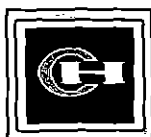
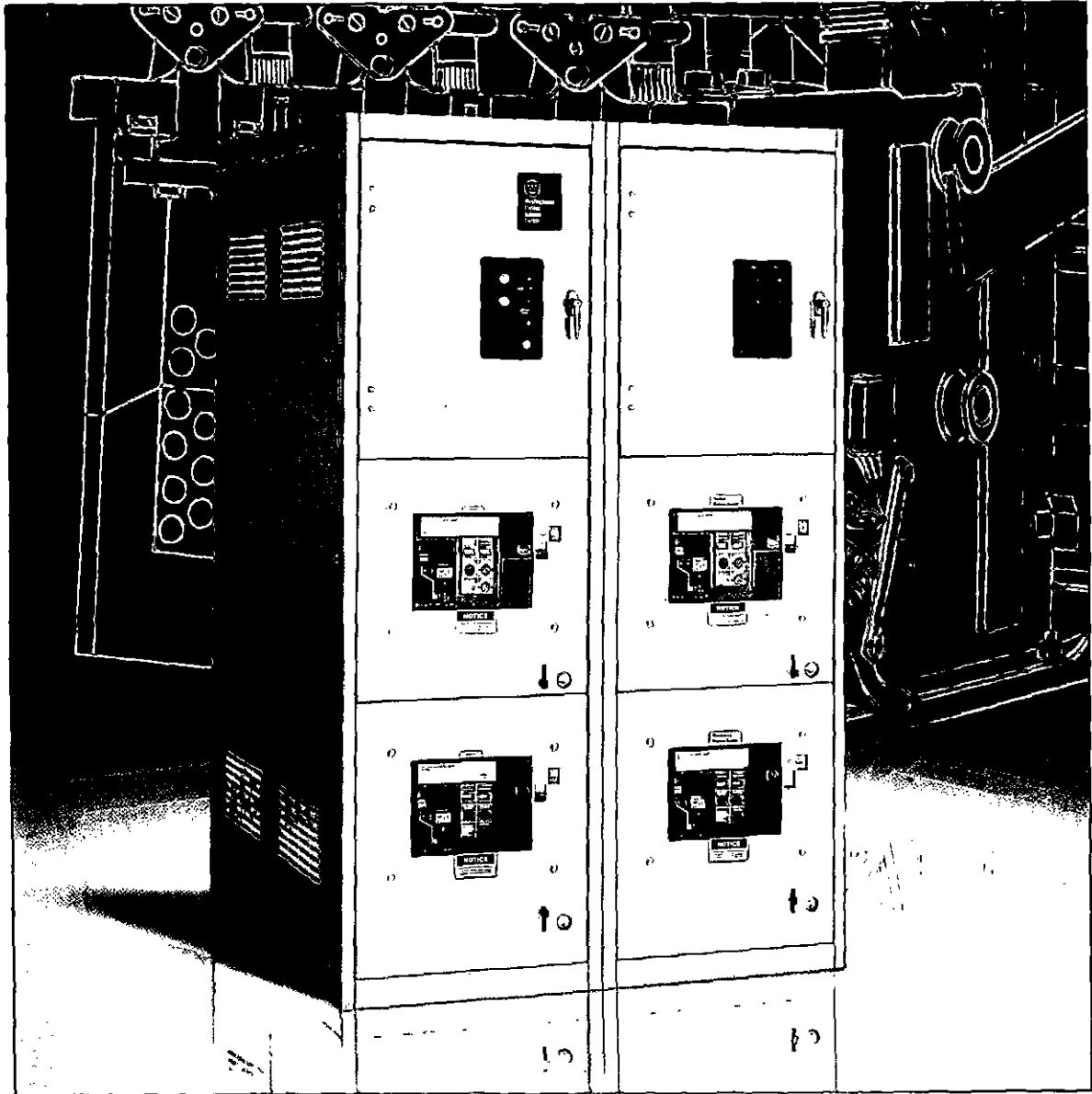


Westinghouse Transfer Switch Equipment

Bypass Isolation Transfer Switches
800 - 3000 Amperes

When you absolutely cannot permit any interruption of power, specify the new UL 1008 listed Westinghouse Bypass Isolation Transfer Switch.



