



Features

- 0-50VDC, -100 Amp to +100 Amp
- Adjustable BUS Over Voltage Protection
- Adjustable BUS Under Voltage Protection
- Adjustable Positive BUS Over Current Protection
- Adjustable Negative BUS Over Current Protection
- Enable/Disable of Under Voltage Detection
- BUS In and BUS Out Voltage Meters
- BUS Current Meter
- 100 Amp DC circuit breaker
- Second Over Voltage Protection with crowbar
- All fault conditions are latched and displayed
- Fault clear switch of fault history
- Bypassable 400 Amp series steering diode
- 20,000W Transient Voltage Suppressors (TVS) on BUS
- 400 Amp Kickback Diode across BUS
- FET Switch for primary BUS on/off followed by a power relay (contactor)
- Contactor contacts provide dead face to spacecraft or payload during BUS off
- Front Panel Tip Jacks for BUS In/Out measurements with 10K source resistance
- BPU monitors for internal over temperature and Fan failures
- Remote Control via Data Acquisition (DAQ) Interface
- Remote Control can turn on/off BUS. Lots of digital mode controls and digital status including encoded Trip Condition. Four buffered analog outputs, BUS Volts, BUS Current, 2 Unit Under Test (UUT) analog voltages.
- UUT Interface allows up to two external analog monitor inputs with adjustable trip points to shut off BUS
- UUT Interface allows up to four external discrete digital inputs to shut off BUS. Opto couplers with isolated +5V supply to accommodate open collector, emergency kill switch, TTL active high or active low.
- Four dry contacts active when BUS is on along with a switched AC 120V outlet when BUS is on.
- All DAQ and UUT inputs along with all analog comparator results are digitally sampled to minimize noise influences.
- Mounting holes for chassis slides
- Configuration/Functional changes and field upgrades via programmable Xilinx[®] FPGA.

NS-15002 Rev A

Description

The BPU 2G is the newest and most capable Bus Protection Unit offered by Silver Engineering, Inc. The "BUS" refers to a spacecraft or payload's power distribution BUS. The BPU is designed to provide voltage and current protection to critical and expensive spacecraft/payload equipment during test and integration activities. Typically during test and integration, spacecraft are powered by commercial rack mounted power supplies that are connected to an AC power source. The supplies are configured and controlled via Ethernet or some older systems use IEEE488. A software glitch or power supply failure could attempt to supply out-of-range voltage to the spacecraft. Also, a fault condition on the spacecraft could load down the power BUS and draw excessive current. The BPU monitors these conditions and disconnects the power source from the spacecraft. The BPU 2G has manually adjusted over/under voltage settings and separate positive/negative over current settings. The separate positive (source) and negative (sink) over current settings allow for different current thresholds when the BPU is connected to a battery simulator.



