Z.A. McCARTHY
ENGINEERING SERVICES LTD.

ADDENDUM

Project Name: City of Kenora Crawford Road Lift Station and Wastewater Treatment Plant Generator Replacements
File No.: 412-004-25
Addendum No.: 1
Date Issued: July 17, 2026

This addendum shall be incorporated into the bid/proposal and shall form a part of the contract documents.

ITEM NO.	REFERENCE DOCUMENT	DESCRIPTION
1	-	Question: Can detailed specifications for the generator sets and automatic transfer switches be released? Response: Please see attached design specification sheets and outline drawings for the generator sets and automatic transfer switches indicated on the tender drawings. Any requests for equals shall be submitted by contractors intending to bid and shall include all information required to validate equal specifications.

encl:
Crawford Road Lift Station: Generator Specification Sheet (1), Generator Outline Drawing (2), Transfer Switch Specification Sheet (3), Transfer Switch Outline Drawing (4);

Wastewater Treatment Plant: Generator Specification Sheet (5), Generator Outline Drawing (6), Transfer Switch Specification Sheet (7), Transfer Switch Outline Drawing (8)

END OF ADDENDUM

Crawford Road Lift Station

Generator set data sheet

Model:	C60D6C
Frequency:	60 Hz
Fuel type:	Diesel
KW rating:	60 standby
	54 prime
Emissions level:	EPA Tier 3, Stationary emergency

Exhaust emission data sheet:	EDS-2027
Exhaust emission compliance sheet:	EPA-3034
Sound performance data sheet:	MSP-1301
Cooling performance data sheet:	MCP-1401
Prototype test summary data sheet:	PTS-450

Fuel consumption

	Standby				Prime			
	kW (kVA)				kW (kVA)			
Ratings	60 (75)				54 (68)			
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full
US gph	2.20	3.30	4.60	6.10	2.1	3.00	4.20	5.50
L/hr	8.33	12.49	17.41	23.09	7.95	11.36	15.90	20.82

Engine

	Standby rating	Prime rating
Engine manufacturer	Cummins Inc.	
Engine model	QSB5-G13	
Configuration	Cast iron, in-line, 4 cylinder	
Aspiration	Turbocharged and charge air cooled	
Gross engine power output, kWm (bhp)	129 (173)	113 (152)
BMEP at set rated load, kPa (psi)	1205 (174.7)	1083 (157.1)
Bore, mm (in)	107 (4.21)	
Stroke, mm (in)	124 (4.88)	
Rated speed, rpm	1800	
Piston speed, m/s (ft/min)	7.44 (1464)	
Compression ratio	17.3:1	
Lube oil capacity, L (qt)	12.2 (12.9)	
Overspeed limit, rpm	2250	

Fuel flow

Maximum fuel flow, L/hr (US gph)	133 (35.0)
Maximum fuel inlet restriction with clean filter, mm Hg (in Hg)	127 (5.0)

Air

	Standby rating	Prime rating
Combustion air, m3/min (scfm)	9.63 (340)	9.34 (330)
Maximum air cleaner restriction with clean filter, kPa (in H2O)	1.25 (5)	

Exhaust

Exhaust flow at set rated load, m^3/min (cfm)	20 (696)	18.52 (654)
Exhaust temperature, °C (°F)	370 (697)	341 (645)
Maximum back pressure, kPa (in H_2O)	10 (40.18)	10(40.18)
Available exhaust back pressure with CPG sound level 2 enclosure muffler, kPa (in H_2O)	3.5 (14.1)	4.5 (18.1)
Available exhaust back pressure with CPG weather enclosure muffler, kPa (in H_2O)	4.5 (18.1)	5 (20.1)

Standard set-mounted radiator cooling

Ambient design, ° C (° F)	50 (122)	
Fan load, kW_m (HP)	5.22 (7)	
Coolant capacity (with radiator), L (US Gal)	16 (4.2)	
Cooling system air flow, m^3/min (scfm)	218.04 (7700)	
Total heat rejection, MJ/min (Btu/min)	8.96 (8491)	8.38 (7943)
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)	

Weight[2]

Unit wet weight kgs (lbs)	1006 (2217)

Notes:

[1] For non-standard remote installations contact your local Cummins Power Generation representative.

[2] Weights represent a set with standard features. See outline drawing for weights of other configurations.

Derating factors

Standby	Engine power available to 3581 m (11750 ft) and ambient temperatures up to 40° C (104° F). Above these conditions, derate at 2.2% per 300 m (1000 ft) and 16.1% per 10° C (18° F)
Prime	Engine power available to 4343 m (14250 ft) and ambient temperatures up to 40° C (104° F). Above these conditions, derate at 2.3% per 300 m (1000 ft) and 18.8% per 10° C (18° F)

Ratings definitions

Emergency standby power (ESP):	Limited-time running power (LTP):	Prime power (PRP):	Base load (continuous) power (COP):
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.	Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

Alternator data

Standard Alternators	Single phase[2]		Three phase[1]				
Maximum temperature rise above 40 °C ambient	120 °C	120 °C	120 °C	120 °C	120 °C	120 °C	120 °C
Feature code	BB88-2[3]	BB90-2	B946-2	B986-2	B943-2	B952-2	BB86-2
Alternator data sheet number	ADS-205	ADS-204	ADS-204	ADS-204	ADS-204	ADS-202	ADS-204
Voltage ranges	120/240	120/240	120/208	120/240	277/480	347/600	127/220
Voltage feature code	R104-2	R104-2	R098-2	R106-2	R002-2	R114-2	R020-2
Surge kW	69.3	71.0	73.3	73.3	73.9	72.6	73.5
Motor starting kVA (at 90% sustained voltage) Shunt			231	231	231	188	231
Motor starting kVA (at 90% sustained voltage) PMG			272	272	272	221	272
Full load current amps at standby rating	250	250	208	181	90	72	197

Alternator data

Standard Alternators	Single phase[2]		Three phase[1]				
Maximum temperature rise above 40 °C ambient	105 °C	105 °C	105 °C	105 °C	105 °C	105 °C	105 °C
Feature code	BB87-2[3]	BB91-2	BB93-2	BB94-2	BB95-2	BB92-2	BB85-2
Alternator data sheet number	ADS-207	ADS-205	ADS-204	ADS-204	ADS-204	ADS-204	ADS-204
Voltage ranges	120/240	120/240	120/208	120/240	277/480	347/600	127/220
Voltage feature code	R104-2	R104-2	R098-2	R106-2	R002-2	R114-2	R020-2
Surge kW	70.2	71.7	73.3	73.3	73.9	73.9	73.5
Motor starting kVA (at 90% sustained voltage) Shunt			231	231	231	231	231
Motor starting kVA (at 90% sustained voltage) PMG			272	272	272	272	272
Full load current amps at standby rating	250	250	208	181	90	72	197

Notes:
[1] Single phase power can be taken from a three phase generator set at up to 2/3 set rated 3-phase kW at 1.0 power factor
[2] Full single phase output up to full set rated 3-phase kW at 1.0 power factor
[3] Reconnectable option

Formulas for calculating full load currents:

Three phase output

$$\frac{kW \times 1000}{Voltage \times 1.73 \times 0.8}$$

Single phase output

$$\frac{kW \times SinglePhaseFactor \times 1000}{Voltage}$$

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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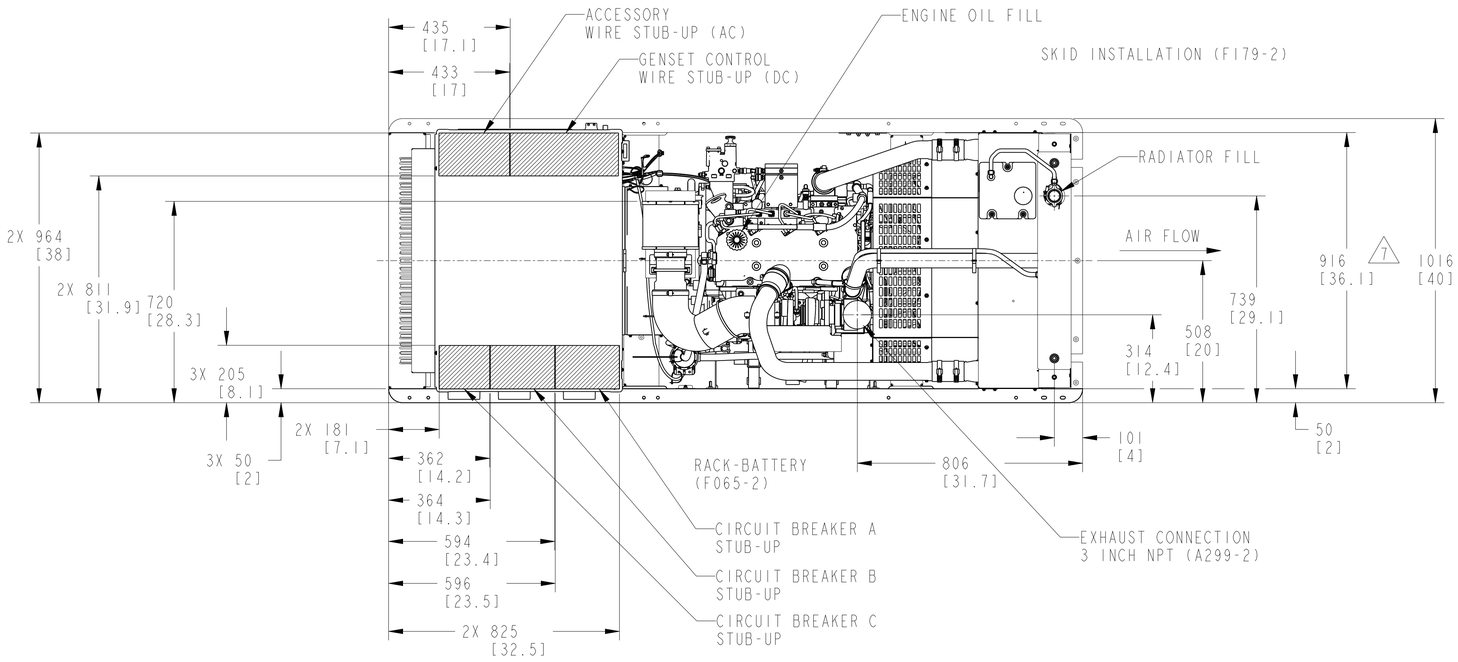
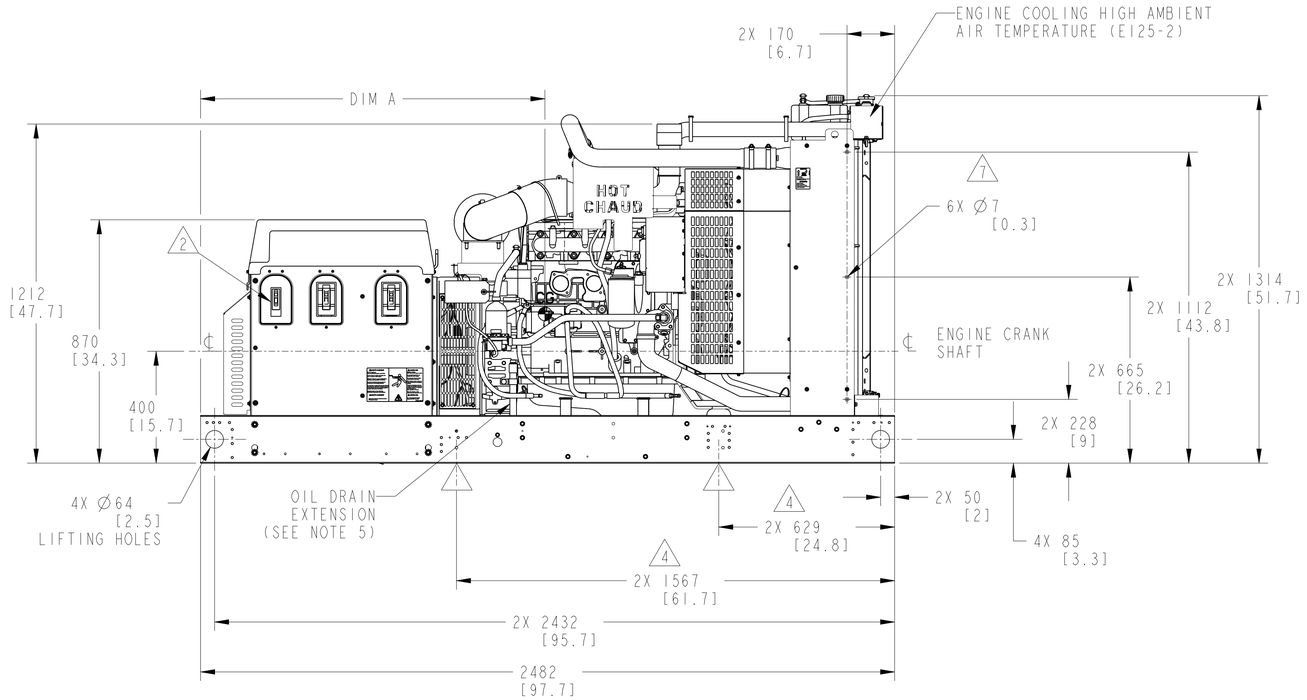
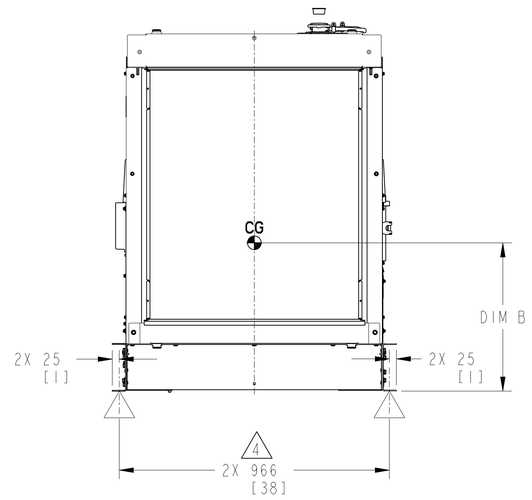
Crawford Road Lift Station







NOTES:

1. DIMENSIONS SHOWN IN [ ] ARE IN INCHES.
2. REFER TO CIRCUIT BREAKER OUTLINE DRAWING FOR ELECTRICAL STUB-UP AREA FOR SPECIFIC BREAKERS.
3. CONTROL INTERFACE CONNECTION SHOULD BE MADE WITH FLEXIBLE CONNECTIONS.
4. Ø21 [0.8] HOLES MARKED BY △ FOR SECURING TO MOUNTING SURFACE.
5. OIL DRAIN EXTENSION: 5/8 INCH HOSE ID.
6. FOR IBC SEISMIC CERTIFIED INSTALLATION, SEE GENSET IBC SEISMIC INSTALLATION REQUIREMENT DRAWING.
7. Ø7.3 HOLES FOR OPTIONAL COOLING EXHAUST AIR DUCT ADAPTER.
8. REFER TO GENSET FOUNDATION OUTLINE FOR ELECTRICAL AND OTHER FOUNDATION SPECIFICS.
9. GENSET SUPPLIED WITH FLEXIBLE FUEL LINE(S) THAT CAN BE CONNECTED TO GENSET INTERFACE POINT(S).