Cutler-Hammer

EATON

Switch Application Section

Westinghouse Transfer Switch Equipment

Westinghouse Bypass Isolation Transfer Switches are designed for applications where preventive maintenance, inspection and testing must be accomplished while maintaining continuity of power to the load. This is typically required in critical life support systems and standby power situations that require safe maintenance of the system with no disruption of the power.

Westinghouse Bypass Isolation Switches meet or exceed all industry standards for endurance, reliability and performance. They are listed under Underwriters Laboratory's UL 1008 Standard for Transfer Switch Equipment. They also comply with emergency and standby system requirements as defined in NFPA 99 for health care facilities.

Design Highlights

- ✓ Most versatile bypass isolation transfer switch available
- ✓ Utilize SPB insulated case switches as power switching elements
- ✓ Westinghouse drawout cassette design
- ✓ Overcurrent protection available
- ✓ UL1008 service entrance available
- ✓ No load break when bypassing to the same source
- ✓ Drawout capabilities on both ATS portion and bypass portion. Competition offers drawout on ATS portion only
- ✓ Seismic qualified for UBC zone 4
- ✓ Significant size advantage over competitor's designs
- ✓ Ability to test power switching elements during drawout process
- ✓ Power switching devices completely interchangeable between ATS & bypass portions
- ✓ Manufactured in an ISO 9002 facility and designed in an ISO 9001 facility

Westinghouse Transfer Switch Equipment offers flexibility and versatility to the system designer and user. All switches include the basic features necessary for normal operation as standard (see listing below). 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 catalog number for your application from the charts below. Then choose any optional features/accessories needed to complete the project requirements.

CATALOG NUMBER						
SWITCH TYPE	ARRANGEMENT NORMAL/EMERGENCY	NUMBER OF SWITCHED POLES	SWITCH RATING	VOLTAGE/FREQUENCY	ENCL. TYPE	UL
BIVSSP	E-Switch/Switch	2-2 Pole	0800-800 Amp	A-120/60	S-Type.1	U
	F-Breaker/Breaker	3-3 Pole	1000-1000 Amp	B-208/60		
	G-Breaker/Switch	4-4 Pole	1200-1200 Amp	E-600/60		
	H-Switch/Breaker		1600-1600 Amp	G-220/50/60		
			2000-2000 Amp	H-380/50		
			2500-2500 Amp	K-600/50		
			3000-3000 Amp	M-230/50		
				N-401/50		
				O-415/50		
				W-240/60		
			X-480/60			
			Z-365/50			

SYSTEMS COORDINATION INFORMATION

STANDARD WITHSTAND, CLOSING & INTERRUPTING RATINGS

AMP RATING	Rating when used with upstream breaker (KA)			Rating when used with upstream fuse (KA)		
	240V	480V	600V	MAX. FUSE RATING	FUSE TYPE	600V
800 *	85	65	42	2000	L	200
1000 *	85	65	42	2000	L	200
1200 *	85	65	42	2000	L	200
1600	100	100	85	3000	L	200
2000	100	100	85	3000	L	200
2500	100	100	85	4000	L	200
3000	100	100	85	4000	L	200

Tested in accordance with UL1008.

Westinghouse Bypass/Isolation switches will coordinate with a power circuit breaker's short time rating. Contact factory for details.

* Ratings increase to 100-100-85 with option 17C

Features, Benefits and Accessories

Reliable and Easy To Use

SUPERIOR MAIN CONTACT STRUCTURE

The Westinghouse Bypass Isolation Transfer Switch meets or exceeds the standards set forth in UL1008, UL1087 and UL489. 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.

RELIABLE SOLID STATE LOGIC

The transfer switch intelligence panel utilizes the reliable, close differential sensing Westinghouse Modular Solid State Logic Package. This provides the system designer the opportunity to tailor the switch to the application as well as providing the capability of future upgrading of logic components in the field.

EASE OF OPERATION

The Westinghouse Bypass Isolation Switch utilizes Systems Pow-R Breaker Drawout Cassettes for mounting of the insulated case switches. This design allows for quick removal of the switches for inspection or maintenance, or if required, quick replacement. This capability is offered on both the ATS portion and the Bypass portion of the switch. No other manufacturer offers drawout maintenance capabilities of the bypass portion of the switch.

