Enclosed Contact Power Switching Units

- Service entrance automatic transfer switches incorporate an isolating mechanism and overcurrent protection on the utility supply, eliminating the need to have a separate, upstream utility source circuit breaker/disconnect switch.
- UL 1008 Automatic Transfer Switch Equipment for use in Emergency Systems, File #E58962
- IBC seismic certification available (ICCB models only)
- Fully enclosed silver alloy contacts provide high withstand rating.
- 3-cycle short circuit current withstand-tested allows use of non-series rated upstream protection devices.
- Completely separate utility and generator set side power switching units provide superior reliability through redundancy (no common parts) and excellent serviceability.
- Power switching units can incorporate overcurrent protection, allowing cost savings in upstream devices.
  - Molded case circuit breakers (MCCB) include thermal-magnetic or electronic trip overcurrent protection (80% rated).
  - Molded case switches (MCSW) do not include overcurrent protection (100% rated).
  - Insulated case circuit breakers (ICCB) include electronic trip overcurrent protection (100% rated).
  - Insulated case switches (ICSW) do not include overcurrent protection (100% rated).
- Inherent stored-energy design prevents damage if manually switched while in service.
- Heavy duty brushless gear motor and operating mechanism provide mechanical interlocking and extreme long life with minimal maintenance.
- Safe manual operation permits easy operation even under adverse conditions.
- All mechanical and control devices are visible and readily accessible.

MPAC™ 1500 Controller

Standard Features

- Microprocessor-based controller
- Environmentally sealed user interface
- LCD display, 4 lines x 20 characters, backlit
- Dynamic function keypad with tactile feedback pushbuttons allows complete programming and viewing capability at the door
- LED indicators: Source available, transfer switch position, service required (fault), and “not in auto”
- Broadrange voltage sensing (208–480 VAC) on all phases
- Phase-to-phase sensing and monitoring with 0.5% accuracy on both sources
- Frequency sensing with 0.5% accuracy on both sources
- Anti-single phasing protection
- Phase rotation sensing for three-phase systems
- Real-time clock with automatic adjust for daylight saving time and leap year
- Time-stamped event log
- Fail-safe transfer for loaded test and exercise functions
- DIP switches: password disable and maintenance
- Modbus® RTU and Modbus® TCP/IP protocols (Modbus® register map available)
- RJ45 connector for 10/100 ethernet connection
- USB port with read/write compatibility
- Isolated RS-485 ports
- One-year limited warranty

Programmable Features

- Programming and monitoring methods:
  - Monitoring and password-protected programming at the door using the keypad and display
  - Program and monitor using a PC with Monitor III integrated generator set and ATS monitoring software
  - Transfer files through the USB port
- System voltage and frequency
- ABC/BAC/none phase rotation selection with error detection
- Voltage unbalance
- Over/undervoltage and over/underfrequency for all phases of the normal and emergency sources
- Load/no load/auto-load test sequences
- Load/no-load exercise functions
- Load bank control for exercise or test
- Adjustable time delays
- Time- and current-based* load control outputs
- Pre/post-transfer, nine individual time delays for selected loads
- Programmable inputs and outputs
- Selectable operating modes: utility/generator, utility/utility, or utility/gen/gen for three-source system
- Resettable historical data
- Password protection, three security levels
- * Requires current sensing kit.
Description

- The service entrance automatic transfer switch requires upstream overcurrent protection on the generator supply.
- Standard features of the service entrance rated automatic transfer switch include a NEMA 1 rated enclosure, padlockable service disconnect control switch and status indicators.
- Normal operation and performance of the automatic transfer switch is unaffected by the service entrance ATS feature.
- Designed and certified to the UL 1008 standard and complies with NEC and NFPA requirements for use in emergency power system applications such as commercial, industrial, or government institutions that require automatic standby power.

Control Circuit Isolation Switch

Two-position switch disconnects utility power to the transfer switch controller. (The operator must open the generator set circuit breaker and/or disable the generator set to remove power from the controller before servicing.)

