Operation & Installation Manual

ProDySC®

Dynamic Voltage Sag Corrector®

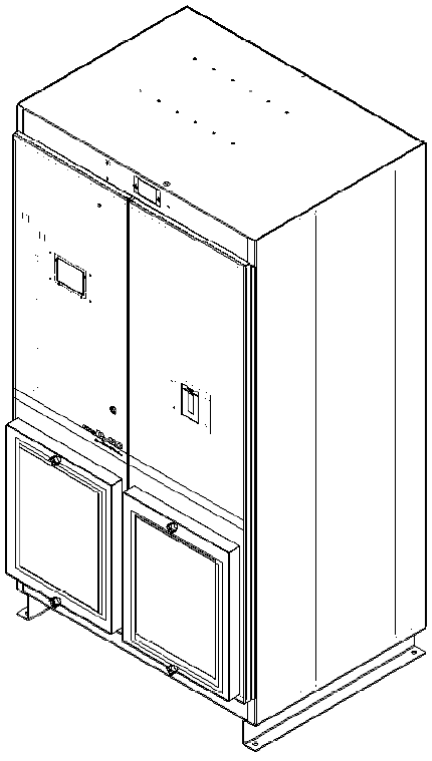
200 Amp

Models DS30200A _ _ _V3SH2_51C
DS30200A _ _ _V4SH2_51C

With internal circuit breaker, Standard Runtime (SR)

Options include:

- 200, 208, 220, 230, 240, 380, 400, 415, 440, 480 volts
- 3-Wire or 4-Wire, 3-Phase
- Remote MODBUS RTU status communications



SoftSwitching® TECHNOLOGIES

Revolutionizing Power Protection

IMPORTANT SAFETY INSTRUCTIONS – SAVE THESE INSTRUCTIONS

WARNING: Read this entire manual prior to the installation and operation of this equipment. Failure to do so can result in serious injury or death.

NOTICE: There are several DANGER, WARNING or CAUTION statements within this manual that pertain to operator safety and equipment usage.

Model number: DS30200A _ _ _V _ SH2_51C

Serial number: _____

Purchased from: _____

Date installed: _____

Please take a moment to fill in the information regarding your DySC® product. This provides a documented reference for any future communications if service or support is required. Model and Serial numbers are found on the DySC product label or from the touch screen display Configuration page.

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DANGER – To reduce the risk of fire, shock or serious injury, read and understand all installation and safety information in this manual.

There are no user-serviceable parts within the *PRODySC* system. Service must only be performed by trained and authorized factory service personnel.

WARNING: Equipment must be earth grounded according to local and national electric codes. Failure to supply proper equipment grounding may result in electrical shock or death.

WARNING: VOLTAGE

Dangerous voltages are exposed within the ProDySC System. The system should never be operated with any enclosure door open except by qualified and authorized personnel who are trained and familiar with system operation and the location of components and voltages. Failure to comply with this warning could result in injury or death.

Refer servicing to qualified and factory authorized personnel. Installation of a manual bypass switch along with the PRODySC is highly recommended. The bypass switch will permit a seamless transfer of electrical loads while safely isolating the PRODySC enclosure for maintenance or repair.

The PRODySC enclosure(s) contains energy storage devices. **Dangerous voltages may exist within the enclosure(s) after AC power has been removed.** Do not touch any components within the enclosure if red LEDs located above capacitor banks are lighted. If red LEDs do not extinguish within 5 minutes, close the enclosure door(s) and contact the factory for assistance.

CAUTION: SERVICE MUST BE PERFORMED ONLY BY QUALIFIED AND AUTHORIZED SERVICE PERSONNEL.

CAUTION : This system is interlocked: Opening *PRODYSC* doors while the system is in operation will result in loss of power to protected loads.

1 INSTALLATION

1.1 SYSTEM COMPONENTS

The PRODYSC consists of a single enclosure. A separate SoftSwitching Mechanical Bypass is required to prevent power disruption during service and maintenance. Refer to section 1.5 for details.

1.2 ORIENTATION AND LAYOUT

The PRODYSC outline dimensions are shown in Figure 1.

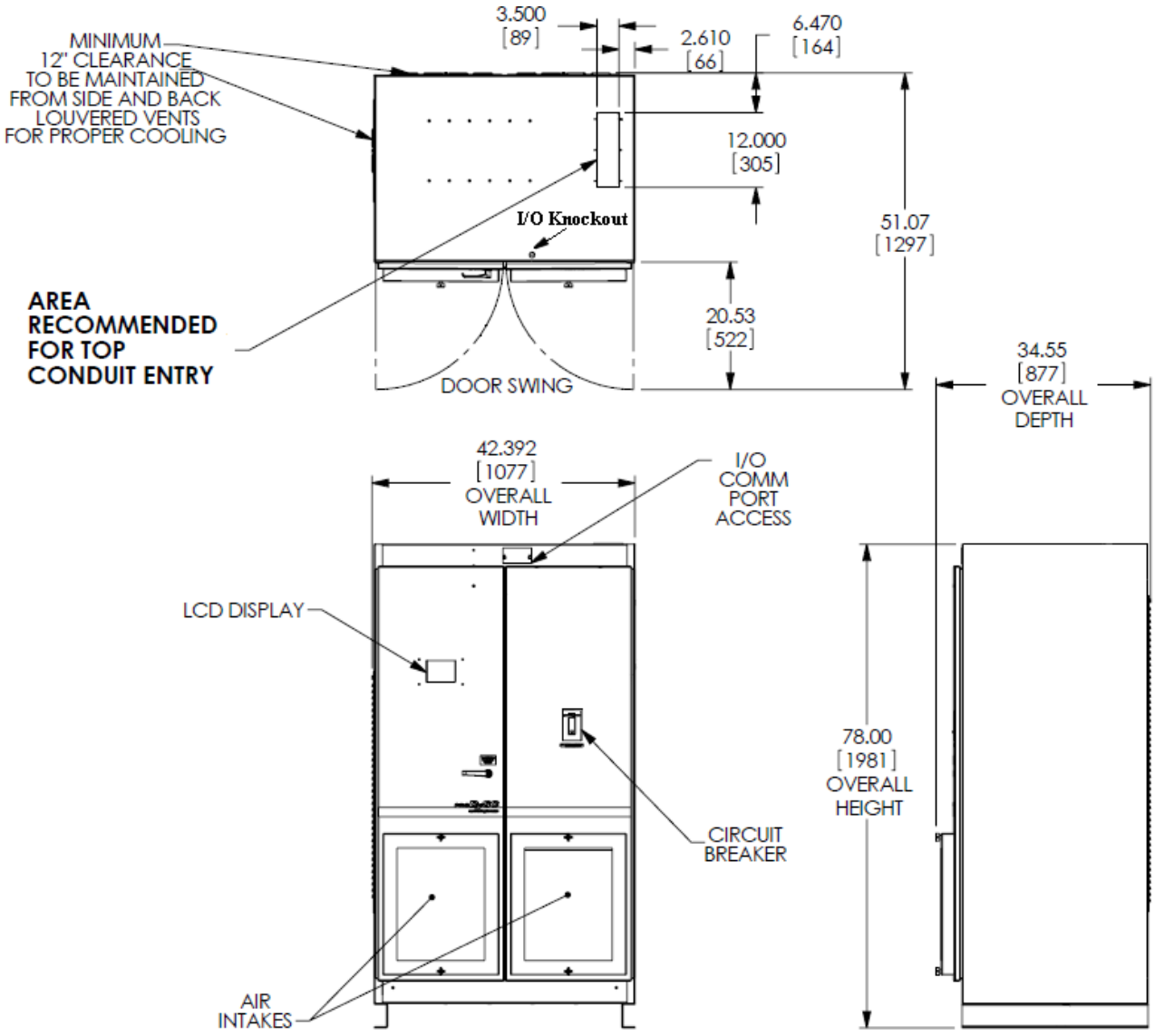


Figure 1: PRODYSC Layout (inches [mm])

1.3 CLEARANCE

The PRODySC door hinges on both the left and right, and a door swing clearance must be given, as shown in Figure 1, to allow the doors to swing open 90 degrees. This will also provide proper clearance for the fan/filter mounted on the doors. A minimum of 12" (200mm) clearance should be allowed at the rear and at the left of the PRODySC enclosure to allow for proper air circulation; 4" (100mm) clearance should be allowed on the right side for the door filter frames when the enclosure door is fully open.