EASE OF COORDINATION

The Westinghouse Bypass Isolation Switch is easily coordinated with any system power or air circuit breaker. The SPB switches have been tested to withstand a short circuit for up to 60 cycles. With optionally added overcurrent protection, the Westinghouse Bypass Isolation Switch offers the greatest flexibility in system coordination of any transfer switch design.

ULTIMATE MAINTAINABILITY

With the use of drawout cassettes for the ATS section as well as the Bypass section, maintenance can be performed easily on the ATS section and the Bypass section. Logic panels are on drawout rails for easy accessibility. The drawout switching units located in the Bypass section can be used as spare elements for the ATS. No other transfer switch manufactured offers this level of maintainability.

Standard Features and Accessories

TEST SELECTOR SWITCH

Provides a spring release push button for test operation of the ATS. It simulates a loss of the normal power source, initiates an engine start and transfers the load to the emergency/standby power source.

ENGINE STARTING CONTACT

Provides a 10A, 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 the Normal Power Supply. Should the 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

Provides a delay, adjustable .2 - 64 minutes, when transferring from the normal power source to the emergency power source. This accessory does not affect the engine starting circuit. Timing begins when emergency/standby voltage begins.

TIME DELAY ENGINE START

This accessory is for use when the emergency power source is an engine generator. It delays initiation of the engine start circuit for .5 - 15 seconds (adjustable) in order to over-ride momentary power outages or voltage fluctuations of the normal power source.

TIME DELAY EMERGENCY TO NORMAL

Delays the retransfer from the emergency/standby power source to the normal power source to permit stabilization of the normal power source before retransfer is made. Timing is adjustable .2-64 minutes and begins when the normal power source appears. If the emergency/standby power source fails during timing, retransfer to the normal power source is immediate, overriding the time delay.

TIME DELAY ENGINE COOLDOWN

Permits the engine to continue to run unloaded after retransfer to the normal power source has been made. Timing is adjustable .2-64 minutes and begins when retransfer is completed.

FULLY RATED NEUTRAL

Provides a fully rated solid neutral for all two and three pole switches. All four 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 enclosed contact assemblies.

MULTI-TAP VOLTAGE SELECTION

Provides line voltage selection of 208, 220, 240, 380, 415, 480 or 600 volts AC, 50 to 60 Hz by proper insertion of voltage selection plug.

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 switch position. Green for normal position, red for emergency/standby position.