Service Disconnect Switch

Two-position switch with padlockable cover disconnects the normal source and inhibits transfer during maintenance or service.
- Service disconnect transfers to the emergency source, disconnecting the load from the utility source.
- Engine start signal is activated. The operator must open the generator set circuit breaker and/or disable the generator set to remove power from the load.
- Further transfer is inhibited after transfer to Emergency.
- Controller display shows SERVICE DISCONNECT.
- Lamp illuminates to indicate that the switch is in the DISCONNECT position.

Environmental Specifications

- Storage temperature: -20°C to 70°C (-4°F to 158°F)
- Operating temperature: -15°C to 50°C (5°F to 122°F)
- Humidity: 95% non-condensing, maximum

Codes and Standards

The ATS meets or exceeds the requirements of the following specifications:
- EN61000-4-4 Fast Transient Immunity Severity Level 4
- EN61000-4-5 Surge Immunity Class 4 (voltage sensing and programmable inputs only)
- IEC Specifications for EMI/EMC Immunity:
  - CISPR 11, Radiated Emissions
  - IEC 1000-4-2, Electrostatic Discharge
  - IEC 1000-4-3, Radiated Electromagnetic Fields
  - IEC 1000-4-4, Electrical Fast Transients (Bursts)
  - IEC 1000-4-5, Surge Voltage
  - IEC 1000-4-6, Conducted RF Disturbances
  - IEC 1000-4-8, Magnetic Fields
  - IEC 1000-4-11, Voltage Dips and Interruptions
- IEC 60947-6-1, Low Voltage Switchgear and Control Gear; Multifunction Equipment; Automatic Transfer Switching Equipment
- IEEE Standard 446, IEEE Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications
- IEEE 472 (ANSI C37.90A) Ring Wave Test
- NEMA Standard ICS 10-2005, Electromechanical AC Transfer Switch Equipment
- NFPA 70, National Electrical Code
- NFPA 99, Essential Electrical Systems for Health Care Facilities
- NFPA 110, Emergency and Standby Power Systems
- Underwriters Laboratories UL 508, Standard for Industrial Control Equipment
- Underwriters Laboratories UL 1008, Standard for Automatic Transfer Switches for Use in Emergency Standby Systems file #58962

Ratings

<table>
<thead>
<tr>
<th>Interrupting Capacity Current Rating</th>
<th>With Integral Overcurrent Protection *</th>
<th>Voltage, Max.</th>
<th>Amps RMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Switching Device</td>
<td>Switch Rating, Amps</td>
<td>@ 240 V</td>
<td>@ 480 V</td>
</tr>
<tr>
<td>Molded case</td>
<td>100</td>
<td>600</td>
<td>65,000</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>600</td>
<td>65,000</td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>240</td>
<td>65,000</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>600</td>
<td>65,000</td>
</tr>
<tr>
<td></td>
<td>400</td>
<td>600</td>
<td>65,000</td>
</tr>
<tr>
<td>Insulated case</td>
<td>600</td>
<td>600</td>
<td>100,000</td>
</tr>
<tr>
<td></td>
<td>800</td>
<td>1000</td>
<td>1200</td>
</tr>
<tr>
<td></td>
<td>1200</td>
<td>1600</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2000</td>
<td>2500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* With molded case/insulated case switching devices equipped with integral overcurrent protection.