1.4 SYSTEM ANCHORING

The PRODySC is floor mounted, and is to be securely anchored to a level surface using the four 5/8" (16mm) mounting hole locations provided at the bottom corners of the unit, as shown in Figure 2.

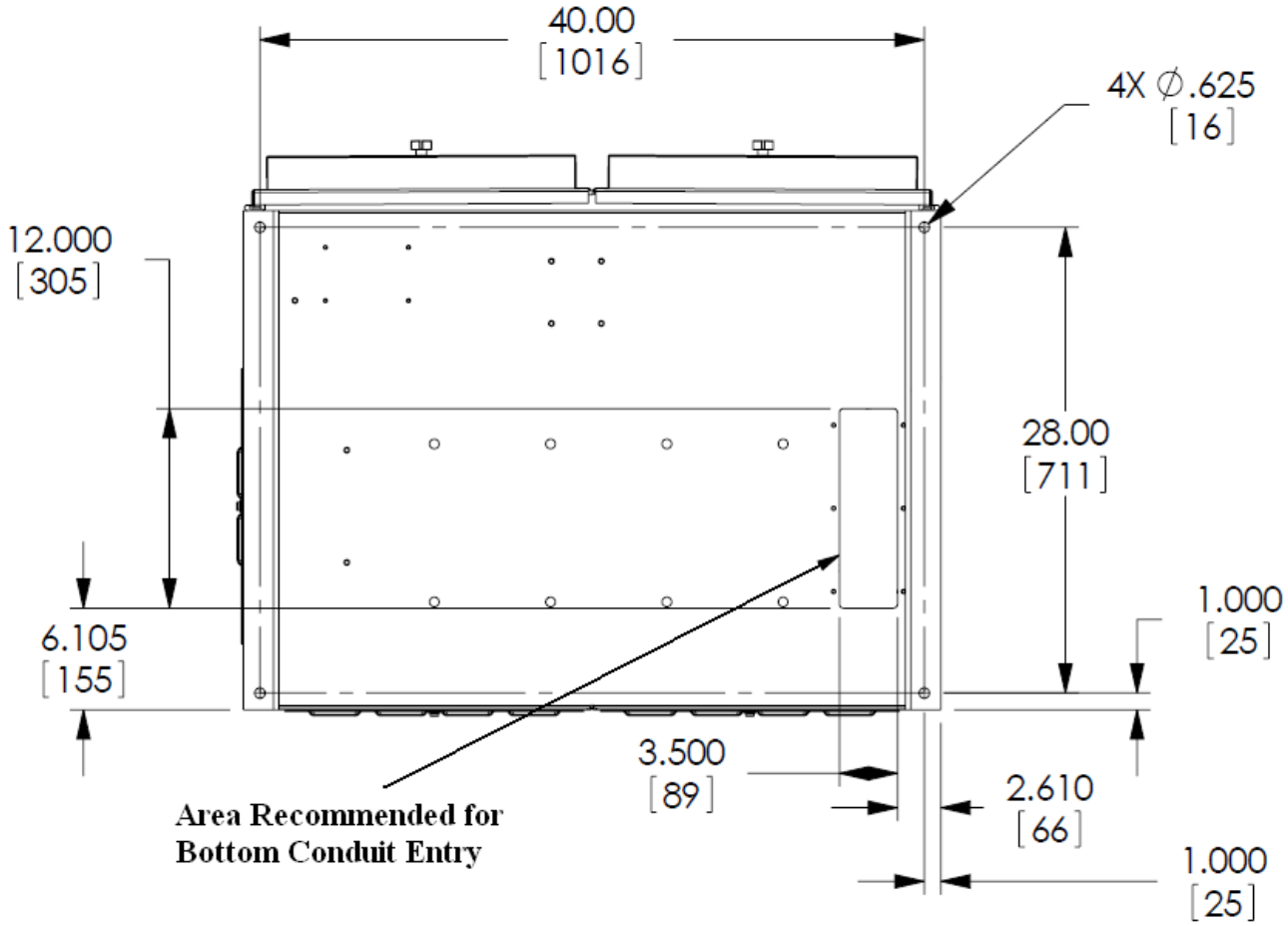


Figure 2: PRODySC Anchoring Hole Locations

1.5 MAINTENANCE BYPASS INSTALLATION AND OPERATION

Install the PRODySC with a separate external maintenance bypass switch to avoid power interruptions to the critical loads during maintenance or service. Mount the bypass near the PRODySC to provide quick access and visual coordination when testing and servicing. The SoftSwitching bypass model BP200A3PB is a wall mounted enclosure with a 3 position make-before-break rotary switch. Its dimensions and mounting locations are shown in Figure 3.

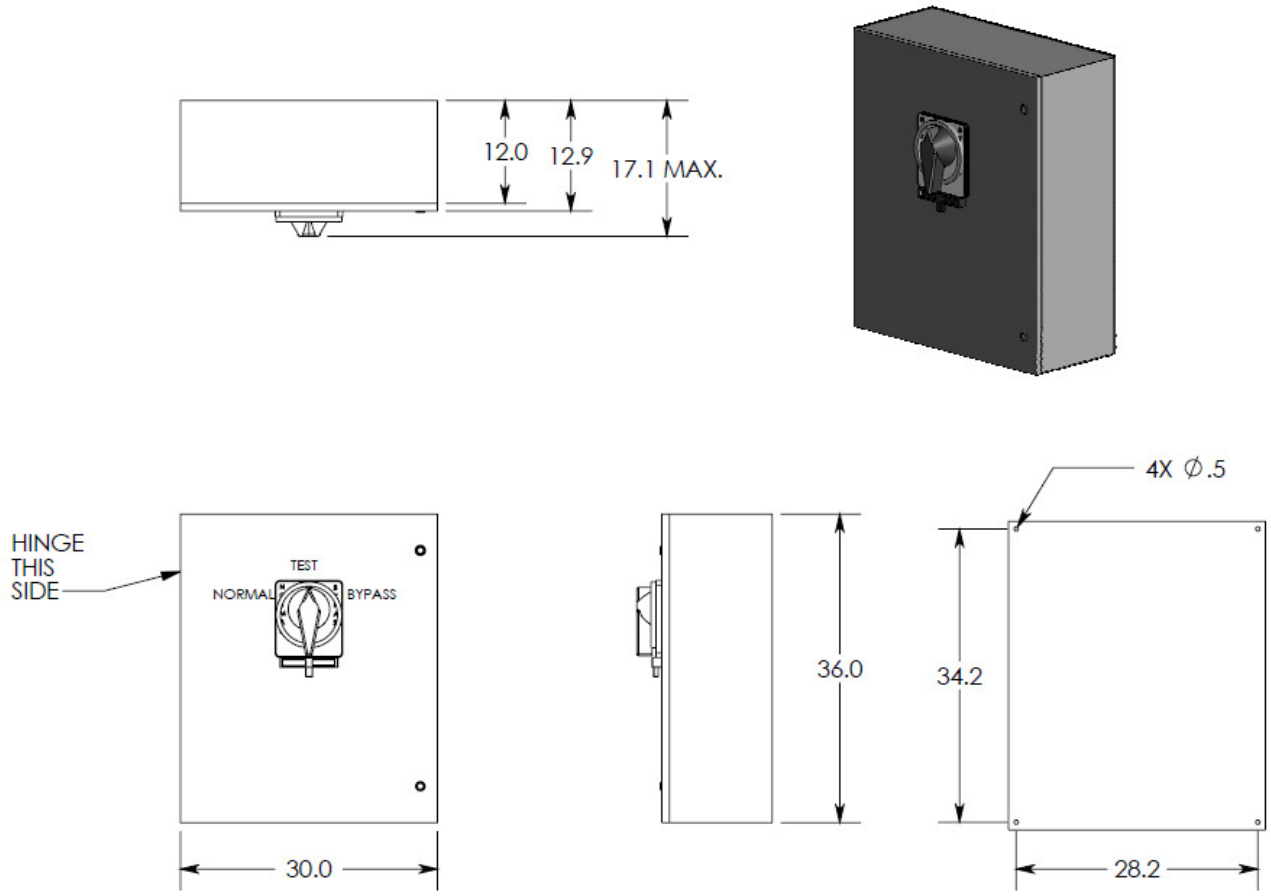
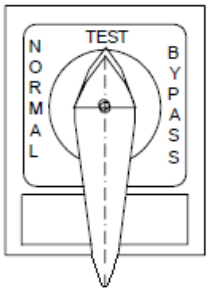


