

SERIES 300

Manual Transfer Switch

with Integrated Quick Connects (MTQ) and

Integrated Breakers (MUQ, MGQ, and MPQ)

H-design, 800 through 1200 Amperes

Operator's Manual

381333-479 A
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Safety Information

Important information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that accompany this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury

WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury

NOTICE

NOTICE is used to address practice not related to physical injury. The safety alert symbol shall not be used with the signal word

Please note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by ASCO POWER TECHNOLOGIES for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Safety Precautions

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA70E, CSA Z462 or NOM-029-STPS.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplying this equipment before working on or inside equipment.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors and covers before turning on power to this equipment.

Failure to follow these instructions will result in death or serious injury.

This manual contains information critical to proper installation and operation of the SERIES 300 Manual Transfer Switches. Be certain to read and understand all instructions prior to installation and operation.

Limited Warranty

When the SERIES 300 Manual Transfer Switches is installed and operated, according to the manual instructions, ASCO Power Technologies will repair or replace any of its mechanical or electrical parts if they are found to be defective in material or workmanship within two years of the shipment date. For further details refer to ***Limited Warranty for Series 150, 200, 300 and 4000 Power Transfer Switches*** (381339-334)

Maintenance

The SERIES 300 Manual Transfer Switches require maintenance. ASCO Power Technologies recommends annual inspections to keep the equipment in safe operating condition. ASCO Power Technologies recommends that the Pre-Operation and Preventive Maintenance Checklist serve a basis for annual inspection.

Technical Support

ASCO Power Services, Inc. are available to assist in resolving issues by calling 1-800-800-2726 (ASCO) or by emailing customercare@ascopower.com for any additional information, please refer to ascopower.com.

Catalog Number Identification

A typical Catalog Number is shown below with its elements explained. The example is for a H–design, solid neutral, 3 poles, 800 amps, in Type 3R enclosure:

<u>H</u>	<u>03MTQ</u>	<u>A</u>	<u>3</u>	<u>0800</u>	<u>N</u>		<u>00</u>	<u>M</u>
Frame	Product*	Neutral Code	Phase Poles	Amperes	Voltage		Group Code	Enclosure
J	03MTQ	A-solid	2	0800	A-115	K-415	00-No Accessory	M- Type 3R Secure
	03MUQ	B-switched	3	1000	B-120	L-440	0X-Accessory	S- Type 3RX
	03MGQ	0-none		1200	C-208	M-460		Secure (316) SS
	03MPQ				D-220	N-480		
					E-230	P-550		
					F-240	Q-575		
					H-380	R-600		
					J-400			

*Product Descriptions

03MTQ - Manual Transfer Switch with Quick Connect on Generator

03MUQ - Manual Transfer Switch with Service Entrance Breaker On Utility and Quick Connects on Generator

03MGQ - Manual Transfer Switch with Breaker and Quick Connects on Generator

03MPQ - Manual Transfer Switch with Service Entrance Breaker On Utility and Breaker with Quick Connects on Generator

Installation

SERIES 300 Manual Transfer Switches (MTQ, MUQ, MGQ and MPQ) are factory assembled and tested. Installation requires mounting, connecting power conductors and auxiliary control circuits (if required).

Supporting Foundation

The supporting foundation for the enclosure must be level and straight. Refer to the applicable enclosure outline drawing included with the transfer switch for all mounting details including door opening space..

If bottom cable entry is used, the foundation must be prepared so that the conduit stubs are located correctly. Refer to the enclosure outline drawing for specified area and location. Provide clearance between field installed conductors and parts of the transfer switch. When a concrete floor is poured, use interlocking conduit spacer caps or a wood or metal template to maintain proper conduit alignment.

Mounting

Refer to the outline drawing furnished with this switch and mount the SERIES 300 Manual Transfer Switch according to details and instructions shown.

NOTE: To prevent carbon monoxide poisoning from improperly ventilated generator emissions, the power panel must **ONLY** be mounted outdoors away from any building openings or HVAC inlets.

Mount the SERIES 300 Manual Transfer Switch to a rigid supporting structure. Level all mounting points by using flat washers behind the mounting hole locations to avoid distortion of the switch.