Auxiliary Position-Indicating Contacts

<table>
<thead>
<tr>
<th>MCCB Models</th>
<th>Use programmable digital outputs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICCB Models</td>
<td>3 Normal, 2 Emergency Rated 2.5 A @ 24/48 VDC, 6 A @ 480VAC</td>
</tr>
</tbody>
</table>

Typical Single-Line Diagram

![Typical Single-Line Diagram](image-url)
MPAC™ 1500 Controller Features

User Interface LED Indicators
- Power switching device position: source N and source E
- Source available: source N and source E
- Service required (fault indication)
- Not in automatic mode

LCD Display
- System status
- Line-to-line voltage
- Line-to-neutral voltage
- Active time delays
- Source frequency
- Preferred source selection
- System settings
- Common alarms
- Load current, each phase
- Inputs and outputs
- Faults
- Time/date
- Address
- Event history
- Maintenance records
- Exerciser schedule
- Exerciser mode
- Time remaining on active exercise

Dynamic Function Tactile Keypad Operations
- Scroll up/down/forward/back
- Increase/decrease/save settings
- End time delay
- Start/end test and exercise
- Reset fault
- Lamp test

DIP Switches
- Maintenance mode
- Password disable

Event History
- View up to 99 time- and date-stamped events on the display
- Download up to 2000 events with Monitor III software
- Download complete event history file to a PC or a memory device connected to the USB port.

Main Logic Board Inputs and Outputs
- One (1) programmable input
- Two (2) programmable outputs

<table>
<thead>
<tr>
<th>Main Board I/O Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output contact type</td>
</tr>
<tr>
<td>Output contact rating</td>
</tr>
<tr>
<td>I/O terminals wire size range</td>
</tr>
</tbody>
</table>

Communications
- USB port with read/write capability
- Isolated RS-485 ports
- RJ-45 connector for 10/100 ethernet connection
- Modbus® RTU and Modbus® TCP/IP protocols (Modbus® register map available)
- USB Port. Upload or download files from a PC or a memory device through the USB port.
  - Application software
  - Event history files
  - Parameter settings
  - Feature configuration
  - Data log files

USB Data Logger
- Time-stamped voltage and frequency readings
- Minimum and maximum current and voltage readings for a selected time period

Programmable Features
- System voltage, 208-480 VAC *
- System frequency, 60 Hz *
- Single/three-phase operation *
- Preferred source selection
- Phase rotation: ABC/BAC/none selection with error detection
- Voltage and frequency pickup and dropout settings
- Voltage unbalance, enable/disable
- Transfer commit/no commit
- Source/source mode: utility/generator, utility/utility, or utility/gen/gen for three-source system
- Passwords, setup and test
- Time, date, automatic daylight saving time enable/disable
- Time delays (see table)
- Exerciser: calendar mode, loaded or unloaded, up to 21 events
- Test: loaded, unloaded, or auto load (1–60 minutes),
  Remote test: loaded or unloaded
- Automatic override on generator failure (loaded test and exercise)
- Peak shave delay enable/disable
- Current monitoring ‡
- Pre/post-transfer, 9 individual time delays for time-based load control
- Current-based load control settings: high/low current levels and load add/remove priority for 9 separate loads ‡
- Resettable historical data

* System parameters factory-set per order.
‡ Requires optional current sensing kit.

Modbus® is a registered trademark of Schneider Electric.
MPAC™ 1500 Controller Features, continued

Programmable Inputs
- External time delay input
- External battery fault
- External common fault
- Inhibit transfer
- Peak shave/area protection input
- External test
- Three-source system disable

Programmable Outputs
- Chicago alarm control
- Common alarm events
- Power switching device position
- Exercise active
- Fail to open, source1/source2
- Fail to close, source1/source2
- Failure to acquire standby source
- Failure to transfer
- Generator engine start, source N and E
- I/O module faults
- Load bank control
- Load control active (pre/post transfer delay, up to 9 outputs)
- Loss of phase fault, source N and E
- External battery fault
- Non-emergency transfer
- Not in automatic mode
- Over/underfrequency faults, source N and E (generator)
- Over/undervoltage faults, source N and E
- Peak shave/area protection active
- Phase rotation error, source N and E
- Preferred source supplying load
- Software-controlled relay outputs (four maximum)
- Source available, preferred and standby
- Standby source supplying load
- Test active
- Transfer switch auxiliary contact fault
- Transfer switch auxiliary contact open
- Voltage unbalance

