IB-26100  PowlVac® 63kA Enclosed Indoor Disconnect Switch

Model:  15.0kV, 63kA 5000A

August, 2005
Contact Information

Powell Electrical Systems, Inc.
www.powellind.com

Powell Apparatus Service
E-mail: Info@powellservice.com
PO Box 12818, Houston, Texas 77217-2818

Tel: 713-944-6900
Fax: 713-947-4453
Contents

I. INTRODUCTION .......................................................................................................................... 2
   A. SCOPE ................................................................................................................................... 2
   B. PURPOSE .............................................................................................................................. 2
   C. INSTRUCTION BULLETINS AVAILABLE ON THE INTERNET ............................................ 2
II. SAFETY ....................................................................................................................................... 3
   A. SAFE WORK CONDITION .................................................................................................... 3
   B. SAFETY RULES .................................................................................................................... 3
      1) General ............................................................................................................................ 3
   C. SAFETY LABELS ................................................................................................................... 4
III. DESCRIPTION ............................................................................................................................ 5
   A. DISCONNECTING SWITCHES .............................................................................................. 5
      1) General ............................................................................................................................ 5
      2) Construction and Operation ............................................................................................ 5
      3) Accessories .................................................................................................................... 6
          a) Grounding (Earthing) Contacts ................................................................................... 6
          b) Auxiliary Switch ....................................................................................................... 7
          c) Key Interlocks .......................................................................................................... 7
   B. OPERATING MECHANISM DESCRIPTION ........................................................................ 10
      1) General .......................................................................................................................... 10
      2) Mechanism Operation ................................................................................................... 10
IV. INSTALLATION ........................................................................................................................ 13
   A. RECEIVING .......................................................................................................................... 13
   B. INSTALLING THE DISCONNECTING SWITCH ................................................................... 13
   C. HANDLING ........................................................................................................................... 13
   D. STORAGE ............................................................................................................................. 13
V. MAINTENANCE .......................................................................................................................... 15
   A. GENERAL ............................................................................................................................ 15
   B. INSPECTION AND CLEANING ......................................................................................... 15
   C. SETTINGS ............................................................................................................................ 15
   D. LUBRICATION .................................................................................................................... 16
   E. HIGH VOLTAGE INSULATION INTEGRITY ...................................................................... 16
VII. RENEWAL PARTS .................................................................................................................. 17
   A. ORDERING .......................................................................................................................... 17
Figures

Figure 1  General Arrangement of the PowlVac® Enclosed Indoor Disconnect Switch ....................... 6
Figure 2. PowlVac® Enclosed Indoor Disconnect Switch ........................................................................... 7
Figure 3. PowlVac® Enclosed Indoor Disconnect Switch Interior Dimensions .................................. 8
Figure 4. PowlVac® Enclosed Indoor Disconnect Switch Front Interior Dimensions ......................... 8
Figure 5. PowlVac® Enclosed Indoor Disconnect Switch Operating Mechanism Dimensions - Left Side .......................................................................................................................... 9
Figure 6. PowlVac® Enclosed Indoor Disconnect Switch Operating Mechanism Dimensions - Right Side ........................................................................................................................................ 9
Figure 7. PowlVac® Enclosed Indoor Disconnect Switch Operating Mechanism Dimensions .......... 11
Figure 8. PowlVac® Enclosed Indoor Disconnect Switch Operating Mechanism ................................ 12
Figure 9. Pivot Contact Spring Setting ..................................................................................................... 15
Figure 10. Moving Contact Springs Setting ............................................................................................. 16

Tables

Table A. Ratings.......................................................................................................................................5
Table B. Renewal Parts ............................................................................................................................ 18
THE EQUIPMENT DESCRIBED IN THIS DOCUMENT MAY CONTAIN HIGH VOLTAGES AND CURRENTS WHICH CAN CAUSE SERIOUS INJURY OR DEATH.

