Fermilab

PPD / EED / Infrastructure Group

Technical Note: IG_ 20110005

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±5V Power Supply Chassis for SeaQuest (E906)

Overview:

Four power supply chassis labeled "DC Power Supply (±5V, 18A) UCLA High Energy Physics" that the SeaQuest (E906) experiment want to use were examined by members of the PPD / EED / Infrastructure Group and found to be deficient in terms of proper wiring and connectivity. Members of the Group modified the four chassis to be consistent with the description contained within this note.

Chassis Description:

Each Power Supply Chassis contains two 5V / 18A linear power supplies (or equivalent). They are connected to the grounded and un-grounded connections of an IEC320 power inlet through two fuses (one for each supply) and a switch. A 15W muffin fan is also powered by the switch. The two power supplies are strapped for local sensing. The outputs of the two supplies as well as the equipment grounding connection to the AC power distribution system are all made available on a terminal strip located on the back panel of the chassis.

Connection Description:

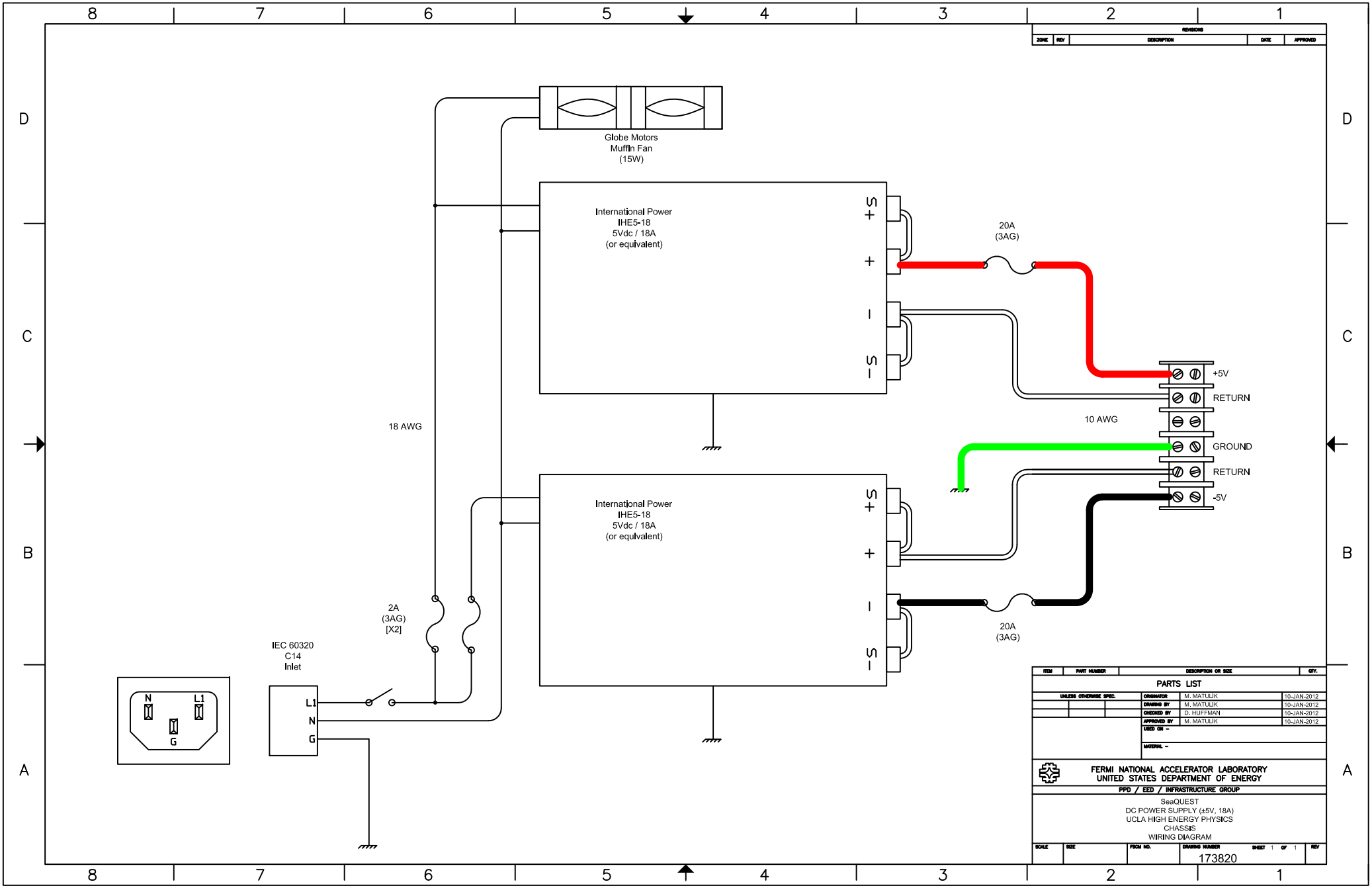
The input fuse (3AG) for each power supply is rated at 2A. The equipment grounding contact from the IEC320 power inlet is connected to each power supply chassis, the chassis and made available on the output terminal strip.

The + and – sense lead terminals on each supply are connected directly to the associated output terminals. Output voltage and current trip levels can be adjusted by potentiometers on the power supplies. Labels on the rear panel identify the source and return connections to each of two power supplies. A 20A (3AG) fuse has been placed in series between the source terminal of each power supply and the terminal strip to insure wire current carrying capacity is not exceeded. The terminal strip connections labeled "Ret" are expected to be connected to the ground reference of the SeaQuest detector. Wire gauge for all output connections is 10AWG.

A wiring diagram for the chassis can be found in the appendix.

Appendix:

SeaQuest DC Power Supply (±5V, 18A) UCLA High Energy Physics Chassis Wiring Diagram (drawing number 173820).



ITEM	PART NUMBER	DESCRIPTION OR SIZE	QTY.

PARTS LIST

UNLESS OTHERWISE SPEC.				
			ORIGINATOR	M. MATULIK	10-JAN-2012
			DRAWING BY	M. MATULIK	10-JAN-2012
			CHECKED BY	D. HUFFMAN	10-JAN-2012
			APPROVED BY	M. MATULIK	10-JAN-2012
			USED ON –		
			MATERIAL –		

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY
PPD / EED / INFRASTRUCTURE GROUP

SeaQUEST
DC POWER SUPPLY (±5V, 18A)
UCLA HIGH ENERGY PHYSICS
CHASSIS
WIRING DIAGRAM

SCALE	SIZE	FSCM NO.	DRAWING NUMBER	SHEET 1 OF 1	REV
			173820		