

# SEREIS RATED CIRCUIT BREAKER PROTECTION GUIDE

## SERIES RATED BREAKER COMBINATIONS UL AND NEC REQUIREMENTS

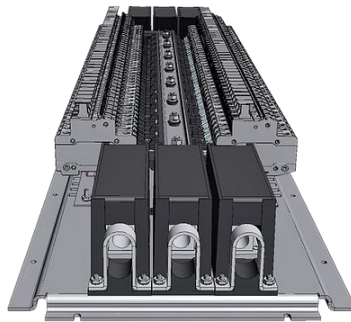
The JANUS cULus panelboard is compatible with most molded case breakers, miniature circuit breakers, and fused switches. The open architecture of the JANUS panelboard allows for breaker combinations that are series rated.

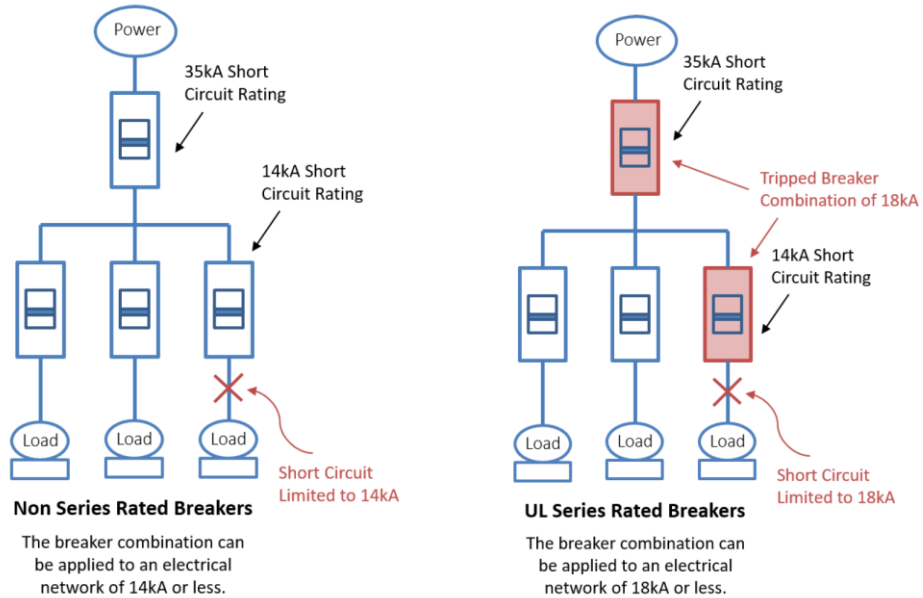
The National Electrical Code (NEC) defines series rating combinations for circuit breakers that work together to limit fault currents.

### NEC in Article 110.22 and 240.86:

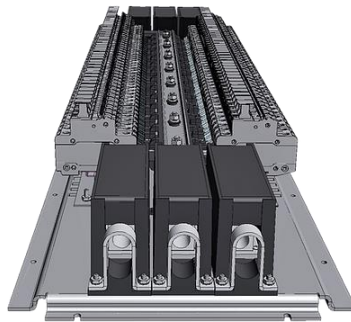
*"A short-circuit interrupting rating assigned to a combination of two or more overcurrent protective devices which are connected in series and in which the rating of the downstream device(s) in the combination is less than the series rating."*

A series rated breaker combination is one where the branch circuit or "downstream" breaker experiences a short circuit higher than its "stand alone" withstand kA rating. The branch breaker relies on the "upstream" breaker to open and contribute to limiting the overall available short circuit.





A series rated breaker combination is one where a branch circuit or “downstream” breaker experiences a high-level short circuit. The branch breaker opens but does not isolate the fault. The “upstream” breaker opens with the “downstream” breaker and both work together to limit the overall short circuit.



# SERIES RATED PROTECTION



All DIN mount cable-in / cable-out breakers have a default 10kA “stand-alone” rating. Series combination ratings above 10kA are accomplished by combining a 10kA breaker with an upstream breaker with a higher kA rating. The two breaker’s combination rating is higher than 10kA.

