Zenith ATS, powered by TruONE™

Withstand and Closing Ratings (WCR)

The Purpose of Testing and Unit Ratings

ABB automatic transfer switches (ATS) have been subjected to an extensive test program to show that they comply with and exceed UL 1008 standards as well as the various performance specifications used by most government agencies and major electrical engineers throughout the world. The primary test to assure the dependability of an automatic transfer switch is its ability to close into and withstand high fault currents. The purpose of this publication is to provide basic information on withstand ratings and to document the ratings that ABB ATS currently holds under UL 1008

NFPA 110 Standard for Emergency and Standby Power Systems, Section 6.3.2, requires that the capacity and rating of automatic transfer switches be adequate to withstand the thermal and electromagnetic effects of short circuit currents that may arise in the electrical system. It is important to be able to compare properly the withstand close rating (WCR) of the switch to the available short circuit (fault) current of the system until the protective device clears the fault

If a transfer switch does not have adequate withstand capability—system failure, fire, injury to personnel or equipment damage may result. A clear understanding of the interrelationship between the protective device, transfer switch and system needs is necessary for a well designed installation. Some basic information on withstand rating terms and calculations follows the enclosed rating charts.

Underwriters Laboratories (UL) is the independent testing body that has developed the standard UL 1008 which all major transfer switch manufacturers test to. UL lists products which have successfully passed a battery of witnessed tests including the withstand and close into fault tests described herein. Manufacturers that complete these tests are then permitted to label their products with the UL mark.

UL made changes in April of 1989 regarding the labeling requirements of transfer switches. UL clarified the labeling procedure and allows for three rating categories.

- Current limiting fuse
- Specific class (trip time) of molded case breaker
- “Umbrella” or “Any Breaker” ratings that take into account all types of molded, insulated case and power circuit breakers; these tests are performed for a duration of 50ms (3 cycles) on units 225 amps and greater, and for 25ms (1.5 cycles) on 40-150 amp units (with an optional 50ms (3 cycles) duration for units up to 150 amps; note the 50ms (3 cycles) rating on 150 amp and below units is optional as UL has determined that all breakers in this size clear in less than 25ms (1.5 cycles). The “Umbrella” or “Any Breaker” rating is therefore the actual UL requirement and definition of the ATS industry 50ms (3 cycles) (or 25ms (1.5 cycles) as noted) withstand and closing rating, and should not to be confused with additional, non UL 1008 labeled “withstand only” tests.

As per UL 1008 7th edition which became effective from Nov 1st, 2014, “Any Circuit Breaker” rating is replaced by “time based” rating and marking will shows in second instead of # of cycles.

Another major change was implemented in UL 7th edition for Specific Breaker Certification. Per the new requirement, the circuit breaker must be tested with a transfer switch in order to be added to the approved breaker list. The new breaker can also be added to the approved breaker list if the fault clearing time from the published trip curve indicates that the new breaker will clear a fault in the same amount or less time than the time required to clear a fault using the breaker that was tested with the transfer switch successfully.

Zenith Product Ratings

The ABB family of transfer switches have maintained an industry-leading role in ratings from the time of its introduction. Today all ZTX and ZTG products are labeled with a list of specific breaker ratings giving the consultant a free hand with system design. The following pages include the UL certified ratings and specific breaker coordination charts, withstand rating data and additional specific information.

The consulting engineer must review the time and rating to specify the breaker, care must be taken to assure that the breaker specified for the installation have an equal or shorter trip time when compared to the listed devices. This would limit the application of the switch to projects within the scope of its specific breaker listing.

In addition to this factor, many transfer switch manufacturers perform additional withstand tests on selected products. These additional tests may be either for a higher current value or a longer duration than their standard UL listed ratings. The consultant must determine the applicability of these tests and take careful note if these levels are normally not UL labeled ratings.

The ZTX and ZTG, Powered by TruONE
Switch Families

- **ZTX** Standard Transition Automatic Transfer Switches 30 - 1200 amps
- **ZTG** Standard Transition Automatic Transfer Switches 30 - 1200 amps
- **ZTGD** Delayed Transition Automatic Transfer Switches 30 - 1200 amps

Definitions & Calculations

Purpose

Many questions arise when comparing WCR to the system fault current rating. Too often a switch is rated by a manufacturer in one set of WCR terms and the available system fault currents described with a different set of terms. The purpose of this paper is to outline the different ways switches may be rated (WCR) and systems are measured.

