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Pushbutton Operated

Product Description

The B100 Manual Motor Starters can be used in single-phase applications rated 3 hp at 240V AC or 2 hp at 230V DC. The starter can also be rated for three-phase applications up to 10 hp at 600V AC.

There are two methods of operation for the B100 Manual Starter. It can be ordered with a toggle switch operator or a START/STOP pushbutton operator.

Application Description

The B100 family of Manual Motor Starters provides manual control, as well as overload protection, to both single-phase and three-phase motors. The starter protects motors up to 38.9 amp single-phase and 26.8 amp three-phase with the appropriate heater selection.

Features

- Includes three-pole bimetallic overload relay
- Straight-through wiring
- Field mounted auxiliary contacts
- Available in NEMA 1, 4, 7, 9 and 12 enclosures with toggle operation (NEMA 1 enclosure for pushbutton operator)
- Standard with a lockout device to lock motor in the OFF position

Instructional Leaflet

IL14890

Standards and Certifications

- UL File No. E19222, Category NLRV
- CSA File No. LR39402-6, Class 3211-05 (Open Starters)
- CSA File No. LR54517-1, Class 3211-05 (Closed Starters)



Technical Data

Table 38-5. Specifications

NEMA Size	Maximum hp for AC Ratings ①			Maximum hp for DC Ratings	
	120V AC	208 – 240V AC	480 – 600V AC	115V DC	230V DC
2-Pole, Single-Phase					
M-0	1	2	—	1	1-1/2
M-1	2	3	—	1-1/2	2
3-Pole, Three-Phase					
M-0	2	3	5	—	—
M-1	3	7-1/2	10	—	—

① Ratings up to 3 hp, 3-phase are suitable for group fusing.

Options

Table 38-6. Factory Modifications

Description	Catalog Number ② Suffix	Adder U.S. \$
Pushbutton operator (open and NEMA 1 only)	A	
Without lockoff (open only)	X	

② Add Suffix letter to starter Catalog Number
Ex: B100MOCA.

Accessories

Table 38-7. Accessories

Description	Catalog Number	Price U.S. \$
Field Mounting Kits		
1NO elect. auxiliary	B1A	
1NC elect. auxiliary	B1B	
Red pilot light 120/60 (NEMA 1 Enc. Only)	LK-21	
Red pilot light 208-240/6 (NEMA 1 Enc. Only)	LK-22	
Red pilot light 480-600/60 (NEMA 1 Enc. Only)	LK-26	
For Type 4 and 12 Enclosures Only		
Red pilot light 120V	LK-41	
Red pilot light 240V	LK-42	

