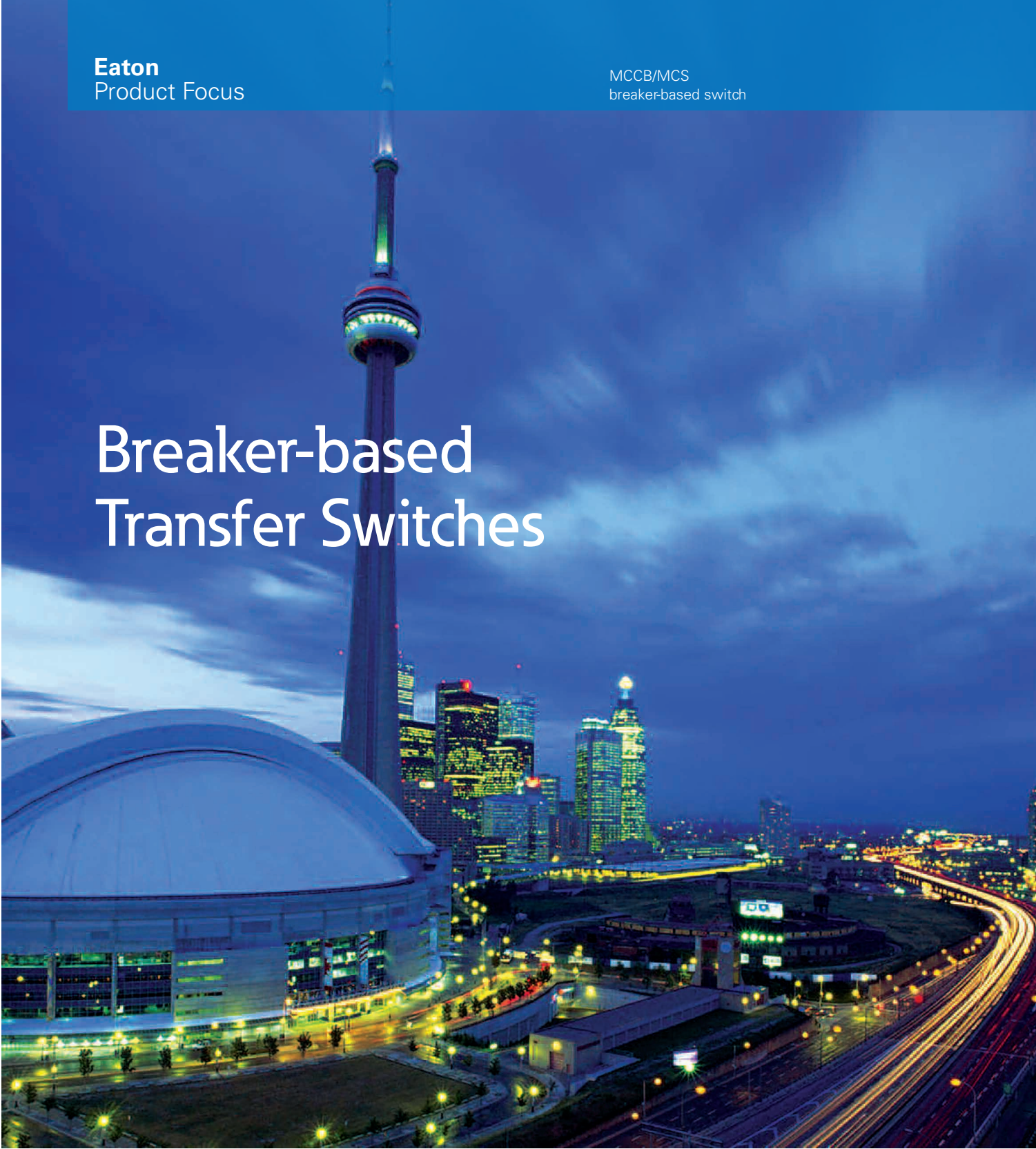


Eaton
Product Focus

MCCB/MCS
breaker-based switch

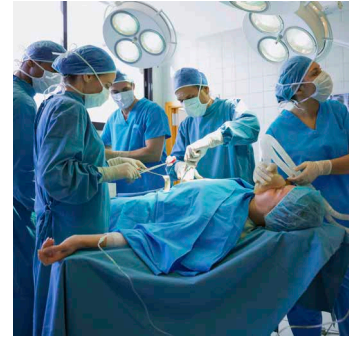
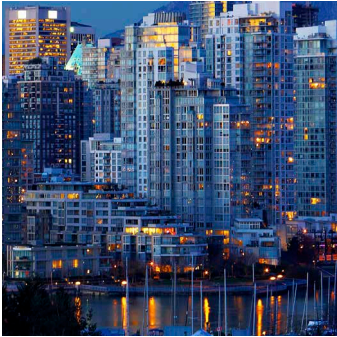
Breaker-based Transfer Switches



EATON

Powering Business Worldwide

Built with years of experience Powered with innovation Delivered with reliability



A History of Experience, Innovation and Reliability

As a premier industrial manufacturer, Eaton's electrical business is one of the world's leading suppliers of electrical control products and power distribution equipment. Eaton's electrical products include a complete line of low and medium voltage assemblies from substations, switchgear and panelboards to loadcentres, transformers and safety switches. These products are used wherever there is a demand for electrical power in residences, high-rise apartment and office buildings, commercial sites, hospitals and factories.

Built With Experience

For over a century, Eaton has focused on providing quality power-centric products and services. In today's business environment, customers like you are driving our transformation from a leading global electrical components provider into a customer-centric solutions partner who understands your business. We do this through in-depth collaboration with customers and subject matter experts studying the issues inherent to the electrical power distribution and control systems.

Powered With Innovation

Eaton continues to meet changing industry needs by providing a broad range of automatic transfer switches. Eaton has used industry-leading breaker based designs for years and these designs can be matched to a family of automatic transfer switch controllers that will meet your specific needs. Identify your application, define your needs, and select the solution from Eaton.

Delivered With Reliability

Power outages due to bad weather or utility failure have grown increasingly costly and more disruptive to businesses and homeowners. A backup power system will keep your computers, security system, heating or refrigeration system, cash registers, home health care equipment, or any system that uses electric power, energized and operational. The demands for reliability have increased. Eaton meets those expectations by the stringent CSA C22.2 No. 178 and UL1008 automatic transfer switches with a world-class product delivery system. Eaton will provide the individual transfer switch built to exacting standards or supply the same transfer switch in an integrated lineup with other Eaton gear.

Breaker-based Transfer Switches

Switch Type - Automatic, Manual and Electrically Operated
30A-1000A



Manual Transfer Switch



Non-automatic Transfer switch

Automatic Transfer switch

Product Description

An economical line of transfer switches with micro-processor based logic, offering a standard feature package, for basic power applications on 30-1000 ampere systems up to 600 volts, 2, 3 or 4 pole.