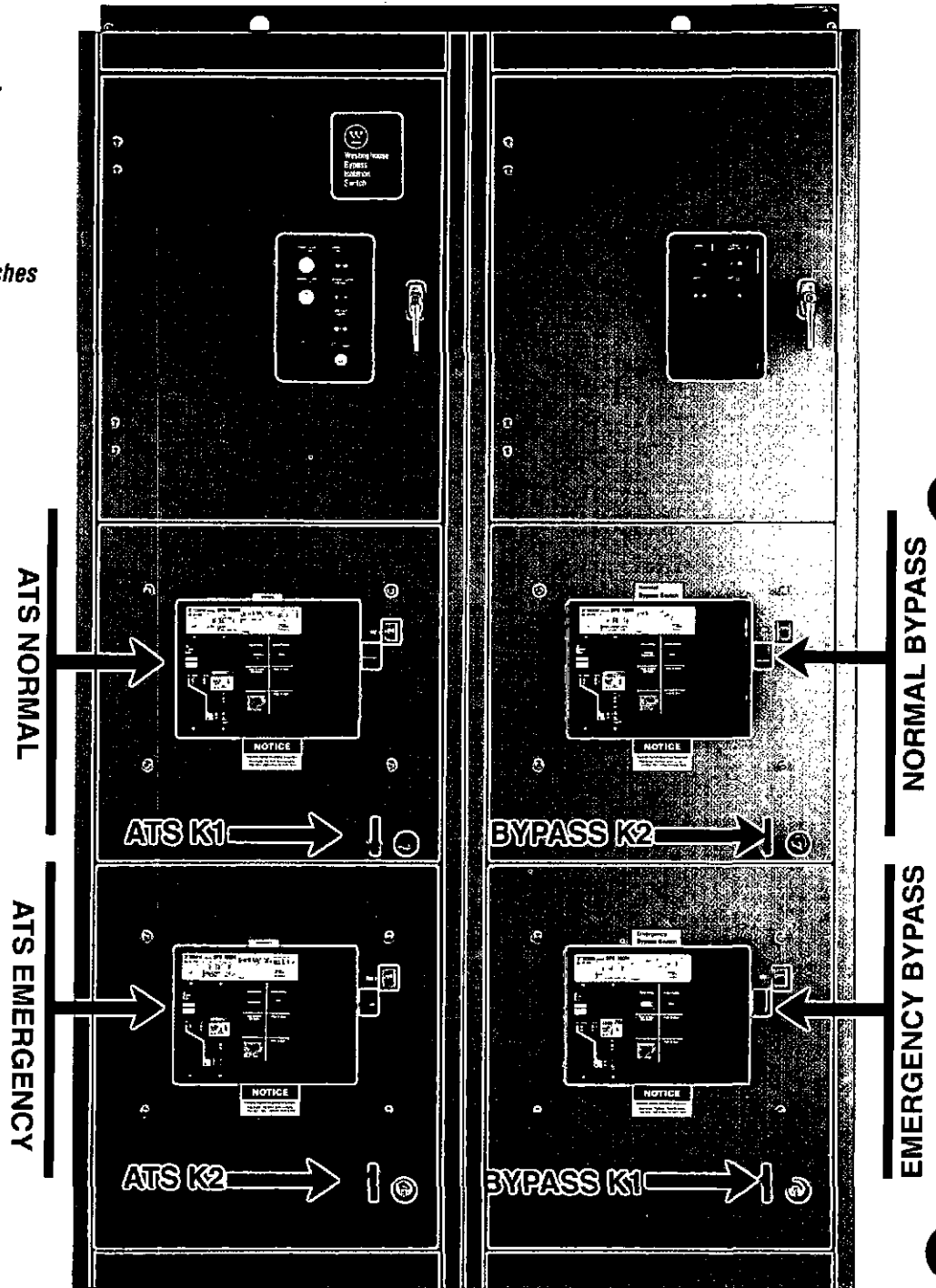
RELAY AUXILIARY CONTACTS

Provides 3 Form C contacts for each source. On the normal power source, energized when the load is connected to the normal power supply and normal voltage is present. On the emergency/standby power source, energized whenever emergency/standby voltage is present.

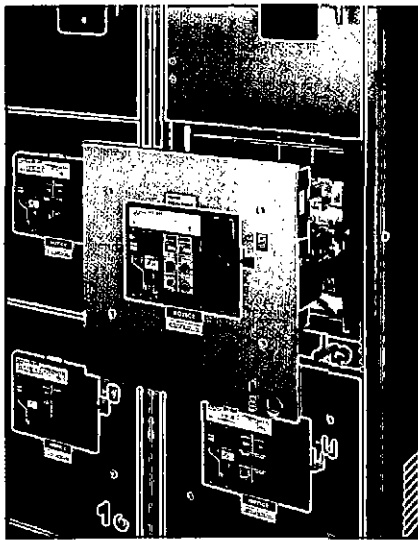
Functional and Operational Capabilities of the Bypass Isolation Drawout Transfer Switch

Our overall design criteria is to provide you with a Bypass Isolation Transfer Switch that offers the utmost in flexibility, reliability and value. The long list of standards and codes below illustrate the versatility of our unit. The Westinghouse Bypass Isolation Transfer Switch meets or exceeds many national and international standards. It is also designed and built in accordance with the following:

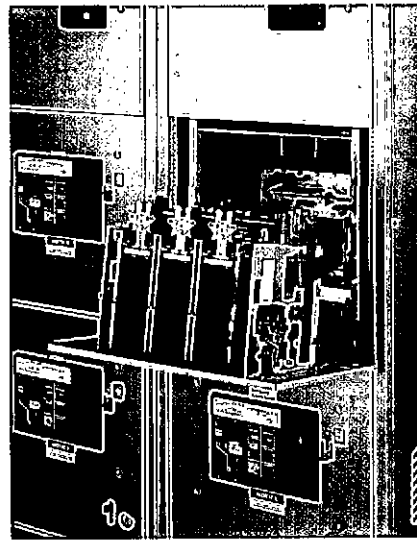
- UL1008** *Standard for Safety for Automatic Transfer Switches*
- UL489** *Standard for Circuit Breakers*
- UL1087** *Standard for Molded Case Switches*
- NEC** *Articles 517, 700, 701, 702*
- ANSI/NFPA 70**
- NFPA 110** *Emergency and Standby Power Systems*
- NFPA 99** *Health Care Facilities*
- EGSA** *Standard for Transfer Switches*
- NEMA** *ICS 2-447.10*
- UBC** *Uniform Building Code for Seismic Zone 4*
- ISO 9000** *International Organization for Standardization*