THE EQUIPMENT IS DESIGNED FOR USE, INSTALLATION, AND MAINTENANCE BY KNOWLEDGEABLE USERS OF SUCH EQUIPMENT HAVING EXPERIENCE AND TRAINING IN THE FIELD OF HIGH VOLTAGE ELECTRICITY. THIS DOCUMENT, AND ALL OTHER DOCUMENTATION SHALL BE FULLY READ, UNDERSTOOD, AND ALL WARNINGS AND CAUTIONS SHALL BE ABIDED BY.

IF THERE ARE ANY DISCREPANCIES OR QUESTIONS, THE USER SHALL CONTACT POWELL ELECTRICAL SYSTEMS, INC. IMMEDIATELY AT 1-800-480-7273.

BEFORE ANY ADJUSTMENT, SERVICING, PARTS REPLACEMENT, OR ANY OTHER ACT IS PERFORMED REQUIRING PHYSICAL CONTACT WITH THE ELECTRICAL WORKING COMPONENTS OR WIRING OF THE EQUIPMENT DESCRIBED IN THIS DOCUMENT, THE POWER SUPPLY MUST BE DISCONNECTED. FAILURE TO FOLLOW THIS WARNING MAY RESULT IN INJURY OR DEATH.
I. INTRODUCTION

A. SCOPE

This instruction bulletin describes the following:

PowlVac® 63kA Enclosed Indoor Disconnect Switch

B. PURPOSE

The content of this document is intended to provide the information and procedures required to properly operate and maintain the enclosed indoor disconnect switch in Section A.

This instruction bulletin contains the following topics:

• Description of the enclosed indoor disconnect switch
• Guidelines for safety
• General descriptions of the operation and maintenance of the enclosed indoor disconnect switch
• Instructions for installation and preparation for use of the enclosed indoor disconnect switch assemblies
• Accessories
• Renewal Parts

The illustrations contained in this document are provided as general information to aid in showing component locations. Therefore, the illustrations may not represent the exact construction details of the enclosed indoor disconnect switch. To the extent required, the products described herein meet the applicable ANSI, IEEE, and NEMA standards; however, no such assurance is given with respect to local codes and ordinances which vary greatly.

C. INSTRUCTION BULLETINS AVAILABLE ON THE INTERNET

Instruction bulletins are available through hyperlinks on the Web site: www.powellind.com. Click the following links: Publications, Services, and Instruction Bulletins.

To obtain instruction bulletins by phone or email, contact the Powell Apparatus Service (PAS) at 1-800-480-7273 or 713-944-6900, or email PAS at info@powellservice.com.
II. SAFETY

A. SAFE WORK CONDITION

The information in Section A is quoted from NFPE 70E 2004 —Article 120 Page 120.1 Establishing an Electrically Safe Work Condition

120.1 Process of Achieving an Electrically Safe Work Condition.

1. Determine all possible sources of electrical supply to the specific equipment. Check applicable up-to-date drawings, diagrams, and identification tags.

2. After properly interrupting the load current, OPEN the disconnecting device(s) for each source.

3. Wherever possible, visually verify that all blades of the disconnecting devices are fully open or that drawout type circuit breakers are withdrawn to the fully disconnected position.

4. Apply lockout/tagout devices in accordance with a documented and established policy.

5. Use an adequately rated voltage detector to test each phase conductor or circuit part to verify they are deenergized. Test each phase conductor or circuit part both phase-to-phase, and phase-to-ground. Before and after each test, determine that the voltage detector is operating satisfactorily.

6. Where the possibility of induced voltages or stored electrical energy exists, ground the phase conductors or circuit parts before touching them. Where it could be reasonably anticipated that the conductors or circuit parts being deenergized could contact other exposed energized conductors or circuit parts, apply ground connecting devices rated for the available fault duty.

B. SAFETY RULES

Study this instruction bulletin and all other associated documentation before uncrating the PowlVac® 63kA 5000A Enclosed Indoor Disconnect Switch.

