

## Combination Starters



WEG's full voltage non-reversing combination starters represent a competitive alternative to the traditional NEMA starters by offering:

- reduced overall dimensions, yet providing reasonable internal wiring space
- rotary through-the-door disconnect instead of the traditional flange operator
- UL/CSA approved performance in more compact components.

Two series are available off the shelf:

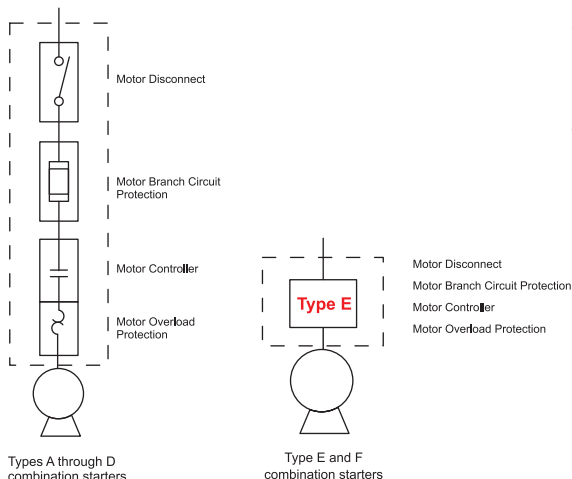
- MCCB disconnect – ESWC Series
- Motor protector – ESWE & ESWF Series

### Combination Starter Basics

Combination starters are the most common type of packaged motor controllers. They are called combination because of their construction and combined functions required by the US National Electric Code (NEC): Motor Disconnect, Motor Branch Circuit Protection, Motor Controller and Motor Overload Protection. UL & CSA currently recognizes six different constructions of combination starters that meet the requirements of a motor branch circuit.

Constructions Types A through D are traditional starters that use either a listed disconnect switch and fuses or a listed circuit breaker as the disconnect means and for short circuit protection. Each type uses a separate UL508 listed motor controller and overload relay. Recently revisions on UL508 introduced the Type E and Type F starters.

UL Combination Starter Type	Device Used for Component Function			
	Disconnected	Branch Circuit Protection	Motor Controller	Motor OL Relay
A	UL 98 Manual Disconnect	UL 248 Fuses	UL 508 Magnetic or Solid State Controller	UL 508 Motor Overload Relay
B		UL 508 Motor Short Circuit Protector		
C	UL 489 Inverse Time Circuit Breaker			
D	UL 489 Instantaneous Trip Circuit Breaker			
E	UL 508 Self-Protected Combination Controller			
F	UL 508 Manual Self-Protected Combination Controller	UL 508 Magnetic or Solid State Controller	UL 508 Manual Self-Protected Combination Controller	



Type E starter is a self-protected combination motor controller that combines in a single device all the required functions of a combination starter eliminating any additional requirements for upstream fuses or circuit breaker. Type F starter consists of a listed manual Type E combined with a UL508 listed contactor.

### Combination Type-E Across The Line Starter

- Branch Disconnect: Rotary through-the-door Handle
- Short-Circuit Protection: Manual Motor Protection
- Motor Control: Magnetic Contactor
- Overload Protection: Manual Motor Protection
- Control Devices: Hand-Off-Auto switch, Start-Stop pushbutton, pilot lights
- Other enclosure options available upon request

### Three-Phase without CPT - Enclosure Type-4X

#### Combination Type-E Across The Line Starter

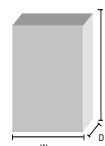
Max. 3-ph Hp Motors				Overload Setting Range (A)	Control Voltage (1) (Vac)	Non-Metallic Enclosure Type 4X			Multiplier
200V	230V	460V	575V			Catalog Number	List Price	Box Size	
-	-	1/2	1/2	0.63 - 1.0	120	\$855	E-1	Z3	
					480				
1/4	1/3	3/4	1	1.0 - 1.6	120	\$855	E-1		
					208-240				
					480				
1/2	1/2	1-1/2	1-1/2	1.6 - 2.5	120	\$855	E-1		
					208-240				
					480				
3/4	1	2	3	2.5 - 4.0	120	\$855	E-1		
					208-240				
					480				
1-1/2	1-1/2	3	5	4.0 - 6.3	120	\$855	E-1		
					208-240				
					480				
3	3	5	7-1/2	6.3 - 10	120	\$865	E-1		
					208-240				
					480				
5	5	10	15	10 - 16	120	\$875	E-1		
					208-240				
					480				
7-1/2	7-1/2	15	15	16 - 20	120	\$900	E-1		
					208-240				
					480				
10	10	20	25	25 - 32	120	\$990	E-1		
					208-240				
					480				

### Three-Phase with CPT - Enclosure Type-4X

Max. 3-ph Hp Motors				Overload Setting Range (A)	Control Voltage (prim. / sec.) (Vac)	Non-Metallic Enclosure Type 4X			Multiplier
200V	230V	460V	575V			Catalog Number	List Price	Box Size	
-	-	1/2	1/2	0.63 - 1.0	480 / 120	\$1,140	E-1	Z3	
					575 / 120				
1/4	1/3	3/4	1	1.0 - 1.6	240 / 120	\$1,140	E-1		
					480 / 120				
					575 / 120				
1/2	1/2	1-1/2	1-1/2	1.6 - 2.5	240 / 120	\$1,140	E-1		
					480 / 120				
					575 / 120				
3/4	1	2	3	2.5 - 4.0	240 / 120	\$1,140	E-1		
					480 / 120				
					575 / 120				
1-1/2	1-1/2	3	5	4.0 - 6.3	240 / 120	\$1,140	E-1		
					480 / 120				
					575 / 120				
3	3	5	7-1/2	6.3 - 10	240 / 120	\$1,140	E-1		
					480 / 120				
					575 / 120				
5	5	10	15	10 - 16	240 / 120	\$1,155	E-1		
					480 / 120				
					575 / 120				
7-1/2	7-1/2	15	15	16 - 20	240 / 120	\$1,175	E-1		
					480 / 120				
					575 / 120				
10	10	20	25	25 - 32	240 / 120	\$1,260	E-1		
					480 / 120				
					575 / 120				

**Notes:**

- (1) Please contact your local WEG representative for starters with 575V control voltage.
- (2) 3-phase starters with 120V coil are pre-wired for separate control
- (3) 3-phase starters can be wired for single-phase applications



Dimensions (inches)			
Box Size	Enclosure Size		
	H	W	D
E-1	14.2	9.9	6.6