PowerCommand® B-Series Bypass-Isolation Transfer Switch

PowerCommand® 80 Control Automatic (Open/Closed Transition)

1200 A - 3000 A

Description

The B-Series bypass-isolation transfer switches combine a draw-out automatic transfer switch with isolation mechanism and a manual bypass transfer switch, to provide redundant power transfer and re-transfer capability where reliable power is paramount to the safety and vitality of our communities. These products are specifically designed to provide a convenient and robust means to satisfy the NFPA 70 Article 700 and 708 requirements for redundant transfer equipment.

The B-Series transfer switches are designed for operation and switching of electrical loads between primary and alternate power sources. They can be used in utility-generator set, utility-utility, generator set-generator set, or three-source system (dual standby) application types.

The B-Series transfer switches are suitable for use in emergency, legally required and optional standby applications. The integral automatic transfer switch control monitors both power sources, signals the generator set to start and automatically transfers the load to the alternate power source. When the preferred power source returns and has stabilized, the load is automatically transferred back.

The B-Series integral automatic transfer switches are available in closed transition operations. By briefly paralleling the two sources (for 100 ms or less), the transfer from the alternate source back to the normal source occurs without power interruption to the loads.

Features

Withstand and Closing Ratings (WCR) – The B-Series transfer switches have the highest UL1008 0.05 s (3 cycle) Time Duration ratings in the industry. The high ratings provide the freedom to use any upstream overcurrent protective device to protect the transfer switch which vastly simplifies the task of power system selective coordination.

PowerCommand® 80 control – A sophisticated, fully featured microprocessor-based control with LED backlit colored LCD display and tactile-feel soft-buttons for easy screen navigation and operation with gloves and in rain.

3-Position mechanism – The 3-position mechanism allows for independent source actuation (i.e. source transfer is not dependent on the position of the opposing source). The transfer switch is either closed on Source 1, closed on Source 2 or in a center off, neutral position (not closed on either source). Thus, provides safe transfer operation for large stored-energy loads by allowing the residual voltage to decay to a safe level before transfer.

Advanced transfer switch mechanism – Patented Blow-On design allows for high survivability in extreme fault current conditions. Actuator designed for high strength locking capability, ensuring electrical contacts remain closed when needed to be closed.

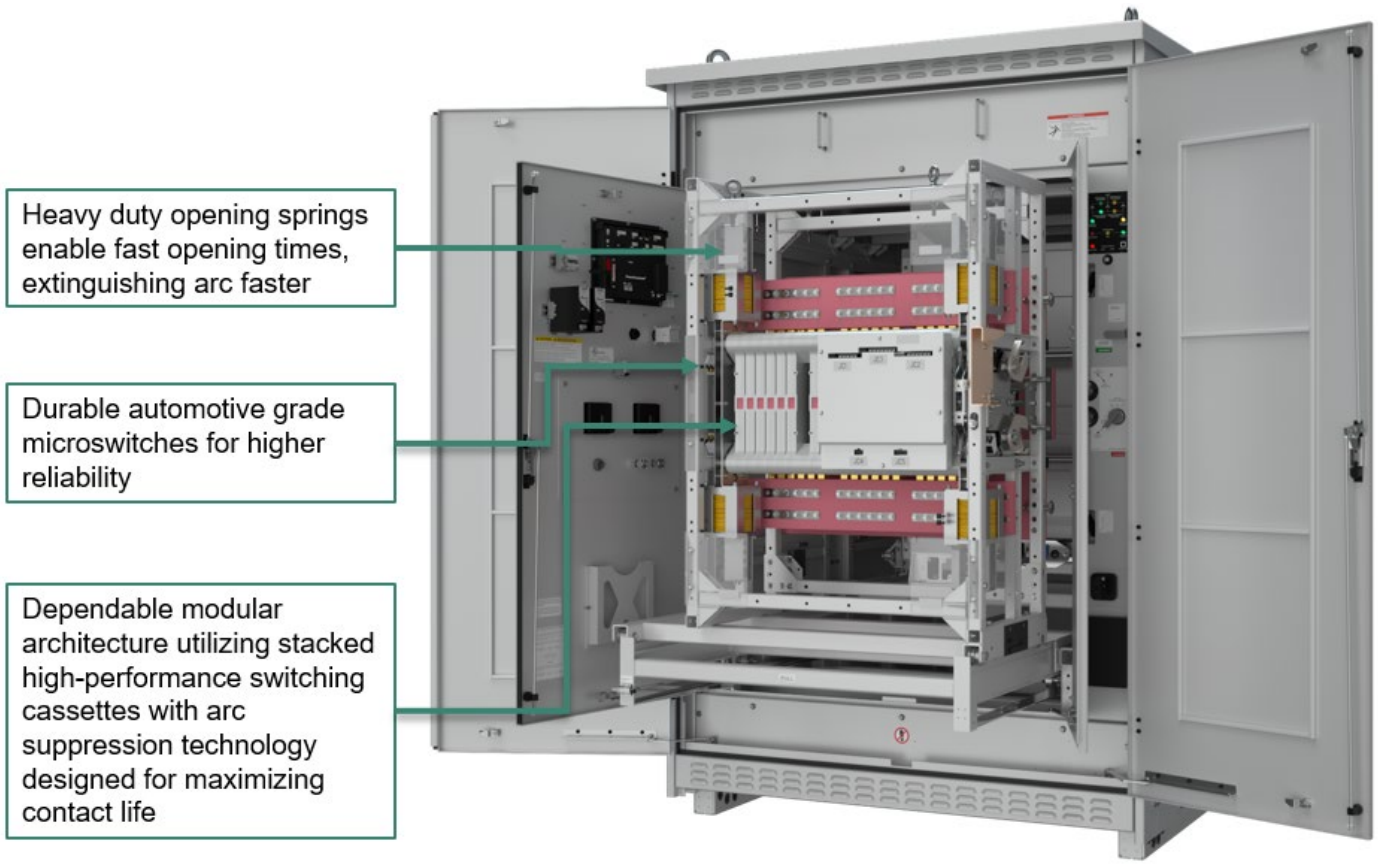
Main contacts – Heavy-duty silver alloy contacts used with multi-leaf arc chutes are rated for motor loads or total system load transfer.

