

EBMS magnetic line starters and enclosures

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

Explosionproof
Dust-ignitionproof
Raintight
Wet Locations
Watertight

2C
2C

Applications:

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 wash downs 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 is 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



EBM motor control enclosures accommodate popular makes of starters

Certifications and compliances:

NEC/CEC:

- Class I, Divisions 1 & 2, Groups B, C, D
- Class II, Division 1, Groups E, F, G
- Class II, Division 2, Groups F, G
- Class III

UL standard:

- UL1203

CSA standard:

- C22.2 No. 30

Environmental ratings:

- NEMA 3, 3R, 4^A, 4X^B, 7BCD, 9EFG, 12

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 ratings:

- Motor starters – NEMA/EEMAC sizes 0-5

^AEnclosure not suitable for NEMA 4 or 4X with cover mounted operators.

^BWith S752 or S753 suffix.

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Options:

The following options are available from the factory by adding suffix to catalog number – suffixes are added alphanumerically.

Part number example:

EBMS1FB-ⓐ-W6413-ⓑ

ⓐ Options in this position are additions to the enclosure itself and should be listed alphanumerically.

ⓑ 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	①	FTPS100
<i>100VA for NEMA/EEMAC sizes 0-2, 600/480/240-120, 50/60 Hz With provision for fusing both primary leads and one secondary lead Fuses not provided</i>		
• Control circuit transformer, 200VA	①	FTPS200
<i>200VA for NEMA/EEMAC size 3, 600/480/240-120, 50/60 Hz With provision for fusing both primary leads and one secondary lead Fuses not provided</i>		
• Control circuit transformer, 300VA	①	FTPS300
<i>300VA for NEMA/EEMAC sizes 4-5, 600/480/240-120, 50/60 Hz With provision for fusing both primary leads and one secondary lead Fuses not provided</i>		
• Pilot light, 120 VAC, red jewel, with blank indicating plate	①	J1 ⓓ
• Pilot light, 120 VAC, green jewel, with blank indicating plate	①	J3 ⓓ
• Less heaters in starter overload relay	②	0
• START-STOP pushbuttons (requires two spaces)	①	PB23 ⓓⓔ
• ON-OFF selector switch	①	RR2 ⓓⓔ
• HAND-OFF-AUTO selector switch	①	RR3 ⓓⓔ
• Space heater, 120V, 25 watts	①	R11
• Space heater, 240V, 25 watts	①	R22
• Space heater, 480V, 25 watts	①	R44
• Automatic reset overload relay	①	S1
• Standard drain (Class I, Groups B, C, D; Class II, Groups E, F, G; Class III)	①	S756 ⓔ
• Standard breather and drain (Class I, Groups B, C, D; Class II, Groups E, F, G; Class III)	①	S756V ⓔ
• External epoxy finish	①	S752
• Internal and external epoxy finish	①	S753
• 12-point terminal block – 30 amp, 300V	①	S786
• General purpose control relay, 4-pole N.O., contacts rated 10A at 600V, coil 120 VAC, 50/60 Hz	①	S787 ⓔ
Additional control contacts, N.O. or N.C.:		
<i>For single-speed, non-reversing starters only (number limited by design of starter; details on specific makes and sizes available upon request)</i>		
• Auxiliary contacts on starter 1 N.O. and 1 N.C.	②	S781
• Auxiliary contacts on starter 2 N.O. and 2 N.C.	②	S782
• Auxiliary contacts on starter 3 N.O. and 3 N.C.	②	S783

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

ⓓ With S752 or S753 suffix.

ⓔ Use of this option with NEMA/EEMAC size 0 or 1 starters necessitates using the larger size B enclosure.

ⓓ When specifying non-standard markings on any one of the following options with 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. See Section 1C for DSL legend plate listings.

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Single-speed, non-reversing
3-pole, 60 Hz, 600 VAC maximum

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Ordering information:

To order an enclosure complete with motor starter, insert the manufacturer's symbol in the designated position of the catalog number. Symbols are shown in the footnote below.

Select the complete catalog number below and specify horsepower, voltage, frequency, RPM, type and full load ampere rating of motor – or specify ampere rating of heaters.

Enclosures only can be ordered. Select from listings below.