Basic Definitions

- RMS Current – The Root Mean Square which is the effective value of an alternating current. It is equal to .707 of the peak current for a sine wave. This is the value referred to when people say “current.”
- Peak Current – The instantaneous maximum value of current—the peak current of a sine wave is 1.414 times its RMS value.
- Symmetrical Current – The alternating current which is symmetrical around the zero axis of the sine wave.
- Asymmetrical Current – The alternating current which is not symmetrical around the zero axis.
- Peak Fault Current – The instantaneous maximum current value that occurs after the start of a fault in any phase.
- Available Peak Current – Maximum possible short circuit current that may exist in a system without protective devices.
- Peak Let Through Current – Maximum instantaneous current through the protective device during the total clearing time.
- Withstand Current Rating – The rating that defines the ability of the switch to withstand the thermal and electromagnetic effects of short circuit currents for a set period of time.
- Withstand and Closing Rating (WCR) – UL 1008 test for a transfer switch’s ability to close into and withstand a fault current. These are the ratings which will actually appear on the UL label of the product.
- Short-Time current rating (STR) - UL 1008 test similar to withstand and closing rating but for a time period up to 0.5 seconds and provides for the requirement that the switch be capable of carrying full load current after the withstand and close-on short-circuit events.

Definitions & Calculations

Test Documents

As fault currents can occur at any level, a transfer switch must be capable of withstanding any fault current up to its maximum rating. This rating is based on the rating of the protective device in front of the unit and must be considered on that basis.

ABB tests show results based on various current values and time durations, and include additional high current tests with fuses. By considering this range of values, it is possible to predict performance with different fuse characteristics or specific circuit breaker current-time curves with a given available short circuit current.

Interrupting Ratings

Some manufacturers of circuit breaker type automatic transfer switches list interrupting current (IC) ratings in lieu of WCR. These switches will then open on faults instead of withstanding the fault until the external protective device clears. As the transfer switch is then used to open the fault current in place of a protective device—this may leave the transfer switch with both normal and emergency open which then requires manual resetting of the breakers within the transfer switch enclosure. The circuit breakers may require factory inspection after high current interruption in accordance with common circuit breaker procedures.

WCR ratings, as opposed to IC ratings appear to offer a better choice to the system designer as he attempts to coordinate the protection of the entire system. Knowing the maximum amount and duration of fault current a switch will withstand gives the designer the information necessary for complete coordinated system design.

Advantage of RMS Symmetrical Ratings

- Date is consistently reported based on UL test procedures.
- Where time beyond the first ½ cycle is given suitable decisions can be made to use circuit breakers or fuses.
- Misleading reporting is eliminated

Blow-On Effects on Short Circuit Current in Contacts

Some switch designers analyze “blow-on” and “blow-off” effects and force vectors (due to electromagnetic repulsion) to claim increased WCR capability of their product. Such calculations are very rough approximations because of inherent errors in estimating “domain” size and number, current “pinch” effect and the problem of complex geometry of actual contact structures when compared to idealized models. The only proof of a successful design are tests, uniformly performed and consistently reported all to the same criterion such as UL 1008.

Specific Breaker Model Types

30-200A 2-pole Zenith T-series transfer switches

ABB Zenith Model Family	Max Rated Voltage	Breaker Manufacturer	Max Coordinated Breaker Rating (kA)	Max. Breaker Amp.	Breaker Type
ZTG (ZGO, ZGD) ZTX (ZXO)	240V 1-phase	ABB	30	125A	XT2S, XT2H, XT2L, XT2V
				250A	XT4S, XT4H, XT4L, XT4V, T4S, T4H, T4L, T4V
		General Electric	30	60A	SEL, SEP
				150A	SEL, SEP
				250A	SFH, SFL, SFP
				600A	SGH, SGL, SGP
		Schneider	30	125A	EGB, EJB, BG, BJ
				150A	HG, HJ, HL, HR
				250A	JG, JJ, JL, JR, LG, LJ, LL, LR
		Eaton	30	125A	EGC
				225A	FD, FDE, HFD, HFDE, FDC, FDCE
				250A	JDB, JD, HJD, JDC, JGH, JGC, JGU, JGX
				400A	KD, CKD, HKD, CHKD, KDC
		Siemens	30	125A	HED4, CED6
				250A	FD6A, FXD6A, HFD6, HFXD6, HHFD6, HHFXD6, CFD6