   9.1 FUEL SUPPLY LINE: 686 [27.0] LONG WITH 5/16" JIC MALE TERMINATION.

TABULATION

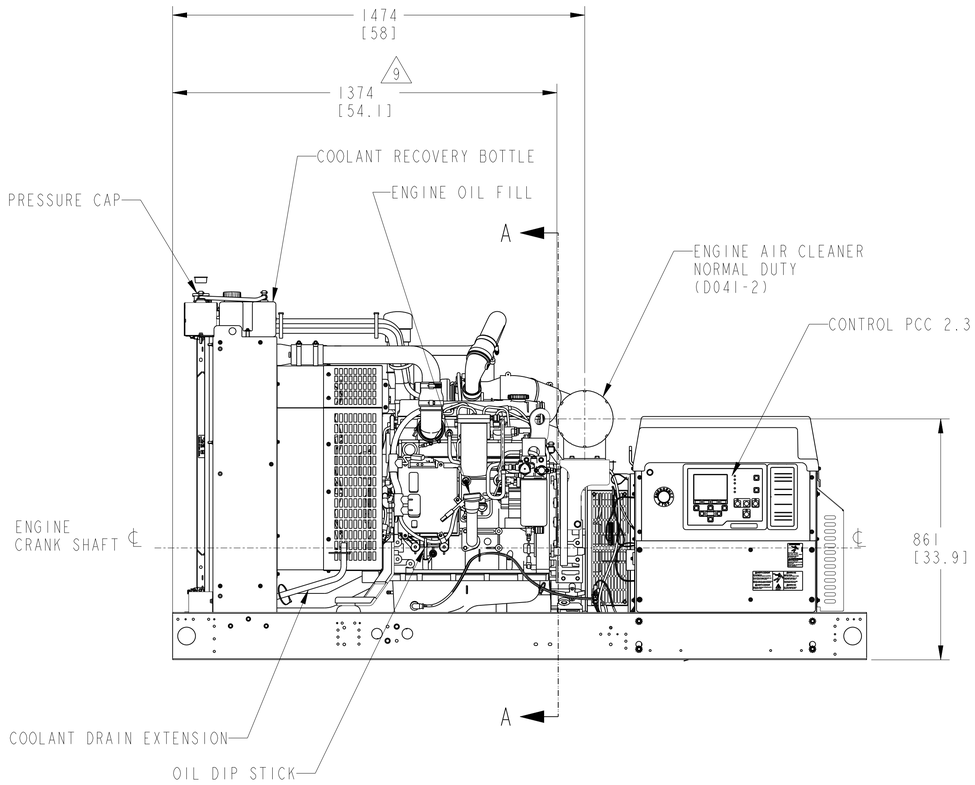
ALT DATA SHEET #	DIM A	DIM B	GENSET WET WEIGHT	
			KG	LB
ADS-202	1092	456	1090	2403
ADS-203	1207	495	986	2173
ADS-204	1184	492	1006	2217
ADS-205	1125	486	1054	2324
ADS-206	1086	482	1082	2386
ADS-207	1060	480	1106	2439
ADS-208	998	473	1173	2586
ADS-209	958	469	1211	2670

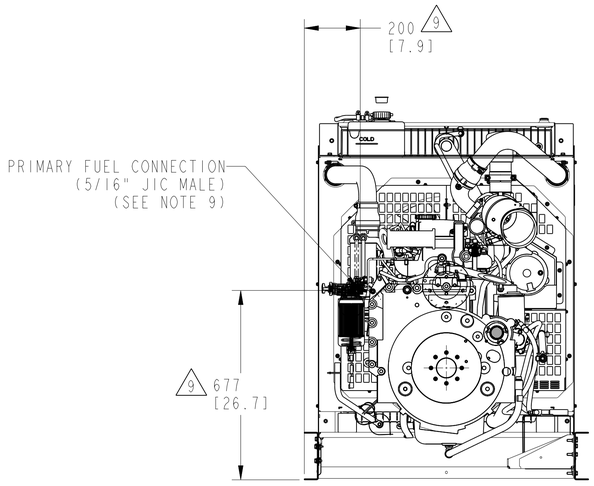
C50 D6C, C60 D6C, C80 D6C,
C100 D6C, C125 D6C

PART NUMBER: A054Y897	PART REVISION: C
PART NAME: OUTLINE,GENSET	
DRAWING CATEGORY: DETAIL	
STATE: RELEASED	SHEET: 1 OF 3
CUMMINS DATA CLASSIFICATION: CUMMINS INTERNAL USE ONLY	

Cummins Inc.

DIMENSIONS ARE IN: MILLIMETERS
[ ] ARE IN: -
SIZE: D
SCALE:3:32
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009
THIRD ANGLE PROJECTION
CAD SYSTEM
PTC® Creo® Parametric





SECTION A-A

C50 D6C, C60 D6C, C80 D6C,
C100 D6C, C125 D6C

PART NUMBER: A054Y897	PART REVISION: C
PART NAME: OUTLINE,GENSET	
DRAWING CATEGORY: DETAIL	
STATE: RELEASED	SHEET: 2 OF 3
CUMMINS DATA CLASSIFICATION: CUMMINS INTERNAL USE ONLY	

Cummins Inc.

DIMENSIONS ARE IN: MILLIMETERS
[ ] ARE IN: -

SIZE: D

SCALE:3:32

DIMENSIONING AND TOLERANCING PER:
ASME Y14.5-2009

THIRD ANGLE PROJECTION

CAD SYSTEM
PTC® Creo® Parametric

Crawford Road Lift Station

POWERCOMMAND®
OTEC TRANSFER SWITCH

POWERCOMMAND® 40-11 CONTROL | OPEN TRANSITION | 40 A-1200 A

AUTOMATIC TRANSFER SWITCH

DESCRIPTION

The OTEC series transfer switch provides the basic features typically required for primary source and generator set monitoring, generator set starting and load transfer functions for emergency standby power applications. They are suitable for use in emergency, legally required, and optional standby circuits in commercial and light industrial applications. The OTEC transfer switch features the new PowerCommand® 40-11 control with a comprehensive feature list to suit a wide variety of ATS applications.

FEATURES

PowerCommand® 40-11 control – A fully featured microprocessor-based control with LCD digital display and tactile-feel soft-switches for easy operation and screen navigation. Control highlights include front panel PC software configuration, three phase sensing on both sources, sync check, phase rotation and imbalance sensing, and event logging. Additional optional features include load shed from standby source, Modbus RTU and TCP network communication, and configurable output contact modules. Completely network compatible with the new Cummins transfer switch remote annunciator (See Transfer Switch Remote Annunciator spec sheet AC-204 for additional details). Please see the S-6560 PowerCommand® 40-11 control specification sheet for the full description, benefits, and features.

Programmed transition – Open transition timing can be adjusted to completely disconnect the load from both sources for a programmed time period, as recommended by NEMA MG-1 for transfer of inductive loads.

Advanced transfer switch mechanism – Unique bi-directional linear actuator provides virtually frictionless constant force, straight-line transfer switch action during automatic operation.

Positive interlocking – Mechanical and electrical interlocking prevent source-to-source connection through the power or control wiring.

Main contacts – Heavy-duty silver alloy contacts used with multi-leaf arc chutes are rated for motor loads or total system load transfer. They require no routine contact maintenance. Continuous load current not to exceed 100% of switch rating and tungsten loads not to exceed 30% of switch rating.

Ease of service and access – Single-plug harness connection and compatible terminal markings simplify servicing. Access space is ample. Door-mounted controls are field-programmable; no special tools are required.

Complete product line – Cummins is a single source supplier with a wide range of equipment, accessories, and services to suit virtually any backup power application.

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

TRANSFER SWITCH MECHANISM

- Transfer switch mechanism is electrically operated and mechanically held in the Source 1 and Source 2 positions. The transfer switch incorporates electrical and mechanical interlocks 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).
- 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.
- Electrical interlocks prevent simultaneous closing signals to normal and emergency contacts and interconnection of normal and emergency sources through the control wiring.
- 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.

- Switch mechanism, including contact assemblies, is 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.

SPECIFICATIONS	
Voltage rating	Up to 600 V AC, 50 or 60 Hz.
Arc interruption	Multiple leaf arc chutes provide dependable arc interruption.
Neutral bar	A full current-rated neutral bar with lugs is standard 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 V AC maximum.
Operating temperature	-22 ˚F (-30 ˚C) to 140 ˚F (60 ˚C)
Storage temperature	-40 ˚F (-40 ˚C) to 140 ˚F (60 ˚C)
Humidity	Up to 95 % relative, non-condensing
Altitude	Up to 10,000 ft (3,000 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*	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.*

TRANSITION MODES

Open delayed transition – In this transition mode the time required for the transfer switch to transfer between sources is adjustable so that the load- generated voltages decay to a safe level before connecting to an energized source. Recommended by NEMA MG-1 to prevent nuisance tripping breakers and load damage. Adjustable 0.5 secs - 10 minutes, and default 0.5 seconds.

Open in-phase translation – Initiates open transition transfer when in-phase monitor senses both sources are in phase (voltage, phase, and frequency). Operates in a break-before-make sequence. Includes ability to enable programmed transition as a backup. The module waits indefinitely for synchronization unless the 'Return to programmed transition' function is active in which case after 2 minutes it performs a programmed delayed transfer.

UL 1008 WITHSTAND AND CLOSING RATINGS (WCR)

The transfer switches listed below must be protected by circuit breakers or fuses. Referenced drawings include detailed listings of specific breakers or fuse types that must be used with the respective transfer switches. Consult with your distributor/dealer to obtain the necessary drawings. Withstand and Closing Ratings (WCR) are stated in symmetrical RMS amperes.