Electrical Ratings

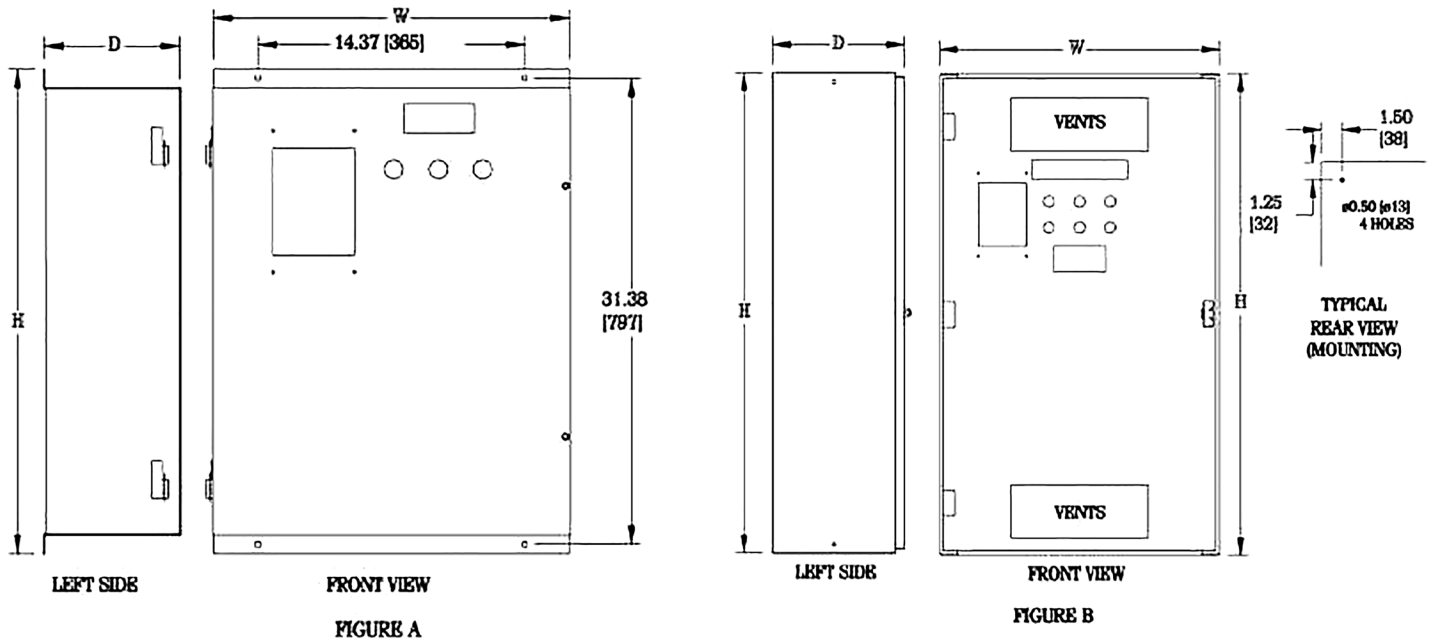
- Ratings 40, 100, 150, 200, 225, 260, 400, 600, 800 and 1000 amperes
- 2, 3 or 4-poles
- Up to 600 Vac, 50/60 Hz.
- NEMA® 1, 3R, Open, 12, 4, 4x
- UL® 1008 listed
- CSA C22.2 No. 178 certified

Standard Features (ATC300+)

- Switch position contacts:
 - Source 1 Position 1NO and 1NC
 - Source 2 Position 1NO and 1NC
- Programmable Micro-processor based control
- Normal/Standby source monitoring
- Plant Exerciser with Failsafe (programmable)
- High Withstand, Closing and Interrupting Ratings
- Manual Transfer Under Load
- Engine Start Contacts
- Time Delay Normal to Emergency
- Time Delay Engine Start
- Time Delay Emergency to Normal
- Time Delay Engine Cooldown
- LED indicators – switch position
- LED indicators – source available
- Emergency source undervoltage/underfrequency sensing
- Normal source undervoltage sensing
- Time Delay Neutral
- Go to Emergency Contact (Area Protection)
- Pre-Transfer Signal Contacts
- Pushbutton Bypass Time Delays
- Load shed from emergency (Emergency Inhibit)

