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Combination Bypass Isolation and Automatic Transfer Switches 100-1000 Amperes

Proven switch designed to ensure reliable transfer from normal to auxiliary power sources - for rapid restoration of essential power in critical applications.

Introduction

Combination Bypass Isolation and Automatic Transfer Switches are designed for applications where preventative maintenance, inspection and testing must be accomplished while maintaining continuity of power to the load. This is typically required in standby power situations that require safe maintenance of the system with minimal disruption of power. Combination Bypass Isolation and Automatic Transfer Switches meet or exceed all industry standards for endurance, reliability and performance. Cutler-Hammer Maintenance Bypass Isolation Transfer Switches meet or exceed all industry standards for endurance, reliability, and performance. They are listed under CSA 22.2 No 178 and UL1008 standards for transfer switches.

Design Highlights

- Overcurrent protection available
- Simple test circuit
- Designed to safely withstand fault currents
- Manufactured in an ISO 9002/14001 facility and designed in an ISO 9001 facility
- Seismic qualified for UBC Zone 4

Switch Application Section
Transfer switch equipment offers flexibility and versatility to the system designer and user.

Cutler-Hammer Bypass Isolation Transfer Switches are offered in two basic designs, doublesided (USA and Canada) and single-sided configuration (Canada Only). A double-sided bypass isolation transfer switch completely isolates the transfer switch while providing the user the ability to bypass the load to only one source, either the utility source or the emergency source as specified when ordered. In accordance with CSA C282-00 (Institutional and Residential Building Occupancy Group B and Group C) require as a minimum a single sided bypass on emergency supply.

All Switches include the basic features necessary for normal operation as standard (see next page). Cutler-Hammer also offers an extensive array of optional features and accessories that permits the user to customize a new transfer switch to match the application. The customization process is simple. Select the appropriate catalogue number for your application from the charts. Then choose any optional features or accessories needed to complete the project requirements.

Cutler-Hammer Transfer Switch Withstand / Closing Ratings

When protected by an upstream, any manufacturers' breaker or Cutler-Hammer circuit breaker 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*	---	---	---
	1000	2,3	Any*	Any*	Any*	Any*	---	---	---
600Y/347 and 600	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 04/16/07

Cutler-Hammer 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
			J, T	---	400A
	300	2,3,4	R	J, T	400A
			J, T	---	600A
	400	2,3,4	J, T	R	600A
			L	---	1200A
	600	2,3,4	L	---	800A
			---	L	1600A
	800 - 1000	2,3,4	---	L	1600A
480Y/277, 480, 600Y/347 and 600	30 - 150	2,3,4	---	J, T	200A
			J, T	---	400A
	200 - 300	2,3,4	R	J, T	400A
			J, T	---	600A
	400	2,3,4	J, T	R	600A
			L	---	1200A
	600	2,3	L	---	800A
			---	L	1600A
	600	4	---	L	1600A
	800 - 1000	2,3,4	---	L	1600A

04/10/07

Features, Benefits and accessories

Superior main Contact Structure
The combination Bypass Isolation and Automatic transfer Switch meets or exceeds the standards set forth in UL 1008, UL489, CSA 22.2 No 178 and CSA 22.2 No 5. No other transfer switch manufacturer has met the rigid testing requirements of this combination of standards. 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 downtime and maintenance time.

Long-Life Design
Main contacts employ developed DE-ION® arc quenchers and contact arcing horns for extended in-service life and reduced pitting and burning of contact services.

Simple, Reliable Operation
The automatic transfer switch is operated by a single, unidirectional gear motor transfer mechanism that receives its power from the source to which is being transferred. Bypass and Isolating Mechanisms are manually operated by handles which ensure true quick-break, quick-make operation under full load conditions.

Secure Isolation
Interlocking of ATS main contacts ensure that both power sources cannot be simultaneously connected to the load. Bypass switches are mechanically interlocked to prevent paralleling of sources.

Versatile Control
Control Logic Panel interconnects with Power Switching Panel via insulated keyed plug connectors to permit total isolation of controls for routine maintenance.

Engine Starting Contact
Provides a 10 ampere, 30 Vdc contact closure to initiate engine starting upon failure of the Normal Power Source. This feature, specifically designed for low current applications, is wired to red terminal blocks on the control panel for ease of identification and maintenance.

Full Phase Protection
Provides phase failure protection on each phase of Normal Power Source. Should voltage drop below a pre-selected, fully adjustable value on any phase, a signal is sent to initiate engine start.