BREAKER PROTECTION

Frame	Amperage rating (A)	MOLDED CASE CIRCUIT BREAKER (MCCB) PROTECTION				SPECIAL CIRCUIT BREAKER PROTECTION		
		With specific manufacturers MCCB (kA at 480V)	With specific manufacturers MCCB (kA at 600V)	Max MCCB ratings (A)	Drawing reference	With specific Current limiting breakers (kA at 600V)	Max. Current limiting breakers CLB rating (A)	Drawing reference
A	40, 70, 125 (3-pole only)	14	14	225	A050J441	200	225	A048J566
	40, 70, 125 (4-pole only)	30	30	400	A048E949	200	400	A051D533
B	150, 225, 260	30	30	400	A048E949	200	400	A051D533
C	300, 400, 600	65	65	1200	A056M829	200	1200	A048J564
D	800, 1000	65	50	1400	A056M821	200	1400	A048J562
E	1200	85	65	1600	A056M825	200	1600	A048P186

FUSE PROTECTION

Frame	Amperage rating (A)	WCR with current limiting fuses (kA)	Fuse size and type	Drawing reference
A	40, 70, 125 (3-pole only)	200	200 A, Class: J, RK1, RK5	A050J441
	40, 70, 125 (4-pole only)	200	1200 A Class L or T, or 600A class J, RK1, RK5	A048E949
B	150, 225, 260	200	1200 A Class L or T, or 600A class J, RK1, RK5	A048E949
C	300, 400, 600	200	1200 A Class L or T, or 600A class J, RK1, RK5	A056M829
D	800, 1000	200	2000 A Class L or 1200 A Class T or 600 A Class J, RK1, RK5	A056M821
E	1200	200	2000 A Class L or 1200 A Class T or 600 A Class J, RK1, RK5	A056M825

All WCR values are at 600 V

TIME BASED RATINGS: 0.05S (3-CYCLES AT 60 HZ)				
Frame	Amperage rating (A)	WCR (kA at Vmax and below)	Max. MCCB rating (A)	Drawing reference
C	300, 400, 600	25 at 600 V	1200	A056M829
D	800, 1000	35 at 600 V	1400	A056M821
E	1200	42 at 600 V	1600	A056M825

TRANSFER SWITCH LUG CAPACITIES				
Frame	Amperage rating (A)	Cables per phase	Certified Cable Size	Part Number
A	40, 70, 3-pole	1	#14 AWG - 2/0	0332-3084 **
			#12 AWG - 2/0	0332-3085 ***
	40, 4-pole	1	#14 AWG - 2/0	0332-3514-01
	70, 4-pole	1	#6 AWG - 300MCM	0332-3038
	125, 3-pole	1	#14 AWG - 2/0	0332-3084 **
			#12 AWG - 2/0	0332-3085 ***
	125, 4-pole	1	#6 AWG - 300MCM	0332-3038
B	150, 225	1	#6 AWG - 300MCM	0332-3038
	260	1	#6 AWG - 400MCM	0332-3039
C	300, 400	2*	3/0 - 600MCM & #4 AWG - 250MCM	0332-2704
	600	2	250 - 500MCM	0332-2660
D	800, 1000	4	250 - 500MCM	0332-2736
E	1200	4	500-750MCM ^	0332-2736 ****
			#2 AWG – 600MCM ^^	0332-1557 ****
			1/0 - 750MCM ^^^	0332-3036

All lugs 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.
** One cable for each lug range listed*
*** Load*
**** Emergency and normal*
***** See A030H735 drawing for lugs specifications*
^ Compression lug adapter suitable for 500-750MCM (Optional feature N032-7)
^^ #2 AWG – 600MCM (Standard feature N045-7)
^^^1/0 - 750MCM (Optional feature N066-7)

ENCLOSURE

The transfer switch and control are wall-mounted in a key-locking enclosure. Wire bend space complies with NEC.

DIMENSIONS – TRANSFER SWITCH IN UL TYPE 1 ENCLOSURE									
Frame	Amperage rating (A)	Height		Width		Depth		Weight	
		in	mm	in	mm	in	mm	lb	kg
A	40, 70, 125 3-pole	27	686	20.5	521	12	305	148	67
	40, 70, 125 4-pole	35.5	902	26	660	16	406	214	97
B	150, 225	35.5	902	26	660	16	406	214	97
	260	43.5	1105	28.5	724	16	406	238	108
C	300, 400, 600	54	1372	25.5	648	18	457	322	146
D	800, 1000	68	1727	30	762	19.5	495	448	203
E	1200	90	2286	39	991	27	698	862	391

DIMENSIONS – TRANSFER SWITCH IN UL TYPE 3R, 4, 4X, OR 12 ENCLOSURES										
Frame	Amperage rating (A)	Height		Width		Depth		Weight		Cabinet Type
		in	mm	in	mm	in	mm	lb	kg	
A	40, 70, 125 3-pole	34	864	26.5	673	12.5	318	220	100	3R, 4
		46	1168	32	813	16	406	307	139	4X
		34	864	26.5	673	12.5	318	201	91	12
	40, 70, 125 4-pole	42.5	1080	30.5	775	16	406	304	138	3R, 4
		46	1168	32	813	16	406	335	152	4X
		42.5	1080	30.5	775	16	406	287	130	12
B	150, 225	42.5	1080	30.5	775	16	406	304	138	3R, 4
		46	1168	32	813	16	406	335	152	4X
		42.5	1080	30.5	775	16	406	287	130	12
	260	46	1168	32	813	16	406	322	146	3R, 4
		46	1168	32	813	16	406	335	152	4X
		46	1168	32	813	16	406	304	138	12
C	300, 400, 600	59	1499	27.5	699	16.5	419	415	188	3R, 4
		73.5	1867	32.5	826	19.5	495	520	236	4X
		59	1499	27.5	699	16.5	419	397	180	12
D	800, 1000	73.5	1867	32.5	826	19.5	495	588	267	3R, 4
		73.5	1867	32.5	826	19.5	495	588	267	4X
		73.5	1867	32.5	826	19.5	495	556	252	12
E	1200	90	2286	39	991	27	698	891	404	3R, 4
		90	2286	39	991	27	698	891	404	4X
		90	2286	39	991	27	698	873	396	12

ENCLOSURE ACCESS FOR CABLE INSTALLATION AND MAINTENANCE

All frames allow for top, side, and bottom cable entry. NEC Requires Minimum 36” Front Access. Additional front clearance is needed to remove the mechanism. Refer to the outline drawing.

OTEC DRAWING PART NUMBERS				
Frame	Amperage rating (A)	Outline Drawing		
		Type 1, 3R, 12, 4, 4X (3 Pole)	Type 1, 3R, 12, 4, 4X (4 Pole)	Open Construction
A	40, 70, 125	A074K565	A074K632	A074K681
B	150, 225	A074K575	A074K587	
	260	A074K613	A074K634	
C	300, 400, 600	A074K635	A074K645	
D	800, 1000	A074K646	A074K658	
E	1200	A074K659		A074K695

WIRING DIAGRAM PART NUMBERS

Frame	Amperage rating (A)	Wiring Diagram				
		Utility to Genset (120 – 480 V)	Utility to Genset (600 V)	Interconnection	Utility to Genset, Open Construction (120 – 480 V)	Utility to Genset, Open Construction (600 V)
A	40, 70, 125 (3-pole)	A074P733	A074P730	A065H780	A074P731	A074P732
	40, 70, 125 (4-pole)					
B	150, 225					
	260					
C	300, 400, 600					
D	800, 1000	A074P729				
E	1200					

SUBMITTAL DETAIL

Model

- 40, 70, 125 A, (3- and 4-pole)
- 150, 225, 260 A
- 300, 400, 600 A
- 800, 1000 A
- 1200 A

Poles

- A028 Poles – 3 (solid neutral)
- A029 Poles – 4 (switched neutral)

Application

- A035 Utility-to-genset

Frequency

- A044 60 Hz
- A045 50 Hz

Phase

- A041 single phase, 2-wire or 3-wire
- A042 three phase, 3-wire or 4-wire

Voltage ratings

- R020 120V
- R038 190V
- R021 208V
- R022 220V
- R023 240V
- R024 380V
- R025 416V
- R035 440 V
- R026 480 V
- R027 600 V

Enclosure

- B001 Type 1: Indoor use, provides some protection against dirt (similar to IEC type IP30)
- B002 Type 3R: Intended for outdoor use, provides some protection from dirt, rain, and snow (similar to IEC type IP34)
- B003 Type 4: Indoor or outdoor use, provides some protection from wind-blown dust and water spray (similar to IEC type IP65)
- B004 open construction: no enclosure - includes automatic transfer switch and controls.
- B010 Type 12: Indoor use, some protection from dust (similar to IEC type IP61).
- B025 Type 4X: Stainless steel, indoor or outdoor use, provides some protection from corrosion (similar to IEC Type IP65).

Standards

- A046 UL 1008/CSA certification
- A080 IBC seismic certification

Control voltage

- M033 12V, Genset starting voltage.
- M034 24V, Genset starting voltage.

Control options

- M032 Elevator signal relay
- M081 MODBUS RS485 Communication module
- M079 integral control power supply provides DC voltage to control from source power.
- M086 Ethernet communication module
- L216 1X auxiliary relay I/O module
- L217 2X auxiliary relay I/O module

Auxiliary relays

- Relays are UL Listed, and factory installed. All relays provide (2) normally closed isolated contacts rated 10A @ 600 VAC. Relay terminals accept (1) 18 gauge to (2) 12-gauge wires per terminal.
- L101 24 VDC coil - installed, not wired (for customer use).
- L102 24 VDC coil - emergency position – relay energized when switch is in source 2 (emergency) position.
- L103 24 VDC coil - normal position - relay energized when switch is in source 1 (normal) position.
- L201 12 VDC coil installed, not wired (for customer use)
- L202 12 VDC coil - emergency position – relay energized when switch is in source 2 (emergency) position.
- L203 12 VDC coil - normal position - relay energized when switch is in source 1 (normal) position.

Optional Cable Lugs

- N032 Lug adapters, compression, ½ stab (1200A only)
- N045 Cable lugs, mechanical, 600 MCM, 4 per pole (1200A only)
- N066 Cable lugs, mechanical, 750 MCM, 4 per pole (1200A only)

Miscellaneous

- C027 Cover - guard
- M003 Terminal block - 30 points (not wired)

Optional features

- M080 Anti-condensation heater for outdoor enclosures
- L214 Load shed from standby source
- M085 Load power monitoring

Accessories

- PDAC-170 Accessories specification sheet
- A065L320 Control panel cover guard

Request for quotation (RFQ)

- Z555 Nonconfigurable spec [ETO]

Warranty

- G004 2-years, comprehensive
- G007 5-years, comprehensive
- G014 3-years, comprehensive
- G015 10-years, comprehensive

Shipping

- A051 Packing - export box (800 – 1000 A)

CODES AND STANDARDS

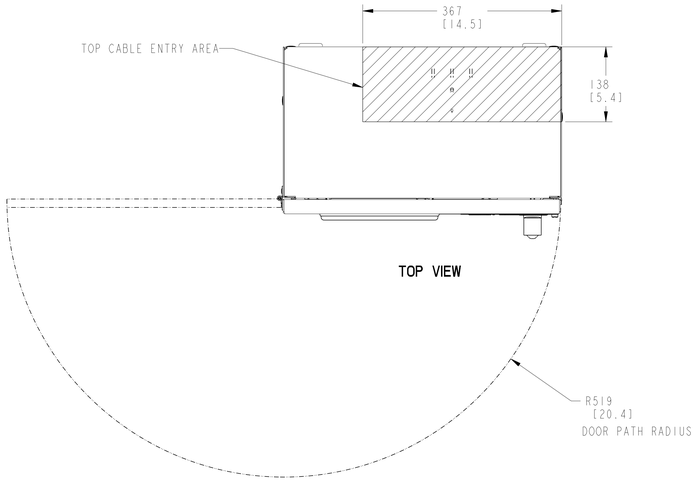
UL	All switches are UL 1008 Listed with UL 50E Type Rated cabinets and UL Listed CU-AL terminals.	**NEC®**	Suitable for use in emergency, legally required and Standby and Critical Operations Power Systems (COPS) applications per NEC 700, 701, 702 and 708.
NEMA	All switches comply with NEMA ICS 10.	**ISO®**	All switches are designed and manufactured in facilities certified to ISO 9001.
CSA®	All switches are certified to CSA C22.2 No. 178.1 switching of electrical energy in emergency or other systems, up to 600 VAC and 4 kA.	**IBC®**	All switches are certified to IBC 2018.
IEEE	All switches comply with IEEE 446 Recommended Practice for Emergency and Standby Power Systems.	**EMC**	Display controllers meet the following Electromagnetic Compatibility (EMC) standards: • EN 61000-6-2 Generic Immunity Standard for the Industrial Environment. • EN 61000-6-4 Generic Emission Standard for the Industrial Environment.
NFPA®	All switches comply with NFPA 70, 99 and 110 (Level 1).		