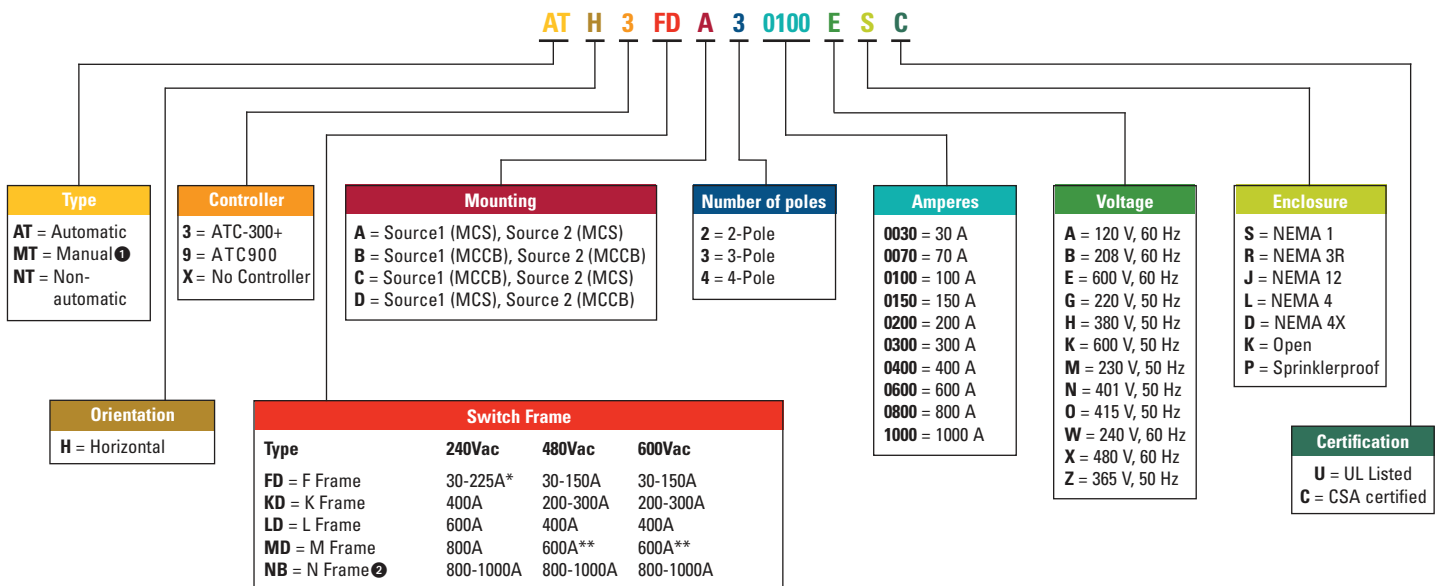
Optional Features

- Overcurrent protection with thermal-magnetic trip
- Surge protection device
- Remote annunciator controller—monitor and control single or multiple automatic transfer switches
- Ethernet gateway with Web server (Modbus TCP/IP, SNMP, BACnet)
- Space heater with thermostat
- Optional upgrade to ATC900



TRANSFER SWITCH ENCLOSURE DIMENSIONS

Frame size	Rating	Figure	Height	Width	Depth
F	30A - 150A, 600V 30A - 200A, 240V	A	32.63" (829)	24" (610)	9" (229)
K, L, M	225A - 600A	B	55" (1397)	32" (813)	15" (381)
N	800A - 1200A	B	65" (1651)	38" (965)	16" (406)



Notes: *225A single phase applications only
 **4 pole 600Vac 600A Use N Frame
 ① Manual configuration is available starting from K frame.
 ② Configurations with 4-pole NB MCCB (with trip unit) are not available

Automatic Breaker-based Transfer Switch Catalogue Numbering System

Breaker-based Transfer Switches

Switch Type -
Bypass Isolation



Double Sided Bypass Isolation Switch

Product Description

The Eaton® Bypass/Isolation Transfer Switch is designed for applications where preventative maintenance, inspection and testing must be accomplished while maintaining continuity of power to the load. Proven Eaton® switch designs ensure reliable transfer from normal to auxiliary power sources – for rapid restoration of essential power in critical applications.

Electrical Ratings

- Ratings 40, 100, 150, 200, 225, 260, 400, 600, 800 and 1000 amperes
- 2, 3 or 4-poles
- Up to 600 Vac, 50/60 Hz.
- NEMA® 1, 3R
- UL® 1008 listed
- CSA® C22.2 No. 178 certified

Superior Main Contact Structure

The Eaton® Combination Bypass and Automatic Transfer Switch is listed to CSA specifications C22.2 No. 178 and C22.2 No. 31.

As an added plus the switching devices are listed under CSA C22.2 No. 5. Completely enclosed contacts provide both safety and reliability. They also ensure the integrity of the contact assemblies and minimize the need for periodic maintenance of the contacts, reducing the need for downtime and maintenance time.



