



*Cat. No. 120E-C09FDA1FA1D-3-4RW-7  
 IP66 (Type 3,4,12) Metal Enclosure with Hinged Cover*

## Bulletin 120E

- **Compact Design**
- **Selection of Enclosures IP42 (Type 1) and IP66 (Type 3/4/12)**
- **Bimetallic Class 10 Overload Relays**
- **Solid-State Overload Relays**

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#### Description

Bulletin 120E multi-speed starters are designed to control “two-speed, separate-winding” AC squirrel-cage induction motors. These starters are available for constant torque, variable torque or constant horsepower three-phase motors. Multi-speed motors are commonly used on machine tools, fans, blowers, pumps, conveyors and many other types of equipment.

Bulletin 120E multi-speed motor starters use Bulletin 100 contactors and Bulletin 193 bimetallic (Class 10) or solid-state overload relays. A normally open auxiliary contact is also included on each contactor. A wide variety of factory- and field-installed options are available.

For two-speed consequent-pole motor starters, consult Allen-Bradley Sales Office.

**Constant Torque** — Constant torque motors will supply a constant torque at each speed while the horsepower rating will vary directly with the speed. Typical applications include conveyors, compressors, hoists, mixers and milling machines.

**Variable Torque** — Variable torque motors have horsepower ratings that vary as a square of the speed and have torque ratings that vary directly with the speed. Typical applications include centrifugal pumps and fans.

**Constant Horsepower** — Constant horsepower motors have the same horsepower rating at each speed while the torque varies inversely to the speed. Typical applications include mixer, milling machines and cranes.

#### Conformity to Standards:

IEC 947  
 VDE 0660  
 CSA 22.2  
 UL 508

#### Approvals:

cUL US

#### A-B EXPRESS Fast Shipment Program

- Fast shipment of Bulletin 120E IEC Products to satisfy your unexpected demands.
- Make your selections from any of the Cat. Nos. printed in blue and identify your order as



#### Your order must include:

- Cat. No. of the multi-speed starter selected.
- Coil Voltage Code.
- If required, factory-installed modifications suffix code.
- If required, Cat. No. of any accessories.

**Bulletin 120E**  
**IEC Multi-Speed Starters**  
**Product Selection**

**Enclosed Type**

**AC Operated**



Fast Shipment Program Cat. Nos. are printed in blue.

**2-Speed Separate Winding, Constant or Variable Torque (Constant Horsepower—Consult Allen-Bradley Sales Office.)**

Max I <sub>e</sub> [A]	Ratings (AC3, AC4)							IP42 (Type 1) General Purpose Sheet Metal Enclosure (Lift-off Cover through 120E-C72)	IP66 (Type 3/4/12) Watertight, Dusttight Sheet Metal Enclosure (Hinged Cover)		
	kW	HP								Cat. No.	Cat. No.
		3Ø	1Ø ①		3Ø						
380V/ 415V	115V	230V	200V	230V	460V	575V					
9	4	1/3	1	2	2	5	7-1/2	120E-C09A	120E-C09F		
12	5-1/2	1/2	2	3	3	7-1/2	10	120E-C12A	120E-C12F		
16	7-1/2	1	3	5	5	10	15	120E-C16A	120E-C16F		
23	11	2	3	5	7-1/2	15	15	120E-C23A	120E-C23F		
30	15	2	5	7-1/2	10	20	25	120E-C30A	120E-C30F		
37	18-1/2	3	5	10	10	25	30	120E-C37A	120E-C37F		
43	22	3	7-1/2	10	15	30	30	120E-C43A	120E-C43F		
60	30	5	10	15	20	40	50	120E-C60A	120E-C60F		
72	37	5	10	20	25	50	60	120E-C72A	120E-C72F		
85	45	7-1/2	15	25	30	60	60	120E-C85A	120E-C85F		
110	55	—	—	30	40	75	100	120E-B110A	120E-B110F		
180	90	—	—	60	60	150	150	120E-B180A	120E-B180F		
250	132	—	—	75	100	200	250	120E-B250A	120E-B250F		
304	160	—	—	100	100	250	300	120E-B300A	120E-B300F		
414	220	—	—	125	150	350	400	120E-B400A	120E-B400F		
608	315	—	—	300	250	500	600	120E-B600A	120E-B600F		

**⊗ Coil Voltage Code**

The Cat. No. as listed is incomplete. Select a Coil Voltage Code from the table below to complete the Cat. No. Example: **Cat. No. 120E-C09A** becomes **Cat. No. 120E-C09AB**.

For 120E-C Starters																
AC Voltage		24	48	110	120	208	208... 240	220	240	277	380... 400	400... 415	440	480	500	600
Common Control ⊗ Coil Voltage Code	50 Hz	—	—	—	—	—	—	A	T	—	N	G	B	—	M	—
	60 Hz	—	—	—	—	H	L	—	A	—	—	—	N	B	—	C
Separate Control (without transformer) Coil Voltage Code	50 Hz	K	Y	D	—	—	—	—	—	—	—	—	—	—	—	—
	60 Hz	J	X	—	D	—	—	—	—	T	—	—	—	—	—	—

For 120E-B Starters																
AC Voltage		24	48	110	120	208	208... 240	220	240	277	380... 400	400... 415	440	480	500	600
Common Control ⊗ Coil Voltage Code	50 Hz	—	—	—	—	—	—	A	T	—	N	I	B	—	M	—
	60 Hz	—	—	—	—	H	L	—	A	—	—	—	G	B	—	C
Separate Control (without transformer) Coil Voltage Code⊗	50 Hz	K	Y	D	—	—	—	—	—	—	—	—	—	—	—	—
	60 Hz	J	X	—	D	—	—	—	—	F	—	—	—	—	—	—

**⊗⊗ Overload Relay Code ①**

The Cat. No. as listed is incomplete. Select (2) overload relay codes from page 3-87 or 3-88. The first code will denote the high speed overload relay, and the second code will denote the low speed overload relay.

- ① For single-phase (1Ø) applications, consult Allen-Bradley Sales Office for overload relay selection.
- ② When selecting a factory-installed control circuit transformer (see Modifications page 3-98), use the Common Control Coil Voltage Code to denote the transformer primary voltage. The starter coil and transformer secondary voltage will both be 120V by default. Example: **Cat. No. 120E-C09FB** will have a transformer with a 480V primary/120V secondary and a 120V starter coil. If a starter coil voltage other than 120V is desired, a second Coil Voltage Code must be added to denote the coil/transformer secondary voltage. Example: **Cat. No. 120E-C09FBJ** will have a transformer with a 480V primary/24V secondary and a 24V starter coil.
- ③ Coils below 110V are not available for 120E-B400 and 120E-B600 Starters due to high inrush current.

Accessories — Page 3-89  
 Modifications — Page 3-99  
 Approximate Dimensions — Page 3-104 and 3-107