Ease of service and access – Built-in plug-and-play control with minimized point-to-point connections and compatible terminal markings simplify servicing. Access space is ample. Door-mounted controls are field- programmable; no special tools are required.

Complete power system provider – Cummins is a single source supplier and integrator of complete systems and services for ease of interconnection and reduced commissioning times.

Warranty and service - Products are backed by a comprehensive warranty and a worldwide network of distributors with factory-trained service technicians.

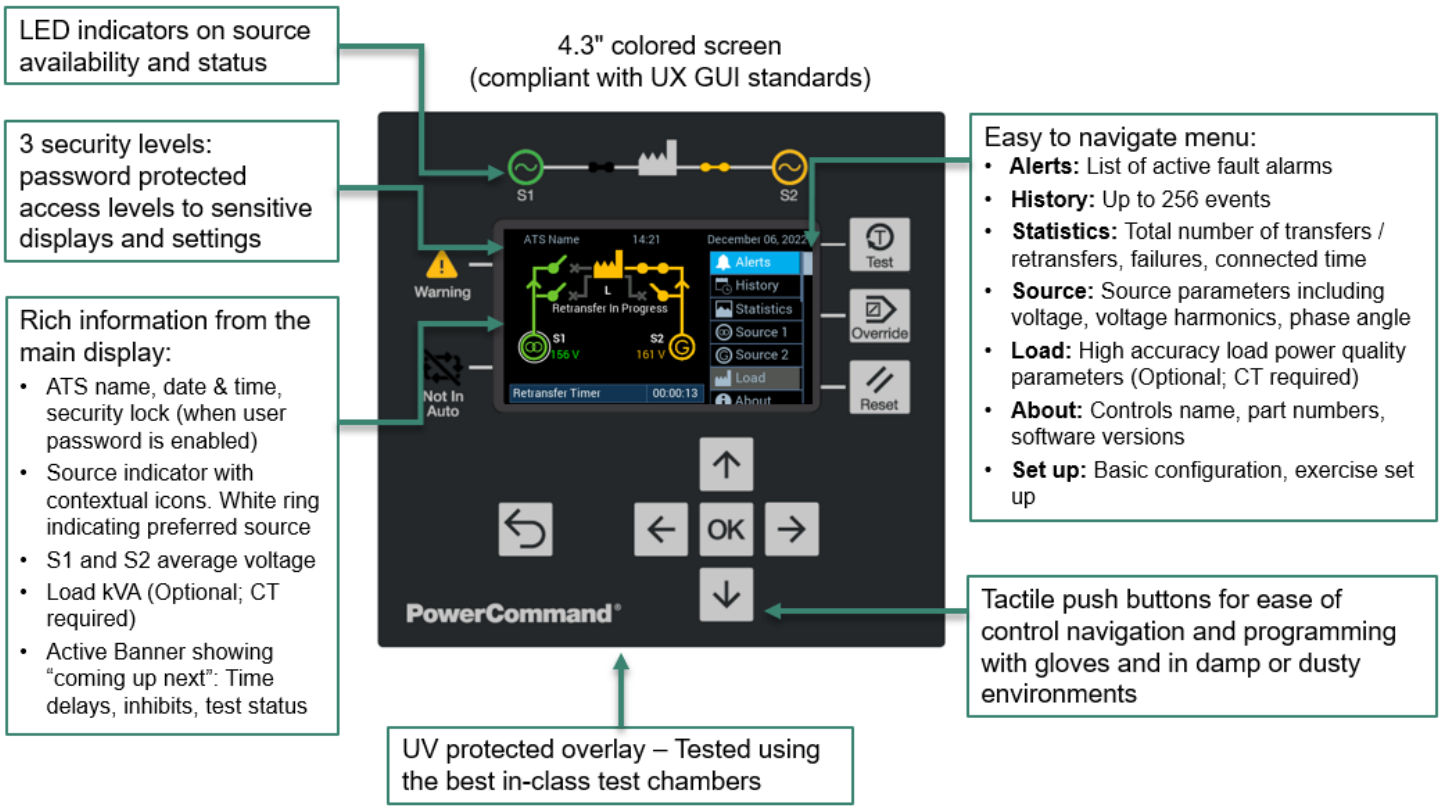
Transfer switch mechanism



- The Automatic Transfer switch (ATS) mechanism is electrically operated and mechanically held in the Source 1 and Source 2 positions. The Manual Bypass Transfer Switch (BTS) is mechanically operated and mechanically held. Designed with operator safety as a top priority, the product comes standard with isolation shutters plus electrical (and mechanical interlocks for open and programmed transition only) to prevent inadvertent interconnection of the sources.
- Independent break-before-make action is used for both 3-pole and 4-pole / simultaneously switched neutral. This design allows use of sync check operation when required, or control of the operating speed of the transfer switch for proper transfer of motor and rectifier-based loads (programmed transition feature).
- For closed transition, transition, make-before-break action with the use of sync check allows for uninterrupted power when transferring between available sources.
- True 4-pole switching allows for proper ground (earth) fault sensing and consistent, reliable operation for the life of the transfer switch. The neutral poles of the transfer switch have the same ratings as the phase poles and are operated by a common crossbar mechanism, eliminating the possibility of incorrect neutral operation at any point in the operating cycle, or due to failure of a neutral operator.
