KOHLER, Power Systems

Automatic Transfer Switch 100-400 Amps





Covers have been removed for illustration.

Available Models

- 100, 200, and 400 amp standard and service entrance models are available.
- 150 and 300 amp service entrance models are also available.
- Combined interface/load management board is available on single-phase standard and service entrance models. (Not available on 3-phase or load center models.)
- 100 amp standard single-phase models are available with or without a 16-space load center. Up to 8 tandem breakers can be used for a total of 24 circuits.
- 100amp standard single phase model with a 12-space load center and a NEMA 1 enclosure is available as a standalone non-configurable spec (GM85273-SA_).
- See page 7 for more information.

Model RXT Automatic Transfer Switch

The Model RXT automatic transfer switch is designed for use only with Kohler® generator sets equipped with RDC2 or DC2 generator set/transfer switch controls. The transfer switch operation is controlled by the RDC2/DC2 controller.

Standard Features

- Allows utility voltage display on the RDC2/DC2 generator set/transfer switch controller, available exclusively on Kohler® residential and light commercial generator sets
- UL listed
 - Models with load centers, UL 67 listed, file #E251086
 - Models without load centers, UL 1008 listed, file #E58962
- CSA certification, file #LR58301, is available for:
 - Standard ATS without load center (single and three-phase)
 - O Service entrance ATS 100, 150, and 200 amp models
- Corrosion-resistant NEMA 3R aluminum enclosure
 - o Padlockable
 - Approved for indoor or outdoor installation
 - o ANSI 49 gray
- NEMA 1 enclosure available on 100 amp load center models
- · Contactor electrically and mechanically interlocked
- Double throw inherently interlocked design
- Contactor manually operable for maintenance purposes
- Silver alloy main contacts
- Transfer switches are 100% equipment rated and can be applied at the rated current without derating (non-service entrance models)
- Service entrance models include disconnect circuit breaker on the utility (normal) source side (80% rated)
- Five-year limited warranty

Standard Interface Board

- Standard interface board connects to the Model RDC2 or DC2 generator set/transfer switch controller.
- Includes a load control contact that provides a 5 minute time delay for startup of selected loads after transfer to the emergency source. Use for large motor loads.

Combined Interface/Load Management Board

- Optional combined interface/load management board replaces the standard interface board and connects to the Model RDC2 or DC2 generator set/transfer switch controller.
- The combined board is available on single-phase standard and service entrance models.
 (Not available on 3-phase or load center models.)
- The combined board automatically manages up to six residential loads:
 - Up to four customer-supplied power relay modules can be connected for management of non-essential secondary loads.
 - Two HVAC relays are included for control of two independent air conditioner loads.

Specifications

Standard Interface Board						
Controller interface connections A and B	#20 AWG shielded twisted-pair Belden 9402 or 8762 or equivalent					
Controller interface connections PWR and COM	#12-20 AWG (see ATS Installation Manual)					
Load control contact rating	10 A @ 250 VAC					
Load control connections	#12-18 AWG					

Note: For combined interface/load management board specifications, see page 3.

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				

Codes and Standards

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

- Underwriters Laboratories UL 67, Enclosed Panel Boards (load center models) file #E251086
- Underwriters Laboratories UL 1008, Standard for Automatic Transfer Switches for Use in Emergency Systems, file #F58962
- Underwriters Laboratories UL 508, Standard for Industrial Control Equipment
- CSA certification available, file #LR58301 (not available for 300-400 amp service entrance or 100 amp load center models). Must be selected when the transfer switch is ordered.
- NFPA 70, National Electrical Code
- NFPA 110, Emergency and Standby Power Systems
- NEMA Standard IC10-1993, AC Automatic Transfer Switches

