Section: 263623 Automatic Transfer Switch Molded Case \_Direct Current

1. GENERAL
	1. Quality Assurance
		1. Electrical Components, Devices and Accessories: Built in accordance to NFPA 70, Article 100, for emergency service under U.L. 1008.
	2. Submittals
		1. Product Data: Include ratings and dimensioned plans, sections, and elevations showing minimum clearances, conductor entry provisions, gutter space, installed features and devices, and material lists for each switch specified.
		2. Drawings: Outline, Schematic and Part Layout drawings shall be provided for each switch. Drawings shall differentiate between manufacturer-installed and field installed wiring. Show both power and control wiring.
		3. Maintenance Data: For each type of product, include maintenance manuals as specified in Division One. Include all features and operating sequences, both automatic and manual. List all factory settings of relays and provide relay setting and calibration instructions, including software, where applicable to be supplied by others.
	3. GUARANTEE/WARRANTY
		1. The equipment installed under this contract shall be left in proper working order.
		2. New materials and equipment shall be guaranteed against defects in composition, design, or workmanship. Guarantee certificates shall be furnished.
2. PRODUCT
	1. Automatic Transfer Switch Direct Current
		1. Manufacturers: Subject to compliance with requirements, provide products by the following:
			1. Lake Shore Electric, LLC.: Automatic Transfer Switch Direct Current
			2. Lake Shore Electric, LLC. Part No.: [[Insert Part Number](https://lake-shore-electric.com/wp-content/uploads/DC-Transfer-Switch_2.pdf)]
			3. Lake Shore Electric, LLC, https://wwww.lake-shore-electric.com/ and/or sales@lake-shore-electric.com
3. GENERAL REQUIREMENTS
	1. Transfer Switch Construction and General Product Requirements
		1. The automatic transfer switch shall be 100% rated for continuous duty and suitable for use in emergency situations. Apply as defined in UL 1008 for continuous loading and total system transfer.
		2. The complete automatic transfer switch shall built in accordance to U.L. 1008 for use on emergency systems.
		3. Four Pole automatic transfer switches shall have all four poles of equal construction including, among other characteristics, arcing contacts, main contacts, and arc chutes.
		4. The automatic transfer switch shall be rated to withstand the RMS symmetrical short circuit fault current available at the transfer switch as shown on the drawings.
		5. The automatic transfer switch shall be positively and reliably interlocked to prevent both sources from being simultaneously connected to the load unless intended.
		6. The automatic transfer switch shall be mechanically held and electrically operated. It shall consist of two molded case switches and motor operator. Connection to the transfer mechanism shall be accomplished by a simple over-center toggle mechanism of the switches, which shall mechanically lock the main contacts in place. Main contacts shall be fully rated, self-wiping, and arc quenching. Separate arcing contacts with magnetic blowouts shall be provided.
		7. The automatic transfer switch shall be provided with a permanently attached means to operate the switch without the use of special tools, devices, or fixtures. The manual operating means shall provide safety to operators performing transfer under load. The manual operator shall transfer the switch with the same contact-to-contact transfer speed as an electrical operator. The transfer switch shall be “Load Break” rated when manually operated. The inability to manually operate the transfer switch without first disconnecting loads will not be acceptable.
		8. The transfer switch shall be accessible from either top or bottom entry into the enclosure. All control components and wiring shall be front accessible
	2. Transfer Switch
		1. All controls shall be of the electromechanical design.
		2. Undervoltage relay on the normal power source. Relay to energize when automatic transfer switch normal voltage is within optimum operating range.
		3. Normal Source Available Relay- This mechanical relay shall be used to energize when the normal power is available to determine if the automatic transfer switch shall be on emergency or normal source.
		4. Load test Switch- The switch shall allow for load test on the automatic transfer switch by transferring load from normal source to emergency source.
		5. Time Delay to Emergency- The timer shall provide a short time delay before the system transfers load to the emergency source.
	3. Additional Accessories, Equipment and Features
		1. Auxiliary Contacts Source Available: Dry contacts consisting of two normally open and two normally closed contacts shall be provided to indicate source available.
		2. Auxiliary Contact Before Transfer: Dry contacts consisting of two normally open and two normally closed contacts shall be provided to indicate that the transfer switch is about to transfer. A Time Delay Before Transfer timer shall also be provided and incorporated in the HMI for display and setting of this timer.
		3. A Plant Exerciser shall be provided to provide for the regular automatic exercising of the Emergency Power System on a pre-selected schedule at field adjustable periods. The controller shall allow exercising with load or without load. In the event of an engine-generator failure, when operating in the plant exerciser mode, the automatic transfer switch shall immediately return to the normal source, if available.
		4. Manual Transfer Switch Option- Removal of the automatic transfer switch controls
		5. Electrical Assist (Only Available with manual transfer switch option): Provides for electrical operation of a manual transfer switch. This operation is through pushbuttons that allow an operator to signal the manual transfer switch when to operate. This accessory does not automatically start the engine or transfer upon a power failure.

1. Enclosure:
	1. The transfer switch shall be enclosed in an NEMA Standards Publication 250, Type [1 or 3R] wall mounted or free standing enclosure constructed from 14 gauge steel unless otherwise shown on the drawings or elsewhere herein.
	2. Front door shall be Pad- Lockable.
		1. Finishes:
			1. Paint after fabrication. Powder coated ANSI 61 Gray, Textured.
2. EXECUTION
	* 1. EXAMINATION
			1. Examine elements and surfaces to receive Automatic Transfer Switch for compliance with installation tolerances and other conditions affecting performance of the Work.
		2. INSTALLATION
			1. Surface, Flush or Base Mounted: Determined by Application
			2. Install anchor bolts to elevations required for proper attachment Automatic Transfer Switch.
		3. FIELD QUALITY CONTROL
			1. Third Party Tests and Inspections to include the following:
			2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
			3. Prepare test and inspection reports, including a certified report that Automatic Transfer Switch and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

END OF SECTION:263623 Automatic Transfer Switch Molded Case