



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0774

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Cummins Power Systems

Manufacturer's Technical Representative: Kollin Kerr

Mailing Address: 3850 Victoria Ave. N., Shoreview, MN 55126

Telephone: (651) 787-7056

Email: kollin.kerr@cummins.com

Product Information

Product Name: Emergency and Standby Power Systems

Product Type: Automatic Transfer Switches

Product Model Number: Various (See Attachment)

General Description: CBR Bypass Transfer Switches, 1200A - 3000A, 208V - 600V.

Mounting Description: Rigid, Floor Mounted

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: TRU Compliance, by Structural Integrity Associates

Contact Person: Daniel Zentner

Mailing Address: 233 SW Wilson Ave, Suite 101, Bend, OR 97702

Telephone: (541) 292-5839

Email: dzentner@structint.com

Title: Program Manager



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION**

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

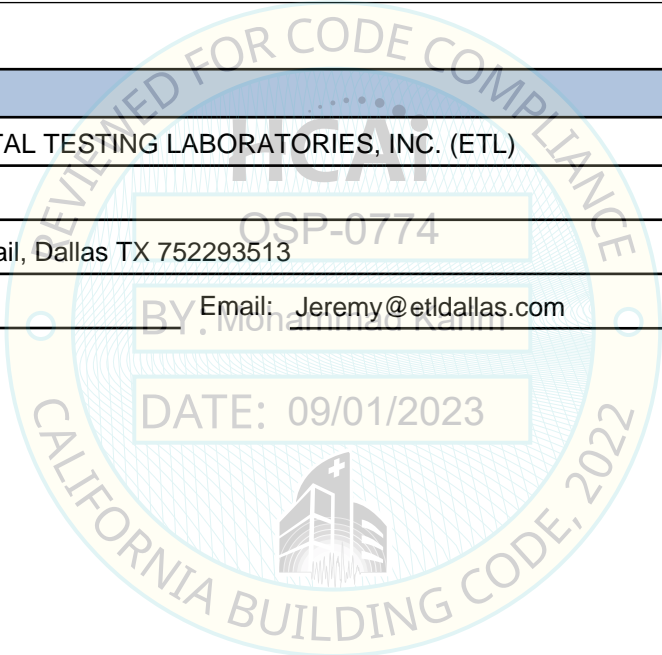
Company Name: STRUCTURAL INTEGRITY ASSOCIATES, INC.
Name: LACHEZAR HANDZHIYSKI California License Number: S6515
Mailing Address: 5215 Hellyer Avenue, Suite 210, San Jose, CA 95138
Telephone: (669) 437-0200 Email: Lhandzhiyski@StructInt.com

Certification Method

GR-63-Core ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
 Other (Please Specify): _____

Testing Laboratory

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)
Contact Person: Jeremy Lange
Mailing Address: 11034 Indian Trail, Dallas TX 752293513
Telephone: (972) 247-9657 Email: Jeremy@etldallas.com





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION**

Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.50 (z/h = 1), 1.125 (z/h = 0)

SDS (Design spectral response acceleration at short period, g) = 2.0 at z/h=1, 2.5 at z/h=0

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

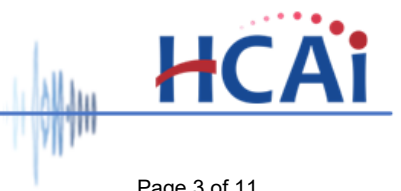
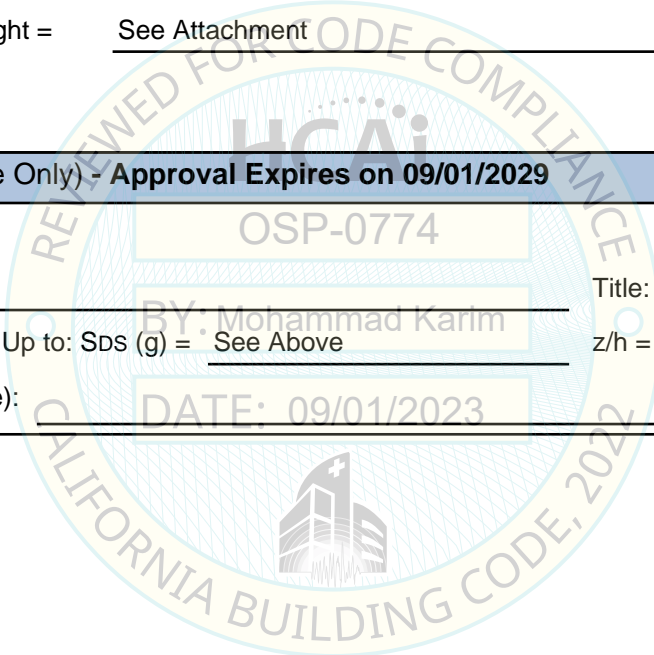
HCAI Approval (For Office Use Only) - Approval Expires on 09/01/2029