Each user has the responsibility to instruct and supervise all personnel associated with usage, installation, operation, and maintenance of this equipment on all safety procedures which must be observed. Furthermore, each user has the responsibility of devising a complete safety program for each type of equipment encountered.

The enclosed indoor disconnect switch described in this instruction bulletin is operated by high energy mechanisms interlocked to provide specific operating sequences. To ensure the safety of personnel associated with usage, installation, operation, and maintenance of this enclosed indoor disconnect switch, it is mandatory that the following safety rules be observed. **THESE RULES ARE NOT INTENDED TO BE A COMPLETE SAFETY PROGRAM, BUT ARE INTENDED TO COVER ONLY THE IMPORTANT ASPECTS OF PERSONNEL SAFETY RELATED TO POWL Vac® 63kA 5000A ENCLOSED INDOOR DISCONNECT SWITCH.**

1) General

1. Only supervised and qualified personnel trained in the usage, installation, operation, and maintenance of the enclosed indoor disconnect switch shall be allowed to work on this equipment. It is mandatory that this instruction bulletin, any supplements, and service advisories be studied, understood, and followed.

2. Maintenance programs must be consistent with both customer experience and manufacturer’s recommendations, including service advisories and the instruction bulletin(s). A well-planned and executed routine maintenance program is essential for enclosed indoor disconnect switch reliability and safety.
3. Service conditions and enclosed indoor disconnect switch applications shall also be considered in the development of such programs, including such variables as ambient temperature and humidity, actual continuous current, thermal cycling, number of operations, and any unusual local conditions such as excessive dust, ash, corrosive atmosphere, vermin, and insect problems.

C. SAFETY LABELS

The switch has DANGER, WARNING, CAUTION, and instruction labels attached to various locations. All equipment DANGER, WARNING, CAUTION, and instruction labels shall be observed.
III. DESCRIPTION

A. DISCONNECTING SWITCHES

1) General

The Powell enclosed indoor disconnect switch is a 3-pole, motor-operated, knife-type “non-load” switch. This disconnect switch does not have current breaking and making capabilities. This disconnect switch meets requirements for short-time current and momentary (peak) withstand current. This disconnect switch has continuous (normal) current rating. See Table A for disconnect switch ratings.

### Table A. Ratings

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Voltage</td>
<td>15.0kV</td>
</tr>
<tr>
<td>Lightning Impulse Withstand Voltage</td>
<td>95.0kV</td>
</tr>
<tr>
<td>Power Frequency withstand Voltage</td>
<td>36.0kV</td>
</tr>
<tr>
<td>Power Frequency</td>
<td>60 Hz</td>
</tr>
<tr>
<td>Continuous Current</td>
<td>5000A</td>
</tr>
<tr>
<td>Momentary Withstand Current</td>
<td>172.6kA Peak</td>
</tr>
<tr>
<td>Short-Time Withstand Current</td>
<td>63kA</td>
</tr>
<tr>
<td>Short-Time Current Withstand Duration</td>
<td>3 s</td>
</tr>
</tbody>
</table>

**WARNING**

THE POWELL DISCONNECT SWITCH SHALL BE INTERLOCKED OR OTHERWISE PREVENTED FROM OPENING WHEN ANY AMOUNT OF LOAD CURRENT IS FLOWING. THE SWITCH SHALL ONLY BE OPERATED WHEN NO VOLTAGE CHANGE OCCURS ACROSS THE TERMINALS OF EACH OF THE SWITCH POLES. DUE TO THE WIDE VARIETY OF APPLICATIONS AND INTERLOCKING SCHEMES, THE INTERLOCKS OR OTHER METHODS OF PREVENTING IMPROPER DISCONNECT SWITCH OPERATION ARE NOT SUPPLIED WITH THE BASIC SWITCH AND SHALL BE THE RESPONSIBILITY OF THE USER. FAILURE TO FOLLOW THIS WARNING WILL RESULT IN SEVERE EQUIPMENT DAMAGE AND MAY CAUSE INJURY OR DEATH.