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

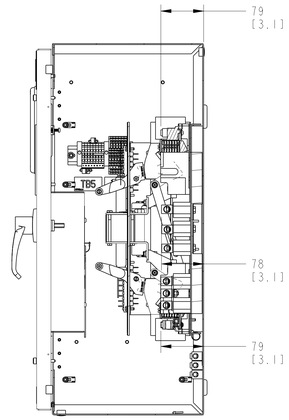
Our energy working for you. ™

S-6556 OTEC Spec Sheet NSE - PD00000752 - Rev. 03/26

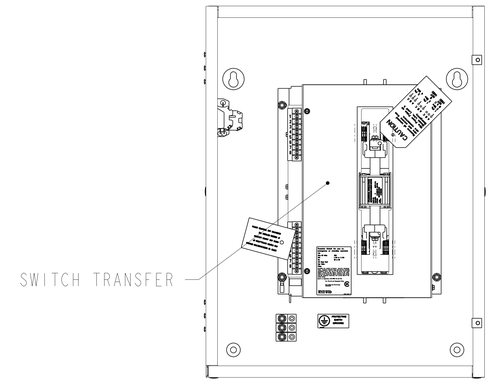
Crawford Road Lift Station



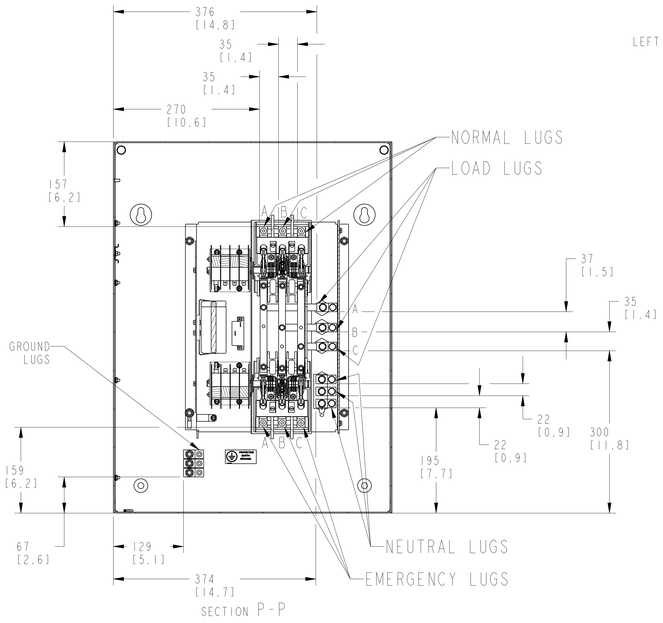
TOP VIEW



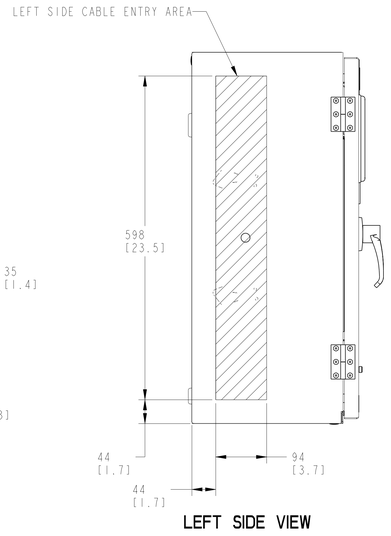
SECTION R-R



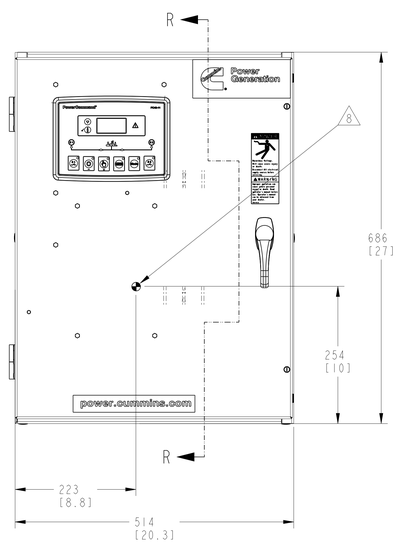
FRONT VIEW
DOOR HIDDEN FOR CLEAR VISUALIZATION



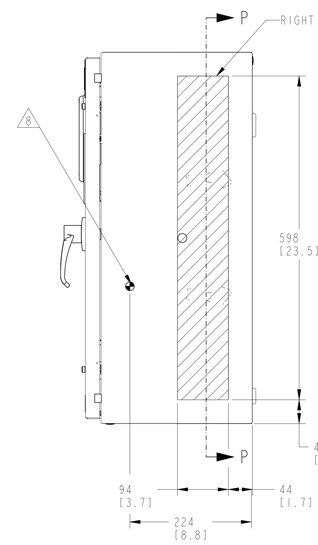
SECTION P-P



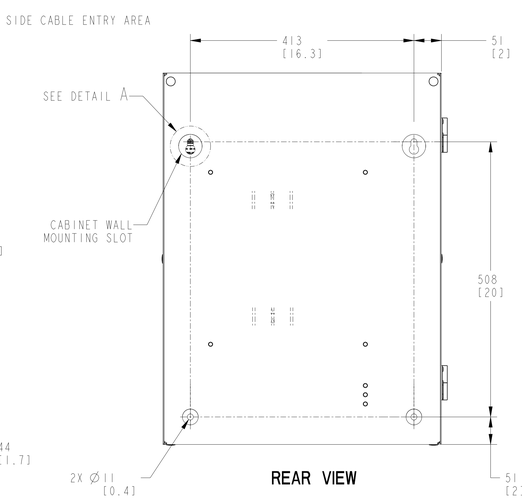
LEFT SIDE VIEW



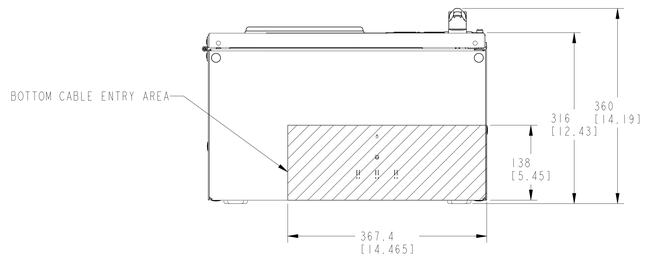
FRONT VIEW



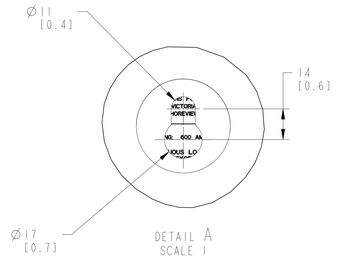
RIGHT SIDE VIEW



REAR VIEW



BOTTOM VIEW



DETAIL A
SCALE 1

SIMILAR IN 2 PLACES

NOTES:

1. APPROXIMATE WEIGHT BASED ON CAD MODEL (NOT FOR INSPECTION):
   FOR TYPE 1: 143.6 LBS (65.2 KG)
   FOR TYPE 3R: 212.8 LBS (96.5 KG)
   FOR TYPE 4: 214.5 LBS (97.3 KG)
   FOR TYPE 4X: 291.4 LBS (132.2 KG)
   FOR TYPE 12: 195.1 LBS (88.5 KG)
2. MECHANICAL LUG CAPACITY:
   NORMAL & EMERGENCY LUGS:
   #12-2/0 CU-AL (QTY 1 WIRE)
   LOAD & NEUTRAL LUGS:
   #14-2/0 CU-AL (QTY 1 WIRE)
   GROUND LUGS:
   #14-1/0 CU-AL (QTY 1 WIRE)
3. USE SEPARATE CONDUITS FOR CONTROL WIRING AND POWER WIRING. DO NOT COMBINE.
4. SHADED AREA INDICATES WIRING & CABLE ENTRANCE AREA. DO NOT INSTALL OUTSIDE OF SHADED AREA.
5. WIRE BENDING SPACE CONFORMS TO NATIONAL ELECTRIC CODE (NFPA70).
6. REFER TO THE NATIONAL ELECTRIC CODE FOR MINIMUM CLEAR SPACE IN FRONT OF THIS ENCLOSURE.
7. ALL DIMENSIONS ARE REFERENCE, UNLESS SPECIFICALLY TOLERANCES.
8. CENTER OF GRAVITY IS APPROXIMATE.
9. FOR UNITS WITH BOLTED DOOR CLAMPS; DO NOT TIGHTEN WITH IMPACT DRIVER AND USE THE FOLLOWING TORQUE REQUIREMENTS: 5/16-18= 13.6-16.3 Nm

OTEC 40-125A, 3 POLE, TYPE 1

LAST DATUM LETTER USED:	LAST REFERENCE LETTER USED: A
MODEL/PLATFORM: OTEC 40-125A	THIS PART IS SIMILAR TO:
PART NUMBER: A074K565	PART REVISION: B
PART NAME: OUTLINE,ENCLOSURE	
DRAWING CATEGORY: OUTLINE	
STATE: RELEASED	SHEET: 1 OF 6
CUMMINS DATA CLASSIFICATION: CUMMINS CONFIDENTIAL	

Cummins Inc.

DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: - | SIZE A0 | SCALE: 0.25

DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009 | THIRD ANGLE PROJECTION

CAD SYSTEM: PTC® Creo® Parametric

Wastewater Treatment Plant

Generator set data sheet

Model:	C125D6D
Frequency:	60 Hz
Fuel type:	Diesel
KW rating:	125 standby
	112.5 prime
Emissions level:	EPA Tier 3, Stationary emergency

Exhaust emission data sheet:	EDS-3043
Exhaust emission compliance sheet:	EPA-2032
Sound performance data sheet:	MSP-4007
Cooling performance data sheet:	MCP-2047
Prototype test summary data sheet:	PTS-636

Fuel consumption

	Standby				Prime			
	kW (kVA)				kW (kVA)			
Ratings	125 (156)				112.5 (141)			
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full
US gph	4.2	6.1	7.9	10.1	3.9	5.6	7.3	9.3
L/hr	15.89	23.08	29.90	38.23	14.76	21.20	27.63	35.20

Engine

	Standby rating	Prime rating
Engine manufacturer	Cummins Inc.	
Engine model	QSB7-G5	
Configuration	Cast iron, in-line, 6 cylinders	
Aspiration	Turbocharged and charge air cooled	
Gross engine power output, kWm (bhp)	242 (324)	208 (279)
BMEP at set rated load, kPa (psi)	1493 (216)	1358 (197)
Bore, mm (in)	107 (4.21)	
Stroke, mm (in)	124 (4.88)	
Rated speed, rpm	1800	
Piston speed, m/s (ft/min)	7.44 (1464)	
Compression ratio	17.2:1	
Lube oil capacity, L (qt)	17.4 (18.38)	
Overspeed limit, rpm	2250	

Fuel flow

Maximum fuel flow, L/hr (US gph)	103 (27.0)
Maximum fuel inlet restriction with clean filter, mm Hg (in Hg)	127 (5.0)

Air

	Standby rating	Prime rating
Combustion air, m3/min (scfm)	13.9 (491)	13.53 (478)
Maximum air cleaner restriction with clean filter, kPa (in H2O)	3.7 (15)	

Exhaust

Exhaust flow at set rated load, m^3/min (cfm)	33.01 (1166)	32.22 (1138)
Exhaust temperature, °C (°F)	447.22 (837)	439.44 (823)
Maximum back pressure, kPa (in H_2O)	10 (40.19)	10 (40.19)
Actual exhaust back pressure with CPG sound level 2 enclosure muffler, kPa (in H_2O)	8.7 (34.96)	7.83 (31.47)
Actual exhaust back pressure with CPG weather enclosure muffler, kPa (in H_2O)	6.5 (26.12)	5.85 (23.51)

Standard set-mounted radiator cooling

Ambient design, ° C (° F)	50 (122)	
Fan load, kW_m (HP)	14.02 (18.8)	
Coolant capacity (with radiator), L (US Gal)	22 (5.9)	
Cooling system air flow, m^3/min (scfm)	305.82 (10800)	
Total heat rejection, MJ/min (Btu/min)	6.95 (6584)	6.4 (6066)
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)	

Weight[2]

Unit wet weight kgs (lbs)	1340 (2955)

Notes:
[1] For non-standard remote installations contact your local Cummins Power Generation representative.
[2] Weights represent a set with standard features. See outline drawing for weights of other configurations.

Derating factors

Standby	Engine power available up to 3850 m (12633 ft.) at ambient temperatures up to 40° C (104° F) and 2695 m (8842 ft.) at 50° C (122° F). Consult your Cummins distributor for temperature and ambient requirements outside these parameters.
Prime	Engine power available up to 3136 m (10290 ft.) at ambient temperatures up to 40° C (104° F) and 2466 m (8090 ft.) at 50° C (122° F). Consult your Cummins distributor for temperature and ambient requirements outside these parameters.

Ratings definitions

Emergency standby power (ESP):	Limited-time running power (LTP):	Prime power (PRP):	Base load (continuous) power (COP):
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.	Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

North America
1400 73rd Avenue N.E.
Minneapolis, MN 55432
USA
Phone 763 574 5000
Fax 763 574 5298

Our energy working for you.™

NAD-6371-EN (03/25) A061F586

power.cummins.com

Alternator data

Standard Alternators	Single phase[2]	Three Phase[1]				
Maximum temperature rise above 40 °C ambient	125 °C	125 °C				
Feature code	BB88-2	B946-2	B986-2	B952-2	B943-2	BB88-2
Alternator data sheet number	ADS-211	ADS-208	ADS-208	ADS-209	ADS-208	ADS-211
Voltage ranges	120/240	120/208	120/240	347/600	277/480	120/208, 127/220, 277/480
Voltage feature code	R104	R098-2	R106-2	R114-2	R002-2	R098, R020, R106, R002
Surge kW	201.6	208.4	210	211.4	210	213.4
Motor starting kVA (at 90% sustained voltage) Shunt	672	422	422	516	422	672
Motor starting kVA (at 90% sustained voltage) PMG	791	497	497	607	497	791
Full load current amps at standby rating	521	434	376	150	188	188 to 434

Alternator data

Standard Alternators	Single phase[2]	Three phase[1]			
Maximum temperature rise above 40 °C ambient	105 °C	105 °C	105 °C	105 °C	105 °C
Feature code	BB87-2	BB94-2	BB95-2	BB92-2	BB87-2
Alternator data sheet number	ADS-211	ADS-209	ADS-209	ADS-209	ADS-211
Voltage ranges	120/240	120/208	277/480	347/600	120/208, 127/220, 277/480
Voltage feature code	R104-2	R098-2	R002-2	R114-2	R098, R020, R106, R002
Surge kW	201.6	208.4	211.4	210	213.4
Motor starting kVA (at 90% sustained voltage) Shunt	672	516	516	516	672
Motor starting kVA (at 90% sustained voltage) PMG	791	607	607	607	791
Full load current amps at standby rating	521	434	188	150	188 to 434

Notes:
[1] Single phase power can be taken from a three phase generator set at up to 2/3 set rated 3-phase kW at 1.0 power factor
[2] Full single phase output up to full set rated 3-phase kW at 1.0 power factor

Formulas for calculating full load currents:

