Section: 263613 Manual Transfer Switch- Molded Case Switch

1. GENERAL
	1. Quality Assurance
		1. Electrical Components, Devices and Accessories: Listed and labeled to U.L. 1008, by a testing agency acceptable to authorities having jurisdiction.
		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. Product Certificates: Signed by manufacturer certifying that products furnished comply with requirements and that switches have been tested for load ratings and short-circuit closing and withstand ratings applicable to units for project.
			4. 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.
	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. Manual Transfer Switch
		1. Manufacturers: Subject to compliance with requirements, provide products by the following:
			1. Lake Shore Electric, LLC.: Manual Transfer Switch
			2. Lake Shore Electric, LLC. Part No.: [[Insert Part Number](https://lake-shore-electric.com/wp-content/uploads/Manual-Transfer-Switch_1.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 manual 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, including tungsten filament lamp load not exceeding 30 percent of switch ampere rating, unless otherwise indicated.
		2. Transfer switch internal switching devices shall be a molded case switch.
		3. The complete manual transfer switch shall be listed under U.L. 1008 for use on emergency systems.
		4. Four Pole manual transfer switches shall have all four poles of equal construction including, among other characteristics, arcing contacts, main contacts, and arc chutes. A neutral assembly shall be provided on all 3-pole switches when required.
		5. The manual transfer switch shall be rated to withstand the RMS symmetrical short circuit fault current shown on the drawings. The manufacturer shall provide certification of compliance to all U.L. 1008 Standards referred to above.
		6. The manual transfer switch shall be positively and reliably interlocked to prevent both sources from being simultaneously connected to the load unless intended.
		7. The manual transfer switch shall be mechanically held and manually operated. It shall consist of two molded case switches and manual 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.
		8. The manual 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.
		9. The transfer switch shall be accessible from either top of bottom entry into the enclosure. All control components and wiring shall be front accessible
	2. Transfer Switch Controls – Manual Transfer Switch to be operable with door closed (if applicable).
	3. Manual Transfer Switch Features
		1. Thermostatically Controlled Strip Heater shall be provided on all NEMA 3R Enclosed switches.
	4. Additional Accessories, Equipment and Features Required
		1. Service Entrance Rated: The complete manual transfer switch shall be properly labeled, and U. L. 1008 listed as suitable for use as service entrance equipment. A LED lights shall be provided on the enclosure door to indicate “Normal Tripped” or “Emergency Tripped” as necessary. Also included shall be over current trip on service source, lock out – tag out provisions, Neutral bus with link, lugs, ground bonding and jumper strap, appropriate markings and service entrance disconnecting device. A dual operator transfer switch shall be provided.
		2. Draw Out Elements: The Normal and Emergency insulated case switch shall have the be mounted on extension rails and are equipped with a racking mechanism for removal of the switch element from the assembly.
		3. Ground Fault Protection: Ground Fault Protections shall be provided where required by U.L. and/or NEC Article 230. Upon detection of a ground fault, a light will display the fault, appropriate source will be disconnected from load, and the trouble contacts shall change state. Transfer switch must be manually reset after the ground fault is cleared.
		4. Ground Fault Indication: Ground Fault Indication shall be provided where required by U.L. and/or NEC Article 230. Upon detection of a ground fault, a light on the enclosure door will display the fault; however, operation of the transfer switch will not be terminated.
		5. Surge Suppression: Secondary Surge Suppressors shall be provided on both Normal and Emergency sources.
		6. Shunt Trips: A Shunt Trip shall be provided on the (Normal or Emergency) source with terminal blocks for remote activation.
		7. Overcurrent Protection: Overcurrent protection shall be provided on the (Normal or Emergency) source with “tripped” LED indication on the enclosure door.
		8. Auxiliary Contacts Source Available: Dry contacts consisting of two normally open and two normally closed contacts shall be provided to indicate source available.
		9. Auxiliary Contacts Switch Position: Dry contacts consisting of two normally open and two normally closed contacts shall be provided to indicate switch position.
		10. Electrical Assist: 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.
		11. Pilot Lights: Provides two LED indicating lights mounted on the exterior of the transfer switch enclosure, showing the position of the switch or the available sources. Pilot Lights may also be mounted at any remote location.
4. 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:

Paint after fabrication. Powder coated ANSI 61 Gray, Textured.

1. EXECUTION
	* 1. EXAMINATION
			1. Examine elements and surfaces to receive Manual 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 to Manual 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 identifies Manual Transfer Switch and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

END OF SECTION: 263613 MANUAL TRANSFER SWITCH-MOLDED CASE SWITCH