Figure 3: SoftSwitching Mechanical Bypass Outline and Mounting Dimensions

1.5.1 BYPASS SWITCH MODES

The SoftSwitching model BP200A3PB bypass switch has three modes of operation and is configured as shown in Figure 4.



1. **NORMAL Mode** - Power flows from the utility source through the PRODySC to the load.

2. **TEST Mode -** Power flows directly from the utility to the load. PRODySC outputs are not connected to the load. PRODySC inputs have power provided for testing by a qualified electrician.

3. **BYPASS Mode -** Power flows directly from the utility to the load. No power is present on PRODySC inputs or outputs.

Figure 4: Bypass Switch and Mode Operations

NOTICE: The bypass contacts are all timed to make-before-break and will not disrupt power to the load during any mode transitions. The switch has lockout/tagout (LOTO) provisions. Delay one second from changing from one position to the next.

1.5.2 BYPASS AND PRODYSC WIRING DIAGRAM

The maintenance bypass has input and output terminals labeled and located inside the bypass enclosure as shown in Figure 5. The neutral connection is available for 4-wire PRODYSC configurations.

NOTICE: All electrical connections must be completed by a qualified electrician, in compliance with all local and national electric codes.

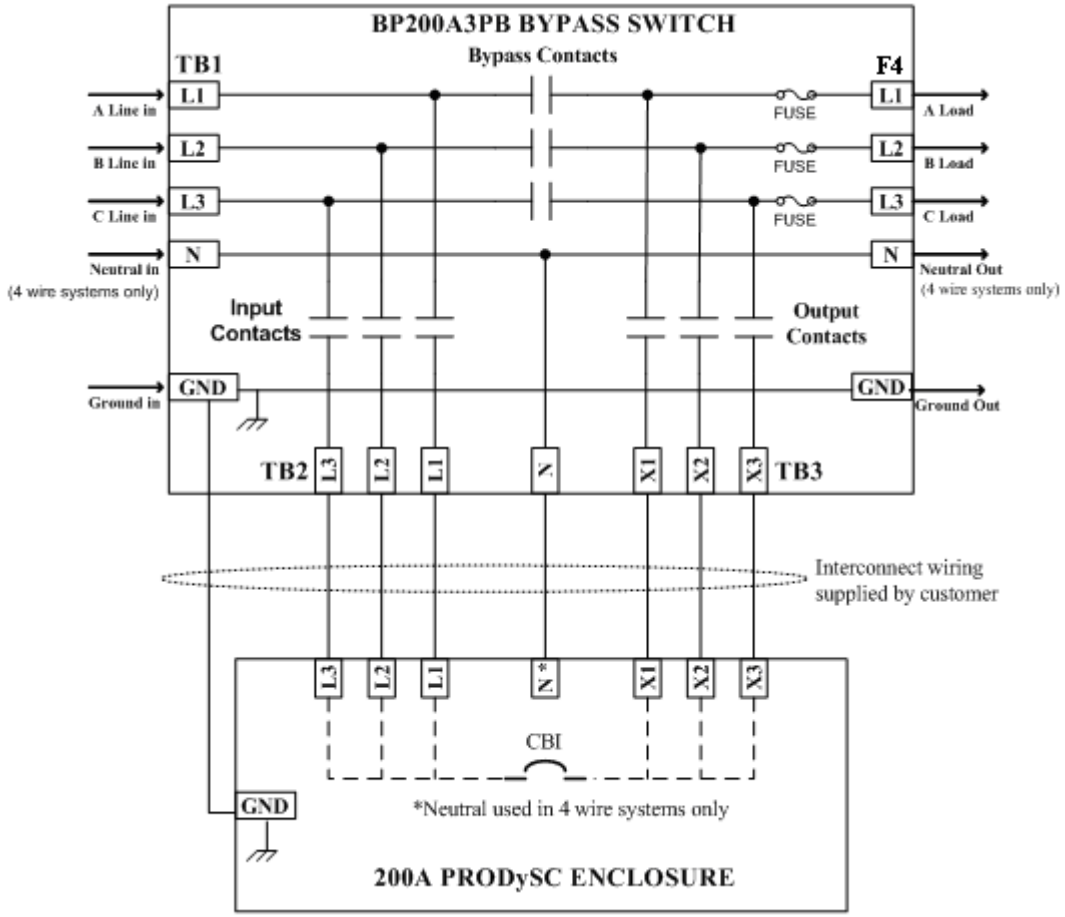


Figure 5: Bypass Interconnection Wiring

Note: The 3-wire PRODySCs models rated grater than 240V have not been evaluated by Underwriter's Laboratories, Inc.® for connection to a corner-grounded delta power source. Contact the factory for assistance.

1.6 PRODySC ELECTRICAL POWER CONNECTIONS

NOTICE: All electrical connections must be completed by a qualified electrician, in compliance with all local and national electric codes.

Power cables from/to bypass (3-phase input from utility mains, 3-phase output to protected loads) enter the top or bottom of the PRODySC enclosure at the location labeled CONDUIT ENTRY AREA in Figure 1 and Figure 2. Remove gland plate (cover) before punching or drilling conduit holes to prevent metallic contamination within the PRODySC enclosure.

NOTICE: Metallic contamination within the *PRODySC* enclosure will void the product warranty.

Input and output power, neutral, and ground terminations are located behind the right door as shown in Figure 6.

