

Automatic Transfer Switches Standard Specific-Breaker Rated

ISO 9001
KOHLER
POWER SYSTEMS
NATIONALLY REGISTERED



Transfer Switch Standard Features

- UL 1008 listed at 208–480 VAC file #E58962 (automatic), #E86894 (nonautomatic)
- CSA certification available
- IBC seismic certification available
- Standard-transition operation
- Silver tungsten alloy contacts on 400–600 amp models
- Solid or switched neutral
- Available with either automatic or non-automatic control (non-automatic control requires the Decision-Maker® MPAC 1200 controller)
- Available in 2, 3, or 4 pole configurations
- High withstand/closing ratings, for use with specific breakers only
- Electrically operated, mechanically held mechanism
- Double-throw, mechanically interlocked design (break-before-make power contacts)
- Enclosed arc chambers with arc chutes
- Front-accessible contacts for easy inspection
- Main shaft auxiliary position-indicating contacts (see page 3 for contact ratings)
- Standard one-year limited warranty. Extended limited warranties are available.

Available Controllers

- Decision-Maker® MPAC 750
- Decision-Maker® MPAC 1200

Ratings

Model	Current	Voltage, Frequency
KSS	40–600 amps	208–600 VAC, 50/60 Hz
	800–1000 amps	208–480 VAC, 50/60 Hz

Available Automatic Transfer Switch Controllers

Select one of the following controllers for your automatic transfer switch.

Decision-Maker® MPAC 750 Controller



- Test pushbutton
- Exercise pushbutton
- LED indicators: Source available, transfer switch position, service required (fault), and “not in auto”
- Programmable voltage pickup and dropout settings
- Programmable time delays
- Seven day generator exerciser
- Two programmable inputs and two programmable outputs
- Modbus communication standard
- RS-485 communication standard
- Ethernet communication optional

For more information about Decision-Maker® MPAC 750 features and functions, see specification sheet G11-126.

Decision-Maker® MPAC 1200 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”
- Programmable voltage and frequency pickup and dropout settings
- Programmable time delays
- Programmable generator exerciser
- Time-based load control
- Two programmable inputs and two programmable outputs
- Up to four I/O extension modules available
- Modbus communication standard
- RS-485 communication standard
- Ethernet communication optional

For more information about Decision-Maker® MPAC 1200 features and functions, see specification sheet G11-127.

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 Standby Systems file # E58962 (automatic), # E86894 (nonautomatic)
- CSA C22.2 No. 178 certification available, file # LR58301
- NFPA 70, National Electrical Code
- NFPA 99, Essential Electrical Systems for Health Care Facilities
- 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 ICS 10-2005, Electromechanical AC Transfer Switch Equipment
- EN61000-4-4 Fast Transient Immunity Severity Level 4
- IEC 60947-6-1, Low Voltage Switchgear and Control Gear; Multifunction Equipment; Automatic Transfer Switching Equipment
- 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
- IEEE 472 (ANSI C37.90A) Ring Wave Test
- Seismic certification in accordance with the International Building Code is available. (Accessory kit is required for seismic certification.)
 - IBC 2000, referencing ASCE 7-98 and ICC AC-156
 - IBC 2003, referencing ASCE 7-02 and ICC AC-156
 - IBC 2006, referencing ASCE 7-05 and ICC AC-156
 - IBC 2009, referencing ASCE 7-05 and ICC AC-156
 - IBC 2012, referencing ASCE 7-10 and ICC AC-156

Application Data

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

UL-Listed Solderless Screw-Type Terminals for External Power Connections				
Model	Switch Rating, Amps	Range of Wire Sizes, Copper or Aluminum*		
		Normal, Emergency, and Load	Neutral	Ground
KSS	40-150	(1) #8 to 3/0 AWG	(3) #6 - 3/0 AWG	(3) #6 - 3/0 AWG
	200-225	(1) #6 AWG to 250 KCMIL	(3) #4 - 600 KCMIL or (6) 1/0 - 250 KCMIL	
	260	(1) #6 AWG to 350 KCMIL		
	400	(1) #4 AWG to 600 KCMIL or (2) #6 AWG to 250 KCMIL	(6) #2 - 600 KCMIL	(3) #4 - 600 KCMIL or (6) 1/0 - 250 KCMIL
	600	(2) #2 AWG to 600 KCMIL		
	800	(2) #1/0 AWG to 750 KCMIL	(12) #2 - 600 KCMIL	
	1000	(4) #2 AWG to 600 KCMIL		

* Use 60°C minimum wire for #14 to #1 AWG. Use 75°C minimum wire for 1/0 AWG and larger.

