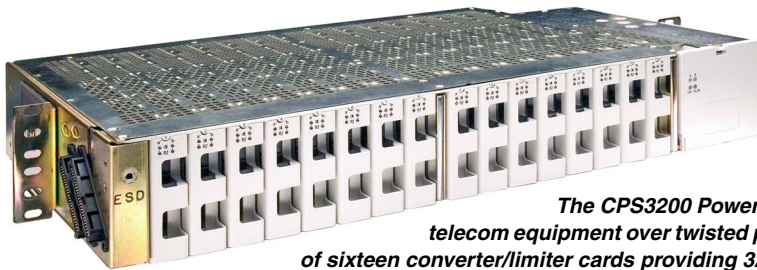


# **CPS3200U Upstream System**

## **Telephone Power for Video**

### **48 Vdc Input, $\pm 190$ Vdc Output Converter/Limiter System**



*The CPS3200 Power System is designed for powering telecom equipment over twisted pairs (RFT-V). The system consists of sixteen converter/limiter cards providing 32 100VA limited output channels. The 2 RU high CPS3200 Converter shelf also provides a pair of redundant -48 V input A & B feeds (right side) and a pair of 50-pin RJ21 connectors for the 32  $\pm 190$ V outputs, in a totally front access, field installable package.*

#### **Features**

- 32  $\pm 190$  Vdc 100VA limited output circuits
- Wide operating temperature range (-40°C to +75°C)
- Output short circuit, overload, overvoltage and undervoltage shutdown circuits
- Inrush protected, hot swappable cards
- Front panel status and diagnostic LEDs per circuit
- Total Front Access
- High Density
- Vertical Airflow
- Easy growth at the shelf and frame level
- Redundant -48 Vdc inputs
- Single channel failure group
- Dual channel replacement group
- Optional Ethernet/TCP-IP access
- Major and Minor Form C relay alarms
- 3.5" (2RU) H, 12" D, 21.5" W shelf fits any application
- Shelf portioned into two sections to limit L2 current drain to existing BDFB standards
- No exposure of unprotected  $\pm 190$  Vdc
- Outputs on AMP-Champ RJ21 connectors
- Optional fan shelf, houses Ethernet interface card

**The CPS3200U** is the premier upstream dc/dc converter for line powering FTTN networks. The 3200U contains 16 dc/dc converter/limiter cards in a dense 2 RU shelf. Each card contains a pair of independent -48 Vdc input to  $\pm 190$  Vdc output converters with each output safety limited to 100VA. The cards are fully connectorized and insulator shielded, inrush current protected and completely hot swappable, making card addition to in-service shelves in the field an easy, one step process. The converter card shelf is completely front access, with all -48V input and RJ21 output connections made on connectors in front of the mid-mount shelf brackets. The alarm and communications connections are also on the front of the shelf.

The CPS3200U meets the applicable requirements of these North American product standards: UL60950-21, UL60950-1, GR-1089-CORE, and GR-063-CORE.

**Dual Input Converter Card Specifications**

<b>Input</b>	
Input Voltage Range	-40 Vdc to -59 Vdc
Maximum Input Current at Vin=40.0 Vdc	7A
Maximum Inrush Current	7A
Input Conducted Noise Spectrum	< GR-1089 limits (10 kHz to 30 MHz)
Input Protection	Fuses, diode reverse input polarity
<b>Output</b>	
Output Voltage Setpoint QS982A	±188.3 Vdc to ±192.1 Vdc
Output Voltage Regulation	±1.0%
Output Voltage Ripple RMS (5 Hz to 20 MHz) Peak-Peak (5 Hz to 20 MHz)	500 mV 2.5V
Output Conducted Noise Spectrum	< GR-1089 limits (10 kHz to 30 MHz)
Output Protection	Over/Under Voltage Shutdown, Overcurrent Shutdown, Ground Fault Shutdown
Output Power	95 VA/ channel minimum; 190 VA/card
Output Current Overcurrent limit QS982A	0.251A min (each circuit)
Output Overvoltage Limit QS982A	±200 Vdc max
<b>Environmental</b>	
Efficiency	85% (typical)
Operating Temperature Range	-40 to +65 °C (-40 to +149 °F) with 175 lfm airflow
Operating Humidity Range	5% to 95% RH non-condensing
Storage Temperature Range	-40 to +85 °C (-40 to +185 °F)
Storage Humidity Range	0% to 99% RH non-condensing
Indicators	OK and FLT for each circuit
<b>Safety / Standards Compliance</b>	
Electrical safety	UL60950-1, UL60950-21
EMC	FCC-Class A, GR-1089
Environment	NEBS Level 3
Isolation	1500V (-48 V input to ±190V output)

