

# Transfer switch OT III open or delayed transition, non-automatic

## > Specification sheet

40 - 1000 Amp

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### Description

The Cummins Power Generation OTIII non-automatic transfer switch offers flexibility when remote controlled or manual transfer or retransfer of load is required.

Non-automatic transfer switches are used in conjunction with an automatic transfer switch which monitors the normal power source and remotely signals the non-automatic transfer switches to transfer and retransfer load.

With a non-automatic transfer switch, an operator or control device initiates transfer of a portion of the peak load from the utility to an energized standby power source. Load shed from the standby power source is standard.

The non-automatic transfer switch allows an operator to manually transfer from a utility or prime power source to a standby power source in the case of a power failure or when there is maintenance or exercising requirement.



All switches are UL 1008 Listed with UL Type Rated cabinets and UL Listed CU-AL terminals.



All switches are certified to CSA 282 Emergency Electrical Power Supply for Buildings, up to 600 VAC.



All switches comply with NEMA ICS 10.



This transfer switch is designed and manufactured in facilities certified to ISO9001.

### Features

**Assembly features** - Plug connections between switch and control to facilitate service.

**Door mounted controls** - Provide easy access for adjustments and service. Ample space for field power and control connections. Terminal markings compatible with generator set.

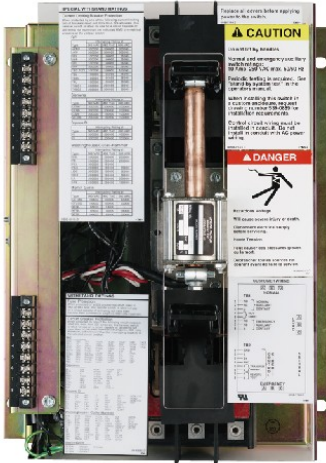
**Positive interlocking** - Mechanical and electrical contactor interlocking prevents source-to-source connection through power or control wiring.

**Local/remote operation modes** - Can be operated locally with a door-mounted keyswitch or remotely via input signals from an automatic transfer switch or other control device.

**Main contacts** - Heavy-duty silver allow contacts and multi-leaf arc chutes are rated for total system transfer.

**Warranty and service** - Backed by a comprehensive warranty and worldwide distributor network.

## Transfer switch mechanism



- A bi-directional linear motor actuator powers OT III Transfer Switches. This design provides virtually friction-free, constant force, straight-line transfer switch action with no complex gears or linkages.
- Independent break-before-make action is used for both 3-pole and 4-pole/switched neutral switches. On 3-pole/switched neutral switches, this action also prevents the objectionable ground currents and nuisance ground fault tripping that can result from overlapping designs.
- A mechanical interlock prevents simultaneous closing of normal and emergency contacts.
- Electrical interlocks prevent simultaneous closing signals to normal and emergency contacts and interconnection of normal and emergency sources through the control wiring.
- Long-life, high pressure, silver alloy contacts resist burning and pitting. Separate arcing surfaces further protect the main contacts. Contacts are mechanically held in both normal and emergency positions for reliable, quiet operation.
- Superior arc interruption is accomplished through multiple leaf arc chutes that cool and quench the arcs. Barriers separate the phases and prevent inter-phase flashover

### Specifications

<b>Operating temperature</b>	-40 °F (-40 °C) to 122 °F (50 °C)
<b>Storage temperature</b>	-40 °F (-40 °C) to 140 °F (60 °C)
<b>Humidity</b>	Up to 95% relative, non-condensing
<b>Altitude</b>	Up to 10,000 ft (3,000 m) without de-rating
<b>Surge withstand ratings</b>	Performance tested per IEEE-587 - 1980 procedure.
<b>Total transfer time (source-to-source)</b>	Will not exceed 6 cycles at 60 Hz with nominal voltage applied to the actuator and without programmed transition installed.

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## UL withstand and closing 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.

