Westinghouse

WESTINGHOUSE CONTACTOR

WCM Series

WCM Series - IEC Standard Contactors

The WCM Series IEC Contactor was designed as a general purpose contactor taking into consideration the heavy demands and need for high reliability in modern industry. They are rated for inductive loads up to 800 AMPS @ 460V. WCM Contactors are compact in frame size allowing for optimization of valuable internal space within electrical enclosures. Reducing inventory is a "Snap" away with the WCM Series' common accessories.

Standard Features

- Panel mountable or 35mm DIN Rail up to the WCM105 Series
- Front and Side Mounting Auxiliary Contacts
- Finger-Touch IP20 Protection
- Wide Coil Voltage Protection AC or DC
- Mirror Contacts for "Safety-Related" Applications
- Mechanically linked Auxiliary Contacts

WCM Catalog Number Sequence

WCM	18	-	10	30		V18

Standard Contactor Series

WCM: Standard IEC Contactors
WCM_N: Standard NEMA Contactors

Frame Rating

WCM (IEC)

9: 9 Amps	105: 105 Amps
12: 12 Amps	112: 112 Amps
18: 18 Amps	150: 150 Amps
25: 25 Amps	180:180 Amps
32: 32 Amps	250: 250 Amps
40: 40 Amps	300: 300 Amps
50: 50 Amps	400: 400 Amps
65: 65 Amps	500: 500 Amps
80: 80 Amps	630: 630 Amps
95: 95 Amps	800: 800 Amps

WCM_N (NEMA)

9N: 9 Amps	(SIZE 00)
18N: 18 Amps	(SIZE 0)
32N: 32 Amps	(SIZE 1)
50N: 50 Amps	(SIZE 2)
95N: 95 Amps	(SIZE 3)
150N: 150 Amps	(SIZE 4)
300N: 300 Amps	(SIZE 5)

Auxiliary Contacts

00: None
10: 1 NO
01: 1 NC
11: 1 NO + 1 NC
22: 2 NO + 2 NC

Power Pole

30: 3 NO Power Poles
20: 2 NO Power Poles

Coil Voltage

VAC COIL (9 to 105 Amps)
V04: 24V ac 60 Hz
V18: 120V ac 60Hz
V24: 208-240V ac 60Hz
V47: 480V ac 60Hz
V56: 500V ac 60Hz

VDC COIL (32 to 105 Amps)
C34: 24-28V dc
C40: 110-130V dc

VAC/VDC COIL (112 to 300 Amps)
E02: 24-28V ac/Vdc
E10: 110-130V ac/Vdc
E13: 208-250V ac/Vdc
E21: 430-500V ac/Vdc

VAC/VDC COIL (400Amps)
E36: 100-240V ac/Vdc

VAC/VDC COIL (500 to 800 Amps)
E35: 100-127V ac/Vdc (WCM500…WCM800)
E39: 200-240V ac/Vdc (WCM500…WCM800)

VAC/VDC COIL (500 to 800 Amps)
D81: 440-575V ac (WCM400…WCM800)

Contactors

WCM Series - IEC Standard Contactors





Catalog Number	WCM9	WCM12	WCM18	WCM25	WCM32	WCM40	WCM50	WCM65	WCM80	WCM95	WCM105
Rated operational power Single-phase											
115Vac Hp	1/2	3/4	1	2	3	3	3	5	7 1/2	7 1/2	10
230Vac Hp	1 1/2	2	3	5	5	5	7 1/2	10	15	15	20
Three-phase											
230Vac Hp	3	3	5	7 1/2	10	15	15	20	25	30	40
460Vac Hp	5	7 1/2	10	15	20	30	40	50	50	60	75
575Vac Hp	7 1/2	10	15	15	25	25	40	50	60	75	75
General Purpose A Rating (AC-1)	25	25	32	45	60	60	90	110	110	140	140
Inductive Motor Switching (AC-3)	9	12	18	25	32	40	50	65	80	95	105

Overload relays

WR27-1D

0.28. . .0.4
0.4. . .0.63
0.56. . .0.8
0.8. . .1.2
1.2. . .1.8
1.8. . .2.8
2.8. . .4
4. . .6.3

5.6. . .8
7. . .10
8. . .12.5
10. . .15
11. . .17
15. . .23
22. . .32

WR67-1D

25...40
32...50

WR67-2D

40...57
50...63
57...70
63...80

WR117-1D

63...80
75...97
90...112

Auxillary contact blocks

WBCXMF10 (1NO)
WBCXMF01 (1NC)

WBCXML 11 (1NO+1NC)
WBCXML 20 (2NO)
WBCXMRL 11 (1NO+1NC)
WBCXMRL 20 (2NO)

Mechanical interlock

WBLIM9-105
WBLIM.02 9-105 (2NC)

Electronic Relays

Timing Relays - WTR Series
(Please refer to Electronic Relays Section)

Surge Suppressor

RC block:
WBAMRC4 D53 24-48 V 50/60Hz
WBAMRC5 D55 50-127 V 50/60Hz
WBAMRC6 D63 130-250 V 50/60Hz

Varistor block:
WBAMV1 D68 270-380 V 50/60Hz
WBAMV2 D73 400-510 V 50/60Hz

RC block:
WBAMRC7 D53 24-48 V 50/60Hz
WBAMRC8 D55 50-127 V 50/60Hz
WBAMRC9 D63 130-250 V 50/60Hz

Varistor block:
WBAMV1 D68 270-380 V 50/60Hz
WBAMV2 D73 400-510 V 50/60Hz

Contactors

WCM Series - IEC Standard Contactors



Catalog Number	3 Poles	WCM112	WCM150	WCM180	WCM250	WCM300
Rated operational power						
Single-phase						
115Vac	Hp	-	-	-	-	-
230Vac	Hp	-	-	-	-	-
Three-phase						
230Vac	Hp	50	60	75	100	125
460Vac	Hp	100	125	150	200	250
575Vac	Hp	100	150	200	250	350
General Purpose Rating	A	180	225	225	350	410
Inductive/Motor Switching (AC3)		112	150	180	250	300
Overload relays	A	WR117-2D  75...97 90...112		WR317-1D  100...150 140...215 200...310 275...420		
Auxiliary contact blocks		 WBCXML11 (1NO+1NC) WBCXML20 (2NO) WBCXMRL11 (1NO+1NC) WBCXMRL20 (2NO)				
Mechanical interlock		 WBLIM112-300				
Surge suppressor		built-in with electronic module				

Contactors

WCM Series - IEC Standard Contactors

				
Catalog Number		**WCM400**	**WCM630**	**WCM800**
Rated Optional Power				
Single-phase				
220/230Vac	Hp	-	-	-
380Vac	Hp	-	-	-
Three-phase				
230Vac	Hp	150	250	300
460Vac	Hp	300	500	600
575Vac	Hp	300	500	600
General Purpose Rating	A	450	660	900
Inductive/Motor Switching AC-3		400	630	800
Overload relays	A	WR407-1D 	400…600 560…840	
Auxiliary contact blocks			WBCXML11 WCM800 (1NO+1NC) WBCXMRL11 WCM800 (1NO+1NC)	
Mechanical interlock		 WBLIM WCM400	 WBLIM WCM800	
Surge supporessor		(Built-in with electronic module)		

WCM Series - IEC Standard Contactors

3 pole contactors with AC coil





Maximum UL Horsepower						Auxiliary Contacts		Current Rating Amps	Catalog Number	Ref.No.	Multiplier
Single Phase		Three Phase									
115V	230V	200V	230V	460V	575V	N.O.	N.C.				
1/2	1 1/2	3	3	5	7 1/2	1	0	9	WCM9-10-30*	W605642	Z1
						0	1		WCM9-01-30*	W605643	
3/4	2	3	3	7 1/2	10	1	0	12	WCM12-10-30*	W605644	
						0	1		WCM12-01-30*	W605645	
1	3	5	5	10	15	1	0	18	WCM18-10-30*	W605646	
						0	1		WCM18-01-30*	W605647	
2	5	7 1/2	7 1/2	15	15	0	0	25	WCM25-00-30*	W605648	
3	5	10	10	20	25	0	0	32	WCM32-00-30*	W605649	
3	7 1/2	10	15	30	25	0	0	40	WCM40-00-30*	W605650	
3	10	15	15	40	40	0	0	50	WCM50-00-30*	W605651	
5	10	20	20	50	50	0	0	65	WCM65-00-30*	W605652	
7 1/2	15	20	25	50	60	0	0	80	WCM80-00-30*	W605653	
7 1/2	15	25	30	60	75	0	0	95	WCM95-00-30*	W605654	
10	20	30	40	75	75	0	0	105	WCM105-00-30*	W605655	

To complete the selection
- Replace "*" with desired coil voltage from Coil Voltage Code Table

* AC COIL VOLTAGE CODE SELECTION FOR CONTACTORS WCM9...WCM105						
60 Hz	24V [1)]	48V	120V	208-240V	480V	600V
CODE	**V04**	**V10**	**V18**	**V24**	**V47**	**V56**
50 Hz	-	42V	110V	-	400-415V	500V

- Other coil voltages available upon request

The Flexible Line from 5 to 75HP

The 5 to 75HP @ 460V range is differentiated by five frame sizes and only 4 varying widths, with the choice of either screw or DIN rail mounting. Westinghouse offers one of the most compact 75HP @ 460V contactors in the market.

Coil Technology

Westinghouse Contactor AC coils have 4 terminals up to 30HP @ 460V, which allows an easy connection no matter the complexity of the application and wiring. From 32A up to 105A the contactors are equipped with an electronic circuit that provides an unmatched space saving solution, making the 50A through 105A contactors depth the same size.

