KOHLER Generators

Model: RDT

Automatic Transfer Switch
100- 400 Amps



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, ±5%
- Line-to-line frequency sensing, ±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

rehlko

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			
		Adjustment with Accessory Board*	
Time Delay	Factory Setting	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.					

Codes and Standards

The ATS meets or exceeds the requirements of the following specifications:

- Underwriters Laboratories UL 1008, Standard for Automatic Transfer Switches for Use in Emergency Systems, file #E58962
- Underwriters Laboratories UL 508, Standard for Industrial Control Equipment
- CSA certified, file #LR58301 (not applicable to service entrance models)
- NFPA 70, National Electrical Code
- NFPA 110, Emergency and Standby Power Systems
- IEEE Standard 446, IEEE Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications
- NEMA Standard IC10- 1993 (formerly ICS2- 447), AC Automatic Transfer Switches
- ANSI C37.90.1 (IEEE472), 2000, EFT/Surge Relay Systems
- EN61000-4-5 Surge Immunity Class 4 (voltage sensing and programmable inputs only)
- EN61000-4-4 Fast Transient Immunity Severity Level 4
- IEC Specifications for EMI/EMC Immunity
  - CISPR 11, Radiated and Conducted Emissions, Class B
  - IEC 61000-4-2, 2001, Electrostatic Discharge
  - IEC 61000-4-3, 2002, Radiated Immunity
  - IEC 61000-4-4, 2001, Electrical Fast Transients (Bursts)
  - IEC 61000-4-5, 2001, Surge Voltage Immunity
  - IEC 61000-4-6, 2003, Conducted RF Immunity
  - IEC 61000-4-8, Magnetic Field Immunity
  - IEC 61000-4-11, Voltage Dips and Interruptions

Weights and Dimensions

Note: Always use the transfer switch dimension drawing for planning and installation. Weights and dimensions may vary for different configurations. See the Operation/Installation Manual or your local distributor for dimension drawings.

Transfer switch weights and dimensions shown in the table do not include packaging. To estimate the shipping weight, add 3 kg (5 lbs.) or 10% (whichever is larger) to the weight shown.

Amps	Load Center	Enclosure Type	Weight kg	Weight (lb.)	Transfer Switch Dimensions H x W x D, mm (in.)		Dimension Drawing
100	None	NEMA 1 (steel)	7	(15)	610 x 330 x 154 *	(24.0 x 13.0 x 6.0) *	ADV-8437
100 B	16 circuits		18	(40)	914 x 406 x 154	(36.0 x 16.0 x 6.0)	ADV-9181
200	None		7	(15)	610 x 330 x 154 *	(24.0 x 13.0 x 6.0) *	ADV-8438
200 B	24 circuits		21	(45)	914 x 406 x 154	(36.0 x 16.0 x 6.0)	ADV-9182
100	None	NEMA 3R (aluminum)	7	(15)	613 x 340 x 177	(24.1 x 13.4 x 7.0)	ADV-8440
100 B	16 circuits		8	(18)	917 x 416 x 177	(36.1 x 16.4 x 7.0)	ADV-9183
200	None		7	(15)	613 x 340 x 177	(24.1 x 13.4 x 7.0)	ADV-8441
200 B	24 circuits		8	(18)	917 x 416 x 177	(36.1 x 16.4 x 7.0)	ADV-9184
200 SE	None		12	(26)	858 x 473 x 163	(33.8 x 18.6 x 6.4)	ADV-8444
200 BSE	42 circuits		32	(70)	967 x 762 x 165	(38.1 x 30.0 x 6.5)	ADV-9185
400	None		40	(89)	1222 x 560 x 269	(48.1 x 22.0 x 10.6)	ADV-9769
400 SE	None		59	(130)	1448 x 628 x 329	(57.0 x 24.7 x 12.9)	ADV-9767

B = Load center model
SE = Service entrance model

* Can be recess-mounted between 16 in. O.C. wall studs.

Accessories

❑ Auxiliary position-indicating contacts
- One closed on normal position and one closed on emergency position
- Form C contacts rated 15 A @ 250 VAC

❑ Accessory board
- Alarm horn indicates system faults
- Adjustable time delays:
  - Engine start
  - Engine cooldown
  - Preferred to standby
  - Standby to preferred
  - Exercise duration
- Inputs and Outputs:
  - Remote start/stop input (loaded)
  - Programmable exerciser input
  - Generator set supplying load output: 10 A @ 120 V SPST normally open (NO) contact
- External alarm module connection
- Dip switches:
  - 1 week/2 week exerciser
  - Load/no load exercise mode (for optional programmable exerciser)
  - Momentary/maintained external start/stop input: Selects momentary (1 second) push button or maintained contact closure for remote start/stop signal
  - Load control, 5 minutes/10 minutes: Allows adjustment of the startup delay after transfer to generator set for selected loads (e.g. air conditioners or other large motor starting loads)
  - Audible alarm disable