Time Delay Normal to Emergency
Delays the retransfer from Emergency/Standby Power Source to Normal Power Source to permit stabilization of the Normal Power source before retransfer is made. Timing is adjustable 0-30 minutes and begins when the Normal Power Source appears. If the Emergency/Standby Power Source is immediate, overriding the time delay.

Time Delay Engine Cooldown
Permits the engine to continue to run unloaded after transfer to the Normal Power Source has been made. Timing is adjustable 0-30 minutes and begins when retransfer is completed.

Fully rated Neutral
Provides a fully rated solid neutral for all 2 and 3 pole switches. All 4 pole switches are supplied with switched neutral contacts of identical construction and rating as the power poles and are mounted on the power contact shaft, integral to the completely enclose contact assemblies.

Emergency/Standby Source Monitoring
Relay monitor prevents transfer from the Normal Power Source to the Emergency/Standby Power Source until that source has attained 90% of nominal voltage and frequency. In addition, when the switch is in the Emergency/Standby position and that source falls outside the monitored parameters, a load retransfer is initiated to the Normal Power Source if it is present.

Indicating Lights
Indicate source availability, switch position, transfer switch isolation position, and bypass modes.

Description:

Switch Operation:

Bypass to Normal (Utility power)
Turn "ENGINE SELECTOR" switch to "OFF" position
Place isolating handle mechanism in "OFF" position
Position bypass switch interlocking plate for "NORMAL BYPASS" operation
Place "NORMAL BYPASS" switch to "ON" position

Bypass to emergency (standby power)
Turn "ENGINE SELECTOR" switch to "RUN" position
Place isolating handle mechanism in "OFF" position
Position bypass switch interlocking plate for "EMERGENCY BYPASS" operation
Place "EMERGENCY BYPASS" switch to "ON" position

Return to Normal Operation
Place appropriate bypass switch in "OFF" position
Place isolating handle mechanism in the "ON" position
Turn "ENGINE" switch to "AUTO" position

Benefits
The combination Bypass Isolation and Automatic Transfer Switch eliminates all of the complicated drawout mechanisms required on competitive products for total isolation of the transfer switch, and instead utilizes foolproof mechanical interlocking plate combined with a positive Total Isolation Mechanism. The result is the safest, easiest-to-operate bypass isolation switch available in the marketplace today.

When the transfer switch is in the Isolated position, complete testing of the ATS can be accomplished via a special insulated keyed connector. This allows the operator to completely test the entire operating sequence of the ATS while maintaining power to the connected load.

The combination Bypass Isolation and Automatic Transfer Switch utilizes modified moulded case switches, designed specifically for high duty repetitive load transfer, as a means to bypass and totally isolate the transfer switch. This device provides for a reliable , rugged installation that can withstand very high level short circuits. In addition, 100-600 ampere units utilize Series C Technology that offers a highest Withstand, Closing and Interrupting Rating available in the marketplace today.

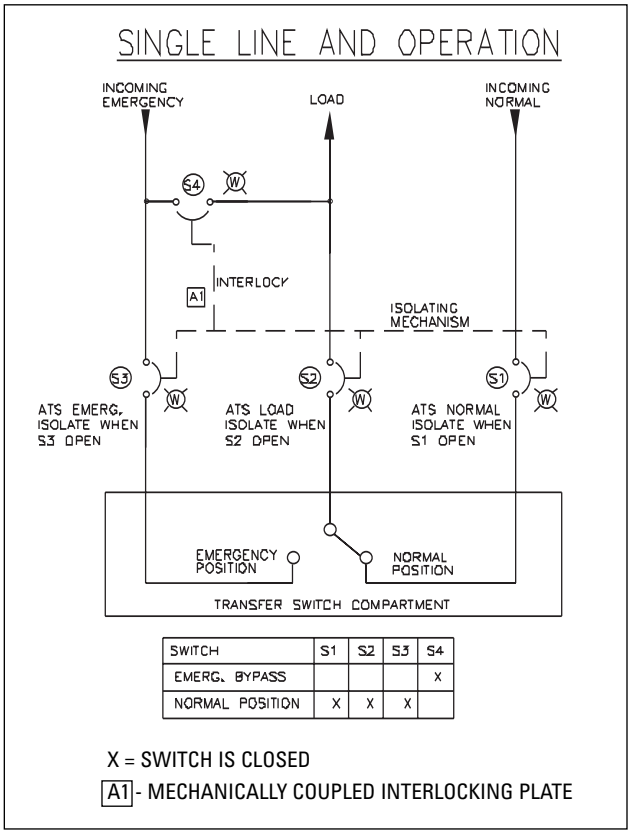


Figure 1: Single Sided Bypass Single Line Diagram (available in Canada only)

