

Description	Page No.
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Combination Line Starters and Enclosures	
Single speed, non-reversing, with circuit breakers & disconnect switches	
EBMC Series	327-332
EPC Series	336-338
EBMC Series with Advantage* Starter	334, 345
Single speed, non-reversing, with motor circuit protectors	
EBMC Series	333
EPC Series	339

*Advantage is a trademark of Cutler-Hammer Inc.

Application:

Combination line starters are housed in enclosures suitable for specific environments, and are used for:

- across-the-line starting of polyphase ac induction motors
- providing disconnect means
- branch circuit protection
- motor running protection
- remote starting and stopping

Considerations for Selection:

Considerations for selection of proper enclosure:

- The environment of the enclosure location in accordance with NEC/CEC and NEMA/EEMAC requirements
- The characteristics of the starter and breaker to be enclosed
- See "Quick-Selector", below for guidance

Options and Accessories:

Some of the options and accessories available for particular applications are:

- push buttons
- selector switches
- control transformers
- extra overload relays
- extra interlock contacts
- neutral connectors (both insulated and grounded)
- breathers and drains

See individual listings for specific options. Many are available in kit form for field addition to existing units

Materials and Finishes:

- Standard material is copper-free aluminum with natural finish
- Optional finish is *Corro-free*™ epoxy for use in exceptionally corrosive atmospheres

Quick Selector Chart

Enclosures for Combination Motor Starters						
Enclosures	NEC/CEC – Hazardous Area Certifications and Compliance	NEMA/EEMAC Enclosure Type	NEMA/EEMAC Starters	Manufacturers Equipment Enclosed		
			Single Speed Non-Reversing	Starter	Breaker/Switch	Cover Type
EBMC	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	3, 4*, 7BCD, 9EFG, 12	0 – 5	Allen-Bradley G.E. Square D Cutler-Hammer	G.E. Square D Cutler-Hammer	Bolted/Ground Joint/Gasketed
EPC	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	3, 4, 7CD, 9EFG, 12	0 – 3	Allen-Bradley Cutler-Hammer G.E. Square D	G.E. Square D Cutler-Hammer	Threaded

* Without EMP control devices

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

Application:

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
- 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 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



Interior components are readily accessible with ample end room for wiring

- Optional EMPS control devices may be added to enclosure cover
- Steel bracket for lifting larger enclosures during installation supplied as standard

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

Standard Materials:

- Body and cover – copper-free aluminum
- Operating handle – copper-free aluminum
- Operating shafts and bushings – stainless steel
- Cover bolts, 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



Side operators leave cover free for control options

1C Combination Motor Starters

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

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

† 1000 Ampere Frame (max. 800 ampere trip)

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

EBMC Combination Line Starters and Enclosures

Single Speed Non-Reversing
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

Options:

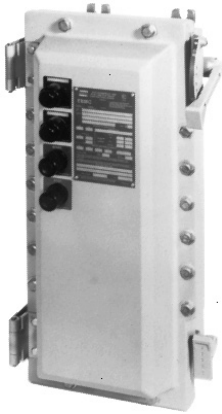
The following options are available from the factory by adding suffix to catalog number – suffixes are added alphanumerically.

Catalog Number System Example

EBMC1FB-(A)-DT30FAL36-W643-(B)

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

(B) 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

- Ambient compensated circuit breaker trip setting AC
- Less overload relays (lighting contactor) CL
- Less overload relays (motor contactor) 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) FTSP100
- 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) FTSP200
- 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) FTSP300
- Pilot light, 120VAC, red jewel, w/blank indicating plate J1
- Pilot light, 120VAC, green jewel, w/blank indicating plate J3
- LED pilot lights (in place of standard incandescent lamps) LED
- Less heaters in starter overload relay 0
- Start-Stop pushbuttons (requires 2 spaces) PB23‡
- On-Off selector switch RR2‡
- Hand-Off-Auto selector switch RR3‡
- Space heater, 120 Volt, 25 Watts R11
- Space heater, 240 Volt, 25 Watts R22
- Space heater, 480 Volt, 25 Watts R44
- Automatic reset overload relay S1
- Insulated neutral w/2 connectors S146
- Std. drain, Class I, B,C & D; Class II, E, F & G; Class III S756‡
- Std. breather & drain, Class I, B,C & D; Class II, E, F & G; Class III S756V‡
- Side conduit entrances (check factory for application) S366
- Back conduit entrances (check factory for application) S367
- External epoxy finish S752
- Internal and external epoxy finish 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. S781
 - Auxiliary contacts on starter 2 N.O. & 2 N.C. S782
 - Auxiliary contacts on starter 3 N.O. & 3 N.C. S783
- Auxiliary switch on Circuit Breaker 1A and 1B contacts S784
- Auxiliary switch on Circuit Breaker 2A and 2B contacts S785
- 12 Point term. block – 30 Amp, 300V S786
- General purpose control relay, 4 pole N.O., contacts rated 10A @600V, coil 120VAC, 50-60 hertz S787*

Suffix to be added to Cat. No. **Position in Cat. No.**

* 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.