Motor starter			Enclosure	
Max. HP polyphase	Voltage	NEMA size	Cat. # Without starter	Cat. # With starter ^H
2	120	0	EBMSFA	EBMS0FA ⑥613
3	120	1	EBMSFA	EBMS1FA ⑥613
3	240	0	EBMSFA	EBMS0FA ⑥623
5	480	0	EBMSFA	EBMS0FA ⑥643
5	600	0	EBMSFA	EBMS0FA ⑥663
7.5	120	2	EBMSFB	EBMS2FB ⑥613
7.5	240	1	EBMSFA	EBMS1FA ⑥623
10	480	1	EBMSFA	EBMS1FA ⑥643
10	600	1	EBMSFA	EBMS1FA ⑥663
15	120	3	EBMSFH	EBMS3FH ⑥613
15	240	2	EBMSFB	EBMS2FB ⑥623
25	480	2	EBMSFB	EBMS2FB ⑥643
25	600	2	EBMSFB	EBMS2FB ⑥663
30	240	3	EBMSFH	EBMS3FH ⑥623
50	480	3	EBMSFH	EBMS3FH ⑥643
50	600	3	EBMSFH	EBMS3FH ⑥663
50	240	4	EBMSFH	EBMS4FH ⑥623
100	480	4	EBMSFH	EBMS4FH ⑥643
100	600	4	EBMSFH	EBMS4FH ⑥663
100	240	5	EBMSFL	EBMS5FL ⑥623
200	480	5	EBMSFL	EBMS5FL ⑥643
200	600	5	EBMSFL	EBMS5FL ⑥663



EBMS starter enclosures are available with magnetic line starters, in NEMA sizes 0-5

⑥ Motor starters

Manufacturer	Symbol
Allen Bradley	AB
Square D	D
General Electric	G
Cutler-Hammer	W

The standard coil voltage is equal to the line voltage. To include a 120V coil, insert a '1' between the last two characters in the catalog number. The 120V coil is required with the FTFS suffix. Example: EBMC1FB-③30②36-③643 becomes EBMC1FB-③30②36-③1③643.

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

^G With S752 or S753 suffix.

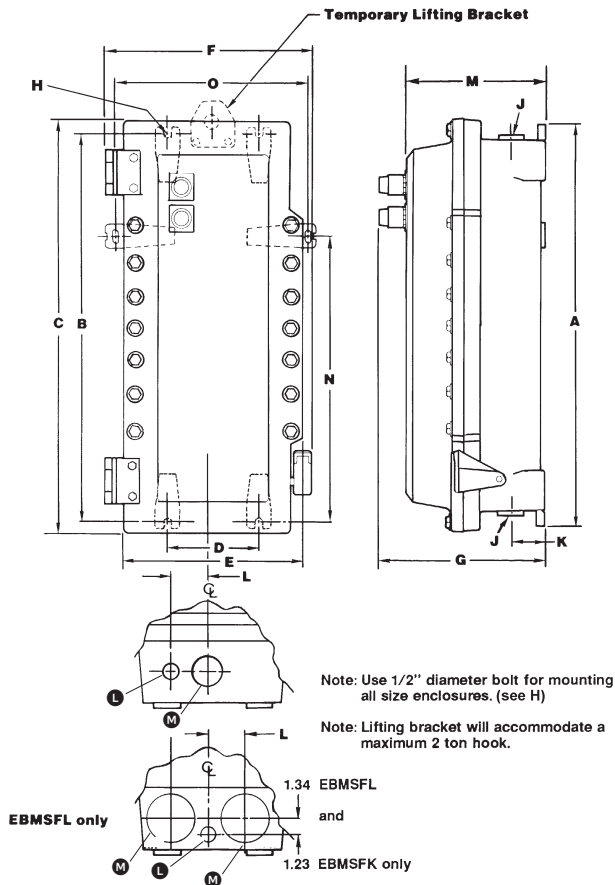
^H Starters are furnished with three heaters, when heater ratings are fully specified.

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Explosionproof
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Dimensions[Ⓞ] (in inches):



J[Ⓜ]
(conduit entry
trade size)

Cat. # Enclosure only	Enclosure size symbol	A	B	C	D	E	F	G	J [Ⓜ] (conduit entry trade size)		K	L	M	N	O
									Drilled and tapped	With 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															
EBMSFH	H	37.50	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															
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

[Ⓢ] Enclosure not suitable for NEMA 4 or 4X with cover mounted operators.

[Ⓜ] With S752 or S753 suffix.

[Ⓞ] Dimensions are approximate, not for construction purposes.

[Ⓛ] 1" drilled and tapped conduit entry for control conductors supplied with PLG plug (top and bottom).

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

[Ⓝ] Use EBMSFB enclosure when S787 option is ordered with size 0 or 1 starter.