



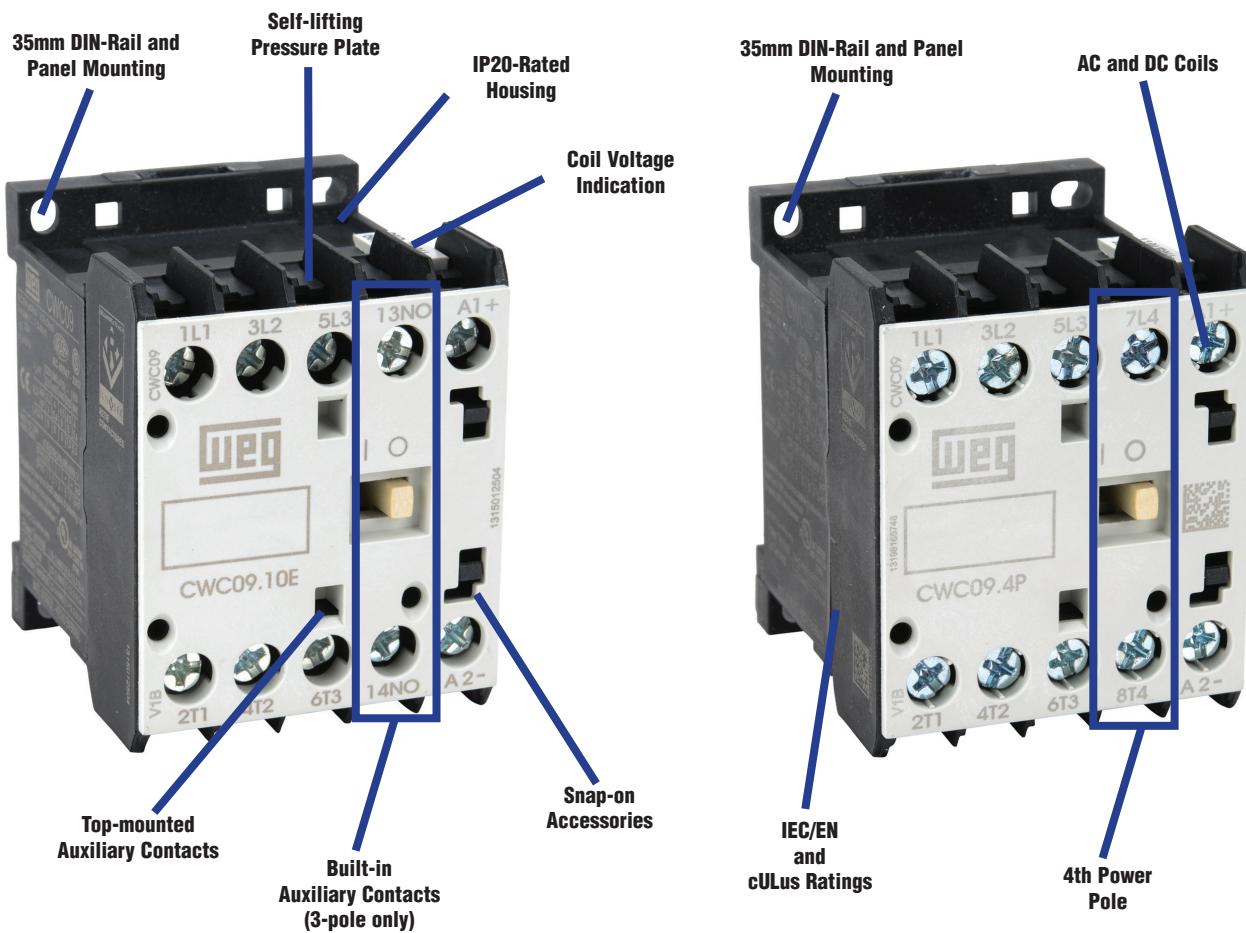
# CWC Series Miniature Contactors

## Features

- Rated up to 15hp @ 460V
- Direct mounting to the WEG RW17D overload relay
- Frame size is identical for AC and DC coil contactors up to 16A (CWC07-16).
- CWC025 frame available with AC coil only
- Heavy-duty operation
- Tool-free DIN-rail mounting
- WEG 18-month warranty
- Snap-on accessories
- DC coil low consumption: 1.7–2.7 W
- DC coil standard consumption: 2.6–3.7 W

The CWC series mini contactors are a complete solution for switching and controlling motors. The CWC's compact dimensions for its IEC current rating, up to 22A, AC-3 utilization category, allows it to take up less space inside electrical enclosures while still maintaining a powerful 15hp @ 460V. Dimensions of the 7A to 16A contactors are the same for both AC or DC coil voltages, making the panel design and assembly easier. DC models feature low consumption coils allowing the CWC to be operated directly from a PLC without interface relays.

## More Horsepower in a Smaller Frame



## Agency Approvals/Certifications

- cULus listed (File No. E202315/E189202)
- CE marked low voltage directive 2006/95/EC