Date: 9/1/2023

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = See Above z/h = See Above

Condition of Approval (if applicable): DATE: 09/01/2023



SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

2101252-CR-001-R1



Manufacturer: Cummins Power Systems	TABLE 1
Model Line: CBR Bypass Transfer Switches	

Certified Product Construction Summary:
 Enclosure: 12ga carbon steel
 Frame primary members: 8ga carbon steel
 3-Pole or 4-Pole²

Certified Options Summary:
 Amperage: 1200A - 3000A
 Voltage: 208 - 600V
 NEMA Rating: 1, 3R³

Mounting Configuration:
 Base mounted - rigid
 Note: Installed mounting must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2022 **Seismic Certification Limits:** $S_{DS} = 2.0g$ $z/h = 1.0$ $I_p = 1.5$
 $S_{DS} = 2.5g$ $z/h = 0.0$

Model Line	Model	Dimensions (in) ⁴			Weight (lbs.)	Notes	UUT
		Depth	Width	Height			
F-Frame ⁴ (1,200 - 1,600A)	CBRF8, 3P, NEMA1	73.9	49.8	90.0	2,598	3-Pole, NEMA 1	Interp.
	CBRF8, 3P, NEMA3R	77.0	49.8	92.0	2,847	3-Pole, NEMA 3R	Interp.
	CBRF8, 4P, NEMA1	73.9	49.8	90.0	4,321	4-Pole, NEMA 1	Interp.
	CBRF8, 4P, NEMA3R	77.0	49.8	92.0	4,570	4-Pole, NEMA 3R	Interp.
G-Frame (1,600 - 2,000A)	CBRG8, 3P, NEMA1	73.9	49.8	90.0	2,598	3-Pole, NEMA 1	Interp.
	CBRG8, 3P, NEMA3R	77.0	49.8	92.0	2,847	3-Pole, NEMA 3R	Interp.
	CBRG8, 4P, NEMA1	73.9	49.8	90.0	4,321	4-Pole, NEMA 1	Interp.
		77.0	49.8	92.0	4,570	4-Pole, NEMA 3R, standard	Interp.
		77.0	49.8	92.0	4,570	4-Pole, NEMA 3R, test unit	2
H-Frame (2,600A / 3,000A)	CBRH8, 3P, NEMA1	81.0	59.8	90.0	2,572	3-Pole, NEMA 1	Interp.
	CBRH8, 3P, NEMA3R	84.1	59.8	92.0	2,866	3-Pole, NEMA 3R	Interp.
	CBRH8, 4P, NEMA1	81.0	59.8	90.0	5,434	4-Pole, NEMA 1	Interp.
	CBRH8, 4P, NEMA3R	84.1	59.8	92.0	5,728	4-Pole, NEMA 3R, standard ¹	Interp.
		84.1	59.8	92.0	6,030	4-Pole, NEMA 3R, test unit ¹	1

Notes:

1. Test unit weights exceed standard production weights for their respective models due to added subcomponents.
2. 3-pole models are depopulated and lighter versions of 4-pole models but use the same frame construction. This allows the 3-pole models to be qualified based on tests of 4-pole models.
3. There are no structural differences between NEMA 1 and NEMA 3R versions. Primary difference is weatherproofing seals. This allows the NEMA 1 models to be qualified based on tests of NEMA 3R models.
4. F-frame and G-frame models use the same frame and enclosure construction and materials. The mechanism is the primary difference but the same overall design is still used. The G-Frame and H-Frame models tested represent the most seismically vulnerable configurations. This allows the F-frame models to be qualified based on tests of G-frame and H-frame models.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