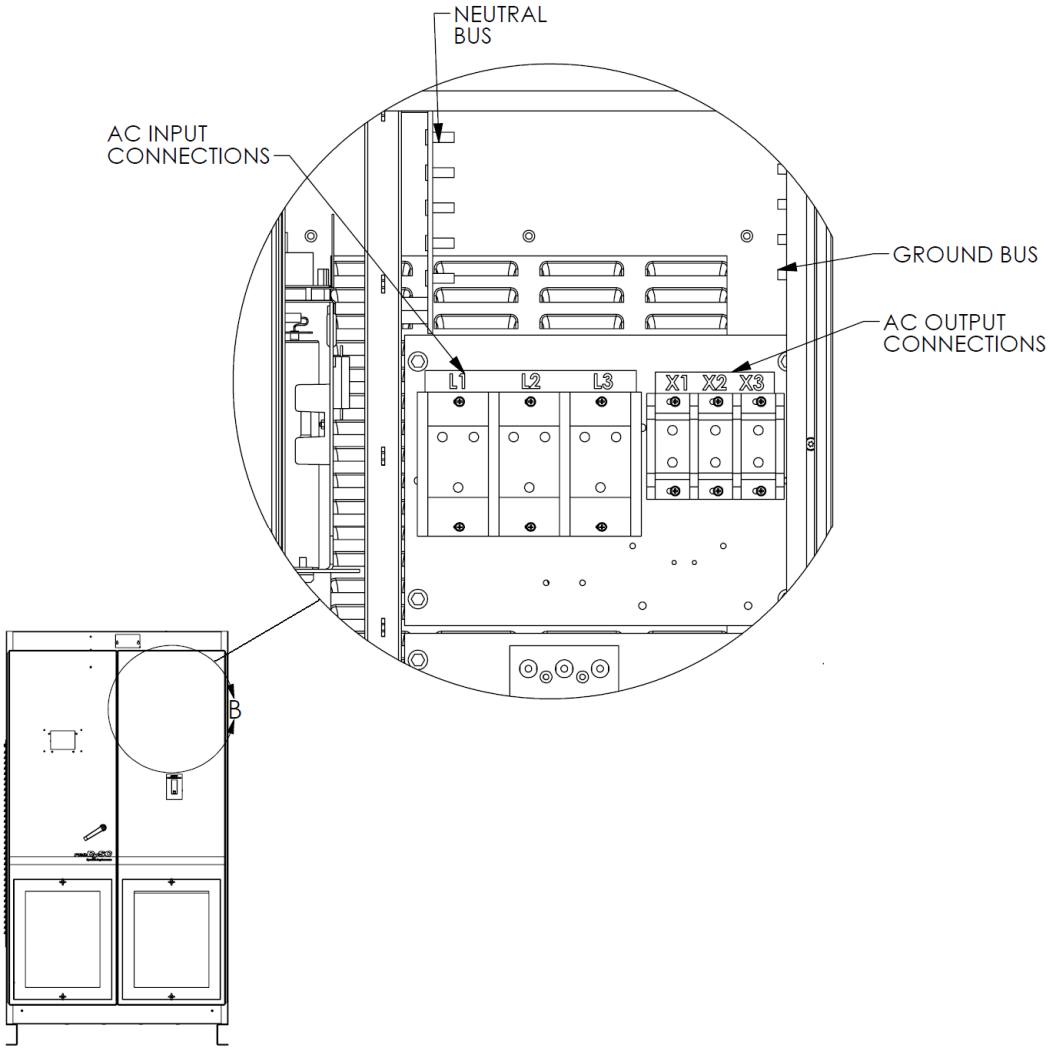


Figure 6: Electrical Connection Locations

Note that

1) Input and output lugs accept 350 kcmil to 6 AWG (stranded) wire.

2) Compression lugs require 5/16" hex key (allen) tool for installation.

3) Compression lugs are mounted on threaded studs and can be removed if desired.
Studs are 3/8" diameter (0.375", 9.525mm) and nuts should be torqued to 192 in-lb (21.7 Nm).

Note: The 3-wire PRODySCs models rated grater than 240V have not been evaluated by Underwriter's Laboratories, Inc.® for connection to a corner-grounded delta power source. Contact the factory for assistance.

1.6.1 UTILITY AND LOAD WIRING PROCEDURES

Refer to Figure 6 for all wiring termination locations to the PRODySC.

- Connect the **GROUND** bus bar to an earth ground
- **UTILITY INPUT** cables are terminated at lugs labeled **L1, L2, L3**
- The **NEUTRAL** input cable is terminated at the bus bar labeled **N**
  (For 4-wire systems only: Input Neutral connection is required)
- **OUTPUTS FOR PROTECTED LOADS** cables are terminated at lugs labeled **X1, X2, X3**
- The **NEUTRAL** output cables, if needed, are terminated at the same bus bar labeled **N**
  (present only in 4-wire systems)
- Close all doors and replace all panels before energizing the system

1.7 PRODySC STATUS RELAY CONTACTS

The PRODySC remote interface port is located behind a small metal cover, above the door. The port location is labeled "I/O Comm. Port Access" in Figure 1. Three sets of customer-accessible relay contacts are provided. See Section 3.1 for details. A knockout is provided on the enclosure top for installation of permanent wiring; this is labeled "I/O Knockout" in Figure 1.

1.8 INSTALLATION CHECKLIST AND APPLYING POWER

1. Verify PRODySC voltage rating matches source.
2. Check to ensure there are no metal filings or any conductive debris in or on any components inside the PRODySC or bypass.
3. Check all inter-connection wiring for correct source and load locations including grounding and neutral (if a 4-wire system is used).
4. Check that all electrical terminations on the PRODySC and bypass are properly tightened.
5. Replace all covers.
6. Close and lock PRODySC enclosure doors.
7. Place bypass switch in "BYPASS" position.
8. Put PRODySC circuit breaker (CBI) in the closed position.
9. Apply power from the upstream protection device. The power will flow directly to the load through the bypass. The DySC is not energized in this mode.
10. Verify that the output (load) voltage is present.
11. Place the bypass switch in the "TEST" mode position. The PRODySC touchscreen will become active but the load will still be powered through the bypass.
12. Ensure that the touchscreen displays "OK" and that the nominal voltage, current, and frequency in the status display are correct.
13. Place the bypass in the "NORMAL" mode position. The connected load is being protected by the PRODySC. During normal operation, the touchscreen will display the home screen. Refer to Section 2.2 for additional information on the PRODySC operation.
14. If "Critical or Fatal" system event appears on the touchscreen call for technical support.

WARNING : This system is interlocked: Opening PRODySC doors while the system is in operation will result in loss of power to protected loads.

2 *PRODYSC* SYSTEM OPERATION

DANGER: VOLTAGE Dangerous voltages are present within the PRODYSC System. The unit should never be operated with the enclosure door open except by qualified and authorized personnel who are trained and familiar with the operation of the unit and the location of components and voltages. Failure to comply with this warning could result in injury or death.

2.1 SYSTEM DESCRIPTION

Raw utility power enters and routes through the PRODySC to the load. In the *Normal operation* mode the PRODySC is energized and the power is directed through the PRODySC, protecting the load. See the following sections for PRODySC operation details.

Note: Operation in Normal Mode requires that any external maintenance bypass switch be open.

2.2 PRODySC OPERATION

The PRODySC contains three modules (one module per phase). Each module independently monitors the line voltage and corrects the output voltage in the event of a voltage sag. Each module consists of a static switch and the sag-correcting electronics. The modules are series-connected to the input line, and operate by adding the compensating voltage needed to restore the line to its nominal voltage value. When the utility line voltage is adequate (specified nominal voltage), the static switch will remain closed and no compensating voltage is added. When an insufficient line voltage event occurs, the static switch opens and the sag-correcting electronics quickly add the balance of voltage necessary to regulate the load voltage.