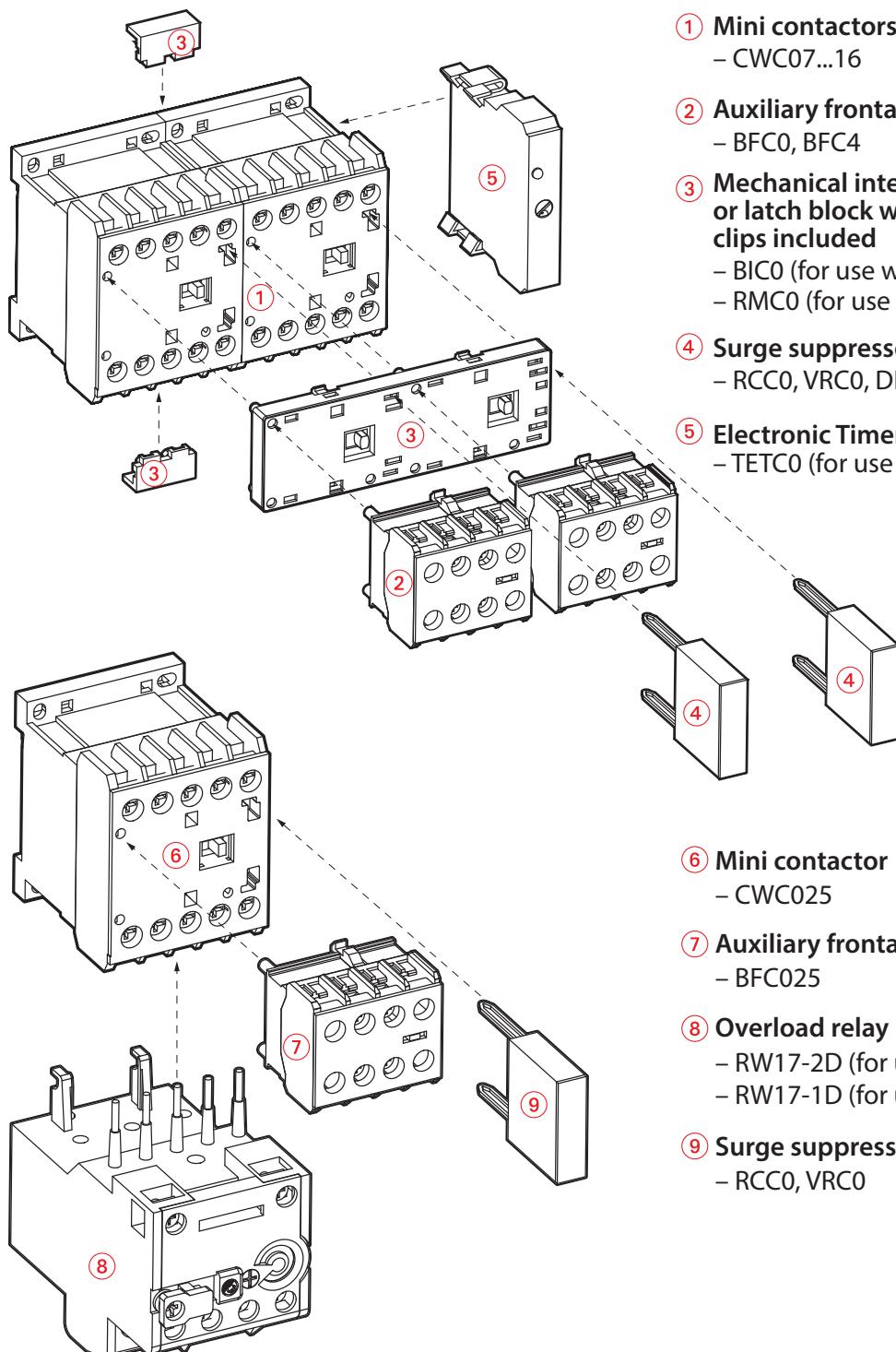


## Standards

- IEC/EN 60947-1
- UL 508
- CSA-C22.2 No. 14

# WEG CWC Series Miniature Contactors

## Overview





# CWC Series Miniature Contactors Configuration

## Three-Pole Contactors

Three-Pole Mini Contactors with AC Coil (IEC/EN – 60947-1)												
Part Number	Price	Current Rating		Maximum Rated Operational Power kW [hp]						# of Contacts		Coil Voltage and Frequency
		AC-3 (A)	AC-1 (A)	220V 230V	380V	400V 415V	440V	500V	660V 690V	Main	Built-in Aux Contacts	
										N.O.	N.C.	
<b>CWC07-10-30V04</b>	\$12.00	7	18	1.5 [2]	3 [4]	3.7 [5]	3.7 [5]	3 [4]	3	1	–	24VAC 60Hz
<b>CWC07-10-30V18</b>	\$12.00									3	1	–
<b>CWC07-10-30V24</b>	\$12.00									3	1	–
<b>CWC07-10-30V47</b>	\$12.00									3	1	–
<b>CWC07-01-30V04</b>	\$12.00									3	–	1
<b>CWC07-01-30V18</b>	\$12.00									3	–	1
<b>CWC07-01-30V24</b>	\$12.00									3	–	1
<b>CWC07-01-30V47</b>	\$12.00									3	–	1
<b>CWC09-10-30V04</b>	\$13.50	9	20	2.2 [3]	4 [5.4]	4 [5.4]	4.5 [6]	4.5 [6]	4 [5.4]	3	1	–
<b>CWC09-10-30V18</b>	\$13.50									3	1	–
<b>CWC09-10-30V24</b>	\$13.50									3	1	–
<b>CWC09-10-30V47</b>	\$13.50									3	1	–
<b>CWC09-01-30V04</b>	\$13.50									3	–	1
<b>CWC09-01-30V18</b>	\$13.50									3	–	1
<b>CWC09-01-30V24</b>	\$13.50									3	–	1
<b>CWC09-01-30V47</b>	\$13.50									3	–	1
<b>CWC012-10-30V04</b>	\$14.50	12	22	3 [4]	5.5 [7.5]	5.5 [7.5]	5.5 [7.5]	5.5 [7.5]	5.5 [7.5]	3	1	–
<b>CWC012-10-30V18</b>	\$14.50									3	1	–
<b>CWC012-10-30V24</b>	\$14.50									3	1	–
<b>CWC012-10-30V47</b>	\$14.50									3	1	–
<b>CWC012-01-30V04</b>	\$14.50									3	–	1
<b>CWC012-01-30V18</b>	\$14.50									3	–	1
<b>CWC012-01-30V24</b>	\$14.50									3	–	1
<b>CWC012-01-30V47</b>	\$14.50									3	–	1
<b>CWC016-10-30V04</b>	\$18.00	16	22	4 [5.4]	7.5 [10]	7.5 [10]	7.5 [10]	7.5 [10]	7.5 [10]	3	1	–
<b>CWC016-10-30V18</b>	\$18.00									3	1	–
<b>CWC016-10-30V24</b>	\$18.00									3	1	–
<b>CWC016-10-30V47</b>	\$18.00									3	1	–
<b>CWC016-01-30V04</b>	\$18.00									3	–	1
<b>CWC016-01-30V18</b>	\$18.00									3	–	1
<b>CWC016-01-30V24</b>	\$18.00									3	–	1
<b>CWC016-01-30V47</b>	\$18.00									3	–	1
<b>CWC025-00-30V04</b>	\$19.00	22	32	5.5 [7.5]	11 [15]	11 [15]	11 [15]	11 [15]	11 [15]	3	–	–
<b>CWC025-00-30V18</b>	\$19.00									3	–	–
<b>CWC025-00-30V24</b>	\$19.00									3	–	–
<b>CWC025-00-30V47</b>	\$19.00									3	–	–
Three-Pole Mini Contactors with DC Coil (IEC/EN – 60947-1)												
<b>CWC07-10-30L02</b>	\$15.50	7	18	1.5 [2]	3 [4]	3.7 [5]	3.7 [5]	3 [4]	3	1	–	12VDC low consumption
<b>CWC07-10-30L03</b>	\$15.50									3	1	–
<b>CWC07-01-30L02</b>	\$15.50									3	–	1
<b>CWC07-01-30L03</b>	\$15.50									3	–	1
<b>CWC09-10-30L02</b>	\$17.50	9	20	2.2 [3]	4 [5.4]	4 [5.4]	4.5 [6]	4.5 [6]	4 [5.4]	3	1	–
<b>CWC09-10-30L03</b>	\$17.50									3	1	–
<b>CWC09-01-30L02</b>	\$17.50									3	–	1
<b>CWC09-01-30L03</b>	\$17.50									3	–	1
<b>CWC012-10-30L02</b>	\$18.00	12	22	3 [4]	5.5 [7.5]	5.5 [7.5]	5.5 [7.5]	5.5 [7.5]	5.5 [7.5]	3	1	–
<b>CWC012-10-30L03</b>	\$18.00									3	1	–
<b>CWC012-01-30L02</b>	\$18.00									3	–	1
<b>CWC012-01-30L03</b>	\$18.00									3	–	1
<b>CWC016-10-30L02</b>	\$21.00	16	22	4 [5.4]	7.5 [10]	7.5 [10]	7.5 [10]	7.5 [10]	7.5 [10]	3	1	–
<b>CWC016-10-30L03</b>	\$21.00									3	1	–
<b>CWC016-01-30L02</b>	\$21.00									3	–	1
<b>CWC016-01-30L03</b>	\$21.00									3	–	1

Note: Low consumption 12VDC and 24VDC contactors can only use 2-pole auxiliary contact blocks.

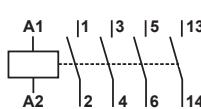


# CWC Series Miniature Contactors Configuration

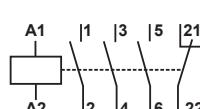
## Four-Pole Contactors

Four-Pole Mini Contactors with AC Coil (IEC/EN – 60947-1)											
Part Number	Price	Current Rating		Maximum Rated Operational Power KW [hp]						Number of Main Contacts	Coil Voltage and Frequency
		AC-3 (A)	AC-1 (A)	230V 230V	380V	400V 415V	440V	500V	660V 690V		
<b>CWC07-00-40V04</b>	\$15.00	7	18	1.5 [2]	3 [4]	3 [4]	3.7 [5]	3.7 [5]	3 [4]	4	— 24VAC 60Hz
<b>CWC07-00-40V18</b>	\$15.00									4	— 120VAC 60Hz/110VAC 50Hz
<b>CWC07-00-40V24</b>	\$15.00									4	— 208-240 VAC 60Hz
<b>CWC07-00-40V47</b>	\$15.00									4	— 480VAC 60Hz/400-415 VAC 50Hz
<b>CWC07-00-22V04</b>	\$15.00									2	2 24VAC 60Hz
<b>CWC07-00-22V18</b>	\$15.00									2	2 120VAC 60Hz/110VAC 50Hz
<b>CWC07-00-22V24</b>	\$15.00									2	2 208-240 VAC 60Hz
<b>CWC07-00-22V47</b>	\$15.00									2	2 480VAC 60Hz/400-415 VAC 50Hz
<b>CWC09-00-40V04</b>	\$16.50	9	20	2.2 [3]	4 [5.4]	4 [5.4]	4.5 [6]	4.5 [6]	4 [5.4]	4	— 24VAC 60Hz
<b>CWC09-00-40V18</b>	\$16.50									4	— 120VAC 60Hz/110VAC 50Hz
<b>CWC09-00-40V24</b>	\$16.50									4	— 208-240 VAC 60Hz
<b>CWC09-00-40V47</b>	\$16.50									4	— 480VAC 60Hz/400-415 VAC 50Hz
<b>CWC09-00-22V04</b>	\$16.50									2	2 24VAC 60Hz
<b>CWC09-00-22V18</b>	\$16.50									2	2 120VAC 60Hz/110VAC 50Hz
<b>CWC09-00-22V24</b>	\$16.50									2	2 208-240 VAC 60Hz
<b>CWC09-00-22V47</b>	\$16.50									2	2 480VAC 60Hz/400-415 VAC 50Hz
<b>CWC016-00-40V04</b>	\$21.50	16	22	4 [5.4]	7.5 [10]	7.5 [10]	7.5 [10]	7.5 [10]	7.5 [10]	4	— 24VAC 60Hz
<b>CWC016-00-40V18</b>	\$21.50									4	— 120VAC 60Hz/110VAC 50Hz
<b>CWC016-00-40V24</b>	\$21.50									4	— 208-240 VAC 60Hz
<b>CWC016-00-40V47</b>	\$21.50									4	— 480VAC 60Hz/400-415 VAC 50Hz
<b>CWC016-00-22V04</b>	\$21.50									2	2 24VAC 60Hz
<b>CWC016-00-22V18</b>	\$21.50									2	2 120VAC 60Hz/110VAC 50Hz
<b>CWC016-00-22V24</b>	\$21.50									2	2 208-240 VAC 60Hz
<b>CWC016-00-22V47</b>	\$21.50									2	2 480VAC 60Hz/400-415 VAC 50Hz
Four-Pole Mini Contactors with DC Coil (IEC/EN – 60947-1)											
<b>CWC07-00-40L02</b>	\$18.00	7	18	1.5 [2]	3 [4]	3 [4]	3.7 [5]	3.7 [5]	3 [4]	4	— 12VDC Low consumption
<b>CWC07-00-40L03</b>	\$18.00									4	— 24VDC Low consumption
<b>CWC07-00-22R02</b>	\$18.00									2	2 12VDC Standard consumption
<b>CWC07-00-22R03</b>	\$18.00									2	2 24VDC Standard consumption
<b>CWC09-00-40L02</b>	\$19.50	9	20	2.2 [3]	4 [5.4]	4 [5.4]	4.5 [6]	4.5 [6]	4 [5.4]	4	— 12VDC Low consumption
<b>CWC09-00-40L03</b>	\$19.50									4	— 24VDC Low consumption
<b>CWC09-00-22R02</b>	\$19.50									2	2 12VDC Standard consumption
<b>CWC09-00-22R03</b>	\$19.50									2	2 24VDC Standard consumption
<b>CWC016-00-40L02</b>	\$25.00	16	22	4 [5.4]	7.5 [10]	7.5 [10]	7.5 [10]	7.5 [10]	7.5 [10]	4	— 12VDC Low consumption
<b>CWC016-00-40L03</b>	\$25.00									4	— 24VDC Low consumption
<b>CWC016-00-22R02</b>	\$25.00									2	2 12VDC Standard consumption
<b>CWC016-00-22R03</b>	\$25.00									2	2 24VDC Standard consumption

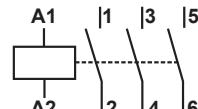
Note: Low consumption 12VDC and 24VDC contactors can only use 2-pole auxiliary contact blocks.