Transfer switch ampere	WCR @ volts max with specific manufacturers MCCBs	Max MCCB ratings	Molded case circuit breaker manufacturer	Molded case circuit breaker type
40, 70, 125	14,000 @ 480 V 14,000 @ 600 V	225 A	GE Westinghouse Square D Siemens	TBC, THFK, TFK, TFJ, THED, TED HMA, MA, JB, KB, FB, EHB, FDB, FD, HFD, FDC, JDB, JD, HJD, JDC, LA, LAL, LAB, LH, LHL, LHB, KAL, KHL, HJ, KM, HEB, FJ
150, 225, 260	30,000 @ 480 V 30,000 @ 600 V	400 A	GE Westinghouse Square D Siemens	TJJ, THFK, TFJ, TFK, HLA, LB, HLB, KDB, KD, HKD, KDC, JDB, JD, JDC, LA, LH, LAB, LHL, LHB, HJ, HM, CJ, HN, JJ
300, 400, 600	65,000 @ 480 V 65,000 @ 600 V	1200 A	GE Westinghouse Square D Siemens	TKM, THKM, TJC, TB8, TKHSS, TKSH, TJSS, TJS, TBC, NB, HLC, LC, HLA, LA, HNB, PB, LAB, MA, RD, MA, MHL, PHF, PAL, PHL, PAF, LA, LH, JL, HJ, HL, LL, KM, HK, HN, HP
800, 1000	65,000 @ 480 V 50,000 @ 600 V	1400 A	GE Westinghouse Square D Siemens	TPR, THR, TPRR, THRR, TPSS, THSS, TPMM, THMM, TKMA, THKMA, PB, NB, HNB, MA, HMA, RD, PA, PAL, MA, MAL, MH, MHL, PAF, PHF, PHL, NHF, NHL, PCF, NX, HP, CP, HR, KM, HN, KP, KK, CR, SKP, SKM, SHK, SHP, HM, CM

## Fuse protection

Transfer switch ampere	WCR @ volts AC maximum with current limiting fuse	Max. fuse, size and type
40, 70, 125	200,000 @ 600	200 A class RK1, RK5 400 A class J
150, 225, 260	200,000 @ 600	600 A class J, RK1, RK5 1200 A class L
300, 400, 600	200,000 @ 600	1200 A class L
800, 1000	200,000 @ 600	2000 A class L

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## Enclosures

The transfer switch and control are mounted in a key-locking enclosure. Wire bend space complies with 2008 NEC.

### Dimensions - transfer switch in UL type 1 enclosure

Amp rating	Height		Width		Depth				Weight		Outline drawing
	in	mm	in	mm	Door closed		Door open		lb	kg	
					in	mm	in	mm			
40, 70, 125	27	660	20.5	520	12	305	31.5	800	82	37	0310-0544
150, 225	35.5	900	26	660	16	405	41	1042	165	75	0310-0414
260	43.5	1105	28.5	725	16	405	43	1093	170	77	0310-0540
300, 400, 600	54	1370	25.5	650	16.5	420	40.5	1029	225	102	0310-0416
800, 1000	68	1730	30	760	19.5	495	48.5	1232	360	163	0310-0417

\* Rear or side access is required to complete power wiring installation.

### Dimensions - transfer switch in UL type 3R, 12 or 4 enclosure

Amp rating	Height		Width		Depth				Weight		Cabinet type	Outline drawing
	in	mm	in	mm	Door closed		Door open		lb	kg		
					in	mm	in	mm				
40, 70, 125	34	865	26.5	675	12.5	320	36.5	927	125	57	3R, 12	0310-0453
											4	0310-0445
150, 225	42.5	1080	30.5	775	16.0	406	44	1118	215	97	3R, 12	0310-0454
											4	0310-0446
260	46	1170	32	815	16.0	406	46	1168	255	102	3R, 12	0310-0455
											4	0310-0447
300, 400, 600	59	1500	27.5	700	16.5	420	41.5	1054	275	125	3R, 12	0310-0456
											4	0310-0448
800, 1000	73.5	1865	32.5	825	19.5	495	49.5	1257	410	186	3R, 12	0310-0457
											4	0310-0449

### Dimensions - 3- and 4-pole open transfer switch\*

Amp rating	Height		Width				Depth		Weight**		Outline drawing	
	in	mm	3 pole		4-pole		in	mm	lb	kg	3-pole	4-pole
			in	mm	in	mm						
40, 70, 125	16.5	419	12	305	NA	NA	8	205	20	9	0310-0692	NA
150, 225, 260	22.5	570	19	485	19	485	12	305	50	23	0310-0692	0310-0693
300, 400, 600	28	710	19	485	19	485	15	380	80	37	0310-0692	0310-0693
800, 1000	37.5	955	22.5	570	22.5	570	17	430	150	68	0310-0692	0310-0693

\* - Approximate dimensions only. For exact construction details, obtain outline drawing listed in table from your distributor.