Contactors

WCM Series - IEC Standard Contactors

3 pole contactors with DC coil





Maximum UL Horsepower						Auxiliary Contacts		Current Rating Amps	Catalog Number	Ref.No.	Multiplier
Single Phase		Three Phase									
115V	230V	200V	230V	460V	575V	N.O.	N.C.				
3	5	10	10	20	25	0	0	32	WCM32-00-30+	W605656	Z1
3	7 1/2	10	15	30	25	0	0	40	WCM40-00-30+	W605657	
3	10	15	15	40	40	0	0	50	WCM50-00-30+	W605658	
5	10	20	20	50	50	0	0	65	WCM65-00-30+	W605659	
7 1/2	15	20	25	50	60	0	0	80	WCM80-00-30+	W605660	
7 1/2	15	25	30	60	75	0	0	95	WCM95-00-30+	W605661	
10	20	30	40	75	75	0	0	105	WCM105-00-30+	W605662	

To complete the selection
- Replace "+" with desired coil voltage from Coil Voltage Code Table

+ DC COIL VOLTAGE CODE SELECTION FOR CONTACTORS WCM9...105

FOR CONTACTORS WCM32...WCM105

Voltage	24-28V	110-130V
CODE	**C34**	**C40**

Contactors

WCM Series - IEC Standard Contactors

3 pole contactors with AC/DC electronic module coil

Maximum UL Horsepower						Auxiliary Contacts		Current Rating Amps	Catalog Number	Ref.No.	Multiplier
Single Phase		Three Phase									
115V	230V	200V	230V	460V	575V	N.O.	N.C.				
-	-	40	50	100	100	2	2	112	WCM112-22-30#	W605663	Z1
-	-	50	60	125	150	2	2	150	WCM150-22-30#	W605664	
-	-	60	75	150	200	2	2	180	WCM180-22-30#	W605665	
-	-	75	100	200	250	2	2	250	WCM250-22-30#	W605666	
-	-	100	125	250	300	2	2	300	WCM300-22-30#	W605667	
-	-	125	150	300	300	2	2	400	WCM400-22-30^	W605668	
-	-	200	250	500	500	2	2	630	WCM630-22-30^	W605669	
-	-	200	300	600	600	2	2	800	WCM800-22-30^	W605670	

To complete the selection
- Replace "#" or "^"with desired coil voltage from Coil Voltage Code Table

AC/DC COIL VOLTAGE CODE SELECTION FOR CONTACTORS WCM112, 150, 180, 250, 300

Voltage	24-28Vac/Vdc	110-130Vac/Vdc	208-250Vac/Vdc	430-500Vac/Vdc
CODE	**E02**	**E10**	**E13**	**E21**
Mounting on	WCM112-WCM300	WCM112-WCM300	WCM112-WCM300	WCM112-WCM300

^ AC/DC COIL VOLTAGE CODE SELECTION FOR CONTACTORS WCM 400...800

Voltage	100-240Vac/100-220Vdc	100-127Vac/100-110Vdc	200-240Vac/200-220Vdc	440-575Vac
CODE	**E36**	**E35**	**E39**	**D82**
Mounting on	WCM400	WCM630-WCM800	WCM630-WCM800	WCM400-WCM800

The Tough Line from 100 to 600HP

With reliability as our goal, Westinghouse contactors are modern and very compact, but they are also one of the most rugged line of contactors in the range from 100 to 600HP, assuring an extended life under the most challenging conditions of today's industry.

Accessories

Side mounted auxiliary contact blocks are common for all WCM contactors, from 5 to 250HP @ 460V.

Electronic Module

From 100 to 600HP @ 460V, Westinghouse offers contactors with electronic module for AC/DC Coil Applications. Such coils provide a smoother switching, therefiore enhancing contactor's performance. Built-in surge suppressor is also standard.

Contactors

WCM Series - IEC Standard Contactors

2 pole contactors with AC coil

Maximum UL Horsepower Single Phase		Auxiliary Contacts		Current Rating Amps	Catalog Number	Ref.No.	Multiplier
115V	230V	N.O.	N.C.				
1/2	1 1/2	0	0	9	WCM9-00-20*	W605671	Z1
3/4	2	0	0	12	WCM12-00-20*	W605672	
1	3	0	0	18	WCM18-00-20*	W605673	
2	5	0	0	25	WCM25-00-20*	W605674	
3	5	0	0	32	WCM32-00-20*	W605675	
3	7 1/2	0	0	40	WCM40-00-20*	W605676	
3	10	0	0	50	WCM50-00-20*	W605677	
5	10	0	0	65	WCM65-00-20*	W605678	
7 1/2	15	0	0	80	WCM80-00-20*	W605679	
7 1/2	15	0	0	95	WCM95-00-20*	W605680	
10	20	0	0	105	WCM105-00-20*	W605681	

To complete the selection
- Replace "*" with desired coil voltage from Coil Voltage Code Table

FOR CONTACTORS WCM9...WCM105

* AC COIL VOLTAGE CODE SELECTION			
60 Hz	24V	120V	208-240V
CODE	V04	V18	V24
50 Hz	-	110V	-

WCM-N Series - NEMA Rated Standard Contactor

The Westinghouse WCM_N series NEMA rated contactor line has been designed for industrial duty and with reliability in mind. Rated for inductive loads up to 300 Amps or 200 Hp @ 460V, Westinghouse can offer the suitable contactor for your application.

Customers who are used to specifying contactors (and starters), by a particular NEMA Size (size 00, 0, 1, 2, 3, 4, 5), now can use the Westinghouse WCM_N series, NEMA rated contactors. Customers get the ease of choosing the product, the reliability of Westinghouse quality, and still get the sophisticated arc quenching techniques to reduce excess heat on the contacts.

Given their compact footprints, WCM_N contactors allow total panel space optimization, with only a few compact frame sizes from 5 to 200 Hp @ 460 V. Reducing inventory is a "snap" with WCM's common accessories. For example, side mounted auxiliary contact blocks are the same from 5 to 200 Hp @ 460 V.

Standard Features

- Ease of choosing product
- Compact footprint
- Arc Quenching technique
- Reduced inventory with common accessories
- Adjustable thermal overload relay for motor protection
- Reliable Westinghouse Quality

NEMA Size	NEMA Continuous Amp rating	Westinghouse Continuous Amp rating	HP @ 230 V	HP @ 460 V
00	9	9	1.5	2
0	18	18	3	5
1	27	32	7.5	10
2	45	50	15	25
3	90	95	30	50
4	135	150	50	100
5	270	300	100	200

Contactors

WCM-N Series - NEMA Rated Standard Contactor

					
Catalog Number		**WCM9N**	**WCM18N**	**WCM32N**	**WCM50N**	**WCM95N**
NEMA Size		00	0	1	2	3
Rated operational power						
Single-phase						
115Vac	Hp	1/3	1	3	3	7 1/2
230Vac	Hp	1	3	5	7 1/2	15
Three-phase						
230Vac	Hp	1 1/2	3	7 1/2	15	30
460Vac	Hp	2	5	10	25	50
575Vac	Hp	2	5	10	25	50
General Purpose	A Rating	25	32	60	90	140

Overload Relays

WRM40E

0.4 . . . 2.0
1.6 . . . 8.0
5 25
8 . . . 40

WRM112E

14 . . . 56
28 . . . 112

Auxillary contact blocks

WBCXMF10 (1NO)
WBCXMF01 (1NC)

WBCXML 11 (1NO+1NC)
WBCXML 20 (2NO)
WBCXMRL 11 (1NO+1NC)
WBCXMRL 20 (2NO)

Mechanical interlock

WBLIM9-105
WBLIM.02 9-105 (2NC)

Electronic Relays

Timing Relays - WTR Series

Surge suppressor

RC block:
WBAMRC4 D53 24-48 V 50/60Hz
WBAMRC5 D55 50-127 V 50/60Hz
WBAMRC6 D63 130-250 V 50/60Hz

Varistor block:
WWBAMV1 D68 270-380 V 50/60Hz
WWBAMV2 D73 400-510 V 50/60Hz

RC block:
WWBAMRC7 D53 24-48 V 50/60Hz
WWBAMRC8 D55 50-127 V 50/60Hz
WWBAMRC9 D63 130-250 V 50/60Hz

Varistor block:
WWBAMV1 D68 270-380 V 50/60Hz
WWBAMV2 D73 400-510 V 50/60Hz

Contactors

WCM-N Series - NEMA Rated Standard Contactor

Catalog Number	3 Poles	WCM150N	WCM300N
NEMA Sizes		4	5
Rated operational power			
Single-phase			
115Vac	Hp	-	-
230Vac	Hp	-	-
Three Phase			
230Vac	Hp	50	100
460Vac	Hp	100	200
575Vac	Hp	100	200
General Purpose Rating	A	225	410
Solid State Overload relays	A	WRM420E  1 50...250 85...420	
Auxiliary contact blocks		 WBCXML11 (1NO+1NC) WBCXML20 (2NO) WBCXMRL11 (1NO+1NC) WBCXMRL20 (2NO)	
Mechanical interlock		 WBLIM112-300	
Surge suppressor		built-in with electronic module	

1) Note: Some motors characteristics may vary according to each manufacturer.

Contactors

WCM-N Series - NEMA Rated Standard Contactor

3 POLE NEMA CONTACTORS WITH AC COIL

NEMA Size	Maximum UL Horsepower						Auxiliary Contacts		Current Rating Amps	Catalog Number	Ref.No.	Multiplier
	Single Phase		Three Phase									
	115V	230V	200V	230V	460V	575V	N.O.	N.C.				
00	1/3	1	1.5	1.5	2	2	1	0	9	WCM9N-10-30*	W605682	Z1
							0	1		WCM9N-01-30*	W605683	
0	1	2	3	3	5	5	1	0	18	WCM18N-10-30*	W605684	
							0	1		WCM18N-01-30*	W605685	
1	2	3	7.5	7.5	10	10	0	0	32	WCM32N-00-30*	W605686	
2	3	7.5	10	15	25	25	0	0	50	WCM50N-00-30*	W605687	
3	7.5	15	25	30	50	50	0	0	95	WCM95N-00-30*	W605688	
4	-	-	40	50	100	100	2	2	150	WCM150N-22-30#	W605689	
5	-	-	75	100	200	200	2	2	300	WCM300N-22-30#	W605690	

*** AC COIL VOLTAGE CODE SELECTION**

FOR CONTACTORS WCM9N...WCM95N

60 Hz	24V	120V	208-240V	480V	600V
CODE	**V04**	**V18**	**V24**	**V47**	**V56**
50 Hz	-	110V	-	400-415V	500V

 # AC / DC COIL VOLTAGE CODE SELECTION

FOR CONTACTORS: WCM150N, WCM300N

Voltage	24-28 Vac/Vdc	110-130 Vac/Vdc	208-250 Vac/Vdc	430-500 VAC/VDC
CODE	**E02**	**E10**	**E13**	**E21**

Notes:
1) WCM_N Series - 9 to 95 A - AC COIL
2) WCM_N Series - 150 to 300 A - AC/DC Coil with Electronic Module

Contactors

WCM-N Series - NEMA Rated Standard Contactor

Accessories

Auxiliary Contacts Block

Location/Description		Mounting on Contactors	Auxiliary Contacts N.O.	Auxiliary Contacts N.C.	Catalog Number	Ref.No.	Multiplier
	Front Mounting	WCM9…105 WCM9N…95N	1	0	WBCXMF10	W605691	Z1
			0	1	WBCXMF01	W605692	
	Side Mounting	WCM9…WCM300 WCM9N…300N	1	1	WBCXML11	W605693	
			2	0	WBCXML20	W605694	
	Side Mounting, Second Block		1	1	WBCXMRL11	W605695	
			2	0	WBCXMRL20	W605696	
	Side Mounting	WCM400…WCM800	1	1	WBCXML11 WCM800	W605697	
	Side Mounting, Second Block		1	1	WBCXMRL11 WCM800	W605698	

Maximum # of added auxiliary contacts per contactor frame size: Note that side mountable version has 2 aux. contacts per block. WCM9…25 = 4 aux. contacts; WCM32…40 = 6 aux. contacts; WCM50…300E = 8 aux. contacts.