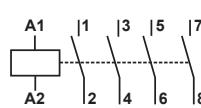
**CWC07-10...CWC016-10**



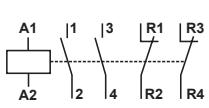
**CWC07-01...CWC016-01**



**CWC025-00**



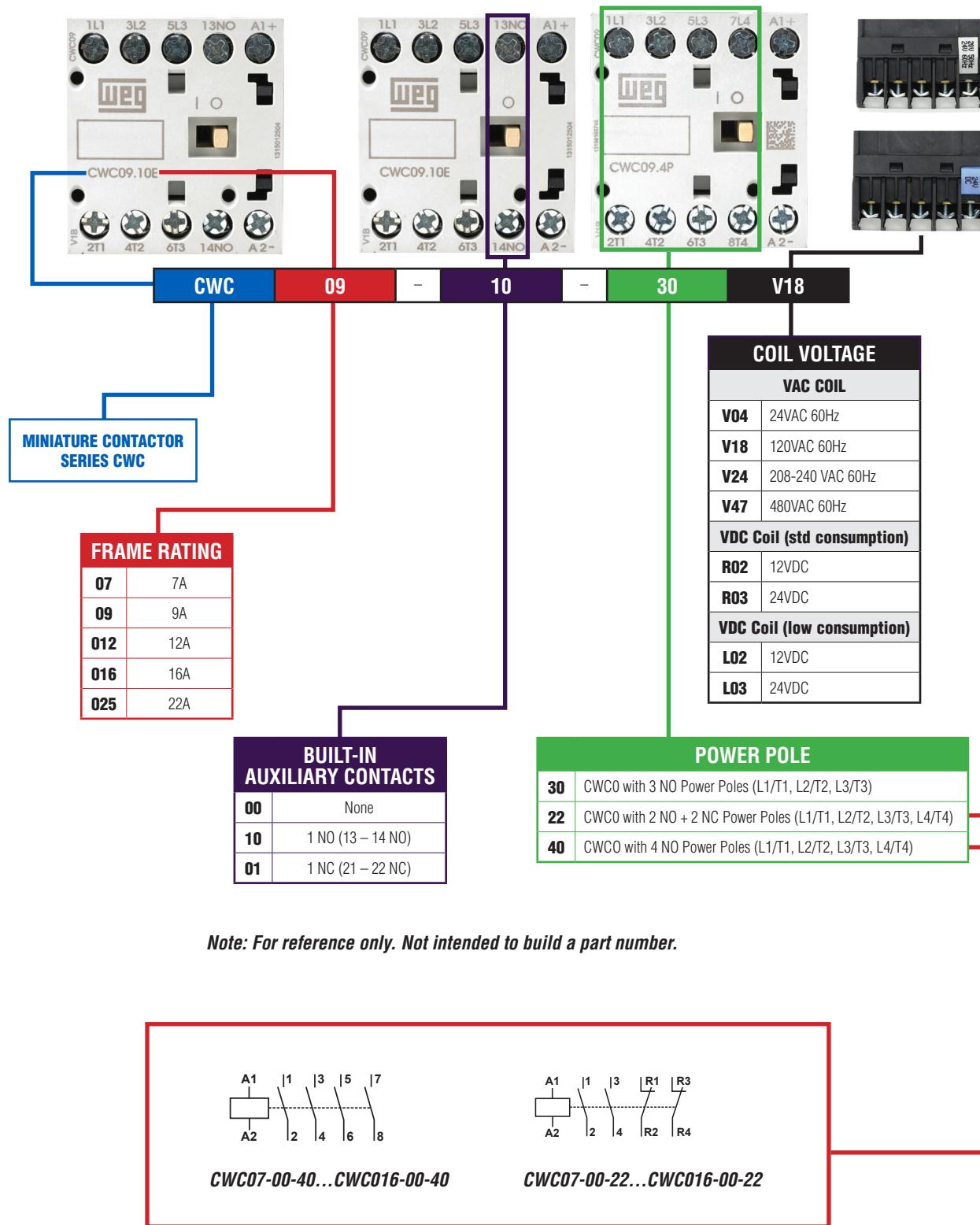
**CWC07-00-40...CWC016-00-40**



**CWC07-00-22...CWC016-00-22**

# WEG CWC Series Miniature Contactors Configuration

## How to Identify Your Part Number





# CWC Series Miniature Contactors

## Technical Characteristics

CWC Miniature Contactors General Technical Characteristics									
Contactor part numbers			CWC07	CWC09	CWC012	CWC016	CWC025		
<b>Standards</b>						IEC/EN 60947-1, IEC/EN 60947-4, DIN VDE 0660(102), UL508			
<b>Rated insulation voltage <math>U_i</math> (pollution degree 3)</b>	IEC/EN 60947-4-1, VDE 0660	(V)		690					
	UL, CSA	(V)		600					
<b>Rated impulse withstand voltage <math>U_{imp}</math></b>	(IEC/EN 60947-1)	(kV)		4					
<b>Rated operational frequency (contact switchable)</b>	(Hz)			25–400					
<b>Mechanical lifespan</b>	AC coil	Ops $\times 10^6$		10		3			
	DC coil	Ops $\times 10^6$		12		–			
<b>Electrical lifespan</b>	I <sub>e</sub> AC-3	Ops $\times 10^6$	1.4	1.3	1.2	1.1	0.6		
<b>Degree of protection (VDE 0160)</b>	Main circuits		IP20						
	Control circuits and auxiliary contacts		IP20						
<b>Mounting</b>			Screw or DIN-rail 35mm (EN 50022)						
<b>Coil terminals</b>			2						
<b>Vibration resistance</b>	Contactor open	(g)		2					
	Contactor closed	(g)		4					
<b>Mechanical shock resistance (<math>\frac{1}{2}</math> sinusoid = 11ms)</b>	Contactor open	(g)		6					
	Contactor closed	(g)		10					
<b>Ambient temperature</b>	Operation		-25 to +55°C [-13 to +131°F]						
	Storage		-55 to +80°C [-67 to +176°F]						
<b>Maximum operating altitude (without derating)</b>			up to 3000m [9842.5 ft]						
<b>Altitude derating</b>	0.72 x rated hp		3000 – 4000 m [9842.5 – 13123.4 ft]						
	0.60 x rated hp		4000 – 5000 m [13123.4 – 16404.2 ft]						

UL508 and IEC/EN Specifications							
Contactor part numbers			CWC07	CWC09	CWC012	CWC016	CWC025
<b>Standards</b>						<b>UL508/CSA Ratings</b>	
<b>Rated operating voltage</b>	(V)			600			
<b>UL general purpose rating</b>	(A)		18	20	22	22	30
<b>Switching motor loads full voltage</b>			50/60				
<b>1-phase</b>	115V (A)		7.2	7.2	9.8	16	20
	230V (A)		6.9	8	12	12	17
	115V (hp)		1/3	1/3	1/2	1	1-1/2
	230V (hp)		3/4	1	2	2	3
<b>3-phase</b>	208V (A)		6.9	7.8	11	11	17.5
	230V (A)		6	9.6	9.6	15.2	22
	460V (A)		7.6	7.6	11	14	21
	575V (A)		6.1	9	9	11	17
	208V (hp)		1-1/2	2	3	3	5
	230V (hp)		1-1/2	3	3	5	7-1/2
	460V (hp)		5	5	7-1/2	10	15
	575V (hp)		5	7-1/2	7-1/2	10	15
<b>Short circuit current rating (SCCR)</b>	600V (kA)		5	5	5	5	5
<b>Standards</b>			<b>IEC Ratings (IEC/EN 60947)</b>				
<b>Rated operating voltage</b>	(V)			690			
<b>Rated thermal current <math>I_{th}</math></b>	AC-1 ( $\leq 55^\circ\text{C}$ )	(A)	18	20	22	22	32
	AC-3 ( $U_e \leq 440\text{V}$ )	(A)	7	9	12	16	22
<b>Switching motor loads</b>			50/60				
<b>3-phase</b>	220-240 V (A)		7	9	12	16	22
	380-400 V (A)		7	9	12	16	22
	415-440 V (A)		7	9	12	16	22
	500V (A)		6.2	7.5	8.8	13	16
	660-690 V (A)		4.5	5.5	6.6	10	13
	220-240 V (kW)		1.5	2.2	3	3.7	5.5
	380-400 V (kW)		3	3.7	5.5	7.5	11
	415-440 V (kW)		3.7	4.5	5.5	7.5	11
	500V (kW)		3.7	4.5	5.5	7.5	11
	660-690 V (kW)		3	3.7	5.5	7.5	11



# CWC Series Miniature Contactors

## Technical Characteristics

Control Circuit - Alternating Current (AC)							
Contactor part numbers			CWC07	CWC09	CWC012	CWC016	CWC025
<b>Rated insulation voltage <math>U_i</math> (pollution degree 3)</b>	IEC/EN 60947-4-1, VDE 0660	(V)	1000				
	UL, CSA	(V)	600				
<b>Coils rated voltage</b>	50Hz	(V)	10-550				
	60Hz	(V)	12-660				
	50/60 Hz	(V)	12-660				
Coil operating limits							
<b>Coil 60Hz</b>	Pick up percent of voltage	(%)	40-76				
	Drop out percent of voltage	(%)	25-65				
<b>Coil 50/60 Hz</b>	Pick up percent of voltage	(%)	50-80				
	Drop out percent of voltage	(%)	20-60				
Average consumption							
<b>Coil 60Hz</b>	Magnetic circuit closed	(VA)	2.5-3.5			10.8-13.2	
	Power factor	(cos φ)	0.28			0.32	
	Power dissipation per pole	(W)	2.6			-	
	Magnetic circuit closing	(VA)	35			72	
	Power factor	(cos φ)	0.85			0.93	
<b>Coil 50/60 Hz</b>	Magnetic circuit closed	(VA)	2-3			4.56-5.8	
	Magnetic circuit closing	(VA)	30			58	
<b>Average time</b>	Closing NO contacts	(ms)	8-20			13-16	
	Opening NO contacts	(ms)	6-13			13.5-17	

Control Circuit - Direct Current (DC)					
Contactor part numbers			CWC07, CWC09, CWC012, CWC016		
Coil type			Standard	Low consumption	4P (2P/2R)
<b>Rated insulation voltage <math>U_i</math> (pollution degree 3)</b>	IEC/EN 60947-4-1, VDE 0660	(V)	1000		
	UL, CSA	(V)	600		
<b>Standard voltages</b>	(V)		12-440		
Coil operating limits					
<b>Coil operating limits</b>	Pick up percent of voltage	(%)	40-70		
	Drop out percent of voltage	(%)	15-40		
Power consumption					
<b>Power consumption</b>	Magnetic circuit closed	(W)	2.6-3.7	1.7-2.7	2.9-4
	Magnetic circuit closing	(W)	2.6-3.7	1.7-2.7	2.9-4
<b>Operation time</b>	Closing NO contacts	(ms)	35-45		
	Opening NO contacts	(ms)	7-12		



# CWC Series Miniature Contactors

## Technical Characteristics

CWC Series Miniature Contactors Power Circuit						
Contactor part numbers		CWC07	CWC09	CWC012	CWC016	CWC025
<b>Rated operational current <math>I_e</math></b>	AC-3 ( $U_e \leq 440V$ )	(A)	7	9	12	16
	AC-4 ( $U_e \leq 440V$ )	(A)	2.8	3.5	4.5	5
	AC-1 ( $\theta \leq 55^\circ C$ , $U_e \leq 690V$ )	(A)	18	20	22	22
<b>Rated operational voltage <math>U_e</math></b>	IEC/EN 60947-4-1, VDE 0660	(V)		690		
	UL, CSA <sup>1</sup>	(V)		600		
<b>Rated thermal current <math>I_{th}</math> (<math>\theta \leq 55^\circ C</math>)</b>		(A)	18	20	22	32
<b>Making capacity - IEC/EN 60947</b>		(A)	70	90	120	160
<b>Breaking capacity IEC/EN 60947</b>	( $U_e \leq 400V$ )	(A)	50	72	96	128
	( $U_e = 500V$ )	(A)	50	72	96	128
	( $U_e = 690V$ )	(A)	35	54	72	96
<b>Short-time current (no current flowing during recovery time of 10 min and <math>\theta \leq 40^\circ C</math>)</b>	1 sec	(A)	250	250	250	—
	5 sec	(A)	125	125	125	—
	10 sec	(A)	95	95	95	—
	30 sec	(A)	70	70	70	—
	1 min	(A)	50	50	50	—
	3 min	(A)	40	40	40	—
<b>Protection against short-circuits with fuses (IEC gL/gG)<sup>2</sup> or UL Class CC</b>	@ 600V - UL/CSA <sup>1</sup>	(kA)		5		
	Coordination type 1	(A)	35	35	35	50
	Coordination type 2	(A)	20	20	25	35
<b>Average impedance per pole</b>		(mΩ)	6	6	5	5
<b>Average power dissipation per pole</b>	AC-1	(W)	1.9	2.4	2.4	6.1
	AC-3	(W)	0.3	0.5	0.7	3.8
Utilization Category AC-3						
<b>Rated operational current <math>I_e</math> (<math>\theta \leq 55^\circ C</math>)</b>	( $U_e \leq 440V$ )	(A)	7	9	12	16
	( $U_e \leq 500V$ )	(A)	6.2	7.5	8.8	13
	( $U_e \leq 690V$ )	(A)	4.5	5.5	6.6	10
	( $U_e \leq 1000V$ )	(A)			Not available	
<b>Rated operational power</b>	220/230 V	(kW)	1.5	2.2	3	3.7
		(hp)	2	3	4	5
	380V	(kW)	3	3.7	5.5	7.5
		(hp)	4	5	7.5	10
	400/415 V	(kW)	3	3.7	5.5	7.5
		(hp)	4	5	7.5	10
	440V	(kW)	3.7	4.5	5.5	7.5
		(hp)	5	6	7.5	10
<b>Maximum electrical operations per hour</b>	500V	(kW)	3.7	4.5	5.5	7.5
		(hp)	5	6	7.5	10
	660/690 V	(kW)	3	3.7	5.5	7.5
		(hp)	4	5	7.5	10
<b>Utilization Category AC-4</b>	600 ops/hr	(%)	100	100	100	100
	1200 ops/hr	(%)	75	75	75	75
	3000 ops/hr	(%)	50	50	50	50
<b>Rated operational current <math>I_e</math> AC-4 (<math>U_e \leq 440 V</math>)</b>	(A)	2.8	3.5	4.5	5	9
	(kW)	0.55	0.75	0.75	1.1	2.2
	220/230 V	(hp)	0.7	1	1	1.5
		(kW)	1.1	1.1	1.8	2.2
	380/400 V	(hp)	1.5	1.5	2.4	2.9
		(kW)	1.1	1.5	2.2	4.5
	415V	(hp)	1.5	2	2.9	2.9
		(kW)	1.1	1.5	2.2	4.5
	440V	(hp)	1.5	2	2.9	2.9
		(kW)	1.1	1.5	2.2	6
	500V	(hp)	1.5	2	2.9	2.9
		(kW)	1.1	1.5	2.2	6
<b>Rated operational power (200,000 operations)</b>	660/690 V	(hp)	1.5	2	2.9	4.5
		(kW)	1.1	1.5	2.2	6

<sup>1</sup>Note: Specifications only valid for 50/60 Hz three-phase, 4 poles WEG standard motors.<sup>2</sup>Note: Not sold by Automation Direct.



