RA SERIES TRANSFER SWITCHES

DESCRIPTION



The RA Series of automatic transfer switches is designed to work with Cummins Quiet Connect RS series generators. These products are listed to UL 1008 and CSA C22.5, the Standard for Transfer Switch Safety. The switch and generator set combination is specifically designed for a simplified, quicker installation in an outdoor rated enclosure.

These switches are suitable for Standby power systems in residential and light commercial applications. These RA products adhere to National Electrical Code (NEC) and National Fire Protection Association (NFPA) requirements.

The RA transfer switch monitors utility power 24 hours a day and 7 days a week. When utility power fails the generator set is signaled to start, then automatically transfers the load. When utility voltage returns, the transfer switch will automatically switch the load from the generator to the utility. No action is required from the homeowner.

The RA Series automatic transfer switches are offered as service entrance rated or non-service entrance rated versions with a variety of ampacity ratings for 120/240V service, These service entrance rated switches utilize UL 489 listed circuit breakers.

FEATURES

Application

- Utility to generator set (open transition)

Mechanically interlocked contactor

- Long-life, high pressure, silver alloy contact resists burning and pitting
- A powerful and economical solenoid drives the mechanism

UL 489 and/or CSA 22.5 No. 5 Listed circuit breakers

Solid bus bar connection

- Between circuit breaker and transfer switch

Neutral and ground bar

- Fully rated
- Bonding jumper on neutral and ground
- Tin plated copper ground and neutral bus

Ease of connection

- Solderless screw type terminals for external power connections

Aluminum enclosure

- NEMA Type 3R rated

Accessories

- Adjustable Voltage Relay Kit (A076C684)
  Note – Required for utility brownout load protection

Warranty

- 2 Year Limited including Parts & Labor

TRANSFER SWITCH MECHANISM



- A powerful and economical solenoid powers RA Transfer Switches.
- Independent break-before-make action
- 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. Contacts are mechanically held in both normal and emergency positions for reliable operation

SPECIFICATIONS	
Voltage rating	120/240VAC, Single Phase, 60 Hz.
Amperage rating	Transfer switches rated for 100, 150, 200, 300 and 400 A continuous amperes.
Arc interruption	Multiple leaf arc chutes cool and quench the arcs. Barriers prevent interphase flashover.
Neutral bar	A full current-rated neutral bar is standard.
Auxiliary contacts	Two contacts rated at 5 A Continuous at 100 Vac or 2.5 A Continuous at 200 Vac (one for each source) are provided for customer use. Wired to terminal block for easy access.
Storage temperature	-25 °C (-13 °F) to 55 °C (131 °F)
Humidity	Up to 90 % @ 20 °C
Altitude	Up to 2,000 m (6,561 ft) without derating.
Total transfer time (source-to-source)	Will not exceed 100 ms with normal voltage applied to the actuator.
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.

MODEL NAMING STRUCTURE

AMP RATING
- 1 = 100A
- 15 = 150A
- 2 = 200A
- 3 = 300A
- 4 = 400A

POLES
- 2 = Two Pole

ENCLOSURE NEMA RATING
- 1 = Type 1
- 3 = Type 3

RA 1 1 2 N 3

RA SERIES TRANSFER SWITCH

PHASE
- 1 = Single Phase

SERVICE ENTRANCE
- N = Non-Service Entrance
- S = Service Entrance

UL 1008 SHORT-CIRCUIT WITHSTAND/CLOSING (WCR)

Model Name	Certification	Part Number	WCR	Integrated Circuit Breaker		
			WCR values are at 240 Vac and below	Cummins Part Number	Supplier Part Number	Manufacturer
RA112S3	CSA & UL	A067J404	22kA	A071Y904	QDP22100TPYP	SQUARE D
RA112S3	UL	A064G545	10kA	0320-2473-01	QBP22100TPYP	SQUARE D
RA112N3	CSA & UL	A064G345	22kA	N/A	N/A	N/A
RA1512S3	UL	A066V485	10kA	A061J598	QBP22150TPYP	SQUARE D
RA212S3	CSA & UL	A067J405	22kA	A071Y909	QDP22200TPYP	SQUARE D
RA212S3	UL	A064G549	10kA	0320-2473-02	QBP22200TPYP	SQUARE D
RA212N3	CSA & UL	A064G376	22kA	N/A	N/A	N/A
RA312S3	UL	A066V486	35kA	A067C758	LGL36400U31X	SQUARE D
RA412S3	UL	A050W853	35kA	A049T377	T5N400 TMA400 FF 3P	ABB
RA412N3	CSA & UL	A050W633	35kA	N/A	N/A	N/A
RA412S3	CSA & UL	A066W927	35kA	A049T377	T5N400 TMA400 FF 3P	ABB

ENCLOSURE DIMENSIONS

Wire bend space complies with NEC.