2101252-CR-001-R1



Manufacturer: Cummins Power Systems		Table Description: Electrical Subcomponents			TABLE 2
Model Line: CBR Bypass Transfer Switches					
Building Code: CBC 2022		Seismic Certification Limits:			
		$S_{DS} = 2.0 g \quad z/h = 1.0$		$I_p = 1.5$	
		$S_{DS} = 2.5 g \quad z/h = 0.0$			
Component Type	Manufacturer	Model	Description	Notes	UUT
Controller	Cummins	PC80	Bypass Switch Controller	Electronics and Plastic	1, 2
Transfer Switch	Cummins	A064J913	Transfer Switch for CBRH8, 3-pole	Copper, Carbon Steel, Plastic	Interp.
		A058W675	Transfer Switch for CBRH8, 4-pole		1
		A064J909	Transfer Switch for CBRG8, 3-pole		Interp.
		A064J911	Transfer Switch for CBRG8, 4-pole		2
		A064J905	Transfer Switch for CBRF8, 3-pole		Interp.
		A064J907	Transfer Switch for CBRF8, 4-pole		Interp.
Bypass Switch	Cummins	A064J914	Bypass Switch for CBRH8, 3-pole	Copper, Carbon Steel, Plastic	Interp.
		A059N002	Bypass Switch for CBRH8, 4-pole		1
		A064J910	Bypass Switch for CBRG8, 3-pole		Interp.
		A064J912	Bypass Switch for CBRG8, 4-pole		2
		A064J906	Bypass Switch for CBRF8, 3-pole		Interp.
		A064J908	Bypass Switch for CBRF8, 4-pole		Interp.
Solid Neutral	Cummins	A067C112	H-Frame Neutral P. for 3P transfer sw	Copper, Carbon Steel	1
		A071Z748	F/G-Frame Neutral P. for 3P transfer sw		2
Power Supply	Delta Electronics Group	DRP-24V120W1BA	2 lbs.	Stainless Steel, Electronics	Interp.
		DRP-24V120W2BN	2 lbs.		1
Thermostat	Stego	01160.0-00	2 lbs.	Plastic, Copper	1
Heater	Stego	02810.90-00	2 lbs.	Plastic, Resistive Element	1
Fuse Holder	Ferraz Shawmut	USCC1	2 lbs.	Plastic, Copper	1
Power Meter	Schneider	METSEPN8244	2 lbs.	Plastic, Electronics	1
PCB	Cummins	A067J612	Source indication PCB branching feedback signals for controls & interlock operations	Plastic, Electronics	1, 2

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

2101252-CR-001-R1



Manufacturer: Cummins Power Systems Model Line: CBR Bypass Transfer Switches		Table Description: Electrical Subcomponents		TABLE 2	
Building Code: CBC 2022		Seismic Certification Limits:		$S_{DS} = 2.0g \quad z/h = 1.0$ $S_{DS} = 2.5g \quad z/h = 0.0$	
				$I_p = 1.5$	
Component Type	Manufacturer	Model	Description	Notes	UUT
Transformer	Hammond HPS	SP50AR	2 lbs.	Plastic, Steel, Copper Windings	Interp.
		SP50QR	2 lbs.		Interp.
		SP50SR	2 lbs.		2
		SP50KHR	2 lbs.		Interp.
		PH1000AJ	26 lbs.		Interp.
		PH1000SP	26 lbs.		2
		PH1000MGJ	26 lbs.		Interp.
	Micron	B050-2001-GA	4 lbs.		Interp.
		B050-2041-GA	4 lbs.		Interp.
		B050-2101-GA	4 lbs.		Interp.
B150-2044-GAF		10 lbs.	1		
Protective Relays	Electroswitch Co.	78PJ03A-011	Lockout Relay	Plastic, Electronics	1
	Schweitzer Electric	SEL 751	Power Relay		1
	Time Mark Co.	360-24V-.1SEC	Timing Relay		1
	Basler Electric	ES-32	Power Relay		2
Power Cable Lugs	BURNDY	YA29A3	2 lbs., 250MCM Compression Lug	Aluminum/Copper	Interp.
		YA30A3	2 lbs., 300MCM Compression Lug		Interp.
		YA31A3	2 lbs., 350MCM Compression Lug		Interp.
		YA32A3	2 lbs., 400MCM Compression Lug		Interp.
		YA34A3	2 lbs., 500MCM Compression Lug		Interp.
		YA36A3	2 lbs., 600MCM Compression Lug		Interp.
		YA39A5	2 lbs., 750MCM Compression Lug		1, 2