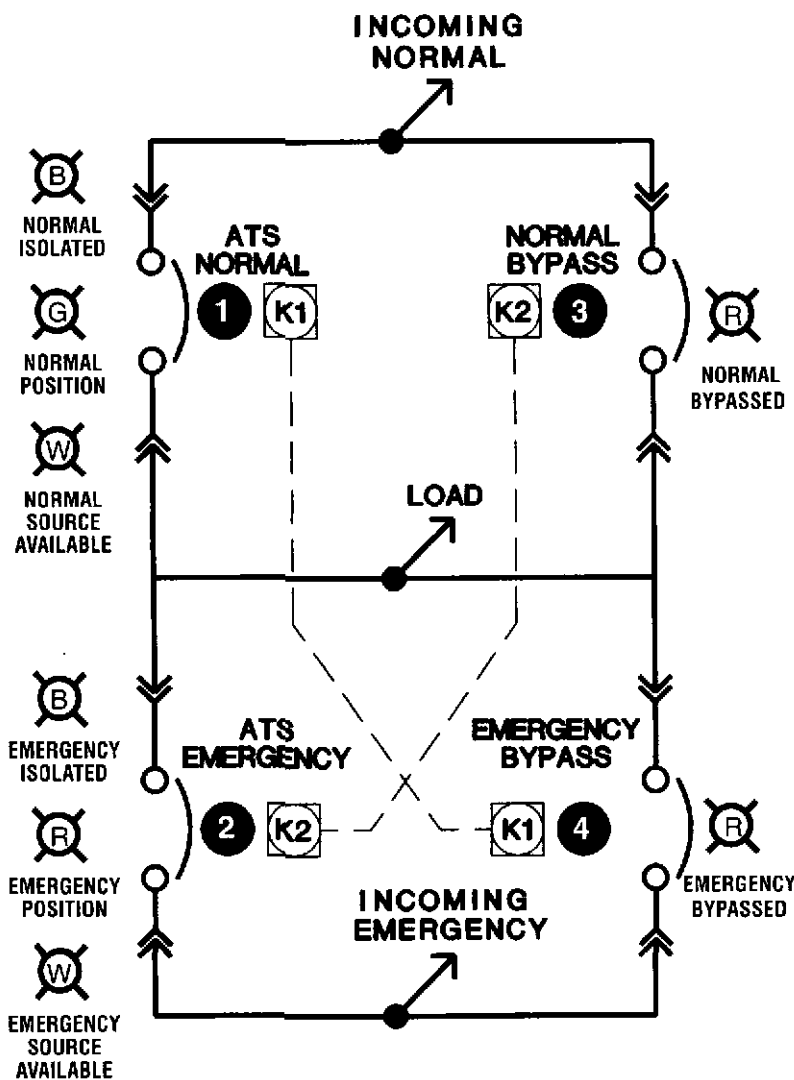
Operating Instructions



Drawn out position



Inspection position



BYPASS TO NORMAL WITH ATS IN NORMAL (NO LOAD INTERRUPTION)

1. Turn "Generator" selector switch to "Off"
2. Lift K2 lock release lever on ATS Emergency ②, turn and remove key
3. Insert key in K2 on Normal Bypass ③, unlock and close Normal Bypass
4. Isolate ATS Normal ① via drawout handle

BYPASS TO EMERGENCY WITH ATS IN NORMAL (LOAD INTERRUPTION)

1. Turn "Generator" selector switch to "Run"
2. Lift K1 lock release lever on ATS Normal ①, turn and remove key (ATS Normal ① will open when lock engages)
3. Insert key in K1 on Emergency Bypass ④, unlock and close Emergency Bypass
4. Isolate ATS Normal ① via drawout handle

