



## MANUAL TRANSFER SWITCH SPECIFICATION

### I. General

#### A. Scope

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

A.2- Manual Transfer Switches provided by PSI Control Solutions shall be completely assembled by a certified ISO facility. PSI Control Solutions is ISO9001:2008 certified. Number-C0098005-IS1.

#### 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.



## B 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.

## C 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.

## D 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.

## E 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

## F Busbar

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

## G 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.

## H 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)

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

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.