30-200A 3 or 4 pole Zenith T-series transfer switches

ABB Zenith Model Family	Max Rated Voltage	Breaker Manufacturer	Max Coordinated Breaker Rating (kA)	Max. Breaker Amp.	Breaker Type
ZTG (ZGO, ZGD) ZTX (ZXO)	480V 1 or 3-phase	ABB	30	125A	XT2S, XT2H, XT2L, XT2V
				250A	XT4S, XT4H, XT4L, XT4V, T4S, T4H, T4L, T4V
				600A	XT5H, XT5L, XT5V
		General Electric	30	60A	SEL, SEP
				150A	SEL, SEP
				250A	SFH, SFL, SFP
				600A	SGH, SGL, SGP
		Schneider	30	125A	EGB, EJB, BG, BJ
				150A	HG, HJ, HL, HR
				250A	JG, JJ, JL, JR, LG, LJ, LL, LR
		Eaton	30	125A	EGC
				225A	FD, FDE, HFD, HFDE, FDC, FDCE
				250A	JDB, JD, HJD, JDC, JGH, JGC, JGU, JGX
				400A	KD, CKD, HKD, CHKD, KDC
		Siemens	30	125A	HED4, CED6
				250A	FD6A, FXD6A, HFD6, HFXD6, HHFD6, HHFXD6, CFD6

Specific Breaker Model Types

260A 2 pole Zenith T-series transfer switches

ABB Zenith Model Family	Max Rated Voltage	Breaker Manufacturer	Max Coordinated Breaker Rating (kA)	Max. Breaker Amp.	Breaker Type
ZTG (ZGO, ZGD) ZTX (ZXO)	240V 1-phase	ABB	35	125A	XT2S
				250A	T4S, XT4S
				600A	T5S
			50	125A	XT2H, XT2L, XT2V
				250A	T4H, T4L, T4V, XT4H, XT4L, XT4V
				600A	T5H, T5L, T5V, XT5H, XT5L, XT5V
		General Electric	35	250A	SFH
				600A	SGH
			50	150A	SEL, SEP
				250A	SFL, SFP
				600A	SGL, SGP
		Schneider	35	125A	EGB, BG
				150A	HG
				250A	JG
				600A	LG
			50	125A	EJB, BJ
				150A	HJ, HL, HR
				250A	JJ, JL, JR
				600A	LJ, LL, LR
		Eaton	35	225A	FD, FDE
				250A	JDB, JD
				400A	KD, CKD
				600A	LD, CLD, HLD, CHLD, LDC, CLDC
			50	125A	EGC
				225A	HFD, HFDE, FDC, FDCE
				250A	HJD, JDC, JGH, JGC, JGU, JGX
				400A	HKD, CHKD, KDC
				600A	LGC, LGU, LGX
		Siemens	35	125A	HED4
				250A	FD6A, FXD6A, HFXD6
				400A	JD6-A, JXD6-A, HJD6-A, HJXD6-A, HHJD6-A, HHJXD6-A, CJD6-A
			50	125A	CED6
				250A	HFD6, HFXD6A, HHFD6, HHFXD6, CFD6