EBMC Combination Line Starters and Enclosures

Single-Speed Non-Reversing
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,4,4 \dagger ,7BCD,9EFG,12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations
Watertight

1C

Options:

● 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.

● Insert Legend Plate(s) Catalog Number (i.e. DSL16) immediately after optional device in the EBM Catalog Number.

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

● 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.

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

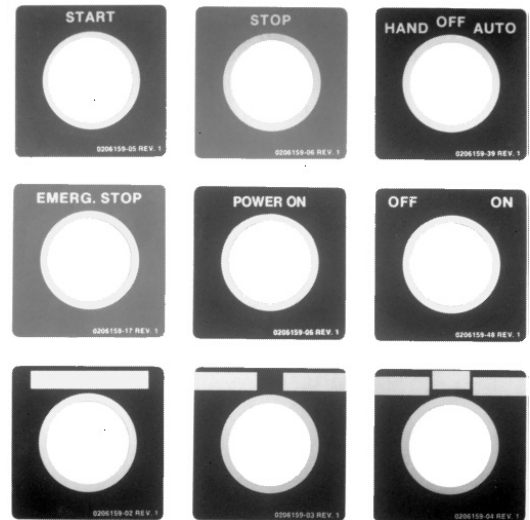
Marking	Cat. #
Blank with 2 fields	DSL03
For-Rev	DSL30
Hand-Auto	DSL29
In-Out	DSL35
Off-On	DSL48
Open-Close	DSL32
Raise-Lower	DSL36
Run-Jog	DSL28
Safe-Run	DSL86
Start-Stop	DSL37
Slow-Fast	DSL65
Up-Down	DSL33

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

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

Marking	Plate Color
Start	Green
Stop	Red
Emerg. Stop	Red



1C
Combination
Motor Starters

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

EBMC Combination Line Starters and Enclosures

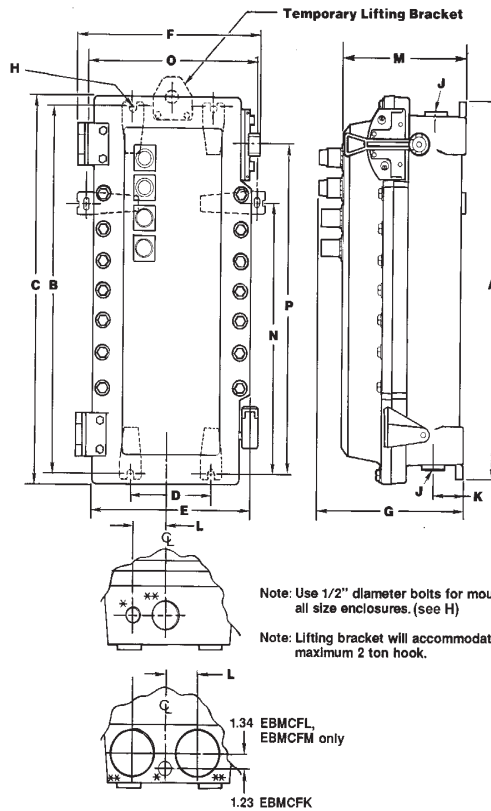
Dimensions (inches)†

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



1C Combination Motor Starters



* 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. No.	Enclosure Size Symbol	A	B	C	D	E	F	G	J** Conduit Entry Trade size		K	L	M	N	O	P	
									D&T♦	w/RE							
Size 0, 1 FVNR combination line starter§	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*** EBMCFH✓	G H	38.13 37.50	36.50 36.50	39.28 38.65	6.00	13.03	14.78 16.65	12.13 13.54	3" 3"	2.5" 2.5"	3.25 3.25	3.13 3.94	10.25 11.66	—	—	34.06 33.75
Size 4 FVNR combination line starter	EBMCFK*** EBMCFL✓	K L	43.12 53.47	41.50 51.50	42.65 53.28	12.00	17.65 17.90	20.46 20.58	12.80 15.00	(2) 3" (2) 4"	(2) 2.5" (2) 3.5"	3.25 4.00	3.00 3.50	10.78 13.03	—	—	19.97 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

§ Use EBMCFD enclosure when LVR1 or S787 options are ordered with Size 0 or 1 combination starters.

† Dimensions are approximate, not for construction purposes.

*** For Cutler-Hammer W200 Advantage® starters.

♦ Drilled & Tapped.

✓ – available with Lightning Service™ delivery.
 See Section G for complete details.

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

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†,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 on page 332.

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

Enclosures only can be ordered. Select from listings below. For starters that can be accommodated see Table 1 in Section 6C. Circuit breakers are also listed in Section 6C.
 Instantaneous magnetic trip circuit breakers (magnetic circuit

interrupters) can be supplied. See listings in Section 6C.
 Combination starters with motor circuit protectors for single speed, non-reversing motors are listed on page 333. Listings of circuit protectors are shown in Table 14 in Section 6C.

