

NOVA Energy & Automation



Product Specifications

Linear Accelerator 150A Main Power Distribution Panel

Model NEACBB150A

03 January 2012

Product Description

1. Standard Applications

The Nova NEACBB150A system Main Disconnect Panel (MDP) serves as the main facility power disconnect source installed ahead of the Linear Accelerator equipment. Each MDP is sold with 2 remote Emergency stop Buttons. The MDP saves time, installation labor, and valuable mounting space by consolidating the main circuit breaker and the feeder over current devices into one integrated panel. The panel design includes short circuit, overload and emergency shutdown of the system. All power is controlled by an ADA approved through the door disconnect or by the remote emergency operator control station.

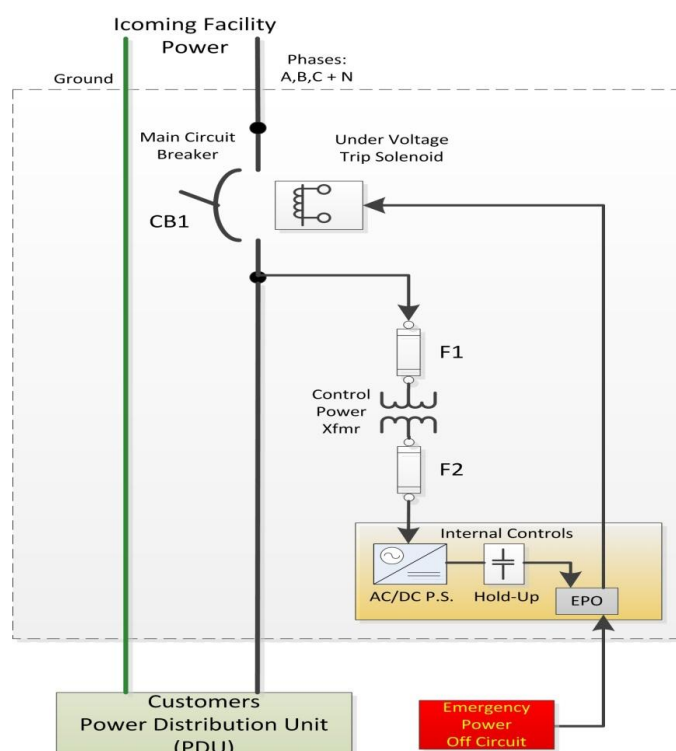


Figure 1 Nova 150A Main Disconnect Panel Application Diagram

Buffered Under Voltage Release

Under voltage release mechanisms trip the circuit breaker by removing power from an internal coil. To energize a circuit breaker with a UVR mechanism power must be present and applied to the UVR coil before the circuit breaker can be energized. If power is not provided to the UVR coil the breaker will continue to trip while one attempts to turn it on. UVR coils are designed to trip when its applied voltage falls between 35 to 70% of nominal rating.

This inherent feature of the UVR mechanism also makes it susceptible to nuisance breaker tripping during voltage sags and intermittent power outages such as when the utility system's Reclosers open to attempt to clear a shorted line due to tree branches moving across power lines.

UVR mechanism are better suited to “interlocking” a number of other equipment safety checks, as all circuits would need to be satisfied and all normally closed contacts would be wired in series. Any one of the contacts could open thereby tripping the circuit breaker.

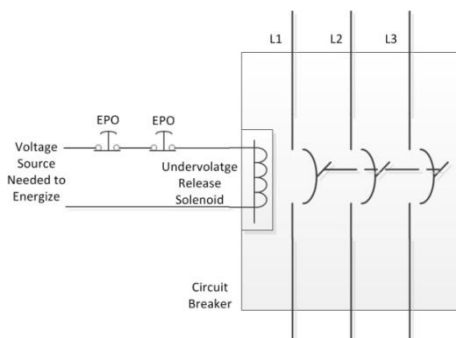


Figure 3 Undervoltage Release Diagram

Another benefit of the UVR is that it will not automatically restart the equipment after a power outage. It would require that a person would go to the breaker panel and manually energize it after checking to see that conditions are safe to do so.