	Cable Sizes									
	AL/CU UL-Listed Solderless Screw-Type Terminals for External Power Connections									
Switch			Range of Wire Sizes, Cu/Al							
Size, Amps	Switch	Phases	Normal and Emergency	Load	Neutral	Ground				
	Standard	1	(1) #14 - 1/0 AWG	(1) #14 – 1/0 AWG	(3) #12 to 250 KCMIL (Cu) or (3) #10 to 250 KCMIL (Al)					
	12-space load center (NEMA 1)	1	(1) #14 – 1/0 AWG per customer-sup circuit breake		(13) #4 - 14 AWG or (1) #6 - 2/0 AWG	(9) #4 – 14 AWG				
100	16-space load center (NEMA 3R)	1	(1) #14 – 1/0 AWG	per customer-supplied circuit breaker	(27) #4 - 14 AWG or (3) #4 - 1/0 AWG or (1) #6 - 2/0 AWG	(9) #4 – 14 AWG				
	Service Entrance	1	Normal: (1) #12 – 2/0 AWG Emerg: (1) #14 – 1/0 AWG	(1) #14 – 1/0 AWG	(3) #12 to 250 KCMIL (Cu) or (3) #10 to 250 KCMIL (Al)	(3) #14 – 1/0 AWG				
	3-Phase	3	(1) #14 – 1/0 AWG	(1) #14 – 1/0 AWG	(3) #4 AWG – 600 KCMIL (6) 1/0 – 250 KCMIL	(3) #6 – 3/0 AWG				
150 200	Service Entrance	1	Normal: (1) #4 – 300 KCMIL Emerg: (1) #6 – 250 KCMIL	(1) #6 – 250 KCMIL	(3) #12 to 250 KCMIL (Cu) or (3) #10 to 250 KCMIL (Al)	(3) #14 – 1/0 AWG				
000	Standard	1	(1) #6 AWG – 250 KCMIL	(1) #6 – 250 KCMIL	(3) #12 to 250 KCMIL (Cu) or (3) #10 to 250 KCMIL (Al)	(9) #4 – 14 AWG				
200	200 3-Phase		(1) #6 AWG – 250 KCMIL	(1) #6 – 250 KCMIL	(3) #4 AWG – 600 KCMIL (6) 1/0 – 250 KCMIL	(3) #6 – 3/0 AWG				
300 400	Service Entrance	1	Normal: : (1) #1 - 600 KCMIL or (2) #1 - 250 KCMIL Emerg: (2) #6 - 250 KCMIL (2) #6 - 250 KCMIL (3) #4 - 600 KCMIL (6) 1/0 - 250 KCMIL		` '	(3) #6 – 3/0 AWG				
	Standard	1								
400	3-pole 208-240 V	3	(2) #6 – 250 KCMIL	(2) #6 – 250 KCMIL	(3) #4 – 600 KCMIL (6) 1/0 – 250 KCMIL	(3) #6 – 3/0 AWG				
	3 or 4 pole 480 V	3	(1) #4 – 600 KCMIL (2) 1/0 – 250 KCMIL	(1) #4 – 600 KCMIL (2) 1/0 – 250 KCMIL	(3) 1/0 - 230 NOWIE					

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

Optional Combined Interface/Load Management Board

The RXT transfer switch is available with either a standard interface board or a combined interface/load management board. The combined board allows load management as described below.

Load Management

- The combined load management board disconnects non-critical loads to prevent generator overload, in compliance with NEC.
- The combined load management board monitors generator current and frequency to determine when to add or shed loads. This monitoring prevents frequency drops that can damage valuable electronics like computers and televisions.
- Load management allows the use of a smaller generator set.

Operation

- Loads are automatically added or shed based on generator capacity.
- The load control system uses dynamic logic to prevent shedding important loads unnecessarily when air conditioning, refrigerator, or water pump motors start (patent pending).
- The load management board and generator communicate to provide smart power management. The time to shed loads decreases as each load is shed to quickly adapt to critical power requirements.
- Load shed power level and frequency setpoints can be adjusted using a personal computer (laptop) and Kohler® SiteTech™ software, which is only available to Kohlerauthorized distributors and dealers.

Priority Setting

- Loads are added and shed according to their priority. Load 1 is the top priority, which is added first and shed last. Load 6 is the lowest priority.
- Less critical loads can be turned off automatically when essential appliances are running.
- Load priorities are hard-wired at installation.

Viewing Load Shed Outputs with OnCue® Plus

- Use Kohler's OnCue® Plus Generator Management System (sold separately) to view load status (On or Off) for loads connected to the load shed relays.
- Use OnCue[®] Plus to remotely monitor when loads are shed or added.
- The load shed outputs can be labeled in OnCue® Plus.