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Default</th>
<th>Adjustment Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undervoltage dropout</td>
<td>90% of pickup</td>
<td>75% - 98%</td>
</tr>
<tr>
<td>Undervoltage pickup</td>
<td>90% of nominal</td>
<td>85% - 100%</td>
</tr>
<tr>
<td>Overvoltage dropout *</td>
<td>115% of nominal</td>
<td>106% - 135%</td>
</tr>
<tr>
<td>Overvoltage pickup</td>
<td>95% of dropout</td>
<td>95% - 100%</td>
</tr>
<tr>
<td>Unbalance enable</td>
<td>Disable</td>
<td>Enable/Disable</td>
</tr>
<tr>
<td>Unbalance dropout</td>
<td>20%</td>
<td>5% - 20%</td>
</tr>
<tr>
<td>Unbalance pickup</td>
<td>10%</td>
<td>3% - 18%</td>
</tr>
<tr>
<td>Voltage dropout time</td>
<td>0.5 sec.</td>
<td>0.1 - 9.9 sec.</td>
</tr>
<tr>
<td>Underfrequency dropout</td>
<td>99% of pickup</td>
<td>95% - 99%</td>
</tr>
<tr>
<td>Underfrequency pickup</td>
<td>90% of nominal</td>
<td>80% - 95%</td>
</tr>
<tr>
<td>Overfrequency dropout</td>
<td>101% of pickup</td>
<td>101% - 115%</td>
</tr>
<tr>
<td>Overfrequency pickup</td>
<td>110% of nominal</td>
<td>105% - 120%</td>
</tr>
<tr>
<td>Frequency dropout time</td>
<td>3 sec.</td>
<td>0.1 - 15 sec.</td>
</tr>
</tbody>
</table>

* 690 volts, maximum. Default = 110% for 600 volt applications.

Adjustable Time Delays

<table>
<thead>
<tr>
<th>Time Delay</th>
<th>Default</th>
<th>Adjustment Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine start, Source S2</td>
<td>3 sec.</td>
<td>0 - 6 sec. †</td>
</tr>
<tr>
<td>Engine start, Source S1 (gen/gen)</td>
<td>3 sec.</td>
<td></td>
</tr>
<tr>
<td>Engine cooldown, Source S2</td>
<td>5 sec.</td>
<td></td>
</tr>
<tr>
<td>Engine cooldown, S1 (gen/gen)</td>
<td>2 sec.</td>
<td></td>
</tr>
<tr>
<td>Fail to acquire standby source</td>
<td>1 min.</td>
<td>0 - 60 min.</td>
</tr>
<tr>
<td>Fail to acquire preferred source</td>
<td>1 min.</td>
<td></td>
</tr>
<tr>
<td>Transfer, preferred to standby</td>
<td>3 sec.</td>
<td></td>
</tr>
<tr>
<td>Transfer, standby to preferred</td>
<td>15 min.</td>
<td></td>
</tr>
<tr>
<td>Transfer, off to standby</td>
<td>1 sec.</td>
<td>1 sec. - 60 min.</td>
</tr>
<tr>
<td>Transfer, off to preferred</td>
<td>1 sec.</td>
<td></td>
</tr>
<tr>
<td>Fail to synchronize</td>
<td>60 sec.</td>
<td>10 sec - 15 min.</td>
</tr>
<tr>
<td>Auto load test duration</td>
<td>30 min.</td>
<td>1 - 60 min. (1 min. increments)</td>
</tr>
<tr>
<td>Prime power run duration</td>
<td>6 min.</td>
<td>6 min. - 100 days (6 min. increments)</td>
</tr>
</tbody>
</table>

Load Control Time Delays:

