

EBMC Combination 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†, 7BCD, 9EFG, 12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations
Watertight

1C

Applications:

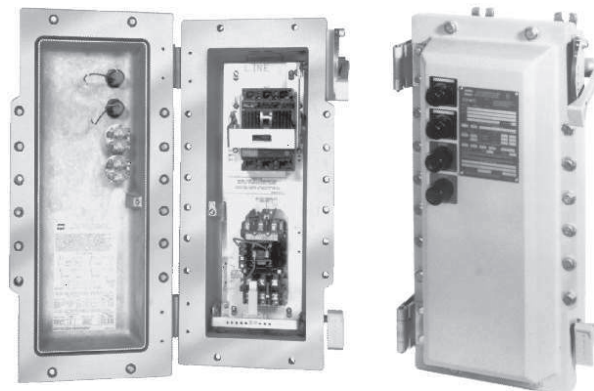
Spectrum™ EBM hinged cover motor control enclosures are used:

- For general motor control and circuit protection – indoors and 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 line disconnect means and short circuit protection
- To provide motor overload and undervoltage protection
- For service entrance, feeder or branch circuit protection for lighting, heating, appliance and motor circuits
- 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%)
- Component operating handles 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*/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
- Stainless steel 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 and breakers
- Simple, straightforward installation of breaker and starter on pre-drilled mounting plate within enclosure. Mounting plate also field removable.
- Circuit breaker motor circuit protector external operating handle can be padlocked in either "ON" or "OFF" positions
- 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

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



Interior components are readily accessible with ample end room for wiring

Side operators leave cover free for control options

1C

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 – Hazardous (classified) locations
- UL Subject 2062 - High AIC rating (Interrupting Capacity) For Groups C & D only

Volt	RMS Symm-Amperes
240	65,000
480	50,000
600	25,000

- CSA Standard: C22.2 No. 30
- NEMA/EEMAC: 3, 3R, 4†, 7BCD, 9EFG, 12

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

Standard Materials:

- Body and cover – copper-free aluminum
- Operating handle – copper-free aluminum
- Operating shafts and bushings – stainless steel
- Cover bolts, hinges, washer and retractile springs – stainless steel
- Interior parts – sheet steel, electrogalvanized

Electrical Rating Range:

- Motor starters – NEMA/EEMAC sizes 0-5
- Circuit breakers – 100, 150, 225, 250, 400, 600, 800, 1000† ampere frame sizes
- Motor circuit protectors – 150, 250, 400 ampere frame sizes

† 1000 Ampere Frame (max. 800 ampere trip)

Options:

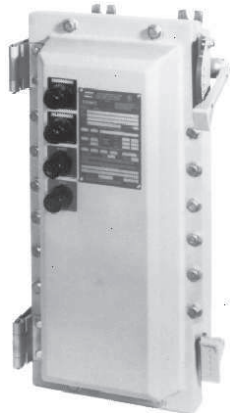
The following options are available from the factory by adding suffix to catalog number – suffixes are added alphanumerically.

Catalog Number System Example

EBMC1FB-①-DT30FAL36-W643-②

① Options in this position are additions to the enclosure itself and should be listed alphanumerically.

② Options in this position are modifications to the starter and/or circuit breaker and should be listed alphanumerically.



EBMC Series motor control enclosures with combination line starters.

When specifying 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.

Description	Position in Cat. #	Suffix
• Ambient compensated circuit breaker trip setting	②	AC
• 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 provided)	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 provided)	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 provided)	①	FTPS300
• Pilot light, 120VAC, red jewel, w/blank indicating plate	①	J1
• Pilot light, 120VAC, green jewel, w/blank indicating plate	①	J3
• LED pilot lights (in place of standard incandescent lamps)	①	LED
• Less heaters in starter overload relay.....	②	0
• Start-Stop pushbuttons (requires 2 spaces).....	①	PB23‡
• On-Off selector switch	①	RR2‡
• Hand-Off-Auto selector switch	①	RR3‡
• Space heater, 120 Volt, 25 Watts	①	R11
• Space heater, 240 Volt, 25 Watts	①	R22
• Space heater, 480 Volt, 25 Watts	①	R44
• Automatic reset overload relay	①	S1
• Insulated neutral w/2 connectors	①	S146
• Std. drain, Class I, B,C & D; Class II, E, F & G; Class III	①	S756‡
• Std. breather & drain, Class I, B,C & D; Class II, E, F & 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.) Auxiliary contacts on starter 1 N.O. & 1 N.C.....	②	S781
Auxiliary contacts on starter 2 N.O. & 2 N.C.....	②	S782
Auxiliary contacts on starter 3 N.O. & 3 N.C.....	②	S783
• Auxiliary switch on Circuit Breaker 1A and 1B contacts	②	S784
• Auxiliary switch on Circuit Breaker 2A and 2B contacts	②	S785
• 12 Point term. block – 30 Amp, 300V.....	①	S786
• General purpose control relay, 4 pole N.O., contacts rated 10A@600V, coil 120VAC, 50 / 60 hertz	①	S787*

*Use of this option with NEMA/EEMAC Size 0, or 1 starters necessitates using the larger "D" size enclosure.

‡Enclosure not suitable for NEMA 4 with cover mounted operators. Breather and drain entries must be plugged for NEMA 4 rating.

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 Cl. II, Div. 1, Groups E, F, G
 Cl. II, Div. 2, Groups F, G
 Cl. III
 NEMA 3, 3R, 4‡, 7BCD, 9EFG, 12

Explosionproof
 Dust-Ignitionproof
 Raintight
 Wet Locations
 Watertight

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Options:

- If desired, markings on indicating plates may be added to catalog number. Select from the list of standard markings below.
- Insert Legend Plate(s) Catalog Number (i.e. DSL16) immediately after optional device in the EBM Catalog Number.
- If EMP devices are to be added in the field, DSL Legend Plates must be ordered separately as they are not furnished with the EMP/EMPS devices.

Example:

EBMC1FB-J1-DSL14-J3-DSL09-DT30FAL36-W643

Use the charts below to select the appropriate legend plate(s) for your application. Markings shown in **bold print** are etched; all others are stamped.

