

Clamped EBMXS Series Explosionproof Motor Starters

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

Applications:

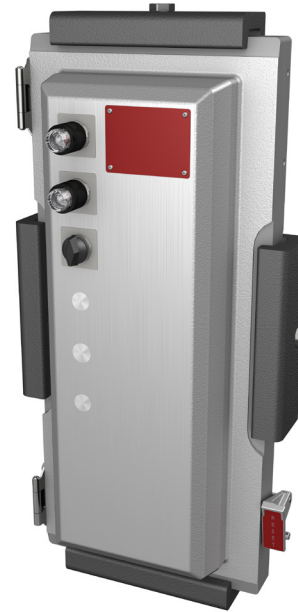
- Operating where flammable liquids or gases are handled, processed or used
- Damp, wet, dirty, dusty, hazardous areas where ultimate corrosion and ingress protection is required
- Harsh and hazardous motor control environments, including refineries, chemical and petrochemical plants, corrosive process facilities, food and beverage, marine and mining
- Across-the-line starting, stopping, speed changing and reversing of polyphased AC induction motors with overload and undervoltage protection

Features:

- Clamped enclosure significantly reduces time to enter enclosure and reduces opportunity for missing, stripped or broken bolts
- -50°C to +60°C temperature range for extreme environments
- Bi-metallic and electronic overload protection options
- Normally open (NO) holding circuit contact supplied standard
- Up to six cover operators for a variety of applications
- Side operated handle provides visual confirmation of proper operator alignment while cover is open
- Neoprene cover gasket provides NEMA 4X protection for hose down applications
- Maximum wiring room compliance with National Electrical Code[®] requirements allows for easy and safe installation
- Rugged, corrosion-resistant, cast copper-free aluminum construction provides NEMA 4X protection
- Semi-clamshell enclosure design, with an external flanged ground joint between body and cover provides increased access to interior components
- Minimum enclosure-to-enclosure spacing with little interference between the opened cover and adjacent enclosure
- Detachable tap-on mounting feet
- Steel brackets supplied standard for lifting during installation
- Bodies have top and bottom drilled and tapped entries for power and control conduits; removable reducers are supplied standard to accommodate smaller size conduits; all conduit entries are plugged

Electrical Ratings:

- Single, three-phase
- 3-pole, non-reversing, full voltage
- 600 VAC maximum
- NEMA sizes 0-4



Certifications and Compliances:

NEC/CEC:

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

UL Standards:

- UL1203 – Explosionproof and Dust-ignitionproof Electrical Equipment for use in Hazardous (Classified) Locations
- UL2062 – High AIC Ratings for Groups C, D

Voltage (AC)	RMS Symmetrical Amps
240, 480	65,000
600	35,000

CSA Standard:

- cUL to CSA C22.2 No. 30

Additional Certifications:

- UL/cUL certified for -50°C to +60°C
- SASO Certificate of Conformity

Environmental Ratings:

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

Standard Materials:

- Body and cover – copper-free aluminum
- Clamp – anodized copper-free aluminum
- External hardware – stainless steel
- Internal parts – galvanized steel

^AHigh AIC and -50°C temperature certifications do not apply for Group B.

^BEnclosures with PB23, RR2 and RR3 options are rated NEMA 3R. All other options maintain NEMA 4X rating.

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Explosionproof
Dust-ignitionproof

2C

Ordering Information:

Part number example

EBMX1S-F1W4BRLNS781

EBMX 1 S - F 1 W 4 B RLN S781

Series

EBMX	Hazardous Rated Enclosure with Clamping Technology
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Enclosure Size

1	NEMA Size 0-2
2	NEMA Size 3
3	NEMA Size 4

Function

S	Starter in Clamped EBMX Enclosure
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Starter Function

F	Full Voltage, Non-reversing Starter, 120V Coil, with CPT
G	Full Voltage, Non-reversing Starter, without CPT