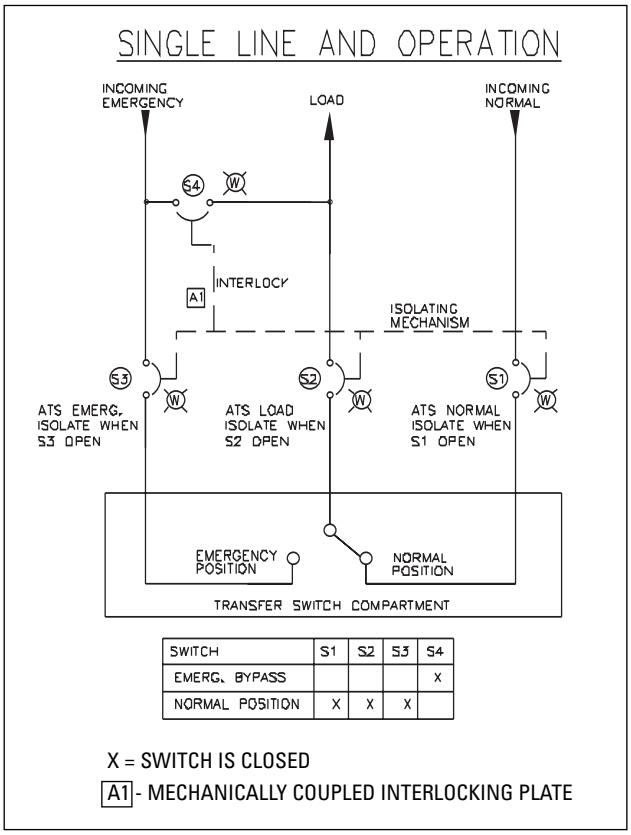


Figure 2: Double Sided Bypass Double Line Diagram (available in Canada & USA)

Functional and Operational Capabilities

Our overall design criteria is to provide a you with a Combination Bypass Isolation and Automatic transfer Switch that offers the utmost in flexibility, reliability and value. The long list of standards and codes below illustrates the versatility of our unit. The combination Bypass Isolation and Automatic Transfer Switch meets or exceeds many national and international standards. It is also designed and built in accordance with the following:
CSA 22.2 No 178 and UL1008 - Standard for Automatic Transfer Switches.
CSA 22.2 No 5 and UL489 - Standard for Moulded Case Circuit Breakers and Moulded Case Switches.
CSA C282 - Emergency Electrical supply for building.
ISO 9000 - International Organization for Standards.
ISO 4001 - Manufacturing Facility.
UBC - Uniform building code for Seismic Zone 4

Basic Switch Design
Combination Bypass Isolation and automatic Transfer Switches consist of Normal Bypass Switch, Emergency Bypass Switch, a Positive Isolating Mechanism and an Automatic Transfer Switch. All subassemblies are tested individually, and the complete assembly is subjected to full operational testing before shipment from Cutler-Hammer's Transfer Switch manufacturing facility.

Double Sided Bypass Isolation Transfer Switch shown

Logic

Application Versatility
Whether the application calls for open or closed transition, manual or automatic operation, Cutler-Hammer has the right logic controller for the task. ATC300 and ATC600 Controller has set a new standard for transfer switch technology featuring:

- Microprocessor- based logic
- Digital LCD display
- Field programmable set-points
- Voltmeter and frequency meter
- True rms voltage sensing
- Mimic BUS/LED display
- Delayed transition capability
- Plant exerciser

Automatic Transfer Open Transition

Available with:

- Time delayed neutral
- Pre-transfer signal
- Manual Re-transfer (ATC600only)
- In Phase monitor (ATC 600 only)
- Delayed transition low voltage decay (ATC 600 only)