Transfer Switch Is Easy To Maintain And Test

The Eaton® Bypass/Isolation Switch is designed to require minimum maintenance even under the most strenuous of operating conditions. Due to the use of moulded case switches and their inherent self-protection capability, the contact structure and mechanism is extremely long lived.

Our experience has shown that through normal operating conditions, the moving and stationary contacts will maintain their integrity for the full expected life of the transfer switch.

When isolating and bypassing the transfer switch, a short term (less than 3 second) power interruption results. However, this is less than when transferring power after a power outage using a standard transfer switch. Also, with a double-sided bypass the transfer switch can be bypassed to either source quickly and easily regardless of the position or condition of the transfer switch.

Safety To Maintenance Personnel

In most instances, the Bypass/Isolation Switch will be in the Bypass Mode only during a maintenance or testing period. During this time, there could be operating personnel close to the equipment. The self protection capability of the Eaton® switch would give these operators an extra measure of safety during a rare coincidental fault condition.

Features

The Eaton® Bypass Isolation Switch is available with all the options and features of our standard Transfer Switch product line. Proven, microprocessor based programmable controllers are supplied as standard on all Bypass Transfer Switches.

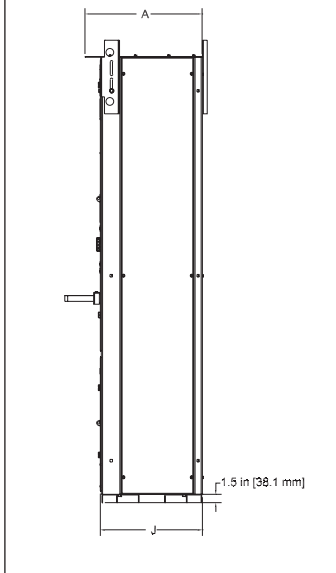
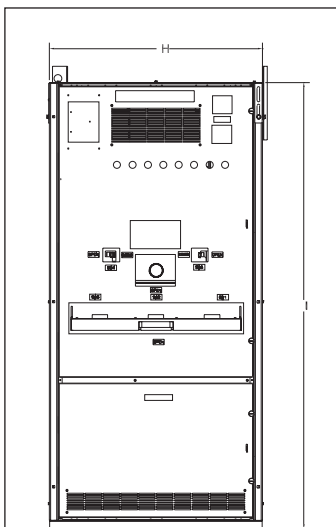
BYPASS ISOLATION ATS (2 & 3 POLE) ENCLOSURE DIMENSIONS

Max Amps	Max Volts	Switch Frame	CSA Bypass Frame	Dimensions (inches/mm)				Weight (LBS)	
				A	H	I	J	AL	CU
150	480	F	F	21/533	30/965	79.5/2019	18/457	328	404
150	600	F	F	21/533	30/965	79.5/2019	18/457	328	404
200	240	F	F	21/533	30/965	79.5/2019	18/457	328	404
225*	240	F	F	21/533	30/965	79.5/2019	18/457	328	404
300	480	K	K	21/533	38/965	79.5/2019	18/457	495	610
300	600	K	K	21/533	38/965	79.5/2019	18/457	495	610
400	240	K	K	21/533	38/965	79.5/2019	18/457	495	610
400	480	L	K	21/533	38/965	79.5/2019	18/457	554	682
400	600	L	K	21/533	38/965	79.5/2019	18/457	554	682
600	240	L	L	21/533	38/965	79.5/2019	18/457	582	717
600	480	M	L	21/533	38/965	79.5/2019	18/457	582	717
600	600	M	L	21/533	38/965	79.5/2019	18/457	582	717
800	240	NB	MD	27.12/689	38/965	91.5/2324	24/610	900	1000
800	480	NB	MD	27.12/689	38/965	91.5/2324	24/610	900	1000
800	600	NB	MD	27.12/689	38/965	91.5/2324	24/610	900	1000
1000	240	NB	ND	27.12/689	38/965	91.5/2324	24/610	900	1000
1000	480	NB	ND	27.12/689	38/965	91.5/2324	24/610	900	1000
1000	600	NB	ND	27.12/689	38/965	91.5/2324	24/610	900	1000