The PRODySC accepts line input power over 3 wires into terminals L1, L2, L3 and provides sag compensated three-phase output power at terminals X1, X2, and X3 when not in the Maintenance Bypass mode. On 4-wire models, the Neutral connection is required as a voltage reference point for line-neutral control voltage.

Thermal switches are included to activate fans if the cabinet temperature or other internal temperatures exceed set limits.

A touchscreen display provides indication of the status of the PRODySC operation. After power is switched on, the green “OK” box will be displayed in the upper left hand corner of the display, indicating that the output voltage is within a normal range of -11% to +10% of nominal.

A red “FAULT” box is displayed in the upper left hand corner of the display when a fault condition is present on the PRODySC. During this period sag correction is inhibited and the PRODySC will continue to bypass the utility voltage directly to the load through the static bypass path.

An orange “FAULT OVER” box is displayed when the previous fault condition has cleared. Sag correction will remain inhibited until the reset period expires (approximately 1 minute).

A blue “SYSTEM OFFLINE” box is displayed whenever the PRODySC system is off-line (CBI open).

A list of conditions and indications is given in Table 1 and displayed error code descriptions are described in the touchscreen display manual addendum, SST PN 94-00106.

2.3 Critical Fault Conditions

Under some conditions the PRODySC will trip the internal circuit breaker CBI to prevent damage to the PRODySC or to protect loads from severe voltage unbalance. Those conditions are the last four listed in Table 1.

NOTICE: reclosing of CBI will be inhibited for one (1) minute after CBI has opened for any reason. Attempts to close CBI too early will result in immediate re-tripping.

Table 1: Operational Conditions and Indications

CONDITION	DEFINITION	DISPLAY STATUS*	INVERTER	MODE
Normal:	88.5% < V_{LINE} < 110%	Green "OK"	Standby	Static BP
Sag Event:	V_{LINE} < 88.5% for less than specified runtime	Green "OK"	Running	Inverter
Runtime Exceeded:	Cumulative runtime exceeded	Red during voltage event, Orange for 1 min. after event	Inhibited	Static BP
Normal Mode, Overload:	Load current > 110%	Red during OL condition, Orange for 1 min. after OL ends	Inhibited	Static BP
Output Over-Current while inverter running (I^2t)	Load current > 150% for 3 cycles	Blinks Red, then Orange for 1 min. Repeats if condition persists	Inhibited	Static BP
Inverter Module Over-temperature:	Module temperature limit exceeded	Red during OT condition, Orange for 1 min. after OT ends	Inhibited	Static BP
PRODySC cabinet Over-temperature:	Internal temperature limit exceeded	Blue, PRODySC offline	Disconnected	CBI open
Static Switch Failure:	Open SCR(s)	Blue, PRODySC offline	Disconnected	CBI open
Main Fuse Open	Open Fuse(s)	Blue, PRODySC offline	Disconnected	CBI open
Enclosure Door Open:	Door Open	Blue, PRODySC offline	Disconnected	CBI tripped

* The touchscreen will power down if both input and output voltages fall below approx. 75% of nominal. An error message will be displayed while the red or orange text box is displayed. Refer to the touchscreen display manual addendum, SST PN 94-00106, for further information on accessing fault codes and status history.

2.4 Transient Voltage Surge Suppressor (TVSS)

A TVSS device is connected on the load side of the PRODySC. The TVSS location is shown in Figure 9. Power to the TVSS module may be removed by opening fuse block F16-F17-F18. An indicator lights on the TVSS module shows if surge protection is active. Fuses F16, F17, and F18 provide short circuit protection in the event of a failure within the TVSS module.

3 Diagnostics and Customer Contacts

These diagnostic indicators are available on the PRODySC system:

- Touchscreen display on the door of the PRODySC enclosure.
- Circuit breaker status (OPEN or CLOSED)
- Remote status contacts and RS-232 port. (SLIP encoded serial packets)
- MODBUS RTU status serial port. (Optional)

3.1 PRODySC STATUS CONTACTS AND RS-232 PORT

The PRODySC remote interface port (see Figure 7) is located behind a small metal cover, above the door of the PRODySC. Three sets of customer-accessible relay contacts are provided. The contacts are form 1A, and close upon occurrence of the named event. Connector positions 1 and 2 will close upon any sag event condition. Connector positions 3 and 4 close under normal operation conditions, and are useful to indicate fully functional status. Connector positions 5 and 6 close when an alarm event occurs. The relays are rated at 24VDC @ 1A.

All wiring is to be class 2, limited to 24 Volts, AC or DC. Acceptable wire gauges range from 24 AWG to 12 AWG (0.205 – 2.5 mm^2). Torque connections to 5 in-lb (0.6 N-m)

A DE-9 female connector is provided for remote communications. A separate addendum describes the communications port protocol.

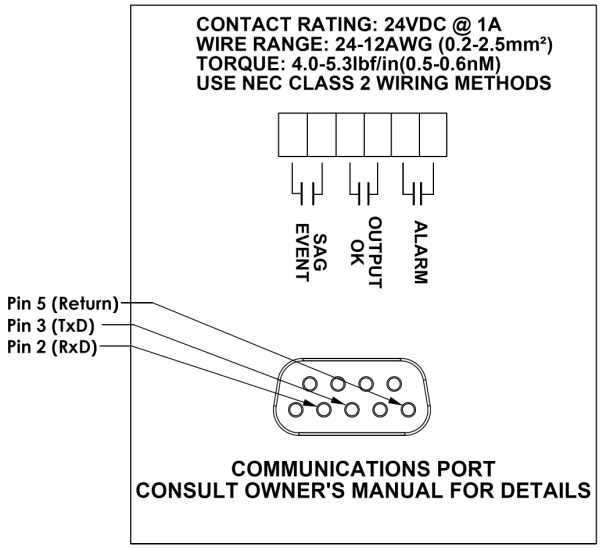


Figure 7: PRODySC Communications Port and Status Contacts (located above PRODySC door)

3.2 OPTIONAL PRODySC STATUS OVER MODBUS RTU PROTOCOL

The PRODySC MODBUS RTU option provides remote access to PRODySC operational data through an RS-485 2-wire serial connection. The protocol is MODBUS RTU. MODBUS registers provide system status, line status, voltage sag notification, and fault notification. A three position connector is provided for serial network terminations. This connector is located behind a small metal cover, above the door of the PRODySC. (See Figure 8 below) A separate addendum 94-00145 SoftSwitching Technologies DySC MODBUS Interface Specification, describes the PRODySC MODBUS interface specifications.