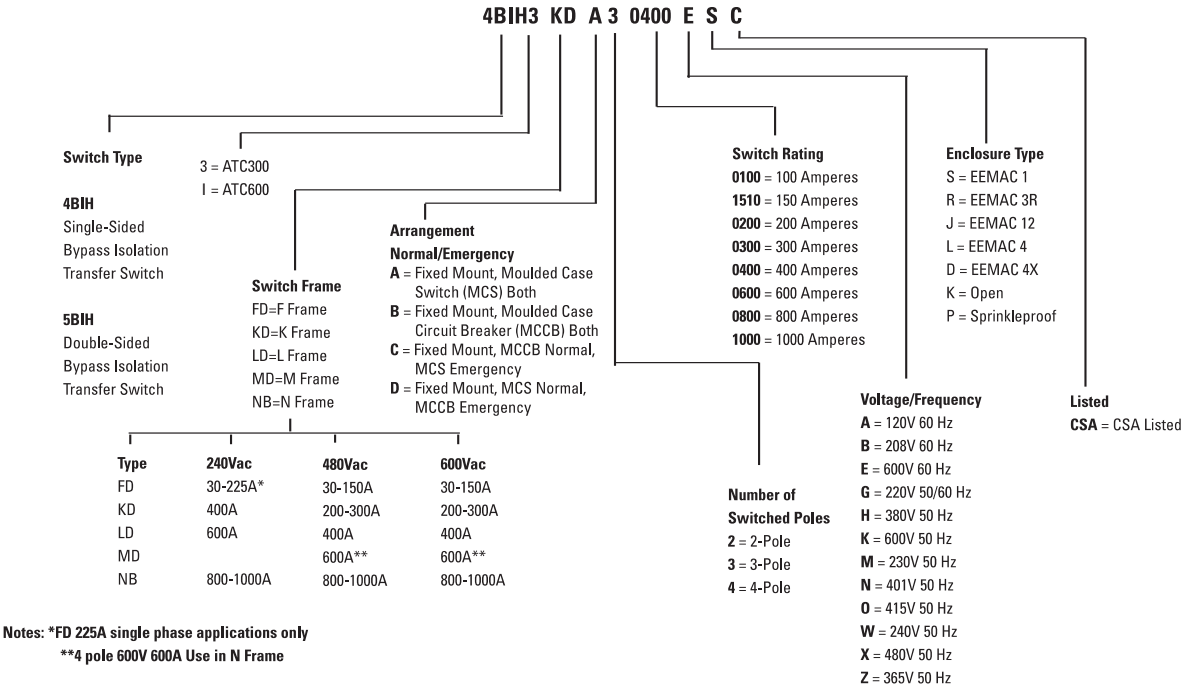
Ease of maintenance

Logic Disconnect Plugs

Keyed quick disconnect plugs are provided for easy and complete isolation of the control circuitry.

Maintenance can be performed on the logic independent from the power sections and still allow the user to manually transfer power under full load conditions.

Catalogue Number Selection Guide (Canada transfer switches only)

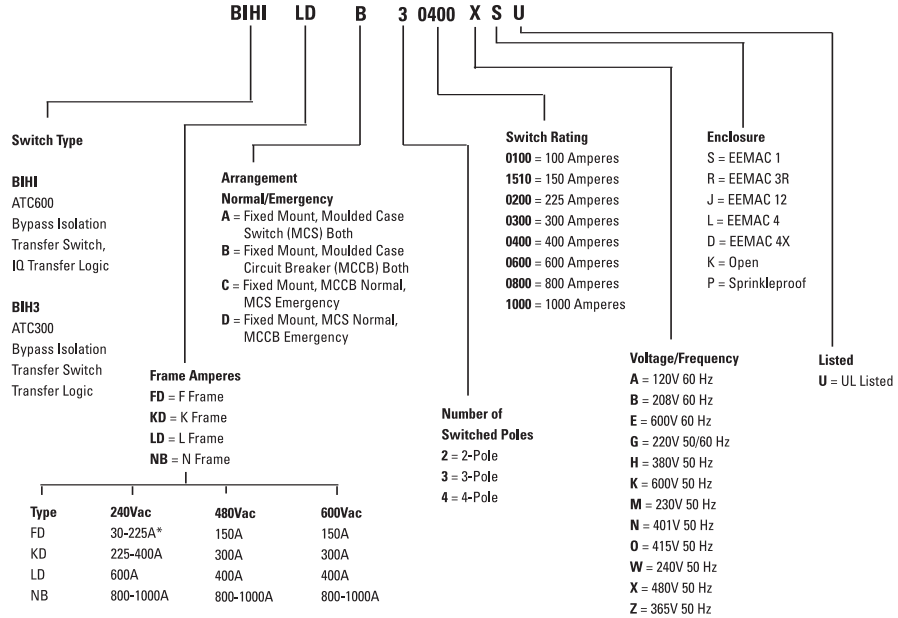


Type	240Vac	480Vac	600Vac
FD	30-225A*	30-150A	30-150A
KD	400A	200-300A	200-300A
LD	600A	400A	400A
MD		600A**	600A**
NB	800-1000A	800-1000A	800-1000A

Notes: *FD 225A single phase applications only
****4 pole 600V 600A Use in N Frame**

1. Single Sided Bypass Isolation Transfer Switches come standard with emergency bypass. If normal bypass is required, please specify when ordering.
2. In accordance with CSA C282-00, Institutional and residential building occupancy (Group B and Group C) require a minimum a Single Sided Bypass on Emergency supply.

