

ISO 9001
KOHLER
POWER SYSTEMS
NATIONALLY REGISTERED



MPAC® 500 Controller Features

- User-friendly interface with easy-to-read international symbols
- Source available and contactor position indicators
- LED indication of system faults
 - Failure to acquire standby source
 - Failure to transfer
 - Auxiliary switch fault
- Common fault contact: latches closed on system faults shown above
- Engine start contact: provides contact closure to start the generator set
- Load control contact: allows 5-minute delay in startup of selected loads
- Test button (with or without load)
- Exercise set button
 - Weekly 20-minute generator set exercise
 - With or without load
- Single-phase voltage sensing on both sources, $\pm 5\%$
- Line-to-line frequency sensing, $\pm 2\%$
- Fixed time delays

Standard Features

- UL listed
 - UL 1008 listed, file # E58962
 - Models with load centers use UL 67 listed components
- cUL listed
 - 100 and 200 amp models with load centers
- CSA certification available, file # LR58301 (not applicable to service entrance or load center models)
- 220/240 VAC, 50/60 Hz (selectable)
- 100, 200, and 400 amp models available
- Two-pole, single-phase open-transition transfer switch
- Contactor electrically and mechanically interlocked
- Double throw inherently interlocked design
- Solid neutral
- Contactor manually operable for maintenance purposes
- Silver alloy main contacts
- Automatic transfer switches are 100% equipment rated and can be applied at the rated current without derating (except service entrance models; see below)
- 100 and 200 amp models available with or without prewired Square D type QO load center
 - 100 amp load center models use up to 16 circuit breakers (up to 8 tandem breakers can be used for a maximum of 24 circuits)
 - 200 amp load center models use up to 24 circuit breakers
 - 200 amp service entrance model with 42-circuit breaker load center is available
- Two enclosures available
 - NEMA Type 1 steel ANSI 49 gray enclosure for indoor installation. 100 amp and 200 amp models without load centers can be recess-mounted between wall studs (not service entrance model)
 - NEMA Type 3R corrosion-resistant aluminum ANSI 49 gray padlockable enclosure. Approved for indoor or outdoor installation
- Five-year limited warranty
- See page 5 for available accessories

Service Entrance Model Features

- 200 and 400 amp service entrance rated automatic transfer switches available
- Service disconnect circuit breaker on the normal (utility) source (80% rated)
- NEMA 3R aluminum ANSI 49 gray enclosure
- Circuit breaker for generator set battery charger
- See page 5 for available SE model accessories

Specifications

| Environmental Specifications | |
|------------------------------|----------------------------------|
| Operating temperature: | - 20°C to 70°C (- 4°F to 158°F) |
| Storage temperature: | - 40°C to 85°C (- 40°F to 185°F) |
| Humidity: | 5 to 95% noncondensing |

| Contact Ratings | |
|-------------------------------|---|
| Engine start | 1 A @ 30 VDC SPST normally closed (NC) |
| Common fault | 0.5 A @ 125 VAC; 2 A @ 30 VDC SPST normally open (NO) |
| Load control | 10 A @ 120 VAC SPST normally open (NO) |
| Auxiliary contacts (optional) | 10 A @ 250 VAC Form C |

| Source Sensing | |
|------------------------|-----|
| Undervoltage dropout | 80% |
| Undervoltage pickup | 85% |
| Underfrequency dropout | 90% |
| Underfrequency pickup | 96% |

| Time Delays | | | |
|-------------------------------------|-----------------|----------------------------------|-----------|
| Time Delay | Factory Setting | Adjustment with Accessory Board* | |
| | | Range | Increment |
| Engine start | 3 seconds | 1- 10 seconds | 1 second |
| Transfer from Normal to Emergency | 3 seconds | 1- 10 seconds | 1 second |
| Retransfer from Emergency to Normal | 6 minutes | 3-30 minutes | 3 minutes |
| Engine cooldown | 5 minutes | 1- 10 minutes | 1 minute |
| Exercise run time | 20 minutes | 5- 50 minutes | 5 minutes |
| Exercise interval | 1 week | 1 week/2 week (DIP switch) | |
| Load control connection delay | 5 minutes | 5 or 10 minutes (DIP switch) | |
| Failure to acquire Emergency source | 78 seconds | NA | |
| Undervoltage dropout | 0.5 second | NA | |
| Underfrequency dropout | 3 seconds | NA | |

