Transfer Switch Standard Features

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 listed, file #58962
- IBC seismic certification available
- Fully enclosed silver alloy contacts provide high withstand rating.
- 3-cycle short circuit current withstand-tested
- Completely separate utility and generator set power switching units provide redundancy (no common parts) and are easy to service.
- Utility disconnect power switching units have overcurrent protection; generator disconnect is available with or without overcurrent protection:
  - 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) (available on generator disconnect only)
  - Insulated case circuit breakers (ICCB) include electronic trip overcurrent protection (100% rated).
  - Insulated case switches (ICSW) do not include overcurrent protection (100% rated) (available on generator disconnect only)
- 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.
- NEMA 1, 3R, 4X and 12 enclosures available
- Padlockable service disconnect control switch
- Status indicators
- Two-position control circuit isolation switch disconnects utility power to the transfer switch controller.

Service Disconnect Switch
- Two-position switch with padlockable cover disconnects the normal source and inhibits transfer during maintenance or service.
- Controller display shows SERVICE DISCONNECT.
- Lamp illuminates to indicate that the switch is in the DISCONNECT position.
- Further transfer is inhibited after transfer to Emergency.

Controller
- Decision-Maker® MPAC 1500

Ratings

<table>
<thead>
<tr>
<th>Power Switching Device</th>
<th>Current</th>
<th>Voltage, Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molded case (MCCB)</td>
<td>200</td>
<td>208-240 VAC, 60 Hz</td>
</tr>
<tr>
<td></td>
<td>100-1200</td>
<td>208-480 VAC, 60 Hz</td>
</tr>
<tr>
<td>Insulated Case (ICCB)</td>
<td>800-4000</td>
<td>208-480 VAC, 60 Hz</td>
</tr>
</tbody>
</table>
**Automatic Transfer Switch Controller**

The Decision-Maker® MPAC 1500 Automatic Transfer Switch Controller is used on service entrance transfer switch models.

**Decision-Maker® MPAC 1500 Controller**

- LCD display, 4 lines x 20 characters, backlit
- Complete programming and viewing capability at the door using the keypad and LCD display
- LED indicators: Source available, transfer switch position, service required (fault), and “not in auto”
- Modbus communication is standard
- Programmable voltage and frequency pickup and dropout settings
- Programmable time delays
- Programmable generator exerciser
- Time-based load control
- Current-based load control (current sensing kit required)
- Two programmable inputs and two programmable outputs
- Up to four I/O extension modules available
- RS-485 communication standard
- Ethernet communication standard
- Three-source system
- Prime power

For more information about Decision-Maker® MPAC 1500 features and functions, see specification sheet G11-128.

**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 1008, Standard for Automatic Transfer Switches for Use in Emergency Standby Systems file #58962
Application Data

Environmental Specifications
- Operating Temperature: -15°C to 50°C (5°F to 122°F)
- Storage Temperature: -20°C to 70°C (-4°F to 158°F)
- Humidity: 95% noncondensing

Auxiliary Position-Indicating Contacts
- MCCB Models: Use programmable digital outputs
- ICCB Models: 3 Normal, 2 Emergency, Rated 2.5 A @ 24/48 VDC, 6 A @ 480VAC

Typical Single-Line Diagram

Ratings

Interrupting Capacity Current Rating With Integral Overcurrent Protection *
(No upstream circuit breaker protection required)