- High pressure silver alloy contacts resist burning and pitting. Separate arcing surfaces further protect the main contacts. Contact wear is reduced by multiple leaf arc chutes that cool and quench the arcs. Barriers separate the phases to prevent interphase flashover. A transparent protective cover allows visual inspection while inhibiting inadvertent contact with energized components.
- Both the ATS and BTS mechanisms, including contact assemblies, are UL 1008 certified to verify suitability for applications requiring high endurance switching capability for the life of the transfer switch. Withstand and closing ratings are validated using the same set of contacts, further demonstrating the robust nature of the design.

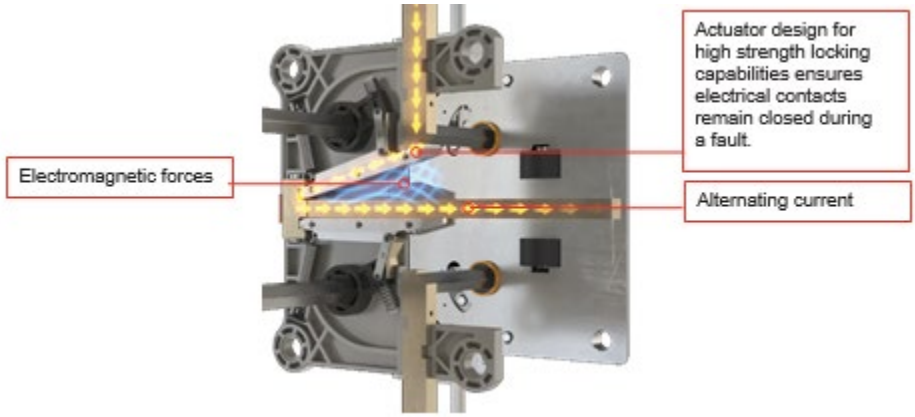
Next-generation automatic transfer switch (ATS) control

- The revolutionary PowerCommand® 80 transfer switch control delivers unrivaled adaptability, connectivity, and intelligence.
- Highly advanced and customizable control designed to work in a wide variety of applications.
- Integrated advanced high-accuracy metering with harmonic analysis capability provides a simplified but highly accurate way to monitor and detect power quality problems and capture energy usage data.
- Integrated automatic load management capability provides the ability to easily set up downstream load management schemes without the need for additional hardware or complicated setup.
- Fully integrated networking solutions without requiring add-on modules (Modbus® RS485 and TCP/IP communications, PowerCommand® Cloud ready.
- Integrated control dc power supply provides the capability to connect up to three independent dc sources.
- Detailed event logging with enhanced fault codes, alert lists, power event history, and source statistics enhances diagnostic capability during service events and provides the ability to meet any reporting requirements.
- Please see the PowerCommand® 80 control specification sheet for the full description, benefits and features.



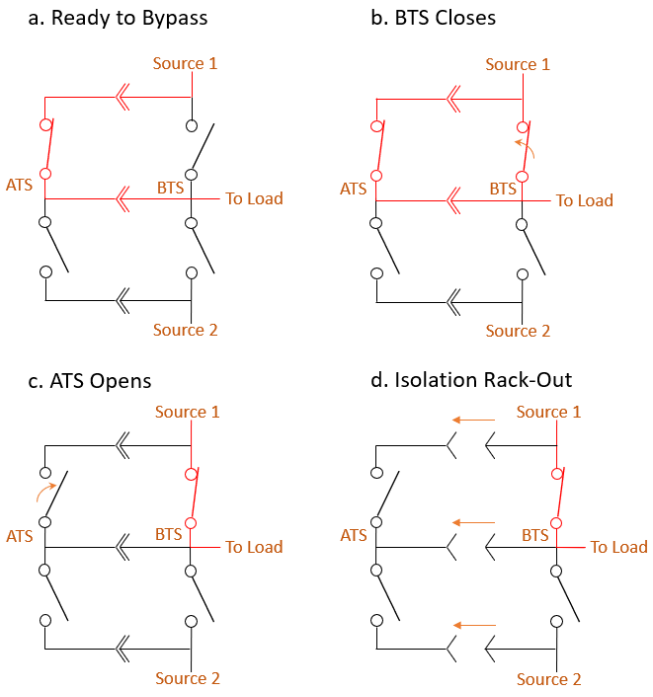
The innovative design of the High Endurance Mechanism