Contact Ratings				
	Resistive Load	Inductive Load	Motor Load	
			NC	NO
Engine Start Contacts	2 A @ 30 VDC	N/A	N/A	N/A
Auxiliary Contacts, (40-600A) ‡	15 A @ 250 VAC	N/A	N/A	N/A
Auxiliary Contacts, (800-1000A) ‡	15 A @ 480 VAC	15 A @ 250 VAC; 6 A @ 500 VAC	5 A @ 125 VAC; 3 A @ 250 VAC; 1.5 A @ 500 VAC	2.5 A @ 125 VAC; 1.5 A @ 250 VAC; 0.75 A @ 500 VAC

‡ Auxiliary position-indicating contacts, one set Normal and one set Emergency

Weights and Dimensions

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

Weights and dimensions are shown for transfer switches in NEMA type 1 and type 3R enclosures. Consult the factory for open units and other enclosures.

Amps	NEMA Type	Dimensions mm (in.)			Weight kg (lb.)			ADV Drawing
		Height	Width	Depth §	2-Pole	3-Pole	4-Pole	
40-225	1, 3R	791 (31.1)	450 (17.7)	316 (12.5)	28 (62)	30 (65)	31 (68)	ADV-8584
260	1, 3R	1219 (48.0)	560 (22.0)	362 (14.3)	52 (115)	56 (123)	59 (131)	ADV-8586
400	1, 3R	1223 (48.1)	560 (22.0)	362 (14.3)	52 (115)	56 (123)	59 (131)	ADV-8588
600	1, 3R	1702 (67.0)	610 (24.0)	514 (20.2)	179 (395)	183 (403)	186 (410)	ADV-8590
800	1, 3R	1932 (76.1)	864 (34.0)	515 (20.3)	N/A	226 (498)	236 (520)	ADV-8592
1000	1, 3R	1932 (76.1)	864 (34.0)	515 (20.3)	N/A	231 (509)	241 (531)	ADV-8592

§ Allow enough room to fully open the door for inspection and service per NEC and local codes. The NEMA type 3R enclosures have a security cover on the controller that extends 54 mm (2.1 in.) beyond the door.

Withstand and Close-On Ratings (WCR) Ratings Summary

The transfer switch is rated for use on a circuit capable of delivering not more than the RMS symmetrical Amperes listed at the specified maximum voltage below, but no greater than the interrupting capacity of the selected circuit breaker or fuse. Circuit breakers and fuses are supplied by the customer.

Certified Withstand Current Ratings in RMS Symmetrical Amperes ¶											
Switch Rating, Amps	With Current-Limiting Fuses				Specific Coordinated Breaker Rating, (see the following tables)			Any Breaker Ratings **			
	Fuse Class	Fuse Size, Max Amps	Maximum Circuit Amps		Maximum Voltage	Maximum Circuit Amps		Maximum Voltage	Maximum Circuit Amps		Time Duration, Seconds Max.
			480 VAC	600 VAC		480 VAC	600 VAC		480 VAC	600 VAC	
40-150	J	400	200,000	200,000	600 V	30,000	22,000	600 V	10,000	10,000	0.025
200-225	J	400	200,000	N/A	600 V	30,000	22,000	600 V	10,000	10,000	
260	N/A	N/A	N/A	N/A	480 V	35,000	N/A	N/A	N/A	N/A	N/A
400	J	600	200,000	200,000	600 V	50,000	42,000	600 V	35,000	35,000	0.050
	RK5 RK1	600	100,000	N/A							
600	N/A	N/A	N/A	N/A	600 V	50,000	42,000	N/A	N/A	N/A	N/A
800	L	3000	200,000	N/A	480 V	65,000	N/A	N/A	N/A	N/A	N/A
1000	L	4000									

¶ All values are available symmetrical RMS Amperes and tested in accordance with the withstand/closing requirements of UL 1008.
** Applicable to breakers with instantaneous trip elements.

Ratings with Specific Manufacturers' Circuit Breakers

Withstand and close-on ratings (WCR) in RMS symmetrical Amperes for specific manufacturers' circuit breakers.