Mechanical Interlock Block

Location/Description		Mounting on Contactors	Auxiliary Contacts N.O.	Auxiliary Contacts N.C.	Catalog Number	Ref.No.	Multiplier
	Side mounted between two contactors	WCM9...105 WCM9N…95N	0	0	WBLIM 9-105	W605699	Z1
			0	2	WBLIM.02 9-105	W605700	
		WCM112…300 1WCM150N WCM300N	0	0	WBLIM 112-300	W605701	
		WCM400	0	0	WBLIM WCM400	W605702	
	Bottom mounted	WCM630…WCM800	0	0	WBLIM WCM800	W605703	

Notes: For WCM9…WCM105 the mechanical interlock can be used to interlock different frame sizes. For WCM112…WCM300, the mechanical interlock has to be used with contactors that have the same mechanical frame size.

For WBLIM WCM800, a metal mount base is provided with this accessory for an accurate assembling of the contactors.

Surge Suppressors

Description		Mounting on Contactors	Voltage Range	Catalog Number	Ref. No.	Multiplier
	Limits switching transients from contactor pick-up	WCM9...40 WCM9N . . .32N	24...48Vac	WBAMRC4 D53	W605704	Z1
			50...127Vac	WBAMRC5 D55	W605705	
			130...250Vac	WBAMRC6 D63	W605706	
		WCM50...105 WCM50N. . . 95N	24...48Vac	WBAMRC7 D53	W605707	
			50...127Vac	WBAMRC8 D55	W605708	
			130...250Vac	WBAMRC9 D63	W605709	
		WCM9...105 WCM9N . . .95N	270 - 380Vac	WBAMV D68	W605710	
			400 - 510Vac	WBAMV2 V73	W605711	

Note: WCM112...300 with Electronic Module and WCM400…800 already have the surge suppressor built-in on the electronic module

Contactors

WCM Series - IEC Standard Contactors

Accessories

Terminal Cover for WCM_E Contactor Series

	Location/Description	Mounting on Contactors	Catalog Number	Ref.No.	Multiplier
	Protection for contactor terminals (3 covers per package)	WCM150	WBMP WCM150	W605712	Z1
		WCM180	WBMP WCM180	W605713	
		WCM300	WBMP WCM300	W605714	
		WCM400	WBMP WCM400	W605715	
		WCM630…WCM800	WBMP WCM800	W605716	

Lugs for WCM Contactor Series (3 units per package)

	Description / Wire Range	Mounting on Contactors	Catalog Number	Ref.No.	Multiplier
	300 MCM…6 AWG	WCM112...150	WL1-S300	W605717	Z1
	300 MCM…6 AWG	WCM180	WL2-S300	W605718	
	600 MCM…4 AWG	WCM250…WCM300	LW1-S600	W605719	
	(2) 3-4/0 AWG	WCM400	WBMJ WCM400	W605720	
	(2) 3/0-600 MCM	WCM630…WCM800	WBMJ WCM800	W605721	

Replacement Coil

	Description	Mounting on Contactors	Catalog Number	Ref.No.	Multiplier
 	Coil voltage code is required to complete part number	**AC COIL**		W605722	
		WCM9... 25 WCM9N... 18N	WBCA4-25*	W605723	Z1
		WCM32...40 WCM32N	WBCA4-40*	W605724	
		WCM50...105 WCM50N... 95N	WBCA-105*	W605725	
		DC COIL[2]		W605726	
		WCM32...40	WBECC4-40+	W605727	Z1
		WCM50...105	WBECC-105+	W605728	
		AC/DC ELECTRONIC MODULE &COIL[1]		W605729	
		WCM112...150 WCM150N	WBCE-150#	W605730	Z1
			WME-300#	W605731	
		WCM180	WBCE-215#	W605732	
			WME-300#	W605733	
		WCM250…300 WCM300N	WBCE-300#	W605734	
			WME-300#	W605735	
		WCM400	WBCE-400 ^	W605736	
		WCM630…800	WBCE-800 ^	W605737	

-1) Module (ME-) & Coil (BCE-) must be used together for a proper contactor operation.
-2) DC Option does not include NEMA Rated Contactors

*** AC COIL VOLTAGE CODE SELECTION FOR CONTACTORS WCM9...WCM105, WCM150N, WCM300N, WCM9N...95**

60 Hz	24V	48V	120V	208-240V	277V	480V	600V
CODE	**V04**	**V10**	**V18**	**V24**	**V37**	**V47**	**V56**
50 Hz	-	42V	110V	-	230-240V	400-415V	500V

1) Stock available only for contactor version …-10-30... and …-00-30…. Example WCM9-10-30V24 or WCM50-00-30V24

+ DC COIL VOLTAGE CODE SELECTION 1)

FOR CONTACTORS WCM32...WCM105		
Voltage	24-28V	110-130V
CODE	**C34**	**C40**

 # AC/DC COIL VOLTAGE CODE SELECTION - Electronic Contactor Required

FOR CONTACTORS WCM112, 150, 180, 250, 300, WCM150N, WCM300N				
Voltage	**24-28Vac/Vdc**	**110-130Vac/Vdc**	**208-250Vac/Vdc**	**430-500Vac/Vdc**
CODE	**E02**	**E10**	**E13**	**E21**
Mounting on	WCM112-WCM300	WCM112-WCM300	WCM112-WCM300	WCM112-WCM300

^ AC/DC COIL VOLTAGE CODE SELECTION - Electronic Contactor Required

FOR CONTACTORS WCM400, 630, 800				
Voltage	100-240Vac/100-220Vdc	100-127Vac/100-110Vdc	200-240Vac/200-220Vdc	440-575Vac
CODE	**E36**	**E35**	**E39**	**D82**
Mounting on	WCM400	WCM630-WCM800	WCM630-WCM800	WCM400-WCM800

1) DC coils cannot be used in AC coil contactors due to difference in size of coil housing.

Contactors

WCM Series - IEC Standard Contactors

Control circuit ratings - AC Coil

TYPE		WCM9	WCM12	WCM18	WCM25	WCM32	WCM40	WCM50	WCM65	WCM80	WCM95	WCM105
Rated Insulation Voltage Ui												
Acc. IEC; VDE 0660	[V]	1000										
Acc. UL; CSA	[V]	600										
Rated Operating Voltage Ue												
Acc. IEC; VDE 0660	[V]	690										
Acc. UL; CSA	[V]	600										
Standard Voltages 60Hz	[V]	24...600										
Coil Operating limits												
Monofrequency coils xUc	[V]					0.85...1.1						-
Pick-up xUc	[V]	0.4...0.76				0.5...0.76		0.5...0.76				-
Drop-out xUc	[V]	0.25...0.65				0.3...0.65		0.25...0.6				-
Operating Time												
Coil energization - N.O.	[ms]	8...20				10...19		15...30				-
Coil de-energization - N.O.	[ms]	6...13				5...25		9...15				-
Coil Consumption												
Single coils												
Sealed	[VA]	4...7.2				6.6...12.5		13.1....19.1				-
Inrush	[VA]	70				98		255				-
Thermal Power Dissipation												
60Hz	[W]	2.6				4.3		8.0				-
Power Factor												
Closed	Cos phi	0.28				0.34		0.32				-
Opened	Cos phi	0.85				0.69		0.54				-
Stranded / Solid [AWG] (UL / CSA)		2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10

Control circuit ratings - DC Coil

TYPE		WCM9	WCM12	WCM18	WCM25	WCM32	WCM40	WCM50	WCM65	WCM80	WCM95	WCM105
Rated Insulation Voltage Ui												
Acc. IEC; VDE 0660	[V]	1000										
Acc. UL; CSA	[V]	600										
Standard Voltages	[V]	12...440				24...240		24...240				
Coil Operating limits												
Pick-up xUc	[V]	0.4...0.7				0.85...1.1		0.7...0.8				
Drop-out xUc	[V]	0.15...0.4				0.45...0.75		0.4...0.6				
						0.15...0.45						
Operating Time												
Coil energization - N.O.	[ms]	35...45				40...55		50...60				
Coil de-energization - N.O.	[ms]	7...12				30...65		55...60				
Coil Consumption												
Sealed	[W]	3.8...9.0				6		6.5				
Inrush	[W]	3.8...9.0				240		340				
Stranded / Solid (UL / CSA)	[AWG]	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10

WCM Series - IEC Standard Contactors

IEC Contactors - WCM Series

TYPE		WCM112	WCM150	WCM180	WCM250	WCM300	WCM400	WCM630	WCM800
Rated Insulation Voltage Ui									
Acc. IEC; VDE 0660	[V]	1000							
Acc. UL; CSA	[V]	600							
Rated Operating Voltage Ue									
Acc. IEC; VDE 0660	[V]	690							
Acc. UL; CSA	[V]	600							
Standard Voltages 50Hz; 60Hz; DC	[V]	24…600							
Coil Operating limits									
xUc	[V]	0.65…1.1				0.85...1.1			
Pick-up xUc	[V]	0.70...0.85				0.77...0.83			
Drop-out xUc	[V]	0.40...0.60				0.48...0.53			
Operating Time									
Coil energization - N.O.	[ms]	60…70	60…70	60…70	60…70	60…70	64…68	66…70	66…70
Coil de-energization - N.O.	[ms]	13…17	13…17	13…17	13…17	13…17	43…47	45…49	45…49
Coil Consumption									
Sealed AC	[VA]	14.8	14.8	14.1	14.1	14.1	14	17	29
Inrush AC	[VA]	213	213	214	229	229	571	1000	1000
Sealed DC	[VA]	2.4	2.4	2.4	2.5	2.5	14	17	29
Inrush DC	[VA]	166	166	154	171	171	571	1000	1000
Thermal Power Dissipation									
AC	[W]	3.9	3.9	3.8	3.7	3.7	4.7	4.9	5.3
DC	[W]	2.4	2.4	2.4	2.5	2.5	5.0	6.3	7.8