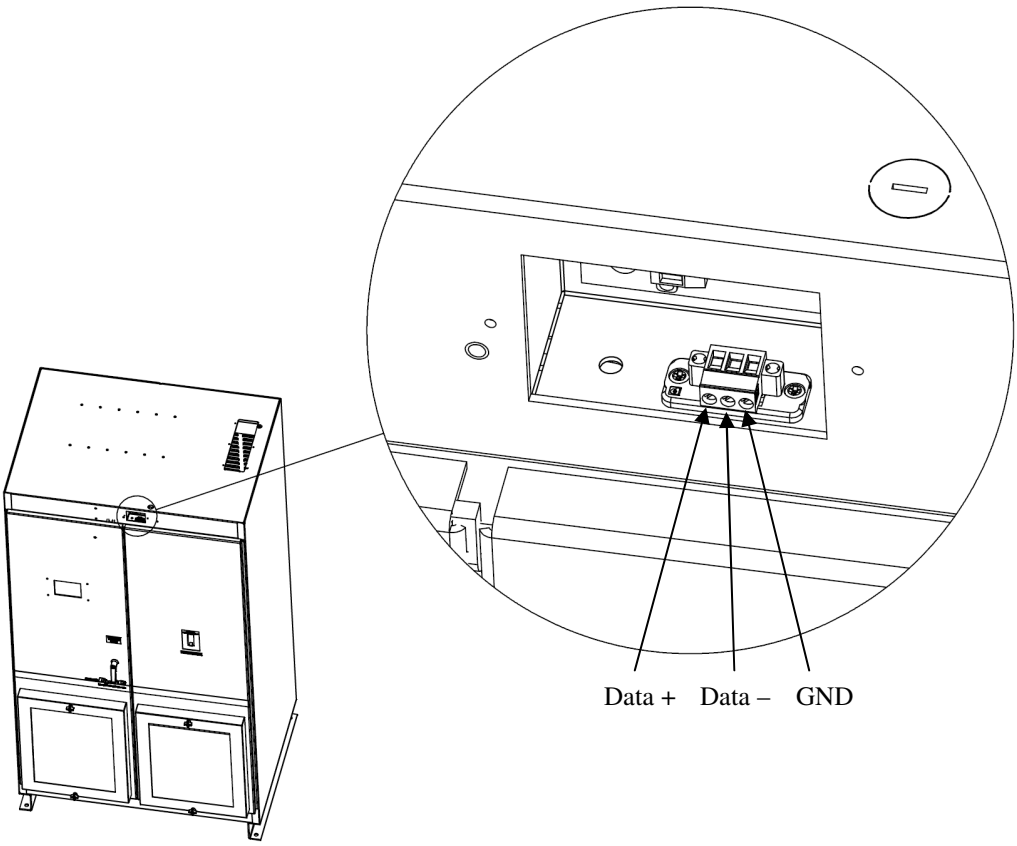


Figure 8: PRODySC MOBUS RTU Serial Network Connections

4 MAINTENANCE AND SERVICING

DANGER: VOLTAGE Dangerous voltages are present within the PRODYSC System. The unit should never be operated with the enclosure door open except by qualified and authorized personnel who are trained and familiar with the operation of the unit and the location of components and voltages. Failure to comply with this warning could result in injury or death.

4.1 PREVENTATIVE MAINTENANCE

The PRODySC requires very little preventative maintenance. The PRODySC should be checked periodically for proper air flow and status indicator operation.

Monthly Checks

1. Ensure the touch screen display is working and no active event faults are displayed.
2. Use a soft cloth to clean the touch display. DO NOT USE harsh detergent, abrasive sponges, alcohol, ammonia, toluene, or acetone on the touch display.
3. Ensure air filters are not covered or obstructed.
4. Bypass switch should be in the "NORMAL" position.

3-6 Month Checks

1. Check air filters and clean or replace when necessary.

Air filters for the PRODySC will require periodic cleaning or replacement, with the frequency depending on the environment. Filters are located on the front side of the PRODySC, and can be accessed with the door closed. Filter media can be safely changed while the system is running normally; the filters should be put back in place as quickly as possible to avoid contamination. Replacement PRODySC filters may be obtained from SoftSwitching by referencing the part number shown in Table 2 below; these filters are washable.

Table 2: Air Filters

PART	DESCRIPTION	SST PART NUMBER
Air filter	16 in x 20 in x 0.8 in, 25 FPI, black, (Quantity 2)	26-00037

2. Check fan for proper operation.

Tap on "CONFIG" on the touch screen display. Tap on "Run System Test". This will bring up a "System Test" screen to test the fans. After tapping the "Fan Test" button, you should hear the fan run for two minutes. Fan locations are shown in Figure 9 and Figure 10. Any abnormal fan noise should be discussed with SoftSwitching Technologies technical support.

3. Ensure that the bypass is in "Normal" mode so that the PRODySC is protecting the load.

Yearly Maintenance

Yearly preventative maintenance should be performed by SoftSwitching service technicians or trained factory authorized technicians. Contact Soft Switching Technologies to address an annual preventative maintenance program.

4.2 SERVICING

CAUTION: SERVICE MUST BE PERFORMED BY QUALIFIED AND AUTHORIZED SERVICE PERSONNEL ONLY

NOTE: In the event of the operation of any over current protection function, check the touchscreen display for error codes that may indicate the type of over current condition. It is important to record any fault messages.

Lock-out all power sources prior to servicing. Fast-acting fuses are included to protect the PRODySC in the event of a load short-circuit. If power is applied, in normal mode, CBI is closed, and the blue "System Offline" box is displayed on the Touchscreen, this may indicate a blown fuse(s). See Figure 9, Figure 10, and Figure 11 for fuse locations and part references. See below for fuse descriptions and replacement part numbers.

4.3 FUSE PART NUMBERS

NOTICE: Before replacing a fuse, authorized and qualified service personnel will require removal of power to the ProDySC by opening and locking out the appropriate upstream branch circuit breaker or bypass according to local plant lockout-tagout protocol.

Fuse locations within the PRODySC cabinet are also shown on a label inside the door. To maintain protection of the PRODySC unit, fuses must be replaced with the same or exact replacement type. These fuses are available from the factory and should only be replaced by qualified and factory authorized service personnel.

To maintain protection of the Maintenance Bypass, fuses must be replaced with the same or exact replacement type. These fuses are available from the factory and should only be replaced by qualified and factory authorized service personnel.

Table 3: PRODySC Enclosure Fuses

FUSE	DESCRIPTION	SST PART NUMBER	MANUFACTURER	MANUFACTURERS PART NUMBER	FIGURE
F1, F2, F3	Fuse, 600A, 500Vac, Semi w/indicator	43-00070	Ferraz-Shawmut	A50QS600-4IL	8
F4, F5, F6	Fuse, 100A, 600Vac, Time Delay	43-00129R	Ferraz-Shawmut	AJT100	9
F7, F8, F9 (3-wire systems only)	Fuse, 15A, 600Vac, Time Delay	43-00029	Ferraz-Shawmut	TRS15R	9
F10, F11	Fuse, 10A, 600Vac, Time Delay	43-00026	Ferraz-Shawmut	ATQR10	8
F12, F13	Fuse, 5A, 600 VAC Time Delay	43-00133	Ferraz-Shawmut	ATQR5	9
F14, F15 (380-480V systems)	Fuse, 5A, 600 VAC Time Delay	43-00131	Ferraz-Shawmut	TRS5R	9
F14, F15 (200-240V systems)	Fuse, 10A, 600 VAC Time Delay	43-00132	Ferraz-Shawmut	TRS10R	9
F16, F17, F18	Fuse, Surge rated, 600V	43-00100	Ferraz-Shawmut	VSP30	8

Table 4: PRODySC Power Module Fuses

FUSE	DESCRIPTION	SST PART NUMBER	MANUFACTURER	MANUFACTURERS PART NUMBER	FIGURE
F1, F2	Fuse, 2A, 600 VAC Time Delay	43-00030	Bussmann	FNQ-R-2	10
F3	Fuse, 200A, 500Vac, Semi w/indicator	43-00106	-	(not accessible)	
F4, F5, F6, F7	Fuse, 20A, 600Vac, Fast-acting	43-00093	Ferraz-Shawmut	ATM20	10

