



EBMS Magnetic Line Starters and Enclosures



Cl. I, Div. 1 & 2, Groups B, C, D 2C Cl.
II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA 3, 3R, 4 \ddagger , 4X \ddagger , 7BCD, 9EFG, 12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations
Watertight

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Applications:

Spectrum™ EBM hinged cover motor control enclosures are used:

- For general motor control – indoors or outdoors – in damp, wet, dirty, dusty hazardous locations, without the need for a protective shelter.
- In areas where frequent washdowns are necessary or where heavy rain or water spray is prevalent.
- For across-the-line starting, stopping, speed changing and reversing of polyphase AC induction motors.
- To provide motor overload and undervoltage protection.
- On switchracks or other assemblies where it's desired that motor control be centrally located.

Features:

- Rugged, corrosion resistant, cast copper-free aluminum construction (less than 0.4 of 1%).
- Motor starter operating handle located through the right side wall of the body permits visual confirmation of correct component assembly and operation.
- Total compliance to the wiring end room requirements of the National Electrical Code® and Canadian Electrical Code.
- Semi-clamshell enclosure design, with an external flanged ground joint between body and cover makes interior components more accessible.
- Minimum enclosure-to-enclosure spacing with little interference between the opened cover and an adjacent enclosure.
- Copper-free aluminum hinges allow the cover to swing well out of the way.
- Stainless steel, quick release, captive, hex head cover bolts. Stainless steel springs provide clear indication cover bolts are fully retracted from body.
- Versatile, internal operating mechanisms allow for field adjustment to accommodate popular manufacturers' starters.
- Simple, straightforward installation of starter on pre-drilled mounting plate within enclosure. Mounting plate also field removable.
- Neoprene cover gasket permanently attached to the cover seals out moisture.
- Bodies have top and bottom drilled and tapped entrances for power conduits plus one at the bottom for control conduit. Removable reducers are supplied as standard, to accommodate smaller size conduits. All conduit entrances are plugged.
- Tap-on mounting feet.
- Optional EMPS control devices may be added to enclosure cover.
- Steel bracket for lifting larger enclosures during installation supplied as standard.



Spectrum EBM motor control enclosures accommodate popular makes of starters,

Certifications and Compliances:

- NEC/CEC
Class I, Division 1 & 2, Groups B, C, D
Class II, Division 1, Groups E, F, G
Class II, Division 2, Groups F, G
Class III
- UL Standards: UL1203
- NEMA: 3, 3R, 4‡, 4X††, 7BCD, 9EFG, 12
- CSA Standard: C22.2 No. 30

Standard Materials:

- Body and cover – copper-free aluminum
- Operating handle – copper-free aluminum
- Operating shaft and bushing – stainless steel
- Interior parts – sheet steel, electrogalvanized
- Cover bolts, washers and retractile springs – stainless steel

Electrical Rating Range:

- Motor starters – NEMA/EEMAC sizes 0–5

‡Enclosure not suitable for NEMA 4 or 4X with cover mounted operators.

††With S752 or S753.

National Electrical Code is a Registered Trademark of the National Fire Protection Association

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Options:

The following options are available from the factory by adding suffix to catalog number. Suffixes are added alphanumerically. Catalog Number System Example

EBMS1FB-**1**-W6413-**2**

- 1** Options in this position are additions to the enclosures and should be listed alphanumerically.
- 2** Options in this position are modifications to the motor starter and should be listed alphanumerically.

DESCRIPTION	POSITION IN CAT.#	SUFFIX
Less Overload Relays (lighting contactor)	1	CL
Less Overload Relays (motor contactor)	1	CM
Control Circuit Transformer, 100VA for NEMA/EEMAC sizes 0–2, 600/480/240–120, 50 / 60 Hertz, with provision for fusing both primary leads and one secondary lead (fuses not included)	1	FTPS100
Control Circuit Transformer, 200VA for NEMA/EEMAC size 3, 600/480/240–120, 50 / 60 Hertz, with provision for fusing both primary leads and one secondary lead (fuses not included)	1	FTPS200
Control Circuit Transformer, 300VA for NEMA/EEMAC size 4, 5 600/480/240–120, 50 / 60 Hertz, with provision for fusing both primary leads and one secondary lead (fuses not included)	1	FTPS300
Pilot Light, 120VAC, Red Jewel, w/blank indicating plate	1	J1 3
Pilot Light, 120VAC, Green Jewel, w/blank indicating plate	1	J3 3
Less Heaters in Starter Overload Relay	2	0
SStart-Stop Pushbuttons (requires 2 spaces)	1	PB23 3 ‡
On-Off Selector Switch	1	RR23 3 ‡
Hand-Off-Auto Selector Switch	1	RR3 3 ‡
Space Heater, 120 Volt, 25 Watts	1	R11
Space Heater, 240 Volt, 25 Watts	1	R22
Space Heater, 480 Volt, 25 Watts	1	R44
SAutomatic Reset Overload Relay	1	S1
Std. Drain, Class I, B, C&D; Class II, EF&G; Class III	1	S756‡
Std. Breather & Drain, Class I, B, C&D; Class II, EF&G; Class III	1	S756V‡
External Epoxy Finish	1	S752
Internal and External Epoxy Finish	1	S753
Additional control contacts, N.O. or N.C. – for single speed, non-reversing starters only (number limited by design of starter. Details on specific makes and sizes on request.)	2	S781
Aux. Contacts on starter 1 N.O. & 1 N.C	2	S782
Aux. Contacts on starter 2 N.O. & 2 C	2	S783
Aux. Contacts on starter 3 N.O. & 3 N.C	1	S786
12 Point Term. Block – 30 Amp, 300V	1	S787*
General Purpose Control Relay, 4 Pole N.O., contacts rated 10A @ 600V, coil 120VAC, 50–60 Hz		