Three phase output

$$\frac{kW \times 1000}{Voltage \times 1.73 \times 0.8}$$

Single phase output

$$\frac{kW \times SinglePhaseFactor \times 1000}{Voltage}$$

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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Minneapolis, MN 55432
USA
Phone 763 574 5000
Fax 763 574 5298

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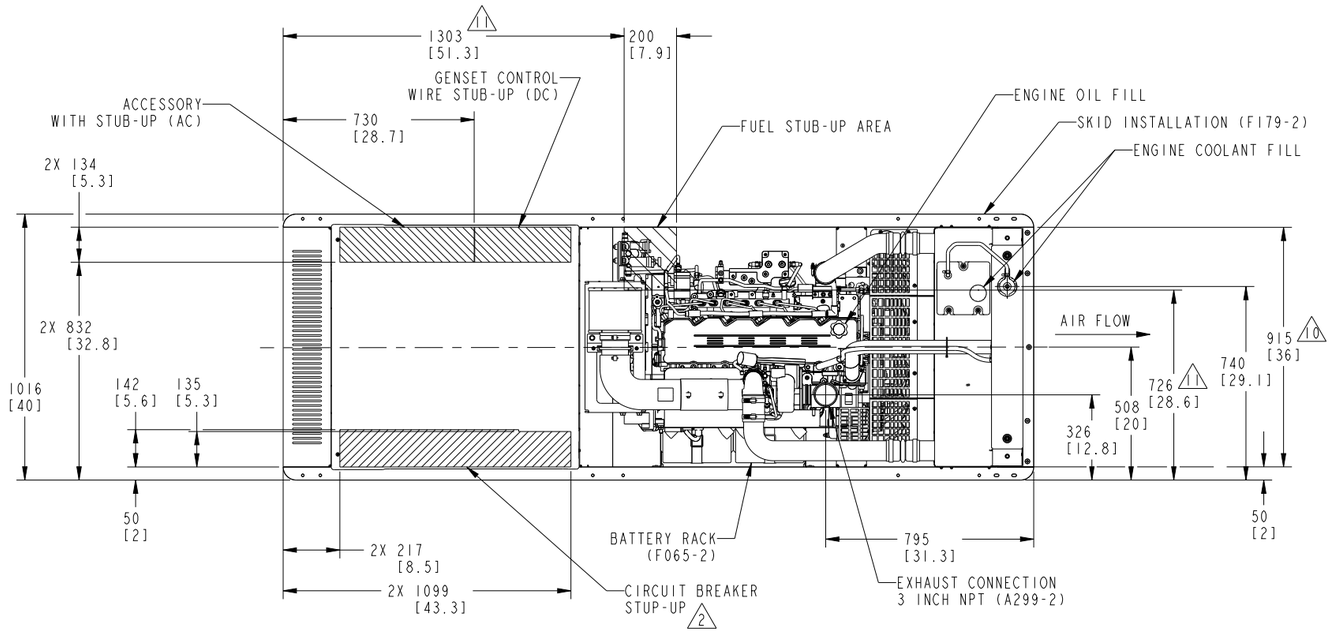
power.cummins.com

PTC® Creo® Parametric

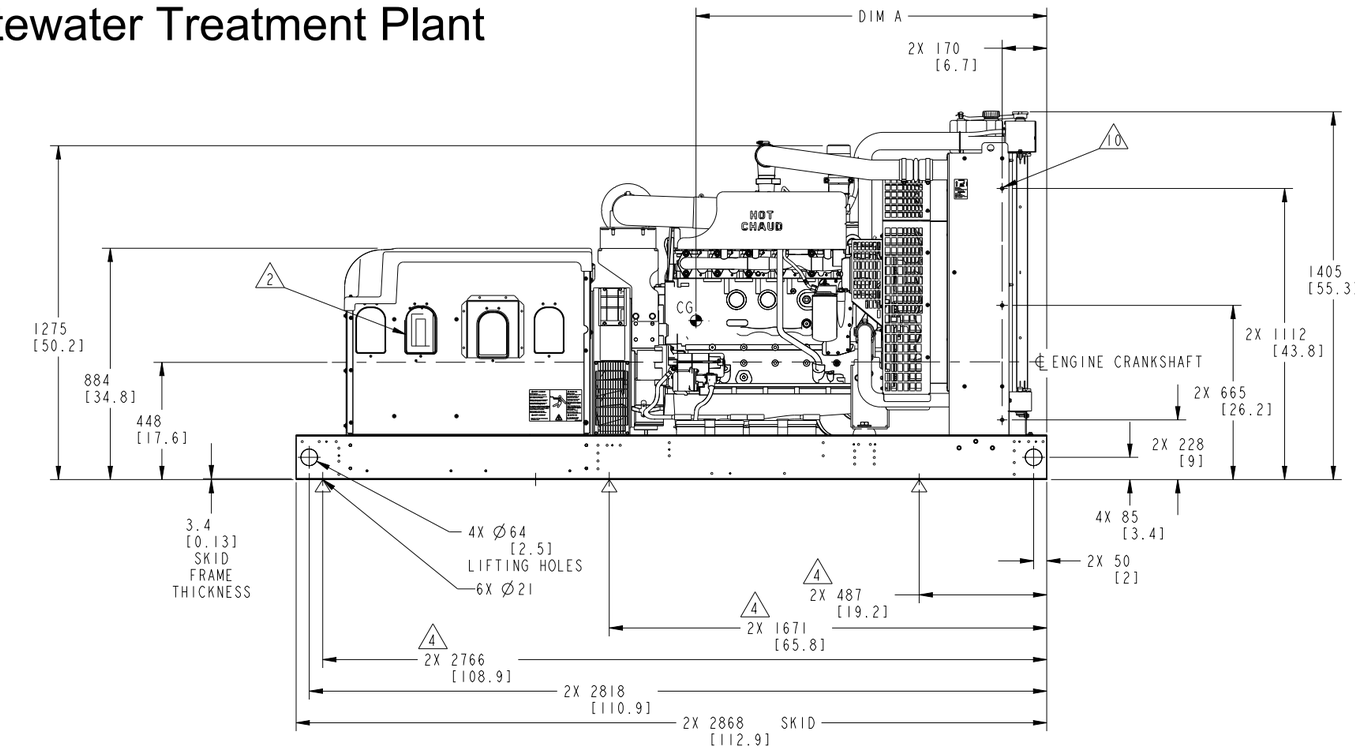
REL NO	REV	NO	REVISION	DWN	CKD	APVD	DATE
ECO-176532	A	1	PRODUCTION RELEASE	DAH	DAH	GILLETT	04APR18



NOTES:

1. ALL DIMENSIONS ARE REFERENCE, UNLESS SPECIFICALLY TOLERANCED.
2. REFER TO CIRCUIT BREAKER OUTLINE DRAWING FOR ELECTRICAL STUB-UP AREA FOR SPECIFIC BREAKERS.
3. CONTROL INTERFACE CONNECTIONS SHOULD BE MADE WITH FLEXIBLE CONNECTIONS.
4. Ø21 [0.8] HOLES MARKED BY △ FOR SECURING TO MOUNTING SURFACE. HOLES IN GENERATOR SET BASE AT THESE LOCATIONS ARE INTENDED FOR ATTACHMENT TO THE MOUNTING SURFACE. IF GENERATOR SET IS MOUNTED ON A FUEL TANK, REFER TO FUEL TANK OUTLINE DRAWING FOR LOCATION OF TANK ATTACHMENT POINTS.
5. REFER TO GENSET OR FUEL TANK FOUNDATION OUTLINES FOR ELECTRICAL, FUEL AND OTHER FOUNDATION SPECIFICS.
6. GENSET SUPPLIED WITH FLEXIBLE FUEL LINES THAT CAN BE CONNECTED TO ENGINE INTERFACE POINTS.
   - 6.1 FUEL SUPPLY LINE: 670 [26] LONG WITH 1/4 INCH NPT MALE TERMINATION.
   - 6.2 FUEL RETURN LINE: 930 [37] LONG WITH 1/4 INCH NPT MALE TERMINATION.
7. OIL DRAIN EXTENSION: 5/8 INCH HOSE I.D.
8. FOR IBC SEISMIC CERTIFIED INSTALLATIONS, SEE GENSET IBC SEISMIC INSTALLATION REQUIREMENTS DRAWING.
9. DRY WEIGHT = WET WEIGHT - 38.5 KG (85 LB).
10. 6X Ø7.3 HOLES FOR CUSTOMER-SUPPLIED COOLING EXHAUST AIR DUCT ADAPTER.
11. FUEL SUPPLY AND RETURN STUB-UP AREA.

Wastewater Treatment Plant



TABULATION				
ALT DATA SHEET #	DIM A	DIM B	GENSET WET WEIGHT	
			KG	LB
ADS-208	1414	504	1340	2955
ADS-209	1443	502	1390	3064
ADS-210	1470	500	1442	3179
ADS-211	1493	499	1480	3262
ADS-212	1526	495	1583	3491
ADS-213	1526	495	1583	3491

C125D6D, C150D6D, C175D6D, C200D6D

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS

DIM		HOLE	
X	±1	0.00- 4.99	+0.15/-0.08
.X	±0.8	5.00- 9.99	+0.20/-0.10
.XX	±0.38	10.00-17.49	+0.25/-0.13
		17.50-24.99	+0.30/-0.13

ANG TOL ± 1.0° | SCALE 3:32

SIM TO _ | DO NOT SCALE PRINT

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5-2009 | FIRST USED ON ARROW

DWN	D HOFMEISTER
CKD	D HOFMEISTER
APVD	D GILLETT
DATE	04APR18

CUMMINS POWER GENERATION

OUTLINE, GENSET

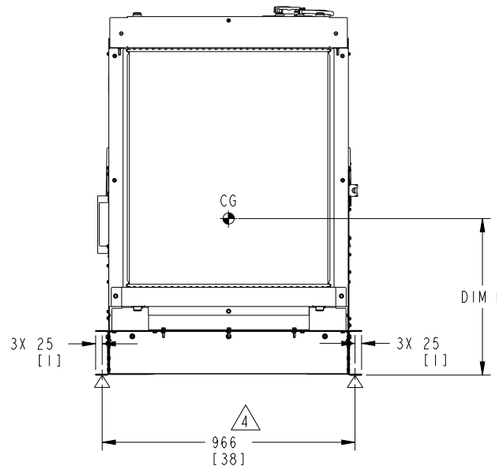
SITE CODE: PGF

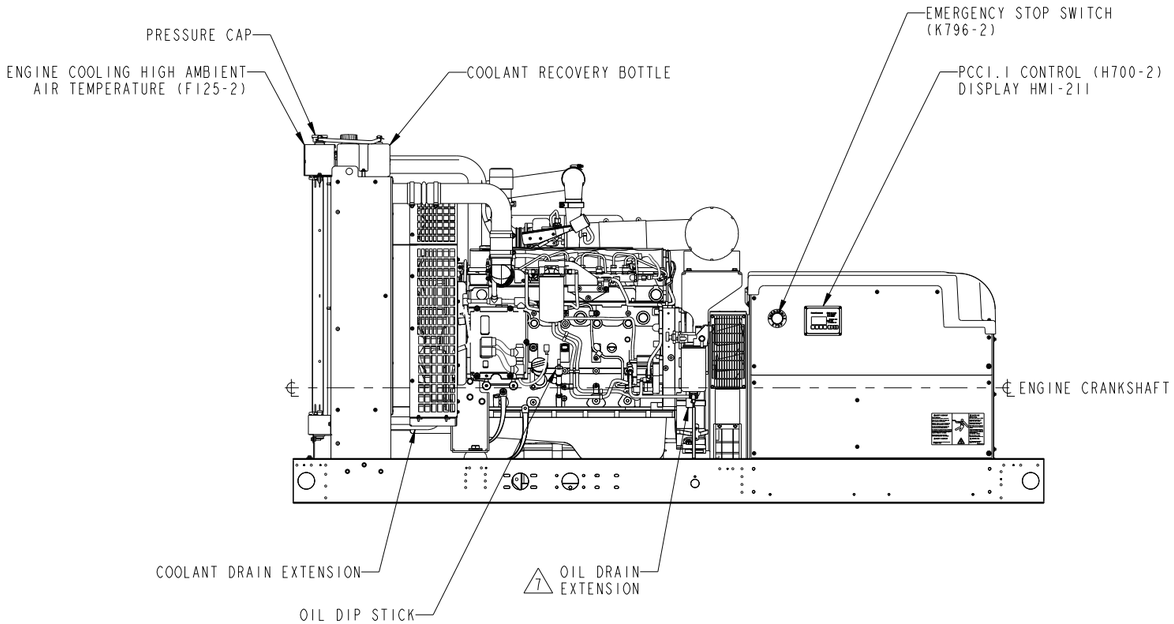
DWG SIZE: D | A060C858 | CAD SHEET 1 of 2

Drawing Name: A060C859 Revision: A
Part Name: A060C858 Revision: A
ECO-176532 Sheet 1 of 3

PTC® Creo® Parametric

REL NO	REV	NO	REVISION	DWN	CKD	APVD	DATE
ECO-176532	A	1	PRODUCTION RELEASE	DAH	DAH	GILLETT	04APR18





UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS

DIM: X ±1 | .X ±0.8 | .XX± 0.38

HOLE: 0.00- 4.99 +0.15/-0.08 | 5.00- 9.99 +0.20/-0.10 | 10.00-17.49 +0.25/-0.13 | 17.50-24.99 +0.30/-0.13

ANG TOL ± 1.0°

SCALE 3:32

SIM TO .

