>
<tr>
<td>DC Output</td>
<td>12V 58A</td>
<td>24V 29A</td>
<td>28V 25A</td>
<td>36V 19.5A</td>
<td>48V 14.5A</td>
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</table>

#### Input

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<thead>
<tr>
<th>Model</th>
<th>SNDBS700B12</th>
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<th>SNDBS700B36</th>
<th>SNDBS700B48</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage [V]</td>
<td>DC200 - 400</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current [A]</td>
<td>2.76typ</td>
<td>2.76typ</td>
<td>2.76typ</td>
<td>2.76typ</td>
<td>2.73typ</td>
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<tr>
<td>Efficiency [%]</td>
<td>90.0typ</td>
<td>90.0typ</td>
<td>90.5typ</td>
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<td>91.0typ</td>
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<tr>
<td>Line Regulation [mV]</td>
<td>40max</td>
<td>95max</td>
<td>95max</td>
<td>95max</td>
<td>120max</td>
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<tr>
<td>Load Regulation [mV]</td>
<td>150max</td>
<td>190max</td>
<td>190max</td>
<td>200max</td>
<td>240max</td>
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#### Output

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<tr>
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<tr>
<td>Voltage [V]</td>
<td>12</td>
<td>24</td>
<td>28</td>
<td>36</td>
<td>48</td>
</tr>
<tr>
<td>Current [A]</td>
<td>58</td>
<td>29</td>
<td>25</td>
<td>19.5</td>
<td>14.5</td>
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<tr>
<td>Ripple [mVp-p]</td>
<td>120max</td>
<td>120max</td>
<td>120max</td>
<td>120max</td>
<td>120max</td>
</tr>
<tr>
<td>Ripple Noise [mVp-p]</td>
<td>160max</td>
<td>160max</td>
<td>160max</td>
<td>160max</td>
<td>160max</td>
</tr>
<tr>
<td>Temperature Regulation [mV]</td>
<td>40max</td>
<td>95max</td>
<td>95max</td>
<td>95max</td>
<td>120max</td>
</tr>
<tr>
<td>Drift [mV]</td>
<td>40max</td>
<td>90max</td>
<td>90max</td>
<td>90max</td>
<td>120max</td>
</tr>
<tr>
<td>Startup Time [ms]</td>
<td>200max(DCIN 280V, Io=100%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Voltage Setting [V]</td>
<td>11.64 - 12.36</td>
<td>23.28 - 24.72</td>
<td>27.16 - 28.84</td>
<td>34.92 - 37.08</td>
<td>46.56 - 49.44</td>
</tr>
</tbody>
</table>

#### Protection Circuit and Others

- Overcurrent Protection: Works over 105% of rating and recovers automatically.
- Overvoltage Protection [V]: 13.80 - 16.80, 27.60 - 33.60, 32.20 - 39.20, 41.40 - 50.40, 55.20 - 63.00.

#### Remote Sensing

- Provided
- Remote On/Off: Provided (On both side of input output)

#### Isolation

- Input-Output: AC3.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C)
- Input-FG: AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C)
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- Operating Temp. Humidity and Altitude: -20 to +95°C (On aluminum base plate), 20% - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max
- Storage Temp. Humidity and Altitude: -20 to +95°C, 20% - 95%RH (Non condensing), 9,000m (30,000 feet) max
- Vibration: 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis
- Impact: 196.1m/s² (20G), 11ms, once each along X, Y and Z axis

#### Safety

- Agency Approvals: UL60950-1, C-UL, EN60950-1

#### Others

- Case Size/Weight: 89×44.5×222mm (3.51×1.75×8.75 inches) [W×H×D] / 570g max
- Cooling Method: Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)

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*2 Refer to Instruction manual for the measuring method of an electrical property.
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*4 Refer to the manual for the input range.
**SNDBS700B**

**Block diagram**

- DC IN 200 - 400V
- NOISE FILTER
- DC-DC CONVERTER DBS700B
- FILTER
- DC OUT
- REMOTE SENSING
- FUSE 450V 10A
- FG
- ENA
- CB TRM VB +S -S
- +V in -V in
- ENA
- TER A
- TER B
- TERMINAL COVER
- CONNECTOR COVER
- M4
- Name plate
- Terminal cover
- Power Module (DBS700B)
- Base plate

**External view**

- Connector cover
- Mounting hole
- 5-φ4.5 [φ0.177]
- Power Module DBS700B
- Voltage adjust
- Point B
- Point A
- ENA
- Name plate
- 44.5max [1.75max]
- 5.08 [0.20]
- 78.84 [3.09]
- 89 [3.51]
- 69.98 [2.76]
- 9.038 [0.356]
- 2.02 [0.08]
- 2.11 [0.084]

**Specifications**

- Tolerance : ±1 [±0.04]
- Weight : 570g max
- Dimensions in mm, [ ] = inches
- PCB material/thickness : FR-4 / 1.6mm [0.06]
- The following parts are attached at shipping from factory:
  - CN2 : Housing for protection
  - CN3 : Short-pieces for without remote sensing
  - CN7, CN8 : Short-piece for setting
- Please connect safety ground to the base plate in 5-φ4.5 [φ0.177] hole.
- Keep drawing current per pin below 7A for CN1/CN2.
- August 11, 2015