Specific Breaker Model Types

260A 3 or 4 pole Zenith T-series transfer switches

ABB Zenith Model Family	Max Rated Voltage	Breaker Manufacturer	Max Coordinated Breaker Rating (kA)	Max. Breaker Amp.	Breaker Type
ZTG (ZGO, ZGD) ZTX (ZXO)	480V 1 or 3-phase	ABB	35	125A	XT2S
				250A	T4S, XT4S
				600A	T5S
			50	125A	XT2H, XT2L, XT2V
				250A	T4H, T4L, T4V, XT4H, XT4L, XT4V
				600A	T5H, T5L, T5V, XT5H, XT5L, XT5V
		General Electric	35	250A	SFH
				600A	SGH
			50	150A	SEL, SEP
				250A	SFL, SFP
				600A	SGL, SGP
		Schneider	35	125A	EGB, BG
				150A	HG
				250A	JG
				600A	LG
			50	125A	EJB, BJ
				150A	HJ, HL, HR
				250A	JJ, JL, JR
				600A	LJ, LL, LR
		Eaton	35	225A	FD, FDE
				250A	JDB, JD
				400A	KD, CKD
				600A	LD, CLD, HLD, CHLD, LDC, CLDC
			50	125A	EGC
				225A	HFD, HFDE, FDC, FDCE
				250A	HJD, JDC, JGH, JGC, JGU, JGX
				400A	HKD, CHKD, KDC
				600A	LGC, LGU, LGX
		Siemens	35	125A	HED4
				250A	FD6A, FXD6A, HFXD6
				400A	JD6-A, JXD6-A, HJD6-A, HJXD6-A, HHJD6-A, HHJXD6-A, CJD6-A
			50	125A	CED6
				250A	HFD6, HFXD6A, HHFD6, HHFXD6, CFD6

Specific Breaker Model Types

400A 2 pole Zenith T-series transfer switches

ABB Zenith Model Family	Max Rated Voltage	Breaker Manufacturer	Max Coordinated Breaker Rating (kA)	Max. Breaker Amp.	Breaker Type
ZTG (ZGO, ZGD) ZTX (ZXO)	240V 1-phase	ABB	35	125A	XT2S
				250A	T4S, XT4S
				600A	T5S, XT5N
			50	125A	XT2H, XT2L, XT2V
				250A	T4H, T4L, T4V, XT4H, XT4L, XT4V
				600A	T5H, T5L, T5V, XT5H, XT5L, XT5V, XT5S
		General Electric	35	250A	SFH
				600A	SGH
			50	150A	SEL, SEP
				250A	SFL, SFP
				600A	SGL, SGP
		Schneider	35	125A	EGB, BG
				150A	HG
				250A	JG
				600A	LG
			50	125A	EJB, BJ
				150A	HJ, HL, HR
				250A	JJ, JL, JR
				600A	LJ, LL, LR
		Eaton	35	225A	FD, FDE
				250A	JDB, JD
				400A	KD, CKD
				600A	LD, CLD, HLD, CHLD, LDC, CLDC
			50	125A	EGC
				225A	HFD, HFDE, FDC, FDCE
				250A	HJD, JDC, JGH, JGC, JGU, JGX
				400A	HKD, CHKD, KDC
				600A	LGC, LGU, LGX
		Siemens	35	400A	CJD6-A
				600A	CLD6-A
			50	125A	CED6
				250A	CFD6
		Fused	100	400A	Class J Fuse

Specific Breaker Model Types

400A 3 or 4 pole Zenith T-series transfer switches

ABB Zenith Model Family	Max Rated Voltage	Breaker Manufacturer	Max Coordinated Breaker Rating (kA)	Max. Breaker Amp.	Breaker Type
ZTG (ZGO, ZGD) ZTX (ZXO)	480V, 3-phase only	ABB	65	125A	XT2H
				250A	T4H, XT4H
				600A	T5H
			100	125A	XT2L
				250A	T4L, XT4L
				600A	T5L
			150	125A	XT2V
				250A	T4V, XT4V
				600A	T5V
		General Electric	65	150A	SEL
				250A	SFP
			100	150A	SEP
				250A	SFP
		Schneider	65	125A	EJB, BJ
				150A	HJ
				250A	JJ
			100	150A	HL
				250A	JL
			150	150A	HR
				250A	JR
		Eaton	65	225A	HFD, HFDE
				250A	JGH
			100	125A	EGC
				225A	FDC, FDCE
				250A	JGC
			150	250A	JGU, JGX
		Siemens	150	125A	CED6
				250A	CFD6
		Fused	200	600A	Class J Fuse