Table 5: Bypass Fuses

Bypass Model: BP200A3PB	Fuse rating: 250A	Fuse Type: LPS-RK-250SP

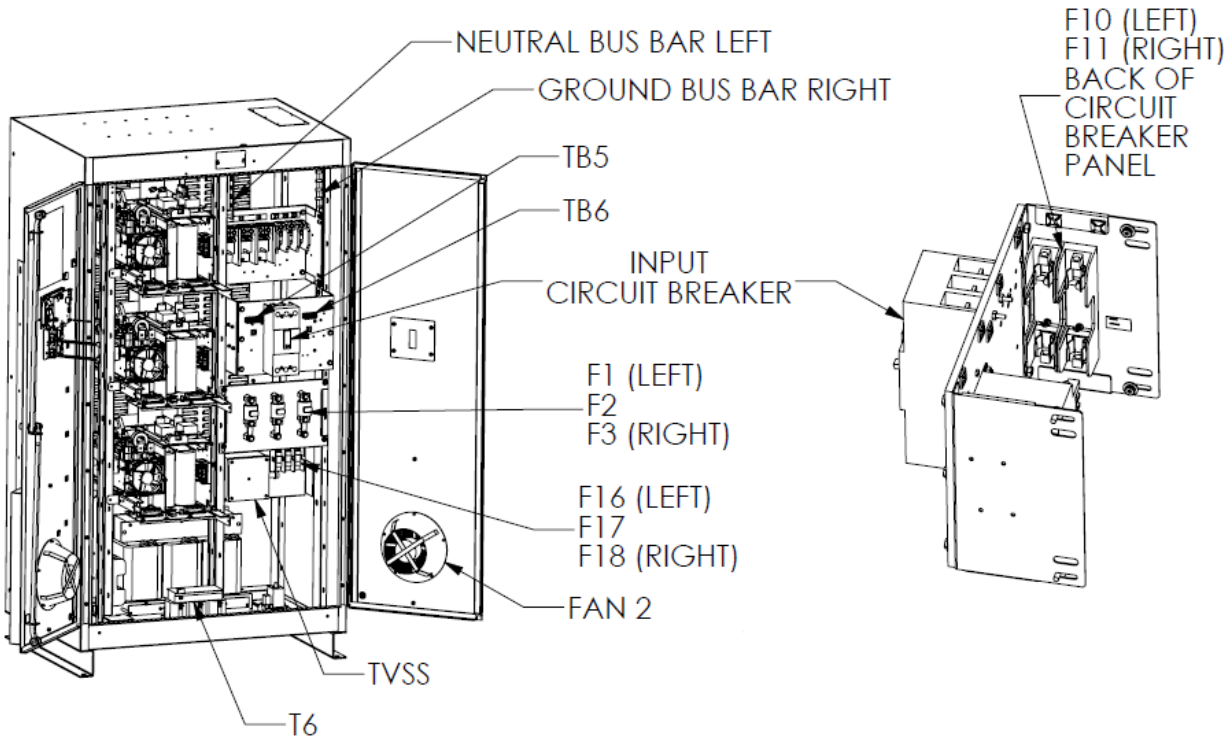


Figure 9: Enclosure Fuses

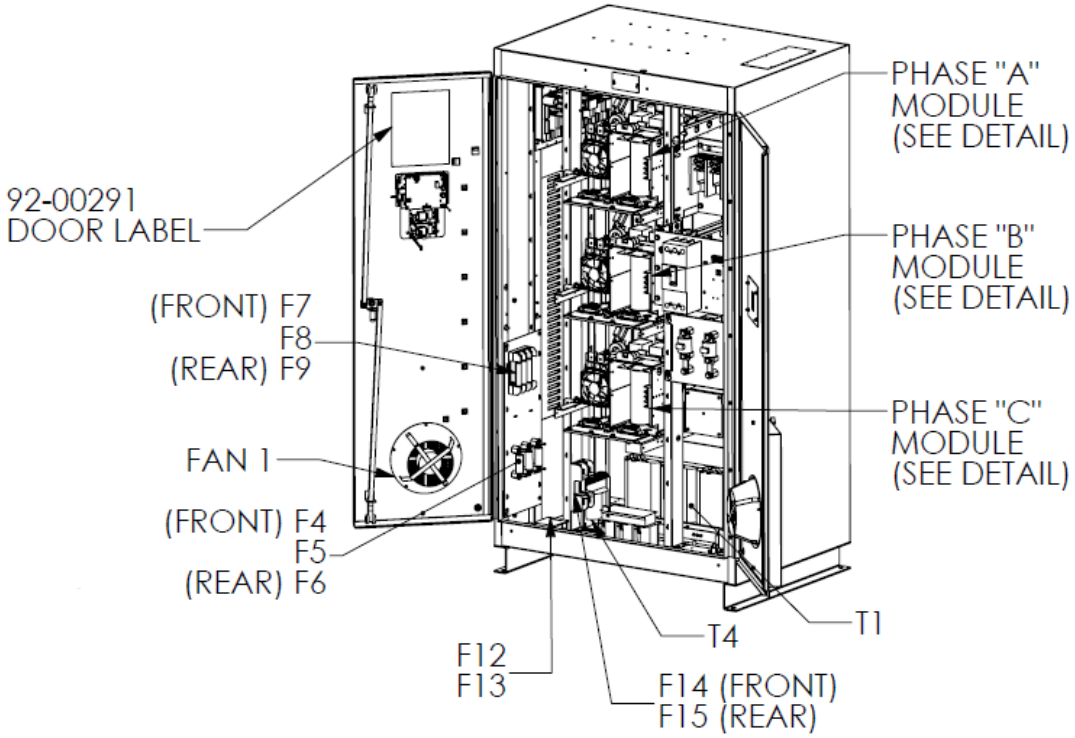


Figure 10: Enclosure Fuses

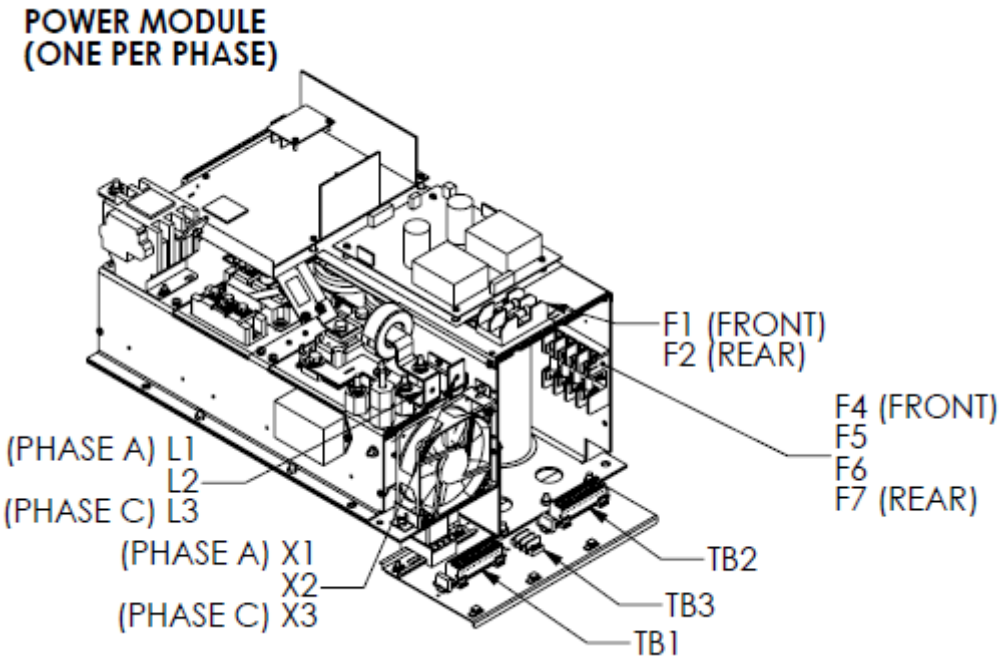


Figure 11: Power Module Fuses

5 SPECIFICATIONS

The three-phase Dynamic voltage Sag Corrector (PRODySC®) protects equipment against voltage sags down to 50% for up to 5 seconds duration, voltage interruptions (zero voltage) for 3 cycles or longer duration, and transient voltage surges. The PRODySC is a device that operates in series with the utility supply; it is not designed or intended to operate with an open circuit at its input terminals—other models are available for that application.	
System Ratings	
Voltage	200, 208, 220, 240, 380, 400, 415, 440, 480 V(rms), 3-phase, ± 10%
Frequency	50/60 Hz, auto-sensing
Wiring	3-wire or 4-wire and ground (model-dependent)
Current	200 A(rms), continuous (69.2- 167 kVA based on voltage rating)
Mechanical CBI Input Breaker Ratings	
Available short circuit current	35 kA
CBI breaker	250 A, 3-pole, thermal-magnetic
Shunt trip	Automatic
Switching	Manual
Voltage Sag Correction Mode	
Detection Voltage	88.5% of rated input voltage (rms voltage trigger)
Output Current	200 A(rms)
Output Current Overload	150% for 30 s, 400% for 5 s, 600% for 0.5 s .Voltage sag correction disabled (remains in static bypass mode) if output current ≥ 110%
Peak Output Current	300 A (Crest Factor 1.5), current limited
Response Time	<2 ms, typical
Output Voltage	87% to 105%, 90% to 100% typical
Output Frequency	Matches the pre-sag frequency
Sag Correction Duration	
Definition: *5 s in first 60 s window, 2 s cumulative in each subsequent 60 s window. Reset to 5s capability after 5 minutes idle.	
3 phase sags (50% to 87% voltage remaining)	5 s / 2 s cumulative every minute*
2 phase sags (30% to 87% voltage remaining)	5 s / 2 s cumulative every minute*
1 phase sags (0% to 87% voltage remaining)	5 s / 2 s cumulative every minute*
Deeper sags or zero volts correction duration	3 cycles at rated load with 0.7 power factor longer at reduced load levels in inverse proportion to load (with zero volts input, 3 phases). Approximately [1 + (%sag / 50%)]* 50ms for three phase sags lower than 50%.
Output Voltage Waveform	True sine wave, typical
Mechanical	
Enclosure	NEMA 1 (IP20), see outline drawings for dimensions
Accessibility (For Wiring)	Top or bottom. (For Wiring) Access to front required.
Environmental	
Ambient Temperature	0°– 40°C (32°– 104°F)
Storage Temperature	-40°– 75°C (-40°– 167°F)
Relative Humidity	0 to 95%, non-condensing
Heat Dissipation	5677 BTU per hour maximum (167kVA model)
Cooling	controlled forced air
Altitude	1000 m (3300 ft) without derating
Audible Noise	<60 dBA at 1 m
Communications/User Interface	
Display	5.7 inch Touchscreen LCD
Connectivity	RS232, dry contacts
Compliance	
DySC System	UL and cUL 1012 listed
TVSS	25kA surge current rating. IEEE Std C62.41.1 and UL 1449
External Bypass Switch	UL 508 listed

6 Soft Switching Technologies Corporation Standard Limited Warranty

1. Soft Switching Technologies Corporation ("Seller") warrants that its product conforms to Seller's published specifications and is free from defects in material or workmanship.
2. The duration of the warranty is 12 months from the date the product ships from Seller's Middleton facilities to Buyer (the "Warranty Period").
3. The warranty is applicable only to Buyer, or to the end-user if Buyer is an authorized reseller, for whom the SoftSwitching product is originally installed for use. This warranty is not transferable or assignable.
4. If Buyer discovers within the Warranty Period a failure of the product to conform to specifications or a defect in material or workmanship, Buyer must promptly notify Seller in writing with 10 days after it discovers such failure and before the expiration of the Warranty Period. Any such notification received by Seller after the expiration of the Warranty Period shall be null, void and ineffective. Within a reasonable time after Buyer's notification, Seller will confirm whether a breach of warranty has occurred, and if so will repair the product to correct any failure of the product to conform to specifications or any defect in material or workmanship.