Catalogue Number Selection Guide (USA transfer switches only)



Type	240Vac	480Vac	600Vac
FD	30-225A*	150A	150A
KD	225-400A	300A	300A
LD	600A	400A	400A
NB	800-1000A	800-1000A	800-1000A

Notes: *FD 225A single phase applications only
****4 pole 600V 600A Use in N Frame**

Table 2: Switch and Feature Selection

ATS FEATURE	Description		ATC300	ATC600
1	Time Delay Normal to Emergency (TDNE)		Std.	Std.
2	Time Delay Engine Start (TDES)		Std.	Std.
3	Time Delay Emergency to Normal (TDEN)		Std.	Std.
4	Time Delay Engine Cooldown (TDEC)		Std.	Std.
5H	Source2 - Phase Reversal Sensing		Std.	Std.
5J	Source2 - All Phase Undervoltage/Underfrequency		Std.	Std.
5K	Source2 - All Phase Overvoltage/Overfrequency		Std.	Std.
5L	Source2 - All Phase Voltage unbalance and phase loss		Std.	O
6B	Test Operator (Controller Faceplate)		Std.	Std.
6D	2-Position Selector Selector Switch (Test/Auto)		Std.	O
6H	4-Position Selector Switch (Test/Auto/Manual/Engine Start)		O	O
6J	Keyed 4-Position Selector Switch (Test/Auto/Manual/Engine Start)		O	O
7A	Time Delay Emergency Fail (TDEF) Adjustable 0 - 6 Seconds)		Std.	Std.
8C	Time Delay Bypass EN Pushbutton (Controller Faceplate)		Std.	Std.
8D	Time Delay Bypass NE Pushbutton (Controller Faceplate)		Std.	Std.
9B	Maintenance / Electrical Operator Isolator Selector Switch		O	O
9D	Keyed Maintenance / Electrical Operator Isolator Selector Switch		O	O
10B	Preferred Source Selector - Utility to Utility or Utility to Generator		N/A	O
10D	Preferred Source Selector - Generator to Generator		N/A	O
12C	Source1 Connected (LED)		Std.	Std.
12CC	Source1 Connected (30mm Pilot Light)		O	O
12D	Source2 Connected (LED)		Std.	Std.
12DD	Source2 Connected (30mm Pilot Light)		O	O
12G	Source1 Available (LED)		Std.	Std.
12GG	Source1 Available (30mm Pilot Light)		O	O
12H	Source2 Available (LED)		Std.	Std.
12HH	Source2 Available (30mm Pilot Light)		O	O
12L	Source1 Device Tripped (Selectable with option 16 only)		O	O
12M	Source2 Device Tripped (Selectable with option 16 only)		O	O
14A	Source1 Connected Auxiliary Relay (2NO/2NC Form C)		O	O
14B	Source2 Connected Auxiliary Relay (2NO/2NC Form C)		O	O
14C	Source1 Available (4NO/4NC Form C)		O	O
14D	Source2 Available (4NO/4NC Form C)		O	O
14E	Source1 Available (1NO/1NC Form C)		O	O
14F	Source2 Available (1NO/1NC Form C)		O	O
14G	Source1 Available (2NO/2NC Form C)		O	O
14H	Source2 Available (2NO/2NC Form C)		O	O
15A	Source1 Connected (2NO/2NC Form C)		Std.	Std.
15B	Source2 Connected (2NO/2NC Form C)		Std.	Std.
15C	Source1 Connected (4NO/4NC Form C)		O	O
15D	Source2 Connected (4NO/4NC Form C)		O	O