Specific Breaker Model Types

400A 3 or 4 pole Zenith T-series transfer switches

ABB Zenith Model Family	Max Rated Voltage	Breaker Manufacturer	Max Coordinated Breaker Rating (kA)	Max. Breaker Amp.	Breaker Type
ZTG (ZGO, ZGD) ZTX (ZXO)	480V, 3 and 1-phase	ABB	35	125A	XT2S
				250A	T4S, XT4S
				600A	T5S, XT5N
			50	125A	XT2H, XT2L, XT2V
				250A	T4H, T4L, T4V, XT4H, XT4L, XT4V
				600A	T5H, T5L, T5V, XT5H, XT5L, XT5V, XT5S
		General Electric	35	250A	SFH
				600A	SGH
			50	150A	SEL, SEP
				250A	SFL, SFP
				600A	SGL, SGP
		Schneider	35	125A	EGB, BG
				150A	HG
				250A	JG
				600A	LG
			50	125A	EJB, BJ
				150A	HJ, HL, HR
				250A	JJ, JL, JR
				600A	LJ, LL, LR
		Eaton	35	225A	FD, FDE
				250A	JDB, JD
				400A	KD, CKD
				600A	LD, CLD, HLD, CHLD, LDC, CLDC
			50	125A	EGC
				225A	HFD, HFDE, FDC, FDCE
				250A	HJD, JDC, JGH, JGC, JGU, JGX
				400A	HKD, CHKD, KDC
				600A	LGC, LGU, LGX
		Siemens	35	400A	CJD6-A
				600A	CLD6-A
			50	125A	CED6
				250A	CFD6
		Fused	100	400A	Class J Fuse

Specific Breaker Model Types

600A 2 pole Zenith T-series transfer switches

ABB Zenith Model Family	Max Rated Voltage	Breaker Manufacturer	Max Coordinated Breaker Rating (kA)	Max. Breaker Amp.	Breaker Type
ZTG (ZGO, ZGD) ZTX (ZXO)	240V 1-phase	ABB	35	125A	XT2S
				250A	T4S, XT4S
				600A	T5S, XT5N
			50	125A	XT2H, XT2L, XT2V
				250A	T4H, T4L, T4V, XT4H, XT4L, XT4V
				600A	T5H, T5L, T5V, XT5N, XT5H, XT5L, XT5V
		General Electric	35	250A	SFH
				600A	SGH
			50	150A	SEL, SEP
				250A	SFL, SFP
				600A	SGL, SGP
		Schneider	35	125A	EGB, BG
				150A	HG
				250A	JG
				600A	LG
			50	125A	EJB, BJ
				150A	HJ, HL, HR
				250A	JJ, JL, JR
				600A	LJ, LL, LR
		Eaton	35	225A	FD, FDE
				250A	JDB, JD
				400A	KD, CKD
				600A	LD, CLD, HLD, CHLD, LDC, CLDC
			50	125A	EGC
				225A	HFD, HFDE, FDC, FDCE
				250A	HJD, JDC, JGH, JGC, JGU, JGX
				400A	HKD, CHKD, KDC
				600A	LGC, LGU, LGX
		Siemens	35	400A	CJD6-A
				600A	CLD6-A
			50	125A	CED6
				250A	CFD6
		Fused	100	600A	Class J Fuse

Specific Breaker Model Types

600A 3 or 4 pole Zenith T-series transfer switches

ABB Zenith Model Family	Max Rated Voltage	Breaker Manufacturer	Max Coordinated Breaker Rating (kA)	Max. Breaker Amp.	Breaker Type
ZTG (ZGO, ZGD) ZTX (ZXO)	480V, 3-phase only	ABB	35	125A	XT2S
				250A	T4S, XT4S
				600A	T5S, XT5S
				800A	T6N
			50	125A	XT2N
				250A	T4H, XT4H
				600A	T5H, XT5N, XT5H
				800A	T6S, T6H, T6L
			100	125A	XT2L
				250A	T4L, XT4L
				600A	T5L, XT5L
			200	125A	XT2V
				250A	T4V, XT4V
				600A	T5V, XT5V
		General Electric	35	150A	SFH
				250A	SGH
			50	150A	SEL
				250A	SFL
			65	600A	SGL, SGP
			100	150A	SEP
				250A	SFP
		Schneider	35	125A	EGB, BG
				150A	HG
				250A	JG
			50	125A	EJB, BJ
				150A	HJ
				250A	JJ
				600A	LG
			65	600A	LJ
			100	150A	HL
				250A	JL
				600A	LL
			200	150A	HR
				250A	JR
				600A	LR
		Eaton	35	225A	FD, FDE
				250A	JDB, JD
				400A	KD, CKD
				600A	LD, CLD
			50	225A	HFD, HFDE
				250A	HJD, JDC,JGH
				400A	HKD, CHKD
			65	600A	HLD, CHLD
			100	125A	EGC
				225A	FDC, FDCE
				250A	JGC
				400A	KDC
				600A	LDC, CLDC, LGC,
			150	250A	JGU
				600A	LGU
			200	250A	JGX, JGH+CL
				600A	LGX
		Siemens	150	400A	CJD6-A
				600A	CLD6-A
			200	125A	CED6
				250A	CFD6
		Fused	200	800A	Class L Fuse