Single Function Legend Plates

Marking	Cat. #
Automatic	DSL16
Blank	DSL01
Blank with single field	DSL02
Close	DSL21
Down	DSL23
Emerg. Stop	DSL17
Fast	DSL46
Forward	DSL18
Hand	DSL15
In	DSL24
Jog	DSL10
Lower	DSL27
On	DSL07
Off	DSL08
Open	DSL20
Out	DSL25
Power On	DSL14
Raise	DSL26
Reset	DSL12
Reverse	DSL19
Run	DSL09
Safe	DSL85
Slow	DSL47
Start	DSL05
Stop	DSL06
Test	DSL13
Trip	DSL11
Up	DSL22

Two Function Legend Plates

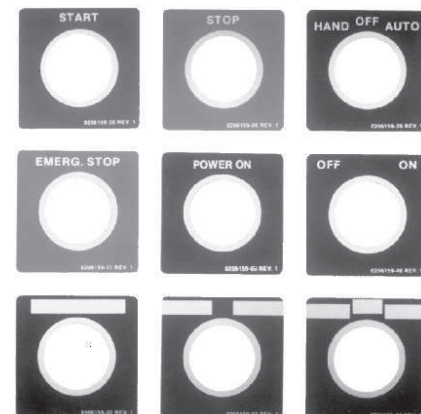
Marking	Cat. #
Blank with 2 fields	DSL03
For-Rev	DSL30
Hand-Auto	DSL29
In-Out	DSL35
Off-On	DSL48
Open-Close	DSL32
Raise-Lower	DSL36
Run-Jog	DSL28
Safe-Run	DSL86
Start-Stop	DSL37
Slow-Fast	DSL65
Up-Down	DSL33

Three Function Legend Plates

Marking	Cat. #
Auto-Off-Hand	DSL49
Blank with 3 fields	DSL04
Fast-Off-Slow	DSL41
For-Off-Rev	DSL40
Hand-Off-Auto	DSL39
Run-Off-Jog	DSL38
Open-Off-Close	DSL43
Raise-Off-Lower	DSL87
Slow-Off-Fast	DSL88
Up-Off-Down	DSL44
1-Off-2	DSL42

Background color for all legend plates is black with the following exceptions:

Marking	Plate Color
Start	Green
Stop	Red
Emerg. Stop	Red



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

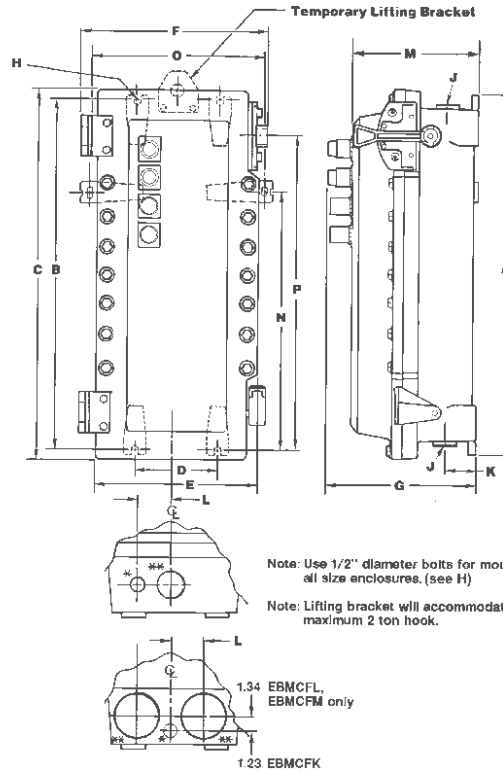
EBMC Combination Line Starters and Enclosures

Dimensions (In inches)†

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‡, 7BCD, 9EFG, 12

Explosionproof
 Dust-Ignitionproof
 Raintight
 Wet Locations
 Watertight

Dimensions In Inches:



*1" Conduit entrance for control conductors (top & bottom).

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

Enclosure Only Cat. #	Enclosure Size Symbol	A	B	C	D	E	F	G	J** Conduit Entry		K	L	M	N	O	P
									Trade Size D&T⊕	w/RE						
Size 0, 1 FVNR combination line starters§																
EBMCFB	B	25.75	24.75	26.90	6.00	13.03	14.78	12.13	2"	1.5"	3.25	3.13	10.25	—	—	22.00
Size 2 FVNR combination line starter																
EBMCFD	D	28.25	27.25	29.40	6.00	13.03	14.67	12.13	3"	2.5"	3.25	3.13	10.25	—	—	24.50
Size 3 FVNR combination line starter																
EBMCFG■	G	38.13	36.50	39.28	6.00	13.03	14.78	12.13	3"	2.5"	3.25	3.13	10.25	—	—	34.06
EBMCFH	H	37.50	36.50	38.65	6.00	14.65	16.65	13.54	3"	2.5"	3.25	3.94	11.66	—	—	33.75
Size 4 FVNR combination line starter																
EBMCFK■	K	43.12	41.50	42.65	12.00	17.65	20.46	12.80	(2) 3"	(2) 2.5"	3.25	3.00	10.78	—	—	19.97
EBMCFL	L	53.47	51.50	53.28	12.00	17.90	20.58	15.00	(2) 4"	(2) 3.5"	4.00	3.50	13.03	41.50	18.40	29.88
Size 5 FVNR combination line starter																
EBMCFM	M	64.22	62.50	64.03	12.00	17.90	21.08	15.00	(2) 4"	(2) 3.5"	4.00	3.50	13.03	41.50	18.40	34.46

†Dimensions are approximate, not for construction purposes.
 ‡ Enclosure not suitable for NEMA 4 with cover mounted operators.
 §Use EBMCFD enclosure when LVR1 or S787 options are ordered with Size 0 or 1 combination starters.
 ■For Cutler-Hammer W200 Advantage® starters.
 ⊕Drilled & Tapped.

EBMC Combination Line Starters and Enclosures

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

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 \ddagger , 7BCD, 9EFG, 12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations
Watertight

1C

Ordering Information:

To order an enclosure complete with starter and breaker, insert the manufacturer's symbols in the designated positions of the catalog number. Symbols are shown in the footnotes see pages 435-436.

Select the complete Cat. No. below and specify HP, 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.

Instantaneous magnetic trip circuit breakers (magnetic circuit interrupters) can be supplied. Consult factory.

For combination starters with motor circuit protectors for single speed, non-reversing motors see page 437.

