

- See page 33 for product description.
- For unit sizing, select unit rating based on 125% of actual load amperes.

NOTE: In order to address the heating effects from loads containing a high degree of harmonic content, it may be necessary to oversize the field conductors (especially neutrals), use k-factor lighting transformers and oversize the lighting contactor units (increase by 50%).

Rating (Amperes) ^[1]	Transformer Primary Switching kVA ^[2]										Space Factor	Catalog Number ^[3] Wiring Type B—Class I		Delivery Program
	208V		240V		380V–415V		480V		600V			NEMA Type 1 and Type 1 w/ gasket	NEMA Type 12	
	1Ø	3Ø	1Ø	3Ø	1Ø	3Ø	1Ø	3Ø	1Ø	3Ø				
30 ^[4]	1.2	3.6	2.4	4.3	2.8	7.1	4.9	8.5	6.2	11	0.5	2103LB-ZK_ _ _	2103LB-ZJ_ _ _	SC
30	1.2	3.6	2.4	4.3	2.8	7.1	4.9	8.5	6.2	11	1.0	2103LB-BK_ _ _	2103LB-BJ_ _ _	
DUAL 30 ^[5]	1.2	3.6	2.4	4.3	2.8	7.1	4.9	8.5	6.2	11	1.5	2103LB-BK_ _ _ ^[6]	2103LB-BJ_ _ _ ^[6]	
60	2.1	6.3	4.1	7.2	6.8	11.8	8.3	14	10	18	1.0	2103LB-CK_ _ _	2103LB-CJ_ _ _	
DUAL 60 ^[5]	2.1	6.3	4.1	7.2	6.8	11.8	8.3	14	10	18	1.5	2103LB-CK_ _ _ ^[6]	2103LB-CJ_ _ _ ^[6]	
100	4.1	12	8.1	14	13.3	23.3	16	28	20	35	1.5	2103LB-DK_ _ _	2103LB-DJ_ _ _	
200	6.8	20	14	23	22.5	39	27	47	34	59	2.5	2103LB-EK_ _ _	2103LB-EJ_ _ _	PE
300	14	41	27	47	45	78.3	54	94	68	117	3.5	2103LB-FK_ _ _	2103LB-FJ_ _ _	

- [1] Ampere ratings apply to non-motor loads such as fluorescent ballasts, mercury vapor lamps and resistive heating. Tungsten lamp current ratings are limited to applications 480 volts line-to-line (277 volts line-to-neutral) maximum.
- [2] Ratings are based on the contactor being used to switch transformers having an inrush of not more than 20 times their rated full load current, regardless of the nature of the secondary load. Ratings do not apply to transformers used in resistance welder service.
- [3] The catalog numbers listed are not complete:
- Select control voltage type from table on page 217 (e.g., 2103LB-BKBD).
 - Select trip current from table on page 221 (e.g., 2103LB-BKBD-30).
 - Select circuit breaker from Circuit Breaker Type table on page 222 (e.g., 2103LB-BKBD-30CT).
- [4] Separate or transformer control only, except 208V (where separate control only). These units have horizontal handles, up to four (4) Bulletin 800F pilot devices and one (1) 10-pt. pull-apart control terminal block with #16 AWG control wire only. One (1) 3-pole power terminal block is supplied as standard.
- [5] Dual mounted unit supplied without power terminal blocks.
- [6] To dual mount combination lighting contactors in one unit:
- Select two trip current numbers from table on page 221 (e.g., 2103LB-BKBD-3032).
 - Then select circuit breaker from Circuit Breaker Type table on page 222 (e.g., 2103LB-BKBD-3032CT).

Configuration Tables

Control Voltage Type for Bulletins 2102L, 2103L, 2106, 2107, 2112, 2113, 2122, 2123, 2126, 2127, 2172 and 2173

Control Voltage Code							Control Type
208V	240V	380V	400V	415V	480V	600V	
H	A	—	—	—	B	C	120V, 60Hz, Transformer Control ^[1]
HD	AD	—	—	—	BD	CD	120V, 60Hz, Separate Control ^[2]
—	—	N	—	I	—	—	110V, 50Hz, Transformer Control ^{[1],[3]}
—	—	NS	—	IS	—	—	110V, 50Hz, Separate Control ^[2]
—	—	—	KN	—	—	—	115V, 50Hz, Transformer Control ^{[1],[3]}
—	—	—	KNS	—	—	—	115V, 50Hz, Separate Control ^[2]
—	—	NP	—	—	—	—	220V, 50Hz, Transformer Control ^{[1],[3]}
—	—	NP	—	—	—	—	220V, 50Hz, Separate Control ^[2]
—	—	—	KNP	—	—	—	230V, 50Hz, Transformer Control ^{[1],[3]}
—	—	—	KNP	—	—	—	230V, 50Hz, Separate Control ^[2]
—	—	—	—	IT	—	—	240V, 50Hz, Transformer Control ^{[1],[3]}
—	—	—	—	IT	—	—	240V, 50Hz, Separate Control ^[2]
—	—	NLP	—	—	—	—	220V, 50Hz, Line to Neutral Control, (Separate Control) ^{[4],[5]}
—	—	—	KNLP	—	—	—	230V, 50Hz, Line to Neutral Control, (Separate Control) ^{[4],[5]}
—	—	—	—	ILT	—	—	240V, 50Hz, Line to Neutral Control, (Separate Control) ^{[4],[5]}
H	A	—	—	—	B	C	Common Control ^[6]

[1] Select a control circuit transformer. See Options section.

[2] Control circuit fusing (option 21) and/or disconnect interlock (option 98) may be required to comply with NEC. See Options section.

[3] Incorporates primary taps for future conversion to new global IEC voltage standards (e.g., 400V/115V/230V). Allows conversion without the need to replace transformers or coils.