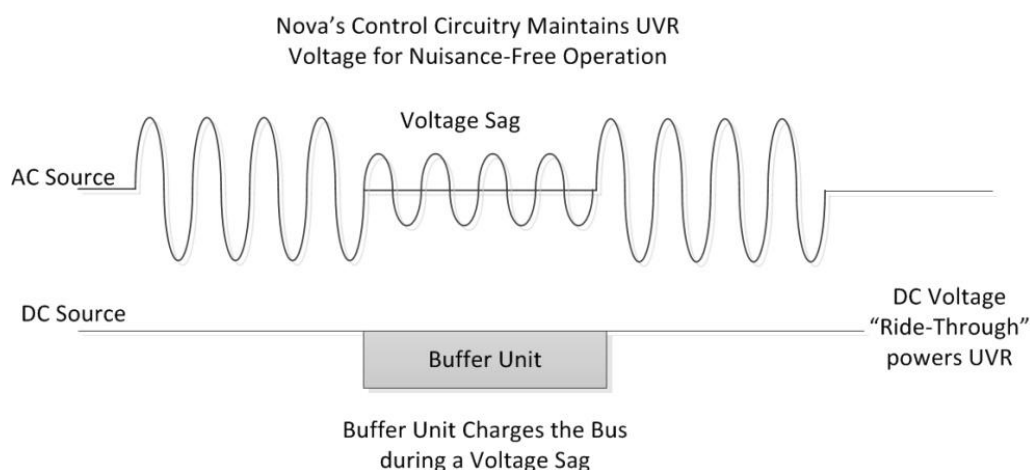


Figure 4 Undervoltage Buffer Operation

In order to continue to provide all the positive safety benefits of the Under Voltage Release mechanism and to eliminate the nuisance trips, Nova Energy & Automation developed and integrates into its panels a buffer circuit that provides ride-through capability of up to 1 minute. Typical voltage sags are in the order of a few cycles and with the Nova design we have eliminated the nuisance tripping that other manufacturer's panel designs experience.

Statistics show that 80 percent of all mains faults last less than 0.2s. These mains faults are completely bridged by the buffer unit and will have no influence on the DC power. This increases the reliability of the system as a whole.

In times when the power supply provides sufficient voltage, the buffer unit stores energy in integrated electrolytic capacitors. In case of a mains voltage fault, this energy is released again in a regulated process.

2. System Compatibility

The Nova NEACBB150A is compatible with the following medical imaging equipment:

Varian Medical Systems: High Energy Clinac, iX, Trilogy, Novalis TX, Silhouette and several other related projects

3. Identification

Varian Medical Systems: The proper distribution panel can be identified in the Varian Site Planning Packet Note 66.066

Clinac Pre-installation Check list: Control Equipment Area item 26.

Equal to item 2100CBB150A



Figure 2 Nova 150A OBI Main Disconnect Panel

4. Features/ Benefits

Features

- UL and cUL listed to conform to NEC
- Labeled to conform with NFPA99, NFPA-70, NEC 100, NEC 110-3, NEC 660.5
- Nuisance Free Undervoltage buffer circuit
- Provides over current and short circuit protections
- Short circuit current rated at 25kAIC
- Single point main disconnect and termination point
- American Disabilities Act (ADA) approved through the door disconnect handle provides one hand ON/OFF operation. The ADA handle makes turning the imaging equipment on and off during emergencies or power failures easy for technicians and nursing staff.
- Lock Out/ Tag Out lockable operating handle provides added safety during maintenance and OSHA requirements.

- Interlocked ON/OFF hinged door prevents access to the panel while the disconnect is in the ON position.
- Door may be locked closed with customer provided padlock.
- ¼ turn slotted door latch provides additional security.
- Isolated Neutral lugs
- Oversized ground lugs for parity sizing of ground wire
- Compact size for easy installation
- Thermal protection
- Factory wired to match Varian equipment and tested
- Manufactured in the USA

Benefits

- Designed, tested, and installed on several projects worldwide
- Acceptable low cost alternative to GE
- Manufactured using the highest quality components for high reliability and long life
- Provides protection for sensitive electronic equipment
- Manufactured to a tolerance which exceeds the specifications of Varian equipment.
- Easy to view LED indicator lights for System ON
- Field adjustable overload and instantaneous trip
- Reduced weight- all components are within a small 45lb enclosure
- Reduces installation time and cost by eliminating delays in obtaining individually enclosed components and by eliminating on site assembly
- Provides a standardized platform for other future modifications or upgrades

5. Specifications

Model	NEACBB150A
Application	Main Disconnect panel for High Energy Clinac Linear Accelerator
Input Voltage	208VAC (please specify if other voltage is required)
Output Voltage	208VAC (please specify if other voltage is required)
Control Voltage	Internally derived 24VDC for controls
Overload Current Protection	Factory set to 150A, (please specify if other current rating is required)
Short Circuit Current Protection	25 kAIC
Instantaneous Trip Settings	Field adjustable
Approvals	UL/cUL

