

## BCS Series



- DC Standby System
- Battery Charging Output
- Optional 5 V, 3 A Supply
- Low Battery Disconnect
- AC OK and Battery Low Alarms
- Battery Overload & Reverse Polarity Protection
- 3 Year Warranty

## Specification

### Input

Input Voltage	• 90-264 VAC (120-370 VDC)
Input Frequency	• 47-63 Hz
Input Current	• 75 W: 1.5/1.0 A max 115/230 VAC 100 W: 2.0/1.2 A max 115/230 VAC 155 W: 2.5/1.5 A max 115/230 VAC
Inrush Current	• 75/100 W 70 A max/230 VAC cold start 25 °C, 155 W 80 A max/230 VAC cold start 25 °C
Earth Leakage Current	• <1 mA at 264 VAC, 60 Hz
Power Factor	• Meets EN61000-3-2, class A
Input Protection	• Internal 4.0 A (155 W: 5.0 A) 250 V fuse, fitted in line

### Output

Output Voltage	• See tables
Output Voltage Trim	• $\pm 10\%$ on output 1. Output 2 tracks by same percentage
Initial Set Accuracy	• $\pm 1.0\%$
Minimum Load	• None
Start Up Delay	• 75/100 W: 800 ms O/P 1 & 3, 3.5 s O/P 2, 155 W: 4 s O/P 1 & 3, 6.2 s O/P 2
Start Up Rise Time	• 30 ms max
Hold Up Time	• 8 ms min at 115 VAC
Line Regulation	• $\pm 0.5\%$ max
Load Regulation	• Output 1 & 2: $\pm 0.5\%$ , Output 3: $\pm 1.5\%$ (where fitted)
Over/Undershoot	• 5% max at turn on
Transient Response	• 4% max. deviation, recovery to less than 1% within 500 $\mu$ s for step load change of 25%
Ripple & Noise	• Output 1: 1% pk-pk, Output 2: 150 mV pk-pk, Output 3: 100 mV pk-pk (where fitted), 20 MHz bandwidth
Overvoltage Protection	• 115-150% on output 1 only, recycle mains to reset
Overload Protection	• Output 1: >110% of total rated power Output 2: 100-115% of max current Output 3: >3.3 A (where fitted) An overload on any output will affect the voltage regulation of all outputs
Batt. Low Voltage Protection	• Internal battery relay opens at 10 V $\pm 4\%$ for 13 V versions and 20 V $\pm 5\%$ for 27 V versions
Short Circuit Protection	• On all outputs, trip and restart, auto recovery
Temp. Coefficient	• 0.03%/°C

### General

Efficiency	• See tables
Isolation	• 3000 VAC Input to Output 1500 VAC Input to Ground 500 VAC Output to Ground
Switching Frequency	• 75 W: 40-76 kHz at full load typical 100 W: 28-60 kHz at full load typical 155 W: PFC 100 kHz, PWM 30-47 kHz at 25-100% load typical
Power Density	• 75 W: 3.4 W/In <sup>3</sup> , 100 W: 4.5 W/In <sup>3</sup> , 155 W: 3.8 W/In <sup>3</sup>
Signals	• AC OK and BAT LOW signals, see applications note
MTBF	• 130 kHrs typical to MIL-HDBK-217F at 25 °C, GB

### Environmental

Operating Temperature	• -20 °C to +70 °C. Refer to derating curves
Cooling	• 75 & 100 W: Convection-cooled, 155 W: Internal fan
Operating Humidity	• 95% RH, non-condensing
Storage Temperature	• -40 °C to +85 °C
Operating Altitude	• 2000 m
Shock	• 30 g pk, half sine, 6 axes
Vibration	• 2 g rms, 10 Hz to 500 Hz, 10 min/cycle for 60 mins on each axis

### EMC & Safety

Emissions	• EN55022, Level B conducted and radiated
Harmonic Currents	• EN61000-3-2, class A
Voltage Flicker	• EN61000-3-3
ESD Immunity	• EN61000-4-2, level 3 Perf Criteria A
Radiated Immunity	• EN61000-4-3, 3 V/m Perf Criteria A
EFT/Burst	• EN61000-4-4, level 2 Perf Criteria A
Surge	• EN61000-4-5, installation class 3, Perf Criteria A
Conducted Immunity	• EN61000-4-6, 3 V Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms, Perf Criteria A, B, B
Safety Approvals	• EN60950-1, UL60950-1