<table>
<thead>
<tr>
<th>Time Delay</th>
<th>Default</th>
<th>Adjustment Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretransfer to preferred</td>
<td>0 sec.</td>
<td></td>
</tr>
<tr>
<td>Post-transfer to preferred</td>
<td>0 sec.</td>
<td></td>
</tr>
<tr>
<td>Pretransfer to standby</td>
<td>0 sec.</td>
<td>0 - 60 min.</td>
</tr>
<tr>
<td>Post-transfer to standby</td>
<td>0 sec.</td>
<td></td>
</tr>
<tr>
<td>Load add Source1/Source2</td>
<td>0 sec.</td>
<td></td>
</tr>
<tr>
<td>Load remove Source1/Source2</td>
<td>0 sec.</td>
<td></td>
</tr>
</tbody>
</table>

Note: Time delays are adjustable in 1 second increments, except as noted.
† Engine start time delay can be extended to 60 minutes with an External Battery Supply Module Kit.
### Cable Sizes

<table>
<thead>
<tr>
<th>Model</th>
<th>Amps</th>
<th>Circuit Breaker (per Phase)</th>
<th>Neutral</th>
<th>Ground</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KEP, MCCB</strong></td>
<td>100</td>
<td>(1) #14 - 1/0 AWG</td>
<td>(3) #14 - 2/0 AWG</td>
<td>(3) #14 - 1/0 AWG</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>(2) #2 - 4/0 AWG</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>(1) #6 - 350 KCML</td>
<td>(3) #6 - 350 KCML</td>
<td></td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>2/0 - 500 KCML</td>
<td>2/0 - 500 KCML</td>
<td>(3) #6 - 350 KCML</td>
</tr>
<tr>
<td></td>
<td>400</td>
<td>(2) 2/0 - 500 KCML</td>
<td>(6) 2/0 - 500 KCML</td>
<td></td>
</tr>
<tr>
<td></td>
<td>600</td>
<td>(3) 2/0 - 500 KCML</td>
<td>(9) 2/0 - 500 KCML</td>
<td></td>
</tr>
<tr>
<td></td>
<td>800</td>
<td>(4) 4/0 - 500 KCML</td>
<td>(12) 4/0 - 500 KCML</td>
<td>(3) #4 - 600 KCML</td>
</tr>
<tr>
<td></td>
<td>1000</td>
<td>3/0 - 750 KCML</td>
<td>3/0 - 750 KCML</td>
<td></td>
</tr>
<tr>
<td><strong>KEP, ICCB</strong></td>
<td>800</td>
<td>(3) 3/0 - 750 KCML</td>
<td>(9) 3/0 - 750 KCML</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1000</td>
<td>(4) 3/0 - 750 KCML</td>
<td>(12) 3/0 - 750 KCML</td>
<td>(3) #6 - 250 KCML</td>
</tr>
<tr>
<td></td>
<td>1200</td>
<td>(4) 3/0 - 750 KCML</td>
<td>(12) 3/0 - 750 KCML</td>
<td>(3) #6 - 250 KCML</td>
</tr>
<tr>
<td></td>
<td>1600</td>
<td>(5) 3/0 - 750 KCML</td>
<td>(15) 3/0 - 750 KCML</td>
<td>(3) #6 - 250 KCML</td>
</tr>
<tr>
<td></td>
<td>2000</td>
<td>(6) 3/0 - 750 KCML</td>
<td>(18) 3/0 - 750 KCML</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2500</td>
<td>(8) 3/0 - 750 KCML</td>
<td>(24) 3/0 - 750 KCML</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3000</td>
<td>(9) 3/0 - 750 KCML</td>
<td>(27) 3/0 - 750 KCML</td>
<td></td>
</tr>
</tbody>
</table>

### Weights and Dimensions

Weights and dimensions are shown for NEMA type 1 enclosures. Consult the factory for other enclosure types. Weights and dimensions are shown for reference only. Refer to the transfer switch dimension drawing for planning and installation.