RETURN TO NORMAL OPERATION WHEN BYPASSED TO NORMAL (NO LOAD INTERRUPTION)

1. If isolated, return ATS Normal ① to connected position and close same
2. Open Normal Bypass ③
3. Lift K2 lock release lever on Normal Bypass ③, turn and remove key
4. Insert key in K2 on ATS Emergency ② and unlock
5. Return "Generator" selector switch to "Auto" position

RETURN TO NORMAL OPERATION WHEN BYPASSED TO EMERGENCY (LOAD INTERRUPTION)

1. If isolated, return ATS Normal ① to connected position (Do not attempt to close yet)
2. Lift K1 lock release lever on Emergency Bypass ④, turn and remove key (Emergency Bypass ④ will open when lock engages)
3. Insert key in K1 on ATS Normal ①, unlock and close ATS Normal ①
4. Return "Generator" selector switch to "Auto" position

USE OF BYPASS SWITCH AS MANUAL TRANSFER SWITCH

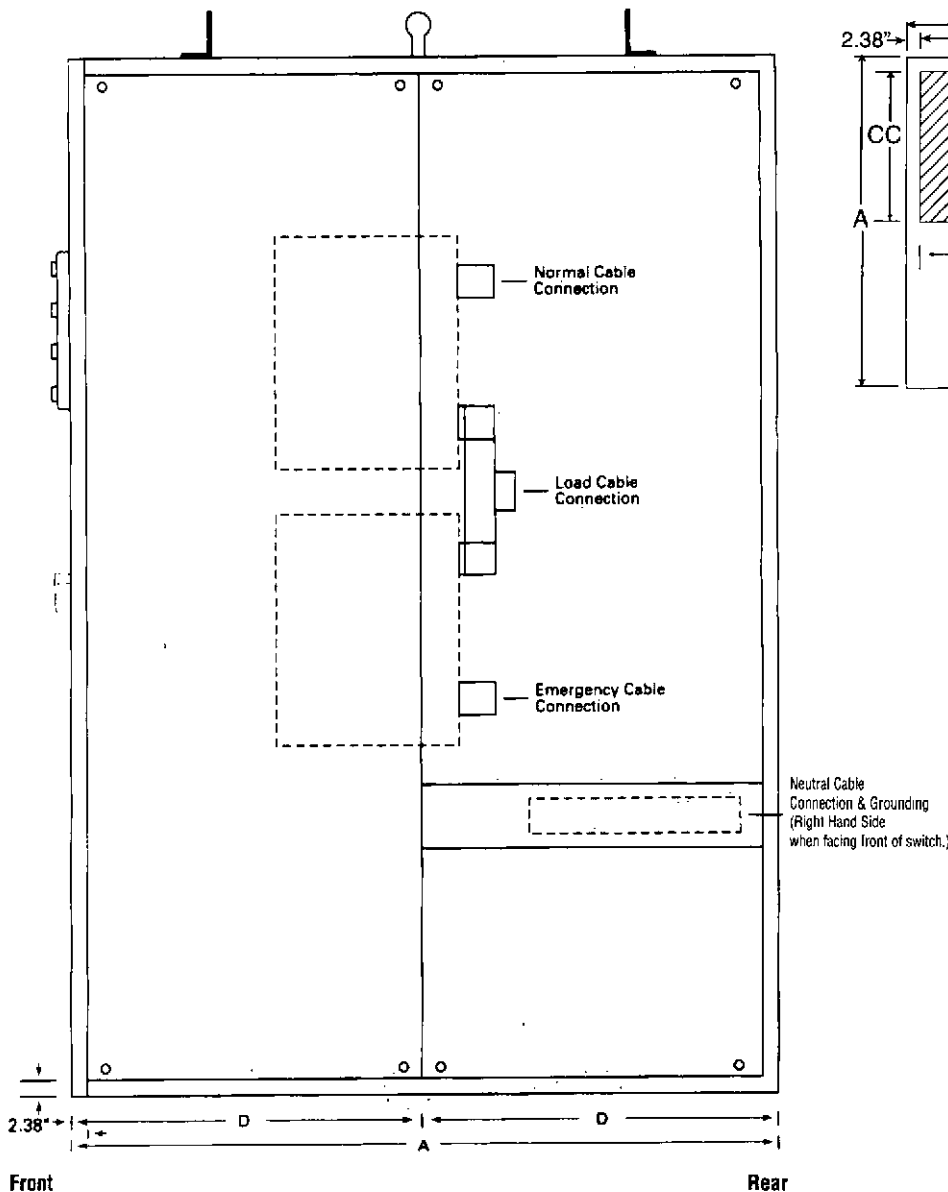
1. Removal of K1 & K2 lock keys from ATS and placement of lock keys in appropriate Bypass devices (as described above) will permit the Bypass Switch to be operated as a true Manual Transfer Switch.