The High Endurance Mechanism (HEM) used for both the automatic transfer switch and manual bypass transfer switch is designed to minimize the contact damage during a fault condition thus retaining its capability to carry up to 100 % of its rated load. Electromagnetic forces developed during a fault cause a conventional transfer switch's contacts to blow open, producing destructive arcing that often results in extensive internal damage to the switch. Typically, after a conventional switch experiences a fault, its contacts, arc chutes and in some cases its control and enclosure need to be replaced. On the other hand, the blow-on technology utilized by the HEM, uses that same electromagnetic energy to hold the contacts closed during a fault, practically eliminating arcing, contact damage, and performance degradation. With the withstand and closing ratings of this innovative blow-on technology, costly repairs or inconvenient downtime can be minimized after a fault.

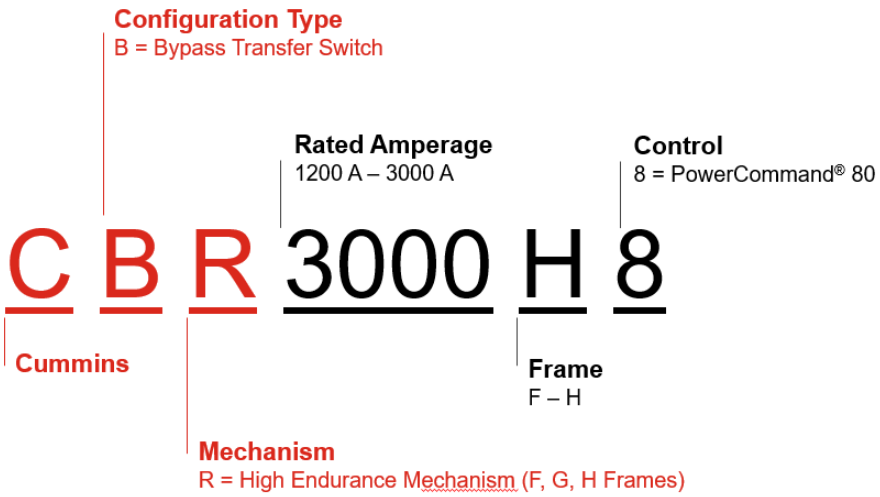


- Both the automatic transfer switch mechanism and manual bypass transfer switch mechanism utilize the same innovative high performance power cassettes.
- Cassette design ensures that all phases and neutral are switched at the same speed, providing true four pole operation.
- Encapsulated contactor design increases phase to phase isolation and reduces possibility of arcing between phases.
- New design eliminates a common failure point in many transfer switches by not using electrical connections made of braided metal in the mechanism's current path.
- Simple design with fewer parts minimizes failure modes and maximizes product reliability.

Bypass Transfer Switch (BTS) and isolation mechanism



- The manual bypass transfer switch mechanism allows the operator to select either the preferred or standby source. Mechanical and LED indicators show bypass "source selected", bypass "closed" or "open" to either source, and automatic transfer switch isolation. Bypass of the automatic switch is accomplished with permanently mounted, mechanically operated devices without disturbing the power supply to system loads, and without opening interior enclosure doors.
- Isolation contacts allow the automatic transfer switch and the bypass switch to be separated electrically and mechanically.
- Protective safety shutters, provided on switches, up to and including 3000 amps, cover the stationary power terminals on the bypass switch when the automatic transfer switch is isolated and removed.
- The draw-out mechanism can be latched in one of three positions: "connected", "test", and "isolated". In the connected position the mechanism is locked. In the test position, the automatic switch power terminals are isolated, but the control receives power. In the isolated position, the automatic switch is completely isolated.
- Since the bypass transfer and isolation mechanisms are manually operated, they are not susceptible to control hardware or software-related failure modes to ensure redundant transfer capability is there when you need it.