### Converter Shelf Specifications

Physical				
Height	3.45 in. (2RU)			
Width	21.40 in.			
Depth	12.0 in.			
Weight (fully populated shelf)	30 lb			
Environmental				
Operating Temperature Range	-40 to +75 °C (-40 to +167 °F)			
Operating Humidity Range	5% to 95% RH non-condensing			
Storage Temperature Range	-40 to +85 °C (-40 to +185 °F)			
Storage Humidity Range	0% to 99% RH non-condensing			
Indicators - Alarm Card	<b>A -48Vdc Input:</b> Green - OK; Red - Fail <b>B -48Vdc Input:</b> Green - OK; Red - Fail <b>ALM:</b> Green - OK; Yellow - Minor; Red - Major			
Connections				
-48 Vdc Input	#2 AWG			
±190 Vdc Output Receptacles	50-pin RJ21 Female for each 16 output 1/2 section			
±190 Vdc Output Cable Connector Plug	24 AWG (Solid or Stranded) and 26 AWG (Solid): 229974-1 (Amp) 22 AWG (Solid or Stranded): 552173-1 (Amp) 24 or 26 AWG (Solid) KS21997L1 (Cinch) or equivalent plug			
±190 Vdc Output Earth Midpoint	Presented on pins 25 and 50 of each output connector			
Alarm Form-C Relays	6-position block for 18 to 26 AWG			
Converter Shelf -48V Input Current Rating (Per Half Shelf, Sum of A + B Input Feeds)	L1 at 54.5 Vdc	L1 at 52.1 Vdc	L2 <sup>1</sup> at 42.6 Vdc	L2 <sup>1</sup> at 40.0 Vdc
Half-Shelf <sup>1</sup> with dual A and B Input Connections	34.7A	36.2A	44.3A	47.2A

1. Each 1/2 section of the shelf has independent A and B input feeds.

**Ordering Information**

<b>Item</b>	<b>Description</b>	<b>Comcode</b>
<b>Converter</b>		
QS982A Converter Card	-48V to $\pm$ 190V Converter/Limiter card, 2 x 100 VA	108996641
QS912A Converter Shelf	BDFB Fed Converter Shelf with alarm card, 4 x -48V, 48 Amp input, lug landings	108996732
<b>Shelf Kits</b>		
H5694820G012	QS912A Shelf e/w with RJ45 cable	CC109122082
H5694820G050	QS930A Redundant Fan shelf e/w air baffle and air filter	CC109122074
H5694820G051	QS930A Redundant Fan shelf e/w baffle without brackets for air filter	CC109132271
<b>Miscellaneous / Spare Parts</b>		
QS982A Converter Slot Filler	Converter card slot filler	CC109121992
QS941A Ethernet controller	Ethernet controller module with display	108996947
QS930A Fan shelf	Fan Shelf with 2 fan trays, 75°C max	108996930
QS930B Fan tray	Single Fan tray (e/w 6 fans)	108997623
QS931A Reverse Shelf	Redundant Fan Shelf with 2 fan trays, 75°C max	CC109146354
QS931B Fan Tray	Single Fan tray (e/w 6 fans)	CC109146362
Airflow Baffle for Air filter	Airflow baffle with bracket for air filter. To be used with air filter CC109121984	CC109102638
Airflow Baffle	Airflow baffle without bracket for air filter	CC848756577
Air filter	Air filter to be used with Airflow baffle CC109102638	CC109121984
Upstream shelf bus	Bus to combine -48V output A & B feeds	CC848848060
Fan Tray bus	Bus to combine -48V input A & B feeds	CC848849876

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