## Models and Ratings

**BCS75/100 XP**

Output Power	Output 1		Output 2		Output 3		Efficiency	Model Number <sup>2)</sup>
	Voltage	Current <sup>(1)</sup>	Voltage	Current <sup>(1)</sup>	Voltage	Current <sup>(1)</sup>		
75 W	13.8 V	5.50 A	13.8 V	1.95 A			86%	BCS75US13-C
	27.6 V	2.75 A	27.6 V	1.10 A			88%	BCS75US27-C
	13.8 V	4.40 A	13.8 V	1.95 A	5.0 V	3.0 A	85%	BCS75US13-CA
	27.6 V	2.20 A	27.6 V	1.10 A	5.0 V	3.0 A	87%	BCS75US27-CA
100 W	13.8 V	7.30 A	13.8 V	2.80 A			86%	BCS100US13-C
	27.6 V	3.65 A	27.6 V	1.70 A			88%	BCS100US27-C
	13.8 V	6.20 A	13.8 V	2.80 A	5.0 V	3.0 A	85%	BCS100US13-CA
	27.6 V	3.10 A	27.6 V	1.70 A	5.0 V	3.0 A	87%	BCS100US27-CA

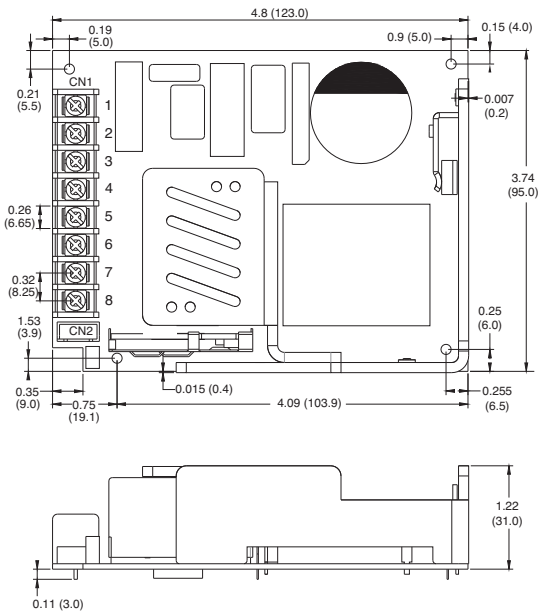
### Notes

1. Total power must not exceed the output power rating.

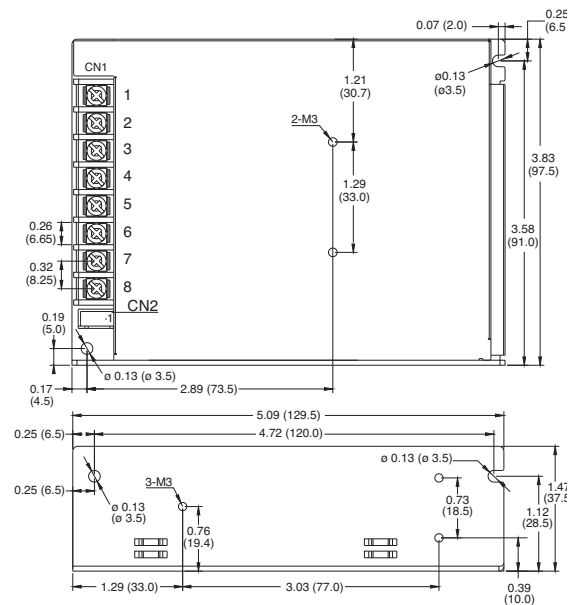
2. Delete C from model number for optional uncased version e.g. BCS75US13. or BCS75US27-A.