Contactors

WCM Series - IEC Standard Contactors

Power Contacts

TYPE			WCM9	WCM12	WCM18	WCM25	WCM32	WCM40	WCM50	WCM65	WCM80	WCM95	WCM105
Standard UL/CSA Ratings													
Rated Operating Voltage		[V]	600										
AC-1 (General Purpose)		[A]	25	25	32	32	60	60	90	110	110	140	140
Switching Motor Loads													
Full Voltage - 50/60Hz													
1-phase	115V	[A]	9.8	13.8	16	24	34	34	56	56	80	80	100
	230V	[A]	10	12	17	28	28	28	40	50	68	68	88
	115V	[HP]	1/2	3/4	1	2	3	3	5	5	7-1/2	7-1/2	10
	230V	[HP]	1-1/2	2	3	5	5	7 1/2	10	10	15	15	20
3-phase	200V	[A]	11	11	17.5	25	32.2	32.2	48.3	62.1	62.1	78.2	92
	230V	[A]	9.6	9.6	15.2	22	28	42	42	54	68	80	104
	460V	[A]	7.6	11	14	21	27	40	52	65	65	77	96
	575V	[A]	9	11	17	17	27	27	41	52	62	77	77
	200V	[HP]	3	3	5	7-1/2	10	10	15	20	20	25	30
	230V	[HP]	3	3	5	7-1/2	10	15	15	20	25	30	40
	460V	[HP]	5	7-1/2	10	15	20	30	40	50	50	60	75
	575V	[HP]	7-1/2	10	15	15	25	25	40	50	60	75	75
Short Circuit Rating	600V	[kA]	5	5	5	5	5	5	10	10	10	10	10
Standard IEC Ratings (IEC EN 60947)													
Rated Operating Voltage		[V]	690						1000				
Rated Thermal Current Ith		[A]	25	25	32	45	60	60	90	110	110	140	140
Switching Motor Loads													
AC-3 - 50/60Hz													
3-phase	220-240V	[A]	9	12	18	25	32	40	50	65	80	95	105
	380-400V	[A]	9	12	18	25	32	40	50	65	80	95	105
	415-440V	[A]	9	12	18	25	32	40	50	65	80	95	105
	500V	[A]	7.5	10.5	14	19	24	32	38	55	63	79	85
	660-690V	[A]	7	9	13	15	22	25	34	44	48	60	80
	220-240V	[kW]	2.2	3	4	7.5	9	11	15	18.5	22	25	30
	380-400V	[kW]	4	5.5	7.5	11	15	18.5	22	30	37	45	55
	415-440V	[kW]	4	5.5	7.5	11	15	22	25	37	45	50	55
	500V	[kW]	5.5	7.5	10	15	18.5	25	30	40	45	55	65
	660-690V	[kW]	5.5	7.5	10	15	18.5	30	35	45	45	55	65
Maximum Switching Rate													
	AC-1	[ops/hr]	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
	AC-3	[ops/hr]	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	600	600
	no load	[ops/hr]	9,000	9,000	9,000	9,000	9,000	9,000	5,000	5,000	5,000	5,000	5,000
AC-4													
200,000 operations;	<= 690V	[A]	5	7	8	12	16	18.5	23	30	37	44	50
50/60Hz	220-230V	[kW]	1.1	1.5	1.5	3	4	4.5	5.5	7.5	9.2	11	12.5
		[HP]	1.5	2	2	4	5.4	6	7.5	10	12.5	15	17
	380-400V	[kW]	2.2	3	3.7	5.5	7.5	9.2	11	15	18.5	22	22
		[HP]	3	4	5	7.5	10	12.5	15	20	25	30	30
	415-440V	[kW]	2.2	3.7	4.5	5.5	9.2	11	11	15	22	22	30
		[HP]	3	5	6	7.5	12.5	15	15	20	30	30	40
	500V	[kW]	3	4	5.5	7.5	10	11	15	18.5	22	25	30
		[HP]	4	5.4	7.5	10	13	15	20	25	30	33	40
	660-690V	[kW]	3	4.5	5.5	7.5	11	12.5	15	20	25	30	33
		[HP]	4	6	7.5	10	15	17	20	27	33	40	45

Power Contacts continued

Power Contacts cont.

WCM Series - IEC Standard Contactors

Type			WCM9	WCM12	WCM18	WCM25	WCM32	WCM40	WCM50	WCM65	WCM80	WCM95	WCM105
Breaking Capacity	Ue=400V	[A]	250	250	250	450	450	920	920	920	920	1050	1050
	Ue=500V	[A]	250	250	250	320	450	920	920	920	920	1050	1050
	Ue=690V	[A]	130	130	130	170	205	780	780	780	780	950	950
Impedance per Pole		[mW]	2.41	2.41	2.35	1.65	1.28	0.95	0.85	0.86	0.86	0.76	0.76
Power Dissipation per Pole													
	AC-1	[W]	1.47	1.47	2.46	3.34	4.6	3.42	6.86	10.40	10.40	14.89	14.89
	AC-3	[W]	0.19	0.34	0.78	1.03	1.31	1.52	2.12	3.63	5.5	6.86	8.37
Short Time Current Icw													
	1 sec.	[A]	455	455	570	630	1010	1265	1580	2530	2530	3300	3300
	5 sec.	[A]	205	205	254	280	450	450	710	1130	1130	1485	1485
	10 sec.	[A]	144	144	180	200	320	400	500	800	800	1050	1050
	30 sec.	[A]	85	85	104	115	185	230	290	460	460	600	600
	1 min.	[A]	60	60	74	80	130	165	205	325	325	430	430
	3 min.	[A]	35	35	46	50	90	100	120	185	185	250	250
	Rec. time	[min.]	10	10	10	10	10	10	10	10	10	10	10
Short Circuit Coordination													
Acc. to IEC													
Coordination Type "1"	gL/gG	[A]	50	50	63	63	100	125	200	200	200	250	250
Coordination Type "2"	gL/gG	[A]	25	35	35	50	63	80	100	125	125	160	200
Acc. to UL/CSA	J Type	[A]	25	35	40	45	60	70	100	125	125	150	200

Built-in Auxiliary Contacts

TYPE			WCM9	WCM12	WCM18
Rated Insulation Voltage Ui					
Acc. IEC; VDE 0660		[V]	1000		
Acc. UL; CSA		[V]	600		
Rated Operating Voltage Ue					
Acc. IEC; VDE 0660		[V]	690		
Acc. UL; CSA		[V]	600		
Rated Thermal Current Ith <=55°C		[A]	20		
Rated Operating Current Ie					
Acc. IEC 60947-5-1 / AC-15	110-127V	[A]	10		
	220-240V	[A]	10		
	380-400V	[A]	6		
	415-450V	[A]	5		
	500V	[A]	4		
	660-690V	[A]	2		
Acc. UL; CSA			A600		
Rated Operating Current Ie					
Acc. IEC 60947-5-1 / DC-13	24V	[A]	6		
	48V	[A]	4		
	110V	[A]	2		
	220V	[A]	0.7		
	440V	[A]	0.7		
Acc. UL; CSA			P600		
Making Capacity Im					
AC-15 / AC-11	Ue <= 690V 50/60Hz	[A]	250		
DC-13 / DC-11	Ue <= 440Vdc	[A]	250		
Breaking Capacity Ic					
AC-15 / AC-11	Ue <= 400V 50/60Hz	[A]	250		
DC-13 / DC-11	Ue <=220Vdc	[A]	2		
Short Circuit Protection with Fuses					
Acc. IEC 60947-5-1 - gL/gG		[A]	10		
Minimum Switching Capacity		[V/mA]	17/5		
Electrical Endurance		Million ops.	1		
Mechanical Endurance		Million ops.	10		
Guaranteed Non-Overlap Time		[ms]	1.5		
Insulation Resistance		[MOhm]	>10		

Contactors

WCM Series - IEC Standard Contactors

Power Contacts cont.

TYPE	Units		WCM112	WCM150	WCM180	WCM250	WCM300	WCM400	WCM630	WCM800
NEMA Ratings										
Rated Operating Voltage		[V]	600							
AC-1 (General Purpose)		[A]	170	170	200	300	400	450	660	900
Switching Motor Loads										
Full Voltage - 50/60Hz										
1-phase	115V	[A]	-	-	-	-	-	-	-	-
	230V	[A]	-	-	-	-	-	-	-	-
	115V	[HP]	-	-	-	-	-	-	-	-
	230V	[HP]	-	-	-	-	-	-	-	-
3-phase	200V	[A]	120	150	177	221	285	359	414	552
	230V	[A]	130	154	192	248	312	360	480	772
	460V	[A]	124	156	180	240	302	361	477	-
	575V	[A]	99	144	192	242	336	289	382	-
	200V	[HP]	40	50	60	75	100	125	150	200
	230V	[HP]	50	60	75	100	125	150	200	300
	460V	[HP]	100	125	150	200	250	300	400	600
	575V	[HP]	100	150	200	250	350	300	400	600
Short Circuit Rating	600V	[kA]	10	10	10	18	18	18	30	30
Standard IEC Ratings (IEC/EN 60947)										
Rated Operating Voltage		[V]	1000							
Rated Thermal Current Ith		[A]	180	225	225	350	350	450	660	900
Switching Motor Loads										
AC-3 - 50/60Hz										
3-phase	220-240V	[A]	112	150	180	250	300	400	630	800
	380-400V	[A]	112	150	180	250	300	400	630	800
	415-440V	[A]	112	150	180	250	300	400	630	800
	500V	[A]	95	130	155	220	265	350	500	720
	660-690V	[A]	82	110	135	185	220	300	420	630
	220-240V	[kW]	30	45	55	75	90	110	185	220
	380-400V	[kW]	55	75	90	132	160	220	330	450
	415-440V	[kW]	55	90	110	150	185	220	370	500
	500V	[kW]	55	90	110	160	200	220	330	500
	660-690V	[kW]	75	110	110	160	200	260	400	560
Maximum Switching Rate										
	AC-1	[ops/hr]	600	600	600	600	600	500	500	500
	AC-3	[ops/hr]	600	600	600	600	600	500	500	500
	no load	[ops/hr]	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

Power Contact cont.