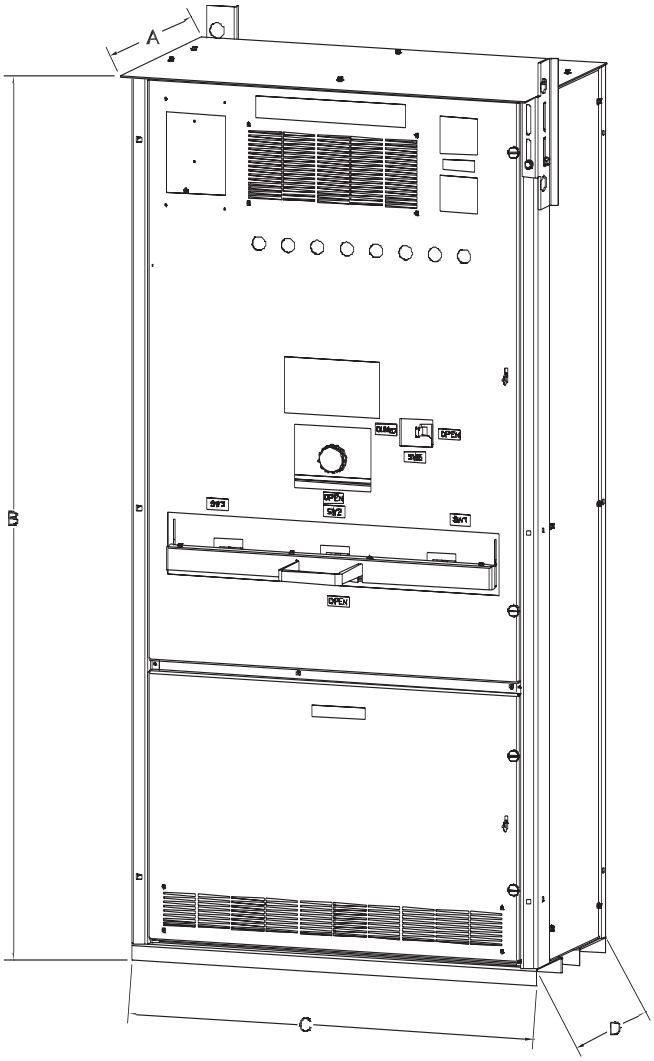
Table 2: Switch and Feature Selection

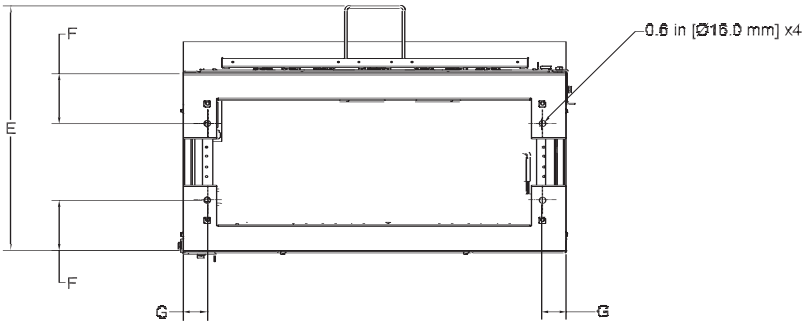
16B	Integral Overcurrent Protection (Source1 & Source2)	REFER	REFER
16E	Integral Overcurrent Protection (Source2 Only)	REFER	REFER
16N	Integral Overcurrent Protection (Source1 Only)	REFER	REFER
18E	Voltage Meter (Source1 & Source2)	Std.	Std.
18G	Frequency Meter (Source1 & Source2)	Std.	Std.
18L	Voltage Meter (Load)	N/A	Std.
18O	IQ Analyzer (Source1 Only)	O	O
18P	IQ Analyzer (Source2 Only)	O	O
18Q	IQ Analyzer (Source1 or Source2 Selectable)	O	O
18R	IQ DP-4000 (Source1)	O	O
18S	IQ DP-4000 (Source2)	O	O
18T	IQ DP-4000 (Source1 or Source2 Selectable)	O	O
18U	IQ DP-4000 (Load Only)	O	O
18V	IQ Analyzer (Load Only)	O	O
18W	Ammeter (Load Only)	O	O
20A	Rear Bus Connections	REFER	REFER
21A	Non-Standard Terminals	REFER	REFER
23J	Plant Exerciser - Disabled/7 Day Interval, 0 - 600 Minutes, Load/No Load, with Failsafe	N/A	Std.
23K	Plant Exerciser - Disabled /7, 14, 28 Day Interval, 0 - 600 Minutes, Load/No Load, with Failsafe	Std.	N/A
24A	12Vdc Battery Charger	O	O
24B	24Vdc Battery Charger	O	O
26D	Go To Emergency (Source2)	Std.	Std.
26H	Source1 - Phase Reversal Protection	Std.	Std.
26J	Source1 - All Phase Undervoltage/Underfrequency	Std.	Std.
26K	Source1 - All Phase Overvoltage/Overfrequency	Std.	Std.
26L	Source1 - All Phase Voltage unbalance and phase loss	Std.	O
29G	Automatic/Manual Operation Selector Switch	N/A	O
29J	Automatic Transfer with Non-Automatic Retransfer Operation	N/A	O
30	Cranking delay	O	O
32A	Time Delay Neutral Adjustable 0 - 120 seconds	Std.	Std.
32B	Load Voltage Decay Adjustable 2 - 30 % Nominal Voltage	N/A	*
32C	In-Phase Monitor Defaults to Load Voltage Decay	N/A	*
32D	In-Phase Monitor Defaults to Time Delay Neutral	N/A	*
33A	Shunt Trip on Source1 Switching Device	O	O
33B	Shunt Trip on Source2 Switching Device	O	O
34A	Logic Extender Cable - 48 Inches (1219 mm)	O	O
34B	Logic Extender Cable - 72 Inches (1829 mm)	O	O
34C	Logic Extender Cable - 96 Inches (2438 mm)	O	O
34E	Logic Extender Cable - 144 Inches (3658 mm)	O	O
35A	Pre-Transfer Signal Contacts (1NO/1NC Form C)	Std.	O
35B	Pre-Transfer Signal Contacts (2NO/2NC Form C)	O	O
36	Load Shed From Emergency	N/A	*
37	Go To Neutral Position	N/A	O
38B	SS Cover for Controller	O	O

