



MANUAL TRANSFER SWITCH SPECIFICATION

60–3000 Amp
2, 3 & 4 Pole



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KDoc_001 Rev A

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1 GENERAL

1.1 SCOPE

This specification defines the requirements for Manual Transfer Switches designed and manufactured by Kratos Industries.

1.2 PURPOSE

1. The purpose of the Kratos Manual Transfer Switch is to manually transfer power to an alternate source such as a back-up generator. This requires a physical interaction with the Kratos Manual Transfer Switch as it will not transfer power automatically in the event of a power outage.
2. By choosing the appropriate options, the Kratos Manual Transfer Switch can be installed indoors or outdoors. NEMA 1 is the minimum rating for indoor application while NEMA 3R, 4, and 4X are suitable for outdoor use. NEMA 4X is also wash-down rated.
3. The Kratos 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.

1.3 QUALITY

1. Kratos Manual Transfer Switches shall be completely assembled and pass a functional test procedure before shipment. This test shall be documented and included with the Kratos Manual Transfer Switch.
2. Manual Transfer Switches shall be built in accordance with NEC requirements.

1.4 WARRANTY

1. Kratos Industries warrants that the products it manufactures and delivers hereunder will be free from defects in material and workmanship for a period of twelve (12) months after date of installation or (18) months from date of shipment, whichever occurs first.
2. A Kratos Factory Extended Warranty can be supplied as an optional added cost at time of purchase.

2 PRODUCT REQUIREMENTS

2.1 GENERAL

1. All components shall be new and free of defects.
2. All components used in UL-labeled Manual Transfer Switches shall be UL-listed or recognized.
3. Kratos Manual Transfer Switches are UL 508a labeled to 1200A.

2.2 ELECTRICAL RATINGS

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

2.3 ENCLOSURE

1. Enclosure shall be NEMA Type 1, 3R, or 4X, wall-mount or free-standing.
2. Enclosure material shall be carbon steel with ANSI-61 gray finish or 304 stainless-steel as a standard for 4X, with an option of 316 stainless-steel.
3. Enclosure shall have a front access door supplied with (1) keyed lock standard and additional key-matched locks as an option.
4. Type 3R enclosures shall be provided with a drip hood and drain hole in bottom of enclosure.
5. All Enclosures provided with a gasketed door.

2.4 SWITCHING DEVICE AND OPERATOR HANDLE

1. The Kratos Manual Transfer Switch switching device shall be 3-position and rated for on-load switching.
2. The switching device shall have a current rating greater than or equal to the overall switch rating.
3. The switching device shall have a UL1008 rating for 60-1200A.
4. Manual Transfer Switches shall have an external handle for switching.
5. The Kratos Manual Transfer Switch handle shall have the appropriate NEMA rating to maintain the overall enclosure rating.
6. The Kratos Manual Transfer Switch handle shall be interlocked with the enclosure door to prevent opening while in either "ON" position.
7. The Kratos Manual Transfer Switch handle shall be padlockable in every position.

2.5 BUSSBAR

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

2.6 LUGS

1. Lugs for permanent conductors shall be aluminum, dual rated, with a mechanical screw. Check drawing for lug sizing for your particular Transfer Switch.
2. Lugs for field wiring shall be sized at a minimum 125% of the transfer switch's rated ampacity.

2.7 FUSE BLOCKS

1. Fuse blocks or fuse holders shall be installed in fusible switch applications.
2. Fuse blocks shall be sized for the appropriate current and voltage rating.
3. Stand-alone fuse blocks shall be installed in switches rated 60-600A when required.
4. 800-3000A fuse holders shall be made as a combination of busbar, insulators, and lugs.
5. Fuse holder busbar ampacity shall be sized for the appropriated switch rating.

2.8 FUSES

1. Fuses are furnished separately and will need to be installed prior to product startup and commissioning.
2. Class R fuses shall be installed in switches for 240VAC applications rated 60-600A.
3. Class J fuses shall be installed in switches for 480/600VAC applications rated 60-600A.
4. Class L fuses shall be installed for 480VAC applications rated 800-3000A.

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	J	L	L
Max Fuse Rating in Amps	200	400	600	800	1000	1600

Figure 1: Short Circuit Rating at 600 Volts (kAIC)

2.9 CAM-LOK RECEPTACLES (OPTIONAL)

NOTE: If Cam-Lok are installed on the transfer switch, the Short Circuit Withstand Rating will be 10Kaic.

1. Cam-Lok receptacles shall be insulated single pole, Cooper E1016 series (or equal), male or female with a single threaded stud connection.



Figure 2: Cooper E1016 series Cam-Lok Receptacle

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

3. Ground Cam-Lok receptacles shall be bonded to the enclosure.
4. Cam-Lok receptacles shall be mounted on a non-conductive material with nylon hardware to reduce potential eddy currents.
5. Cam-Lok receptacles shall be mounted on the enclosure wall with protective flip covers.
6. 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.
7. The internal bussing from Cam-Lok receptacle to Manual Transfer Switch landing tab shall be standard or flexible copper bus.

3 FIELD INFORMATION

3.1 INSTALLATION

1. The Kratos Manual Transfer Switch shall be installed correctly according to the provided manual and in an appropriate location.
2. Installation shall be in accordance with all applicable codes and standards and performed by a licensed electrician, failing to do so may void your warranty.

3.2 CABLE-ENTRY

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

3.3 USE

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