## EATON / CUTLER - HAMMER SERIES RATED BREAKERS

### FAZ-NA / QC

Main	Amps / Volts	kA	Branch	Range
EGC	225A - 277/480V	65kA	FAZ-NA	16-20A
FD/FDE	225A - 120/240V	65kA	QC	15-100A
HFD	225A - 120/240V	65kA	QC	15-70A, 125A
FD	225A - 120/240V	65kA	QC	15-125A
BJH	225A - 120/240V	22kA	QC	15-100A
DA	225A - 120/240V	22kA	QC	15-125A
JA/KA	225A - 120/240V	22kA	QC	15-100A
JB	225A - 120/240V	22kA	QC	15-100A
KB	225A - 120/240V	22kA	QC	15-100A

## ABB SERIES RATED BREAKERS

### S200U / S200UP

Main	Amps / Volts	kA	Branch	Range
T3N	225A - 120/240V	35kA	S200U	1-50A
T3N	225A - 277/480V	14kA	S200UP	1-25A
T4N	225A - 120/240V	35kA	S200U	1-50A

## GE SERIES RATED BREAKERS

### FAZ-NA / QC

Main	Amps / Volts	kA	Branch	Range
THHQL	125A - 120/240V	22kA	THQC	15-100A

## SIEMENS SERIES RATED BREAKERS

### FAZ-NA / QC

Main	Amps / Volts	kA	Branch	Range
EQ978#	125-225A - 120/240V	65kA	BQ	15-125A
EQ958#	125-225A - 120/240V	65kA	BQ	15-125A
HQPP/MPP-MT	125-225A - 120/240V	65kA	BQ	15-125A
HQS	100-225A - 120/240V	65kA	BQ	15-125A
HQJ2	100-225A - 120/240V	65kA	BQ	15-125A
QJ2H/MQL	60-225A - 120/240V	42kA	BQ	15-125A
QSHH	100-225A - 120/240V	42kA	BQ	15-125A
F6/FJ6	70-225A - 120/240V	22kA	BQ	15-125A
QJH2/MQH	60-225A - 120/240V	22kA	BQ	15-125A
EQ949#	125-225A - 120/240V	22kA	BQ	15-125A
SPPH	125-225A - 120/240V	22kA	BQ	15-125A
QPPH/MPP-HT	125-225A - 120/240V	22kA	BQ	15-125A
EQ869#/M2	100-225A - 120/240V	22kA	BQ	15-125A
EQ998#/MEQ	100-225A - 120/240V	22kA	BQ	15-125A
QSH	100-225A - 120/240V	22kA	BQ	15-125A

## STAND ALONE BREAKER RATINGS

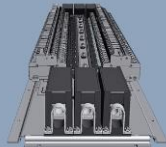
### THESE BREAKERS BY THEMSELVES HAVE NO SERIES RATINGS

Manufacturer	Breaker Series	Amps	Interrupting Rating
ABB	S200U	All	10kA
ABB	S200UP	All	10kA
ABB	S200M	All	10kA
Altech	L	All	10kA
Altech	UL	All	10kA
Carlo Gavazzi	GMB	All	10kA
Carlo Gavazzi	GMBH	All	10kA
CBI	QL	All	10kA
Eaton	FAZ	All	10kA
Eaton	QC/QCD/QCR/QCGF	All	10kA
ETA	4230	All	10kA
GE	TQC/THQC/THHC	All	10kA
GE / AEG	EP100ULH	All	10kA
Nader	NDB2T	All	10kA
Noark	B1H	All	10kA
Noark	B1N	All	10kA
Rockwell	MCA/MCB/MCEA/MCGA	All	10kA
Rockwell	1489M	All	10kA
Schneider	Multi 9 C120	All	10kA
Schneider	Multi 9 C60	All	10kA
Siemens	5SJ4 HG41	All	10kA
Siemens	5SJ4 HG42	All	10kA
Siemens	BQ/BQH/HQB	All	10kA
Sprecher + Schuh	L9	All	10kA
SqD	QOU	All	10kA
Techna	Jtec	All	10kA
WEG	UMBW	All	10kA
Weidmuller	BR	All	10kA



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