Table 2: Switch and Feature Selection

41A	100W Space Heater (c/w: Thermostat)	O	O
41C	400W Space Heater (c/w: Thermostat)	O	O
42	Seismic Zone 4 Certified (CBC, IBC, UBC, BOCA)	REFER	REFER
45A	Load Sequencing Contacts (1)	N/A O	
45B	Load Sequencing Contacts (2)	N/A O	
45C	Load Sequencing Contacts (3)	N/A O	
45D	Load Sequencing Contacts (4)	N/A O	
45E	Load Sequencing Contacts (5)	N/A O	
45F	Load Sequencing Contacts (6)	N/A O	
45G	Load Sequencing Contacts (7)	N/A O	
45H	Load Sequencing Contacts (8)	N/A O	
45I	Load Sequencing Contacts (9)	N/A O	
45J	Load Sequencing Contacts (10)	N/A O	
47C	Closed Transition In-Phase with default to Load Voltage Decay	N/A N/A	
47D	Closed Transition Only	N/A N/A	
47E	Closed Transition In-Phase with default to Time Delay Neutral	N/A N/A	
48A	Communications - IPONI Module	N/A O	
48F	Communications - MPONI Module (MODBUS)	N/A O	
51D1	50kA - Clipper device Connected to Source 1	O	O
51E1	80kA - Clipper device Connected to Source 1	O	O
51F1	100kA - Clipper device Connected to Source 1	O	O
51G1	50kA - CHSP device Connected to Source 1 (240/120Vac single phase Only)	REFER	REFER
51H1	75kA - CHSP device Connected to Source 1 (240/120Vac single phase Only	REFER	REFER
51J4	Telephone/Modem/DSL (4 Lines Total)	O	O
51K4	Cable TV/Satellite Cable/Cable Modem (2 Lines Total) Lines Total)	O	O
51M4A	12Vdc Generator Start Circuit Protection	O	O
51M4B	24Vdc Generator Start Circuit Protection	O	O
51NA1	51na1. 100KA Surge Device w/Advisor Source1	REFER	REFER
51NN1	51nn1. 100KA Surge Device w/NetVisor Source 1	REFER	REFER
51NS1	51ns1. 100KA Surge Device w/SuperVisor Source 1	REFER	REFER
51NS1	51sn1. 200KA Surge Device w/NetVisor Source 1	REFER	REFER
51QA1	51qa1. 160KA Surge Device w/Advisor Source1	REFER	REFER
51QN1	51qn1. 160KA Surge Device w/NetVisor Source 1	REFER	REFER
51QS1	51qs1. 160KA Surge Device w/SuperVisor Source 1	REFER	REFER
51SA1	51sa1. 200KA Surge Device w/Advisor Source1	REFER	REFER
51SS1	51ss1. 200KA Surge Device w/SuperVisor Source 1	REFER	REFER
Std. = Standard Option on Controller			
O = Optional			
* = Customer selects required transfer mode of operation.			
REFER = Please refer to Eaton sales office or BidmanagerÆ pricing tool.			
N/A = Feature "Not Available" with selected controller.			