DIMENSIONS - TRANSFER SWITCH IN UL TYPE 3R ENCLOSURE

Model	Amperage	Rating	Height (H)		Width (W)		Depth (D)		Weight	
			in	mm	in	mm	in	mm	lb	kg
RA112S3	100	CSA & UL	24.2	615	20	507	7.4	189	46	21
RA112S3	100	UL	24.2	615	20	507	7.4	189	46	21
RA112N3	100	CSA & UL	24.4	622	17.2	437	6.9	175	31	14
RA1512S3	150	UL	24.2	615	20	507	7.4	189	46	21
RA212S3	200	CSA & UL	24.2	615	20	507	7.4	189	46	21
RA212S3	200	UL	24.2	615	20	507	7.4	189	46	21
RA212N3	200	CSA & UL	28.2	716	18.4	467	6.9	175	35	16
RA312S3	300	UL	48	1220	23.4	594	10.5	267	95.6	43.4
RA412S3	400	UL	48	1220	23.4	594	10.5	267	95.6	43.4
RA412N3	400	CSA & UL	36.9	938	25	634	10.8	274	64.5	29.3
RA412S3	400	CSA & UL	48	1220	23.4	594	10.5	267	95.6	43.4



All the above enclosures are aluminum.
Type 3R enclosure is secure front designed for greater protection from the elements and vandals
The weight is referred to product, not shipping.

MECHANICAL CABLE LUG CAPACITY

Model Name	Certification	Amp Rating (A)	Size						
			Cables per Pole	Load Terminal	Normal Terminal	Emergency Terminal	Number of Cables	Neutral Terminal	Ground Terminal
RA112S3	CSA & UL	100	1	#14 to 2/0 AWG	#4 AWG to 300 MCM*	#14 to 2/0 AWG	3	#14 to 2/0 AWG	#14 to 1/0 AWG
				0332-3084	N/A	0332-3084		0332-3084	0332-3647
RA112S3	UL	100	1	#14 to 2/0 AWG	#4 AWG to 300 MCM	#14 to 2/0 AWG	3	#14 to 2/0 AWG	#14 to 1/0 AWG
				0332-3084	N/A	0332-3084		0332-3084	0332-3647
RA112N3	CSA & UL	100	1	#14 to 2/0 AWG	#4 AWG to 300 MCM	#14 to 2/0 AWG	3	#14 to 2/0 AWG	#14 to 1/0 AWG
				0332-3084	N/A	0332-3084		0332-3084	0332-3647
RA1512S3	UL	150	1	#6 AWG to 300 MCM	#4 AWG to 300 MCM	#6 AWG to 300 MCM	3	#6 AWG to 300 MCM	#14 to 1/0 AWG
				0332-3038	N/A	0332-3038		0332-3038	0332-3647
RA212S3	CSA & UL	200	1	#6 AWG to 300 MCM	#4 AWG to 300 MCM	#6 AWG to 300 MCM	3	#6 AWG to 300 MCM	#14 to 1/0 AWG
				0332-3038	N/A	0332-3038		0332-3038	0332-3647
RA212S3	UL	200	1	#6 AWG to 300 MCM	#4 AWG to 300 MCM	#6 AWG to 300 MCM	3	#6 AWG to 300 MCM	#14 to 1/0 AWG
				0332-3038	N/A	0332-3038		0332-3038	0332-3647
RA212N3	CSA & UL	200	1	#6 AWG to 300 MCM	#6 AWG to 300 MCM	#6 AWG to 300 MCM	3	#6 AWG to 300 MCM	#14 to 1/0 AWG
				0332-3038	0332-3038	0332-3038		0332-3038	0332-3647
RA312S3	UL	300	2	3/0 AWG to 600 MCM	2/0 AWG to 250 MCM	3/0 AWG to 600 MCM	3	3/0 AWG to 600 MCM	#6 to 3/0 AWG
				A042W626	Schneider Electric: AL600LS52K3	A042W626		A042W626	0332-3492-01
RA412S3	UL	400	2	#4 AWG to 250 MCM	2/0 AWG to 250 MCM	#4 AWG to 250 MCM	6	#4 AWG to 250 MCM	#6 to 3/0 AWG
				A042W626	A049E283	A042W626		A042W626	0332-3492-01
RA412N3	CSA & UL	400	1	#4 AWG to 250 MCM	#4 AWG to 250 MCM	#4 AWG to 250 MCM	6	#4 AWG to 250 MCM	#6 to 3/0 AWG
				A042W626	A042W626	A042W626		A042W626	0332-3492-01
RA412S3	CSA & UL	400	2	#4 AWG to 250 MCM	2/0 AWG to 250 MCM	#4 AWG to 250 MCM	6	#4 AWG to 250 MCM	#6 to 3/0 AWG
				A042W626	A049E283	A042W626		A042W626	0332-3492-01