Motor Starter			Circuit Breaker			Enclosure	
Max. HP Polyphase	Line Volts	NEMA Size	Amp Rating	Frame Volts	Frame Types	Without Breaker & Starter Cat. #	With Breaker & Starter Cat. # §
2	120	0	30	240	FAL, TEB	EBMCFB	EBMC0FB ①30②32 ③613
2	120	0	30	480	FAL, TED, EHD	EBMCFB	EBMC0FB ①30②34 ③613
2	120	0	30	600	FAL, TED, FDB	EBMCFB	EBMC0FB ①30②36 ③613
3	240	0	20	240	FAL, TEB	EBMCFB	EBMC0FB ①20②32 ③623
3	240	0	20	480	FAL, TED, EHD	EBMCFB	EBMC0FB ①20②34 ③623
3	240	0	20	600	FAL, TED, FDB	EBMCFB	EBMC0FB ①20②36 ③623
5	480	0	15	480	FAL, TED, EHD	EBMCFB	EBMC0FB ①15②34 ③643
5	480	0	15	600	FAL, TED, FDB	EBMCFB	EBMC0FB ①15②36 ③643
5	600	0	15	600	FAL, TED, FDB	EBMCFB	EBMC0FB ①15②36 ③663
5	240	1	30	240	FAL, TEB	EBMCFB	EBMC1FB ①30②32 ③623
5	240	1	30	480	FAL, TED, EHD	EBMCFB	EBMC1FB ①30②34 ③623
5	240	1	30	600	FAL, TED, FDB	EBMCFB	EBMC1FB ①30②36 ③623
7½	240	1	50	240	FAL, TEB	EBMCFB	EBMC1FB ①50②32 ③623
7½	240	1	50	480	FAL, TED, EHD	EBMCFB	EBMC1FB ①50②34 ③623
7½	240	1	50	600	FAL, TED, FDB	EBMCFB	EBMC1FB ①50②36 ③623
10	480	1	30	480	FAL, TED, EHD	EBMCFB	EBMC1FB ①30②34 ③643
10	480	1	30	600	FAL, TED, FDB	EBMCFB	EBMC1FB ①30②36 ③643
10	600	1	30	600	FAL, TED, FDB	EBMCFB	EBMC1FB ①30②36 ③663
10	240	2	50	240	FAL, TEB	EBMCFD	EBMC2FD ①50②32 ③623
10	240	2	50	480	FAL, TED, EHD	EBMCFD	EBMC2FD ①50②34 ③623
10	240	2	50	600	FAL, TED, FDB	EBMCFD	EBMC2FD ①50②36 ③623
15	240	2	70	240	FAL, TEB	EBMCFD	EBMC2FD ①70②32 ③623
15	240	2	70	480	FAL, TED, EHD	EBMCFD	EBMC2FD ①70②34 ③623
15	240	2	70	600	FAL, TED, FDB	EBMCFD	EBMC2FD ①70②36 ③623
15	480	2	40	480	FAL, TED, EHD	EBMCFD	EBMC2FD ①40②34 ③643
15	480	2	40	600	FAL, TED, FDB	EBMCFD	EBMC2FD ①40②36 ③643
15	600	2	40	600	FAL, TED, FDB	EBMCFD	EBMC2FD ①40②36 ③663
20	480	2	50	480	FAL, TED, EHD	EBMCFD	EBMC2FD ①50②34 ③643
20	480	2	50	600	FAL, TED, FDB	EBMCFD	EBMC2FD ①50②36 ③643
20	600	2	50	600	FAL, TED, FDB	EBMCFD	EBMC2FD ①50②36 ③663
25	480	2	70	480	FAL, TED, EHD	EBMCFD	EBMC2FD ①70②34 ③643
25	480	2	70	600	FAL, TED, FDB	EBMCFD	EBMC2FD ①70②36 ③643
25	600	2	70	600	FAL, TED, FDB	EBMCFD	EBMC2FD ①70②36 ③663
20	240	3	90	240	FAL, TEB	EBMCFH	EBMC3FH ①90②32 ③623
25	240	3	100	240	FAL, TEB	EBMCFH	EBMC3FH ①100②32 ③623
30	240	3	125	480	TED	EBMCFH	EBMC3FH ①125②34 ③623
30	480	3	70	480	FAL, TED, EHD	EBMCFH	EBMC3FH ①70②34 ③643
30	480	3	70	600	FAL, TED, FDB	EBMCFH	EBMC3FH ①70②36 ③643
30	600	3	70	600	FAL, TED, FDB	EBMCFH	EBMC3FH ①70②36 ③663

①②③ See pages 435-436 for configurable options.

To include a 120V coil, insert a "1" between second to last and last character in catalog number. 120V coil standard with FTFS option.
Ex. EBMCFB-①30②32-③613 becomes EBMCFB-①30②32-③6113

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

§Starters are furnished with 3 heaters, when heater ratings are fully specified.

1C

EBMC Combination Line Starters and Enclosures

Single-Speed Non-Reversing with Circuit Breakers and Fusible Disconnect Switches

3-Pole 60 hertz, 600VAC Maximum

Cl. I, Div. 1 & 2, Groups B, C, D Explosionproof
 Cl. II, Div. 1, Groups E, F, G Dust-Ignitionproof
 Cl. II, Div. 2, Groups F, G Raintight
 Cl. III Wet Locations
 NEMA 3, 3R, 4†, 7BCD, 9EFG, 12 Watertight

1C

Motor Starter			Circuit Breaker			Enclosure	
Max. HP Polyphase	Line Volts	NEMA Size	Amp Rating	Frame Volts	Frame Types	Without Breaker & Starter Cat. #	With Breaker & Starter Cat. # §
40	480	3	90	480	FAL, TED, EHD	EBMCFH	EBMC3FH ①90②34 ③643
40	480	3	90	600	FAL, TED, FDB	EBMCFH	EBMC3FH ①90②36 ③643
40	600	3	90	600	FAL, TED, FDB	EBMCFH	EBMC3FH ①90②36 ③663
50	480	3	100	480	FAL, TED, EHD	EBMCFH	EBMC3FH ①100②34 ③643
50	480	3	100	600	FAL, TED, FDB	EBMCFH	EBMC3FH ①100②36 ③643
50	600	3	100	600	FAL, TED, FDB	EBMCFH	EBMC3FH ①100②36 ③663
40	240	4	175	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFH	EBMC4FL ①175②36 ③623
50	240	4	200	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFH	EBMC4FL ①200②36 ③623
60	480	4	125	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFH	EBMC4FL ①125②36 ③643
60	600	4	100	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFH	EBMC4FL ①100②36 ③663
75	480	4	150	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFH	EBMC4FL ①150②36 ③643
75	600	4	125	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFH	EBMC4FL ①125②36 ③663
100	480	4	200	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFH	EBMC4FL ①200②36 ③643
100	600	4	150	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFH	EBMC4FL ①150②36 ③663
125	480	5	300	600	TJK/ KD/ LAL, TJJ, KDB	EBMCFM	EBMC5FM ①300②36 ③643
150	480	5	400	600	TJK/ KD/ LAL, TJJ, KDB	EBMCFM	EBMC5FM ①400②36 ③643

Motor Starter			Fusible Disconnect Switch			
Max. HP Polyphase	Max. Line Volts	NEMA Size	Amp Rating	Max. Volts	Switch Type	With Disconnect Switch & Starter Cat. #
5	600	0	30	600	DS161R	EBMC0FD WFD30J36 W643
10	600	1	30	600	DS161R	EBMC1FD WFD30J36 W643
25	600	2	60	600	DS262R	EBMC2FD WFD60J36 W643
30	600	3	100	600	DS363R	EBMC3FH WFD100J36 W643