Current Transformer

- The combined load management board option includes a 400 amp current transfomer (CT) for load monitoring.
- A larger diameter CT is available for applications that require larger cables.
- A 500 amp CT is available for use with a 60RCL generator.
- See the table below for current transformer specifications and optional kit numbers.

Load Shed Specifications

Connection	Rating	Connection
Pilot Relays*	125VAC, 10 A total (general purpose) 120VAC, 125VA (pilot duty)	#12-20 AWG
HVAC Relays (qty. 2)	125VAC, 10 A (general purpose) 120VAC, 125VA (pilot duty)	#12-20 AWG
RBUS Communication and Power Connections to the RDC2/DC2 controller	0.5 A @ 12 VDC	Use Belden #9402 or equivalent 20 AWG shielded, twisted-pair communications cable †

^{*} Four (4) pilot relays are provided for customer-supplied normally closed load-switching contactors/relays. The combination of four load relay outputs cannot exceed 10 amps total current draw. Kohler® power relay modules are recommended.

Current Transformer Specifications

Ratio (Amps:VAC)	Outer Diameter mm (in.)	Inner Diameter mm (in.)	Service Part Number	Sales Kit Part Number	CT Availability
400:3	63.5 (2.5)	28.7 (1.13)	GM83929	N/A	Included with combined board
400:3	111.8 (4.4)	57.2 (2.25)	GM17250	GM17250-KP1-QS	Sold Separately
500:3	171.5 (6.75)	108.0 (4.25)	GM60264	GM17250-KP2-QS	Sold Separately (use with 60RCL)

For long distances, use an equivalent shielded, twisted-pair cable for RBUS connections and individual 12-20 AWG wires (qty. 2) for power connections.

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.

Suitable for the 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.

Switch Rating, Amps *	WCR, RMS Symmetrical Amps at 240 VAC					
100, 150, 200	22,000					
300, 400 35,000						
* Continuous load current no	* Continuous load current not to exceed 80% of switch rating.					

Contactor Ratings with Coordinated Circuit Breakers

Single-phase transfer switches are UL listed at 240 VAC maximum. Three-phase transfer switches are rated at 480 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 the 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.

The transfer switch is rated for use on a circuit capable of delivering not more than the RMS symmetrical amperes maximum as shown in the tables below, but no greater than the interrupting capacity of the selected breaker.

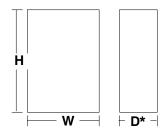
WCR Ratings with Specific Manufacturer's Molded-Case Circuit Breakers						
		WCR, RMS Symmetrical Amps	Manufacturer	Type or Class	Maximum Size, Amps	
			10,000	Any Breaker	Any Breaker (0.025 seconds max.)	_
					FB, FCL	100
100	240	2 pole/		Eaton	QCHW	125
100	240	1 phase	22,000		FDC	150
				ITE/Siemens	CED6, ED4, ED6, HED4, HED6	125
				Square D	FI	100
150 200	240	2 pole/ 1 phase	22,000	Any Breaker	Any Breaker (0.025 seconds max.)	_
				Eaton	FCL	100
					JGS, JGH, JGC, JGU, JGX, JBD, JD, HJD, JDC, LCL, LCLA	250
					LDC, CLDC, KDB, KD, HKD, KDC, LD, CLD, HLD, CHLD	400
					CED6, HED4, HED6	125
400		3 pole/ 3 phase		ITE/Siemens	CFD6, FD6A, FXD6, HFD6, HFXD6, HHFD6, HHFXD6	250
100	480		30,000		CJD6	400
200		4 pole/	/		SEL, SEP, THLC1	150
		3 phase		O a seed Flooride	THLC2	225
				General Electric	SFH, SFL, SFP	250
					SGH, SGL, SGP, FGN, FGH, FGL, FGP	400
					HG, HJ, HL, HR	150
				Schneider	JJ, JL, JR	250
					LG, LJ, LL, LR	400