# CWC Series Miniature Contactors Technical Characteristics

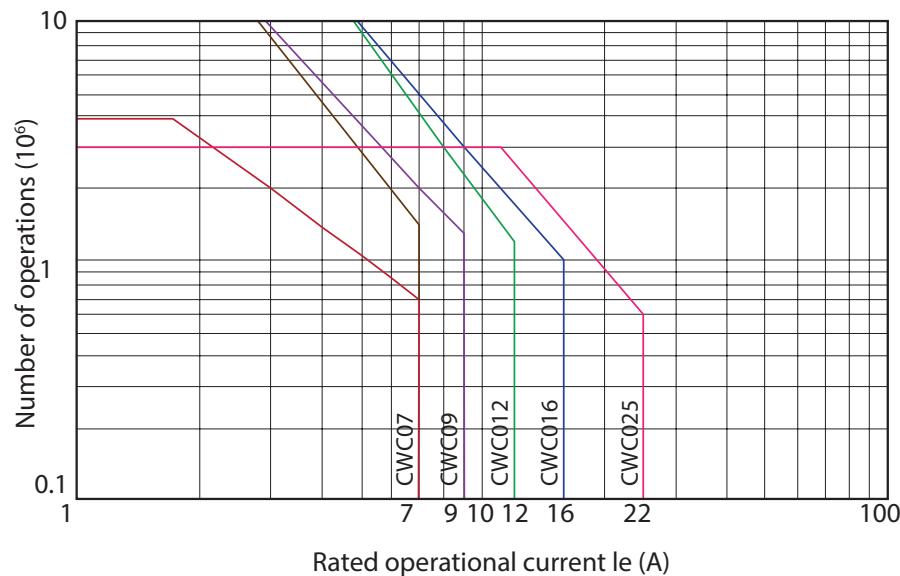
Built-In Auxiliary Contacts Technical Characteristics			
Standards	IEC 60947-5-1, IEC 60947-4-1		
<b>Rated insulation voltage <math>U_i</math> (pollution degree 3)</b>	IEC, VDE 0660	(V)	690
	UL, CSA	(V)	600
<b>Rated operational voltage <math>U_e</math></b>	IEC, VDE 0660	(V)	690
	UL, CSA	(V)	600
<b>Rated thermal current <math>I_{th}</math> (<math>\theta \leq 55^\circ\text{C}</math>)</b>	(A)	10	
<b>Rated operational current <math>I_e</math></b>			
<b>AC-15 (IEC 60947-5-1)</b>	$U_e \leq 240\text{V}$	(A)	10
	380–400 V	(A)	6
	415–440 V	(A)	6
	500V	(A)	4
	660–690 V	(A)	2
UL/CSA			A600
<b>DC-13 (IEC 60947-5-1)</b>	24V	(A)	6
	60V	(A)	2
	110V	(A)	1
	220–240 V	(A)	0.3
UL/CSA			Q600
<b>Making capacity (rms)</b>	$U_e$ 400 V 50/60 Hz - AC-15	(A)	$10 \times I_e$ (AC-15)
<b>Breaking capacity (rms)</b>	$U_e$ 400 V 50/60 Hz - AC-15	(A)	$10 \times I_e$ (AC-15)
<b>Maximum IEC fuse class gL/gG without welding (short-circuit protection) gL/gG</b>	(A)	10	
<b>Control circuit reliability</b>	(V/mA)		17 / 5
<b>Electrical endurance</b>	(millions operations)		1
<b>Mechanical endurance</b>	(millions operations)		10



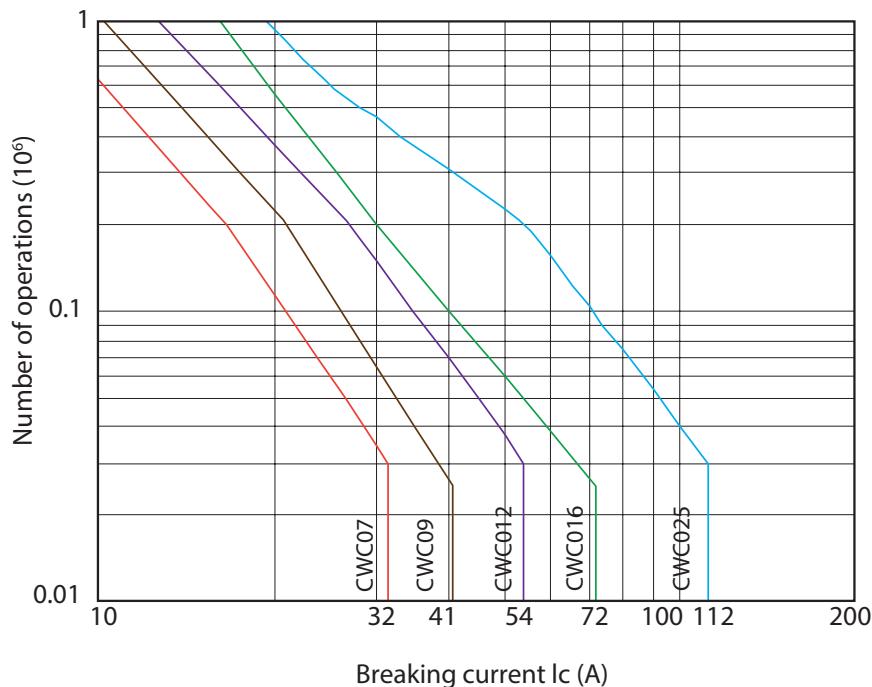
# CWC Series Miniature Contactors

## Electrical Durability

**AC-3 ( $U_e \leq 440\text{VAC}$ )**

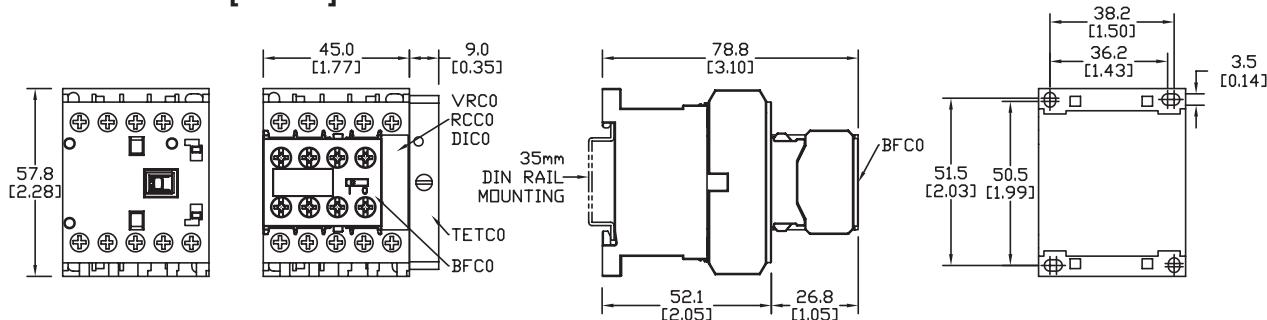


**AC-4 ( $U_e \leq 440\text{VAC}$ )**

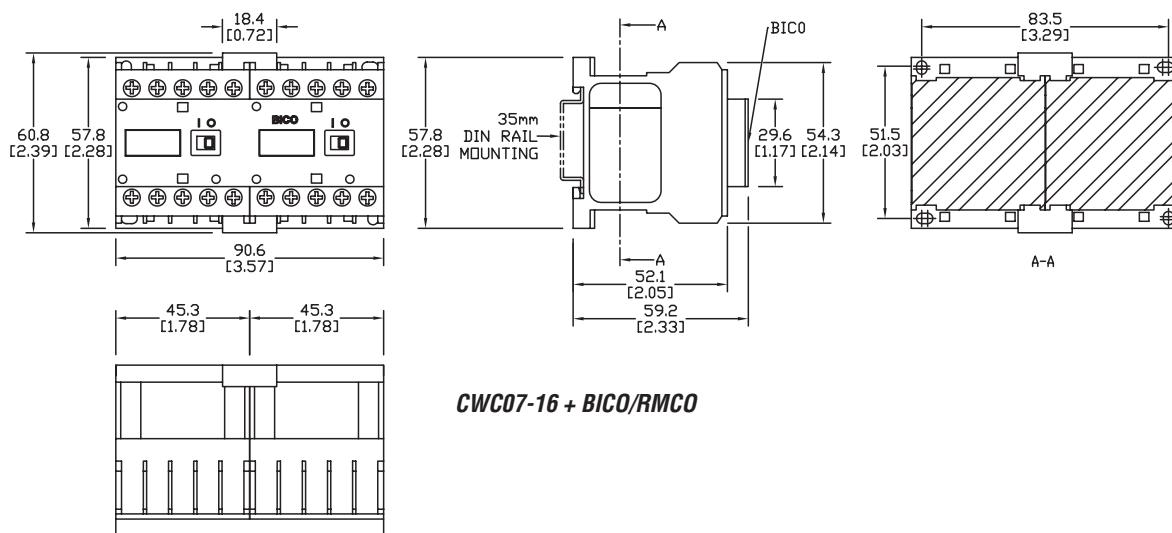


# **weg** CWC Series Miniature Contactors Dimensions

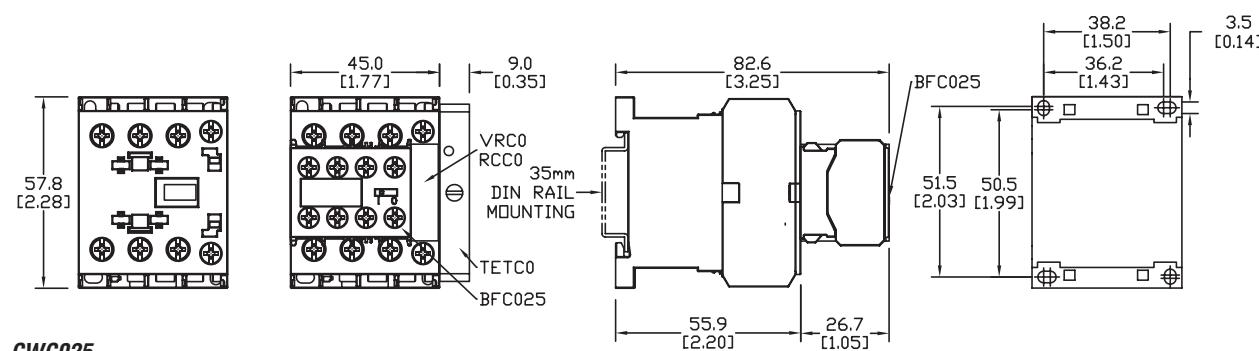
## Dimensions mm [inches]