NEMA Starter Size

0	
1	
2	
3	
4	

Starter Manufacturer

W	Eaton
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Line Voltage

1	120 VAC
2	240 VAC
4	480 VAC
6	600 VAC

Cover Operator

GLB	Green LED Pilot Light with Blank Legend Plate
GLF	Green LED Light with "OFF" Legend Plate
PB23	Start/Stop Pushbutton with "START" & "STOP" Legend Plates (Two Positions)
RLN	Red LED Light with "ON" Legend Plate
RLB	Red LED Pilot Light with Blank Legend Plate
RR2	2 Position Selector Switch with "ON-OFF" Legend Plate
RR3	3 Position Selector Switch with "HAND OFF AUTO" Legend Plate
blank	No Cover Operators

FLA

	FLA Range	NEMA Size			
		0, 1	2	3, 4	
<i>blank or ER Option</i>	0.0 - 0.0	•	•	•	
A	0.8 - 1.3	•	•		
B	1.2 - 2.0	•	•		
C	1.8 - 2.9	•	•		
D	2.2 - 3.5	•	•		
E	3.2 - 5.2	•	•		
F	4.6 - 7.4	•	•		
G	6.8 - 11.0	•	•		
H	9.1 - 14.0	•	•		
J	14.0 - 22.8	•	•		
L	23.5 - 38.5	•	•		
M	39.6 - 57.4		•		
N	53.9 - 74.9		•		
P	8.0 - 11.5			•	
Q	11.4 - 15.7			•	
R	14.3 - 19.0			•	
S	18.0 - 24.5			•	
T	24.6 - 33.4			•	
V	33.5 - 45.6			•	
W	45.7 - 62.1			•	
X	62.2 - 84.6			•	
Y	84.7 - 115.0			•	
Z	106.0 - 144.0			•	

Options

AIC	65kAIC at 480V, 35kAIC at 600V Enclosure Rating
ER	Electronic Overload Relay
HT	+60°C Enclosure Rating
MT	-50°C Enclosure Rating
R11	Space Heater, 25 Watts, 120V
R22	Space Heater, 25 Watts, 240V
R44	Space Heater, 25 Watts, 480V
S214	External Ground Lug
S752	External Epoxy Coating
S753	Internal and External Epoxy Coating
S756V	Breather and Drain, Class I, Groups B, C, D
S781	Auxiliary Contact on Starter: (1) NO & (1) NC
S782	Auxiliary Contacts on Starter: (2) NO & (2) NC
S783	Auxiliary Contacts on Starter: (3) NO & (3) NC
S786	12-point Terminal Block, 30 Amp, 300V

- Ⓒ High AIC and -50°C temperature certifications do not apply for Group B.
- Ⓓ Enclosures with PB23, RR2 and RR3 options are rated NEMA 3R. All other options maintain NEMA 4X rating.
- Ⓔ Starter coil equals line voltage.
- Ⓕ List selected operators in order starting with the top position.
- Ⓖ List selected options in alphanumeric order.
- Ⓗ Pushbutton provided in cover for manual reset.

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Freedom Starter:

Motor Starter

Max. Horsepower	Line Voltage	NEMA Size
1	120	0
3	240	
5	480	
5	600	1
2	120	
7.5	240	
10	480	2
10	600	
3	120	
15	240	3
25	480	
25	600	
30	240	4
50	480	
50	600	
100	240	4
100	480	
100	600	

Note: 120V is single phase; other voltages are polyphase.

Reference Tables:

Electronic Overload Relay Settings

NEMA Size	FLA Range (A)
0	1 - 5
1	4 - 20
2	9 - 45
3	20 - 100
4	28 - 140

Control Circuit Transformer, 50/60 Hz, Fusing for Primary and Secondary[Ⓛ]

NEMA Size	VA
0 - 2	100
3	200
4	300

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[Ⓜ]Enclosures with PB23, RR2 and RR3 options are rated NEMA 3R. All other options maintain NEMA 4X rating.