Switch Rating, Amps	Molded-Case Circuit Breakers				
	Voltage, Max.	WCR, Amps RMS	Manufacturer	Type	Max. Size, Amps
40 80 100 150 200 225	480	30,000	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
			ITE/Siemens	CED6, HED4, HED6	125
				CFD6, FD6A, FXD6, HFD6, HFXD6, HHFD6, HHFXD6	250
				CJD6	400
			General Electric	SEL, SEP, THLC1	150
				THLC2	225
				SFH, SFL, SFP	250
			Schneider	SGH, SGL, SGP, FGN, FGH, FGL, FGP	400
				HG, HJ, HL, HR	150
				JJ, JL, JR	250
	600	22,000	Eaton	LG, LJ, LL, LR	400
				JGS, JGH, JGC, JGU, JGX, JDB, JD, HJD, JDC, LCL, LCLA	250
				LDC, CLDC, KDB, KD, HKD, KDC, LD, CLD, HLD, CHLD	400
			ITE/Siemens	CED6, HED4, HED6	125
CFD6, FD6, FXD6, HFD6, HFXD6, HHFD6, HHFXD6				250	
SEL, SEP, THLC1				150	
General Electric			THLC2	225	
			SFH, SFL, SFP	250	
			SGH, SGL, SGP, FGN, FGH, FGL, FGP	400	

Switch Rating, Amps	Molded-Case Circuit Breakers				
	Voltage, Max.	WCR, Amps RMS	Manufacturer	Type	Max. Size, Amps
260	480	35,000	Eaton	JGS, JGH, JGC, JGU, JGX, JDB, JD, HJD, JDC, LCL, LCLA	250
				LDC, CLDC, LD, CLD, HLD, CHLD, KDB, KD, HKD, KDC	400
			ITE/Siemens	CED6, HED4, HHED6	125
				CFD6, FD6, FXD6, HFD6, HFXD6, HHFD6, HHFXD6	250
			General Electric	SEL, SEP, THLC1	150
				THLC2	225
				SFH, SFL, SFP	250
				SGH	350
			Schneider	SGH, SGL, SGP, FGN, FGH, FGL, FGP	400
				HG, HJ, HL, HR	150
				JJ, JL, JR	250
				LG, LJ, LL, LR	400
400	480	50,000	Eaton	HJD, JDC, JGC, JGH, JGU, JGX	250
				CHLD4, CLD, HLD4, CLDC, LDC, KDC, HKD, CHMDL4, CMDL4	400
				CHLD6, HDL6, CHMDL6, CMDL6, CLDC, CLD6, LDC6, CLDC6	600
				CHMDL8, HMDL8, MDL8, CMDL8	800
			ITE/Siemens	CFD6, HFD6, HFXD6, HHFD6, HHFXD6	250
			General Electric	SFL, SFP	250
				FGL, FGP	600
			Schneider	LJ, LL, LR	600
	600	42,000	Eaton	JGU, JGX	250
				CLDC4, KDC, LDC4	400
				CLDC6, LDC6, NB Tri-Pac	600
				NB Tri-Pac	800
			ITE/Siemens	CFD6	250
				CJD6, SCLD6	400
				CLD6, HHLD6, HHLXD6, SCLD6	600
				CMD6, HMD6, HMXD6, SCMD6, SHMD6	800
General Electric	THLC1	150			
	FGL4, FGP4, THLC4, TLB4	400			
	SGL, SGP, FGL6, FGP6	600			
	SKL8, SKP8	800			
Schneider	JL, JR	250			

Switch Rating, Amps	Molded-Case Circuit Breakers					
	Voltage, Max.	WCR, Amps RMS	Manufacturer	Type	Max. Size, Amps	
600	480	50,000	Eaton	HJD, JDC, JGC, JGH, JGU, JGX	250	
				CHLD4, CLD, HLD4, CLDC, LDC, KDC, HKD, CHMDL4, CMDL4	400	
				CHLD6, HLD6, CHMDL6, CMDL6, CLDC6, LDC6, CLD6, CLDC	600	
				CHMDL8, HMDL8, MDL8, CMDL8	800	
			ITE/Siemens	CFD6, HFD6, HFXD6, HHFD6, HHFXD6	250	
			General Electric	SFL, SFP	250	
				FGL, FGP	600	
	Schneider	LJ, LL, LR	600			
	600	600	42,000	Eaton	JGU, JGX	250
					CLDC4, KDC, LDC4	400
					CLDC6, LDC6, NB Tri-Pac	600
					NB Tri-Pac	800
				ITE/Siemens	CFD6	250
					CJD6, SCLD6	400
CLD6, HHLD6, HHLXD6, SCLD6					600	
CMD6, HMD6, HMXD6, SCMD6, SHMD6					800	
General Electric				THLC1	150	
				FGL4, FGP4, THLC4, TLB4	400	
	SGL, SGP, FGL6, FGP6	600				
	SKL8, SKP8	800				
Schneider	JL, JR	250				
800 1000	480	65,000	Eaton/ Cutler-Hammer	TRI-PAC NB, CHMDL, HMDL, CHND, HND, NDC, CNDC	800	
				TRI-PAC NB, CNDC, NDC, CRDC, TRI-PAC PB, RDC, CHND, HND, RD. CRD	1200	
			Schneider/ Square D	MJ, PJ, PL, RJ	800	
				PJ, PL, RL	1000	
			ITE/Siemens	CMD6, HMD6, SCMD6, SHMD6, CND6, HND6, SCND6, SHND6, CPD6	800	
				CND6, HND6, SCND6, CPD6, SHND6, HPD6	1200	
			General Electric	TB8, TC, THC, THP	1000	
				THC, THP, TRP	1200	