‡Enclosure not suitable for NEMA 4 or 4X with cover mounted operators.

††With S752 or S753.

1 3 When specifying non-standard markings on any one of the following options with Spectrum™ EBM Motor Controls (J1, J3, PB23, RR2, RR3) it is necessary to order DSL Legend Plates for identification and marking of the device(s) being used.

* Use of this option with NEMA/EEMAC Size 0 or 1 starters necessitates a larger enclosure. Use "B" size enclosures

Example:

	Enclosure	Enclosure for
Without	Cat. #	S787
Starter	EBMSFA	EBMSFB

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Single-Speed Non-Reversing 3-Pole 60 hertz, 600 VAC Maximum

Ordering Information:

- To order an enclosure complete with motor starter, insert the manufacturer's symbol in the designated position (see ‡) of the catalog number. Symbols are shown in the footnotes.
- Also specify HP, voltage, frequency, RPM, type and full load ampere rating of motor – or specify ampere rating of heaters.
- Enclosures without starters may be ordered. Select from the listings below.



EBMS Series starter enclosures are available with magnetic line starters. NEMA sizes 0–5.

EBMS SERIES ENCLOSURES FOR MAGNETIC LINE STARTERS SINGLE SPEED NON-REVERSING				
MOTOR STARTER			ENCLOSURE	
MAX. HP POLYPHASE	VOLTS	NEMA SIZE	WITHOUT STARTER CAT. #	WITH STARTER CAT. # §
2	120	0	EBMSFA	EBMS0FA ①613
3	120	1	EBMSFA	EBMS1FA ①613
3	240	0	EBMSFA	EBMS0FA ①623
5	480	0	EBMSFA	EBMS0FA ①643
5	600	0	EBMSFA	EBMS0FA ①663
7	120	2	EBMSFB	EBMS2FB ①613
7	240	1	EBMSFA	EBMS1FA ①623
10	480	1	EBMSFA	EBMS1FA ①643
10	600	1	EBMSFA	EBMS1FA ①663
15	120	3	EBMSFH	EBMS3FH ①613
15	240	2	EBMSFB	EBMS2FB ①623
25	480	2	EBMSFB	EBMS2FB ①643
25	600	2	EBMSFB	EBMS2FB ①663
30	240	3	EBMSFH	EBMS3FH ①623
50	480	3	EBMSFH	EBMS3FH ①643
50	600	3	EBMSFH	EBMS3FH ①663
50	240	4	EBMSFH	EBMS4FH ①623
100	480	4	EBMSFH	EBMS4FH ①643
100	600	4	EBMSFH	EBMS4FH ①663
100	240	5	EBMSFL	EBMS5FL ①623
200	480	5	EBMSFL	EBMS5FL ①643
200	600	5	EBMSFL	EBMS5FL ①663

① MOTOR STARTERS:

MANUFACTURER	SYMBOL
Allen Bradley	AB
Square D	D
General Electric	G
Cutler-Hammer	W

‡Enclosure not suitable for NEMA 4 or 4X with cover mounted operators.

††With S752 or S753.