Transfer Switch Dimensions

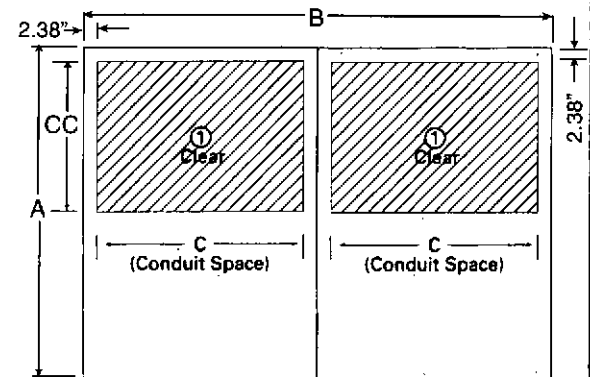
All transfer switch enclosures are constructed of high quality, 12 gauge steel and include a key lockable door handle as standard equipment. Enclosures for Westinghouse Bypass Isolation Switches are freestanding Type 1 and meet all current applicable NEMA and UL standards for conduit entry, cable bending, gutter space and shielding of live components. Approximate enclosure dimensions can be determined once you specify the ampere rating and number of poles required.

Rating	Depth in Inches	
	A	D
800-2000A	60.00	30.00
2500-3000A	60.00	30.00

Dimensions & Conduit Opening in Inches	A	B	C	CC Cable Space Depth	Weight (lbs.)
3 Pole 800-2000A	60.00	66.00	23.24	28.44	3400
4 Pole 800-2000A	60.00	68.00	29.24	28.44	4000
3 Pole 2500-3000A	60.00	82.00	36.24	23.84	4500
4 Pole 2500-3000A	60.00	82.00	36.24	23.84	4900



Typical Side View



Typical Footprint View

Optional Features and Accessories

In addition to the standard features and accessories, the following optional features and accessories are also available to match your application requirements:

SOURCE MONITORING - NORMAL POWER SUPPLY

- 26C OVER VOLTAGE - Full Phase, adjustable
- 26D AREA PROTECTION - Remote Sensing
- 26E UNDER FREQUENCY - Single Phase, adjustable
- 26F OVER FREQUENCY - Single Phase, adjustable

SOURCE MONITORING - EMERGENCY POWER SUPPLY

- 5C OVER FREQUENCY - Single Phase, adjustable
- 5E OVER VOLTAGE - Single Phase, adjustable
- 5F UNDER VOLTAGE - Three Phase, adjustable
- 5G OVER VOLTAGE - Three Phase, adjustable

TIME DELAYS

- 2C TDES, adjustable 4-120 seconds
- 30A CRANKING LIMITER, adjustable 4-120 seconds
- 32A DELAYED TRANSITION, adjustable 0-120 seconds
- 35A PRE-TRANSFER SIGNAL DEVICE, adjustable 0-120 seconds

TIME DELAY BYPASS PUSH BUTTONS

- 8C BYPASS TDEN PUSH BUTTON
- 8D BYPASS TDNE PUSH BUTTON

ALTERNATE TEST OPERATORS & SELECTOR SWITCHES

- 6D AUTO/TEST SWITCH - Maintained contact
- 6G KEY OPERATED AUTO/TEST SWITCH - Maintained contact
- 6H FOUR POSITION SELECTOR SWITCH - Test, Auto, Off, Engine Start
- 9B MAINTENANCE SELECTOR SWITCH - Maintained contact
- 10B PREFERRED SOURCE SELECTOR SWITCH - Utility/Utility or Utility/Generator
- 10D PREFERRED SOURCE SELECTOR SWITCH - Dual Generator