<table>
<thead>
<tr>
<th>Power Switching Device</th>
<th>Switch Rating, Amps</th>
<th>Voltage, Max. @ 240 V</th>
<th>Amps RMS @ 480 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molded case</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>600</td>
<td>65,000</td>
<td>25,000</td>
</tr>
<tr>
<td>150</td>
<td>600</td>
<td>65,000</td>
<td>NA</td>
</tr>
<tr>
<td>200</td>
<td>240</td>
<td>65,000</td>
<td>35,000</td>
</tr>
<tr>
<td>250</td>
<td>600</td>
<td>65,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Insulated case</td>
<td>600</td>
<td>100,000</td>
<td>100,000</td>
</tr>
<tr>
<td>400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>800</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2500</td>
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<td></td>
</tr>
<tr>
<td>3000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KEP, MCCB</td>
<td></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>100</td>
<td>(2) #2 - 4/0 AWG</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>(1) #6 - 350 KCMIL</td>
<td>(3) #6 - 350 KCMIL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>(2) 2/0 - 500 KCMIL</td>
<td>(6) 2/0 - 500 KCMIL</td>
<td>(3) #6 - 350 KCMIL</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>(3) 2/0 - 500 KCMIL</td>
<td>(9) 2/0 - 500 KCMIL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>400</td>
<td>(4) 4/0 - 500 KCMIL</td>
<td>(12) 4/0 - 500 KCMIL</td>
<td>(3) #4 - 600 KCMIL</td>
</tr>
<tr>
<td></td>
<td>600</td>
<td>(3) 3/0 - 750 KCMIL</td>
<td>(9) 3/0 - 750 KCMIL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>800</td>
<td>(4) 3/0 - 750 KCMIL</td>
<td>(12) 3/0 - 750 KCMIL</td>
<td>(3) #6 - 250 KCMIL</td>
</tr>
<tr>
<td></td>
<td>1000</td>
<td>(4) 3/0 - 750 KCMIL</td>
<td>(12) 3/0 - 750 KCMIL</td>
<td>(3) #6 - 250 KCMIL</td>
</tr>
<tr>
<td></td>
<td>1200</td>
<td>(5) 3/0 - 750 KCMIL</td>
<td>(15) 3/0 - 750 KCMIL</td>
<td>(3) #6 - 250 KCMIL</td>
</tr>
<tr>
<td></td>
<td>1600</td>
<td>(6) 3/0 - 750 KCMIL</td>
<td>(18) 3/0 - 750 KCMIL</td>
<td>(3) #6 - 250 KCMIL</td>
</tr>
<tr>
<td></td>
<td>2000</td>
<td>(8) 3/0 - 750 KCMIL</td>
<td>(24) 3/0 - 750 KCMIL</td>
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</tr>
<tr>
<td></td>
<td>2500</td>
<td>(3) 3/0 - 750 KCMIL</td>
<td>(27) 3/0 - 750 KCMIL</td>
<td>(3) #6 - 250 KCMIL</td>
</tr>
<tr>
<td></td>
<td>3000</td>
<td>(9) 3/0 - 750 KCMIL</td>
<td>(36) 3/0 - 750 KCMIL</td>
<td>(3) #6 - 250 KCMIL</td>
</tr>
<tr>
<td></td>
<td>4000</td>
<td>(12) 3/0 - 750 KCMIL</td>
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<td></td>
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</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>Height</th>
<th>Width</th>
<th>Depth</th>
<th>2P</th>
<th>3P</th>
<th>4P</th>
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<tbody>
<tr>
<td>KEPl MCCB</td>
<td>100-150</td>
<td>2,3,4</td>
<td>914 (36.0)</td>
<td>725 (28.5)</td>
<td>462 (18.2)</td>
<td>68 (150)</td>
<td>68 (150)</td>
<td>68 (150)</td>
</tr>
<tr>
<td>200</td>
<td>2,3</td>
<td>914 (36.0)</td>
<td>725 (28.5)</td>
<td>462 (18.2)</td>
<td>68 (150)</td>
<td>68 (150)</td>
<td>N/A</td>
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<tr>
<td>250</td>
<td>2,3,4</td>
<td>914 (36.0)</td>
<td>725 (28.5)</td>
<td>462 (18.2)</td>
<td>81 (178)</td>
<td>81 (178)</td>
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<tr>
<td>400</td>
<td>2,3,4</td>
<td>1231 (48.4)</td>
<td>995 (39.2)</td>
<td>486 (19.1)</td>
<td>195 (430)</td>
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<tr>
<td>600-800</td>
<td>2,3,4</td>
<td>1231 (48.4)</td>
<td>995 (39.2)</td>
<td>486 (19.1)</td>
<td>200 (441)</td>
<td>200 (441)</td>
<td>200 (441)</td>
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</tr>
<tr>
<td>1000-1200</td>
<td>3,4</td>
<td>2024 (79.7)</td>
<td>875 (34.4)</td>
<td>515 (20.3)</td>
<td>N/A</td>
<td>270 (595)</td>
<td>270 (595)</td>
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</table>