Motor Starter			Circuit Breaker			Enclosure	
Max. HP	Line Volts	NEMA Size	Amp Rating	Frame Volts	Frame Types	Without Breaker & Starter Cat. No.	With Breaker & Starter Cat. No. ♦ ♦
2	120	0	30	240	FAL, TEB	EBMCFB✓	EBMC0FB-†30 ♦ 32-†613
2	120	0	30	480	FAL, TED, EHD	EBMCFB✓	EBMC0FB-†30 ♦ 34-†613
2	120	0	30	600	FAL, TED, FDB	EBMCFB✓	EBMC0FB-†30 ♦ 36-†613
3	240	0	20	240	FAL, TEB	EBMCFB✓	EBMC0FB-†20 ♦ 32-†623
3	240	0	20	480	FAL, TED, EHD	EBMCFB✓	EBMC0FB-†20 ♦ 34-†623
3	240	0	20	600	FAL, TED, FDB	EBMCFB✓	EBMC0FB-†20 ♦ 36-†623
5	480	0	15	480	FAL, TED, EHD	EBMCFB✓	EBMC0FB-†15 ♦ 34-†643
5	480	0	15	600	FAL, TED, FDB	EBMCFB✓	EBMC0FB-†15 ♦ 36-†643
5	600	0	15	600	FAL, TED, FDB	EBMCFB✓	EBMC0FB-†15 ♦ 36-†663
5	240	1	30	240	FAL, TEB	EBMCFB✓	EBMC1FB-†30 ♦ 32-†623
5	240	1	30	480	FAL, TED, EHD	EBMCFB✓	EBMC1FB-†30 ♦ 34-†623
5	240	1	30	600	FAL, TED, FDB	EBMCFB✓	EBMC1FB-†30 ♦ 36-†623
7½	240	1	50	240	FAL, TEB	EBMCFB✓	EBMC1FB-†50 ♦ 32-†623
7½	240	1	50	480	FAL, TED, EHD	EBMCFB✓	EBMC1FB-†50 ♦ 34-†623
7½	240	1	50	600	FAL, TED, FDB	EBMCFB✓	EBMC1FB-†50 ♦ 36-†623
10	480	1	30	480	FAL, TED, EHD	EBMCFB✓	EBMC1FB-†30 ♦ 34-†643
10	480	1	30	600	FAL, TED, FDB	EBMCFB✓	EBMC1FB-†30 ♦ 36-†643
10	600	1	30	600	FAL, TED, FDB	EBMCFB✓	EBMC1FB-†30 ♦ 36-†663
10	240	2	50	240	FAL, TEB	EBMCFD✓	EBMC2FD-†50 ♦ 32-†623
10	240	2	50	480	FAL, TED, EHD	EBMCFD✓	EBMC2FD-†50 ♦ 34-†623
10	240	2	50	600	FAL, TED, FDB	EBMCFD✓	EBMC2FD-†50 ♦ 36-†623
15	240	2	70	240	FAL, TEB	EBMCFD✓	EBMC2FD-†70 ♦ 32-†623
15	240	2	70	480	FAL, TED, EHD	EBMCFD✓	EBMC2FD-†70 ♦ 34-†623
15	240	2	70	600	FAL, TED, FDB	EBMCFD✓	EBMC2FD-†70 ♦ 36-†623
15	480	2	40	480	FAL, TED, EHD	EBMCFD✓	EBMC2FD-†40 ♦ 34-†643
15	480	2	40	600	FAL, TED, FDB	EBMCFD✓	EBMC2FD-†40 ♦ 36-†643
15	600	2	40	600	FAL, TED, FDB	EBMCFD✓	EBMC2FD-†40 ♦ 36-†663
20	480	2	50	480	FAL, TED, EHD	EBMCFD✓	EBMC2FD-†50 ♦ 34-†643
20	480	2	50	600	FAL, TED, FDB	EBMCFD✓	EBMC2FD-†50 ♦ 36-†643
20	600	2	50	600	FAL, TED, FDB	EBMCFD✓	EBMC2FD-†50 ♦ 36-†663
25	480	2	70	480	FAL, TED, EHD	EBMCFD✓	EBMC2FD-†70 ♦ 34-†643
25	480	2	70	600	FAL, TED, FDB	EBMCFD✓	EBMC2FD-†70 ♦ 36-†643
25	600	2	70	600	FAL, TED, FDB	EBMCFD✓	EBMC2FD-†70 ♦ 36-†663
20	240	3	90	240	FAL, TEB	EBMCFH✓	EBMC3FH-†90 ♦ 32-†623
25	240	3	100	240	FAL, TEB	EBMCFH✓	EBMC3FH-†100 ♦ 32-†623
30	240	3	125	480	TEB	EBMCFH✓	EBMC3FH-†125 ♦ 34-†623
30	480	3	70	480	FAL, TED, EHD	EBMCFH✓	EBMC3FH-†70 ♦ 34-†643
30	480	3	70	600	FAL, TED, FDB	EBMCFH✓	EBMC3FH-†70 ♦ 36-†643
30	600	3	70	600	FAL, TED, FDB	EBMCFH✓	EBMC3FH-†70 ♦ 36-†663

♦ † See page 332 for footnotes.