Specifications

Voltage rating	Up to 600 Vac, 50 or 60 Hz
Arc interruption	Multiple leaf arc chutes provide dependable arc interruption.
Neutral bar	A full current-rated solid neutral bar with lugs is optional on enclosed 3-pole transfer switches.
Auxiliary contacts	Two isolated contacts (one for each source) indicating switch position are provided for customer use. Contacts are normally open, and close to indicate connection to the source. Wired to terminal block for easy access. Rated at 10 A continuous and 250 Vac maximum. An additional two contacts are available with the premium Customer I/O option. UL recognized, and CSA-certified.
Operating temperature	-40 ˚F (-40 ˚C) to 140 ˚F (60 ˚C) LCD display operates over an ambient temperature range of -40 ˚F (-20 ˚C) to 140 ˚F (60 ˚C) without heaters, 85 % RH (absolute humidity limit 46 g/m^3)
Storage temperature	-40 ˚F (-40 ˚C) to 140 ˚F (60 ˚C)
Humidity	Up to 95 % relative, non-condensing
Altitude	Up to 10,000 ft (3,048 m) without derating
Surge withstand ratings	Voltage surge performance and testing in compliance with the requirements of IEEE C62.41 (Category B3) and IEEE C62.45.
Total transfer time (source-to-source)	Will not exceed 6 cycles at 60 Hz with normal voltage applied to the actuator and without programmed transition enabled.
Manual operation*	Automatic transfer switch mechanisms are equipped with means to manually transfer. All sources must be de-energized before manual operation is attempted.

* See Operator Manual for further details.

UL 1008 short-circuit withstand/closing (WCR) and short-time current ratings

Amperage Rating (A)	Fuse Ratings (kA)	F Frame	G Frame	H Frame
		0.05 s [3-cycle]	0.05 s [3-cycle]	0.05 s [3-cycle]
		(kA)	(kA)	(kA)
1200	200	100		
1600		100	125	
2000			125	
2600				150
3000				150

All 0.05 seconds (3-cycle) ratings are the short-circuit WCR.

Mechanical cable lug capacity (Optional)

Frame	Amperage Rating (A)	Maximum Cables Per Phase	Size	Part Number
F	1200-1600	6	300 - 750 MCM	A059T589
G	1600-2000	8	250-750 MCM	A058P583
H	2600-3000	8	500-750 MCM	A054S076, A054S078

All lugs are 90 °C rated and accept copper or aluminium wire unless indicated otherwise.
Refer to the latest NFPA 70 Article 310 - Conductors for general wiring for the ampacity calculations.

Compression cable lug capacity (Optional)

Size (MCM)	Maximum Cables per Phase			Part Number	Manufacturer/ Model Number
	F Frame	G Frame	H Frame		
750	5	6	8	A058X606**	BURNDY/ YA39A5

* Configurable option
Additional hardware is required for compression lug installation. Refer to lug installation drawing for more details. All lugs are 90 °C rated and accept copper or aluminum wire unless indicated otherwise.
Refer to the latest NFPA 70 Article 310 - Conductors for general wiring for the ampacity calculations.

Enclosure dimensions

Type 3R secure-front enclosure is shown.

Frame	Amperage Rating (A)	Measurements		NEMA Rated Enclosures for Indoor	NEMA Rated Enclosures for Indoor & Outdoor
				Type 1	Type 3R
F	1200-1600	Dimension (mm/in)	W	1294.0/51.0	1314.0/52.0
			D	1906.7**/75.0**	2125.8**/84.0**
			H	2382.6*/94.0*	2382.6*/94.0*
		Approximate Weight$_{max}$ (kg/lb)		1930.0/4256.0	1930.0/4256.0
G	1600-2000	Dimension (mm/in)	W	1294.0/51.0	1314.0/52.0
			D	1906.7**/75.0**	2125.8**/84.0**
			H	2382.6*/94.0*	2382.6*/94.0*
		Approximate Weight$_{max}$ (kg/lb)		2325.0/5127.0	2325.0/5127.0
H	2600-3000	Dimension (mm/in)	W	1550.0/61.0	1570.0/62.0
			D	2086.0**/82.0**	2378.5**/94.0**
			H	2382.6*/94.0*	2382.6*/94.0*
		Approximate Weight$_{max}$ (kg/lb)		2361.0/5800.0	2361.0/5800.0

* Dimension includes additional height for lifting hooks provided with the enclosure.
** Dimension considers additional depths for a roof that overhangs from the front wall of the enclosure.
Type 3R enclosures are secure front designed for greater protection from the elements and vandals.

Enclosure access for cable installation and maintenance

Frame	Amperage Rating (A)	Access	
		Type 1	Type 3R
F	1200-1600	Rear or Both Sides	
G	1600-2000		
H	2600-3000		

Ensure minimum working space clearance is maintained in front of the transfer switch per NEC.
Additional front clearance is needed to remove the mechanism. Refer to the outline drawing.
All frames allow for top and bottom cable entry.