INDICATING LIGHTS

- 12G NORMAL SOURCE PILOT LIGHT - White
- 12H EMERGENCY SOURCE PILOT LIGHT - White
- 12L NORMAL TRIP PILOT LIGHT - Amber
- 12M EMERGENCY TRIP PILOT LIGHT - Amber (12L & 12M available only with Option 16)

BATTERY CHARGERS

- 24C 5 AMP, 12VDC OUTPUT - Separate mount, requires 120VAC power source
- 24D 5 AMP, 24VDC OUTPUT - Separate mount, requires 120VAC power source

SHUNT TRIPS

- 33A SHUNT TRIP ON NORMAL POWER SOURCE-Coil Voltage_____
- 33B SHUNT TRIP ON EMERGENCY POWER SOURCE - Coil Voltage _____

INTEGRAL OVERCURRENT PROTECTION

- 16B DIGITRIP - Both sources
- 16E DIGITRIP - Emergency source
- 16N DIGITRIP - Normal source

SERVICE ENTRANCE RATING

- 37A SERVICE ENTRANCE RATING WITHOUT GROUND FAULT PROTECTION
- 37B SERVICE ENTRANCE RATING WITH GROUND FAULT PROTECTION

SOLID STATE DIGITAL PLANT EXERCISERS

- 23C PLANT EXERCISER WITHOUT LOAD TRANSFER - Adjustable 0-168 hours, 0-10 programs
- 23D PLANT EXERCISER WITH LOAD TRANSFER - Adjustable 0-168 hours, 0-10 programs
- 23G PLANT EXERCISER WITH SELECTOR SWITCH - Allows choice of exercise with or without load transfer or a bypass of exercise period
- 23I PLANT EXERCISER WITH LOAD TRANSFER AND FAIL-SAFE FEATURE
- 23J PLANT EXERCISER WITH SELECTOR SWITCH AND FAIL-SAFE FEATURE

METERING

- 18I IQ GENERATOR - Normal Power Source Only - Microprocessor based voltmeter, ammeter, and frequency meter
- 18J IQ GENERATOR - Emergency source only
- 18K IQ GENERATOR - Both sources
- 18L IQ DATA PLUS II - Normal Source only, advanced microprocessor based metering
- 18M IQ DATA PLUS II- Emergency source only
- 18N IQ DATA PLUS II - Both sources
- 18P IMPACC Communications

PORTABLE TEST KIT

- 38A TEST KIT - Portable, hand-held test kit to test solid state control logic cards and output relays

SPACE HEATER WITH THERMOSTAT

- 41A 100 WATT HEATER - Requires separate 120V
- 41B 200 WATT HEATER - Requires separate 120V
- 41C 400 WATT HEATER - Requires separate 120V

INTELLIGENCE CIRCUIT FUSES

- 28A INTELLIGENCE CIRCUIT FUSES - Fuses all non-essential circuitry

ALTERNATE OPERATIONAL MODES

- 29D PUSH BUTTON OPERATED TRANSFER SWITCH - Provides non- automatic operation of the transfer switch
- 29E PUSH BUTTON RETURN TO NORMAL
- 29G SELECTABLE AUTOMATIC/NON-AUTOMATIC OPERATION OF TRANSFER SWITCH - Non-UL.
- 29J SELECTABLE AUTOMATIC/PUSH BUTTON RETURN TO NORMAL ON TRANSFER SWITCH

**FOR ADDITIONAL INFORMATION
ON WESTINGHOUSE TRANSFER
SWITCHES:**

Mini-SPB Transfer Switches, 600-1200 Amperes	B 1222
ATS Solid State Logic Systems	SA 12075
ATS Relay Logic Systems	SA 12076
ATS Renewal Parts Catalog	SA 12077
ATS Renewal Parts Price List	PL 29-995
Transfer Switch Equipment 150-4000 Amperes	TD 29-925
Automatic, Manual and Non-Automatic Transfer Switches, 150-1000 Amperes	B 1223
Automatic, Manual, Non-Automatic, Transfer Switches, 30-4000 Amperes, Price List	PL 29-920
Type ATSB1 Combination Bypass Isolation and Automatic Transfer Switches, 100-1000 Amperes	SA 11844
Type ATSRD Drawout Transfer Switches, 800-4000 Amperes	SA 11873

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Cutler-Hammer

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