2) Construction and Operation

Refer to Figures 1 through 6 for illustrations of the physical description of the enclosed indoor disconnect switch. To review detailed drawing of the switch operating mechanism, refer to Figure 7 and Figure 8.

The base of the disconnect switch is constructed of welded steel plate for rigidity. The base is finished with an ANSI 61 gray powder-coating process for long-term corrosion protection. The primary phase-to-ground insulation is NEMA grade GPO-3 polyester fiberglass.

The primary contacts for this disconnect switch are made of hard drawn, high-conductivity copper. Parallel flat copper bars are used for the moving contacts. Heavy silver plating of the stationary and moving contacts guards against wear. The
required contact force is achieved by multiple disc springs acting to compress the moving contacts together. A welded main operating shaft in the base of the 3-pole switch drives the moving contacts through levers and insulated operating links. The main shaft is common to all three poles ensuring synchronized operation of the poles.

3) Accessories

Powell enclosed indoor disconnect switches are available with following options and accessories:

- **OPEN** Position Grounding Contacts for the Moving Contacts
- Auxiliary Switches
- Key Interlocks

a) Grounding (Earthing) Contacts

Grounding contacts can be installed on the disconnect switch for grounding the moving contacts in the **OPEN** position (Figure 8). Grounding contacts and the supporting ground bus can be mounted to the switchgear in such a way that the stationary grounding contacts engage the moving contacts of the disconnect switch towards the end of the opening stroke. The grounding contacts are made from hard-drawn, high-conductivity copper.

When the disconnect switch is opened, the moving contacts of the disconnect switch rotate and connect with the grounding contacts. With this design, there is no need for any additional interlocks to prevent grounding the incoming primary connections when the disconnect switch is **CLOSED**.

*Figure 1. General Arrangement of the PowlVac® Enclosed Indoor Disconnect Switch*
b) Auxiliary Switch

Optional auxiliary switches can be mounted to the wall of the enclosure or to the frame of the enclosed indoor disconnect switch. The optional auxiliary switches are provided with single pole double throw contacts.

c) Key Interlocks

Key interlocks can be provided to ensure proper operating sequences of the disconnect switch. The disconnect switch operating mechanism has provisions for mounting key interlocks in both the OPEN and CLOSED positions of the switch.

Figure 2. PowlVac® Enclosed Indoor Disconnect Switch
Figure 3. PowlVac® Enclosed Indoor Disconnect Switch Interior Dimensions

Figure 4. PowlVac® Enclosed Indoor Disconnect Switch Front Interior Dimensions
Figure 5. PowlVac® Enclosed Indoor Disconnect Switch
Operating Mechanism Dimensions - Left Side

Figure 6. PowlVac® Enclosed Indoor Disconnect Switch
Operating Mechanism Dimensions - Right Side
B. OPERATING MECHANISM DESCRIPTION

1) General

The main operating shaft of the disconnect switch is motor-driven to the OPEN and CLOSED positions through a right angle gear box. The gearbox, which is bolted to the base of the switch, contains worm and wheel type gearing and connects the gear motor to the main operating shaft. The inherent anti-reversing nature of worm and wheel gearing ensures the moving contacts of the disconnect switch will not change positions or move unless the input shaft to the gearbox is rotated.

The drive motor is located in a low-voltage compartment of the enclosure for ease of operation and maintenance. The output of the drive motor is connected to the input of the gearbox through a steel operating shaft. The drive motor is a dual-output, common shaft construction. A hexagonal adapter is provided on the output shaft opposite the shaft that is connected to the gearbox. The adapter makes it possible to manually override the motor to operate the switch when control power is not available. The adapter can be covered with a lockable protection cover to deter manual operation. The motorized operating mechanism can be equipped with electrical and mechanical interlocking.