B-Series drawing part numbers

Frame	Amperage Rating (A)	Outline Drawing	WCR Label	Wiring Diagram			
		Type 1 & 3R	0.05 s [3-cycle]	Open/ Delayed Transition	Closed Transition	Interconnect U-G* & U-U**	Interconnect G-G****
F	1200-1600	A072E825	A063N541	A065M201	A072N401	A072N416***	A072N417
G	1600-2000	A072E824	A063N543				
H	2600-3000	A072E823	A061V902				

* U-G stands for Utility-Generator Set
** U-U stands for Utility-Utility
*** Drawing contains wiring for NEC Start Integrity
**** G-G stands for Generator Set-Generator Set

Product codes for F-Frame submittal detail

Model
❒CBRF_CBR1200 1200 A, F frame
❒CBRF_CBR1600 1600 A, F frame

Transfer modes
❒CBRF_A077-7 Open transition/in-phase [STANDARD]
❒CBRF_A078-7 Open transition/time delayed (programmed)
❒CBRF_A079-7 Closed transition

Poles
❒CBRF_A028-7 3-poles [STANDARD]
❒CBRF_A029-7 4-poles, switched neutral

Application
❒CBRF_A035-7 Utility to generator set [STANDARD]
❒CBRF_A036-7 Utility to utility
❒CBRF_A037-7 Generator set to generator set

Performance ratings
❒CBRF_H024-7 UL 1008 3-cycle withstand ratings [STANDARD]

Frequency
❒CBRF_A044-7 60 Hz [STANDARD]
❒CBRF_A045-7 50 Hz

Phase
❒CBRF_A090-7 3-phase, 3-wire (no neutral)
❒CBRF_A091-7 3-phase, 4-wire (solid or switched neutral)

Voltage
❒CBRF_R021-7 208 V
❒CBRF_R026-7 480 V
❒CBRF_R027-7 600 V

Cabinet
❒CBRF_B001-7 Type 1: Indoor use, provides some protection against dirt (similar to IEC type IP30) [STANDARD]
❒CBRF_B002-7 Type 3R: Intended for outdoor use, provides some protection from dirt, rain and snow (similar to IEC type IP34)

Standards
❒CBRF_A064-7 UL/NFPA 20 fire pump compliant
❒CBRF_S043-7 UL 1008 listing (includes cUL listing for Canada) [STANDARD]

Control
❒CBRF_C109-7 PC80 control [STANDARD]

Control options
❒CBRF_D403-7 Integrated PC80 high accuracy power quality metering
❒CBRF_L214-7 Load shed from standby source (24VDC)
❒CBRF_L215-7 Start Signal Integrity for Multiple ATS systems
❒CBRF_M079-7 Integral control power supply (24VDC)

Customer input/output
❒CBRF_M076-7 Standard - 5 digital inputs, 6 digital outputs, 2 dry-contact outputs, 24VDC coil voltage
❒CBRF_M077-7 Premium - includes Standard plus 2 digital inputs, 6 digital outputs, 2 dry-contact output, 24VDC coil voltage

Protective relays
❒CBRF_M045-7 IEEE protective relays, 62PL parallel timer, 86 lock-out
❒CBRF_M047-7 IEEE protective relays, 62PL parallel timer, 86 lock-out, BE1-32R reverse power relay with 3-phase sensing
❒CBRF_M082-7 IEEE protective relays 86 lock-out and programmable SEL-751 wired for 32R and 62PL function

Cable lugs (Select One)
❒CBRF_N069-7 No cable lugs, bus stabs
❒CBRF_N070-7 Cable lugs, mechanical, 1/0-750 MCM [STANDARD]
❒CBRF_N071-7 Cable lugs, compression, 750 MCM

Power quality meter
❒CBRF_D010-7 PM8244 Utility grade PQM, 3-wire, for delta systems
❒CBRF_D011-7 PM8244 Utility grade PQM, 4-wire, for wye systems

Surge protective device (SPD)
❒CBRF_M060-7 S1 SPD, 120 kA, for wye systems
❒CBRF_M061-7 S1 SPD, 120 kA, for HRG-wye systems
❒CBRF_M062-7 S1 SPD, 120 kA, for delta systems
❒CBRF_M063-7 S1 SPD, 120 kA, for HL-Delta systems
❒CBRF_M064-7 S1 SPD, 240 kA, for wye systems
❒CBRF_M065-7 S1 SPD, 240 kA, for HRG-wye systems*
❒CBRF_M066-7 S1 SPD, 240 kA, for delta systems*
❒CBRF_M067-7 S2 SPD, 120 kA, for HL-Delta systems
❒CBRF_M068-7 S2 SPD, 120 kA, for wye systems
❒CBRF_M069-7 S2 SPD, 120 kA, for HRG-wye systems
❒CBRF_M070-7 S2 SPD, 120 kA, for delta systems
❒CBRF_M071-7 S1 SPD, 240 kA, for HL-Delta systems
❒CBRF_M072-7 S2 SPD, 240 kA, for wye systems
❒CBRF_M073-7 S2 SPD, 240 kA, for HRG-wye systems*
❒CBRF_M074-7 S2 SPD, 240 kA, for delta systems*
❒CBRF_M075-7 S2 SPD, 240 kA, for HL-Delta systems

*600V configurations of these SPD features are only rated for 180 kA.