## Mechanical Details

### BCS, BCS-A



### BCS-C, BCS-CA



CN1 - Input/Output Connector			
Pin	Function	Pin	Function
1	Line	5	+Vout
2	Neutral	6	BAT+
3	FG ⊕	7	BAT-
4	-Vout Com	8	+5V (-A versions only)

CN2 - Alarm Connector for BCS, BCS-C	
Pin	Function
1	AC OK
2	BAT LOW
3	13.8 V/20 mA or 27.6 V/20 mA (Output voltage dependant)

CN2 - Alarm Connector for BCS-A, BCS-CA	
Pin	Function
1 2	AC OK
3 4	BAT LOW

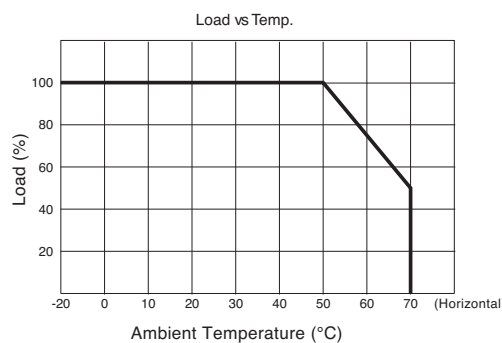
### Notes

1. All dimensions in inches (mm).  
2. BCS, BCS-C CN2 Mating Part JST XHP-3 housing, SXH-001 T-P0.6 crimps or equivalent.

3. BCS-A, BCS-CA CN2 mating part JST XHP-4 housing, SXH-001 T-P0.6 crimps or equivalent.

4. For correct operation of the internal battery fuse, the BAT- terminal should not be connected to earth or -Vout Com.

## Derating Curves



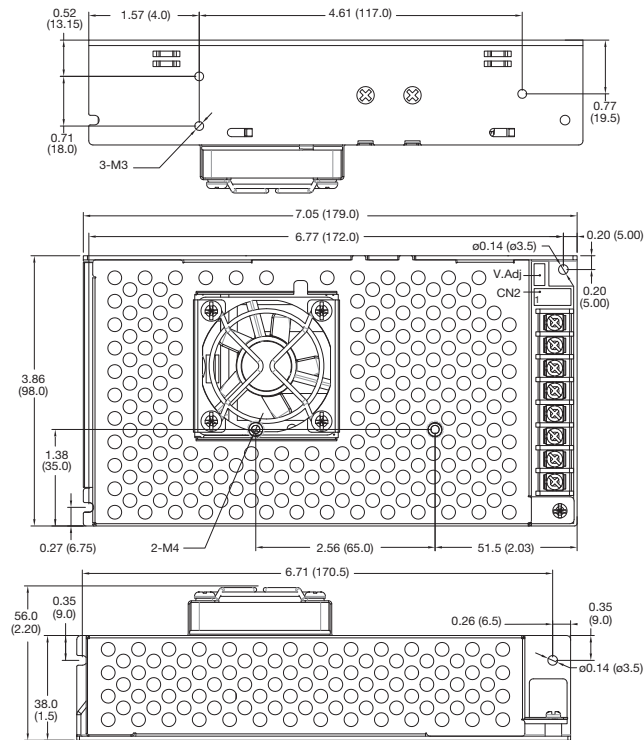
## Models and Ratings

Output Power	Output 1		Output 2		Output 3		Efficiency	Model Number
	Voltage	Current <sup>(1)</sup>	Voltage	Current <sup>(1)</sup>	Voltage	Current <sup>(1)</sup>		
155 W	13.8 V	11.2 A	13.8 V	3.88 A			86%	BCS155PS13-C
	27.6 V	5.6 A	27.6 V	2.10 A			86%	BCS155PS27-C
	13.8 V	10.1 A	13.8 V	3.88 A	5.0 V	3.0 A	85%	BCS155PS13-CA
	27.6 V	5.1 A	27.6 V	2.10 A	5.0 V	3.0 A	85%	BCS155PS27-CA

### Notes

- Total power must not exceed the output power rating.