* Single Phase Only

BYPASS ISOLATION ATS (4 POLE) ENCLOSURE DIMENSIONS

Max Amps	Max Volts	Switch Frame	CSA Bypass Frame	Dimensions (inches/mm)				Weight (LBS)	
				A	H	I	J	AL	CU
150	480	F	F	21/533	30/965	79.5/2019	18/457	364	448
150	600	F	F	21/533	30/965	79.5/2019	18/457	364	448
200	240	F	F	21/533	30/965	79.5/2019	18/457	364	448
300	480	K	K	21/533	38/965	79.5/2019	18/457	591	728
300	600	K	K	21/533	38/965	79.5/2019	18/457	591	728
400	240	K	K	21/533	38/965	79.5/2019	18/457	591	728
400	480	L	K	21/533	38/965	79.5/2019	18/457	675	831
400	600	L	K	21/533	38/965	79.5/2019	18/457	675	831
600	240	L	L	21/533	48/1219	79.5/2019	18/457	750	924
600	480	NB	ND	21/533	48/1219	91.5/2324	24/610	1100	1300
600	600	NB	ND	21/533	48/1219	91.5/2324	24/610	1100	1300
800	240	NB	ND	27.12/689	48/1219	91.5/2324	24/610	1100	1300
800	480	NB	ND	27.12/689	48/1219	91.5/2324	24/610	1100	1300
800	600	NB	ND	27.12/689	48/1219	91.5/2324	24/610	1100	1300
1000	240	NB	ND	27.12/689	48/1219	91.5/2324	24/610	1100	1300
1000	480	NB	ND	27.12/689	48/1219	91.5/2324	24/610	1100	1300
1000	600	NB	ND	27.12/689	48/1219	91.5/2324	24/610	1100	1300



Typical Double Sided Bypass Transfer Switch

4BI H 3 FD A 3 0100 E S C

Type

4BI = Single Sided Bypass
5BI = Double Sided Bypass

Logic

3 = ATC-300+
9 = ATC-900

Mounting

A = Source1 (MCS), Source 2 (MCS)
B = Source1 (MCCB), Source 2 (MCCB)
C = Source1 (MCCB), Source 2 (MCS)
D = Source1 (MCS), Source 2 (MCCB)

Number of poles

2 = 2-Pole
3 = 3-Pole
4 = 4-Pole

Amperes

0030 = 30 A
0070 = 70 A
0100 = 100 A
0150 = 150 A
0200 = 200 A
0300 = 300 A
0400 = 400 A
0600 = 600 A
0800 = 800 A
1000 = 1000 A

Voltage

A = 120 V, 60 Hz
B = 208 V, 60 Hz
E = 600 V, 60 Hz
G = 220 V, 50 Hz
H = 380 V, 50 Hz
K = 600 V, 50 Hz
M = 230 V, 50 Hz
N = 401 V, 50 Hz
O = 415 V, 50 Hz
W = 240 V, 60 Hz
X = 480 V, 60 Hz
Z = 365 V, 50 Hz

Enclosure

S = NEMA 1
R = NEMA 3R
J = NEMA 12
L = NEMA 4
D = NEMA 4X
K = Open
P = Sprinklerproof

Certification

U = UL Listed
C = CSA certified

Orientation

H = Horizontal

Switch Frame

Type	240Vac	480Vac	600Vac
FD = F Frame	30-225A*	30-150A	30-150A
KD = K Frame	400A	200-300A	200-300A
LD = L Frame	600A	400A	400A
MD = M Frame	800A	600A**	600A**
NB = N Frame	800-1000A	800-1000A	800-1000A

Notes: *225A single phase applications only
**4 pole 600Vac 600A Use N Frame
Ⓜ Configurations with 4-pole NB MCCB (with trip unit) are not available

BREAKER-BASED TRANSFER SWITCH WITHSTAND/CLOSING RATINGS

When protected by any manufacturers' breaker or Cutler-Hammer® circuit breaker upstream as shown, the transfer switch is rated for use on a circuit capable of delivering not more than the RMS Symmetrical amps at the voltage shown below.