2) Mechanism Operation

The following description of the mechanism operation does not address the required interlocking or operating procedures as required in Section III. DESCRIPTION, A. DISCONNECTING SWITCHES 1) General. This section is provided to describe only the functional aspects of the motor operated switch mechanism for maintenance and troubleshooting purposes.

Refer to Figure 8 for component identification.

1. When the gear motor (Figure 8, a) is energized, rotational force is transmitted to the right angle gear box (Figure 8, j) via the gearbox input shaft (Figure 8, l). The gearbox input shaft is connected to the gearbox by a cylindrical shaft coupler (Figure 8, c). The opposite end of the input shaft is connected to a torque-limiting device by a shaft coupler.

The torque limiting device is a preset ratcheting design used to prevent excessive torque from being applied to the gearbox. The output of the gear motor is connected to the torque limiter by a shaft coupler.

2. The output of the right angle gearbox (Figure 8, l) is connected to the main operating shaft (Figure 8, k) of the disconnect switch. Rotating the input shaft of the gearbox causes a proportional rotation of the main operating shaft. Full operation of the disconnect switch is accomplished by rotating the main operating shaft 45 to 50 degrees. Excessive rotation is prevented by the limit switches mounted to define the OPEN and CLOSED position of the disconnect switch.

3. The operating mechanism support brackets (Figure 8, e) and support angle (Figure 8, f) support the gear motor and gearbox input shaft. A portion of the gearbox input shaft is externally threaded and is equipped with an internally threaded slider. The slider (Figure 8, g) moves horizontally in proportion to the rotation of the input shaft.

4. The slider (Figure 8, g) is designed to perform three functions. The slider operates limit switches that control motor operation and switch main contact position, mechanically drives the OPEN-CLOSED indicator flag and also drives the mechanical position interlocks.
Figure 7. PowlVac® Enclosed Indoor Disconnect Switch Operating Mechanism Dimensions
**Figure 8. PowlVac® Enclosed Indoor Disconnect Switch Operating Mechanism**

- a. Motor
- b. Hex Rod End
- c. Couplers (2)
- d. Torque Limiter
- e. Support Brackets
- f. Support Angle
- g. Slider
- h. Ground Bus (Optional Open Position Grounding Contacts)
- i. Threaded Rod
- j. Gear Box (Right Angle)
- k. Main Operator Shaft
- l. Gear Box Input Shaft
IV. INSTALLATION

A. RECEIVING

Upon receipt, remove any shipping material and inspect the enclosed indoor disconnect switch for damage that may have occurred during shipment. Check equipment received against the shipping documents to ensure receipt of the complete shipment.

B. INSTALLING THE DISCONNECTING SWITCH

The switch is designed for metal-enclosed indoor applications. Refer to the installation drawings supplied with the switch for mounting bolt locations, electrical clearances and ventilation requirements. Refer to Figures 3 through 6 a typical switch outline with dimensions.

The enclosed indoor disconnect switch must be firmly attached to a square and level base. Care should be taken during installation to and tightening of the mounting hardware to avoid twisting the frame.

Care should also be taken when installing primary copper connections to the switch terminals. Unnecessarily high torques or static loads on the terminals due to improper conductor installation must be avoided as these may cause misalignment and binding of the switch contacts. In order to maintain short-circuit withstand ratings of the switch; the distance to the nearest support insulator from the switch terminals must not exceed 36 inches.

C. HANDLING

The enclosed indoor disconnect switch weighs approximately 850 lbs. The preferred method for moving the enclosed indoor disconnect switch is by overhead crane.