**CWC07, CWC09, CWC012, CWC016 + VRC0/RCC0/DICO**

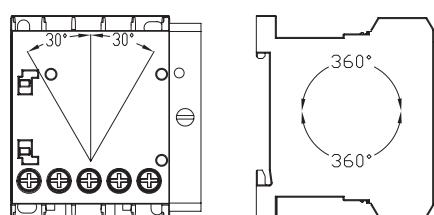


**CWC07-16 + BICO/RMCO**



**CWC025**

## Mounting position for CWC miniature contactors





# CWC Series Miniature Contactors Accessories

## Front Mounting Auxiliary Contact Blocks

Auxiliary Contact Blocks												
	2 Maximum # of Contacts						2 Maximum # of Contacts					
Use With	Auxiliary Contacts		Terminal Markings	Part Number	Price	Use With	Auxiliary Contacts		Terminal Markings	Part Number	Price	
Three-Pole Contactors (CWC07, CWC09, CWC012, CWC016)	2	0		BFC0-20*	\$4.75	Four-Pole Contactors (CWC07, CWC09, CWC012, CWC016)	2	0		BFC4-20*	\$4.75	
	1	1		BFC0-11*	\$4.75		1	1		BFC4-11*	\$4.75	
	0	2		BFC0-02*	\$4.75		0	2		BFC4-02*	\$4.75	
	4 Maximum # of Contacts						4 Maximum # of Contacts					
	4	0		BFC0-40	\$7.50		4	0		BFC4-40	\$7.50	
	2	2		BFC0-22	\$7.50		2	2		BFC4-22	\$7.50	
	0	4		BFC0-04	\$7.50		0	4		BFC4-04	\$7.50	
	3	1		BFC0-31	\$7.50		3	1		BFC4-31	\$7.50	
	1	3		BFC0-13	\$7.50		1	3		BFC4-13	\$7.50	
Three-Pole Contactors CWC025	2 Maximum # of Contacts					*Note: Low consumption 12VDC and 24VDC contactors can only use 2-pole auxiliary contact blocks						
	2	0		BFC025-20	\$4.75	 <b>BFC0-11</b>						
	1	1		BFC025-11	\$4.75							
	0	2		BFC025-02	\$4.75							



# CWC Series Miniature Contactors Accessories

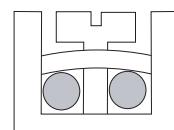
## Auxiliary Contact Blocks Technical Specifications

Auxiliary Contacts BFC0/BFC4/BFC025 Technical Specifications			
Standards		IEC 60947-5-1, IEC 60947-4-1	
<b>Rated insulation voltage <math>U_i</math> (pollution degree 3)</b>	IEC, VDE 0660	(V)	1000
	UL, CSA	(V)	600
<b>Rated operational voltage <math>U_e</math></b>	IEC, VDE 0660	(V)	690
	UL, CSA	(V)	600
<b>Rated thermal current <math>I_{th}</math> (<math>\theta \leq 55^\circ\text{C}</math>)</b>		(A)	10
<b>Making capacity (rms)</b>		U <sub>e</sub> 400V 50/60 Hz - AC-15	(A)
<b>Breaking capacity (rms)</b>		U <sub>e</sub> 400V 50/60 Hz - AC-15	(A)
<b>Maximum IEC fuse class gL/gG without welding (short-circuit protection)</b>		(A)	10
<b>Minimum switching capacity</b>		(V/mA)	17 / 5
<b>Electrical endurance</b>		(millions operations)	1
<b>Mechanical endurance</b>		(millions operations)	10

AC Auxiliary Contact Block Ratings UL/CSA											
Contact Rating Code Designation	Thermal Continuous Current (A)	Maximum Current (A)								Maximum Apparent Power (VA)	
		120V		240V		480V		600V			
		Make	Break	Make	Break	Make	Break	Make	Break		
A600	10	60	6	30	3	15	1.5	12	1.2	7200	
C600	2.5	15	1.5	7.5	0.75	3.75	0.375	3	0.3	1800	

DC Auxiliary Contact Block Ratings UL/CSA				
Contact Rating Code Designation	Thermal Continuous Current (A)	Maximum Make or Break Current (A)		Maximum Make or Break Apparent Power (VA)
		125V	250V	
Q600	2.5	0.55	0.27	69
R300	1	0.22	0.11	28

## Terminals Capacity and Tightening Torque – Power, Control Circuits, and Auxiliary Contact Blocks



Terminals Capacity and Tightening Torque - Power, Control Circuits and Auxiliary Contact Blocks						
Terminal Type		CWC07...16		CWC025		BFC0/BFC4/BFC025
		Main Contacts	Auxiliary Contacts	Main Contacts	Auxiliary Contacts	Auxiliary Contacts
<b>Solid cable</b>	mm <sup>2</sup>	1x 0.5–2.5	2x 0.5–2.5	1x 0.5–2.5	2x 0.5–2.5 1x 4	–
		2x 0.5–2.5		2x 0.5–2.5		–
<b>Cable without ferrule</b>	mm <sup>2</sup>	1x 0.75–2.5	2x 0.5–2.6	2x 1–2.5	1x 0.75–2.5	1x 0.75–4
		2x 0.75–2.5		2x 2.5–6	2x 0.75–2.5	2x 0.75–2.5
<b>Cable with ferrule</b>	mm <sup>2</sup>	1x 2.5	–	2x 1–2.5	1x 0.5–2.5	1x 0.5–4
		2x 2.5		2x 2.5–6	2x 0.5–2.5	2x 0.5–2.5
<b>Wire gauge</b>	AWG	1 or 2x 18–12	22–14	1 or 2x 18–10	22–14	22–14
<b>Terminal screws</b>		M3 flat/phillips	M3.5 flat/phillips	M3 flat/phillips	M3.5 flat/phillips	M3.5 flat/phillips
<b>Tightening torque</b>	N·m [lb·in]	1–1.5 [8.85–13.28]	1–1.7 [8.85–15.05]	1.4–1.7 [12.39–15.05]	1–1.5 [8.85–13.28]	0.8–1.5 [7.08–13.28]



# CWC Series Miniature Contactors Accessories

## Surge Suppressors

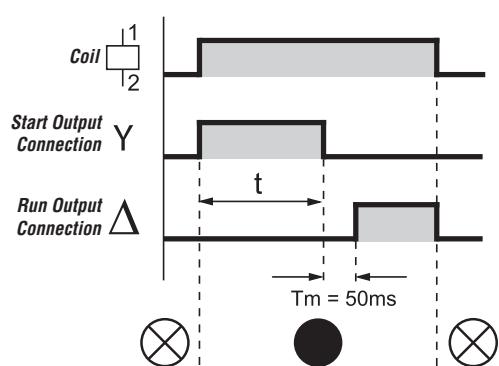
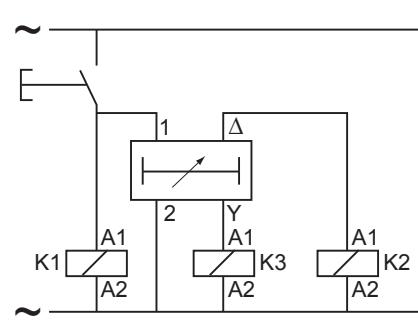
Surge Suppressors					
Part Number	Price	Circuit Diagram	Voltage	Max. Clamping Voltage @ Current (Ip)	For Use With
<b>RCC0-1D49</b>	\$2.25		12-24 VAC 50/60 Hz	N/A	RC Resistor/ Capacitor AC Loads (The capacitor is used to absorb the voltage spike)
<b>RCC0-2D53</b>	\$2.25		24-48 VAC 50/60 Hz		
<b>RCC0-3D55</b>	\$2.25		50-127 VAC 50/60 Hz		
<b>RCC0-4D63</b>	\$2.25		130-250 VAC 50/60 Hz		
<b>RCC0-5D84</b>	\$2.25		275-380 VAC 50/60 Hz		
<b>RCC0-6D73</b>	\$2.25		400-510 VAC 50/60 Hz		
<b>VRC0-1E49</b>	\$2.25		12-48 VAC 50/60 Hz / 12-60 VDC	135V @ 10A	MOV Varistor AC or DC Loads  The voltage surge is limited to 3 times the voltage rating of the suppressor (300% of the rated coil voltage). Clamps voltage
<b>VRC0-2E34</b>	\$2.25		50-127 VAC 50/60 Hz / 60-180 VDC	395V @ 10A	
<b>VRC0-3E50</b>	\$2.25		130-250 VAC 50/60 Hz / 180-300 VDC	710V @ 10A	
<b>VRC0-4E41</b>	\$2.25		277-380 VAC 50/60 Hz / 300-510 VDC	650V @ 10A	
<b>VRC0-5D73</b>	\$2.25		400-510 VAC 50/60 Hz	775V @ 10A	
<b>DICO-1C33</b>	\$2.25		12-600 VDC (1N4007)	N/A	Diode DC Loads The diode allows the remanent current to flow from a DC coil very smoothly and avoids an increase in voltage through the coil. Flyback suppression

**RCC0-5D84**

## Electronic Timing Relays (CWC07...CWC025)

Star-Delta (TETCO) with LED Status Indication				
Part Number	Price	Voltage	Timing	Function
<b>TETCO-U030S-D52</b>	\$39.00	24-28 VDC 50/60 Hz		
<b>TETCO-U030S-D61</b>	\$39.00	110-130 VDC 50/60 Hz	3 to 30 seconds	Star-Delta
<b>TETCO-U030S-D66</b>	\$39.00	220-240 VDC 50/60 Hz		

Note: Right side mounting

**TETCO-U030S-XXX****Timing Diagram****IEC Wiring Diagram**

IEC Schematic Symbols	
	Timing Relay Coil
	Contactor/Control Relay Coil
	Push Button N.O. Contacts



Tm = Change over time

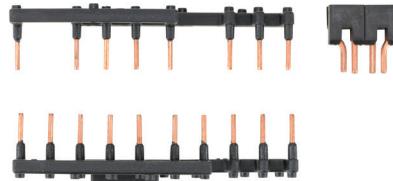


# CWC Series Miniature Contactors Accessories

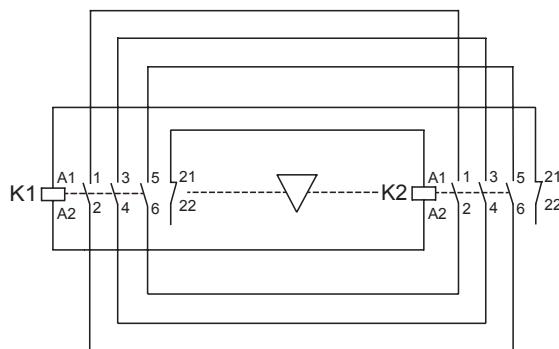
## Wiring Kits (Jumper Assemblies)

- Quick and easy assembly for wye-delta and reversing starters
- Allows assembly of WEG overload relay RW17D

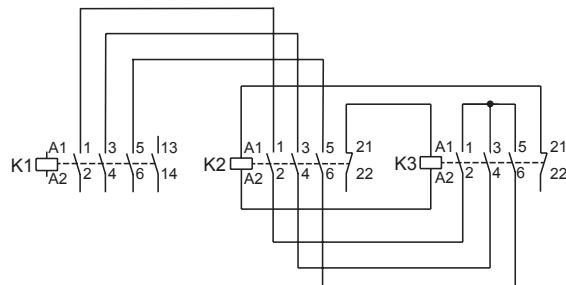
Reversing Wiring Kit for Mini Contactors CWC07 to CWC016										
Part Number	Price	Max Rated Operational Power of Three-Phase Motors 50/60 Hz kW [hp]						Rated Operational Current $I_e$ AC-3 ( $U_e \leq 440V$ )	Mini Contactors	
		220V 230V	380V	400V 415V	440V	500V	660V 690V		K1 = K2	K3
<b>ECC0-R</b>	\$11.00	1.5 [2]	3 [4]	3 [4]	3.7 [5]	3.7 [5]	3 [4]	7	CWC07	
		2.2 [3]	4 [5.4]	4 [5.4]	4.5 [6]	4.5 [6]	4 [5.4]	9	CWC09	
		3 [4]	5.5 [7.5]	5.5 [7.5]	5.5 [7.5]	5.5 [7.5]	5.5 [7.5]	12	CWC012	
		4 [5.4]	7.5 [10]	7.5 [10]	7.5 [10]	7.5 [10]	7.5 [10]	16	CWC016	
Star-Delta Wiring Kit for Mini Contactors CWC07 to CWC016										
Part Number	Price	Max Rated Operational Power of Three-Phase Motors 50/60 Hz kW [hp]						Rated Operational Current $I_e$ AC-3 ( $U_e \leq 440V$ )	Mini Contactors	
		220-230 V	400-415 V	660-690 V					K1 = K2	K3
<b>ECC0-SD</b>	\$12.50	3.7 [5]	5.5 [7.5]	5.5 [7.5]				12	CWC07	CWC07
		3.7 [5]	7.5 [10]	9.2 [12.5]				18	CWC012	
		5.5 [7.5]	11 [15]	15 [20]				25	CWC016	