Voltage	Transfer Switch Ampere Rating	Number of Poles Switched	Maximum fault level available at upstream device (kA symmetrical)						
			Upstream any manufacturers' breaker or Cutler-Hammer circuit breaker type						
			25kA	35kA	42kA	50kA	65kA	100kA	200kA
120/240 and 240, 208Y/120	30 - 200	2,3,4	Any*	Any*	Any*	Any*	Any*	Any*	FDC,JDC,KDC
	225	2	Any*	Any*	Any*	Any*	Any*	Any*	FDC,JDC,KDC
	300	2,3,4	Any*	Any*	Any*	Any*	Any*	Any*	KDC
	400	2,3,4	Any*	Any*	Any*	Any*	Any*	Any*	KDC
	600	2,3,4	Any*	Any*	Any*	Any*	Any*	Any*	LDC
	800 - 1000	2,3,4	Any*	Any*	Any*	Any*	Any*	Any*	---
480Y/277 and 480	30 - 150	2,3,4	Any*	Any*	Any*	Any*	Any*	(FDB/FD)+LFD FDC,JDC,KDC	150kA FCL***,LCL***
	200 - 300	2,3,4	Any*	Any*	Any*	Any*	Any*	KDC,NB-TP**	LCL***
	400	2,3,4	Any*	Any*	Any*	Any*	Any*	---	---
	600	2,3	Any*	Any*	Any*	Any*	Any*	NB-TP	---
	800	2,3	Any*	Any*	Any*	Any*	---	NB-TP	---
	600 - 1000	4	Any*	Any*	Any*	Any*	---	---	---
600Y/347 and 600	1000	2,3	Any*	Any*	Any*	Any*	---	---	---
	30 - 150	2,3,4	Any*	Any*	(FD/FDB)+LFD KDC	(FD/FDB)+LFD KDC	(FD/FDB)+LFD KDC	(FD/FDB)+LFD LCL	---
	200 - 300	2,3,4	Any*	Any*	Any*	KDC	KDC	LCL	---
	400	2,3,4	Any*	Any*	Any*	KDC	KDC	---	---
	600	2,3	Any*	Any*	Any*	LDC	---	---	---
	600	4	Any*	---	---	---	---	---	---
800 - 1000	2,3,4	Any*	---	---	---	---	---	---	

*Any manufacturers' breaker

**with P12 limiter

*** 150kA maximum

BREAKER-BASED TRANSFER SWITCH WITHSTAND/CLOSING RATINGS

When protected by an upstream fuse type shown, the transfer switch is rated for use on a circuit capable of delivering not more than the RMS Symmetrical amps at the voltage shown below.

Voltage	Transfer Switch Ampere Rating	Number of Poles Switched	Maximum fault level available at upstream device (kA symmetrical)		
			Upstream Fuse Type		Max. Fuse Amperes
			100kA	200kA	
120/240 and 240, 208Y/120	30 - 225	2,3,4	---	J, T ---	200A 400A
	300	2,3,4	R J,T	J,T ---	400A 600A
	400	2,3,4	J,T L	R ---	600A 1200A
	600	2,3,4	L ---	---	800A 1600A
	800 - 1000	2,3,4	---	L	1600A
480Y/277, 480, 600Y/347 and 600	30 - 150	2,3,4	---	J,T ---	200A 400A
	200 - 300	2,3,4	R J,T	J,T ---	400A 600A
	400	2,3,4	J,T L	R ---	600A 1200A
	600	2,3	L ---	---	800A 1600A
	600	4	---	L	1600A
	800 - 1000	2,3,4	---	L	1600A