✓ – available with Lightning Service™ delivery. See Section G for complete details.

1C
 Combination
 Motor Starters



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,4,4+,7BCD,9EFG,12 Watertight

1C Combination Motor Starters

Motor Starter			Circuit Breaker			Enclosure	
Max. HP	Line Volts	NEMA Size	Amp Rating	Frame Volts	Frame Types	Without Breaker & Starter Cat. No.	With Breaker & Starter Cat. No. ♦♦
40	480	3	90	480	FAL, TED, EHD	EBMCFH✓	EBMC3FH-†90 ♦ 34-*643
40	480	3	90	600	FAL, TED, FDB	EBMCFH✓	EBMC3FH-†90 ♦ 36-*643
40	600	3	90	600	FAL, TED, FDB	EBMCFH✓	EBMC3FH-†90 ♦ 36-*663
50	480	3	100	480	FAL, TED, EHD	EBMCFH✓	EBMC3FH-†100 ♦ 34-*643
50	480	3	100	600	FAL, TED, FDB	EBMCFH✓	EBMC3FH-†100 ♦ 36-*643
50	600	3	100	600	FAL, TED, FDB	EBMCFH✓	EBMC3FH-†100 ♦ 36-*663
40	240	4	175	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFL✓	EBMC4FL-†175 ♦ 36-*623
50	240	4	200	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFL✓	EBMC4FL-†200 ♦ 36-*623
60	480	4	125	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFL✓	EBMC4FL-†125 ♦ 36-*643
60	600	4	100	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFL✓	EBMC4FL-†100 ♦ 36-*663
75	480	4	150	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFL✓	EBMC4FL-†150 ♦ 36-*643
75	600	4	125	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFL✓	EBMC4FL-†125 ♦ 36-*663
100	480	4	200	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFL✓	EBMC4FL-†200 ♦ 36-*643
100	600	4	150	600	TFK/ JD/ KAL, TFJ, JDB	EBMCFL✓	EBMC4FL-†150 ♦ 36-*663
125	480	5	300	600	TJK/ KD/ LAL, TJJ, KDB	EBMCFM✓	EBMC5FM-†300 ♦ 36-*643
150	480	5	400	600	TJK/ KD/ LAL, TJJ, KDB	EBMCFM✓	EBMC5FM-†400 ♦ 36-*643

Motor Starter			Fusible Disconnect Switch			With Disconnect Switch & Starter Cat. No.
Max. HP	Line Volts	NEMA Size	Amp Rating	Max. Volts	Switch Type	
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

NEMA Size		Without Switch & Starter Cat. No.
0		EBMCFD-FD
1		EBMCFD-FD
2		EBMCFD-FD
3		EBMCFH-FD

† Circuit Breakers:

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

♦ Select Circuit Breaker **Frame Type** based on Frame Size, Voltage, and Manufacturer desired:
 ♦♦ Starters are furnished with 3 heaters, when heater ratings are fully specified.

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	

✓ – available with Lightning Service™ delivery. See Section G for complete details.

* Motor 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. Breather and drain entries must be plugged for NEMA 4 rating.

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

1C



1C Combination Motor Starters

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.

◆◆ Starters are furnished with three heaters when heater ratings are fully specified. For starter catalog numbers refer to Table 1 in Section 6C. For motor circuit protector, refer to Table 14 in Section 6C.