Miscellaneous
❒CBRF_M080-7 Anti-condensation cabinet heater

Warranty
❒CBRF_G004-7 2-years, comprehensive [STANDARD]
❒CBRF_G007-7 5-years, comprehensive
❒CBRF_G014-7 3-years, comprehensive
❒CBRF_G015-7 10-years, comprehensive

Shipping
❒CBRF_A050-7 Packing – Standard
❒CBRF_A051-7 Packing - export box

Request for quotation
❒CBRF_Z555-7 Nonconfigurable spec (ETO)

Product codes for G-Frame submittal detail

Model
❒CBRG_CB1600 1600 A, G frame
❒CBRG_CBR2000 2000 A, G frame

Transfer modes
❒CBRG_A077-7 Open transition/in-phase [STANDARD]
❒CBRG_A078-7 Open transition/time delayed (programmed)
❒CBRG_A079-7 Closed transition

Poles
❒CBRG_A028-7 3-poles [STANDARD]
❒CBRG_A029-7 4-poles, switched neutral

Application
❒CBRG_A035-7 Utility to generator set [STANDARD]
❒CBRG_A036-7 Utility to utility
❒CBRG_A037-7 Generator set to generator set

Performance ratings
❒CBRG_H024-7 UL 1008 3-cycle withstand ratings [STANDARD]

Frequency
❒CBRG_A044-7 60 Hz [STANDARD]
❒CBRG_A045-7 50 Hz

Phase
❒CBRG_A090-7 3-phase, 3-wire (no neutral)
❒CBRG_A091-7 3-phase, 4-wire (solid or switched neutral)

Voltage
❒CBRG_R021-7 208 V
❒CBRG_R026-7 480 V
❒CBRG_R027-7 600 V

Cabinet
❒CBRG_B001-7 Type 1: Indoor use, provides some protection against dirt (similar to IEC type IP30) [STANDARD]
❒CBRG_B002-7 Type 3R: Intended for outdoor use, provides some protection from dirt, rain and snow (similar to IEC type IP34)

Standards
❒CBRG_A064-7 UL/NFPA 20 fire pump compliant
❒CBRG_S043-7 UL 1008 listing (includes cUL listing for Canada) [STANDARD]

Control
❒CBRG_C109-7 PC80 control [STANDARD]

Control options
❒CBRG_D403-7 Integrated PC80 high accuracy power quality metering
❒CBRG_L214-7 Load shed from standby source (24VDC)
❒CBRF_L215-7 Start Signal Integrity for Multiple ATS systems
❒CBRG_M079-7 Integral control power supply (24VDC)

Customer input/output
❒CBRG_M076-7 Standard - 5 digital inputs, 6 digital outputs, 2 dry-contact outputs, 24VDC coil voltage
❒CBRG_M077-7 Premium - includes Standard plus 2 digital inputs, 6 digital outputs, 2 dry-contact output, 24VDC coil voltage

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❒CBRG_D011-7 PM8244 Utility grade PQM, 4-wire, for wye systems

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❒CBRF_M062-7 S1 SPD, 120 kA, for delta systems
❒CBRF_M063-7 S1 SPD, 120kA, for HL-Delta systems
❒CBRF_M064-7 S1 SPD, 240 kA, for wye systems
❒CBRF_M065-7 S1 SPD, 240 kA, for HRG-wye systems*
❒CBRF_M066-7 S1 SPD, 240 kA, for delta systems*
❒CBRF_M067-7 S2 SPD, 120kA, for HL-Delta systems
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❒CBRF_M069-7 S2 SPD, 120 kA, for HRG-wye systems
❒CBRF_M070-7 S2 SPD, 120 kA, for delta systems
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❒CBRF_M073-7 S2 SPD, 240 kA, for HRG-wye systems*
❒CBRF_M074-7 S2 SPD, 240 kA, for delta systems*
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*600V configurations of these SPD features are only rated for 180 kA.

Miscellaneous
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Warranty
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❒CBRG_G007-7 5-years, comprehensive
❒CBRG_G014-7 3-years, comprehensive
❒CBRG_G015-7 10-years, comprehensive

Shipping
❒CBRG_A050-7 Packing - Standard
❒CBRG_A051-7 Packing - export box

Request for quotation
❒CBRG_Z555-7 Nonconfigurable spec (ETO)

Product codes for H-Frame submittal detail

Model
❒CBRH_CBR2600 2600 A, H frame
❒CBRH_CBR3000 3000 A, H frame

Transfer modes
❒CBRH_A077-7 Open transition/in-phase [STANDARD]
❒CBRH_A078-7 Open transition/time delayed (programmed)
❒CBRH_A079-7 Closed transition

Poles
❒CBRH_A028-7 3-poles [STANDARD]
❒CBRH_A029-7 4-poles, switched neutral

Application
❒CBRH_A035-7 Utility to generator set [STANDARD]
❒CBRH_A036-7 Utility to utility
❒CBRH_A037-7 Generator set to generator set

Performance ratings
❒CBRH_H024-7 UL 1008 3-cycle withstand ratings [STANDARD]

Frequency
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❒CBRH_A045-7 50 Hz

Phase
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❒CBRH_A091-7 3-phase, 4-wire (solid or switched neutral)

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❒CBRH_R026-7 480 V
❒CBRH_R027-7 600 V

Cabinet
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❒CBRH_B002-7 Type 3R: Intended for outdoor use, provides some protection from dirt, rain and snow (similar to IEC type IP34)