①Circuit Breakers:

Manufacturer	Symbol
Cutler-Hammer	WT
General Electric	TT
Square D	W

NEMA

Size	Without Switch & Starter Cat. #
0	EBMCFD FD
1	EBMCFD FD
2	EBMCFD FD
3	EBMCFH FD

②Select Circuit Breaker Frame Type based on Frame Size, Voltage, and Manufacturer desired:

Manufacturer	100 Amp. Frame and 150 Amp. Frame			225 Amp. Frame and 250 Amp. Frame		400 Amp. Frame	
	240V AC	480V AC	600V AC	600VAC		600VAC	
Cutler-Hammer	—	EHD	FDB	JD – Interchangeable Trip Unit JDB – Non-Interchangeable Trip Unit	KD – Interchangeable Trip Unit KDB – Non-Interchangeable Trip Unit		
General Electric	TEB	TED	TED	TFK – Interchangeable Trip Unit TFJ – Non-Interchangeable Trip Unit	TJK – Interchangeable Trip Unit TJJ – Non-Interchangeable Trip Unit		
Square D	FAL	FAL	FAL	KAL	LAL		

③Motor Starters:

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

†Enclosure not suitable for NEMA 4 with cover mounted operators.

§Starters are furnished with 3 heaters, when heater ratings are fully specified.

EBMC Combination Line Starters

**Single-Speed Non-Reversing
with Motor Circuit Protectors
3-Pole 60 hertz, 600VAC Maximum**

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†, 7BCD, 9EFG, 12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations
Watertight

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Ordering Information:

Select the complete Catalog No. below and specify HP, voltage, frequency, RPM, type and full load ampere rating of motors or specify ampere rating of heaters.

Motor Starter

Max. HP Polyphase	Volts	NEMA Size	MCP Amp Rating	Enclosure without Starter & MCP Cat. #	Enclosure with Starter & MCP Cat. # §
3	240	0	15	EBMCFB	EBMC0FB ①15A②36 ③623
3	480	0	7	EBMCFB	EBMC0FB ①7A②36 ③643
3	600	0	7	EBMCFB	EBMC0FB ①7A②36 ③663
5	480	0	15	EBMCFB	EBMC0FB ①15A②36 ③643
5	600	0	15	EBMCFB	EBMC0FB ①15A②36 ③663
7½	240	1	30	EBMCFB	EBMC1FB ①30A②36 ③623
7½	480	1	15	EBMCFB	EBMC1FB ①15A②36 ③643
10	480	1	30	EBMCFB	EBMC1FB ①30A②36 ③643
10	600	1	15	EBMCFB	EBMC1FB ①15A②36 ③663
10	240	2	50	EBMCFD	EBMC2FD ①50A②36 ③623
15	240	2	100	EBMCFD	EBMC2FD ①100A②36 ③623
15	480	2	30	EBMCFD	EBMC2FD ①30A②36 ③643
20	600	2	30	EBMCFD	EBMC2FD ①30A②36 ③663
25	480	2	50	EBMCFD	EBMC2FD ①50A②36 ③643
25	600	2	50	EBMCFD	EBMC2FD ①50A②36 ③663
30	240	3	100	EBMCFH	EBMC3FH ①100A②36 ③623
30	600	3	50	EBMCFH	EBMC3FH ①50A②36 ③663
50	480	3	100	EBMCFH	EBMC3FH ①100A②36 ③643
50	600	3	100	EBMCFH	EBMC3FH ①100A②36 ③663
50	240	4	250*	EBMCFL	EBMC4FL ①250④236 ③623
100	480	4	250*	EBMCFL	EBMC4FL ①250④236 ③643
100	600	4	250*	EBMCFL	EBMC4FL ①250④236 ③663
60	240	5	250*	EBMCFM	EBMC5FM ①250④236 ③623
100	240	5	400	EBMCFM	EBMC5FM ①400④236 ③623
125	480	5	250*	EBMCFM	EBMC5FM ①250④236 ③643
150	600	5	250*	EBMCFM	EBMC5FM ①250④236 ③663
200	480	5	400	EBMCFM	EBMC5FM ①400④236 ③643
200	600	5	400	EBMCFM	EBMC5FM ①400④236 ③663

①Motor Circuit Protectors:

Manufacturer	Symbol
Cutler-Hammer	WP
General Electric	TP
Square D	DP

②Select Motor Circuit Protector Frame Type based on Frame Size and Manufacturer desired:

	150 Amp. Frame	250 Amp. Frame	400 Amp. Frame
Cutler-Hammer	HMCP (F-Frame)	HMCP (J-Frame)	HMCP (K-Frame)
General Electric	TEC	TFC	TJC
Square D	FAL	KAL	LAL

③Motor Starters:

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

† Enclosure not suitable for NEMA 4 with cover mounted operators.

*General Electric motor circuit protectors are 225 Amp. Rated.

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

④After the MCP amp rating the following character symbol must be entered to designate the trip range. Consult factory for other trip ranges available.

MCP Amp Rating	Symbol	Trip Range
Cutler-Hammer (WP)		
7	A	21 to 70
15	A	45 to 150
30	A	90 to 300
50	B	150 to 500
100	B	300 to 1000
250	J	1250 to 2500
400	G	1250 to 2500
General Electric (TP)		
7	A	18 to 90
15	A	42 to 198
30	A	90 to 390
50	A	180 to 660
100	A	300 to 1308
225	B	1000 to 2250
400	C	1000 to 3300
Square D (DP)		
7	A	18 to 70
15	A	50 to 180
30	A	100 to 350
50	A	150 to 580
100	A	300 to 1100
250	H	1250 to 2500
400	E	1250 to 2500

Supplied with Cutler-Hammer Advantage™ Starters

Cl. I, Div. 1 & 2, Groups B, C, D	Explosionproof
Cl. II, Div. 1, Groups E, F, G	Dust-Ignitionproof
Cl. II, Div. 2, Groups F, G	Raintight
Cl. III	Wet Locations
Type 3, 3R, 4 \ddagger , 7BCD, 9EFG, 12	Watertight

Applications:

Spectrum EBM-E series of hinged cover motor control enclosures are used:

- For general motor control and circuit protection – indoors and outdoors – in damp, wet, dirty, dusty hazardous locations without the need for protective shelter.
- In areas where frequent washdowns are necessary or where heavy rain or water spray is prevalent.
- For across-the-line starting and stopping of polyphase AC induction motors.
- To provide line disconnect means and short circuit protection (EBMC).
- To provide motor overload and undervoltage protection.
- For feeder or branch circuit protection for lighting, heating, appliance, and motor circuits (EBMC).
- On switchracks or other assemblies where it's desired that motor control be centrally located.