### Insulated Case Circuit Breaker (ICCB) Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Amps</th>
<th>Poles</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
<th>Weight, kg (lb.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEPl ICCB</td>
<td>800</td>
<td>3</td>
<td>2324 (91.5)</td>
<td>914 (36.0)</td>
<td>1219 (48.0)</td>
<td>544 (1200)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>2324 (91.5)</td>
<td>914 (36.0)</td>
<td>1219 (48.0)</td>
<td>635 (1400)</td>
</tr>
<tr>
<td>1000-1200</td>
<td>3</td>
<td>2324 (91.5)</td>
<td>914 (36.0)</td>
<td>1219 (48.0)</td>
<td>553 (1220)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>2324 (91.5)</td>
<td>914 (36.0)</td>
<td>1219 (48.0)</td>
<td>644 (1420)</td>
<td></td>
</tr>
<tr>
<td>1600</td>
<td>3</td>
<td>2324 (91.5)</td>
<td>914 (36.0)</td>
<td>1372 (54.0)</td>
<td>598 (1320)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>2324 (91.5)</td>
<td>914 (36.0)</td>
<td>1372 (54.0)</td>
<td>625 (1380)</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>3</td>
<td>2324 (91.5)</td>
<td>914 (36.0)</td>
<td>1372 (54.0)</td>
<td>607 (1340)</td>
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<tr>
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<td>4</td>
<td>2324 (91.5)</td>
<td>914 (36.0)</td>
<td>1372 (54.0)</td>
<td>644 (1420)</td>
<td></td>
</tr>
<tr>
<td>2500</td>
<td>3</td>
<td>2324 (91.5)</td>
<td>914 (36.0)</td>
<td>1524 (60.0)</td>
<td>625 (1380)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>2324 (91.5)</td>
<td>1067 (42.0)</td>
<td>1524 (60.0)</td>
<td>662 (1460)</td>
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</tr>
<tr>
<td>3000</td>
<td>3</td>
<td>2324 (91.5)</td>
<td>914 (36.0)</td>
<td>1524 (60.0)</td>
<td>644 (1420)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>2324 (91.5)</td>
<td>1067 (42.0)</td>
<td>1524 (60.0)</td>
<td>680 (1500)</td>
<td></td>
</tr>
<tr>
<td>4000</td>
<td>3</td>
<td>2324 (91.5)</td>
<td>1372 (42.0)</td>
<td>1524 (60.0)</td>
<td>907 (2000)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>2324 (91.5)</td>
<td>1372 (42.0)</td>
<td>1524 (60.0)</td>
<td>1270 (2800)</td>
<td></td>
</tr>
</tbody>
</table>
Accessories

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

- **Digital Meter**
  - Measure and display voltage, current, frequency, and power for both sources:
  - Programmable visual alarms for high voltage, low voltage, and high current
  - Three digital outputs
  - Serial port for optional network connections
  - Password-protected programming menus
  - Joystick operation
  - Factory-installed

- **Extended Warranties**
  - 2-year basic
  - 5-year basic
  - 5-year comprehensive
  - 10-year major components

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

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

- **Load Shed Kit**
  - Forced transfer from Emergency to OFF for programmed-transition models
  - Customer-supplied signal (contact closure) is required for the forced transfer to OFF function
  - Factory-installed

- **RSA III Remote Serial Annunciator**
  - Monitors the generator set
  - Monitors Normal and Emergency source status and connection
  - Monitors ATS common alarm
  - Allows remote testing of the ATS
  - For more information, see specification sheet G6-139.

- **Seismic Certification**
  - Certification depends on application and geographic location. Contact your distributor for details.
  - Available for the transfer switches and enclosures shown below:

  | ATS Type and Size | Enclosure, NEMA Type:
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Amps</td>
</tr>
<tr>
<td>MCCB</td>
<td>100-600</td>
</tr>
<tr>
<td>MCCB</td>
<td>100-1200</td>
</tr>
<tr>
<td>ICCB</td>
<td>800-4000</td>
</tr>
</tbody>
</table>