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

2101252-CR-001-R1



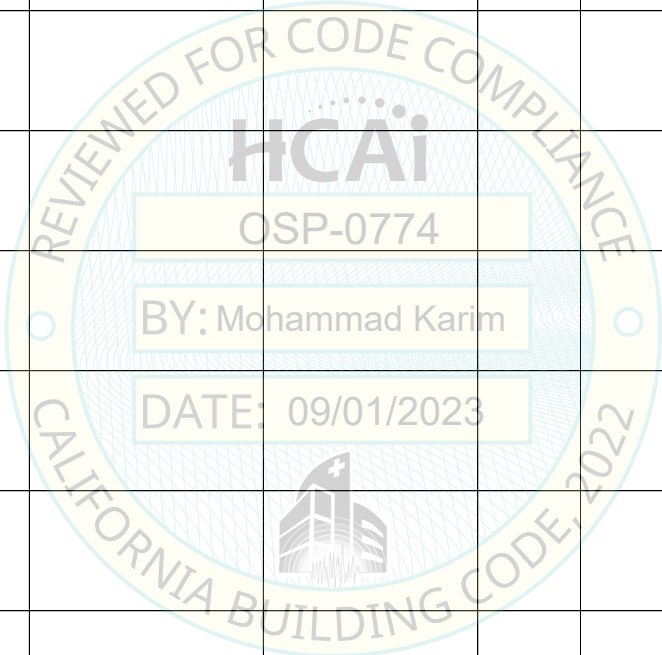
Manufacturer: Cummins Power Systems Model Line: CBR Bypass Transfer Switches		Table Description: Electrical Subcomponents			TABLE 2	
Building Code: CBC 2022		Seismic Certification Limits:			$S_{DS} = 2.0g \quad z/h = 1.0$ $S_{DS} = 2.5g \quad z/h = 0.0$	
					$I_p = 1.5$	
Component Type	Manufacturer	Model	Description	Notes	UUT	
Power Cable Lugs	Cummins/ILSCO	A054S076	3 lbs., H-frame Right-hand Mechanical Lug	Aluminum/Copper	1	
		A054S078	3 lbs., H-frame Left-hand Mechanical Lug		1	
	ILSCO	D3980	3lbs., G-frame Mechanical Lug		2	
		D3984	3 lbs., F-frame Mechanical Lug		Interp.	
		PB4-750	3 lbs., Ground Lug		1, 2	
Display	Square D	SPD Display	Display for Surge Device	Plastic, Electronics	1	
Surge Suppressor	Square D	TVS1IMA1201	10 lbs.	Copper, Plastic, Aluminum, PCB	Interp.	
		TVS2IMA1201	10 lbs.		Interp.	
		TVS3IMA1201	10 lbs.		Interp.	
		TVS4IMA1201	10 lbs.		Interp.	
		TVS5IMA1201	10 lbs.		Interp.	
		TVS6IMA1201	10 lbs.		Interp.	
		TVS8IMA1201	10 lbs.		Interp.	
		TVS9IMA1201	10 lbs.		Interp.	
		TVS1IMA2401	10 lbs.		Interp.	
		TVS2IMA2401	10 lbs.		1, 2	
		TVS3IMA2401	10 lbs.		Interp.	
		TVS4IMA2401	10 lbs.		Interp.	
		TVS5IMA2401	10 lbs.		Interp.	
		TVS6IMA2401	10 lbs.		Interp.	
		TVS8IMA2401	10 lbs.		Interp.	
		TVS4HIMA1201	10 lbs.		Interp.	
		TVS8HIMA1201	10 lbs.		Interp.	