Features:

- Total compliance to the wiring end room requirements of the National Electrical Code®.
- Solid state electronic Cutler-Hammer Advantage™ starter.
- Smaller enclosures required than for conventional starter applications.
- Elimination of heater elements, contact chatter, and welding due to low voltage supply.
- Precise overcurrent protection and constant coil power.
- Same performance and labor-saving benefits from the versatile Spectrum EBM Enclosure product line.
- Universal mounting plates and hardware for all major manufacturers' components.
- Mercury switch electronic overload reset.
- Optional EMPS control devices may be added to enclosure cover.

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 – Hazardous (classified) locations
- CSA Standard: C22.2 No. 30
- UL Subject 2062 - High AIC rating (Interrupting Capacity)

Volt	RMS Symm-Amperes
240	65,000
480	50,000
600	25,000

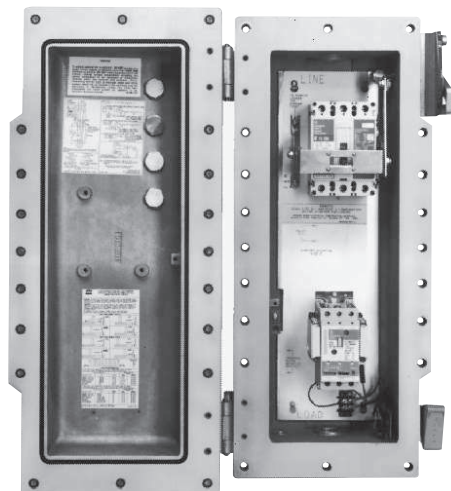
- NEMA/EEMAC: 3, 3R, 4 \ddagger , 7BCD, 9EFG, 12

Standard Materials:

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

Electrical Rating Ranges:

- Motor starters – NEMA sizes 1–5



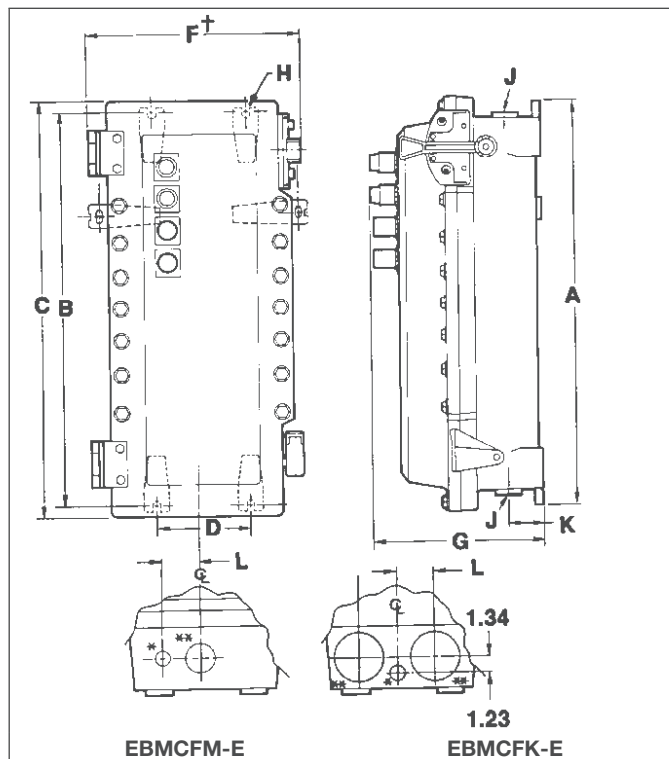
Spectrum EBM-E Series Combination Line Starter with Advantage Starter.

Options:

- See page 439 for options for the EBM enclosures supplied with Cutler-Hammer Advantage starters. The following suffixes cannot be ordered with this style equipment: C, LVR1, O, S.

Dimensions

In Inches:



See page 439 for dimensions of different enclosure sizes.

*Advantage is a trademark of Cutler-Hammer Products.

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

Enclosure Only Cat. #	Dimensions (In Inches): A	B	C	D	F	**J Conduit Entry			
						Trade Size D&T	w/RE	K	L
EBMCFB E	25.75	24.75	26.90	6.00	14.78	2"	1.5"	3.25	3.13
EBMCFG E	38.13	36.50	39.28	6.00	14.78	3"	2.5"	3.25	3.13
EBMCFK E	43.12	41.50	42.65	12.00	20.46	(2) 3"	(2) 2.5"	3.25	3.25
EBMCFM E	64.22	62.50	64.03	12.00	21.08	(2) 4"	(2) 3.5"	4.00	4.00

"H" - Use 1/2" diameter bolts for all enclosures listed above.

*1" D&T conduit entry for control conductors supplied with PLG plug (top and bottom).

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

Ordering Information - Combination Line Starters

- To order an enclosure complete with motor starter and circuit breaker (or motor circuit protector), insert the manufacturer's symbols in the designated positions of the catalog number. Symbols are shown in the footnotes.

EBM "E" Series Combination Line Starters and Enclosures for Cutler-Hammer Advantage Starters, Single Speed Non-Reversing