Switch Rating, Amps	Voltage, max.	Number of Poles/ Phases	WCR, RMS Symmetrical Amps	Manufacturer	Type or Class	Maximum Size, Amps
				ABB	T5, T6	600
					CHKD, CKD, DK, HKD, KD, KDB, KDC, LA TRIPAC, LCL	
				Eaton	CHLD, CLD, CLDC, HLD, LD, LDB, LDC	600
					HMDL, MDL, NB TRI-PAC	800
				General Electric	FGH, FGL, FGN, FGP, SGHA	600
		0 1 - /			CJD6, HHJD6, HHJXD6, HJD6, HJGA, HJXD6, JD6, JXD2, JXD6, SCJD6, SHJD6, SJD6	400
300 400	240	2 pole/ 1 phase 240		Siemens	CLD, HHLD, HHLXD, HLD, HLGA, HLXD, LD, LLGA, LXD, NLGA, SCLD, SHLD, SLD	600
					CMD, HLMD, HLMXD, HMD, HMG, HMXD, LMD, LMG, LMXD, MD, MXD, NMG, SCMD, SHMD, SMD	800
				Square D	LA, LC, LE, LH, LI, LX, LXI	400
					DG, DJ, DL, LC, LE, LI, LX, LXI	600
				Martin Carin	CJ400H, CJ400L, CJ400N	400
				Merlin Gerin	CJ600H, CJ600N	600
	3 pole/		35,000	Any Breaker	Any Breaker (0.017 seconds max.)	600
		3 phase	50,000	Eaton	LD	600
					HJD, JDC, JGC, JGH, JGU, JGX	250
		3 pole/ 3 phase		Falsa	CHLD4, CLD, HLD4, CLDC, LDC, KDC, HKD, CHMDL4, CMDL4	400
400				Eaton	CHLD6, HDL6, CHMDL6, CMDL6, CLDC, CLD6, LDC6, CLDC6	600
	480		50,000		CHMDL8, HMDL8, MDL8, CMDL8	800
		4 pole/ 3 phase		ITE/Siemens	CFD6, HFD6, HFXD6, HHFD6, HHFXD6	250
		o priase	е	General Electric	SFL, SFP	250
				Goriciai Electric	FGL, FGP	600
				Schneider	LJ, LL, LR	600

Dimensions and Weights

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.



				Shipping Weight ‡	Dimension
Amps	Description	Dimensions, H	κ W x D, mm (in.) †	kg (lb.)	Drawing
	Single phase	623 x 335 x 180	(24.5 x 13.2 x 7.1)	7 (15)	ADV-8688
	With 12- or 16-space load center (NEMA 1)	610 x 330 x 154	(24.0 x 13.0 x 6.0)	12 (26)	ADV-8736
100	With 16-space load center	614 x 335 x 180	(24.2 x 13.2 x 7.1)	8 (18)	ADV-8690
100	Three phase	682 x 462 x 228	(26.8 x 18.2 x 9.0)	14 (30)	ADV-8689
	Service entrance (ASE)	731 x 416 x 175	(28.8 x 16.4 x 6.9)	12 (26)	ADV-8687
	Service entrance (CSE)	735 x 416 x 175	(28.9 x 16.4 x 6.9)	16 (34)	ADV-8665
450,000	Service entrance (ASE)	734 x 416 x 175	(28.9 x 16.4 x 6.9)	12 (26)	ADV-8687
150-200	Service entrance (CSE)	735 x 416 x 175	(28.9 x 16.4 x 6.9)	14 (30)	ADV-8666
000	Single phase	623 x 335 x 180	(24.5 x 13.2 x 7.1)	7 (15)	ADV-8688
200	Three phase	682 x 462 x 228	(26.8 x 18.2 x 9.0)	14 (30)	ADV-8689
300	Service entrance	1075 x 559 x 329	(42.3 x 22.0 x 12.9)	46 (101)	ADV-8694
	Single phase	1067 x 559 x 329	(42.0 x 22.0 x 12.9)	55 (120)	ADV-8691
	3-Pole/208-240 volts	1067 x 559 x 329	(42.0 x 22.0 x 12.9)	41 (90)	ADV-8692
400	3-Pole/480 volts	1222 x 610 x 343	(48.1 x 24.0 x 13.5)	59 (130)	ADV-8693
	4-Pole	1222 x 610 x 343	(48.1 x 24.0 x 13.5)	59 (130)	ADV-8693
	Service entrance	1075 x 559 x 329	(42.3 x 22.0 x 12.9)	46 (101)	ADV-8694

[†] Depth does not include the padlock hasp on the front of the enclosure.

Note: Enclosures are type NEMA 3R except as noted.

[‡] Transfer switch weights are approximate and do not include packaging.