- **Surge Protection Device (SPD)**
  - SPD available for the normal source supply
  - Surge protection reduces transient voltages to harmless levels
  - Protection modes: L-L / L-N / L-G / N-G
  - Replaceable phase and neutral cartridges for service
  - Frequency: 50–60 Hz
  - Operating Temperature Range: -40 to 176°F (-40 to 80°C)
  - Remote contacts for customer-supplied status indicators:
    - Contacts: 1 NO, 1 NC
    - Min Load: 12VDC / 10 mA
    - Max Load: 250 VAC / 1 A
    - Wire Size (max.): 16AWG
  - Fuse protection: 30 amps / 600 V
  - UL 1449, 3rd Edition for Type 2 applications
  - IEC 61-643-1, 2nd Edition T2/11
  - See additional specifications below

- **Additional Controller Accessories**
  See the controller specification sheet for more information.

- **Accessory Modules**
  - Alarm Module
  - External Battery Supply Module
  - Input/Output Module
  - High-Power Input/Output Module

- **Current Sensing Kit**

- **Line-to-Neutral Voltage Monitoring**

- **Padlockable User Interface Cover**

- **Supervised Transfer Control Switch**

---

**SPD Specifications**

<table>
<thead>
<tr>
<th>Nominal Voltage (V ± 15%)</th>
<th>Max. Discharge Current (kA)</th>
<th>UL VPR 3rd Ed (L-N/N-G/L-G) (kV)</th>
<th>Limiting Voltage, (L-N/N-G/L-G) (kV) at 3kAmps</th>
<th>Short Circuit Withstand Current (kA)</th>
<th>Maximum Continuous Operating Voltage (VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>240/120</td>
<td>40</td>
<td>3</td>
<td>0.6 / 1.2 / 0.7</td>
<td>0.6 / 0.4 / 0.6</td>
<td>200 / 175 / 350</td>
</tr>
<tr>
<td>208/120</td>
<td>40</td>
<td>4</td>
<td>0.6 / 1.2 / 0.7</td>
<td>0.6 / 0.4 / 0.6</td>
<td>200 / 175 / 350</td>
</tr>
<tr>
<td>480/277</td>
<td>40</td>
<td>4</td>
<td>1.0 / 1.2 / 1.1</td>
<td>1.0 / 0.4 / 1.0</td>
<td>200 / 175 / 350</td>
</tr>
<tr>
<td>240/120</td>
<td>40</td>
<td>4</td>
<td>1.0 / 1.2 / 1.1</td>
<td>1.0 / 0.4 / 1.0</td>
<td>200 / 175 / 350</td>
</tr>
<tr>
<td>600/347</td>
<td>40</td>
<td>4</td>
<td>1.3 / 1.2 / 1.4</td>
<td>1.3 / 0.4 / 1.3</td>
<td>200 / 175 / 350</td>
</tr>
</tbody>
</table>
### Model Designation

<p>| Model Controls | Voltage Poles Enclosure Current Rating Connection Utility Sw. Gen Sw. |
|----------------|-------------------|-----------------|-----------------|-----------------|-----------------|</p>
<table>
<thead>
<tr>
<th>Mechanism Transition</th>
<th>Voltage</th>
<th>Poles</th>
<th>Enclosure</th>
<th>Current Rating</th>
<th>Connection</th>
</tr>
</thead>
</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

**Mechanism**
- **E:** Service Entrance Rated

**Transition**
- **P:** Programmed

**Controller**
- **D:** Decision-Maker® MPAC 1500, Automatic

**Voltage/Frequency**
- **C:** 208 Volts/60 Hz
- **M:** 480 Volts/60 Hz
- **F:** 240 Volts/60 Hz
- **R:** 220 Volts/60 Hz
- **K:** 440 Volts/60 Hz

**Number of Poles/Wires**
- **N:** 2 Poles/3 Wires, Solid Neutral
- **T:** 3 Poles/4 Wires, Solid Neutral
- **V:** 4 Poles/4 Wires, Switched Neutral

**Enclosure**
- **A:** NEMA 1
- **C:** NEMA 3R
- **B:** NEMA 12
- **F:** NEMA 4X

**Connections**
- **S:** Standard

**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 1000–4000 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 800–4000 A
- **R:** ICCB w/electronic trip 800–4000 A

**Note:** Some selections are not available for every model. Contact your Kohler distributor for availability.

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.