Motor Starter		NEMA Size	MCP Amp Rating	Enclosure W/O Starter & MCP Catalog No.	Enclosure W/Starter & MCP Catalog No. ◆◆
Max. HP Polyphase	Volts				
3	240	0	15	EBMCFB✓	EBMC0FB-†15A ◆ 36-**623
3	480	0	7	EBMCFB✓	EBMC0FB-†7A ◆ 36-**643
3	600	0	7	EBMCFB✓	EBMC0FB-†7A ◆ 36-**663
5	480	0	15	EBMCFB✓	EBMC0FB-†15A ◆ 36-**643
5	600	0	15	EBMCFB✓	EBMC0FB-†15A ◆ 36-**663
7½	240	1	30	EBMCFB✓	EBMC1FB-†30A ◆ 36-**623
7½	480	1	15	EBMCFB✓	EBMC1FB-†15A ◆ 36-**643
10	480	1	30	EBMCFB✓	EBMC1FB-†30A ◆ 36-**643
10	600	1	15	EBMCFB✓	EBMC1FB-†15A ◆ 36-**663
10	240	2	50	EBMCFD✓	EBMC2FD-†50A ◆ 36-**623
15	240	2	100	EBMCFD✓	EBMC2FD-†100A ◆ 36-**623
15	480	2	30	EBMCFD✓	EBMC2FD-†30A ◆ 36-**643
20	600	2	30	EBMCFD✓	EBMC2FD-†30A ◆ 36-**663
25	480	2	50	EBMCFD✓	EBMC2FD-†50A ◆ 36-**643
25	600	2	50	EBMCFD✓	EBMC2FD-†50A ◆ 36-**663
30	240	3	100	EBMCFH✓	EBMC3FH-†100A ◆ 36-**623
30	600	3	50	EBMCFH✓	EBMC3FH-†50A ◆ 36-**663
50	480	3	100	EBMCFH✓	EBMC3FH-†100A ◆ 36-**643
50	600	3	100	EBMCFH✓	EBMC3FH-†100A ◆ 36-**663
50	240	4	250 [⊙]	EBMCFL✓	EBMC4FL-†250* ◆ 36-**623
100	480	4	250 [⊙]	EBMCFL✓	EBMC4FL-†250* ◆ 36-**643
100	600	4	250 [⊙]	EBMCFL✓	EBMC4FL-†250* ◆ 36-**663
60	240	5	250 [⊙]	EBMCFM✓	EBMC5FM-†250* ◆ 36-**623
100	240	5	400	EBMCFM✓	EBMC5FM-†400* ◆ 36-**623
125	480	5	250 [⊙]	EBMCFM✓	EBMC5FM-†250* ◆ 36-**643
150	600	5	250 [⊙]	EBMCFM✓	EBMC5FM-†250* ◆ 36-**663
200	480	5	400	EBMCFM✓	EBMC5FM-†400* ◆ 36-**643
200	600	5	400	EBMCFM✓	EBMC5FM-†400* ◆ 36-**663

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

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

† Motor Circuit Protectors:

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

◆ Select 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

** Motor Starters:

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

✓ – available with Lightning Service™ delivery. See Section G for complete details.

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

Cutler-Hammer (WP)

MCP Amp Rating	Symbol	Trip Range
7	A	21 to 70
15	A	45 to 150
30	A	90 to 300
50	A	150 to 500
100	A	300 to 1000
250	J	1250 to 2500
400	G	1250 to 2500

General Electric (TP)

MCP Amp Rating	Symbol	Trip Range
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)

MCP Amp Rating	Symbol	Trip Range
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

Application:

- 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 a 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.

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:

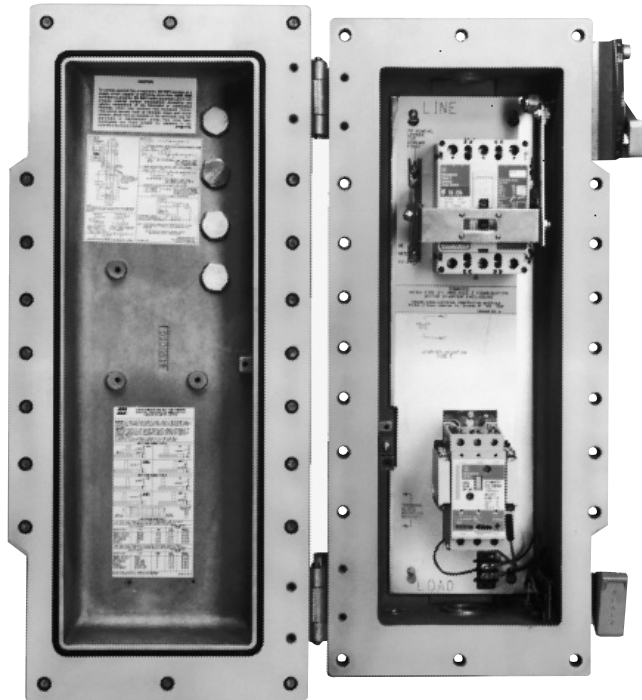
- Motor starters – NEMA sizes 1-5

Certifications and Compliances:

- NEC Class I, Division 1 & 2, Groups B,C,D /CEC: 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 Ratings (Interrupting Capacity)

