MANUAL TRANSFER SWITCH SPECIFICATION

1. 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.

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.

1. 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.

1. 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.