Discount Symbol **1CD-1C**

Dimensions

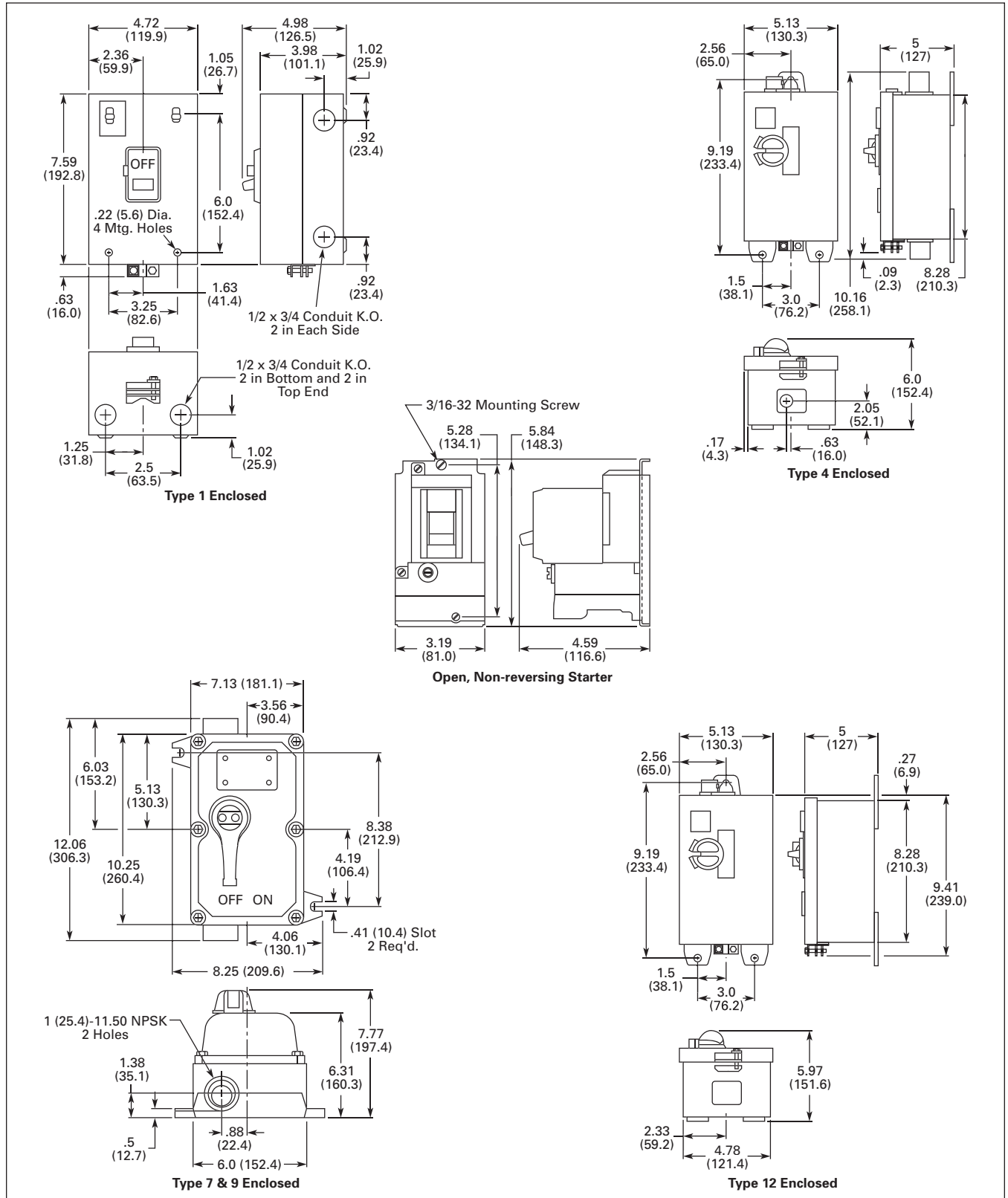


Figure 38-4. Approximate Dimensions in Inches (mm)

Type B100, Single- and Three-Phase Starters

Product Selection

When Ordering Specify

- Catalog Number of Starter with application modifications
- Heater Pack selection — A three-phase starter requires three heaters, and a single-phase starter requires two heaters
- Any required Accessories



Toggle Operated



Type 1 Enclosure

Table 38-8. Product Selection — Toggle and Pushbutton Operated Starters

NEMA Size	Open Type Toggle Handle		Enclosed							
	Catalog Number ③	Price U.S. \$	NEMA 1 General Purpose		NEMA 4 Watertight, Stainless Steel ①		NEMA 7D, 9E, 9F & 9G for Hazardous Locations ②④		NEMA 12 Dust-Tight	
			Catalog Number ③	Price U.S. \$	Catalog Number ③	Price U.S. \$	Catalog Number ③	Price U.S. \$	Catalog Number ③	Price U.S. \$
Type B100 Non-reversing 2-Pole (For Single-Phase Motors and DC)										
M-0	B100M0B		B100S0B		B100W0B		B100U0B		B100J0B	
M-1	B100M1B		B100S1B		B100W1B		B100U1B		B100J1B	
Type B100 Non-reversing 3-Pole (For Polyphase Motors) ④										
M-0	B100M0C		B100S0C		B100W0C		B100U0C		B100J0C	
M-1	B100M1C		B100S1C		B100W1C		B100U1C		B100J1C	

① One 1-inch chrome hub supplied on each end.

② NEMA 7D = NEMA 7, Class I, Group D. NEMA 9E, 9F and 9G = NEMA 9, Class II, Groups E, F and G.

③ Starter does not include heaters. Select Catalog Numbers of heaters from **Table 38-9**.

④ Tapped for 1-inch conduit on each end.