TYPE			WCM112	WCM150	WCM180	WCM250	WCM300	WCM400	WCM500	WCM630	WCM800
AC-4	**Voltage**	**Units**									
200,000 operations;	<= 690V	[A]	50	55	58	100	130	-	-	-	-
50/60Hz	220-230V	[kW]	18.5	20	22	37	45	90	-	110	185
		[HP]	25	27	30	50	60	125	-	150	250
	380-400V	[kW]	30	33	37	55	75	150	-	220	330
		[HP]	40	44	50	75	100	200	-	300	450
	415-440V	[kW]	37	40	45	63	80	185	-	220	370
		[HP]	50	54	60	84	107	250	-	300	500
	500V	[kW]	40	45	50	75	90	-	-	-	-
		[HP]	54	60	67	100	121	-	-	-	-
	660-690V	[kW]	45	50	55	90	100	-	-	-	-
Maximum Switching Rate		[HP]	600	67	75	121	133	-	-	-	-
		[ops/hr]	150	150	150	150	150	-	-	-	-
Making Capacity		[A]	1430	1820	2100	2600	3000	-	-	-	-
Breaking Capacity											
	Ue<=400V	[A]	1290	1350	1400	2000	-	4000	-	6300	8000
	Ue=500V	[A]	1290	1350	1400	2000	-	4000		6300	8000
Impedance per pole		[mW]	0.5	0.5	0.45	0.3	0.3	-	-	-	-
Power Dissipation per Pole											
	AC-1	[W]	16	25	21.6	35	45.7	-	-	-	-
	AC-3	[W]	6.2	11.1	13.8	17.9	25.7	-	-	-	-
Short Time Current Icw											
0°≤ 104°F	1 sec.	[A]	3165	3763	4649	4427	-	-	-	-	-
	5 sec.	[A]	1820	2164	2673	2546	-	-	-	-	-
	10 sec.	[A]	1430	1700	2100	2000	-	-	-	-	-
	30 sec.	[A]	826	980	1212	1155	-	-	-	-	-
	1 min.	[A]	584	694	857	816	-	-	-	-	-
	3 min.	[A]	337	401	495	471	-	-	-	-	-
	Recovery time	[min.]	10	10	10	10	10	-	-	-	-
Short Circuit Coordination											
Acc. to IEC											
Coordination type "1"	gL/gG	[A]	315	355	355	500	630	630	-	800	1000
Coordination type "2"	gL/gG	[A]	224	250	250	400	500	-	-	-	-
Acc. to UL/CSA	J Type	[A]	250	350	400	500	700	700	-	900	1100

Contactors

WCM Series - IEC Standard Contactors

General Ratings

TYPE		WCM9	WCM12	WCM18	WCM25	WCM32	WCM40	WCM50	WCM65	WCM80	WCM95	WCM105
Standards	Units	Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories - UL 508; CSA C.22.2/14; VDE 0660/102										
Rated Insulation Voltage Ui												
Acc. IEC; VDE 0660	[V]	1000										
Acc. UL; CSA	[V]	600										
Rated Impulse Voltage Uimp		6						8				
Acc. IEC60947-1	[kV]											
Rated Operating Frequency	[Hz]	25…400										
Degree of Protection		IP20			Protection against direct contact Acc. VDE 0160 - Part. 100							
Main terminals					IP10							
Coil terminals												
Auxiliary terminals												
Ambient Temperature												
Storage		-55 to +80°C (-67 to +176°F)										
Operating		-25 to +55°C (-13 to +131°F)										
Altitude												
Up to 1,500m		Nominal values										
Pollution Degree		3										
Climatic Withstand		According to IEC 60680-2										
Mounting		35mm rail Acc. DIN EN 50 022										
Vibration Resistance (5 to 200 Hz)												
Contactor open	[g]	3	3	3	7.5	8	8	4.5	4.5	4.5	5	5
Contactor closed at Uc	[g]	6	6	6	8	12	12	9	9	9	7	7
Mechanical Endurance												
AC Coil	Million ops.	10										
Electrical Endurance AC-3	Million ops.	1.8	1.6	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1
Shock Resistance (1/2 sin wave = 11ms)												
Contactor open	[g]	8	8	8	8	7	7	6	6	6	6	6
Contactor closed at Uc	[g]	12	12	12	12	12	12	10	10	10	10	10
Weight	[kg]	0.30	0.30	0.30	0.30	0.52	0.54	1.11	1.12	1.13	1.45	1.47
AC Coil	[lb]	0.65	0.65	0.65	0.65	1.15	1.19	2.44	2.47	2.49	3.20	3.24
Terminal Capacity		Cross/Slotted Combination						Allen Head				
Fine - Stranded with sleeve	Top [mm2]	2x0.5-2.5	2x0.5-2.5	2x0.5-2.5	2x1-2.5	0.75-16	0.75-16	1-35	1-35	1-35	1.5-50	1.5-50
	Bottom [mm2]	or 2x2.5-6	or 2x2.5-6	or 2x2.5-6	or 2x2.5-10	1.0-16	1.0-16	2.5-35	2.5-35	2.5-35	4-35	4-35
Coarse - Stranded / Solid	Top [mm2]	2x1-2.5	2x1-2.5	2x1-2.5	2x1-2.5	1-16	1-16	1.5-35	1.5-35	1.5-35	2.5-50	2.5-50
	Bottom [mm2]	or 2x2.5-6	or 2x2.5-6	or 2x2.5-6	or 2x2.5-10	1.5-16	1.5-16	6-35	6-35	6-35	6-35	6-35
Stranded / Solid (UL / CSA)	Top [AWG]	2x20-12	2x20-12	2x20-12	2x18-12	18-6	18-6	16-2	16-2	16-2	16-1	16-1
	Bottom [AWG]	or 2x12-10	or 2x12-10	or 2x12-10	or 2x12-8	16-6	16-6	14-2	14-2	14-2	10-2	10-2
Drive Size		Screwdriver - Philips #2						5/32" (4mm.)				
Tightening Torque	lb-in (Nm)	8.9...15 (1...1.7)	8.9...15 (1...1.7)	8.9...15 (1...1.7)	14.2...26.6 (1.6...3)	22.1...35..4 (2.5...4)	22.1...35..4 (2.5...4)	35.4...53.1 (4...6)	35.4...53.1 (4...6)	35.4...53.1 (4...6)	44.3...57.5 (5...6.5)	44.3...57.5 (5...6.5)

Contactors

WCM Series - IEC Standard Contactors

General Ratings

TYPE		WCM112	WCM150	WCM180	WCM250	WCM300	WCM400	WCM630	WCM800
Standards Units		Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories - UL 508; CSA C.22.2/14; VDE 0660/102							
Rated Insulation Voltage Ui									
Acc. IEC; VDE 0660	[V]	1000							
Acc. UL; CSA	[V]	600							
Rated Impulse Voltage Uimp									
Acc. IEC60947-1	[kV]	8							
Rated Operating Frequency	[Hz]	25…400							
Degree of protection		Protection against direct contact acc. VDE 0160 - Part. 100							
Main terminals		IP00							
Coil terminals		IP20							
Auxiliary terminals		IP20							
Ambient Temperature									
Storage		-55 to +80 °C (-67 to +176°F)							
Operating		-25 to +55 °C (-13 to +131°F)							
Altitude									
Up to 1,500m		Nominal values							
Other altitudes							up to 2000m		
Pollution Degree		3							
Climatic withstand		According to IEC 68-2							
Mounting		Screw to panel							
Vibration Resistance (5 to 200 Hz)									
Contactor open	[g]	4							
Contactor closed at Uc	[g]	4							
Mechanical Endurance									
AC Coil	Million ops.	10					5		
Electrical Endurance AC-3	Million ops.	1.1	1.1	1.0	1.0	1.0	0.5		
Shock Resistance (1/2 sin wave = 11ms)									
Contactor open	[g]	3							
Contactor closed at Uc	[g]	3							
Weight									
AC/DC Coil	[kg]	2.54	2.54	4.04	6.14	6.14	9.2	22.4	22.4
	[lb]	5.60	5.60	8.91	13.54	13.54	20	49	49
Terminal Capacity									
Fine - Stranded with sleeve	[mm2]	2 x (25-70)		2 x (50-120)	2 x (50-150)		1 x 150	1 x 240	1 x 240
AWG wires with end sleeve		1 x 300 or 2 x 107			1 x 500 or 2 x 300		Nº2 30×5	Nº2 50×5	Nº2 60×5
Busbars	[mm]	2 x (15 x 3)		2 x (20 x 3)	2 x (30 x 5)		-	-	-
Tightening Torque	lb-in (Nm)	47.8-53.1(5.4-6)		123.9-141.6 (14-16)	203.6-230.1 (23-26)		203.6 (23)	504.5 (57)	504.5 (57)

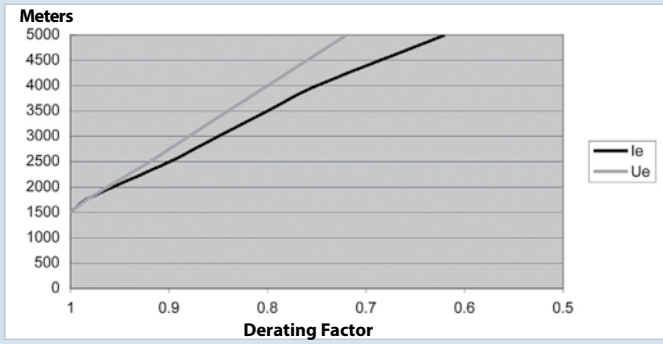
Contactors

WCM Series - IEC Standard Contactors

Auxiliary contact block ratings

TYPE			WBCXMF WBCXML WBCXMRL WBLIM.02
Rated Insulation Voltage Ui			
Acc. IEC; VDE 0660		[V]	1000
Acc. UL; CSA		[V]	600
Rated Operating Voltage Ue			
Acc. IEC; VDE 0660		[V]	690
Acc. UL; CSA		[V]	600
Rated Thermal Current Ith <=55°C		[A]	10
Rated Operating Current Ie			
Acc. IEC 60947-5-1 / AC-15	110-127V	[A]	6
	220-240V	[A]	6
	380-400V	[A]	4
	415-450V	[A]	3.5
	500V	[A]	2.5
	660-690V	[A]	1.5
Acc. UL; CSA			A600
Rated Operating Current Ie			
Acc. IEC 60947-5-1 / DC-13	24V	[A]	4
	48V	[A]	2
	110V	[A]	0.7
	220V	[A]	0.3
	440V	[A]	0.15
Acc. UL; CSA			Q600
Making Capacity Im			
AC-15 / AC-11	Ue <= 400V 50/60Hz	[A]	90
DC-13 / DC-11	Ue <= 220Vdc	[A]	90
Breaking Capacity Ic			
AC-15 / AC-11	Ue <= 400V 50/60Hz	[A]	60
DC-13 / DC-11	Ue <= 220Vdc	[A]	0.95
Short Circuit Protection with Fuses			
Acc. IEC 60947-5-1 - gL/gG		[A]	10
Minimum Switching Capacity		[V/mA]	17/5
Electrical Endurance		Million ops.	1
Mechanical Endurance		Million ops.	10
Guaranteed Non-Overlap Time		[ms]	1.5
Insulation Resistance		[MOhm]	>10

Graphic Altitude



NOTE:
Altitude compensation in WCM Series contactors, considers a factor ac cording to which the rated power must be reduced.