Motor Starter			Circuit Breaker			Enclosure	
Max. HP Polyphase	Line Volt	NEMA Size	Amp Trip	Frame Volts	Frame Type	Without Breaker & Starter Cat. #†	With Breaker (or Motor Circuit Protector) & Cutler-Hammer Advantage Starter Cat. #
7½	240	1	50	240	FAL, TEB	EBMCFB E	EBMC1FB ①50②32 W6213 E
7½	240	1	50	480	FAL, TED, EHD	EBMCFB E	EBMC1FB ①50②34 W6213 E
7½	240	1	50	600	FAL, TED, FDB	EBMCFB E	EBMC1FB ①50②36 W6213 E
10	480	1	30	480	FAL, TED, FDB	EBMCFB E	EBMC1FB ①30②34 W6413 E
10	480	1	30	600	FAL, TED, FDB	EBMCFB E	EBMC1FB ①30②36 W6413 E
10	600	1	30	600	FAL, TED, FDB	EBMCFB E	EBMC1FB ①30②36 W6613 E
15	240	2	70	240	FAL, TEB	EBMCFB E	EBMC2FB ①70②32 W6213 E
15	240	2	70	480	FAL, TED, FDB	EBMCFB E	EBMC2FB ①70②34 W6213 E
15	240	2	70	600	FAL, TED, FDB	EBMCFB E	EBMC2FB ①70②36 W6213 E
25	480	2	70	480	FAL, TED, EHD	EBMCFB E	EBMC2FB ①70②34 W6413 E
25	480	2	70	600	FAL, TED, FDB	EBMCFB E	EBMC2FB ①70②36 W6413 E
25	600	2	50	600	FAL, TED, FDB	EBMCFB E	EBMC2FB ①50②36 W6413 E
30	240	3	125	240	FAL, TEB	EBMCFG E	EBMC3FG ①125②32 W6213 E
30	240	3	125	480	FAL, TED, EHD	EBMCFG E	EBMC3FG ①125②34 W6213 E
30	240	3	125	600	FAL, TED, FDB	EBMCFG E	EBMC3FG ①125②36 W6213 E
50	480	3	100	480	FAL, TED, EHD	EBMCFG E	EBMC3FG ①100②34 W6413 E
50	480	3	100	600	FAL, TED, FDB	EBMCFG E	EBMC3FG ①100②36 W6413 E
50	600	3	90	600	FAL, TED, FDB	EBMCFG E	EBMC3FG ①90②36 W6613 E
50	240	4	200	600	TFK, JD, KAL, TFJ, JDB	EBMCFK E	EBMC4FK ①200②W36 W6213 E
100	480	4	200	600	TFK, JD, KAL, TFJ, JDB	EBMCFK E	EBMC4FK ①200②36 W6413 E
100	600	4	150	600	TFK, JD, KAL, TFJ, JDB	EBMCFK E	EBMC4FK ①150②36 W6613 E
75	240	5	400	600	TJK, KD, LAL, TJJ, KDB	EBMCFM E	EBMC5FM ①400②36 W6213 E
150	480	5	400	600	TJK, KD, LAL, TJJ, KDB	EBMCFM E	EBMC5FM ①400②36 W6413 E
200	600	5	400	600	TJK, KD, LAL, TJJ, KDB	EBMCFM E	EBMC5FM ①400②36 W6613 E

①With Circuit Breakers:

Manufacturer	Symbol
Cutler-Hammer	WT
General Electric	TT
Square D	DT

①With Motor Circuit Protectors:

Note: Only units with a frame volts of 600 are available with Motor Circuit Protectors:

Manufacturer	Symbol
Cutler-Hammer	WP
General Electric	TP
Square D	DP

②Select Circuit Breaker Frame Type based on Frame Size, Voltage, and Manufacturer desired.

Manufacturer	100 Amp Frame and 150 Amp Frame		225 Amp Frame and 250 Amp Frame		400 Amp Frame
	240VAC	480VAC	600VAC	600VAC	600VAC
Cutler-Hammer	—	EHD	FDB	JD - Interchangeable Trip Unit JDB - Non-Interchangeable Trip Unit	KD - Interchangeable Trip Unit KDB - Non-Interchangeable Trip Unit
General Electric	TEB	TED	TED	TFK - Interchangeable Trip Unit TFJ - Non-Interchangeable Trip Unit	TJK - Interchangeable Trip Unit TJJ - Non-Interchangeable Trip Unit
Square D	FAL	FAL	FAL	KAL	LAL

②Select Motor Circuit Protector Frame Type based on Frame Size and Manufacturer desired.

Before the frame type a character symbol must be entered to designate the trip range. See page 437 for appropriate symbol.

Manufacturer	150 Amp Frame (600 V)	250 Amp Frame (600 V)	400 Amp Frame (600 V)
Cutler-Hammer	HMCP (F-Frame)	HMCP (J-Frame)	HMCP (K-Frame)
General Electric	TEC	TFC	TJC
Square D	FAL	KAL	LAL

†Note: "Enclosures only" are supplied with necessary operators, linkages, and mercury switch electronic overload resets.

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

Applications:

EPC combination line starters and enclosures are used:

- For across-the-line starting of polyphase AC induction motors
- In locations which are hazardous due to the presence of flammable vapors, gases or highly combustible dusts
- In damp, wet or corrosive locations
- For installation indoors or outdoors at petroleum refineries, chemical and petrochemical plants and other process industry facilities where similar hazards exist
- To provide disconnecting means, motor branch circuit protection, motor running protection, undervoltage protection and remote starting and stopping due to the combination of thermal-magnetic circuit breaker and magnetic motor starter

Features:

- Quick-opening covers – less than two turns to remove or install
- Three section design for ease of installation
- Water-shedding construction with female threads on top cover, male threads on bottom cover, and top cover skirted
- Specially located stops and locks insure adequate thread engagement and prevent overtightening
- Separate replaceable mounting bracket attached to the rear of the body provides three-point suspension for quick installation and leveling – one keyhole slot at top and two open slots at bottom
- Bodies have two taper-tapped conduit hubs with integral bushings on the top, and two more directly below
- Universal mounting plate and reset mechanism will accommodate any of the motor starters and circuit breakers in catalog listing
- When interior mounting plate is removed, feeder and branch circuit conductors are easily pulled into the wiring chamber. The interior assembly, with breaker and starter attached, is then replaced, final connections made, and covers assembled
- External handle, which operates breaker can be padlocked in either "ON" or "OFF" positions
- Breaker is trip-free of the handle, therefore it will open under short circuit or overload, even if the external handle is locked in the "ON" position
- Furnished with third overload relay as standard

Certifications and Compliances:

- NEC/CEC
 Class I, Division 1 & 2, Groups C, D
 Class II, Division 1, Groups E, F, G
 Class II, Division 2, Groups F, G
 Class III
- NEMA/EEMAC: 3, 4, 7CD, 9EFG, 12
- UL Standard: 698
- CSA Standards: C22.2 No. 30

Standard Materials:

- Body and cover – copper-free aluminum
- Operating handle – copper-free aluminum
- Operating shafts – stainless steel
- Interior parts – sheet steel

Standard Finishes:

- Copper-free aluminum – natural
- Stainless steel – natural
- Sheet steel – electrogalvanized with chromate finish

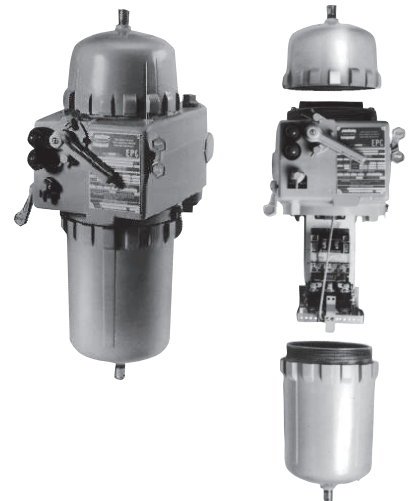
Electrical Rating Range:

- Starters – Sizes 0, 1 and 3 inclusive
- Breakers – 100 and 150 ampere frame sizes
- Motor Circuit Protectors – 100 ampere frame size

Options:

The following special options are available from factory by adding suffix to Cat. No. and many are available in kit form or for field addition to existing units: See page 459 for listing of kits

Description	Suffix
Control circuit transformer 600/480/240–120 volts, 50 or 60 hertz (Sizes 0 and 1 – 100–50 VA, Size 3 – 200–350 VA) Fusible – Secondary.....	FT
Fusible – Primary and secondary.....	FTPS
Auxiliary Contacts on Starter or Contactor*	
1 N.O./1 N.C.....	S781
2 N.O./2 N.C.....	S782
3 N.O./3 N.C.....	S783
Auxiliary Switch on Circuit Breaker or Motor Circuit Protector*	
1A/1B (1P2T).....	S784
2A/2B (2P2T).....	S785
Side bosses drilled and tapped same size as standard hubs (except 15" dia. – 1" size).....	S366
Back boss drilled and tapped same size as standard hubs (except 15" dia. – 1" size).....	S367
Pushbuttons (heavy duty): START-STOP.....	PB3



Assembled unit

Separated view showing major components

Description	Suffix
Selector switches (standard duty): ON-OFF.....	RR2
HAND-OFF-AUTO.....	RR3
Pilot lights: Red, 120 volt.....	J1
Green, 120 volt.....	J3
LED pilot lights, in place of standard incandescent lamps.....	LED
Pilot light transformers: 240 volt†.....	T2
480 volt.....	T4
600 volt†.....	T5
Space heaters: 120 volt.....	R11
240 volt.....	R22
480 volt.....	R44
Automatic reset overload relay.....	S1
Less overload relays (lighting contactor).....	CL
Less overload relays (motor contactor)	CM
Separate AC control circuit.....	Specify
Insulated neutral with 2 connectors (50, 100 & 225 amp).....	S146
Grounded neutral stud with 3 connectors (50, 100 & 225 amp).....	S178
Pilot light holes drilled, tapped and plugged for future addition of pilot lights	
One hole.....	S541
Two holes.....	S542
Standard Breather (Class I, Groups C, D, Class II, Groups E, F, G, Class III)....	S219
Standard Drain (Class I, Groups C, D, Class II, Groups E, F, G, Class III).....	S198
Standard Breather and Drain (Class I, Groups C, D, Class II, Groups E, F, G, Class III).....	S198V
Universal Breather – Drain (Class I, Groups C, D, Class II, Groups F, G)....	S454‡
(2) Universal Breather – Drains (Class I, Groups C, D, Class II, Groups F, G)..	S454V‡
Less heaters.....	0

*Application is limited by starter, contactor, circuit breaker or motor circuit protector design – Consult Factory
 † Required for pilot lights on other than 120 volt control circuits. One required for each lamp.
 ‡ Not suitable for NEMA 4.

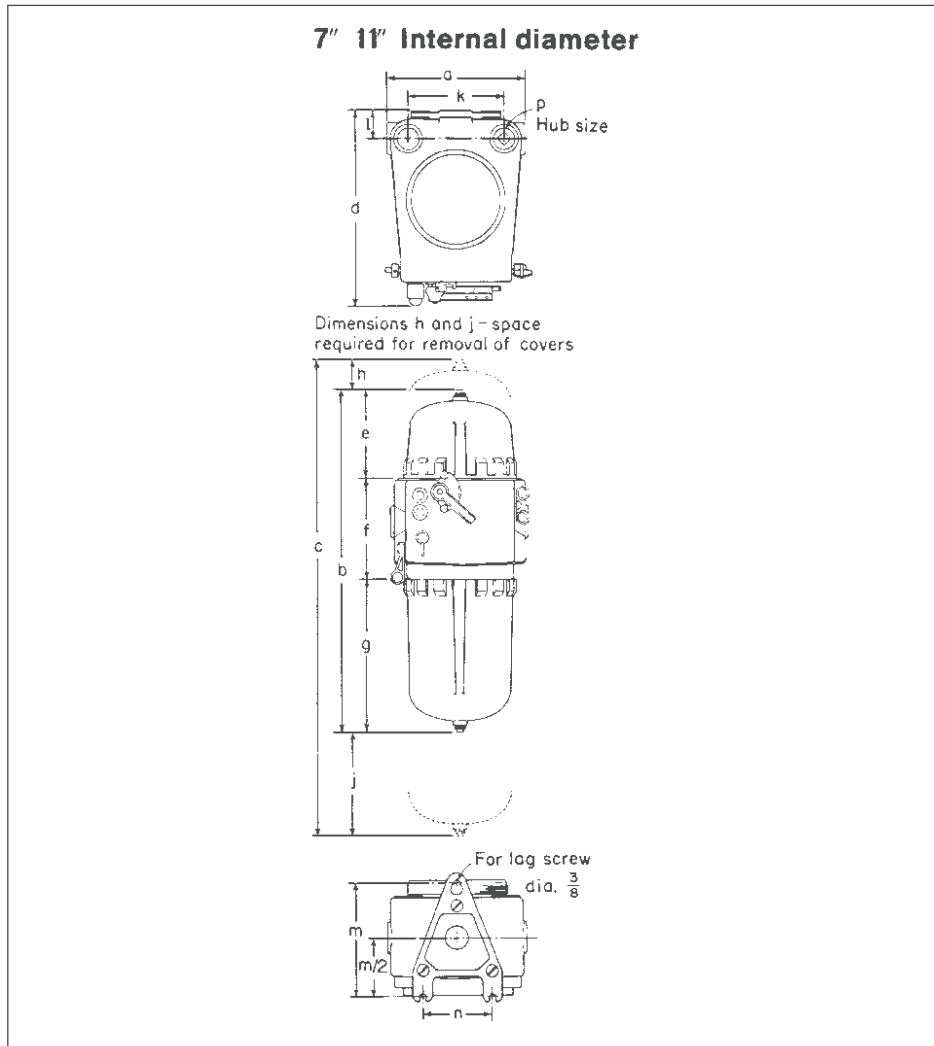
EPC Combination Line Starters and Enclosures

Dimensions* (In Inches)

Cl. I, Div. 1 & 2, Groups C, D
 Cl. II, Div. 1, Groups E, F, G
 Cl. II, Div. 2, Groups F, G
 Cl. III
 NEMA 3, 4, 7CD, 9EFG, 12