DO NOT SCALE PRINT

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5-2009

FIRST USED ON ARROW

DWN	D HOFMEISTER
CKD	D HOFMEISTER
APVD	D GILLETT
DATE	04APR18

CUMMINS POWER GENERATION

OUTLINE, GENSET

SITE CODE PGF

DWG SIZE D | A060C858 | CAD SHEET 2 of 2

Drawing Name: A060C859 Revision: A
Part Name: A060C858 Revision: A
ECO-176532 Sheet 2 of 3

PowerCommand®
B-Series – CBL Bypass Isolation Transfer Switch

PowerCommand® 80

Control Automatic (Open/Closed Transition)

150 A - 1000 A

DESCRIPTION

The B-Series CBL 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 CBL 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 CBL 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 CBL 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

Position mechanism – The 3-position over-center mechanism allows for fast and consistent 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.

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.

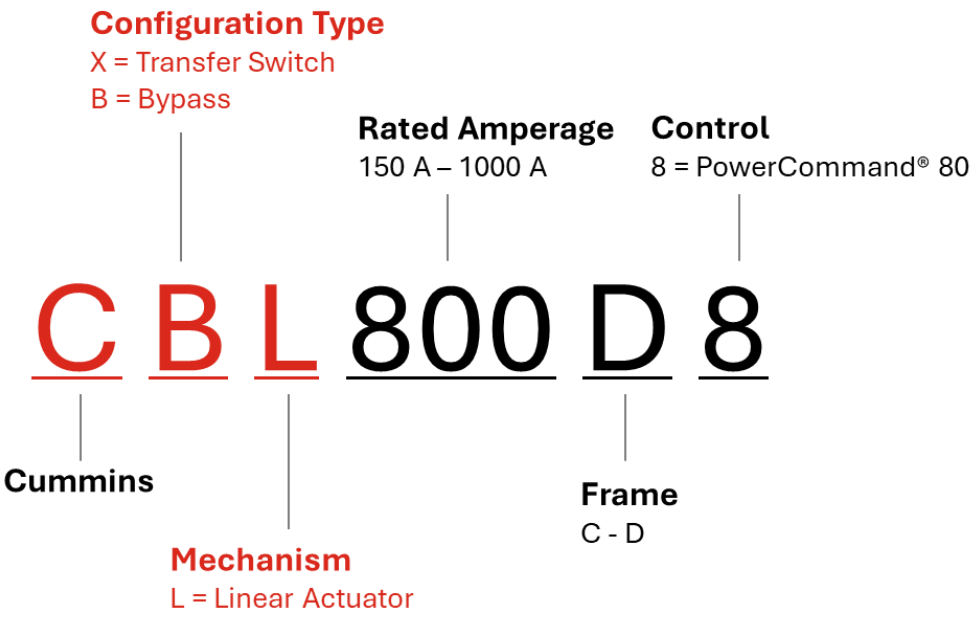
PowerCommand® 80 control – A sophisticated, fully featured microprocessor-based control with LED backlit colored LCD display and tactile-feel soft-buttons for ease of screen navigation and operation with gloves and in damp or dusty environments.

Withstand and Closing Ratings (WCR) – The B-Series CBL Bypass Isolation Transfer Switches feature 0.05 s (3 cycle) Time Duration ratings, fuse ratings, and specific breaker ratings.

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 technician.

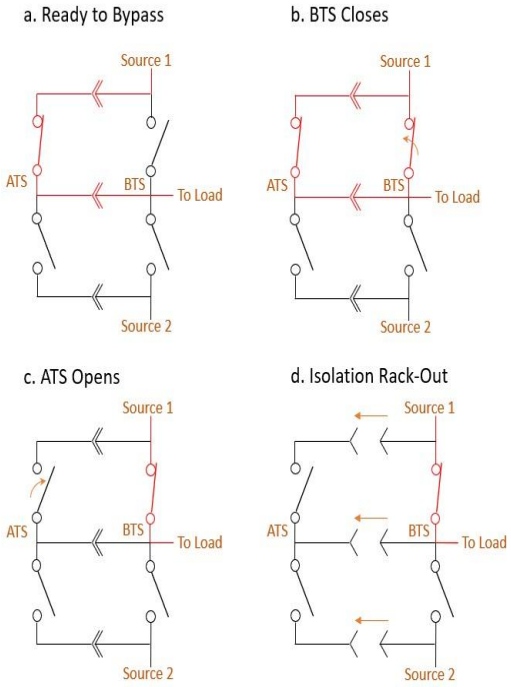
MODEL NAMING STRUCTURE



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, 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.

BYPASS TRANSFER SWITCH (BTS) AND ISOLATION MECHANISM



- Manual bypass switch mechanism allows the operator to select either the normal or emergency source by closing the bypass contacts. Visual indicators show bypass “source selected”, bypass "closed" or "open" to either source, and automatic transfer switch isolation or "disable." Bypass of the automatic switch is accomplished with permanently mounted, mechanically operated devices without disturbing the power supply to system loads, and without opening enclosure door.
- Isolation contacts allow the automatic transfer switch and the bypass switch to be separated electrically and mechanically.
- Protective safety shutters, 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”, “isolated”. In the connected position the mechanism is locked. In the test position, the automatic switch is isolated, but the controls receive power. In the isolated position, the automatic switch is completely isolated.
- The bypass switch mechanism is identical to the automatic switch except it is mechanically operated rather than electrically operated. Mechanical interlocks prevent operation of the bypass or automatic switches in any mode that would result in the interconnection of the sources.

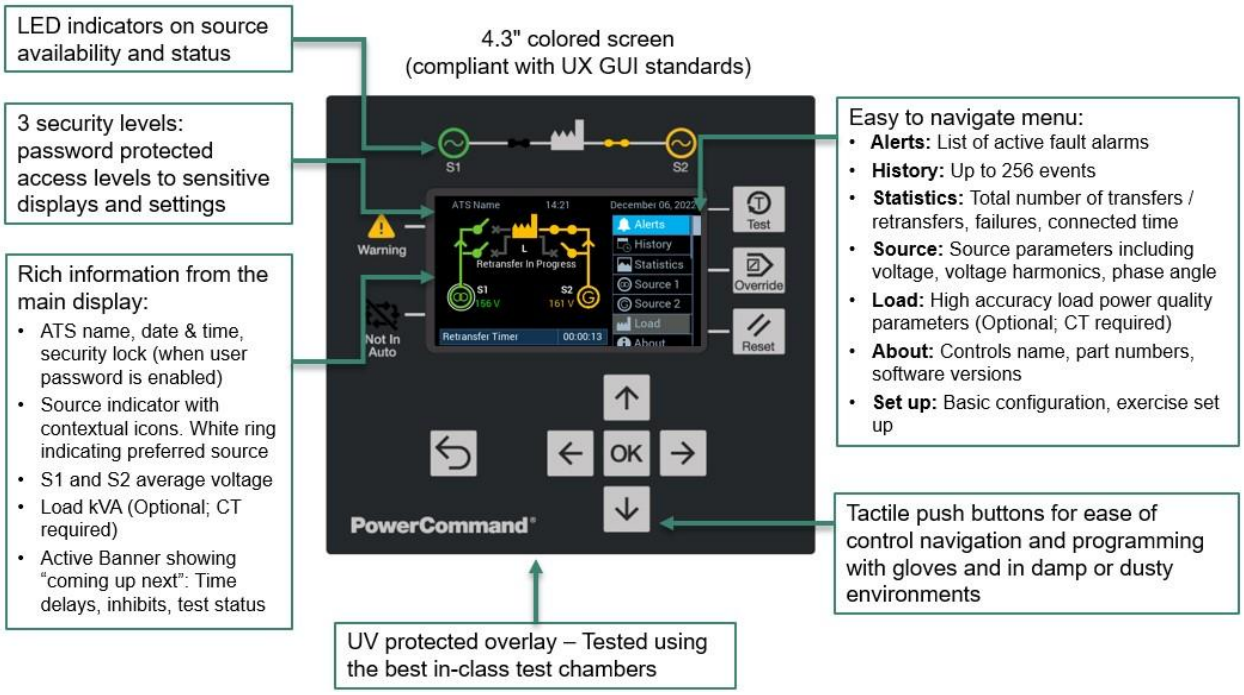
SPECIFICATIONS

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. UL recognized, and CSA-certified.
Operating temperature	-40 ˚F (-40 ˚C) to 140 ˚F (60 ˚C)
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*	External manual operator is provided via the bypass and isolation mechanism, providing quick make/quick-break operation under load.

Note: See Operator Manual for further details.

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 (Modbus® RS485 and TCP/IP communications).
- 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.



UL 1008 SHORT-CIRCUIT WITHSTAND/CLOSING (WCR) CURRENT RATINGS

The transfer switches listed below must be protected by circuit breakers or fuses. Referenced drawings include detailed listings of specific breakers or fuse types that must be used with the respective transfer switches. Consult with your distributor/dealer to obtain the necessary drawings. Withstand and Closing Ratings (WCR) are stated in symmetrical RMS amperes.

Frame	Amp Rating (A)	MCCB protection			Special circuit breaker protection		
		WCR @ volts max with specific manufacturers MCCBs	Max MCCB ratings	Drawing reference	With specific current limiting breakers (CLB)	Max CLB rating	Drawing reference
C	150, 225, 260, 300, 400, 600	85,000 at 480	1200 A	A056M836	200,000 at 480	1200 A	A048J544
		65,000 at 600			100,000 at 600	100,000 at 600	
D	600, 800, 1000	85,000 at 480	1400 A	A056M548	200,000 at 480	1400 A	A048J546
		65,000 at 600			100,000 at 600	100,000 at 600	

FUSE PROTECTION

Frame	Amp Rating (A)	WCR @ volts max. with current limiting fuses	Max fuse, size and type	Drawing reference
C	150, 225, 260, 300, 400, 600	200,000 at 600	600 A Class J, RK1, RK5 or 1200 A Class L, T	A056M836
D	600, 800, 1000	200,000 at 600	600 A Class J, RK1, RK5, 1200 A Class T, or 2000 A Class L	A056M548

3-CYCLE RATINGS

Frame	Amp Rating (A)	WCR @ volts max 3 cycle rating	Max MCCB rating	Drawing reference
C	150, 225, 260, 300, 400, 600	25,000 at 600	1200 A	A056M836
D	600, 800, 1000	42,000 at 600	1400A	A056M548

TRANSFER SWITCH LUG CAPACITIES

All lugs are 90ºC rated and accept copper or aluminium wire unless indicated otherwise.

Frame	Amp rating	Maximum # of Cables Per Phase	Size
C	150, 225, 260, 300, 400	1	3/0 AWG to 600 MCM CU-AL
		2	#4 AWG to 250 MCM CU-AL
	600	2	250 MCM to 500 MCM CU-AL
D	600, 800, 1000	4	250 MCM to 500 MCM CU-AL

ENCLOSURE DIMENSIONS

Frame	Amperage Rating (A)	Measurements		NEMA Rated Enclosures for Indoor		NEMA Rated Enclosures for Indoor & Outdoor		
				Type 1	Type 12	Type 3R	Type 4	Type 4X
C	150, 225, 260, 300, 400, 600	Dimension (mm/in)	W	914/36				
			D	639/25.2			623/24.5	
			H	2115/83.2				
		Approximate Weight max (kg/lb)		365/805.3			367/810	
D	600, 800, 1000	Dimension (mm/in)	W	1214/47.8				
			D	762/30	745/29.3	762/30	745/29.3	
			H	2286/90				
		Approximate Weight max (kg/lb)		532/1172.7	535/1179.1	533/1174.3	535/1179.1	535/1179.1

B-SERIES CBL DRAWING PART NUMBERS

Frame	Amperage Rating (A)	Outline Drawing				WCR Label	Wiring Diagram			
		Type 1	Type 3R	Type 12	Type 4 & 4X	0.05 s [3-cycle]	Open/ Delayed Transition	Closed Transition	Inter-connect U-G**	Inter-connect G-G***
C	150, 225, 260, 300, 400, 600	A074R931			A074R932	A056M836	A074C707* A074C708		A074C709	A074C710
D	600, 800, 1000	A074R933	A074R934	A074R935		A056M548				

* Up to 480 V
** U-G stands for Utility-Generator Set
*** G-G stands for Generator Set-Generator Set

SUBMITTAL DETAIL

Amperage ratings

- ❒ 150 A
- ❒ 225 A
- ❒ 260 A
- ❒ 300 A
- ❒ 400 A
- ❒ 600 A
- ❒ 800 A
- ❒ 1000 A

Voltage ratings

- ❒ R038 190 V
- ❒ R021 208 V
- ❒ R022 220 V
- ❒ R023 240 V
- ❒ R024 380 V
- ❒ R025 416 V
- ❒ R035 440 V
- ❒ R026 480 V
- ❒ R027 600 V

Pole configuration

- ❒ A028-7 Poles - 3 (solid neutral)
- ❒ A029-7 Poles - 4 (switched neutral)

Frequency

- ❒ A044 60 Hertz
- ❒ A045 50 Hertz

Transfer mode

- ❒ A077-7 Open transition/in-phase
- ❒ A078-7 Open transition/programmed
- ❒ A079-7 Closed transition

Application

- ❒ A035-7 Utility-to-genset
- ❒ A036-7 Utility-to-utility
- ❒ A037-7 Genset-to-genset

System options:

- ❒ A089-7 1-phase, 3-wire
- ❒ A090-7 3-phase, 3-wire
- ❒ A091-7 3-phase, 4-wire

Standards

- ❒ A046-7 UL 1008/CSA certification
- ❒ A064-7 NFPA 20 compliant
- ❒ A080-7 IBC Seismic certification
- ❒ A085-7 OSHPD Seismic Certification

Control options

- ❒ D403-7 Integrated PC80 high accuracy power quality metering
- ❒ L214-7 Load shed from standby source
- ❒ L215-7 Start Signal Integrity for Multiple ATS systems
- ❒ M079-7 Integral control power supply

Customer input/output

- ❒ M076-7 Standard - 5 digital inputs, 6 digital outputs, 4 dry-contact outputs
- ❒ M077-7 Premium - includes Standard plus 2 digital inputs and 6 digital outputs

Protective relays

- ❒ M045-7 Paralleling timer and lockout relays, ANSI/IEEE 62PL and 86
- ❒ M047-7 Paralleling timer and lockout and reverse power relays, three phase, ANSI/IEEE 62PL, 86 and 32R

Auxiliary relays

Relays are UL listed and factory installed. All relays provide two normally closed isolated contacts rated 10 A at 600 VAC Relay terminals accept from one 18 gauge to two 12-gauge wires per terminal.