**ECC0-R Wiring Diagram**



**ECC0-SD Wiring Diagram**



# **weg** CWC Series Miniature Contactors Accessories

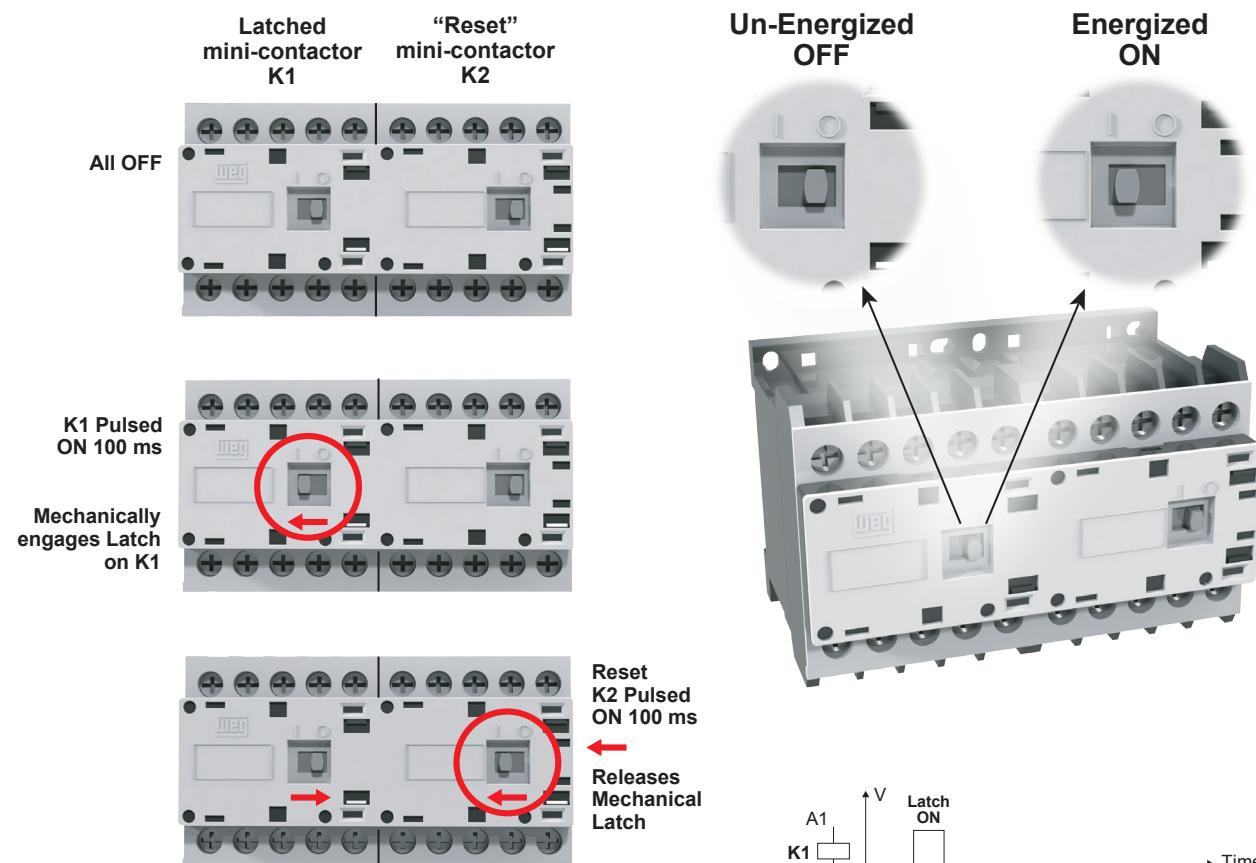
## Mechanical Interlock Block and Latch Block

Mechanical Interlock Block and Latch Block			
Part Number	Price	Description	For Use With
<b>BICO</b>	\$3.25	Mechanical interlock, front mounted, use with any CWC07 through CWC016 series miniature contactor. Mechanically connects two CWC series mini contactors and prevents both contactors from being pulled in at the same time. For reversing contactors.	CWC07 CWC09 CWC012 CWC016
<b>RMC0</b>	\$3.75	Latch block, front mounted, use with any CWC07 through CWC016 series miniature contactor. Mechanically connects two CWC series mini contactors and enables one contactor to operate with a pulse input signal. Retention block for contactor.	



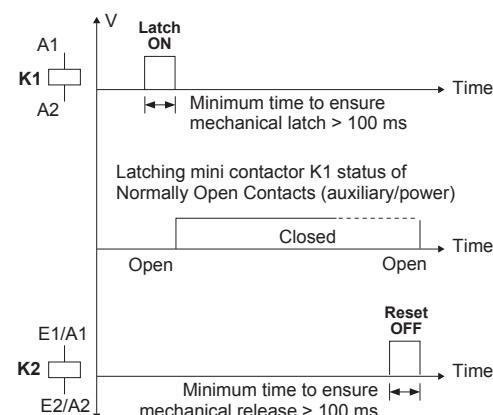
Note: Do not use BICO or RMC0 accessory with mini contactors with low consumption DC coils.

## Operation Description of Latched Block RMC0



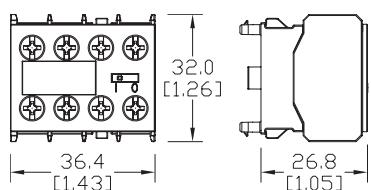
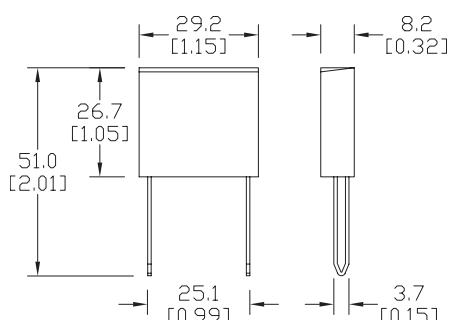
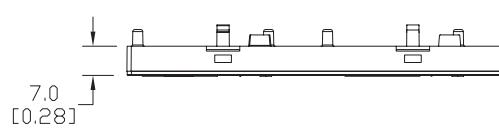
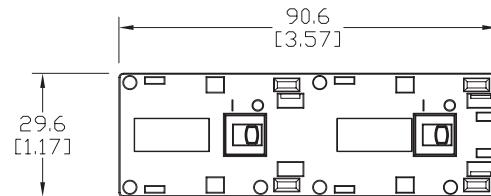
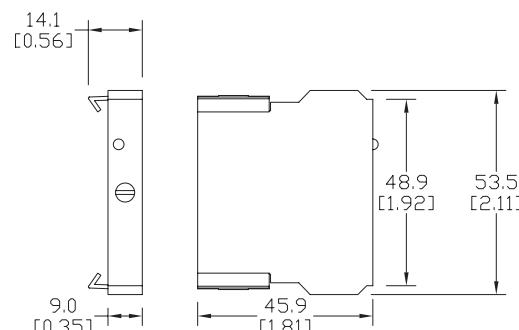
- After a minimum pulse of 100ms on mini contactor's coil (K1), the RMC0 will keep K1 contactor switched on;
- The mini contactor K1 will only return to rest position after miniature contactor's coil (K2) has been energized by a releasing pulse of 100ms;
- The mechanical latch only occurs when mini contactor (K1) is energized (ON).

**Note:** If RESET miniature contactor's coil (K2) remains energized, the latching of mini contactor (K1) is not enabled.

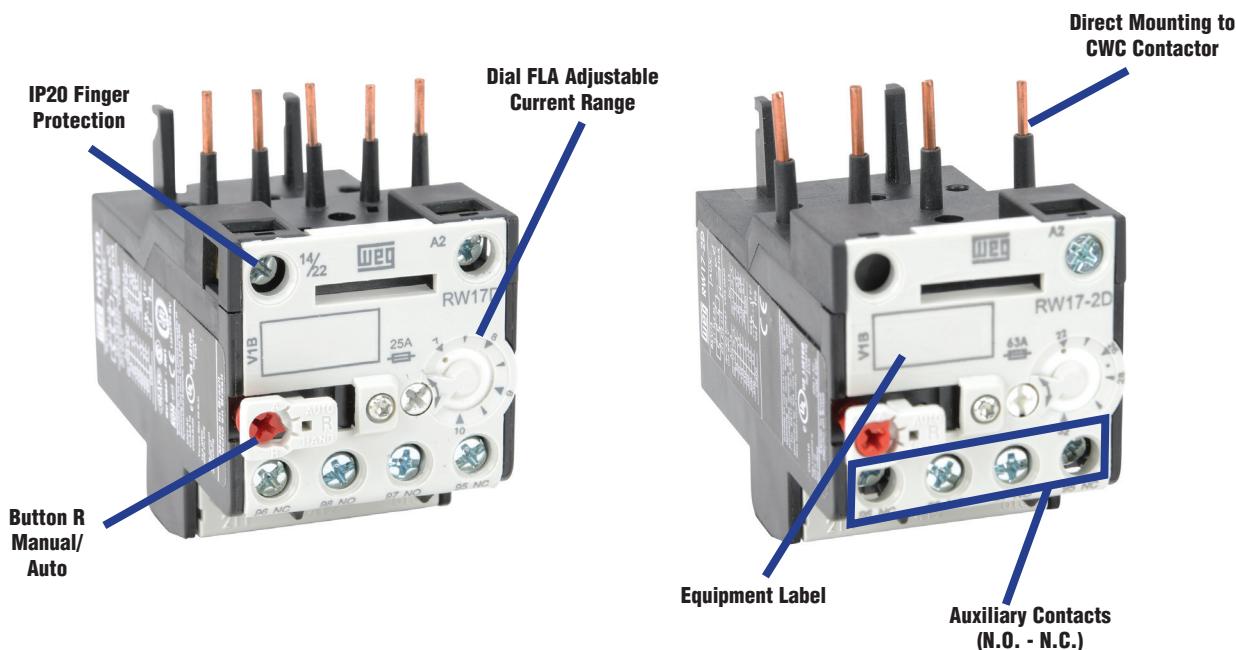


# **weg** CWC Series Miniature Contactors Accessories - Dimensions

## Dimensions mm [in]

**BFC0-xx, BFC4-xx, BFC025-xx****RCC0-xxxx, VRCC0-xxxx, DIC0-xxxx****BICO, RMCO****TETCO-U030S-Dxx**

# **weg** RW Series Overload Relays for CWC Miniature Contactors



## Overload Relays Features

RW overload relays are an important part of WEG controls' range of products. As usual in WEG products, an extended operational service life is one of the main features you can find in RW overload relays.

WEG's RW class 10 thermal overload relays are designed for use with, and as perfect complement to, the CWC miniature contactors.