D. STORAGE

IT IS RECOMMENDED THAT THE INDOOR DISCONNECTING SWITCH BE PLACED INTO SERVICE IMMEDIATELY IN ITS PERMANENT LOCATION AFTER COMPLETING THE COMMISSIONING TESTS. IF THIS IS NOT POSSIBLE, THE FOLLOWING PRECAUTIONS MUST BE TAKEN TO ENSURE THE PROPER STORAGE OF THE INDOOR DISCONNECTING SWITCH

1. Since moisture has an adverse effect on the insulating parts, the enclosed indoor disconnect switch should be carefully protected against condensation, preferably by storing it in a warm dry room of moderate temperature, such as 40°-100°F. Enclosed indoor disconnect switches used in outdoor metal-clad switchgear should be stored in the equipment only when power is available and the anti-condensation heaters are in operation.
2. The enclosed indoor disconnect switch should be stored in a clean location free from corrosive gases or fumes. Particular care should be taken to protect the equipment from moisture and cement dust, as this combination has a corrosive effect on many parts.

3. Unplated surfaces, such as, rollers, latches, etc., should be coated with grease/oil to prevent rusting.

If the enclosed indoor disconnect switch is stored for any length of time, it should be inspected periodically to see that rusting has not started and to ensure good mechanical condition. Should the enclosed indoor disconnect switch be stored under unfavorable atmospheric conditions, it should be cleaned and dried before attempting the commissioning tests and before placing the enclosed indoor disconnect switch into service.
V. MAINTENANCE

A. GENERAL

A regular maintenance schedule should be established to obtain the best service and reliability from the enclosed indoor disconnect switch. Actual inspection and maintenance will depend on individual application conditions such as number of operations, desired system reliability and storage conditions. Some atmospheric conditions such as extremes of dust, moisture, or corrosive gases might indicate inspection and maintenance at more frequent intervals. Very clean and dry conditions will justify longer times between inspection and maintenance operations. With experience, each user can set an inspection and maintenance schedule which is best suited for the particular use.

When the enclosed indoor disconnect switch has been in storage for an extended period of time, it must be inspected and cleaned before being used. See Section IV. INSTALLATION, C. STORAGE.

A permanent record of maintenance work and inspections should be kept. The degree of record detail depends on the operating conditions. Dates and results of inspections and routine maintenance activities should be recorded starting from the date the switch is first put into service.

B. INSPECTION AND CLEANING

Inspect the enclosed indoor disconnect switch for loose or damaged hardware or parts. Tighten any loose hardware, and replace missing or damaged hardware or parts.

When necessary, remove loose dust and dirt from the enclosed indoor disconnect switch with a vacuum cleaner, a clean, dry cloth, or an industrial type wiper. **DO NOT** use an air hose to clean the enclosed indoor disconnect switch. Dirt or grit may be blown into critical parts, including bearings, which will cause excessive wear of the parts.

Primary insulation, including the main contact supports and the insulating operating links, should also be cleaned. Wipe clean with a dry lint-free cloth or an industrial type wiper. If dirt adheres and will not come off by wiping, remove it with denatured alcohol. Be sure that the switch is dry before returning it to service. Do not use any type of detergent to wash the surface of the insulators as detergent may leave an electrical conducting residue on the surface as it dries.

![Figure 9. Pivot Contact Spring Setting](image)

C. SETTINGS

During maintenance, check the contact spring settings. The correct setting for the pivot contact springs is shown in Figure 9.
The moving contact springs setting is as shown in Figure 10.

![Figure 10. Moving Contact Springs Setting](image)

**D. LUBRICATION**

Lubrication of switch moving parts should be performed at the regular maintenance intervals. The guiding rule in lubrication should be to lubricate regularly, use lubricant sparingly, and remove all excess lubricant.

The lubricant on the main contacts of the disconnect switch should be renewed approximately every 2 years. Use only Mobil Grease 28 for lubricating the main contacts. Substituting other greases or lubricants on the contacts may cause overheating, binding or welding of the contacts.