Standards
❒CBRH_A064-7 UL/NFPA 20 fire pump compliant
❒CBRH_S043-7 UL 1008 listing (includes cUL listing for Canada) [STANDARD]

Control
❒CBRH_C109-7 PC80 control [STANDARD]

Control options
❒CBRH_D403-7 Integrated PC80 high accuracy power quality metering
❒CBRH_L214-7 Load shed from standby source (24VDC)
❒CBRF_L215-7 Start Signal Integrity for Multiple ATS systems
❒CBRH_M079-7 Integral control power supply (24VDC)

Customer input/output
❒CBRH_M076-7 Standard - 5 digital inputs, 6 digital outputs, 2 dry-contact outputs, 24VDC coil voltage
❒CBRH_M077-7 Premium - includes Standard plus 2 digital inputs, 6 digital outputs, 2 dry-contact output, 24VDC coil voltage

Protective relays
❒CBRH_M045-7 IEEE protective relays, 62PL parallel timer, 86 lock-out
❒CBRH_M047-7 IEEE protective relays, 62PL parallel timer, 86 lock-out, BE1-32R reverse power relay with 3-phase sensing
❒CBRF_M082-7 IEEE protective relays 86 lock-out and programmable SEL-751 wired for 32R and 62PL function

Cable lugs (Select One)
❒CBRH_N069-7 No cable lugs, bus stabs
❒CBRH_N070-7 Cable lugs, mechanical, 1/0-750 MCM [STANDARD]
❒CBRH_N071-7 Cable lugs, compression, 750 MCM

Power quality meter
❒CBRH_D010-7 PM8244 Utility grade PQM, 3-wire, for delta systems
❒CBRH_D011-7 PM8244 Utility grade PQM, 4-wire, for wye systems

Surge protective device (SPD)
❒CBRF_M060-7 S1 SPD, 120 kA, for wye systems
❒CBRF_M061-7 S1 SPD, 120 kA, for HRG-wye systems
❒CBRF_M062-7 S1 SPD, 120 kA, for delta systems
❒CBRF_M063-7 S1 SPD, 120kA, for HL-Delta systems
❒CBRF_M064-7 S1 SPD, 240 kA, for wye systems
❒CBRF_M065-7 S1 SPD, 240 kA, for HRG-wye systems*
❒CBRF_M066-7 S1 SPD, 240 kA, for delta systems*
❒CBRF_M067-7 S2 SPD, 120kA, for HL-Delta systems
❒CBRF_M068-7 S2 SPD, 120 kA, for wye systems
❒CBRF_M069-7 S2 SPD, 120 kA, for HRG-wye systems
❒CBRF_M070-7 S2 SPD, 120 kA, for delta systems
❒CBRF_M071-7 S1 SPD, 240kA, for HL-Delta systems
❒CBRF_M072-7 S2 SPD, 240 kA, for wye systems*
❒CBRF_M073-7 S2 SPD, 240 kA, for HRG-wye systems*
❒CBRF_M074-7 S2 SPD, 240 kA, for delta systems
❒CBRF_M075-7 S2 SPD, 240kA, for HL-Delta systems

*600V configurations of these SPD features are only rated for 180 kA.

Miscellaneous
❒CBRH_M080-7 Anti-condensation cabinet heater

Warranty
❒CBRH_G004-7 2-years, comprehensive [STANDARD]
❒CBRH_G007-7 5-years, comprehensive
❒CBRH_G014-7 3-years, comprehensive
❒CBRH_G015-7 10-years, comprehensive

Shipping
❒CBRH_A050-7 Packing - Standard
❒CBRH_A051-7 Packing - export box

Request for quotation
❒CBRH_Z555-7 Nonconfigurable spec (ETO)

Codes and Standards

UL	All switches are **UL 1008** Listed with **UL 50E** Type Rated cabinets and UL Listed CU-AL terminals.	NEMA	All switches comply with **NEMA ICS 10**.
cULus	All switches are **UL 1008** Listed for Canadian requirements.	IEEE	All switches comply with **IEEE 446** Recommended Practice for Emergency and Standby Power Systems.
NFPA	All switches comply with **NFPA 20**, **70**, **99** and **110 (Level 1)**.	RoHS	All switches are **RoHS** compliant.
NEC®	Suitable for use in emergency, legally required and Standby and Critical Operations Power Systems (COPS) applications per **NEC 700**, **701**, **702** and **708**.	ISO	All switches are designed and manufactured in facilities certified to **ISO 9001**.
IBC®	Coming Soon	OSHPD	Coming Soon
EMC	All switches have been tested to meet the following Electromagnetic Compatibility (**EMC**) standards: **EN 61000-4-3** Radiated Immunity **EN 61000-4-4** Electrical Fast Transients **EN 61000-4-2** Electrostatic Discharge **EN 61000-4-6** Conducted Immunity **EN 61000-4-8** Power Frequency Magnetic Field **EN 61000-6-2** Generic Immunity Standard		

For more information, please contact your local Cummins distributor or visit cummins.com

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