Accessories

☐ Power relay modules

- 50 amp DPST power relay mounted in a NEMA type 3R enclosure
- Use up to four modules with the combined interface/load management board
- 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

☐ Status indicator kit for standard interface board

- LEDs indicate normal and emergency source availability and contactor position
- Mounts on the outside of the RXT enclosure
- View transfer switch status without removing enclosure cover
- An overhang on the enclosure protects the indicator panel and ribbon cable opening
- Dimensions: 92 mm x 42 mm (3.62 in. x 1.65 in.)
- · Connects to the standard interface board only
- For more information on the status indicator kit, see specification sheet G11-123

Status indicator kit for combined interface/load management board

- LEDs indicate normal and emergency source availability and contactor position
- Dual color LEDs for each load indicate load status (powered or shed) and flash during a test
- Load shed test button allows the operator to cycle the load shed relays in order of priority (when generator is in RUN mode)
- Mounts on the outside of the RXT enclosure
- View transfer switch and load status without removing enclosure cover
- An overhang on the enclosure protects the indicator panel and ribbon cable opening
- Dimensions: 183 mm x 42 mm (7.20 in. x 1.65 in.)
- Connects to the combined interface/load management board only
- For more information on the status indicator kit, see specification sheet G11-123

Available Models

All Model RXT transfer switches are standard-transition 60 Hz automatic transfer switches. Letters in parentheses refer to the model designation code described on the last page.

	Description	Description Voltages					WCR §
Amps	(Connections)	208 (C)	240 (F)	480 (M)	Poles	Phases	RMS Symmetrical Amps
	Standard (A)		•		2 (N)	1	10,000
	Standard, with 16-space load center (B) ¶		•		2 (N)	1	10,000
100	Standard, with 12-space load center **		•		2 (N)	1	10,000
	Service entrance (ASE, CSE)		•		2 (N)	1	22,000
	Standard, 3-phase (A)	•	•	•	3 (T) or 4 (V)	3	30,000
150	Service entrance (ASE, CSE)		•		2 (N)	1	22,000
	Standard (A)		•		2 (N)	1	10,000
200	Service entrance (ASE, CSE)		•		2 (N)	1	22,000
	Standard, 3-phase (A)	•	•	•	3 (T) or 4 (V)	3	30,000
300	Service entrance (ASE)		•		2 (N)	1	35,000
	Standard (A)		•		2 (N)	1	50,000
400	Service entrance (ASE)		•		2 (N)	1	35,000
	Standard, 3-phase (A)	•	•	•	3 (T) or 4 (V)	3	50,000

[§] Withstand and close-on rating. See pages 3-5 for WCR information and specific breaker ratings.

Note: Combined interface board is available on single-phase standard or service entrance models. (Not available on 3-phase or load center models.)

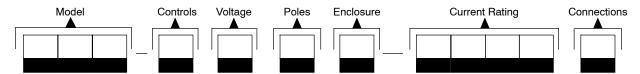
[¶] With 16-space load center and NEMA 1 or NEMA 3R enclosure. Up to 8 tandem breakers can be used, for a maximum of 24 circuits.

^{**} GM85273-SA with 12-space load center and NEMA 1 enclosure.

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Model Designation



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

Sample Model Designation: RXT-JFNC-0200A

Model

RXT: Kohler Automatic Transfer Switch

Controls

Interface for RDC2/DC2 Controller (standard or combined interface/load management)

Voltage/Frequency

208 Volts/60 Hz (3-phase only)

240 Volts/60 Hz F:

M: 480 Volts/60 Hz (3-phase only)

Number of Poles/Wires

N: 2-pole, 3-wire, solid neutral (120/240 V only)

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®

T: 3-pole, 4-wire, solid neutral 4-pole, 4-wire, switched neutral

Enclosure

A: NEMA 1 * NEMA 3R

* NEMA 1 enclosure is available on 100 amp load center models only.

Current Rating

0100: 100 amps 0300: 300 amps 0150: 150 amps 0400: 400 amps 0200: 200 amps

Connections

A: No load center

B: With load center (100 amp single-phase only)

ASE: Service entrance rated

CSE: Service entrance rated with CSA certification

(100/150/200 amps only)

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G11-140 (Model RXT Automatic Transfer Switch) 12/15c Page 8

generator distributor for availability.