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

- NEMA: 3, 3R, 4‡, 7BCD, 9EFG, 12

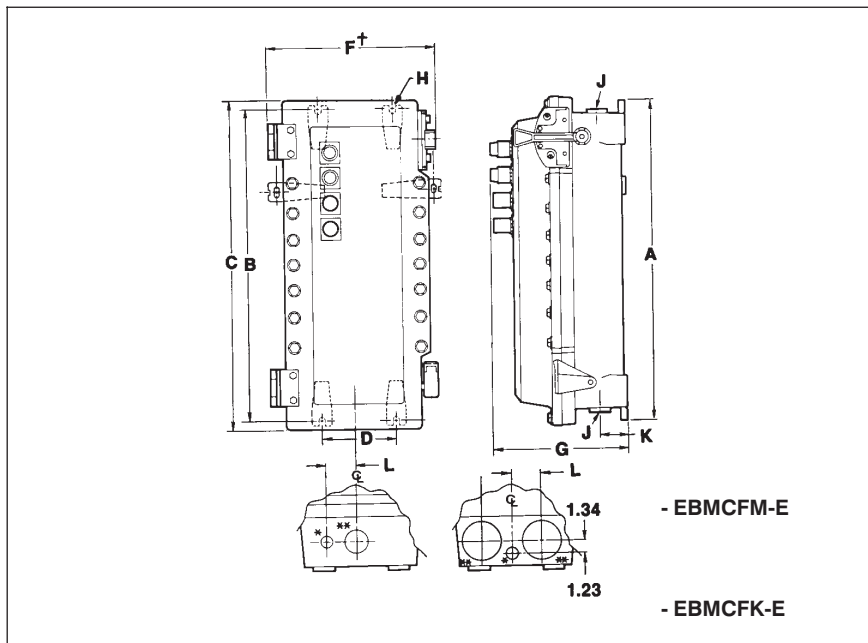


Spectrum EBM-E Series Combination Line Starter with Advantage Starter.

Options:

See page 310 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 (inches) - see page 335 for dimensions of different enclosure sizes



*Advantage is a trademark of Cutler-Hammer Products.

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

Spectrum EBM Enclosures

Supplied with Cutler-Hammer Advantage™ Starters

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,
 Type 3,3R,4,7,BCD,9EFG,12

Explosionproof
 Dust-Ignitionproof
 Raintight
 Wet Locations
 Watertight

1C

DIMENSIONS (inches)

Enclosure Only Cat. No.	Dimensions					**J Conduit Entry Trade Size			
	A	B	C	D	F	D&T	w/RE	K	L
EBMCFB-E	25.75	24.75	26.90	6.00	13.53	2"	1.5"	3.25	3.13
EBMCFG-E	38.13	36.50	39.28	6.00	12.53	3"	2.5"	3.25	3.13
EBMCFK-E	43.12	41.50	42.65	12.00	11.40	(2) 3"	(2) 2.5"	3.25	3.25
EBMCFM-E	64.22	62.50	64.03	12.00	15.40	(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	Poly-phase	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-†50*32-W6213-E
7½	240	1	50	480	FAL, TED, EHD		EBMCFB-E	EBMC1FB-†50*34-W6213-E
7½	240	1	50	600	FAL, TED, FDB		EBMCFB-E	EBMC1FB-†50*36-W6213-E
10	480	1	30	480	FAL, TED, FDB		EBMCFB-E	EBMC1FB-†30*34-W6413-E
10	480	1	30	600	FAL, TED, FDB		EBMCFB-E	EBMC1FB-†30*36-W6413-E
10	600	1	30	600	FAL, TED, FDB		EBMCFB-E	EBMC1FB-†30*36-W6613-E
15	240	2	70	240	FAL, TEB		EBMCFB-E	EBMC2FB-†70*32-W6213-E
15	240	2	70	480	FAL, TED, FDB		EBMCFB-E	EBMC2FB-†70*34-W6213-E
15	240	2	70	600	FAL, TED, FDB		EBMCFB-E	EBMC2FB-†70*36-W6213-E
25	480	2	70	480	FAL, TED, EHD		EBMCFB-E	EBMC2FB-†70*34-W6413-E
25	480	2	70	600	FAL, TED, FDB		EBMCFB-E	EBMC2FB-†70*36-W6413-E
25	600	2	50	600	FAL, TED, FDB		EBMCFB-E	EBMC2FB-†50*36-W6413-E
30	240	3	125	240	FAL, TEB		EBMCFG-E	EBMC3FG-†125*32-W6213-E
30	240	3	125	480	FAL, TED, EHD		EBMCFG-E	EBMC3FG-†125*34-W6213-E
30	240	3	125	600	FAL, TED, FDB		EBMCFG-E	EBMC3FG-†125*36-W6213-E
50	480	3	100	480	FAL, TED, EHD		EBMCFG-E	EBMC3FG-†100*34-W6413-E
50	480	3	100	600	FAL, TED, FDB		EBMCFG-E	EBMC3FG-†100*36-W6413-E
50	600	3	90	600	FAL, TED, FDB		EBMCFG-E	EBMC3FG-†90*36-W6613-E
50	240	4	200	600	TFK, JD, KAL, TFJ, JDB		EBMCFK-E	EBMC4FK-†200*W36-W6213-E
100	480	4	200	600	TFK, JD, KAL, TFJ, JDB		EBMCFK-E	EBMC4FK-†200*36-W6413-E
100	600	4	150	600	TFK, JD, KAL, TFJ, JDB		EBMCFK-E	EBMC4FK-†150*36-W6613-E
75	240	5	400	600	TJK, KD, LAL, TJJ, KDB		EBMCFM-E	EBMC5FM-†400*36-W6213-E
150	480	5	400	600	TJK, KD, LAL, TJJ, KDB		EBMCFM-E	EBMC5FM-†400*36-W6413-E
200	600	5	400	600	TJK, KD, LAL, TJJ, KDB		EBMCFM-E	EBMC5FM-†400*36-W6613-E

†With Circuit Breakers:

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

†With 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

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

	100 Amp Frame and 150 Amp Frame			225 Amp Frame and 250 Amp Frame		400 Amp Frame
Mfg.	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	TEB	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

* Select 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 333 for appropriate symbol.

