Applicable Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KCS</td>
<td>Standard-Transition Any Breaker ATS ²</td>
</tr>
<tr>
<td>KCP</td>
<td>Programmed-Transition Any Breaker ATS ³</td>
</tr>
<tr>
<td>KCC</td>
<td>Closed-Transition Any Breaker ATS ⁴</td>
</tr>
<tr>
<td>KSS</td>
<td>Standard-Transition Specific Breaker ATS ³</td>
</tr>
<tr>
<td>KSP</td>
<td>Programmed-Transition Specific Breaker ATS ³</td>
</tr>
</tbody>
</table>

² Available with automatic or non-automatic controller
³ Available with automatic controller only
⁴ Available with automatic controller only

Decision-Maker® MPAC 1200 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 (208–600 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
- Run time clock and operation counter
- Time-stamped event log
- Fail-safe transfer for loaded test and exercise functions
- DIP switches: password disable and maintenance
- Isolated RS-485 ports for Modbus connections (9.6, 19.2, and 57.6 kbps)
- Modbus® RTU protocol (Modbus register map available)
- USB port. Connect a personal computer and use Kohler® SiteTech™ software to view events and adjust settings. *
- Available in automatic and non-automatic versions; see supervised transfer control switch on page 5

Programmable Features

- Programming and monitoring methods:
  - Monitoring and password-protected programming at the door using the keypad and display
  - Program using a PC with Kohler® SiteTech™ software (available to Kohler-authorized distributors and dealers)
- Over/undervoltage for all phases of the normal and emergency sources
- Over/underfrequency for the emergency source
- Adjustable time delays
- Load/no load/auto-load test and load/no-load exercise functions
- Programmable inputs and outputs
- Load bank control for exercise or test
- Time-based load control, nine individual time delays for selected loads
- In-phase monitor (3-phase only)
- Password protection, three security levels
- See pages 2 and 3 for additional programmable features

* SiteTech software is available to Kohler-authorized distributors and dealers.

Modbus is a registered trademark of Schneider Electric.
Decision-Maker® MPAC 1200 Controller Features

User Interface LED Indicators
- Contactor 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 (current sensing kit required)
- 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 or exercise
- Reset fault
- Lamp test

DIP Switches
- Maintenance mode
- Password disable

Event History
- View time and date-stamped events on the display or on a personal computer equipped with Kohler® SiteTech™ software. *
- Download complete event history files using Kohler SiteTech software and a PC connected to the USB port. *

Main Logic Board Inputs and Outputs
- Two (2) programmable inputs
- Two (2) programmable outputs

Communications
- Optional Ethernet communications with RJ45 connector for 10/100 Ethernet connection
- Isolated RS-485 ports for Modbus communications
- Modbus® RTU and Modbus® TCP/IP protocols (Modbus® register map available)
- USB Port. Use SiteTech software to upload or download files and adjust transfer switch settings *
  - Application software
  - Event history files
  - Language files
  - Parameter settings
  - Usage reports
  - Feature configuration

Programmable Features
- System voltage, 208–600 VAC †
- System frequency, 50/60 Hz †
- Single/three-phase operation †
- Standard/programmed/closed-transition operation †
- Preferred source selection allows the normal or emergency source to be used when both sources are available (alarm module required)
- Phase rotation: ABC/BAC/none selection with error detection
- Overvoltage and undervoltage pickup and dropout settings, both sources
- Overfrequency and underfrequency pickup and dropout settings, Emergency source
- Voltage unbalance, enable/disable
- In-phase monitor: enable/disable and phase angle
- Transfer commit/no commit
- Passwords, system and test
- Time, date, automatic daylight saving time enable/disable
- Time delays (see table)
- Exerciser: calendar mode, loaded/unloaded up to 21 events
- Test: loaded/unloaded/auto load (1–60 minutes)
- Remote test: loaded/unloaded
- Automatic override on generator failure (loaded test and exercise)
- Peak shave delay enable/disable
- Current monitoring (current sensing kit required)
- Load control pre/post-transfer delays, 9 individual time delays for selected loads
- Resettable historical data

* SiteTech software is available to Kohler-authorized distributors and dealers.
† System parameters are factory-set per order.