The derating of the permissible operating power for installation altitudes above 1,500 m (5,000 ft) is calculated according to:

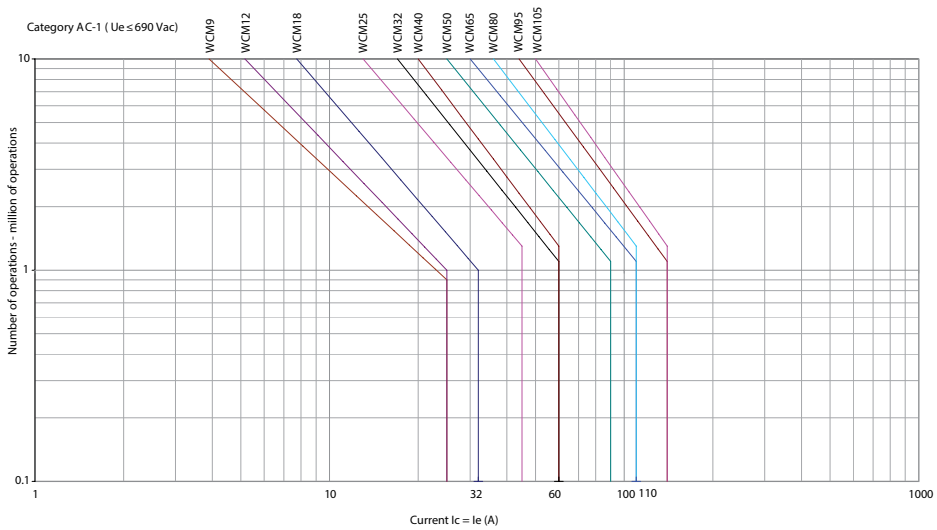
Total derating = Derating $_{current}$ x Derating $_{voltage}$

Example: Altitude: 3,000 m (10,000 ft):

Derating current K1 = 0.85
Derating voltage K2 = 0.88

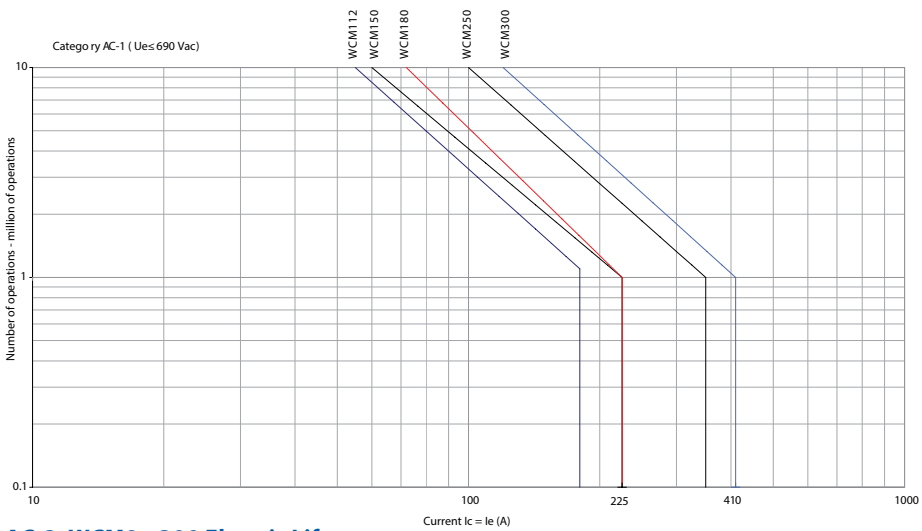
Total derating = 0.85 x 0.88 = 0.75 x HP

AC-1: WCM9...105 Electric Lifespan



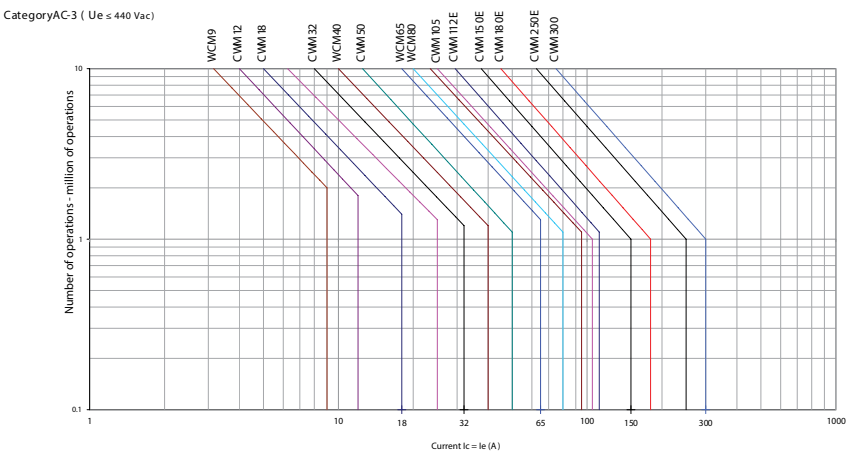
Control of resistive circuits (power factor >= 0.95) The current broken (Ic) in category AC-1 is equal to the current (Ie) drawn by the load.

AC-1: WCM112...300 Electric Lifespan



Control of resistive circuits (power factor >= 0.95) The current broken (Ic) in category AC-1 is equal to the current (Ie) drawn by the load.

AC-3: WCM9...300 Electric Lifespan

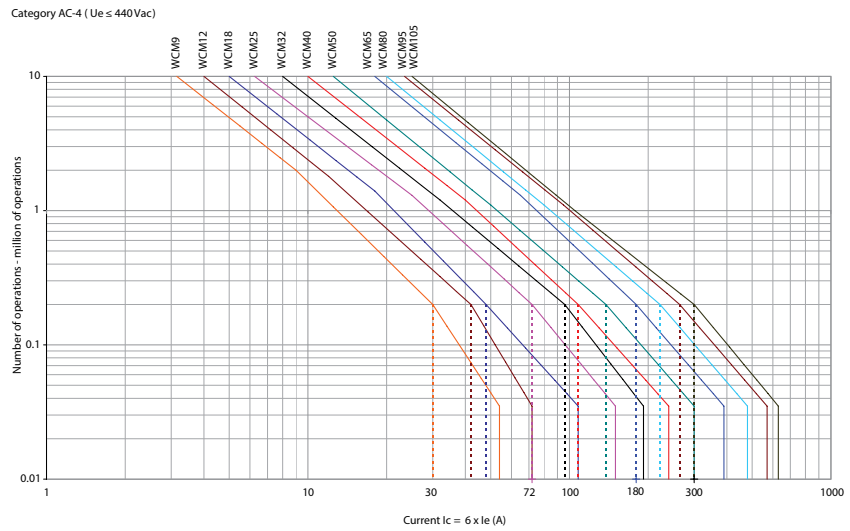


Control of 3-phase asynchronous squirrel cage motors with breaking while running. The current broken (Ic) in category AC-3 is equal to the operational current of the motor (Ie).

Contactors

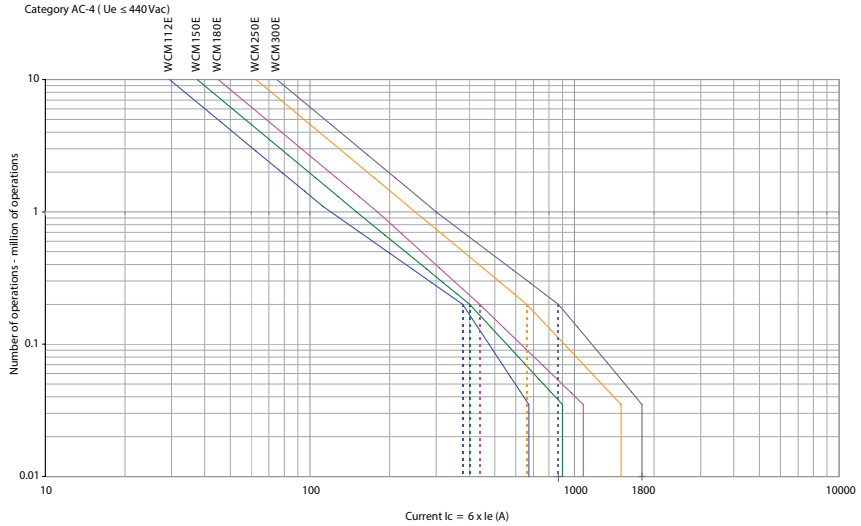
WCM Series - IEC Standard Contactors

AC-4: WCM9...105 Electric Lifespan



Control of 3-phase asynchronous squirrel cage motors with breaking while motor stalled.
The current broken (Ic) in category AC-4 is equal to 6 times the operational current of the motor (Ie).

AC-4: WCM112...300 Electric Lifespan



Control of 3-phase asynchronous squirrel cage motors with breaking while motor stalled.
The current broken (Ic) in category AC-4 is equal to 6 times the operational current of the motor (Ie).