RW relays are available in compact frame sizes from 0.28 A to 32A. Mounting an RW series overload relay directly to a WEG CWC miniature contactor creates an across-the-line starter capable of controlling motors from fractional to 15hp @ 460V.

### Standards and Approvals

- IEC 60947 and VDE 0660.
- cULus listed file no. E189202
- CE marked low voltage directive 2006/95/EC
- Marine



### Modern Architecture

Previous models of open overloads with "heaters" encounter problems in the field, including:

- Inaccurate trip point, because of uneven screw tightness when installed on individual phases
- Ambient problems, such as dust and other contaminants, because of their open design
- Inability to protect in case of single phase failure
- Nuisance tripping, because no temperature compensation is possible.

The modern design of WEG overload relays solves all of these problems. RW overload relays are fitted with fixed bimetallic elements, which eliminate any need for heater elements for field installation or future upgrading to a more efficient motor. All sizes provide complete motor protection by offering:

- Ambient temperature compensation (-4°F to +140°F)
- Phase loss sensitivity protection
- Current unbalance sensitivity

### Dial FLA Setting

The trip-current is set via an adjustable dial designed with the motor's full load current (FLA) in mind.

### Temperature Compensation

Because RW overload relays include a fourth bimetallic strip in addition to the three that are directly heated by the motor current, ambient temperature variations in the range of -4°F to +140°F are no obstacle for accurate protection of your motors even in the toughest conditions.

### Phase Loss Sensitivity

WEG overload relays include standard phase failure sensitivity protection. This feature ensures fast tripping in case of phase loss, protecting your motor and avoiding expensive repairs.

### Multi Function Button "R"

The programmable RESET button can be selected to operate in a Manual or Automatic mode, with or without TEST capabilities of the isolated "trip" N.O. and "alarm" N.O. auxiliary contacts. The "R" multifunction RESET / TEST button can be set in four different positions:

- H (manual RESET only)
- HAND (manual RESET/TEST)
- AUTO (automatic RESET/TEST)
- A (automatic RESET only)

In HAND and AUTO positions, when gray R button is pushed, both N.O. 97-98 and N.C. 95-96 contacts change state.

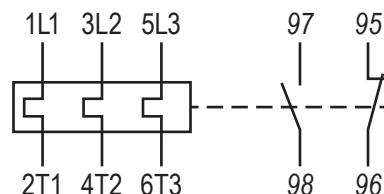
# **weg** RW Series Thermal Overload Relays for CWC Miniature Contactors

## Thermal Overload Relays Features

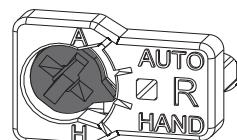
- Adjustable tripping current
- Phase-loss sensitivity (All phases must be connected. See motor wiring diagrams.)
- Tripping class 10
- Auxiliary contacts 1 N.O. + 1 N.C.
- Temperature compensation from -20° to +60°C [-4°F to +140°F]
- Hand/Auto/Reset button
- Equipment Label

<b>Part Number</b>	<b>Price</b>	<b>For use with</b>	<b>Setting range of overload release (A)</b>	<b>*Short-Circuit Protective Device</b>		
				<b>IEC Max Fuse</b>	<b>UL Max Fuse</b>	<b>UL Max Breaker</b>
<b>RW17-1D3-D004</b>	\$16.00	CWC07 CWC09 CWC012 CWC016	0.28–0.4	2	15	15
<b>RW17-1D3-C063</b>	\$16.00		0.4–0.63	2	15	15
<b>RW17-1D3-D008</b>	\$16.00		0.56–0.8	2	15	15
<b>RW17-1D3-D012</b>	\$16.00		0.8–1.2	4	15	15
<b>RW17-1D3-D018</b>	\$16.00		1.2–1.8	6	15	15
<b>RW17-1D3-D028</b>	\$16.00		1.8–2.8	6	15	15
<b>RW17-1D3-U004</b>	\$16.00		2.8–4.0	10	15	15
<b>RW17-1D3-D063</b>	\$17.50		4.0–6.3	16	25	25
<b>RW17-1D3-U008</b>	\$17.50		5.6–8.0	20	30	30
<b>RW17-1D3-U010</b>	\$17.50		7.0–10	25	40	40
<b>RW17-1D3-D125</b>	\$17.50		8.0–12.5	25	50	50
<b>RW17-1D3-U015</b>	\$17.50		10.0–15.0	35	60	60
<b>RW17-1D3-U017</b>	\$17.50		11.0–17.0	35	60	60
<b>RW17-2D3-U010</b>	\$17.50	CWC025	7–10	25	40	40
<b>RW17-2D3-D125</b>	\$17.50		8–12.5	25	50	50
<b>RW17-2D3-U015</b>	\$17.50		10–15	35	60	60
<b>RW17-2D3-U017</b>	\$17.50		11–17	35	60	60
<b>RW17-2D3-U023</b>	\$17.50		15–23	50	90	90
<b>RW17-2D3-U032</b>	\$17.50		22–32	63	90	125

\* Note: Type 2 short-circuit coordination per IEC 60947-4-1. UL fuse type class CC.



*Circuit Diagram*



*Hand/Auto/Reset Button*



# RW Series Thermal Overload Relays for CWC Miniature Contactors

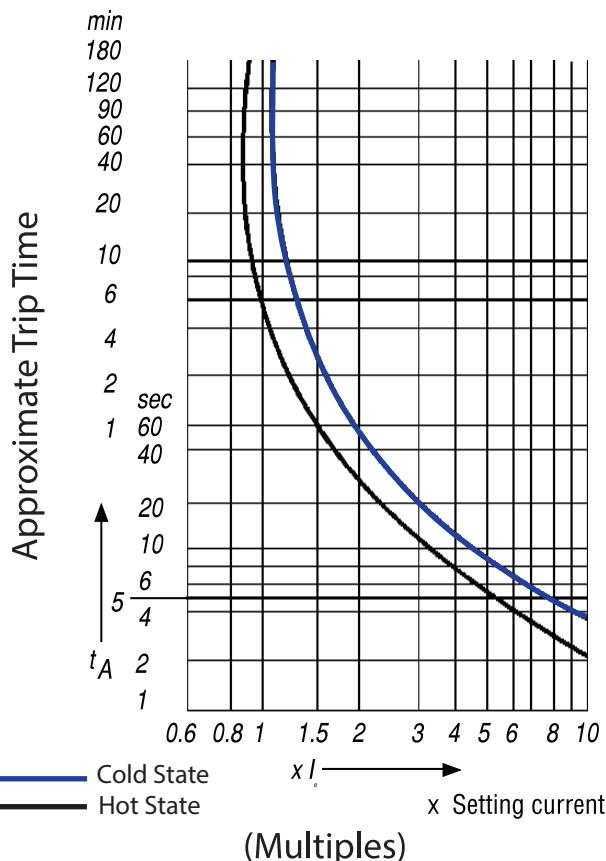
## Thermal Overload Relays Technical Characteristics

RW Series Thermal Overload Relays General Ratings		
<b>Standards</b>		IEC 60947-1 / 60947-4-1, EN 60947-1 / 60947-4-1, UL 508; CSA C.22.2/14; VDE 0660/102
<b>Number of poles</b>		3
<b>Tripping class</b>		10
<b>Phase loss sensitive</b>		Yes
<b>Temperature compensation</b>		Yes
<b>Rated insulation voltage IEC 60947-4-1</b>		690V
<b>Rated insulation voltage UL/CSA</b>		600V
<b>Rated operation voltage <math>U_e</math> IEC 60947-4-1</b>		690V
<b>Rated operation voltage <math>U_e</math> UL/CSA</b>		600V
<b>Rated impulse voltage <math>U_{imp}</math></b>		6kV
<b>Current</b>	<b>Direct</b>	Yes
	<b>Alternating</b>	up to 400Hz
<b>Degree of protection - protection against contact acc. VDE 0160 - Part 100</b>		IP20
<b>Ambient Temperature</b>	<b>Storage</b>	-50 to +80°C [-58 to 176°F]
	<b>Operating</b>	-20 to +70°C [-4 to 158°F]
	<b>Ambient temperature compensation</b>	-20 to +60°C [-4 to 140°F]
<b>Pollution degree per IEC 60947-4-1</b>		3
<b>Mounting</b>		Direct on contactor
<b>Current heat loss</b>	<b>Lower value of setting range</b>	0.9 W
	<b>Higher value of setting range</b>	1.4 W
<b>Weight</b>		0.15kg [0.33lb]
<b>Shock resistance IEC 60068-2-27</b>		8g [10ms]
<b>Main terminals capacity</b> (Cross / Slotted Combination)	<b>Fine - stranded with sleeve (ferrule)</b>	1.5–10 mm <sup>2</sup>
	<b>Coarse - stranded / solid</b>	1.5–6.0 mm <sup>2</sup>
	<b>Stranded / solid (UL / CSA)</b>	14–6 AWG
<b>Tightening torque</b>		1.4–2.3 N·m [12.4–20.4 lb·in]
<b>Short circuit rating 600V</b>		5kA

# **weg** RW Series Thermal Overload Relays for CWC Miniature Contactors

## Thermal Overload Relays Technical Characteristics

<b>Auxiliary Contacts General Ratings RW17D</b>			
<b>Front auxiliary contact</b>			1 NO + 1 NC
<b>Rated auxiliary contacts IEC/EN 60947</b>			
AC-14/15	24V	(A)	4.0
	60V	(A)	3.5
	125V	(A)	3.0
	230V	(A)	2.0
	400V	(A)	1.5
	500V	(A)	0.5
	690V	(A)	0.3
DC-13/14	24V	(A)	1.0
	60V	(A)	0.5
	110V	(A)	0.25
	220V	(A)	0.1
<b>Rated thermal current</b>		(A)	6
<b>Short circuit protection</b>			
Fuses type gL/gG		(A)	6
<b>Auxiliary terminals capacity</b>			
Fine - stranded with ferrule		(mm <sup>2</sup> )	1.0 – 2.5
Coarse - stranded/solid		(mm <sup>2</sup> )	1.0 – 2.5
Stranded/solid (UL/CSA)		(AWG)	16 – 12
<b>Tightening torque</b>		(N·m)	1.0 – 1.5
		(lb·in)	8.9 – 13.3

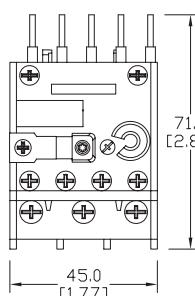




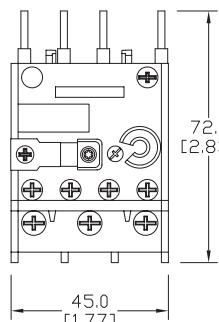
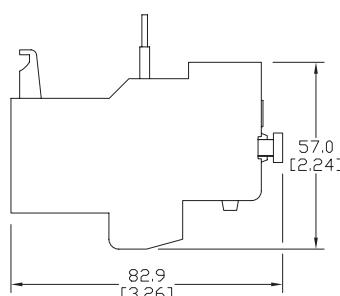
# RW Series Overload Relays for CWC Miniature Contactors