* This lug is integrated into the circuit breaker; there is no separate part number or drawing because it is supplier controlled

MODEL DRAWING INDEX

Model Name	Certification	Wiring Diagram	Outline Drawing	Interconnect	WCR Name Plate
RA112S3	CSA & UL	A064J759	A066S702	A064J761	A066S682
RA112S3	UL	A064J759	A064E337		A064F988
RA112N3	CSA & UL	A064J759	A064E337		A051A950
RA1512S3	UL	A064J759	A064E337		A066P700
RA212S3	CSA & UL	A064J759	A066S702		A066S683
RA212S3	UL	A064J759	A064E337		A064F990
RA212N3	CSA & UL	A064J759	A064E337		A051A954
RA312S3	UL	A066R269	A066P703	A066R268	A066P710
RA412S3	UL	A066R269	A049Z141		A067C267
RA412N3	CSA & UL	A066R269	A049Z141		A050K433
RA412S3	CSA & UL	A066R269	A066S929		A066W341

SUBMITTAL DETAILS

Model Name	Certification	Part Number	UPC Code	Service Entrance	Application	Amperage (A)	Voltage Rating (Vac)	Poles	Frequency (Hz)	Phase	Enclosure
RA112S3	CSA & UL	A067J404	690781005846	Yes	U-G	100	240	2	60	1	3R
RA112S3	UL	A064G545	690781005488	Yes		100					
RA112N3	CSA & UL	A064G345	690781005464	No		100					
RA1512S3	UL	A066V485	690781005853	Yes		150					
RA212S3	CSA & UL	A067J405	690781005860	Yes		200					
RA212S3	UL	A064G549	690781005495	Yes		200					
RA212N3	CSA & UL	A064G376	690781005471	No		200					
RA312S3	UL	A066V486	690781005877	Yes		300					
RA412S3	UL	A050W853	690781005457	Yes		400					
RA412N3	CSA & UL	A050W633	690781005440	No		400					
RA412S3	CSA & UL	A066W927	690781005884	Yes		400					

CUMMINS GENERATOR SET MODELS USING RA TRANSFER SWITCHES

NG/LPV		Diesel
RS13A, RS17A, RS20A, RS20AC		C20 D6
RS13AE, RS17AE, RS20AE, RS20ACE		C30 D6
RS25	RS60	C50 D6
RS30	RS80	C80D6C
RS36	RS100	C100D6C
RS40	RS125	
RS50	RS150	

CODES AND STANDARDS

	These switches are UL 1008 Listed with UL Type Rated cabinets and UL Listed CU-AL terminals: RA112S3 UL RA112N3 CSA & UL RA1512S3 UL RA212S3 UL RA212N3 CSA & UL RA312S3 UL RA412S3 UL RA412N3 CSA & UL		All switches comply with NFPA 70.
	These switches are CSA C22.5 No.178.1 certified: RA112S3 CSA & UL RA112N3 CSA & UL RA212S3 CSA & UL RA212N3 CSA & UL RA412N3 CSA & UL RA412S3 CSA & UL		All switches comply with NEMA ICS 10.

Note: This product is not intended to be used in applications where the primary energy power source is critical to life or safety

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