Line Connections

Refer to the wiring diagram provided with quick connect panel. All wiring must be made in accordance with the National Electrical Code and local codes.

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- De-energize the conductors before making any line or auxiliary circuitry connections.
- Be sure that Source 1 and Source 2 line connections are in proper phase rotation.
- Place engine generator starting control in the OFF position.
- Make sure engine generator is not in operation.

Failure to follow these instructions will result in death or serious injury

Testing Power Conductors

Do not connect the power conductors to the transfer switch until they are tested. Installing power cables in conduit, cable troughs and ceiling-suspended hangers often requires considerable force. The pulling of cables can damage insulation and stretch or break the conductor's strands. For this reason, after the cables are pulled into position, and before they are connected, they should be tested to verify that they are not defective or have been damaged during installation.

Connecting Power Conductors

After the power conductors have been tested, connect them to the appropriate terminals on the transfer switch as shown on the wiring diagram provided. Make sure the conductors being installed are suitable for use with the terminals provided on the transfer switch. Standard terminals are solderless, screw type and will accept the wire sizes and types listed on the drawings provided with the transfer switch. Be careful when stripping insulation from the cables; avoid nicking or ringing the conductor. Remove surface oxides from conductors by cleaning with a wire brush. When aluminum conductors are used, apply joint compound to them. Tighten terminals to the torque specified on the rating label.

Cam-Lok Cable Connections & Disconnection

⚠ DANGER

RISK OF ELECTRIC SHOCK.

- Terminals are energized when cables are connected.
- Do not connect or remove connectors until cables are de-energized.
- Connections to be made by qualified personnel only.

Failure to follow these instructions will result in death or serious injury.

Cam-Lok Connections

1. Install Cam-Lok cables as per manufacturer's instructions beginning with ground conductors.

⚠ WARNING

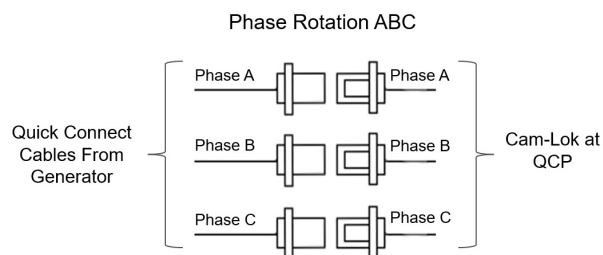
RISK OF ELECTRIC SHOCK.

- Plug connection must be made in the following order:
 1. Equipment-grounding conductor connection(s)
 2. Grounded circuit conductor connection(s)
 3. Ungrounded conductor connection(s)
- Plug disconnection to be in reverse order.
- Connections to be made by qualified personnel only.

Failure to follow these instructions could result in death or serious injury

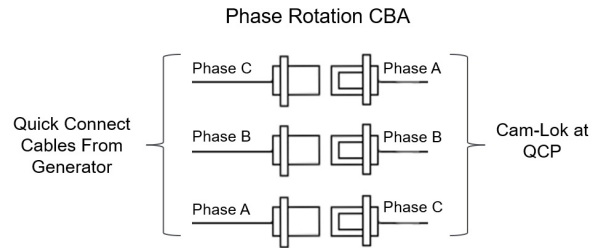
2. Determine the Utility Phase Rotation
 - a) Utility's Phase Rotation ABC (Figure 1):
 - Gen A-Phase to Cam-Lok A-Phase
 - Gen B-Phase to Cam-Lok B-Phase
 - Gen C-Phase to Cam-Lok C-Phase

Figure 1. Phase Rotation ABC



- b) Utility's Phase Rotation CBA (Figure 2):
 - Gen A-Phase to Cam-Lok C-Phase
 - Gen B-Phase to Cam-Lok B-Phase
 - Gen C-Phase to Cam-Lok A-Phase

Figure 2. Phase Rotation CBA



3. Configure phase rotation (when provided) to match the Utility phase Sequence ABC or CBA as per the wiring provided
4. Open the utility circuit breaker (off position).
5. Start Generator.
6. Check phase rotation indication on the Transfer Switch (when provided).
 - The Phase Rotation LED will illuminate if the phase sequence matches the utility sequence as configured above.
 - If the LED does not illuminate or illuminates solid red, it indicates Phase Loss or Phase Reversal.
7. Close the utility circuit breaker (on position).