Specific Breaker Model Types

600A 3 or 4 pole Zenith T-series transfer switches

ABB Zenith Model Family	Max Rated Voltage	Breaker Manufacturer	Max Coordinated Breaker Rating (kA)	Max. Breaker Amp.	Breaker Type
ZTG (ZGO, ZGD) ZTX (ZXO)	480V, 3 and 1- phase	ABB	35	125A	XT2S
				250A	T4S, XT4S
				600A	T5S, XT5S
			50	125A	XT2H, XT2L, XT2V
				250A	T4H, T4L, T4V, XT4H, XT4L, XT4V
				600A	T5H, T5L, T5V, XT5N, XT5H, XT5L, XT5V
		General Electric	35	250A	SFH
				600A	SGH
			50	150A	SEL, SEP
				250A	SFL, SFP
				600A	SGL, SGP
		Schneider	35	125A	EGB, BG
				150A	HG
				250A	JG
				600A	LG
			50	125A	EJB, BJ
				150A	HJ, HL, HR
				250A	JJ, JL, JR
				600A	LJ, LL, LR
		Eaton	35	225A	FD, FDE
				250A	JDB, JD
				400A	KD, CKD
				600A	LD, CLD, HLD, CHLD, LDC, CLDC
			50	125A	EGC
				225A	HFD, HFDE, FDC, FDCE
				250A	HJD, JDC, JGH, JGC, JGU, JGX
				400A	HKD, CHKD, KDC
				600A	LGC, LGU, LGX
		Siemens	35	400A	CJD6-A
				600A	CLD6-A
			50	125A	CED6
				250A	CFD6
		Fused	100	600A	Class J Fuse

Specific Breaker Model Types

800-1200A 3 or 4 pole Zenith T-series transfer switches

ABB Zenith Model Family	Max Rated Voltage	Breaker Manufacturer	Max Coordinated Breaker Rating (kA)	Max. Breaker Amp.	Breaker Type
ZTG (ZGO, ZGD) ZTX (ZXO)	480V, 3 Phase	ABB	50	600	XT5S
				800	T6S, XT6S
				1200	T7S, XT7S
			65	600	T5H, XT5H
				800	T6H, XT6H
				1200	T7H, XT7L, XT7H
			85	800	T6L
				1200	T7L
			100	600	T5L, XT5L
				1200	XT7L
			150	600	T5V, XT5V
		General Electric	50	1200	SKH
			65	600	SGL
				1200	SKP, SKL
			100	600	SGP
		Schneider	50	1200	PK, RL, RJ, RK
			65	600	LJ
				800	MJ
				1200	PL, PJ
			100	600	LL
			200	600	LR
		Eaton	50	600	LGS
				800	MDL, CMDL
				1200	NGS, ND, CND
			65	400	HKD, CHKD
				600	LGH, HLD, CHLD
				800	HMDL, CHMDL
				1200	NGH, HND, CHND
				1600	RGH
			100	400	KDC
				600	LGC, LDC, CLDC
			150	600	LGU
			200	600	LGX
		Siemens	50	800	MD6, MXD6, LMD6, LMXD6
				1200	ND6, NXD6
				1600	PD6, PXD6
			65	400	HJD6, HJXD6, SHJD6
				600	HLD6, HLXD6, SCLD6
				800	HMD6, HMXD6
				1200	HND6, HNXD6
				1600	CPD6, HPD6, HPXD6
			100	800	CMD6
				1200	CND6
			150	400	CJD6, SCJD6
				600	CLD6, SCLD6
		Fused	100	2000	CLASS L fuses
			200	600	CLASS RK5 fuses
				800	CLASS J & T fuses
				1200	CLASS L fuses