6. Weights and Dimensions

Mounting	High Energy Clinac main disconnect is provided in a steel enclosure suitable for surface or semi flush installations.
Dimensions	Height: 23.62" (600mm) Width:14.2" (400mm) Depth: 5.9" (150mm)
Weight	45 lbs. (20.45 kg)
Mounting	Rear wall mounting holes (4). Spaced 0.79" (20mm) from enclosure edge. Optional mounting brackets are available
Enclosure	16 Gauge Carbon Steel, all rounded corners 1 gland plate in the enclosure base.
Enclosure Sealing	Foamed-in place polyurethane door gasket
Finish	Dip coat primed, powder coated in textured RAL 7035
Latching Mechanism	Two ¼ turn latches with double-bit inserts (cam lock). Door is hinged on the left side but can be swapped if specified when order is placed.
Interior Panel	Zinc-Plated subpanel
Protection Category	IP 66 to EN60 529/09:2000, complies with NEMA 4 Enclosure Approvals: UL, CSA, TUV, GL, Lloyds, VDE, Bureau Veritas

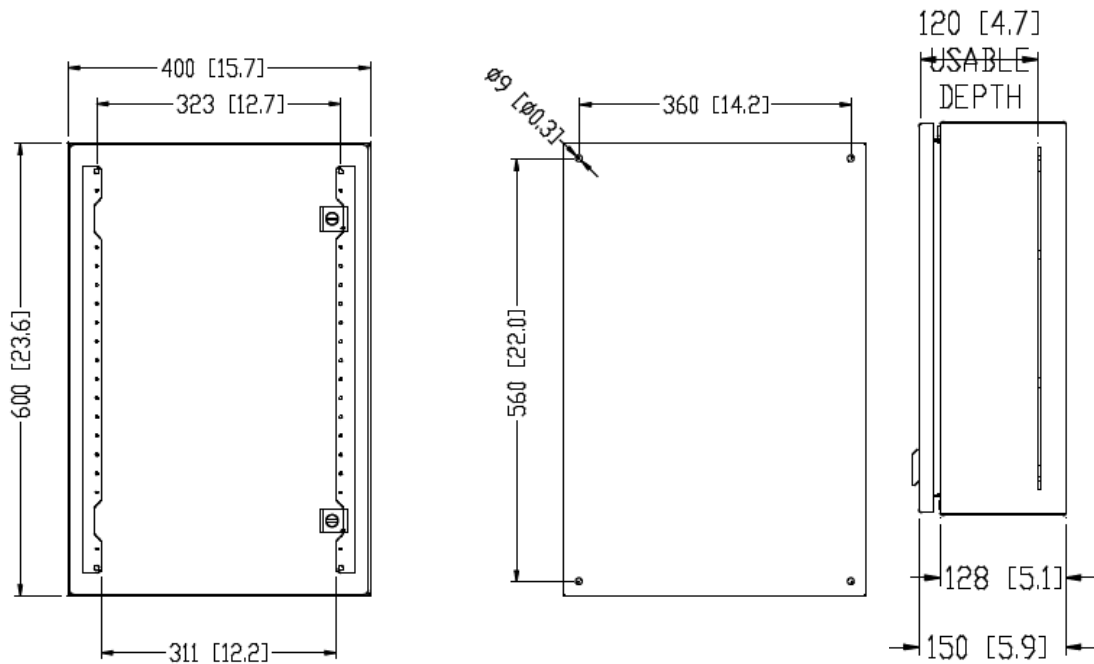


Figure 4 Enclosure Dimensions: Outside, Mounting, Depth

7. Warranty

This limited warranty set forth below is given by Nova Automation ("Seller") with respect to the electrical equipment ("Product") packaged with this limited warranty. The Product, when delivered to you in new condition in its original packaging, is warranted against defects in materials or workmanship as follows: For a period of one (1) year from the date of original purchase, defective parts or a defective Product returned to a Seller, or its authorized service providers, as applicable, and proven to be defective upon inspection, will be repaired, or exchanged for a new Product, as determined by the Seller, or the authorized service provider.

This limited warranty covers all defects encountered in normal use of the Product, and does not apply in the following cases: Loss of or damage to the Product due to abuse, mishandling, alteration, accident, electrical current fluctuations, failure to follow operating, maintenance or environmental instructions prescribed by Seller, failure to follow Sellers installation instructions, or service performed by someone other than Seller or its authorized service provider.

Nova assumes no responsibility for labor or freight costs incurred in connection with the installation, removal, or replacement of products determined to be defective or any consequential or incidental damages arising from the use of the product. Nova Automations entire liability on any claim of loss or damage resulting from a defective product is limited to the replacement of the product.

WARRANTY IS VOID IF PRODUCT IS NOT USED FOR THE PURPOSE FOR WHICH IT WAS MANUFACTURED.

8. Product Service and Technical Assistance

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