	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. Breather and drain entries must be plugged for NEMA 4 rating.

Application:

- 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

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

* Application is limited by starter, contactor, circuit breaker or motor circuit protector design – Consult Factory

Electrical Rating Range:

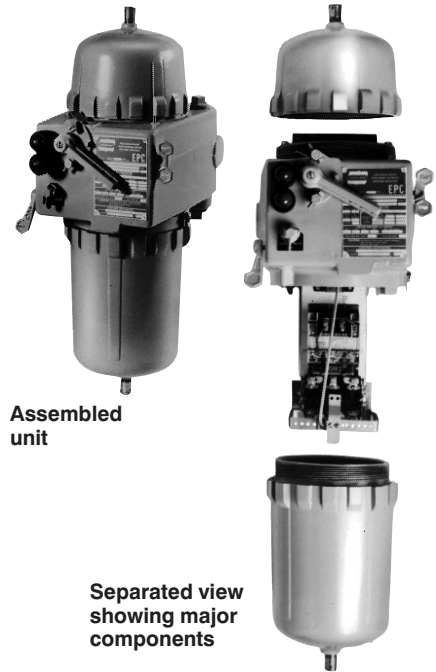
- Starters – Sizes 0 to 3 inclusive
- Breakers – 100 and 150 ampere frame sizes
- Motor Circuit Protectors – 100 ampere frame size

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

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 352 for listing of kits



Description

Description	Suffix to add to Encl. Cat. #
Control circuit transformer 600/480/240-120 volts, 50 or 60 hertz (Sizes 0 and 1 – 100-50 VA, Size 2 – 100-200 VA, Size 3 – 200-350 VA)	
Fusible – Secondary	FT
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
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
† Required for pilot lights on other than 120 volt control circuits. One required for each lamp.	
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

‡ Not suitable for NEMA 4.