## Mechanical Details



CN1 - Input/Output Connector			
Pin	Function	Pin	Function
1	Line	5	+Vout
2	Neutral	6	BAT+
3	FG ⚡	7	BAT-
4	-Vout Com	8	+5V (-A versions only)

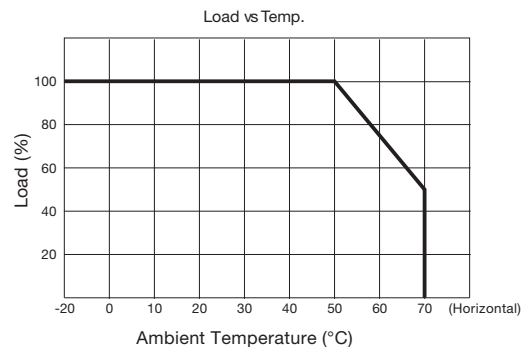
CN2 - Alarm Connector for BCS, BCS-C	
Pin	Function
1	AC OK
2	BAT LOW
3	13.8 V/20 mA or 27.6 V/20 mA (Output voltage dependant)

CN2 - Alarm Connector for BCS-A, BCS-CA	
Pin	Function
1 2	AC OK
3 4	BAT LOW

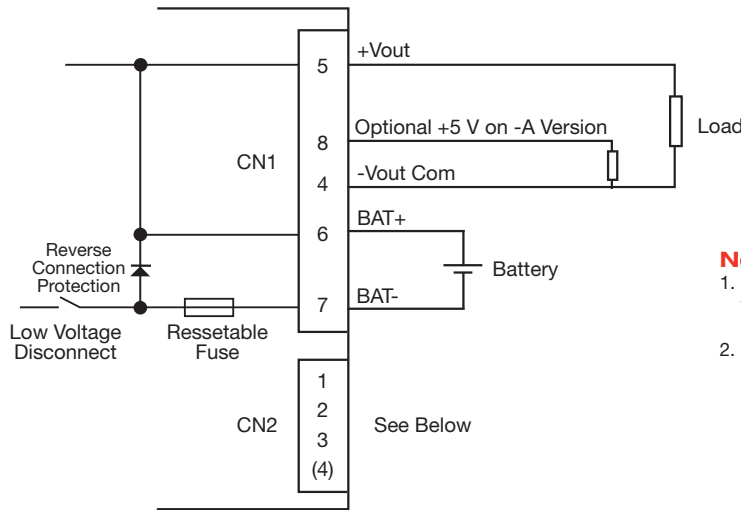
### Notes

- All dimensions in inches (mm).
- BCS-C CN2 Mating Part JST XHP-3 housing, SXH-001 T-P0.6 crimps or equivalent.
- BCS-CA CN2 mating part JST XHP-4 housing, SXH-001 T-P0.6 crimps or equivalent.
- For correct operation of the internal battery fuse, the BAT- terminal should not be connected to earth or -Vout Com.

## Derating Curves



Connection Diagram

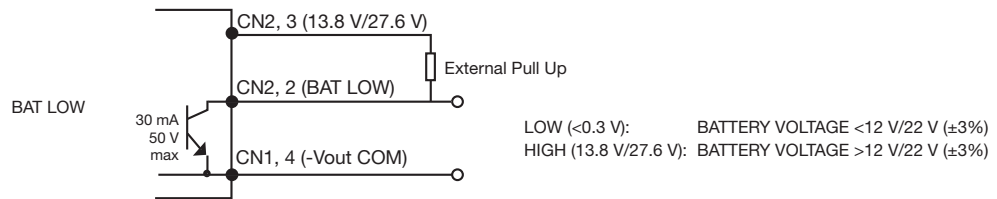
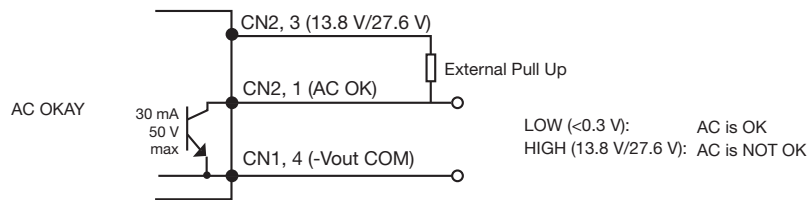


Notes

1. For correct operation of the internal battery fuse, the BAT- terminal should not be connected to Earth or -Vout COM.
2. Low Voltage Disconnect operates at 10 V  $\pm$ 4% for S13 models or 20 V  $\pm$ 5% for S27 models.

Alarm Connections

BCS, BCS-C Models



BCS-A, BCS-CA Models