Cam-Lok Disconnection

1. Shut down the generator.
2. Open Breaker before removing Cam-Lok cables (when provided).
3. Disconnection of the Cam-Lok Cabling is done in the reverse order of connecting with the ground disconnected last.
4. Plug disconnection must be made in the following order:
 - 1) Ungrounded conductor connection(s)
 - 2) Grounded circuit conductor connection(s)
 - 3) Equipment-grounding conductor connection(s)

Manual Operation Procedure

The SERIES 300 Manual Transfer Switch has an external manual operating handle on the front left of the enclosure. Observe the switch position indicators - SOURCE 1, SOURCE 2 and DISCONNECTED. See Figures 3, 4, 5 and 6.

⚠ WARNING

RISK OF ELECTRIC SHOCK.

Close the transfer switch enclosure door and tighten the screws before you use the manual operating handle.

Failure to follow these instructions could result in death or serious injury

Operate the manual operating handle to DISCONNECT the load or transfer to SOURCE 1 or SOURCE 2. The selected switch position is indicated with a yellow indicator window. See Figures 3, 4, 5 and 6.

1. Provisions for a padlock allow the manual operating handle to be locked in the SOURCE 1, SOURCE 2 or DISCONNECTED position.

Operation of the Transfer Switch

⚠ DANGER

RISK OF ELECTRIC SHOCK.

- Operate the transfer switch only with the enclosure door closed.
- Connections to be made by qualified personnel only.

Failure to follow these instructions will result in death or serious injury

To Transfer from **SOURCE 1** to **DISCONNECTED**:

Figure 3. DISCONNECTED (from SOURCE 1) position indicator

Pull handle out.
Turn handle
counterclockwise
until
DISCONNECTED
position is
indicated.



To Transfer from **DISCONNECTED** to **SOURCE 2**:

Figure 4. SOURCE 2 position indicator

Push handle in.
Turn handle
counterclockwise
until
SOURCE 2
position is
indicated



To Transfer from **SOURCE 2** to **DISCONNECTED**:

Figure 5. DISCONNECTED (from SOURCE 2) position indicator

Push handle in.
Turn handle
clockwise
until
DISCONNECTED
position is
indicated.



To Transfer from **DISCONNECTED** to **SOURCE 1**:

Figure 6. SOURCE 1 position indicator

Pull handle out.
Turn handle
clockwise
until
SOURCE 1
position is
indicated



Testing & Service

Transfer Test

Operate the equipment monthly to ensure proper operation.

Preventive Maintenance

Reasonable care in preventive maintenance will insure high reliability and long life for the SERIES 300 MTQ/MUQ/MPQ/MGQ

An annual preventive maintenance program is recommended.

ASCO Power Services, Inc. is ASCO Power Technologies service organization for the United States and Canada. Call 1-800-800-2726 (ASCO) to request a service call and information on preventive maintenance agreements.

Inspection Checklist

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA70E.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplying this equipment before working on or inside equipment.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors and covers before turning on power to this equipment.

Failure to follow these instructions will result in death or serious injury.

- **Clean the enclosure.** Wipe and vacuum away any excessive dust accumulation. Remove moisture with a clean cloth.
- **Perform breaker maintenance** per manufacturers recommendation.
- **Check the transfer switch contacts.** The non-replaceable main contacts are designed to last the life of the transfer switch. Contact ASCO Power Services Inc. if any concerns about the transfer switch contacts.
- **Maintain transfer switch lubrication.** Under normal operating conditions no further lubricating is required. Renew factory lubrication if the switch is subjected to severe dust or abnormal operating conditions.
- **Check all cable connections** by either thermal measuring or monitoring, or mechanical check. If any connections are loose, retighten them.

California Proposition 65 Warning—Lead and Lead Compounds

Advertencia de la Proposición 65 de California—Plomo y compuestos de plomo

Avertissement concernant la Proposition 65 de Californie—Plomb et composés de plomb



WARNING: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to: www.P65Warnings.ca.gov



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