* Optional accessory board required for time delay adjustments
NA = not adjustable

| Cable Sizes | | | | | |
|--|---|---|---|--|---------------------------------------|
| AL/CU UL-Listed Solderless Screw-Type Terminals for External Power Connections | | | | | |
| Switch Size, Amps | Range of Wire Sizes, Cu/Al | | | | |
| | Normal (per phase) | Emergency (per phase) | Load (per phase) | Neutral | Ground |
| 100 | (1) #14 - 1/0 AWG | | | (5) #12 - 250 KCMIL(Cu) or (5) #10 - 250 KCMIL(Al) | (9) #14 - #6 AWG (4) #14 - 1/0 AWG |
| 100 B | (1) #14 - 1/0 AWG | | per customer-supplied branch circuit breakers | (26) #14 - #4AWG or (2) #14 - 1/0 AWG or (1) #6 - 2/0 AWG | |
| 200 | (1) #6 AWG - 250 KCMIL | | (1) #6 AWG - 250 KCMIL | (5) #12 - 250 KCMIL(Cu) or (5) #10 - 250 KCMIL(Al) | |
| 200 B | (1) #6 AWG - 250 KCMIL | | per customer-supplied branch circuit breakers | (38) #14 - #4 AWG or (3) #14 - 1/0 AWG or (1) #4 AWG - 250 KCMIL | |
| 200 BSE | (1) #4 - 300 KCMIL | (1) #6 - 250 KCMIL | per customer-supplied branch circuit breakers | (4) #12 - 250 KCMIL(Cu) or (4) #10 - 250 KCMIL(Al) | |
| 200 SE | (1) #4 - 300 KCMIL | (1) #6 - 250 KCMIL | (1) #6 AWG - 250 KCMIL | (5) #12 - 250 KCMIL(Cu) or (5) #10 - 250 KCMIL(Al) | |
| 400 | (2) 1/0 - 250 KCMIL or (1) 4 AWG - 600 KCMIL | | | (3) #4 - 600 KCMIL (6) 1/0 - 250 KCMIL | (6) #6 - 3/0 AWG |
| 400 SE | (1) #1 - 600 KCMIL or (2) #1 - 250 KCMIL | (2) 1/0 - 250 KCMIL or (1) 4 AWG - 600 KCMIL | | (6) #4 - 600 KCMIL (12) 1/0 - 250 KCMIL | |

B = Load center model
SE = Service entrance model

Note: Data is subject to change. Refer to the transfer switch dimension drawings and wiring diagrams for planning and installation.

Withstand and Close- On Ratings (WCR)

Service Entrance Transfer Switch Ratings

The service entrance transfer switch is factory-equipped with a normal source disconnect circuit breaker.

| Switch Rating, Amps | WCR, RMS Symmetrical Amps at 240 VAC |
|---------------------|--------------------------------------|
| 200 | 22,000 |
| 400 | 35,000 |

Contactor Ratings with Coordinated Circuit Breakers

The transfer switches are UL listed at 240 VAC maximum. The following table lists contactor withstand current ratings (WCR) for 100- 400 ampere non-service entrance rated switches with specific manufacturer's circuit breakers per UL and Canadian safety standards. Suitable for control of motors, electric discharge lamps, tungsten filament lamps and electric heating equipment where the sum of motor full-load ampere ratings and the ampere ratings of other loads do not exceed the ampere rating of the switch and the tungsten load does not exceed 30 percent of switch rating.

| WCR Ratings with Specific Manufacturer's Molded-Case Circuit Breakers | | | | | |
|---|---------------|---------------------------|---------------------|----------------------------------|--------------------|
| Switch Rating, Amps | Voltage, max. | WCR, RMS Symmetrical Amps | Manufacturer | Type or Class | Maximum Size, Amps |
| 100 200 | 240 | 10,000 | Any Breaker * | Any Breaker (0.025 seconds max.) | — |
| 400 | 240 | 65,000 | GE | THLC4 | 350 |
| | | 42,000 | Eaton/Cutler-Hammer | HMC | 800 |
| | | | GE | THKM3F | 1200 |
| | | 35,000 | Any Breaker | Any Breaker (0.05 seconds max.) | — |

* For higher WCR values, contact the factory for additional specific breaker ratings.