[4] Requires horizontal neutral bus and vertical neutral bus in 9" vertical wireway. Refer to Section Modifications to select.

[5] Select control circuit fusing (see option 21 in Options section).

[6] Select control circuit fusing (see option 22 in Options section). Required to comply with NEC.

Control Voltage Type for Space Saving NEMA-Rated Bulletins 2106, 2107, 2112 and 2113

Control Voltage Code		Control Type
480V	600V	
B	C	120V, 60Hz, Transformer Control ^[1]
BD	CD	120V, 60Hz, Separate Control ^[2]

[1] Select a control circuit transformer. See Options section.

[2] Control circuit fusing (option 21) and/or disconnect interlock (option 98) may be required to comply with NEC. See Options section.

Primary Voltage Code for Bulletins 2195, 2196, 2196Z, 2197 and 2197Z

240V	380V	400V	415V	480V	600V
A	N	KN	I	B	C

Control Voltage Type for Bulletins 2154 and 2155

Control Voltage Code								Control Type
220V ^[1]	230V ^[1]	240V	380V ^[1]	400V ^[1]	415V ^[1]	480V	600V	
P	—	—	N	—	I	—	—	110V, 50Hz Transformer Control
—	P	—	—	KN	—	—	—	115V, 50Hz Transformer Control
—	—	A	—	—	—	B	C	120V, 60Hz Transformer Control

[1] Units at these voltages are not UL listed, cUL listed or CSA certified.

Fuse Clip Designator for Bulletin 2196 and 2196Z ^[1] ^[2]

Fuse Clip Size	Fuse Clip Type	Fuse Clip Designator	Fuse Manufacturer Code ^[3]	Fuse Clip Class
30	J	24J	Select G or B	J
	R	24R	G=Ferraz Shawmut	R
	H ^[4]	24	B=Bussmann	H
60	J	25J	Select G or B	J
	R	25R	G=Ferraz Shawmut	R
	H ^[4]	25	B=Bussmann	H
100	J	26J	Select G or B	J
	R	26R	G=Ferraz Shawmut	R
	H ^[4]	26	B=Bussmann	H
200	J	27J	Select G or B	J
	R	27R	G=Ferraz Shawmut	R
	H ^[4]	27	B=Bussmann	H

- [1] Only 24J option available for 2196Z units.
- [2] See Appendix for short circuit withstand ratings. For fuse rating based upon kVA of transformer, see publication 2100-TD003x-EN-P. Selecting Bussmann or Littelfuse power fuse changes delivery program to PE. Power fuses are not available for Type H fuse clip. Power fuses are available on 480V and 600V only.
- [3] The Ferraz Shawmut Class J fuse incorporates blown fuse indication for fuses above 8A.
- [4] Power fuse option not available for Class H fuse clip.

Trip Current for Bulletin 2103L

Contactor Rating (Amperes)	Number	Trip Current (Amperes)
30 or 60	30	15
	31	20
30, 60, or 100	32	30
	34	40
60 or 100	35	50
	36	60
	37	70
100, 200, or 300	38 ^[1]	80
	39	90
	40	100
	41	125
200 or 300	42	150
	43	175
	44	200
	45	225
300	46	250
	47	300
	48	300

- [1] Available only on 100A contactors.

Trip Current for Bulletin 2197 and 2197Z

Number	Trip Current (Amperes)	Number	Trip Current (Amperes)
30	15	37	70
31	20	40	100
32	30	41	125
34	40	42	150
35	50	44	200
36	60	—	—

Configuration Tables

Circuit Breaker Type—Inverse Time (Thermal Magnetic) Circuit Breaker Options for Bulletin 2103L^{*,†}

Rating (Amperes)	Standard Interrupting Capacity		Standard Interrupting Capacity with Current Limiter ^[1]		Medium Interrupting Capacity		High Interrupting Capacity	
	Suffix	Frame	Suffix	Frame	Suffix	Frame	Suffix	Frame
30 (0.5 SF)	CT	FDB	—	—	CB	FD	CM	HFD
30-60	CT	FDB	CD	FDB-LFD	CB	FD	CM	HFD
100	CT	FDB	CD	FDB-LFD ^[2]	CB	FD	CM	HFD
200	CT	JD	—	—	—	—	CM	HJD
300	CT	KD	—	—	—	—	CM	HKD

[1] Circuit breakers with current limiters are not available on dual mounted units.

[2] Add 0.5 space factor.

Circuit Breaker Type for Bulletin 2113 Vacuum^{*}

Rating (Amperes)	Instantaneous Circuit Breakers ^[1]		Inverse Time (Thermal Magnetic or Solid State) Circuit Breakers ^[2]			
	High Interrupting Capacity		Standard Interrupting Capacity		High Interrupting Capacity	
	Suffix	Frame	Suffix	Frame	Suffix	Frame
200	CA	HMCP	CT ^[3]	JD	CM ^[3]	HJD
		HMCP250	CT	JD	CM	HJD
350	CA	HMCP250	CT	JD	CM	HJD
		HMCP400	CT	KD	CM	HKD
450	CA	HMCP600	CT	LD	CM	HLD
		HMCP600	CT	LD	CM	HLD

[1] Refer to publication 2100-TD001x-EN-P, *CENTERLINE Motor Control Centers HMCP Circuit Breakers*, for more information.

[2] Refer to publication 2100-TD002x-EN-P, *CENTERLINE Motor Control Centers Thermal Magnetic Circuit Breakers*, for more information.

[3] Add 0.5 space factor.

* Refer to Appendix for interrupting capacity and short circuit withstand rating.

† Refer to publication 2100-TD002x-EN-P, *CENTERLINE Motor Control Centers Thermal Magnetic Circuit Breakers*, for more information.