Explosionproof
 Dust-Ignitionproof
 Raintight
 Wet Locations
 Watertight

1C



Single-Speed Non-Reversing Sizes 0, 1 and 3 starters

	EPC87	EPC813	EPC87-FTPS or EPC87-FT	EPC813-FTPS or EPC813-FT
Int. Dia.	7"	11"	7"	11"
	Dimensions		Dimensions†	
a	10 ⁵ / ₈	16 ¹ / ₈	10 ⁵ / ₈	16 ¹ / ₈
b	26 ¹ / ₁₆	38 ¹ / ₂	31 ¹ / ₁₆	41 ¹ / ₂
c	35 ¹¹ / ₁₆	61	47 ¹¹ / ₁₆	67 ¹ / ₂
d	14 ¹¹ / ₁₆	20 ¹ / ₄	14 ¹¹ / ₁₆	20 ¹ / ₄
e	6 ³ / ₄	9 ¹ / ₈	11 ³ / ₄	12 ¹ / ₈
f	71 ¹ / ₁₆	8 ⁵ / ₈	71 ¹ / ₁₆	8 ⁵ / ₈
g	11 ⁵ / ₈	20 ³ / ₄	11 ⁵ / ₈	20 ³ / ₄
h	2	4 ¹ / ₂	9	8
j	7 ⁵ / ₈	18	7 ⁵ / ₈	18
k	7 ³ / ₈	12	7 ³ / ₈	12
l	2 ¹ / ₁₆	2 ⁵ / ₈	2 ¹ / ₁₆	2 ⁵ / ₈
m	9 ³ / ₈	11	9 ³ / ₈	11
n	5 ¹ / ₄	5 ¹ / ₂	5 ¹ / ₄	5 ¹ / ₂
p	1 ¹ / ₄	2 ¹ / ₂	1 ¹ / ₄	2 ¹ / ₂

*Dimensions are approximate, not for construction purposes.
 †For units with Control Circuit Transformer (suffix FT or FTPS).

1C

EPC Combination Line Starters and Enclosures

Single Speed, Non-Reversing with Circuit Breakers

3-Pole 60 hertz, 600 VAC Maximum

Cl. I, Div. 1 & 2, Groups C, D Explosionproof
 Cl. II, Div. 1, Groups E, F, G Dust-Ignitionproof
 Cl. II, Div. 2, Groups F, G Raintight
 Cl. III Wet Locations
 NEMA 3, 4, 7CD, 9EFG, 12 Watertight

Ordering Information:

To order an enclosure complete with starter and breaker, insert the manufacturer's symbols in the designated positions of the catalog number. Symbols are shown in the footnotes below.

Enclosures only can be ordered. Select from listings below.

Instantaneous magnetic trip circuit breakers (magnetic circuit interrupters) can be supplied. Consult factory.

Select the complete Cat. No. below and specify HP, voltage, frequency, RPM, type and full load ampere rating of motor – or specify ampere rating of heaters.

For combination starters with motor circuit protectors or single speed, non-reversing motors see page 443.

Motor Starter			Circuit Breaker		Enclosure		Without Starter & Circuit Breaker Cat. #	With Starter & Circuit Breaker Cat. # §
Max. HP Polyphase	Volts	NEMA Size	Amp Rating	Frame	Hub Size in.	Int. Dia. in.		
2	120	0	30	EB	1¼	7	EPC87	EPC870 ①30ED ②613
3	240	0	20	EHD	1¼	7	EPC87	EPC870 ①20EHD ②623
3	480	0	15	EHD	1¼	7	EPC87	EPC870 ①15EHD ②643
3	480	0	15	FDB	1¼	7	EPC87	EPC870 ①15FD ②643
3	600	0	15	FD	1¼	7	EPC87	EPC870 ①15FD ②653
5	240	1	30	EHD	1¼	7	EPC87	EPC871 ①30EHD ②623
5	480	0	15	EHD	1¼	7	EPC87	EPC870 ①15EHD ②643
5	480	0	15	FDB	1¼	7	EPC87	EPC870 ①15FD ②643
5	600	0	15	FDB	1¼	7	EPC87	EPC870 ①15FD ②653
7½	240	1	50	EHD	1¼	7	EPC87	EPC871 ①50EHD ②623
7½	480	1	30	EHD	1¼	7	EPC87	EPC871 ①30EHD ②643
7½	480	1	30	FDB	1¼	7	EPC87	EPC871 ①30FD ②643
7½	600	1	30	FDB	1¼	7	EPC87	EPC871 ①30FD ②653
10	480	1	30	EHD	1¼	7	EPC87	EPC871 ①30EHD ②643
10	480	1	30	FDB	1¼	7	EPC87	EPC871 ①30FD ②643
10	600	1	30	FDB	1¼	7	EPC87	EPC871 ①30FD ②653
40	480	3	90	EHD	2½	11	EPC813	EPC813 ①90EHB ②643
40	480	3	90	FDB	2½	11	EPC813	EPC813 ①90FB ②643
40	600	3	90	FDB	2½	11	EPC813	EPC813 ①90FB ②653
50	480	3	100	EHD	2½	11	EPC813	EPC813 ①100EHB ②643
50	480	3	100	FDB	2½	11	EPC813	EPC813 ①100FB ②643
50	600	3	100	FDB	2½	11	EPC813	EPC813 ①100FB ②653

①Circuit Breakers:

Manufacturer	Symbol	Frames 100/150AMP		
		240V	480V	600V
General Electric	TT	TEB	TED*	TED*
Square D	DT	FAL*	FAL*	FAL*
Cutler-Hammer	WT	EHD	EHD	FB, FDB

*Specify Voltage

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

②Motor Starters:

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

■ When Square D starter is used in EPC813, EPC-KIT 32 must be ordered

EPC Combination Line Starters

Single-Speed Non-Reversing with Motor Circuit Protectors 3-Pole 60 hertz, 600 VAC Maximum

Cl. I, Div. 1 & 2, Groups C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
NEMA 3, 4, 7CD, 9EFG, 12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations
Watertight

1C

Ordering Information:

Select the complete Catalog No. below and specify HP, voltage, frequency, RPM, type and full load ampere rating of motors or specify ampere rating of heaters.

Current limiters may be ordered by specification*.

Motor Starter			Enclosure with Motor Circuit Protector and Starter §	
Max. HP Polyphase	Volts	NEMA Size	Amp Rating	Cat. #
3	240	0	15	EPC870 ①15HMCP ②623
3	480	0	7	EPC870 ①7HMCP ②643
3	600	0	7	EPC870 ①7HMCP ②653
5	480	0	15	EPC870 ①15HMCP ②643
5	600	0	15	EPC870 ①15HMCP ②653
7½	240	1	30	EPC871 ①30HMCP ②623
7½	480	1	15	EPC871 ①15HMCP ②643
10	600	1	15	EPC871 ①15HMCP ②653
10	480	1	30	EPC871 ①30HMCP ②643

①Motor Circuit Protectors

Manufacturer	Symbol
General Electric	TP
Square D	DP
Cutler-Hammer	WP

②Motor Starters:

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

*General Electric or Cutler-Hammer MCPs only.

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

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