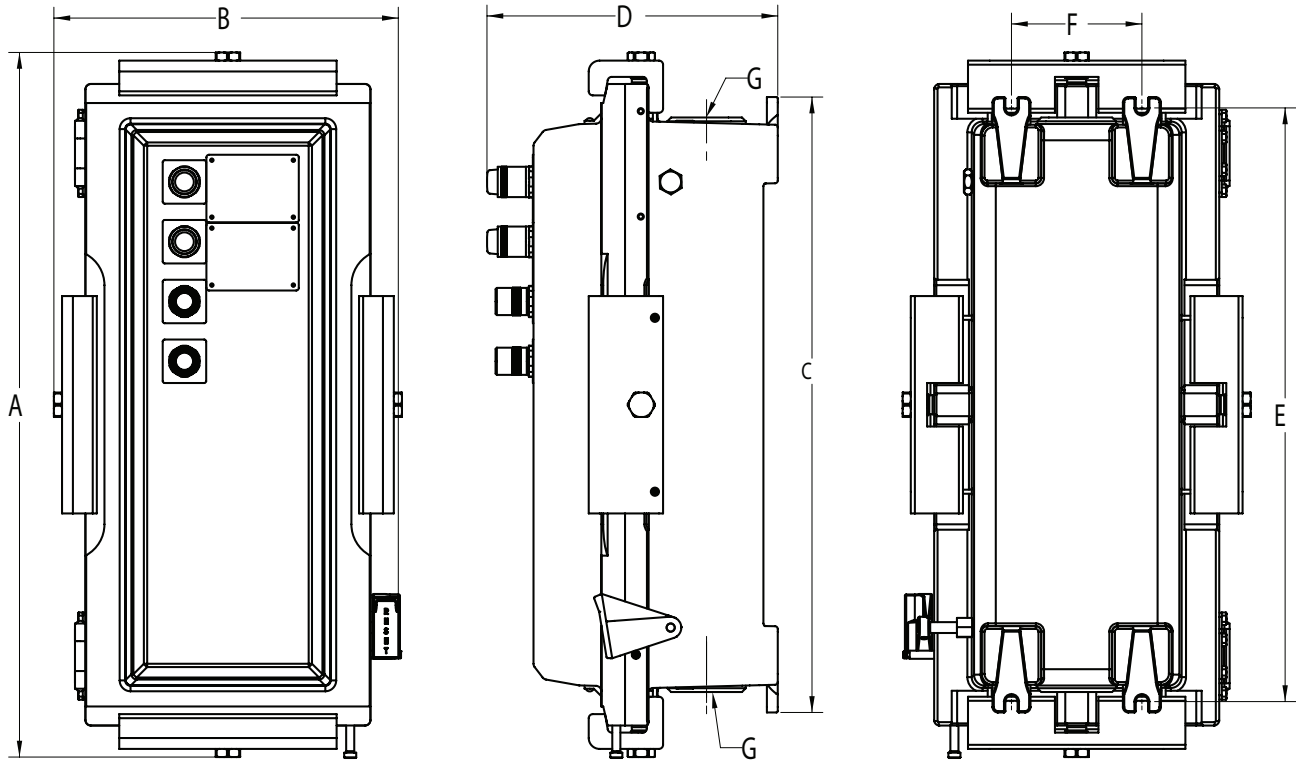
[Ⓝ]Fuses not included.

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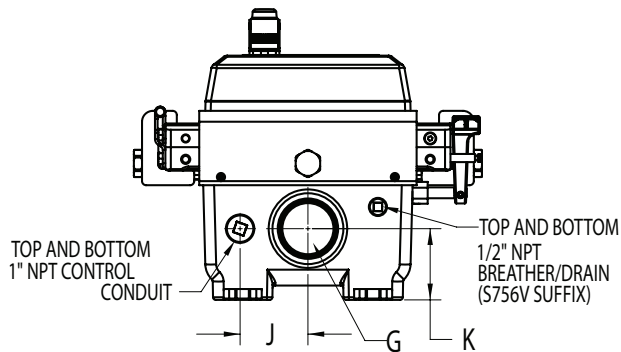
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2C

Dimensions (in Inches):



2C



Enclosure Size	A	B	C	D	E	F	G		J	K
							Drilled & Tapped	with Reducer		
1	22.11	15.98	18.04	12.86	17.13	6.00	2 NPT	1.5 NPT	3.12	3.01
2	32.40	16.28	28.31	13.56	27.25	6.00	3 NPT	2.5 NPT	3.12	3.28
3	42.28	17.93	38.15	13.85	37.25	6.00	3 NPT	2.5 NPT	3.93	3.56

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