Lubrication requirements of the operating mechanism are minimal. The motor and right angle gearbox are lubricated at the factory and should not require replenishment during the life of the components. Rheolube-368A should be used to lubricate moving parts of the operating mechanism.

Powell offers a complete lubrication kit (Powlube-102) which contains all the lubricants required for maintaining the switch.

**E. HIGH VOLTAGE INSULATION INTEGRITY**

The high voltage insulation system of the disconnect switch, which consists of the insulated operating links and contact support assemblies, should be hipot tested prior to initially placing the switch in service. The switch primary phase-to-phase and phase-to-ground insulation should be tested with the switch in the CLOSED position. Test each pole of the switch separately, with the other two poles and the switch base (frame) grounded.

Field primary insulation integrity testing can be conducted with either AC or DC high potential testing (Hipot). Powell recognizes that DC testing is very common due to the availability of the equipment. When using DC voltages, consistent and historical readings are more important than predetermined values when determining the condition of the primary insulation system. A clean, dry switch will help yield accurate and consistent readings.

The recommended maintenance test voltage for the disconnect switch is:

- 27 kVAC for one minute,
- or
- 37kVDC for one minute.
VII. RENEWAL PARTS

A. ORDERING

Should any part require replacement due to wear or damage, order renewal parts from Powell Apparatus Service (PAS). When ordering parts, provide the following information:

- Name of the ultimate user
- Location of the installation
- Type of the device including rated voltage and rated amps
- Serial number of the device
- Description of the part
- Photo of the device with the needed part marked will be helpful in assuring that the proper part is furnished

To order parts please contact Powell Electrical Systems, Inc. by one of the following methods:

POWELL WEB SITE:
    http://www.powellind.com

EMAIL:  info@powlservice.com

TELEPHONE:  713-944-6900

FAX:  713-947-4453

◄ SECTION END ►
### Table B. Renewal Parts

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalog Number</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acme Rod</td>
<td>35351P00000004</td>
<td><img src="image1" alt="Acme Rod" /></td>
</tr>
<tr>
<td>Gear Box</td>
<td>RVO75 (Motovario Mfg.)</td>
<td><img src="image2" alt="Gear Box" /></td>
</tr>
<tr>
<td>Motor</td>
<td>S13421</td>
<td><img src="image3" alt="Motor" /></td>
</tr>
<tr>
<td>Operating Link</td>
<td>35351P00005147</td>
<td><img src="image4" alt="Operating Link" /></td>
</tr>
<tr>
<td>Limit Switch Assembly</td>
<td>(Specific to Order number)</td>
<td><img src="image5" alt="Limit Switch Assembly" /></td>
</tr>
<tr>
<td>Moving Contact Spring Setting Gauge</td>
<td>R042203P100</td>
<td><img src="image6" alt="Moving Contact Spring Setting Gauge" /></td>
</tr>
<tr>
<td>PowlVac Lubrication Kit</td>
<td>Powlube-102</td>
<td><img src="image7" alt="PowlVac Lubrication Kit" /></td>
</tr>
</tbody>
</table>
INDEX

A
ANSI, IEEE, NEMA 2
Applicable standards 2

H
Handling 8

I
Inspection and Cleaning 9
Installation
   handling 8
   receiving 8
   storage 8
Instruction Bulletin
   Web site 2
Introduction
   purpose 2
   scope 2

L
Lubrication 9

M
Maintenance
   general 8
   inspection and cleaning 9
   lubrication 9

O
Ordering parts 9

P
Parts 9
Powell Electrical Systems, Inc. 2

Q
Qualified personnel 3

R
Receiving 8
Renewal parts 9
   ordering 9

S
Safety 2
   general 3
   isolation 3
   qualified personnel 3
   racking 3
   transport or install 3
Safety labels 3
Standards 2
Storage 8

W
Weight 8
IB-26100
PowlVac® 63kA Enclosed Indoor Disconnect Switch

Model: 15.0kV, 63kA 5000A

August, 2005