UNIT UNDER TEST (UUT) SUMMARY SHEET

2101252-CR-001-R1



Manufacturer: Cummins Power Systems								
Model Line: CBR Bypass Transfer Switches								
UUT	Unit Description	Report Number	Testing Lab	Year Tested	ISO 17025 Accredited?	S _{DS}	z/h	I _p
1	H-Frame, 4-Pole, NEMA 3R	2101252-TR-001-R1	Environmental Testing Lab (ETL)	2022	Yes	2.0 2.5	1.0 0.0	1.5
2	G-Frame, 4-Pole, NEMA 3R	2101252-TR-001-R1	Environmental Testing Lab (ETL)	2022	Yes	2.0 2.5	1.0 0.0	1.5
Notes:								



UNIT UNDER TEST (UUT) SUMMARY SHEET

2101252-CR-001-R1



Manufacturer: Cummins Power Systems	UUT 1
Model Line: CBR Bypass Transfer Switches	
Model Number: CBRH8-3000	
Serial Number: N/A	
Test Report: 2101252-TR-001-R0 (UUT1)	

UUT Properties						
Weight (lbs.)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
6,030	84.1	59.8	92.0	7.99	5.14	14.92

UUT Highest Passed Seismic Run Information								
Building Code	Test Criteria	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0					

Product Construction Summary:
Enclosure: 12ga carbon steel, NEMA 3R;
Frame primary members: 8ga carbon steel; 4-Pole;
H-Frame, 3000A

Test Mounting Details:

Options/Subcomponent Summary:

Description	Mfr.	Part Number
Bypass Switch	Cummins	A059N002
Controller	Cummins	PC80
Display	Square D	SPD Display
Fuse Holder	Ferraz Shawmut	USCC1
Heater	Stego	02810.90-00
PCB	Cummins	A067J612
Power Cable Lugs	BURNDY	YA39A5
	Cummins/ILSCO	A054S076, A054S078
	ILSCO	PB4-750
Power Meter	Schneider	METSEPN8244
Power Supply	Delta Electronics Group	DRP-24V120W2BN
Protective Relays	Electros witch Co.	78PJ03A-011
	Schweitzer Electr	SEL 751
	Time Mark Co.	360-24V-.1SEC
Solid Neutral	Cummins	A067C112
Surge Suppressor	Square D	TVS2IMA2401
Thermostat	Stego	01160.0-00
Transfer Switch	Cummins	A058W675
Transformer	Micron	B050-2001-GA, B150-2044-GAF



UUT1 is base mounted - rigid using four (4) 3/4" Grade 5 bolts and washers.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

2101252-CR-001-R1



UUT 2

Manufacturer: Cummins Power Systems
Model Line: CBR Bypass Transfer Switches
Model Number: CBRG8-2000
Serial Number: N/A

Test Report: 2101252-TR-001-R0 (UUT2)

UUT Properties						
Weight (lbs.)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
4,570	77.0	49.8	92.0	11.59	5.77	17.34

UUT Highest Passed Seismic Run Information								
Building Code	Test Criteria	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0					

Product Construction Summary:

Enclosure: 12ga carbon steel, NEMA 3R;
 Frame primary members: 8ga carbon steel; 4-Pole;
 G-Frame, 2000A

Test Mounting Details:



Options/Subcomponent Summary:

Description	Mfr.	Part Number
Bypass Switch	Cummins	A064J912
Controller	Cummins	PC80
Display	Square D	
PCB	Cummins	A067J612
Power Cable Lugs	BURNDY	YA39A5
	ILSCO	D3980, PB4-750
Protective Relays	Basler Electric	ES-32
Solid Neutral	Cummins	A071Z748
Surge Suppressor	Square D	TVS21MA2401
Transfer Switch	Cummins	A064J911
Transformer	Hammond HPS	SP50SR, PH1000SP

UUT2 is base mounted - rigid using four (4) 3/4" Grade 5 bolts and washers.
 Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.