\*\* - Approximate weight only.

## Transfer switch lug capacities

All lugs accept copper or aluminum wire unless indicated otherwise.

Amp rating	Cables per phase	Size
40, 70, 125	1	#12 AWG-2/0
150, 225	1	#6 AWG-300 MCM
260	1	#6 AWG-400 MCM
300, 400	1	3/0-600 MCM or #4 AWG-250 MCM
600	2	250-500 MCM
800, 1000	4	250-500 MCM

## Submittal detail - options

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### Amperage ratings

- 40
- 70
- 125
- 150
- 225
- 260
- 300
- 400
- 600
- 800
- 1000

### Voltage ratings

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

\* Line to neutral voltage (not available on 800-1000 amp switches)

### Pole configuration

- A028 Poles - 3 (solid neutral)
- A029 Poles - 4 (switched neutral - not available 40-125 amps)

### Frequency

- A044 60 Hertz
- A045 50 Hertz

### Application

- A038 Non automatic/remote

### System options

- A041 Single phase, 2-wire or 3-wire (not available 800-1000 amps)
- A042 Three phase, 3-wire or 4-wire

### Enclosure

- B001 Type 1: general purpose indoor (similar to IEC type IP30)
- B002 Type 3R: intended for outdoor use (dustproof and rainproof) (Available 40-1000 amps only - similar to IEC type IP34).
- B003 Type 4: indoor or outdoor use (watertight). (Available 40-1000 amps only - similar to IEC type IP65)
- B004 Open Construction: no enclosure - includes automatic transfer switch and controls. Also supplied are source connected/available lamps and selector switch to be wired by customer. Meters not available with this package.
- B010 Type 12: indoor use, dust-tight and drip-tight (similar to IEC type IP65).

### Standards

- A046 UL 1008/CSA
- A080 Seismic certification

### Delayed (programmed) transition

Slows switch operation, for an adjustable delay period, to provide an open period during transfer (and retransfer)

- J021 Program transition, 1-7.5 sec.
- J022 Program transition, 1-60 sec.

### Meters

- D001 None
- D002 Door mounted (not available open construction)  
Voltmeter - 2.5" (63.5 mm), 2% accuracy.  
Ammeter - 2.5" (63.5 mm), 2% accuracy.  
Frequency meter - 2.5 (63.5 mm), pointer type.  
Phase selector switch - phase-to-phase voltage sensing on both normal and emergency sources

**Auxiliary relays** - Relays are UL-Listed and factory installed. All relays provide (2) normally open and (2) normally closed isolated contacts rated 10A @ 600 VAC. Relay terminals accept (1) 18 gauge to (2) 12 gauge wires per terminal.

- L001 24 VAC coil - installed, not wired (for customer use).
- L002 Emergency position - relay energized when ATS in Source 2 (emergency) position.
- L003 24 VDC coil - normal position - relay energized when ATS in source 1 (normal) position
- L004 24 VDC coil - emergency source - relay energized when source 2 (emergency) available.
- L005 24 VDC coil - normal source - relay energized when source 1 (normal) available.

### Miscellaneous options

- M007 Load shed - from emergency (standard on non-automatic) - drives OTIII to neutral position when remote signal contact closes
- M008 Module - alarm - provides visual and audible indication whenever emergency power is available.
- N005 Terminal block - source 1/2 remote signal.
- N009 Power connect - bus stabs (open construction only; available on 150-1000 amps).

### Warranty

- G002 One year basic
- G004 Two year comprehensive
- G006 Five year basic
- G007 Five year comprehensive
- G008 Ten year major components

### Shipping

- A051 Packing - export box

## Cummins Power Generations

### Americas

1400 73<sup>rd</sup> Avenue N.E.  
Minneapolis, MN 55432 USA  
Phone: 763 574 5000  
Fax: 763 574 5298

### Europe, CIS, Middle East and Africa

Manston Park Columbus Ave.  
Manston Ramsgate  
Kent CT 12 5BF United Kingdom  
Phone 44 1843 255000  
Fax 44 1843 255902

### Asia Pacific

10 Toh Guan Road #07-01  
TT International Tradepark  
Singapore 608838  
Phone 65 6417 2388  
Fax 65 6417 2399

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