#### Molded Case Circuit Breaker (MCCB) Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Amps</th>
<th>Poles</th>
<th>Dimensions, mm (in.)</th>
<th>Weight, kg (lb.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KEP, MCCB</strong></td>
<td>100-150</td>
<td>2,3,4</td>
<td>Height: 914 (36.0)</td>
<td>Width: 725 (28.5)</td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>2,3</td>
<td>Height: 914 (36.0)</td>
<td>Width: 725 (28.5)</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>2,3,4</td>
<td>Height: 914 (36.0)</td>
<td>Width: 725 (28.5)</td>
</tr>
<tr>
<td></td>
<td>400</td>
<td>2,3,4</td>
<td>Height: 1231 (48.4)</td>
<td>Width: 985 (38.7)</td>
</tr>
<tr>
<td></td>
<td>600-800</td>
<td>2,3,4</td>
<td>Height: 1231 (48.4)</td>
<td>Width: 985 (38.7)</td>
</tr>
<tr>
<td></td>
<td>1000-1200</td>
<td>3,4</td>
<td>Height: 2024 (79.7)</td>
<td>Width: 875 (34.4)</td>
</tr>
</tbody>
</table>

#### Insulated Case Circuit Breaker (ICCB) Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Amps</th>
<th>Poles</th>
<th>Dimensions, mm (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KEP, ICCB</strong></td>
<td>800</td>
<td>3</td>
<td>Height: 2324 (91.5)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Height: 2324 (91.5)</td>
<td>Width: 914 (36.0)</td>
</tr>
<tr>
<td></td>
<td>1000-1200</td>
<td>3</td>
<td>Height: 2324 (91.5)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Height: 2324 (91.5)</td>
<td>Width: 914 (36.0)</td>
</tr>
<tr>
<td></td>
<td>1600</td>
<td>3</td>
<td>Height: 2324 (91.5)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Height: 2324 (91.5)</td>
<td>Width: 914 (36.0)</td>
</tr>
<tr>
<td></td>
<td>2000</td>
<td>3</td>
<td>Height: 2324 (91.5)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Height: 2324 (91.5)</td>
<td>Width: 914 (36.0)</td>
</tr>
<tr>
<td></td>
<td>2500</td>
<td>3</td>
<td>Height: 2324 (91.5)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Height: 2324 (91.5)</td>
<td>Width: 914 (36.0)</td>
</tr>
<tr>
<td></td>
<td>3000</td>
<td>3</td>
<td>Height: 2324 (91.5)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Height: 2324 (91.5)</td>
<td>Width: 914 (36.0)</td>
</tr>
</tbody>
</table>
Accessories

Accessories are available either factory-installed or as loose kits, unless otherwise noted.

Accessory Modules

The mounting kit holds up to five optional modules. The maximum total current draw is 300 mA. If an External Battery Module is installed, there is no current restriction.

<table>
<thead>
<tr>
<th>Module Current Draw Specifications, mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm Module</td>
</tr>
<tr>
<td>Standard I/O Module</td>
</tr>
<tr>
<td>High Power I/O Module</td>
</tr>
</tbody>
</table>

💡 Standard Input/Output Module

**Inputs**
- Available Inputs: 2
- Input Definition: Contact closure
- Current: 5 mA Max
- Connection Type: Terminal Strip
- Wire Size: #14–24 AWG
- Max Distance: 700 feet

**Outputs**
- Outputs Available: 6
- Contact Type: Form C (SPDT)
- Contact Voltage Rating: 2 A @ 30 VDC, 500 mA @ 125 VAC
- Connection Type: Terminal Strip
- Wire Size: #14–24 AWG

💡 High-Power Input/Output Module

**Inputs**
- Available Inputs: 2
- Input Definition: Contact closure
- Current: 5 mA Max
- Connection Type: Terminal Strip
- Wire Size: #14–24 AWG
- Max Distance: 700 feet

**Outputs**
- Outputs Available: 3
- Contact Type: Form C (SPDT)
- Contact Voltage Rating: 12 A @ 24 VDC, 12 A @ 250 VAC, 10 A @ 277 VAC, 2 A @ 480 VAC
- Connection Type: Terminal Strip
- Wire Size: #14–24 AWG