* Modbus is a registered trademark of Schneider Electric.
### Programmable Inputs
- Forced transfer to OFF (programmed-transition models only; requires load shed accessory)
- Inhibit transfer
- Low battery voltage (external battery supply module required)
- Peak shave/area protection input
- Remote common fault
- Remote test
- Remote end time delay
- Remotely monitored inputs, four (4) available

### Programmable Outputs
- Alarm silenced
- Audible alarm
- Chicago alarm control
- Common alarm events
- Contactor position
- Exercise active
- Failure to acquire standby source
- Failure to transfer
- Generator engine start, source E
- I/O module faults
- In-phase monitor synch
- Load bank control
- Load control active (pre/post transfer delay, up to 9 outputs)
- Loss of phase fault, source N and E
- Low battery fault (external battery supply module required)
- Maintenance mode
- Non-emergency transfer
- Not in automatic mode
- 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, source N and E

### Voltage and Frequency Sensing

<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.
† Emergency source only

### Adjustable Time Delays

<table>
<thead>
<tr>
<th>Time Delay</th>
<th>Default</th>
<th>Adjustment Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine start</td>
<td>3 sec.</td>
<td>0-6 sec. †</td>
</tr>
<tr>
<td>Engine cooldown</td>
<td>5 min.</td>
<td>0-60 min.</td>
</tr>
<tr>
<td>Fail to acquire standby 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 termination after transfer</td>
<td>1 sec.</td>
<td>1 sec.-60 min.</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>0-60 min.</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></td>
</tr>
<tr>
<td>Post-transfer to standby</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.
Accessory Modules

The mounting kit holds up to five optional modules.

<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>
<tr>
<td>Maximum Total Current *</td>
</tr>
</tbody>
</table>

* If an External Battery Module is installed, there is no current restriction.

- **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

- **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

- **External Alarm Connection Specifications**
  - Wire Size: #12–22 AWG Cu
  - Contact Voltage Rating: 500 mA @ 120 VAC, 250 mA @ 240 VAC

- **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 Controller Accessories

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

- **Controller Disconnect Switch**
  - Disconnects power to the controller without disconnecting the load
  - Mounts inside the enclosure

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

- **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

- **Ethernet Communications**
  - RJ-45 connector
  - Supports Internet Protocol version 4 (IPv4)
  - Supports Modbus TCP/IP protocol

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

- **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 only

- **Padlockable User Interface Cover**
  - Provides additional protection against unauthorized access
  - Cover standard on NEMA 3R enclosures

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

- **Supervised Transfer Control Switch**
  - Standard on models with non-automatic controls
  - Optional for models with automatic controls
  - Auto, manual, and transfer positions
  - Automatic and non-automatic modes
  - Alarm module required

---

### Supervised Transfer Control Switch Operation for Automatic and Non-Automatic Transfer Switches

<table>
<thead>
<tr>
<th>Switch Position</th>
<th>Automatic Switches</th>
<th>Non-Automatic Switches</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO</td>
<td>Automatically transfers to the standby source, when available, if the preferred source is lost.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transfers back to the preferred source when it becomes available.</td>
<td>Does not automatically transfer to an available source when the connected source is lost.</td>
</tr>
<tr>
<td>MANUAL</td>
<td>Automatically transfers to an available source if the connected source is lost.</td>
<td>Does not automatically transfer to an available source when the connected source is lost.</td>
</tr>
<tr>
<td></td>
<td>Test, peak shave, and loaded exercise commands will transfer to the standby source.</td>
<td>Test, peak shave, and loaded exercise commands are ignored.</td>
</tr>
<tr>
<td></td>
<td>Does not automatically transfer back to preferred when both sources are available.</td>
<td>Does not automatically transfer back to preferred when both sources are available.</td>
</tr>
<tr>
<td>TRANSFER (momentary switch position)</td>
<td>Does not initiate an engine start sequence. Generator set engine must be signalled to start by an event such as a loss of utility, loaded test, loaded exercise, etc.</td>
<td>Transfers only when the switch is manually moved to the TRANSFER position as described below.</td>
</tr>
<tr>
<td></td>
<td>Allows transfer to the other source, if available. An event such as a loss of utility, loaded exercise, or loaded test must first initiate the transfer sequence.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time delays will operate. Wait for time delays to expire, or press the End Time Delay button.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operates pre- and post-transfer load control time delays if both sources are available.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MANUAL TRANSFER is displayed when the ATS is ready to transfer.</td>
<td></td>
</tr>
</tbody>
</table>
### Environmental Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-20°C to 70°C (-4°F to 158°F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°C to 85°C (-40°F to 185°F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% to 95% noncondensing</td>
</tr>
</tbody>
</table>

### Main Board I/O Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output contact type</td>
<td>Isolated form C (SPDT)</td>
</tr>
<tr>
<td>Output contact rating</td>
<td>1 amp @ 30 VDC, 500 mA @ 120 VAC</td>
</tr>
<tr>
<td>I/O terminals wire size</td>
<td>#12-24 AWG</td>
</tr>
</tbody>
</table>