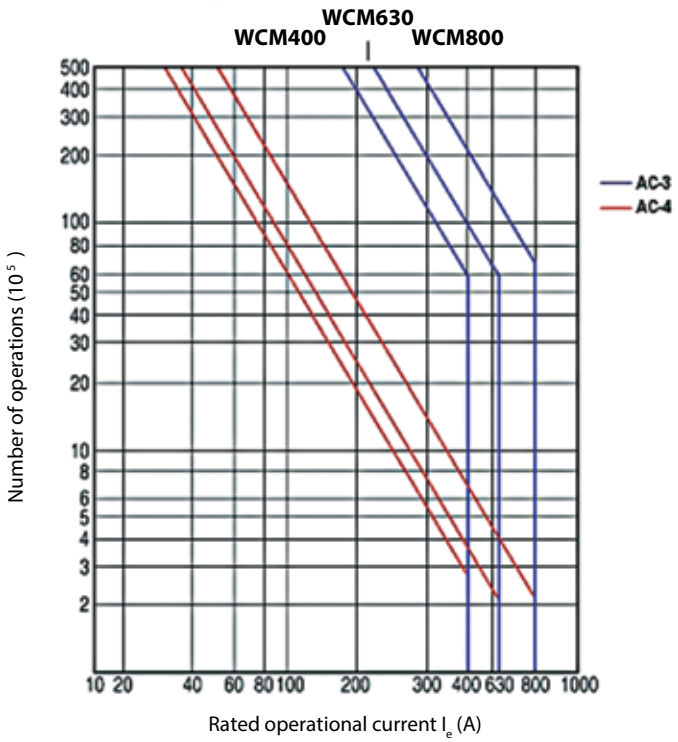
In many applications there is a mixture of AC-3 and AC-4 duty. For these applications the electric lifespan of a particular contactor can be estimated using the formula:

$$E = \frac{AC3}{1-\left(\frac{P}{100}\right)+\left(\frac{P}{100}\times\frac{AC3}{AC4}\right)}$$

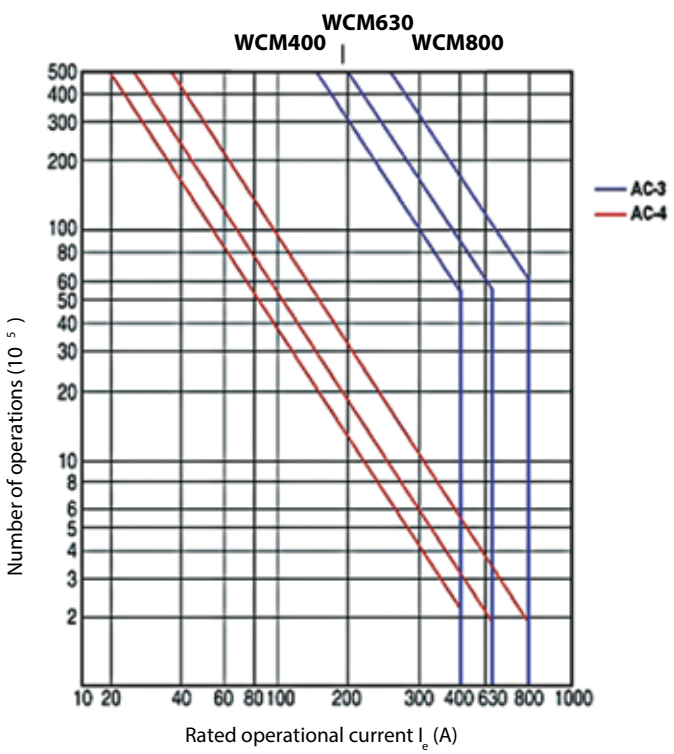
E= Estimated electric lifespan for mixed duty application.
AC-3= Number of electrical operations taken from the AC-3 Duty life curve.
AC-4= Number of electrical operations taken from the AC-4 Duty life curve.
P= Proportion of AC-4 operations to total operations for the application, expressed as a percentage.

Electrical Lifespan

$U_e \leq 220\text{-}240$ VAC



$U_e \leq 380\text{-}460$ VAC

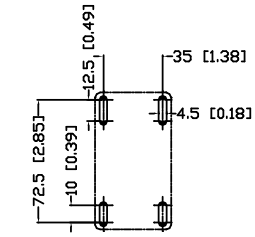


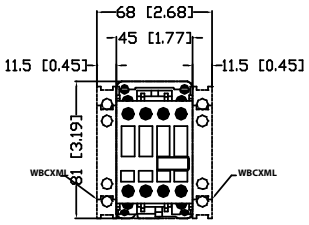
Contactors

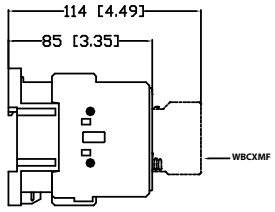
WCM-N Series - NEMA Rated Standard Contactor

Mechanical Drawings mm (in)

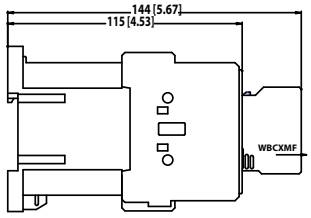
WCM9, WCM9N, WCM12, WCM18, and WCM18N





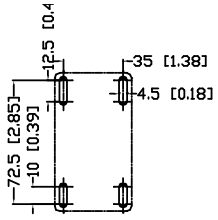


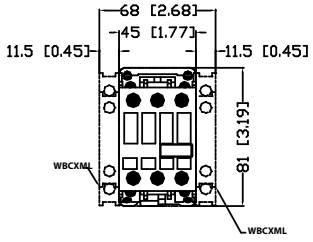
Vac Contactors

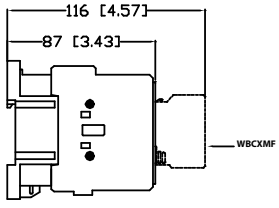


Vdc Contactors

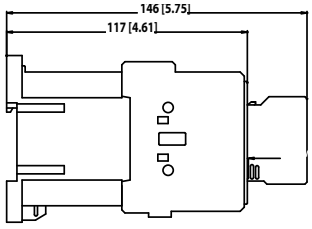
WCM25





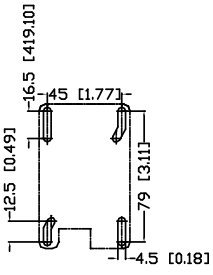


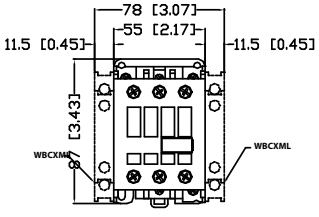
Vac Contactors

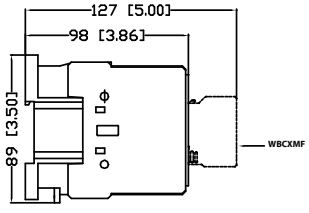


Vdc Contactors

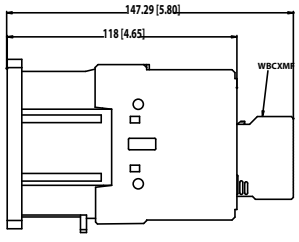
WCM32, WCM32N and WCM40







Vac Contactors



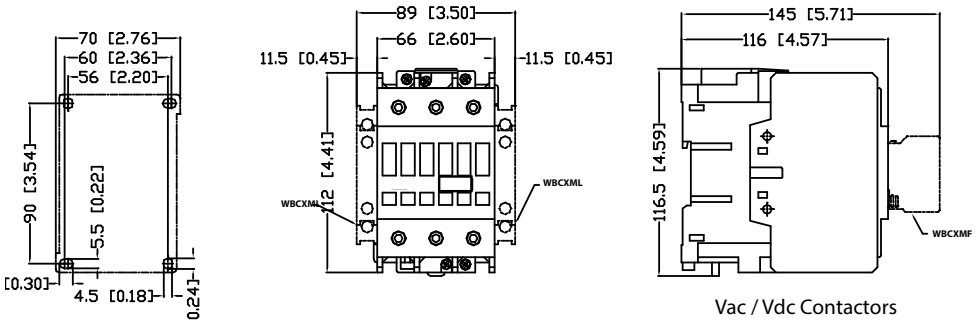
Vdc Contactors

1

WCM CONTACTOR

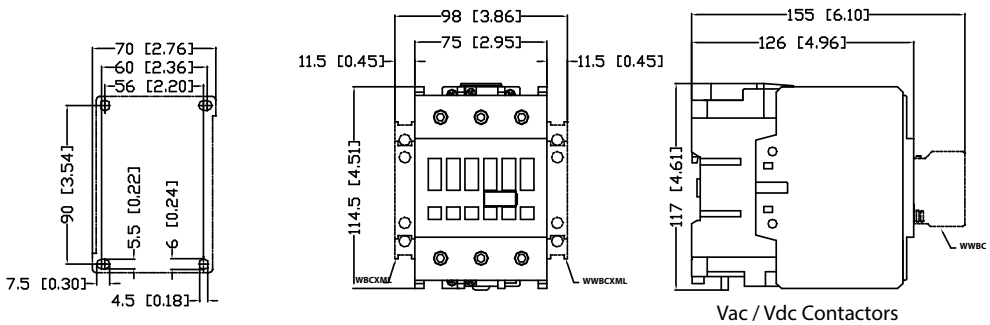
Mechanical Drawings mm (in)