**Environmental Specifications**
- Temperature: -40°C to 85°C (-40°F to 185°F)
- Humidity: 35% to 85% noncondensing

💡 Alarm Module
- 90 dB Audible alarm
- Any alarm function can be programmed to trigger the audible alarm
- Chicago alarm function
- Preferred source selection
- Supervised transfer control (supervised transfer control switch required)
- Connection for external alarm

<table>
<thead>
<tr>
<th>External Alarm Connection Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wire Size</td>
</tr>
<tr>
<td>Contact Voltage Rating</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

💡 External Battery Supply Module
- Energizes the ATS controls using an external battery when no source power is available
- Allows extended engine start time delays
- Allows the use of any combination of accessory modules (no current draw restriction, maximum of five modules total)
- Connects to one or two batteries, 12 VDC or 24 VDC system
- Current draw: 140 mA @ 12 VDC, 86 mA @ 24 VDC
- Provides low external battery voltage indication to the transfer switch controller
- Reverse-polarity protected

💡 Other Accessories

💡 Current Sensing Kit
- Monitor current on all phases with 1% accuracy

💡 Digital Meter
- Measure and display for both sources:
  - Voltage
  - Current
  - Frequency
  - Power
- Programmable visual alarms:
  - High voltage
  - Low voltage
  - High current
- Three digital outputs
- Serial port for optional network connections
- Password-protected programming menus
- Joystick operation
- Available factory-installed
- See TT-1506, Digital Power Meters
Accessories, continued

- **Anti-Condensation Heater**
  - Humidistat-controlled 120 VAC strip heater (customer-supplied voltage source required)
  - 125 or 250 watts (sized for enclosure)
  - Protective 15 Amp circuit breaker

- **Export Packaging**

- **Extended Warranties**
  - 2-year basic
  - 5-year basic

- **Line-to-Neutral Voltage Monitoring**
  - Monitors all line-to-neutral voltages

- **Literature Kits**
  - Production literature kit (one kit is included with each transfer switch)
  - Overhaul literature kit

- **Padlockable User Interface Cover**
  - With or without window
  - Cover without window standard on NEMA 3R enclosures

- **Supervised Transfer Control Switch**
  - Auto, Manual, and Transfer positions
  - Automatic and non-automatic modes
  - Alarm module required

- **Monitor III Software**
  - Monitor and control the power system’s generator sets and transfer switches from a personal computer using a single software package
  - Monitor and control systems through a Windows®-based graphical user interface
  - Monitor and control systems over a local area network, remotely via a modem connection, or through an Ethernet connection
  - Password-protected data access: Guest, User, and Supervisor levels
  - Ethernet capability
  - Start or stop a test from a remote PC
  - View and adjust trip points, time delays, and system parameters
  - Assign inputs and outputs
  - Available as loose kits:
    - Software kit with serial cable
    - Software kit with device modem and cables

- **Seismic Certification**
  - Available for 800–3000 Amp Model KEP transfer switches with ICCB breakers and NEMA 1 or NEMA 3R enclosures.
  - Certification depends on application and geographic location. Contact your distributor for details.

- **Surge Protective Device (SPD)**
  - SPD available for the normal source supply
  - Surge protection reduces transient voltages to harmless levels
  - Replaceable without disconnecting power
  - High-performance EMI/RFI filtering: -75dB maximum 100 kHz to 100 MHz
  - Protection modes: L-L, L-N, L-G, N-G
  - Thermal and short circuit fusing
  - LED status indicators
  - Remote contacts for customer-supplied status indicators Form C (NO, NC, C) 60 W DC, 120 VAC, 3A max.
  - Audible alarm, 90 dB
  - Listed to UL 1449, Edition 3
  - See additional specifications below