Automatic Transfer Controllers Feature Selection Chart, continued



Feature Description	ATC-300+	ATC-900
Voltage Specification		
System application voltage	Up to 600 Vac	Up to 600 Vac
Voltage measurements	Source 1 and 2—VAB, VBC and VCA	Source 1, 2 and load—VAB, VBC and VCA
Voltage measurement range	0–790 Vac rms	0–700 Vac rms
Operating power	65–145 Vac	65–160 Vac 24 Vdc (±10%)
Frequency Specifications		
Frequency measurements	Source 1 and 2	Source 1 and 2
Frequency measurement range	40–70 Hz	40–70 Hz
Environmental Specifications		
Operating temperature range	–20 to +70 °C	–20 to +70 °C
Storage temperature range	–30 to +85 °C	–30 to +85 °C
Operating humidity	0 to 95% relative humidity (noncondensing)	0 to 95% relative humidity (noncondensing)
Operating environment	Resistant to ammonia, methane, nitrogen, hydrogen and hydrocarbons	Resistant to ammonia, methane, nitrogen, hydrogen and hydrocarbons
Front Panel Indication		
Mimic diagram with LED indication	Unit status, Source 1 and 2 available and connected (five total)	Unit status, Source 1 and 2 available and connected (seven total)
Main display	LCD-based display, 2 lines, 16 characters	LCD display, 4.3 inch color TFT (480x272)
Display language	English, French and Spanish	English, French and Spanish
Communications capable	Modbus 485	Modbus 485 or Ethernet TCP/IP
Enclosure compatibility	NEMA 1, 12, 3R and 4X UV resistant faceplate	NEMA 1, 12, 3R and 4X UV resistant faceplate
Programming Selections		
Time delay normal to emergency	0–1800 seconds	0–9999 seconds
Time delay emergency to normal	0–1800 seconds	0–9999 seconds
Time delay engine cooldown	0–1800 seconds	0–9999 seconds
Time delay engine start	0–120 seconds	0–120 seconds
Time delay neutral	0–120 seconds	0–120 seconds or based on load voltage decay of 2–30% of nominal
Time delay Source 2 fail	0–6 seconds	0–6 seconds
Time delay voltage unbalance	10–30 seconds	10–30 seconds
Voltage unbalance three-phase	0 or 1 (1 = enabled)	Enabled or disabled
Phase reversal three-phase	Dropout 5–20% Pickup (DO –2%) –3%	Dropout 5–20% Pickup (DO –2%) –3%
In-phase	0 or 1 (1 = enabled)	
Load sequencing	Not available	0–120 seconds (up to xx devices)
Pre-transfer signal	1–120 seconds	0–120 seconds
Plant exerciser	Selectable—OFF, 7-, 14-, 28-day interval, 0–600 minutes, no load/load with fail-safe	Two independent exerciser modes—OFF, daily, 7-, 14-, 28-day interval or by calendar date (up to 12 independent calendar dates). Test operations include independent transfer time delays
Preferred source selection	Not available	Source 1, Source 2 or None
Commitment to transfer in TDNE	Not available	Enabled or disabled
Retransfer mode N/A automatic or manual	Optional	Enabled or disabled
Auto daylight saving time adjustment	Not available	Enabled or disabled
System selection	Utility/generator or dual utility	Utility/generator, dual utility, dual generator or three source

Integrated Solutions



Automatic Transfer Switch Integrated Into a Switchboard Lineup

Integrated Solutions

Minimize initial equipment costs, reduce installation time, and increase system reliability. These are goals of all involved in placing electrical distribution equipment in service — from the design engineer, to the electrical contractor, and especially with the end user of the equipment.

Eaton believes the transfer switch equipment is an integral part of the distribution equipment. This fundamental belief is why Eaton offers various types of transfer switches for the design engineer, electrical contractor and the user to choose from. Eaton offers Contactor-Based, Moulded Case and Circuit Breaker style switches.

All Eaton transfer switches are designed to meet the requirements set forth by CSA C22.2 No.178, however, all transfer switches are not created equal. You can be assured of safe and reliable operation from all types of transfer switches that Eaton offers.

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