❑ External alarm module
- Alarm horn
- Alarm silence/lamp test button
- Remote start/stop button
- Generator supplying load indicator
- Fault indicator
- Fits into standard outlet box
- Multiple alarm modules can be connected
- Accessory board required

❑ Load shed kit
- Automatically sheds non-critical loads when essential appliances are running
- Prevents generator overload in compliance with NEC 2008
- Provides two (2) HVAC relays, rated 10 A @ 125 VAC, to control two independent air conditioner loads
- Includes four (4) pilot relays rated 120VAC, 125VA (pilot duty), 10 A @ 125 VAC (general purpose) to control customer-provided power relays for non-essential loads
- Mounts inside the ATS enclosure
- Uses Kohler's exclusive RBUS communication protocol
- Requires Kohler® residential generator set with RDC2 or DC2 controller
- See specification sheet G11-124

❑ Power relay modules
- 50 amp power relay mounted in a NEMA Type 3R enclosure
- Use up to four modules with the load shed kit
- UL/cUL listed
- Dimensions: 172 x 233 x 92 mm (6.8 x 9.2 x 3.6 in.)
- For more information, see specification sheet G6-143

❑ Programmable exerciser
- Seven-day programmable timer allows scheduling up to 56 on/off events
- LCD display indicates day, time, program/run modes, and on/off/skip status
- Skip next cycle button
- Lithium backup battery with 5-year expected life
- Accessory board required

❑ Wall-mount bezel (for Type 1 enclosures)
- For 100 and 200 amp recess-mounted switches
- For NEMA type 1 enclosures only (not for NEMA 3R or service entrance switches)

Additional Accessories for Service Entrance Models

❑ Accessory circuit breaker
- For generator set engine heater or other AC accessory
- Single-pole Square D type QO circuit breaker
- 15 amp and 20 amp circuit breakers are available

❑ Enclosure space heater
- 150 Watts
- Hygrostat (humidity control)
- Built-in temperature limiter for overheat protection
- 15 A single-pole Square D type QO circuit breaker

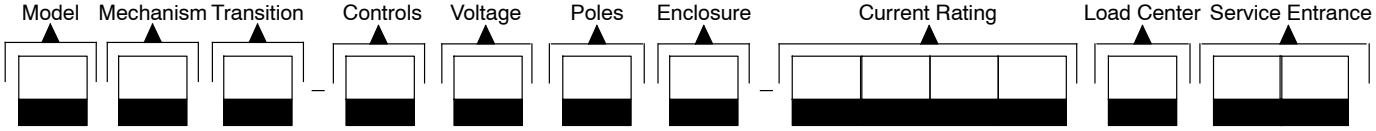
❑ Utility-side surge suppressor
- Surge protection reduces transient voltages to harmless levels
- Protection modes: L-L / L-N / L-G / N-G
- Replaceable phase and neutral cartridges for service
- Frequency: 50-60 Hz
- Operating Temperature Range: -40 to 176°F (-40 to 80°C)
- Remote contacts for customer-supplied 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

Surge Suppressor Specifications

Nominal Voltage (V ±15%)	Max. Discharge Current (kA)	Phase	Poles	UL VPR 3rd Ed (L-N/N-G/L-G) (kV)	Limiting Voltage, (L-N/N-G/L-G) (kV)		Short Circuit Withstand Current (kA)	Maximum Continuous Operating Voltage (VAC)
					at 3kA	at 10kA		
240/120	40	Split	3	0.6 / 1.2 / 0.7	0.6 / 0.4 / 0.6	0.8 / 0.7 / 0.8	200	175 / 350

KOHLER® Generators

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Kohler® Model Designation Key

This chart explains the Kohler® transfer switch model designation system. The sample model designation shown is for a Model R service entrance rated automatic transfer switch that uses a standard-transition contactor with MPAC® 500 electrical controls rated at 240 Volts/60 Hz with 2 poles, 3 wires, and solid neutral in a NEMA 3R enclosure with a current rating of 200 amperes and no load center.

SAMPLE MODEL DESIGNATION

RDT-CFNC-0200ASE

Model
R: Model R automatic transfer switch

Mechanism
D: Specific-breaker rated

Transition
T: Standard transition

Electrical Controls
C: MPAC® 500 (Microprocessor ATS Control)

Voltage/Frequency
F: 240 Volts/60 Hz
(A jumper on the controller allows conversion to 50 Hz)

Number of Poles/Wires
N: 2-pole, 3-wire, solid neutral

Enclosure
A: NEMA 1 (steel) *
C: NEMA 3R (aluminum)

Current Rating: Numbers indicate the current rating of the switch in amperes:
0100: 100 amps 0200: 200 amps 0400: 400 amps

Load Center
A: Without load center
B: With load center (not available on 400 amp models)

Service Entrance:
SE: Service entrance model (200 and 400 amp models available)
Blank: Not rated for service entrance

* NEMA 1 only: 100 and 200 amp models without load centers can be recess-mounted between wall studs. Optional wall-mount bezel available.

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