**SPD Specifications**

<table>
<thead>
<tr>
<th>Working Voltage</th>
<th>Ph.</th>
<th>Surge Current (I_{\text{max}}), kA</th>
<th>UL SVR, VAC</th>
<th>Limiting Voltage, VAC at 3kAmps</th>
<th>Limiting Voltage, VAC at 10kAmps</th>
</tr>
</thead>
<tbody>
<tr>
<td>120/240 Split</td>
<td>100</td>
<td>400</td>
<td>470</td>
<td>780</td>
<td></td>
</tr>
<tr>
<td>120/208 3</td>
<td>100</td>
<td>400/800</td>
<td>470/890</td>
<td>780/1200</td>
<td></td>
</tr>
<tr>
<td>220/380 3</td>
<td>100</td>
<td>800</td>
<td>890</td>
<td>1200</td>
<td></td>
</tr>
<tr>
<td>240/415 3</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Model Designation

<table>
<thead>
<tr>
<th>Model</th>
<th>Mechanism</th>
<th>Transition</th>
<th>Controls</th>
<th>Voltage</th>
<th>Poles</th>
<th>Enclosure</th>
<th>Current Rating</th>
<th>Connection</th>
<th>Utility Sw.</th>
<th>Gen Sw.</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>E</td>
<td>P</td>
<td>D</td>
<td>S</td>
<td>N</td>
<td>T</td>
<td>V</td>
<td>N</td>
<td>F</td>
<td>C</td>
</tr>
</tbody>
</table>

Record the transfer switch model designation in the boxes. The transfer switch model designation defines characteristics and ratings as explained below.

#### Sample Model Designation: KEP-DMTA-0400S-NK

- **Model**
  - K: Kohler Transfer Switch
- **Mechanism**
  - E: Service Entrance
- **Transition**
  - P: Programmed
- **Controls**
  - D: MPAC™ 1500 Microprocessor Controls, Automatic
- **Voltage/Frequency**
  - C: 208 Volts/60 Hz
  - F: 240 Volts/60 Hz
  - K: 440 Volts/60 Hz
  - M: 480 Volts/60 Hz
  - R: 220 Volts/60 Hz
- **Number of Poles/Wires**
  - N: 2-pole, 3-wire, solid neutral
  - T: 3-pole, 4-wire, solid neutral
  - V: 4-pole, 4-wire, switched neutral
- **Enclosure**
  - A: NEMA 1
  - B: NEMA 12
  - C: NEMA 3R
  - F: NEMA 4X

* Enclosure Notes:
  - NEMA 1: Standard, 100–3000 A
  - NEMA 3R: Optional, 100–3000 A
  - NEMA 12: Optional, 100–1200 A MCCB only
  - NEMA 4X: Optional 100–600 A MCCB only

#### Current Rating:
Numbers indicate the current rating of the switch in amperes:

<table>
<thead>
<tr>
<th>0100</th>
<th>0150</th>
<th>0200</th>
<th>0250</th>
<th>0400</th>
</tr>
</thead>
<tbody>
<tr>
<td>0600</td>
<td>0800</td>
<td>1000</td>
<td>1200</td>
<td>1600</td>
</tr>
<tr>
<td>1600</td>
<td>2000</td>
<td>2500</td>
<td>3000</td>
<td></td>
</tr>
</tbody>
</table>

#### Connection:
- S: Standard Connection

#### Utility Switching Device:
- M: MCCB w/thermal magnetic trip 100–200 A
- N: MCCB w/electronic trip 250–800 A
- P: MCCB w/electronic trip and GF 1000–1200 A
- R: ICCB w/electronic trip 800 A
- T: ICCB w/electronic trip and GF 1000–3000 A

#### Generator Switching Device:
- K: MCSW 100–1200 A
- M: MCCB w/thermal magnetic trip 100–200 A
- N: MCCB w/electronic trip 250–1200 A
- Q: ICSW 800–3000 A
- R: ICCB w/electronic trip 800–3000 A

Availability is subject to change without notice. Kohler Co. reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Contact your local Kohler generator distributor for availability.