Specific Breaker Model Types

800-1200A 3 or 4 pole Zenith T-series transfer switches

ABB Zenith Model Family	Max Rated Voltage	Breaker Manufacturer	Max Coordinated Breaker Rating (kA)	Max. Breaker Amp.	Breaker Type
ZTG (ZGO, ZGD) ZTX (ZXO)	240V, 3 Phase	ABB	65	600	T5N, XT5N
				800	XT6N
				1200	XT7L, XT7H, XT7S
			85	800	T6L, T6H, T6S
				1200	T7L, T7H
			100	600	T5S, XT5S
				800	XT6S
				1200	XT7L, XT7H
			150	600	T5H, XT5H
			200	600	T5V, T5L, XT5V, XT5L
				800	XT6H
		General Electric	65	600	SGH
				1200	SKH
			100	600	SGL
				1200	SKP, SKL
			200	600	SGP
		Schneider	50	1200	RL, RJ, RK
			65	600	LG
				800	MJ, MG
				1200	PL, PJ, PK
			100	600	LJ
			125	600	LL
			200	600	LR
		Eaton	50	1200	NGS
			65	400	KD, CKD
				600	LD, CLD
				800	HMDL, CHMDL, MDL, CMDL
				1200	NGH, HND, CHND, ND, CND
				1600	RGH
			85	600	LGS
			100	400	HKD, CHKD
				600	LGH, HLD, CHLD
			200	400	KDC
				600	LGX, LGU, LGC, LDC, CLDC
		Siemens	65	400	JD6, JXD6, SJD6
				600	LD6, LXD6, SLD6
				800	MD6, MXD6, LMD6, LMXD6
				1200	HND6, NXD6
				1600	PD6, PXD6
			100	400	HJD6, HJXD6, SHJD6
				600	HLD6, HLXD6, SHLD6
				800	HMD6, HMXD6
				1200	HND6, HNXD6
				1600	HPD6, HPXD6
			200	400	CJD6, SCJD6
				600	CLD6, SCLD6
				800	CMD6
				1200	CND6
				1600	CPD6
		Fused	200	800	CLASS T fuses

Each ATS has Rating Label per UL 1008 Marking

Requirements as Shown in Figure 1.

600 AMPS (3 & 4-pole unit)

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 rating of other loads do not exceed the ampere rating of the switch and the tungsten load does not exceed 30 percent of switch rating.
Rated Frequency: 50/60 Hz

SHORT CIRCUIT RATINGS WHEN USING SPECIFIC CIRCUIT BREAKERS/ FUSES

When protected by a circuit breaker of specific manufacturer, type, and ampere rating as marked below, this Transfer Switch is suitable for use in a circuit capable of delivering the Short-Circuit current at the maximum voltage marked below. When protected by a fuse of the specific fuse class and maximum ampere rating as marked below, this Transfer Switch is suitable for use in a circuit capable of delivering the Short-Circuit current at the maximum voltage marked.

TABLE A: 480V Max. Rated for UL, 3-phase only.

MFR	RMS SYMM AMPS x 1000	Max. Amp.	Type
ABB	35	125A	XT2S
	35	250A	XT4S, T4S
	35	600A	T5S, XT5S
	35	800A	T6N
	50	125A	XT2H
	50	250A	XT4H, T4H
	50	600A	T5H, XT5N, XT5H
	50	800A	T6S, T6H, T6L
	100	125A	XT2L
	100	250A	XT4L, T4L
	100	600A	T5L, XT5L
	200	125A	XT2V
	200	250A	XT4V, T4V
	200	600A	T5V, XT5V
GENERAL ELECTRIC	35	250A	SFH
	35	600A	SGH
	50	150A	SEL
	50	250A	SFL
	65	600A	SGL, SGP
	100	150A	SEP
	100	250A	SFP
SCHNEIDER	35	125A	EGB, BG
	35	150A	HG
	35	250A	JG
	50	125A	EJB, BJ
	50	150A	HJ
	50	250A	JJ
	50	600A	LG
	65	600A	LJ
	100	150A	HL
	100	250A	JL
	100	600A	LL
	200	150A	HR
	200	250A	JR
	200	600A	LR

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Figure 1. (Label shown for reference only)

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