MANUAL TRANSFER SWITCH SPECIFICATION

I. General

A Scope
A.1- This specification defines the requirements for Manual Transfer Switches assembled by PSI Control Solutions.

B Purpose
B.1- The purpose of the Manual Transfer Switch is to manually transfer power to an alternate source. The most common application is transferring power from a generator to the load during utility failures.
B.2- The Manual Transfer Switch can be installed indoors or outdoors with appropriate environmental rating.
B.3- When installed properly, the Manual Transfer Switch provides an easy means for transferring loads to an alternate source in the event of another power source failure.
B.4- The Manual Transfer Switch offerings shall include optional features such as short-circuit protection, Cam-Lok quick-connect receptacles, service-entrance rated, and phase rotation protection.

C Quality
C.1- Manual Transfer Switches shall be completely assembled and undergo a functional test procedure before shipment. This test shall be documented and included with the Manual Transfer Switch.
C.2- Manual Transfer Switches shall be built in accordance with NEC requirements.
C.3- Manual Transfer Switches with an ampacity range of 60-1200A are UL1008 listed and shall be built in accordance with UL508A.

D Warranty
D.1- PSI Control Solutions warrants the products manufactured by it and delivered hereunder will be free from defects in material and workmanship for a period of twelve (12) months after date of shipment.

II. Product Requirements

A General
A.1- All components shall be new and free of defects.
A.2- All components used in UL-labeled Manual Transfer Switches shall be UL-listed or recognized.
**Electrical Ratings**

B.1- Manual Transfer Switches shall be rated for single phase 100-240VAC and three phase 208-600VAC.
B.2- Manual Transfer Switch shall be available with an ampacity range of 60-3000A.
B.3- Manual Transfer Switch shall be available in both 3 and 4 pole configurations.

**Enclosure**

C.1- Enclosure shall be NEMA Type 1, 3R, or 4X, wall-mount or free-standing.
C.2- Enclosure material shall be carbon steel with ANSI-61 gray finish or Type 316 stainless-steel.
C.3- Enclosure shall have a front access door with a means for padlocking.
C.4- Enclosure shall have a full gasket for protecting against foreign debris.

**Switching Device**

D.1- The Manual Transfer Switch switching device shall be 3-position and rated for on-load switching.
D.2- The switching device shall have a current rating greater than or equal to the overall switch rating.
D.3- The switching device shall have a UL rating for 60-1200A.

**Switching Handle**

E.1- Manual Transfer Switches shall have an external handle for switching.
E.2- The Manual Transfer Switch handle shall have the appropriate NEMA rating to maintain the overall enclosure rating.
E.3- The Manual Transfer Switch handle shall be interlocked with the enclosure door to prevent opening while in either “ON” position.
E.4- The Manual Transfer Switch handle shall be padlockable in every position.

**Busbar**

F.1- When used, busbar shall be tin-plated copper.
F.2- Busbar shall be sized at 1000A/sq. in.

**Lugs**

G.1- Lugs for permanent conductors shall be aluminum, dual rated, with a mechanical screw.
G.2- Lugs for field wiring shall be sized at a minimum 125% of the transfer switch’s rated ampacity.

**Fuseblocks**

H.1- Fuseblocks or fuseholders shall be installed in fusible switch applications.
H.2- Fuseblocks shall be sized for the appropriate current and voltage rating.
H.3- Stand-alone fuseblocks shall be installed in switches rated 60-600A when required.
H.4- 800-3000A fuseholders shall be made as a combination of busbar, insulators, and lugs.
H.5- Fuseholder busbar ampacity shall be sized for the appropriated switch rating.
I. Fuses

I.1- Fuses shall be provided if purchased.
I.2- Class RK5 fuses shall be installed in switches for 240VAC applications rated 60-600A.
I.3- Class J fuses shall be installed in switches for 480VAC applications rated 60-600A.
I.4- Class L fuses shall be installed for 480VAC applications rated 800-3000A.

Short Circuit Rating at 600 Volts (kAIC)

<table>
<thead>
<tr>
<th>Switch Size</th>
<th>100 Amp</th>
<th>200 Amp</th>
<th>400 Amp</th>
<th>600 Amp</th>
<th>800 Amp</th>
<th>1200 Amp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Voltage</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Short Circuit Rating kAIC</td>
<td>100</td>
<td>100</td>
<td>65</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Type of Fuse Class</td>
<td>J</td>
<td>J</td>
<td>J</td>
<td>L</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td>Max Fuse Rating in Amps</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>1600</td>
</tr>
<tr>
<td>Short Circuit rating with Breaker</td>
<td>10/25</td>
<td>10/25</td>
<td>14/50</td>
<td>35/50</td>
<td>35/50</td>
<td>35/50</td>
</tr>
</tbody>
</table>

J. Cam-Lok Receptacles

Note: If Cam-Lok are installed on the transfer switch, the Short Circuit Withstand Rating will be 10kAIC

I.1- Cam-Lok receptacles shall be insulated single pole, Cooper E1016 series, male or female with a single threaded stud connection
I.2- Cam-Lok receptacles shall be color coded for each phase depending upon system voltage

Phase Conductors
208-240VAC-Black, Red, Blue
480VAC-Brown, Orange, Yellow
575/600VAC-Black, Black, Black
Neutral Conductor-White
Ground Conductor-Green

I.3- Ground Cam-Lok receptacles shall be bonded to the enclosure.
I.4- Cam-Lok receptacles shall be mounted on the enclosure wall with protective flip covers.
I.5- The external arrangement for Cam-Lok receptacles shall be phase conductors, neutral if provided, and ground. This arrangement shall be from top-bottom or left-right.
I.6- The internal bussing from Cam-Lok receptacle to Manual Transfer Switch landing tab shall be Erico Flexibar.
III. Execution

A Installation

A.1- The Manual Transfer Switch shall be installed correctly according to the provided manual and in an appropriate location.
A.2- Installation shall be in accordance with all applicable codes and standards

B Cable-Entry

B.1- Enclosure penetrations for cable entry shall be used with appropriate components to maintain the specified NEMA rating.

C Use

C.1- When the Manual Transfer Switch is properly installed and ready for operation, the end-user should follow all operation instructions specified in the included manual.