## Overload Relays Dimensions

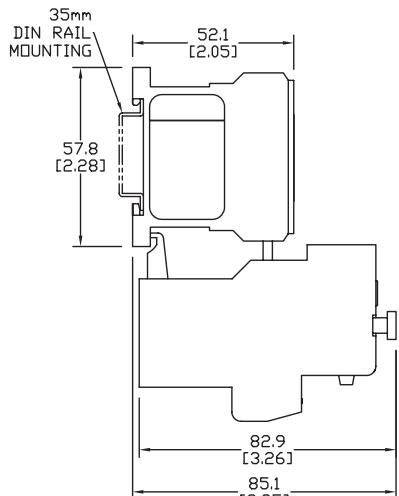
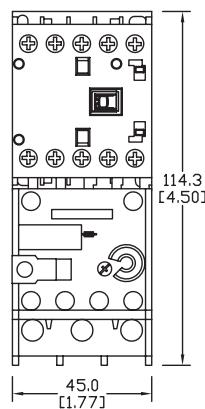
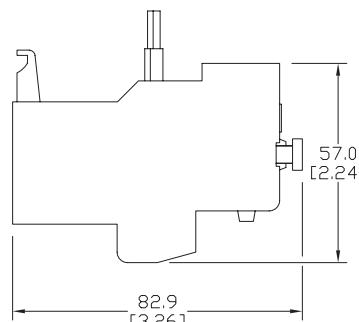
### Dimensions mm [inches]



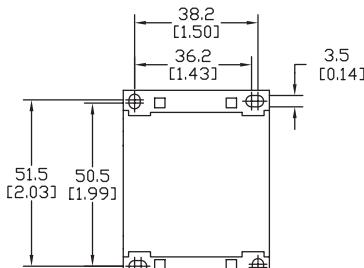
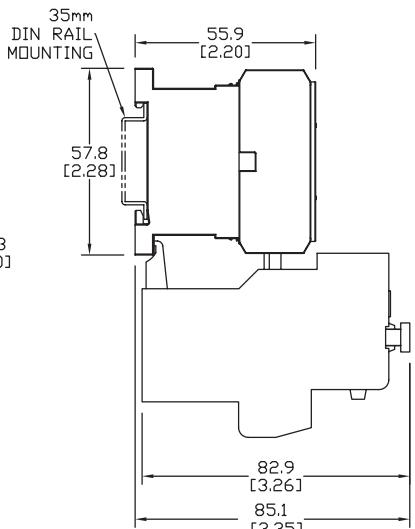
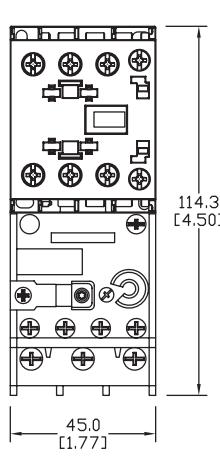
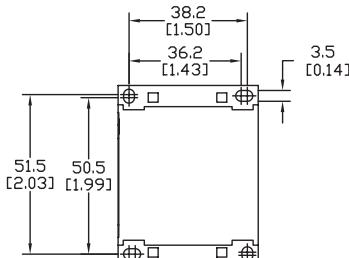
RW17-1D



RW17-2D



CWC07...16 + RW17-1D

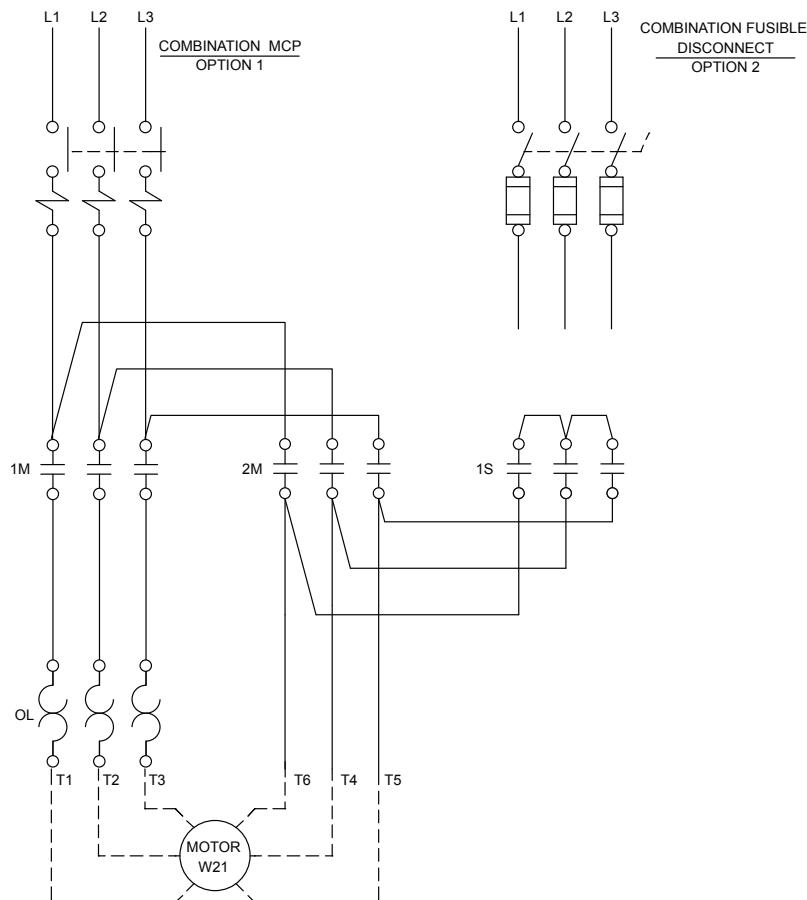
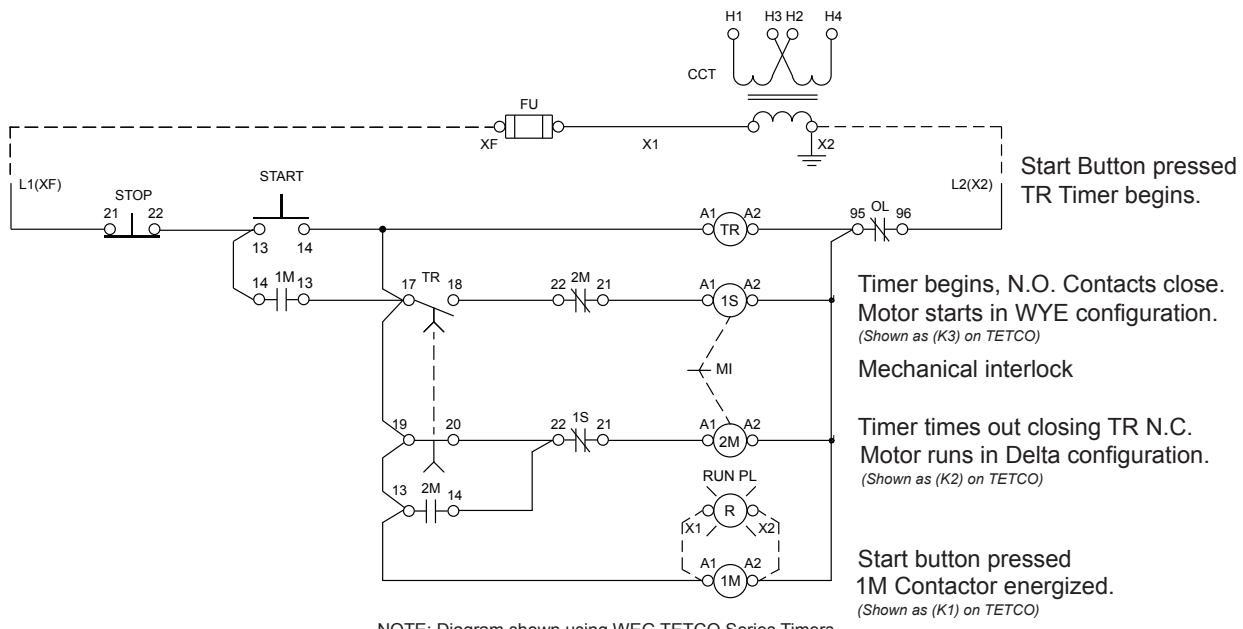


CWC025 + RW17-2D



# Wiring Diagrams

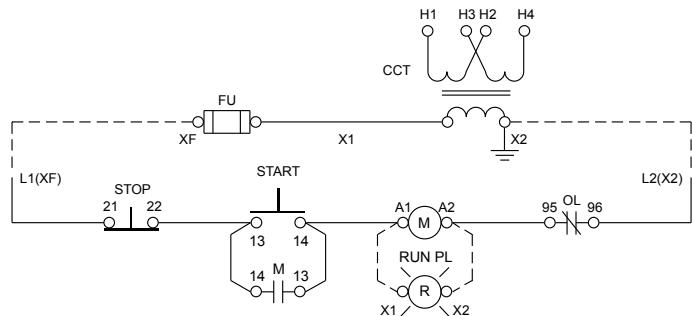
## Reduced Voltage Starters – Wye Delta



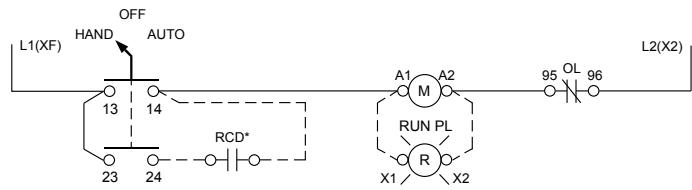


# Wiring Diagrams

## Motor Starters Non-Reversing

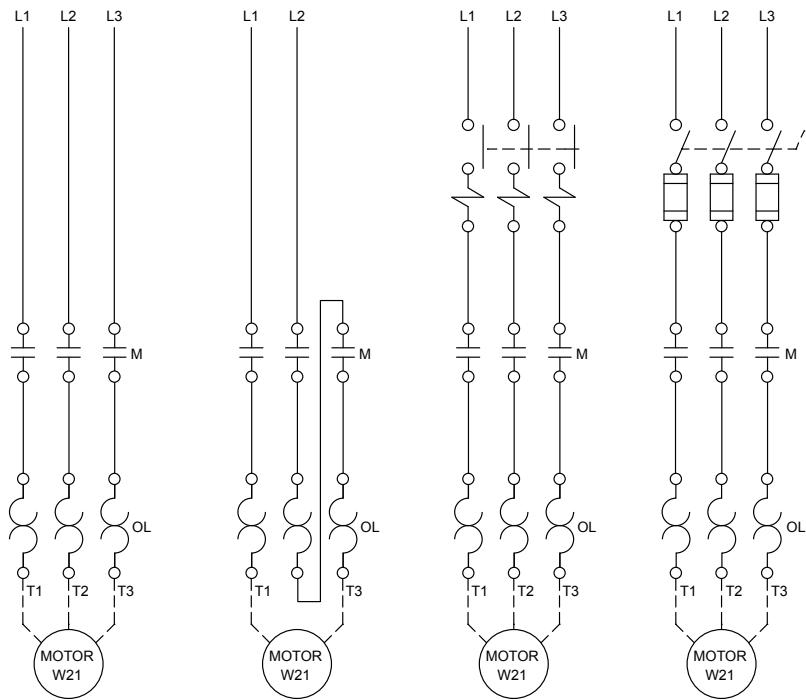
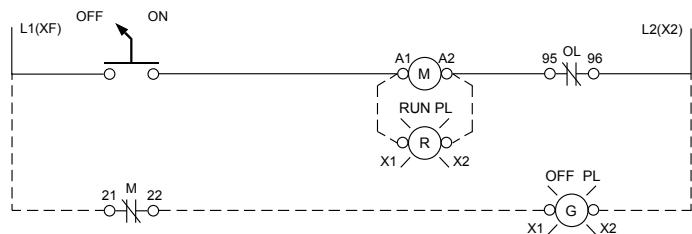


## START - STOP -PUSHBUTTONS



\* REMOTE CONTROL DEVICE BY CUSTOMER

#### HAND - OFF - AUTO SELECTOR SWITCH



### NON COMBINATION 3-PHASE

### NON COMBINATION 1-PHASE

COMBINATION MC

► COMBINATION FUS / NON FUS. DISC.