- ❒ L101-7 24 VDC coil - installed, not wired (for customer use)
- ❒ L102-7 24 VDC coil - emergency position – relay energized when switch in source 2 (emergency) position
- ❒ L103-7 24 VDC coil - normal position – relay energized when switch in source 1 (normal) position
- ❒ L201-7 12 VDC coil - installed, not wired (for customer use)
- ❒ L202-7 12 VDC coil - emergency position – relay energized when switch in source 2 (emergency) position
- ❒ L203-7 12 VDC coil - normal position – relay energized when switch in source 1 (normal) position

Control Voltage

- ❒ M033-7 12V DC, Genset Starting Voltage
- ❒ M034-7 24V DC, Genset Starting Voltage

Enclosure

- ❒ B001-7 Type 1: Indoor use, provides some protection against dirt (similar to IEC type IP30)
- ❒ B002-7 Type 3R: Intended for outdoor use, provides some protection from dirt, rain and snow (similar to IEC type IP34)
- ❒ B003-7 Type 4: Indoor or outdoor use, provides some protection from wind-blown dust and water spray (similar to IEC type IP65)
- ❒ B004-7 Open Construction: No enclosure - includes automatic transfer switch and controls (call factory for dimensions)
- ❒ B010-7 Type 12: Indoor use, some protection from dust (similar to IEC type IP61)
- ❒ B025-7 Type 4X: Stainless steel, indoor or outdoor use, provides some protection from corrosion (similar to IEC Type IP65)

Miscellaneous

- ❒ M080-7 Anti-condensation cabinet heater

Warranty

- ❒ G012-7 Transfer Switch Warranty – 2 year comprehensive – base
- ❒ G014-7 Transfer Switch Warranty – 3 year comprehensive
- ❒ G007-7 Transfer Switch Warranty – 5 year comprehensive
- ❒ G015-7 Transfer Switch Warranty – 10 year comprehensive

Shipping

- ❒ A050-7 Packing - Standard
- ❒ A051 Packing - Export box

CODES AND STANDARDS

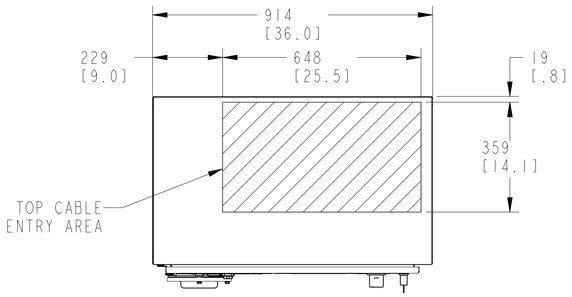
UL	All switches are **UL 1008** Listed with **UL 50E** Type Rated cabinets and UL Listed CU-AL terminals.	NEMA	All switches comply with **NEMA ICS 10**.
NFPA	All switches comply with **NFPA 20**, **70**, **99** and **110 (Level 1)**.	IEEE	All switches comply with **IEEE 446** Recommended Practice for Emergency and Standby Power Systems.
CSA	All switches are certified to CSA C22.2 No. 178.1 switching of electrical energy in emergency or other systems, up to 600 VAC and 4 kA.	**RoHS**	All switches are **RoHS** compliant.
c UL us LISTED	All switches are **UL 1008** Listed for Canadian requirements.	**OSHPD**	All switches are certified to **CBC 2021**.
IBC®	All switches are certified to **IBC 2021**.	**ISO®**	All switches are designed and manufactured in facilities certified to **ISO 9001**.
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	**NEC®**	Suitable for use in emergency, legally required and Standby and Critical Operations Power Systems (COPS) applications per **NEC 700**, **701**, **702** and **708**.

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

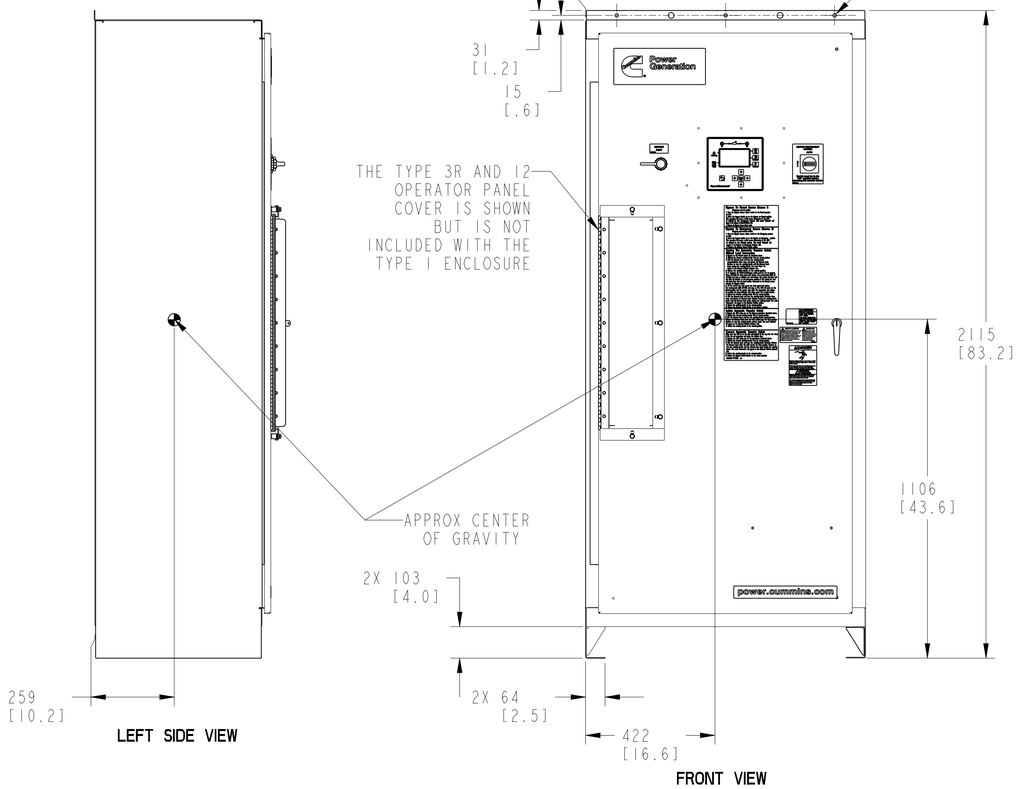
Our energy working for you™

S-6762 - Series B – CBL – C/D - PD00002920 (Last revised: 06/25)

Wastewater Treatment Plant

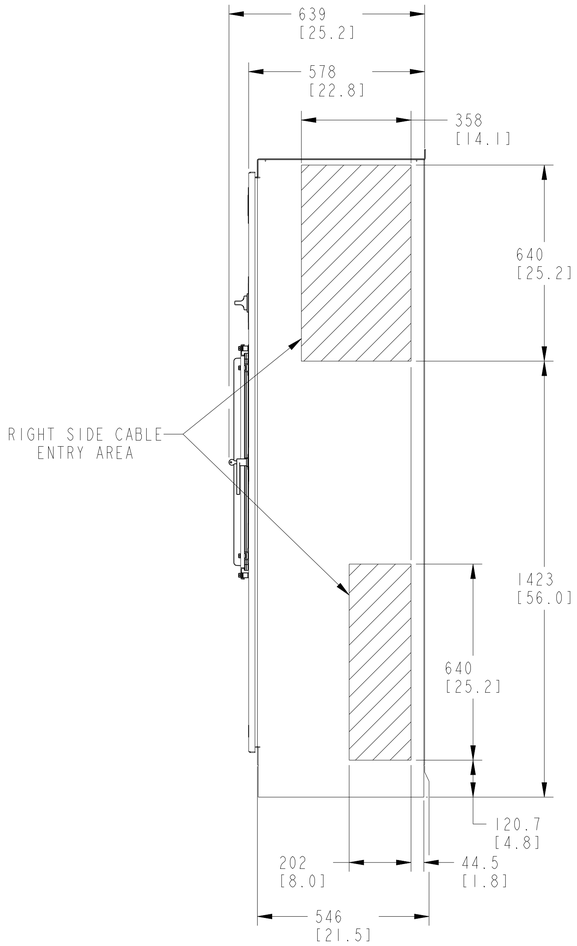


TOP VIEW

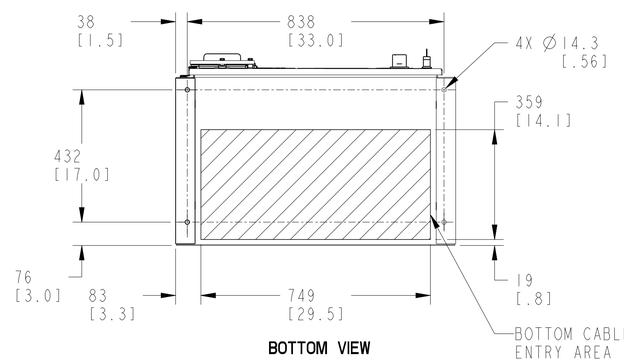


LEFT SIDE VIEW

FRONT VIEW



RIGHT SIDE VIEW



BOTTOM VIEW

⚠8 LUG CONFIGURATION TABLE			
SWITCH AMPERE RATING	LUG DESCRIPTION	MAXIMUM # OF CABLES PER PHASE	LUG CABLE CAPACITY
150, 225, 260 300, 400	STANDARD	1	3/0 AWG TO 600 MCM CU-AL
	STANDARD	2	#4 AWG TO 250 MCM CU-AL
600	STANDARD	2	250 MCM TO 500 MCM CU-AL

CBL SERIES:
FRAME C, 150 THRU 600 AMP
3 AND 4 POLE, FRONT CONNECT
NEMA TYPE 1, 3R AND 12
TOP, BOTTOM AND RIGHT SIDE CABLE ENTRY

NOTES:

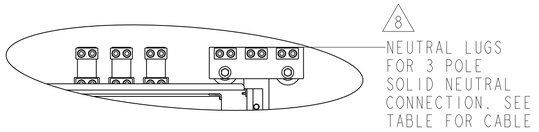
1. APPROXIMATE WEIGHT: 805.3 LBS (365 KG)
2. ALL CABLES SHALL ENTER CABINET IN AREAS INDICATED. DO NOT COMBINE CONTROL CABLES AND POWER CABLES IN THE SAME CONDUIT.
3. WIRE BENDING SPACE CONFORMS TO NATIONAL ELECTRIC CODE (NFPA70).
4. REFER TO THE NATIONAL ELECTRIC CODE FOR MINIMUM CLEAR SPACE IN FRONT OF THIS ENCLOSURE.
5. AUTOMATIC TRANSFER SWITCH MECHANISM WEIGHT EXCEEDS TWO-PERSON LIFT. LIFTING PROVISIONS PROVIDED ON TRANSFER SWITCH FOR CRANE HOIST AND FORKLIFT. ENSURE THERE IS ADEQUATE CLEARANCE IN FRONT OF ENCLOSURE TO SAFELY USE LIFTING EQUIPMENT FOR REMOVING AUTOMATIC TRANSFER SWITCH MECHANISM AND FOR ANY ADDITIONAL LOCAL CODE REQUIREMENTS.
6. FOR INTERNAL DETAILS OF CABINET, SEE SHEET 2.
7. ALL DIMENSIONS ARE REFERENCE, UNLESS SPECIFICALLY TOLERANCED.
8. FOR LUG CONFIGURATION OPTIONS REFER TABLE.
9. IF CUTTING HOLES INTO EXISTING ENCLOSURE LAYOUT, ALL BARE METAL SHOULD BE RE-PAINTED TO MAINTAIN NEMA RATING.
10. STANDARD ENCLOSURE FINISH: ANSI 61 GREY

LAST DATUM LETTER USED: .	LAST REFERENCE LETTER USED: B
MODEL/PLATFORM: CBL	THIS PART IS SIMILAR TO:

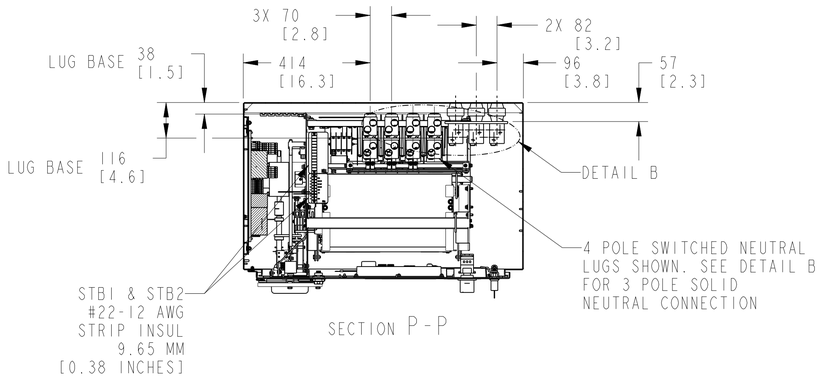
PART NUMBER: A074R931	PART REVISION: C
PART NAME: OUTLINE,ENCLOSURE	
DRAWING CATEGORY: OUTLINE	
STATE: RELEASED	SHEET: 1 OF 4
CUMMINS DATA CLASSIFICATION: CUMMINS CONFIDENTIAL	

Cummins Inc.