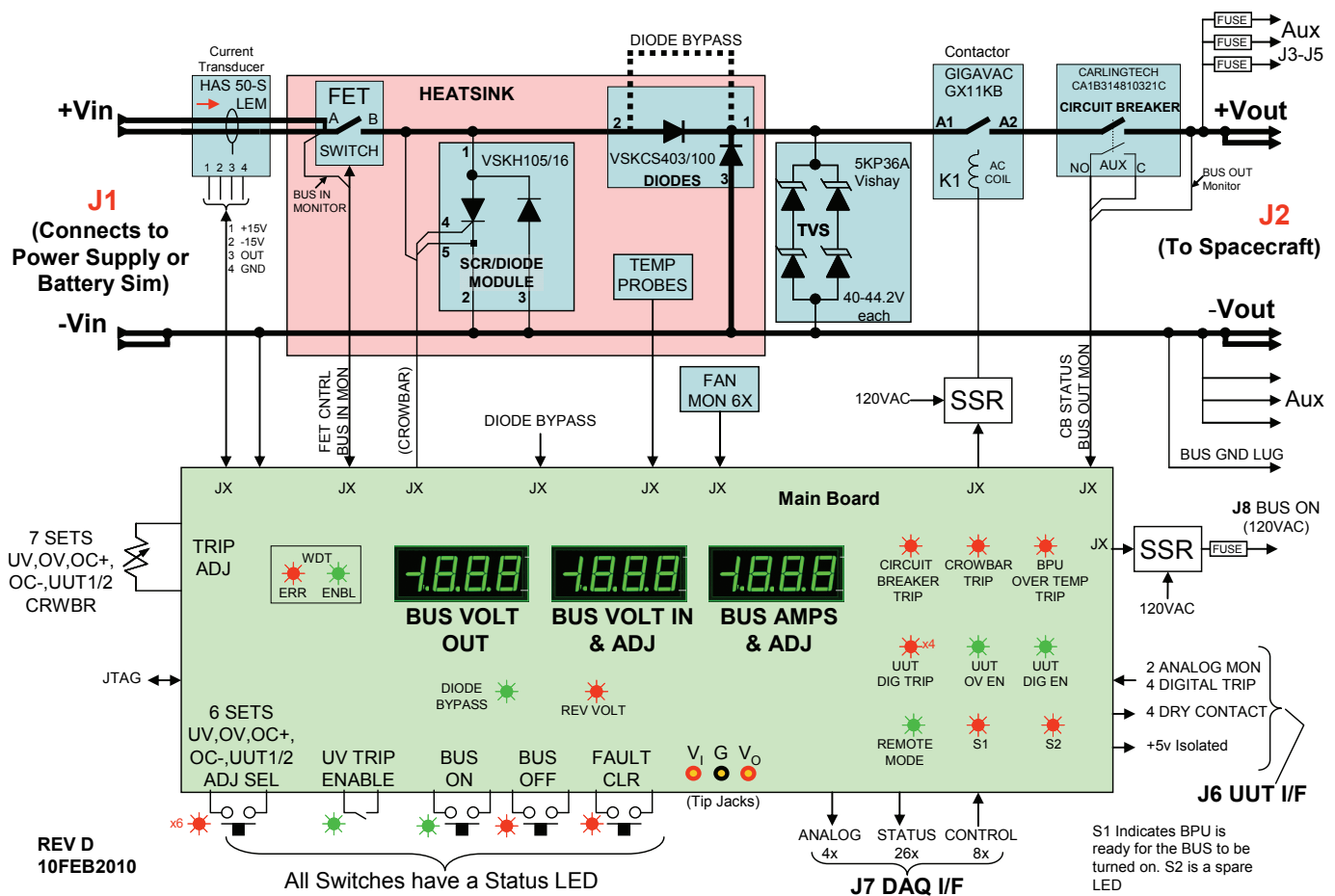
Improvements with the BPU 2G

- Greater than twice the current capacity with adjustable current thresholds measured with current transducers instead of a shunt resistor.
- Faster BUS off and softer turn on with FET switch.
- Two BUS disconnects, FET and RELAY in series.
- Remote control via DAQ interface.
- DAQ interface with digital status/control and analog status.
- 2 external analog inputs can be monitored for over voltage. 4 external digital inputs for BUS off.
- Heavy Duty Quick Disconnect HARTING[®] power connectors. 2 to 6 AWG, 4 Pins per connector.
- 5.25" vs. 7" rack mount

Specifications

Mechanical	5.25 Inch Rack Mount with holes for chassis slides 15.5 Inches depth (not counting rear panel connectors) 29 pounds
AC Input Power	120VAC, 2 Amp, Fuse 3AG 3.5 Amp Slow Blow
AC BUS Status Output	120VAC 1 Amp, Fuse 3AG 1 Amp Slow Blow
BUS INPUT / BUS OUTPUT	0 TO +50VDC, +/- 100 Amp DC
AUX POWER OUTPUTS	0 TO +50VDC, 1 Amp each
J1 BUS Input,	HARTING, 09 30 016 0301 Housing, Bulkhead Mount 09 14 002 2651 Module, 2 Pos, Male, 2X 09 14 016 0303 Frame, Male 09 14 000 9960 Locking Element, 2X
J2 BUS Output,	HARTING, 09 30 016 0301 Housing, Bulkhead Mount 09 14 002 2751 Module, 2 Pos, Female, 2X 09 14 016 0313 Frame, Female 09 14 000 9960 Locking Element, 2X
J3,J4,J5 Auxiliary Power Output	9D Female with Jack Socket
J6 UUT	44HDD Male with Jack Socket
J7 DAQ	78HDD Female with Jack Socket
J8 Switched AC	IEC AC Receptacle
J9 JTAG	15HDD Female with Jack Socket

Specification subject to change without notice.



BPU 2G Block Diagram

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