Transfer Switch Accessories

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

CSA Certification

Digital Meter (with MPAC 1200 only)

- 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
- Three digital outputs
- Joystick operation

Extended Limited Warranties

- 2-year basic
- 5-year basic
- 5-year comprehensive
- 10-year major components

Export Packaging

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 kit is included with each transfer switch)
- Overhaul literature kit

Neutral Assembly

- Available as loose kit for open units

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 40–1000 amp KSS models with NEMA 1, 3R, 4, 4X, and 12 enclosures

Surge Protection Device (SPD)

- 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 spec sheet for more information.

Accessory Modules (with MPAC 1200 only)

- Alarm Module
- External Battery Supply Module
- Input/Output Module
- High-Power Input/Output Module

Controller Disconnect Switch

Ethernet Communications

Current Sensing Kit (with MPAC 1200 only)

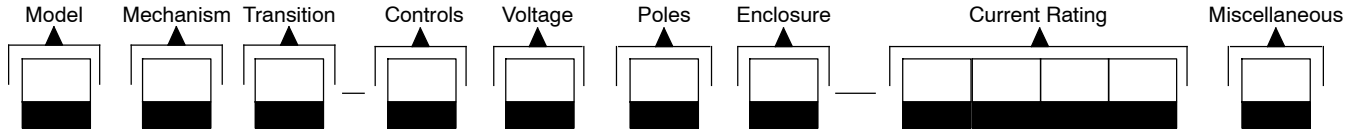
Line-to-Neutral Voltage Monitoring (with MPAC 1200 only)

Padlockable User Interface Cover

Supervised Transfer Control Switch (with MPAC 1200 only)

SPD 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
208/120	40	Wye	4	0.6 / 1.2 / 0.7	0.6 / 0.4 / 0.6	0.8 / 0.7 / 0.8	200	175 / 350
480/277	40	Wye	4	1.0 / 1.2 / 1.1	1.0 / 0.4 / 1.0	1.2 / 0.7 / 1.2	200	320 / 460
240/120	40	HLD	4	1.0 / 1.2 / 1.1	1.0 / 0.4 / 1.0	1.2 / 0.7 / 1.2	200	320 / 460
600/347	40	Wye	4	1.3 / 1.2 / 1.4	1.3 / 0.4 / 1.3	1.5 / 0.7 / 1.5	200	440 / 880

Model Designation



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

Sample Model Designation: KSS-JCNA-0100S

Model

K: Kohler

Mechanism

S: Standard (Specific-Breaker)

Transition

S: Standard

Controller

- A: Decision-Maker® MPAC 1200, Automatic
- B: Decision-Maker® MPAC 1200, Non-Automatic
- J: Decision-Maker® MPAC 750, Automatic

Voltage/Frequency

- | | |
|--------------------|--------------------|
| C: 208 Volts/60 Hz | K: 440 Volts/60 Hz |
| D: 220 Volts/50 Hz | M: 480 Volts/60 Hz |
| F: 240 Volts/60 Hz | N: 600 Volts/60 Hz |
| G: 380 Volts/50 Hz | P: 380 Volts/60 Hz |
| H: 400 Volts/50 Hz | R: 220 Volts/60 Hz |
| J: 416 Volts/50 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 | D: NEMA 4 |
| B: NEMA 12 | F: NEMA 4X |
| C: NEMA 3R | G: Open Unit |

Current, Amps

- | | | |
|------|------|------|
| 0040 | 0200 | 600 |
| 0080 | 0225 | 800 |
| 0100 | 0260 | 1000 |
| 0150 | 0400 | |

Connections

S: Standard

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

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