5. Buyer shall ship at Buyer's cost the defective product to Seller for repair. Buyer assumes the risk of loss while product is in transit. Upon repair of the product, shipment back to Buyer shall be at Buyer's sole expense. Seller will arrange with Buyer shipment of the repaired product back to Buyer. If Buyer requires warranty service on-site and Seller agrees, in its sole discretion, to provide such service, then labor costs for on-site field repair and all associated travel and living expenses, shall be the responsibility of Buyer. If Buyer requests expedited warranty service and Seller can accommodate such request as determined in Seller's sole discretion, such service shall be at Buyer's expense.
6. If Seller is unable to repair the product Seller will provide to Buyer, at Seller's sole option, one of the following: (1) a replacement product, or (2) a full refund of the purchase price. These remedies are Buyer's exclusive remedies for breach of warranty.
7. Replacement parts shall be warranted for 90 days or for the remainder of the original Warranty Period, whichever is longer.
8. Seller does not warrant (1) defects caused by failure to provide a suitable installation environment for the product, (2) damage caused by use of the product in applications or for purposes other than it was designed for, (3) damage caused by wrong or inadequate electrical connections of field wiring, (4) damage caused by weather or other natural causes, (5) damage caused by unauthorized attachment or modification, (6) damage during shipment, (7) damage due to ordinary wear and tear, or (8) any other abuse, misapplication, neglect or misuse by Buyer.
9. **DISCLAIMER OF WARRANTY**: THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER ARISING UNDER ANY STATUTE OR LAW, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
10. **Limitation of Liability**. SELLER DOES NOT ACCEPT LIABILITY BEYOND THE REMEDIES SET FORTH HEREIN, INCLUDING BUT NOT LIMITED TO ANY LIABILITY FOR PRODUCT NOT BEING AVAILABLE FOR USE, LOST PROFITS, OR LOSS OF BUSINESS. EXCEPT AS EXPRESSLY PROVIDED HEREIN, SELLER WILL NOT BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY THIRD PARTY. BUYER AGREES THAT FOR ANY LIABILITY RELATED TO THE PURCHASE OF PRODUCT, SELLER IS NOT LIABLE OR RESPONSIBLE FOR ANY AMOUNT OF DAMAGES ABOVE THE AMOUNT INVOICED FOR THE APPLICABLE PRODUCT. THE REMEDIES SET FORTH IN THIS WARRANTY SHALL APPLY EVEN IF SUCH REMEDIES FAIL THEIR ESSENTIAL PURPOSE
11. Any action by Seller against Buyer for Buyer's breach of the terms and conditions of this warranty must be commenced within 12 months following the date of such breach.
12. **WARRANTY OF TITLE, PATENTS, AND COPYRIGHTS**: In addition to the warranty set forth in Paragraph 1 above, Seller warrants that it has good title to its products free of any encumbrance, and that the product shall be delivered free from the rightful claim of any third person for infringement of patent or copyright. Seller will defend Buyer against any claim of infringement and will pay resulting costs, damages, and attorney fees finally awarded, provided that, (1) Buyer promptly notifies Seller in writing of any claim within 10 days after Buyer becomes aware of any such claim or potential claim, and (2) Seller has sole control of the defense and all related settlement negotiations. If a claim arises, Buyer will allow Seller, at Seller's option and expense, to procure the right for Buyer to continue using the product, to replace or modify it so that it becomes non-infringing, or to grant Buyer a refund of the purchase price in exchange for return of the infringing product

7 Contact Information

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