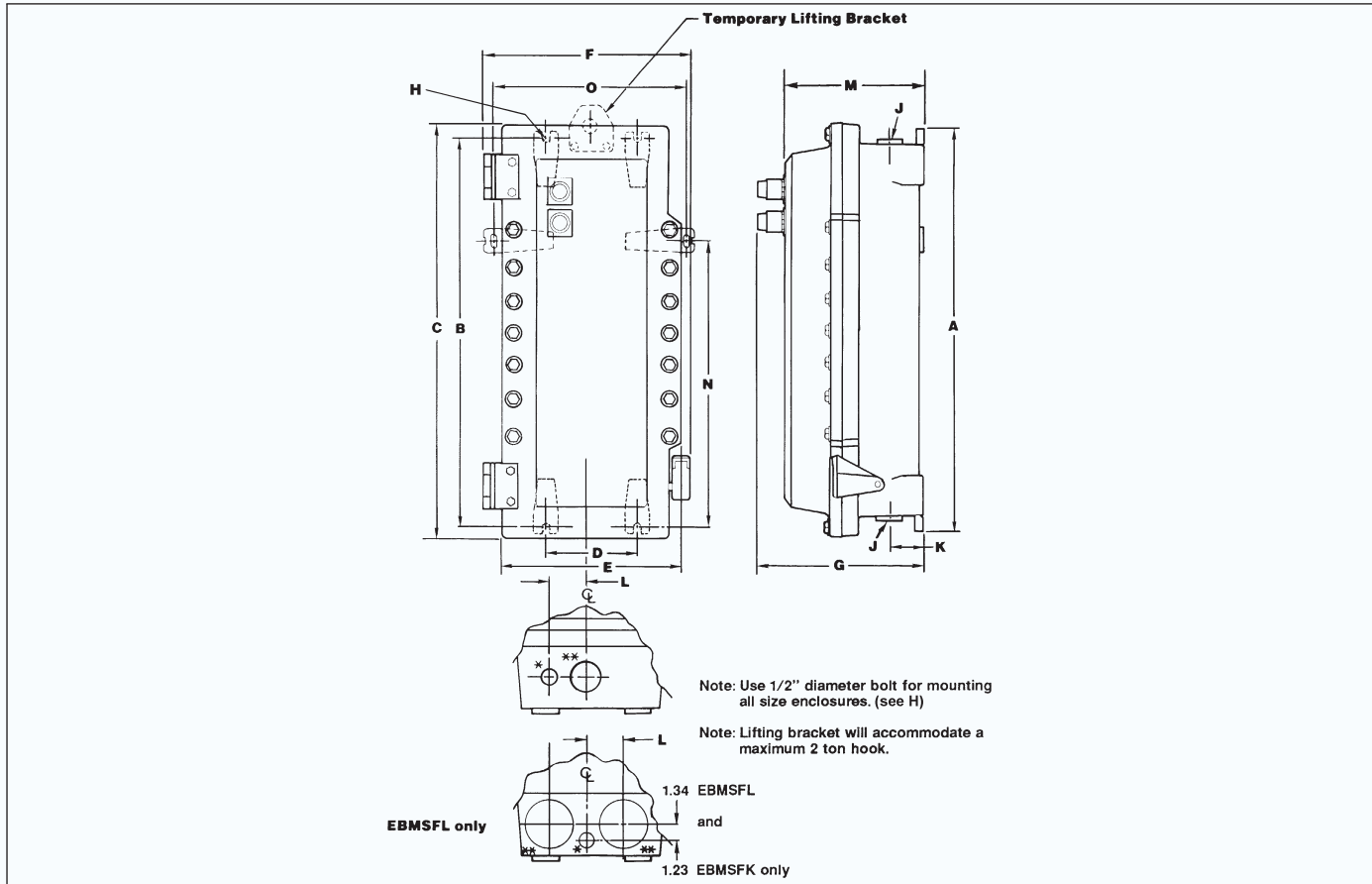
§ Motor starters are furnished with three heaters when heater ratings are fully specified..

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Dimensions (In Inches)



Dimensions are approximate, not for construction purposes.

ENCLOSURE ONLY CAT.#	ENCLOSURE SIZE SYMBOL	A	B	C	D	E	F	G	J**		K	L	M	N	O
									CONDUIT ENTRY SIZE D&T	TRADE W/RE					
Size 0,1 FVNR Starter§	EBMSFA A	18.25	17.25	19.00	6.00	12.63	14.38	12.13	2"	1.5"	3.25	3.13	10.25		
Size 2 FVNR Starter	EBMSFB B	25.75	24.75	26.50	6.00	12.63	14.38	12.13	2"	1.5"	3.25	3.13	10.25		
Size 3,4 FVNR Starter	EBMSFD† D	28.25	27.25	29.00	6.00	12.63	14.06	12.13	3"	2.5"	3.25	3.13	10.25		
	EBMSFH H	37.5	36.50	38.25	6.00	14.25	16.00	13.54	3"	2.5"	3.25	3.94	11.66		
Size 5 FVNR Starter	EBMSFK† K	43.12	41.50	42.25	12.00	17.25	19.88	11.00	(2) 3"	(2) 2.5"	3.25	3.00	10.78		
	EBMSFL L	53.25	51.50	52.88	12.00	17.50	20.18	15.00	(2) 4"	(2) 3.5"	4.00	3.50	13.03	41.50	18.00

§Use EBMSFB enclosure when S787 option is ordered with size 0 or 1 starter.

*1" Drilled & Tapped conduit entry for control conductors supplied with PLG plug (top & bottom)

**Conduit entrance for power conductors (top and bottom). (All conduit entrances supplied with RE reducer and PLG plug.)

†For Cutler-Hammer W200 Advantage® starters.

■Drilled & Tapped.

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††With S752 or S753