Table 38-9. Heater Selection

Motor Full Load Current	Max. Fuse Amps	Catalog Number	Price U.S. \$	Motor Full Load Current	Max. Fuse Amps	Catalog Number	Price U.S. \$
Single-Phase Enclosed Starters ①				Three-Phase Enclosed Starters ②			
.28 – .29	1	FH03		.25 – .26	1	FH03	
.30 – .33	1	FH04		.27 – .29	1	FH04	
.34 – .36	1	FH05		.30 – .32	1	FH05	
.37 – .40	1	FH06		.33 – .35	1	FH06	
.41 – .45	1	FH07		.36 – .39	1	FH07	
.46 – .50	1	FH08		.40 – .44	1	FH08	
.51 – .56	1	FH09		.45 – .49	1	FH09	
.57 – .63	2	FH10		.50 – .55	1	FH10	
.64 – .70	2	FH11		.56 – .61	2	FH11	
.71 – .78	2	FH12		.62 – .68	2	FH12	
.79 – .86	2	FH13		.69 – .75	2	FH13	
.87 – .95	3	FH14		.78 – .83	2	FH14	
.96 – 1.04	3	FH15		.84 – .91	3	FH15	
1.05 – 1.14	3	FH16		.92 – 1.00	3	FH16	
1.15 – 1.25	4	FH17		1.01 – 1.10	3	FH17	
1.26 – 1.39	4	FH18		1.11 – 1.22	4	FH18	
1.40 – 1.54	5	FH19		1.23 – 1.35	4	FH19	
1.55 – 1.71	5	FH20		1.36 – 1.50	5	FH20	
1.72 – 1.89	6	FH21		1.51 – 1.66	5	FH21	
1.90 – 2.10	7	FH22		1.67 – 1.84	6	FH22	
2.11 – 2.32	8	FH23		1.85 – 2.03	7	FH23	
2.33 – 2.54	8	FH24		2.04 – 2.23	7	FH24	
2.55 – 2.79	9	FH25		2.24 – 2.45	8	FH25	
2.80 – 3.07	10	FH26		2.46 – 2.69	9	FH26	
3.08 – 3.36	10	FH27		2.70 – 2.95	10	FH27	
3.37 – 3.68	10	FH28		2.96 – 3.23	10	FH28	
3.69 – 4.03	10	FH29		3.24 – 3.53	10	FH29	
4.04 – 4.40	15	FH30		3.54 – 3.85	10	FH30	
4.41 – 4.81	15	FH31		3.86 – 4.22	10	FH31	
4.82 – 5.26	15	FH32		4.23 – 4.61	15	FH32	
5.27 – 5.74	15	FH33		4.62 – 5.03	15	FH33	
5.75 – 6.26	20	FH34		5.04 – 5.49	15	FH34	
6.27 – 6.83	20	FH35		5.50 – 5.99	20	FH35	
6.84 – 7.45	25	FH36		6.00 – 6.53	20	FH36	
7.46 – 8.11	25	FH37		6.54 – 7.11	25	FH37	
8.12 – 8.81	30	FH38		7.12 – 7.73	25	FH38	
8.82 – 9.58	30	FH39		7.74 – 8.40	25	FH39	
9.59 – 10.40	35	FH40		8.41 – 9.12	30	FH40	
10.41 – 11.30	35	FH41		9.13 – 9.89	35	FH41	
11.40 – 12.20	40	FH42		9.90 – 10.70	35	FH42	
12.30 – 13.50	45	FH43		10.80 – 11.80	40	FH43	
13.60 – 14.90	50	FH44		11.90 – 13.00	45	FH44	
15.00 – 16.00	50	FH45		13.10 – 14.00	50	FH45	
16.10 – 17.10	60	FH46		14.10 – 15.00	50	FH46	
17.20 – 18.30	60	FH47		15.10 – 16.10	50	FH47	
18.40 – 19.70	70	FH48		16.20 – 17.30	60	FH48	
19.80 – 21.20	70	FH49		17.40 – 18.60	60	FH49	
21.30 – 22.80	80	FH50		18.70 – 20.00	70	FH50	
22.90 – 24.50	88	FH51		20.10 – 21.50	70	FH51	
24.60 – 26.40	90	FH52		21.60 – 23.20	80	FH52	
26.50 – 28.50	90	FH53		23.30 – 25.00	80	FH53	
28.60 – 30.80	100	FH54		25.10 – 26.80	90	FH54	
30.90 – 33.30	110	FH55					
33.40 – 36.00	125	FH56					
36.10 – 38.90	125	FH57					

① Single-Phase Starters require two overload heaters.
 ② Three-Phase Starters require three overload heaters.

Note: FH Series heaters are for Type B100 manual motor starters. Heater element selection is based on motor nameplate's listed full load amperes. Trip rating of this series of elements is 125% of minimum motor full load amperes listed for the element.

When motor and overload relay are in the same ambient and the service factor of the motor is 1.15 to 1.25, select heaters from the heater selection table. If the service factor is 1.0 or less (including zero), or a maximum of 115% protection is desired, select a heater one size smaller than indicated for the amperage range required.