Transfer Switch Dimensions in Inches (mm)





Note: For bottom entry, add 14" to depth of unit

UL 1008 Certified ATS

BYPASS ISOLATION ATS (2&3 POLE)

Max Amps	Max Volts	Switch Frame	UL Bypass Frame	DIMENSIONS (INCHES/MM)								
				A	B	C	D	E	F	G	H	I	J
150	480	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/6.23	30/965	79.5/2019	18/457
150	600	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/6.23	30/965	79.5/2019	18/457
200	240	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/6.23	30/965	79.5/2019	18/457
225*	240	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/6.23	30/965	79.5/2019	18/457
300	480	K	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/6.23	38/965	79.5/2019	18/457
300	600	K	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/6.23	38/965	79.5/2019	18/457
400	240	K	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/6.23	38/965	79.5/2019	18/457
400	480	L	L	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/6.23	38/965	79.5/2019	18/457
400	600	L	L	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/6.23	38/965	79.5/2019	18/457
600	240	L	L	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/6.23	38/965	79.5/2019	18/457
600	480	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610
600	600	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610
800	240	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610
800	480	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610
800	600	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610
1000	240	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610
1000	480	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610
1000	600	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610

BYPASS ISOLATION ATS (4 POLE)

Max Amps	Max Volts	Switch Frame	UL Bypass Frame	DIMENSIONS (INCHES/MM)									
				A	B	C	D	E	F	G	H	I	J
150	480	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/6.23	30/965	79.5/2019	18/457
150	600	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/6.23	30/965	79.5/2019	18/457
200	240	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/6.23	30/965	79.5/2019	18/457
300	480	K	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/6.23	38/965	79.5/2019	18/457
300	600	K	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/6.23	38/965	79.5/2019	18/457
400	240	K	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/6.23	38/965	79.5/2019	18/457
400	480	L	L	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	43.2/1097	24.5/6.23	48/1219	79.5/2019	18/457
400	600	L	L	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	43.2/1097	24.5/6.23	48/1219	79.5/2019	18/457
600	240	L	L	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	43.2/1097	24.5/6.23	48/1219	79.5/2019	18/457
600	480	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
600	600	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
800	240	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
800	480	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
800	600	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
1000	240	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
1000	480	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
1000	600	NB	NB	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610

* Single Phase Only

CSA C22.2 Spec 178 Certified ATS

BYPASS ISOLATION ATS (2&3 POLE)

Max Amps	Max Volts	Switch Frame	CSA Bypass Frame	DIMENSIONS (INCHES/MM) A	B	C	D	E	F	G	H	I	J
150	480	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/623	30/965	79.5/2019	18/457
150	600	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/623	30/965	79.5/2019	18/457
200	240	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/623	30/965	79.5/2019	18/457
225*	240	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/623	30/965	79.5/2019	18/457
300	480	K	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/623	38/965	79.5/2019	18/457
300	600	K	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/623	38/965	79.5/2019	18/457
400	240	K	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/623	38/965	79.5/2019	18/457
400	480	L	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/623	38/965	79.5/2019	18/457
400	600	L	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/623	38/965	79.5/2019	18/457
600	240	L	L	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/623	38/965	79.5/2019	18/457
600	480	M	L	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/623	38/965	79.5/2019	18/457
600	600	M	L	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/623	38/965	79.5/2019	18/457
800	240	NB	MD	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610
800	480	NB	MD	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610
800	600	NB	MD	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610
1000	240	NB	ND	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610
1000	480	NB	ND	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610
1000	600	NB	ND	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	33.2/843	30.5/775	38/965	91.5/2324	24/610

BYPASS ISOLATION ATS (4 POLE)

Max Amps	Max Volts	Switch Frame	CSA Bypass Frame	DIMENSIONS (INCHES/MM) A	B	C	D	E	F	G	H	I	J
150	480	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/623	30/965	79.5/2019	18/457
150	600	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/623	30/965	79.5/2019	18/457
200	240	F	F	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	25.5/648	24.5/623	30/965	79.5/2019	18/457
300	480	K	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/623	38/965	79.5/2019	18/457
300	600	K	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/623	38/965	79.5/2019	18/457
400	240	K	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/623	38/965	79.5/2019	18/457
400	480	L	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/623	38/965	79.5/2019	18/457
400	600	L	K	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	33.2/843	24.5/623	38/965	79.5/2019	18/457
600	240	L	L	21/533	82.5/2095	2.4/61	5.3/135	7.5/191	43.2/1097	24.5/623	48/1219	79.5/2019	18/457
600	480	NB	ND	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
600	600	NB	ND	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
800	240	NB	ND	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
800	480	NB	ND	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
800	600	NB	ND	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
1000	240	NB	ND	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
1000	480	NB	ND	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610
1000	600	NB	ND	27.12/689	94.5/2325	2.4/61	5.3/135	13.5/343	43.2/1097	30.5/775	48/1219	91.5/2324	24/610

* Single Phase Only