EPC Combination Line Starters and Enclosures

Dimensions* (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

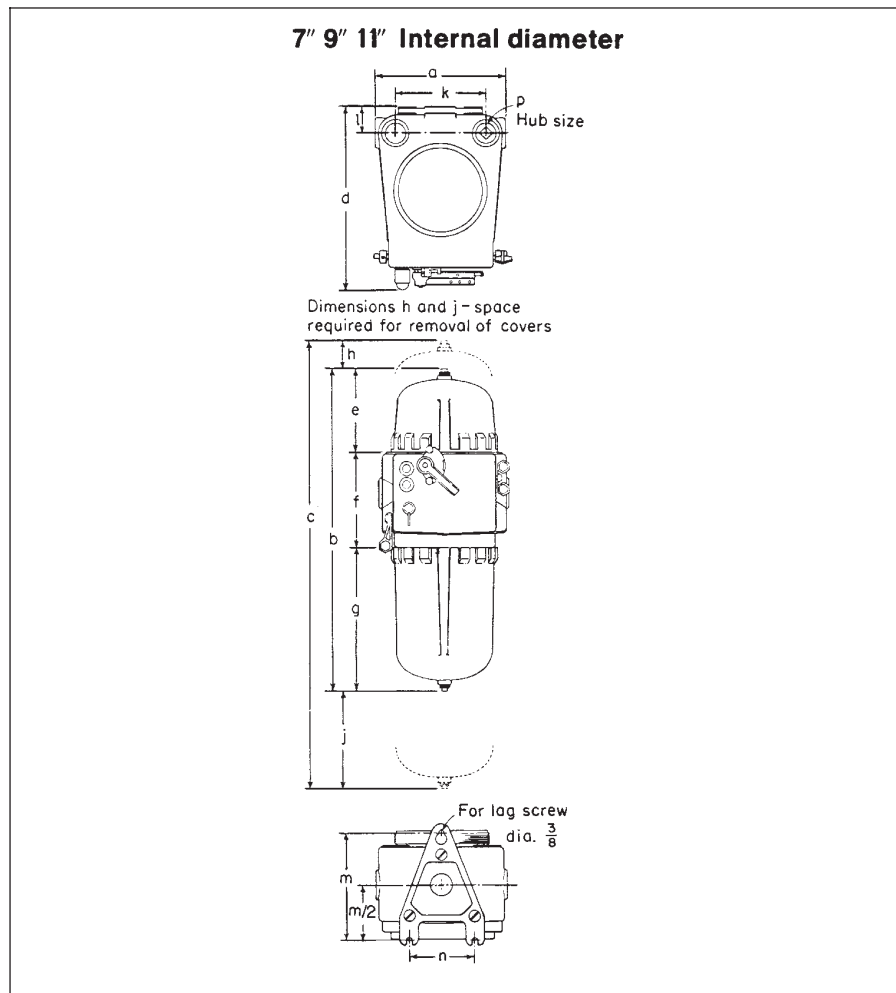
1C

1C Combination Motor Starters

Single-Speed Non-Reversing Sizes 0, 1, 2, and 3 starters

Cat. # EPC Int. Dia.	87 7" Dimensions	813 11" Dimensions	87-FTPS or 87-FT 7" Dimensions ♦	813-FTPS or 813-FT 11" 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 ¹ / ₁₆	20 ¹ / ₄	14 ¹ / ₁₆	20 ¹ / ₄
e	6 ³ / ₄	9 ¹ / ₈	11 ³ / ₄	12 ¹ / ₈
f	7 ¹¹ / ₁₆	8 ⁵ / ₈	7 ¹¹ / 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

♦ For units with Control Circuit Transformer (suffix FT or FTPS)



* Dimensions are approximate, not for construction purposes.

1C

EPC Combination Line Starters and Enclosures

Single Speed, Non-Reversing
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

With Circuit Breakers

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.

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.

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

Enclosures only can be ordered. Select from listings below. For starters that can be accom-

modated see Table 1 in Section 6C. Circuit breakers are also listed in Section 6C. Specific reference table is shown in the listings below.

Instantaneous magnetic trip circuit breakers (magnetic circuit interrupters) can be supplied. See listings in Section 6C.

Combination starters with motor circuit protectors or single speed, non-reversing motors are listed on page 339. Listings of circuit protectors are shown in Table 16 in Section 6C.

1C Combination Motor Starters

Motor Starter			Circuit Breaker			Enclosure		Without Starter & Circuit Breaker Cat. #	With Starter & Circuit Breaker Cat. # ◆◆
Max. HP	Poly-phase	Volts	NEMA Size	Amp Rating	Frame	Section 6C Table	Hub Size	Int. Dia.	
2	120	0	30	EB	7	1¼	7	EPC87	EPC870-†30ED-†613
3	240	0	20	EHD	7	1¼	7	EPC87	EPC870-†20EHD-†623
3	480	0	15	EHD	8	1¼	7	EPC87	EPC870-†15EHD-†643
3	480	0	15	FDB	9	1¼	7	EPC87	EPC870-†15FD-†643
3	600	0	15	FD	6	1¼	7	EPC87	EPC870-†15FD-†653
5	240	1	30	EHD	7	1¼	7	EPC87	EPC871-†30EHD-†623
5	480	0	15	EHD	8	1¼	7	EPC87	EPC870-†15EHD-†643
5	480	0	15	FDB	9	1¼	7	EPC87	EPC870-†15FD-†643
5	600	0	15	FDB	9	1¼	7	EPC87	EPC870-†15FD-†653
7½	240	1	50	EHD	7	1¼	7	EPC87	EPC871-†50EHD-†623
7½	480	1	30	EHD	8	1¼	7	EPC87	EPC871-†30EHD-†643
7½	480	1	30	FDB	9	1¼	7	EPC87	EPC871-†30FD-†643
7½	600	1	30	FDB	9	1¼	7	EPC87	EPC871-†30FD-†653
10	480	1	30	EHD	8	1¼	7	EPC87	EPC871-†30EHD-†643
10	480	1	30	FDB	9	1¼	7	EPC87	EPC871-†30FD-†643
10	600	1	30	FDB	9	1¼	7	EPC87	EPC871-†30FD-†653
40	480	3	90	EHD	8	2½	11	EPC813	EPC813-†90EHB-†643
40	480	3	90	FDB	9	2½	11	EPC813	EPC813-†90FB-†643
40	600	3	90	FDB	9	2½	11	EPC813	EPC813-†90FB-†653
50	480	3	100	EHD	8	2½	11	EPC813	EPC813-†100EHB-†643
50	480	3	100	FDB	9	2½	11	EPC813	EPC813-†100FB-†643
50	600	3	100	FDB	9	2½	11	EPC813	EPC813-†100FB-†653

† Circuit 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	EHB	FB, FDB

‡ Motor Starters:

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

* Specify voltage

*** 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


1C Combination Motor Starters

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.

◆◆ Starters are furnished with three heaters when heater ratings are fully specified. For starter catalog numbers refer to Table 1 in Section 6C. For motor circuit protector, refer to Table 14 in Section 6C.

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-†15HMCP-‡623
3	480	0	7	EPC870-†7HMCP-‡643
3	600	0	7	EPC870-†7HMCP-‡653
5	480	0	15	EPC870-†15HMCP-‡643
5	600	0	15	EPC870-†15HMCP-‡653
7½	240	1	30	EPC871-†30HMCP-‡623
7½	480	1	15	EPC871-†15HMCP-‡643
10	600	1	15	EPC871-†15HMCP-‡653
10	480	1	30	EPC871-†30HMCP-‡643

◆ General Electric or Cutler-Hammer MCPs only.

† Motor Circuit Protectors

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

‡ Motor Starters:

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