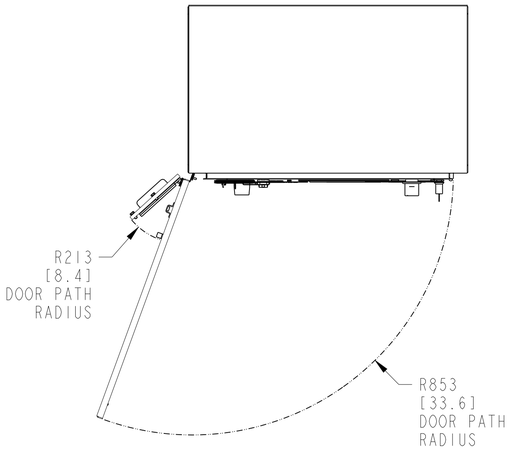
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: INCHES	SIZE: A1	SCALE:0.1
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	THIRD ANGLE PROJECTION	CAD SYSTEM PTC® Creo® Parametric



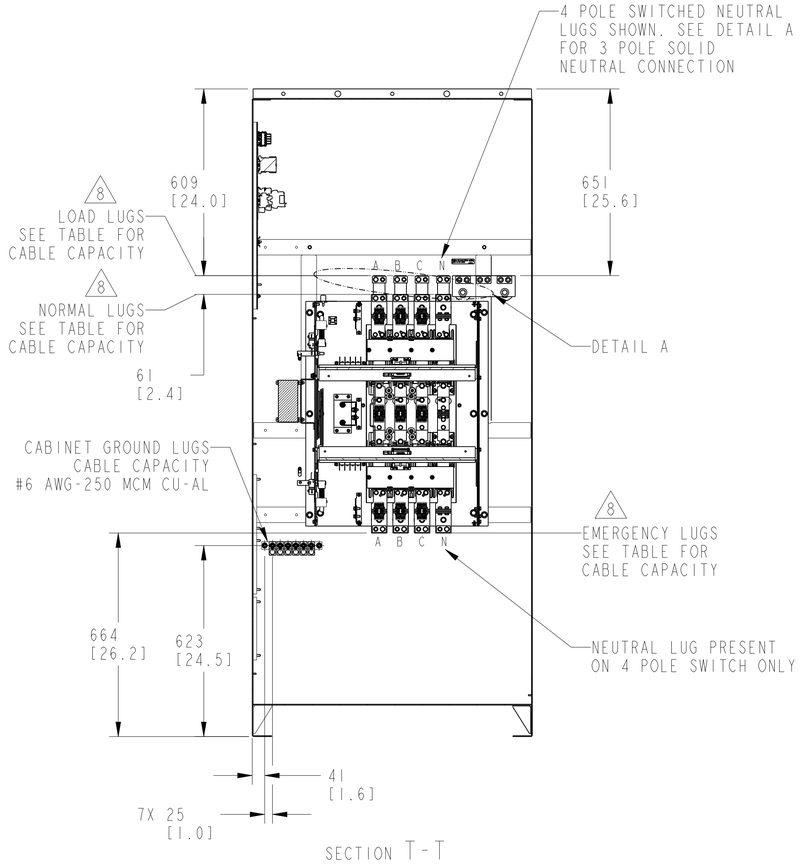
DETAIL **A**
3 POLE SWITCH NEUTRAL BAR



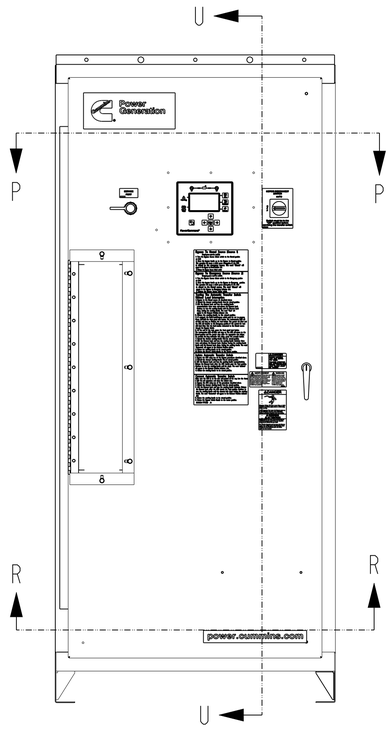
SECTION P-P

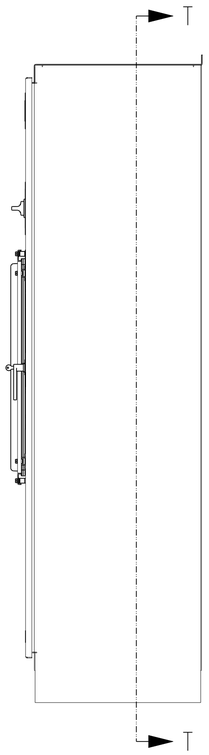


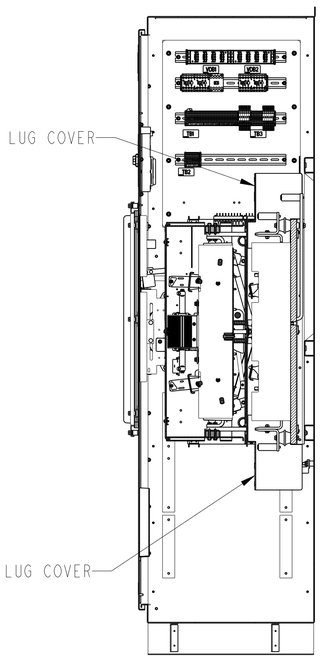
DOOR OPENING VIEW



SECTION T-T







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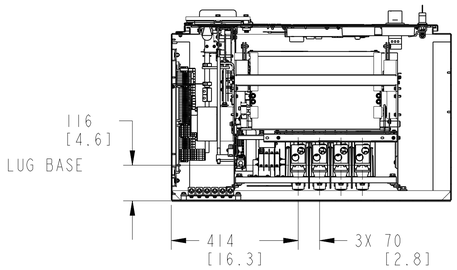
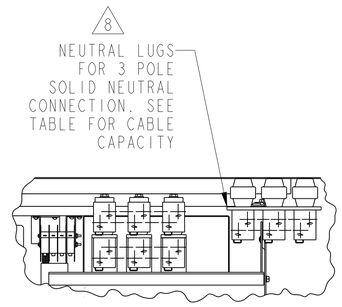


SECTION R-R



DETAIL **B**
3 POLE SWITCH
NEUTRAL BAR

PART NUMBER: A074R931	PART REVISION: C
PART NAME: OUTLINE,ENCLOSURE	
DRAWING CATEGORY: OUTLINE	
STATE: RELEASED	SHEET: 2 OF 4
CUMMINS DATA CLASSIFICATION: CUMMINS CONFIDENTIAL	

Cummins Inc.

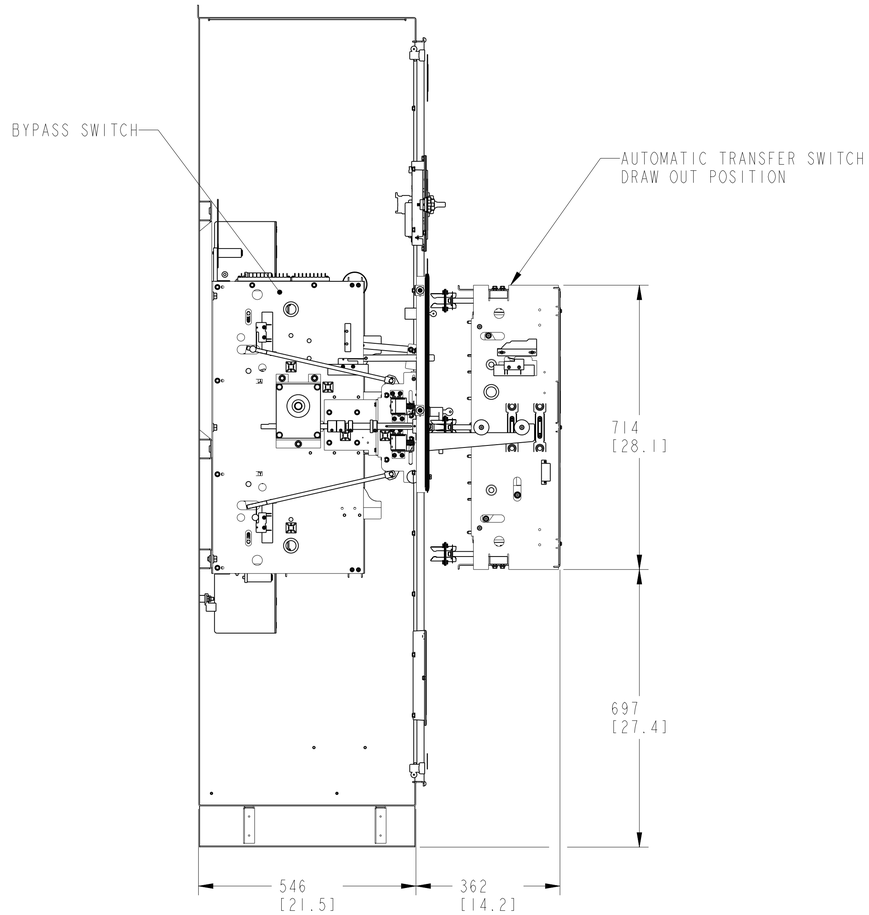
DIMENSIONS ARE IN: MILLIMETERS
[ ] ARE IN: INCHES

SIZE: A1 SCALE:0.1

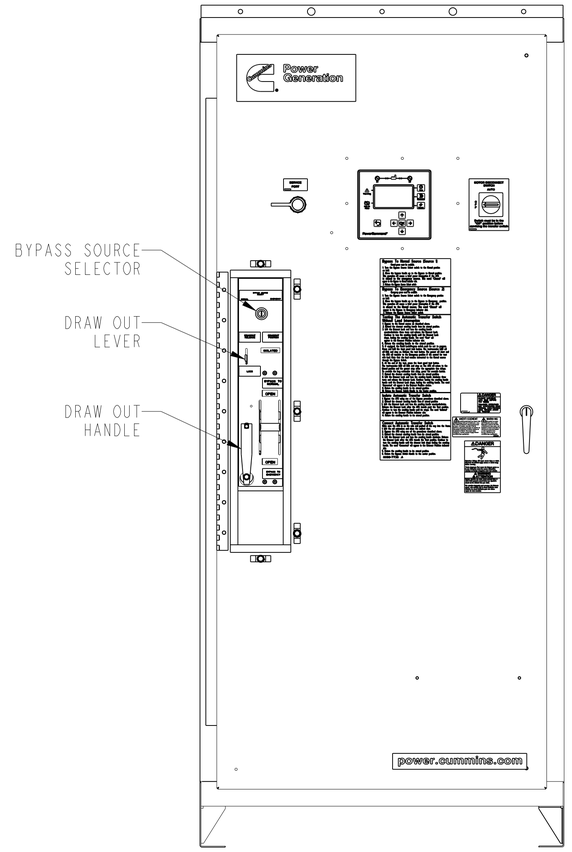
DIMENSIONING AND TOLERANCING PER:
ASME Y14.5-2009

THIRD ANGLE PROJECTION

CAD SYSTEM
PTC® Creo® Parametric



SIDE VIEW
AUTOMATIC TRANSFER SWITCH
DRAW OUT POSITION DEPICTED IN THIS VIEW



FRONT VIEW
SCALE 0.13
HANDLE POSITION DEPICTED IN THIS VIEW

PART NUMBER: A074R931	PART REVISION: C
PART NAME: OUTLINE,ENCLOSURE	
DRAWING CATEGORY: OUTLINE	
STATE: RELEASED	SHEET: 3 OF 4
CUMMINS DATA CLASSIFICATION: CUMMINS CONFIDENTIAL	

Cummins Inc.

DIMENSIONS ARE IN: MILLIMETERS
[ ] ARE IN: INCHES

SIZE: A1 SCALE:0.1

DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009

THIRD ANGLE PROJECTION

CAD SYSTEM
PTC® Creo® Parametric