WCM50, WCM50N, WCM65 and WCM80



Vac / Vdc Contactors

WCM95, WCM95N, and WCM105



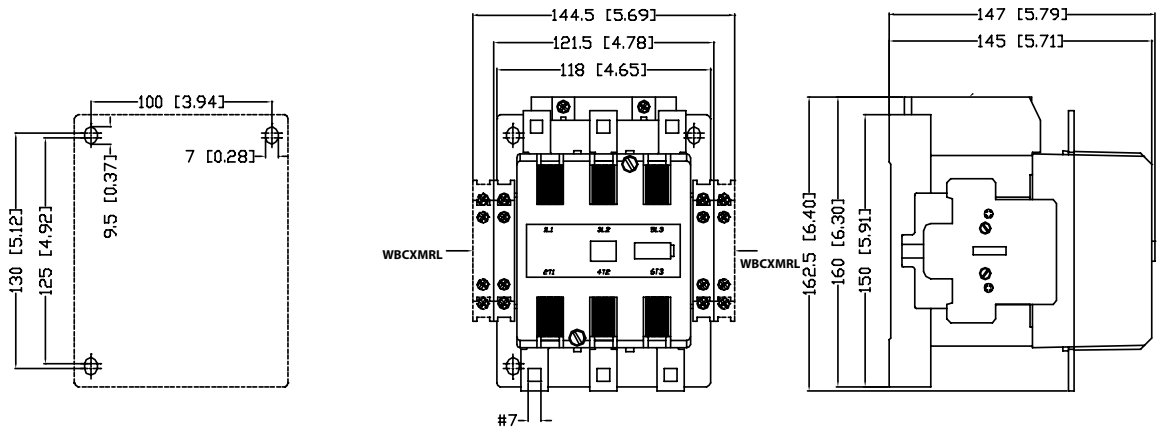
Vac / Vdc Contactors

Contactors

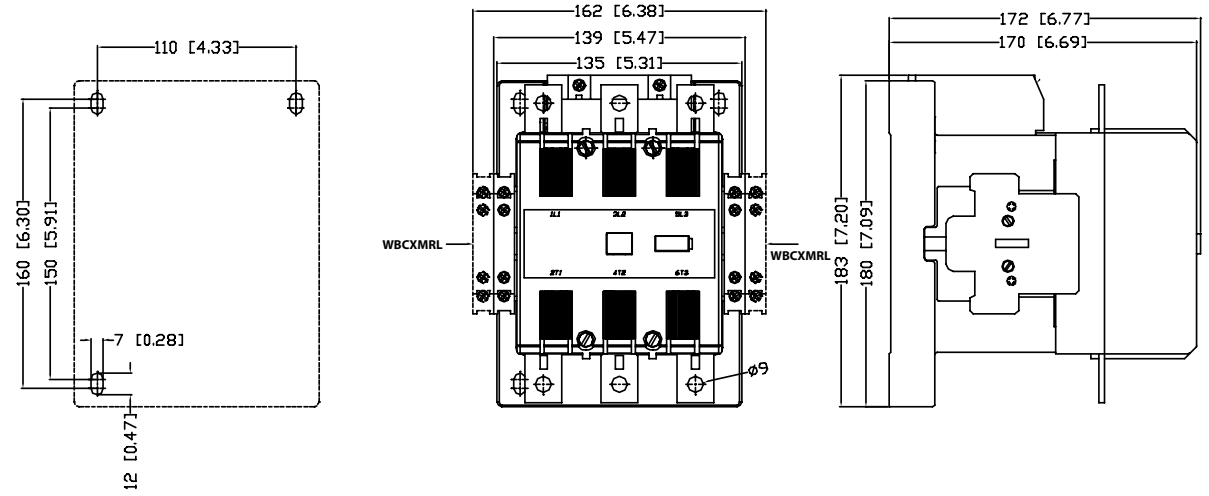
WCM-N Series - NEMA Rated Standard Contactor

Mechanical Drawings mm (in)

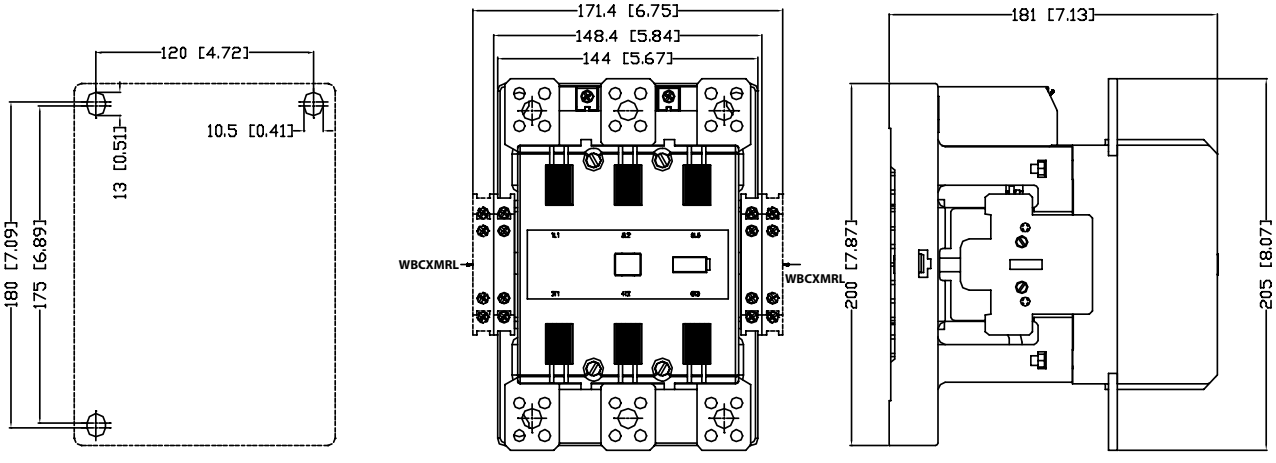
WCM112. WCM150 and WCM150N



WCM180

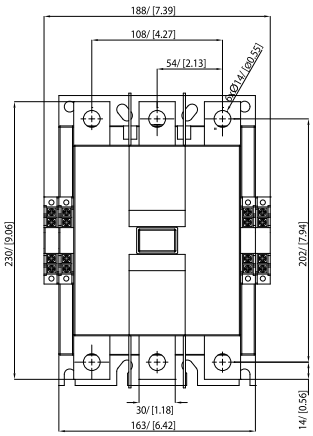


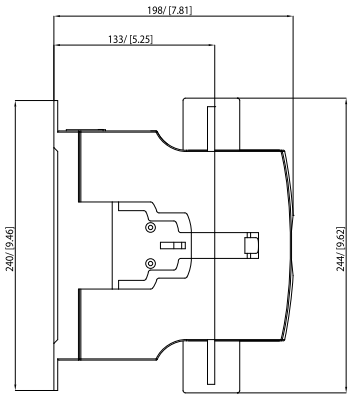
WCM250, WCM300 and WCM300N

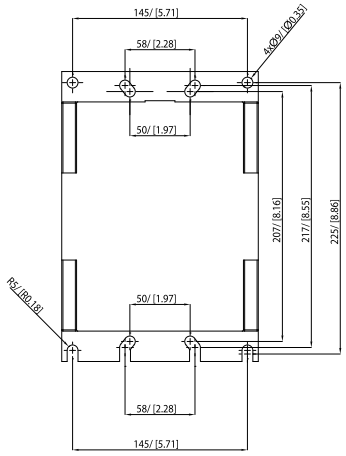


Mechanical Drawings mm (in)

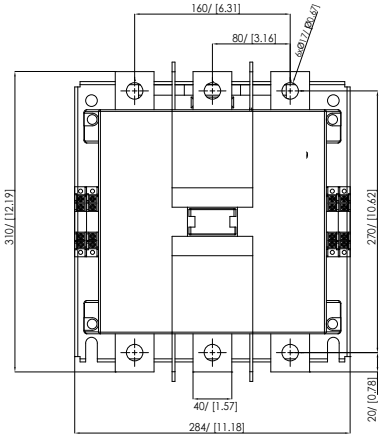
WCM400

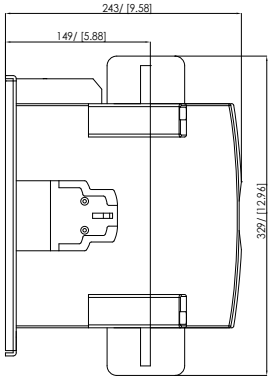


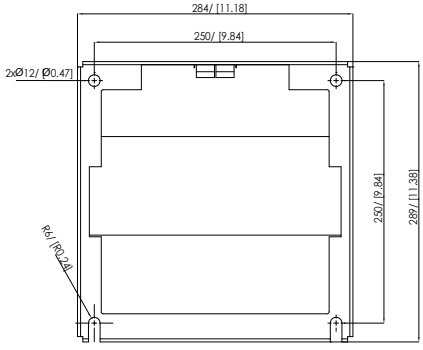




WCM630 and WCM800





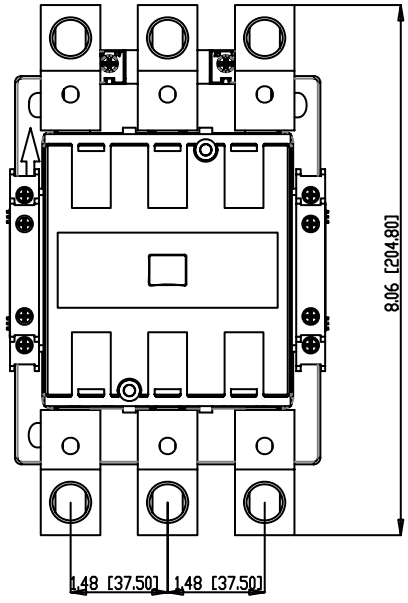


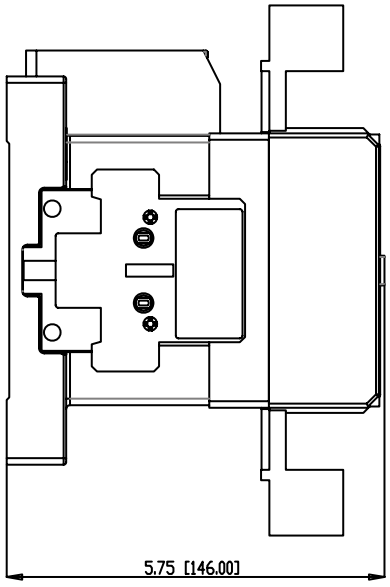
Contactors

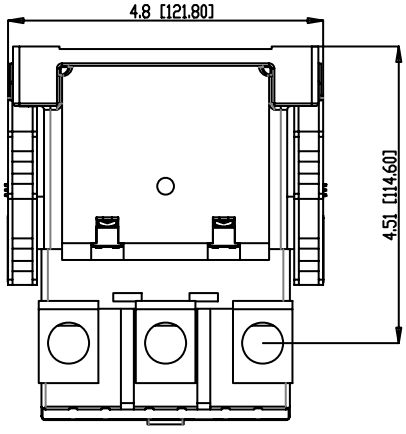
WCM Series - IEC Standard Contactors

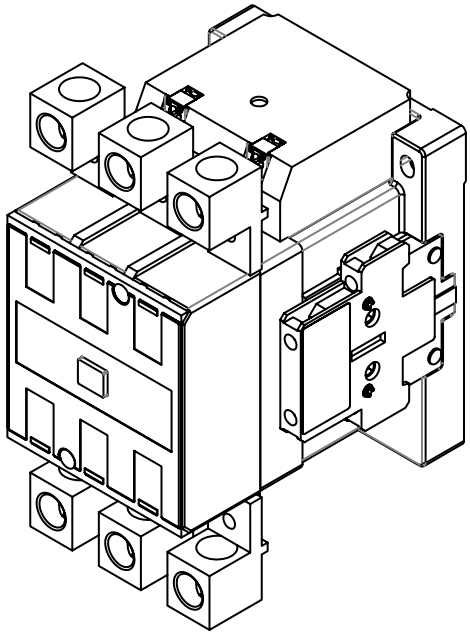
Mechanical Drawings mm (in)

WCM112 - WCM150 + LW1-S300 (contactor with lugs)



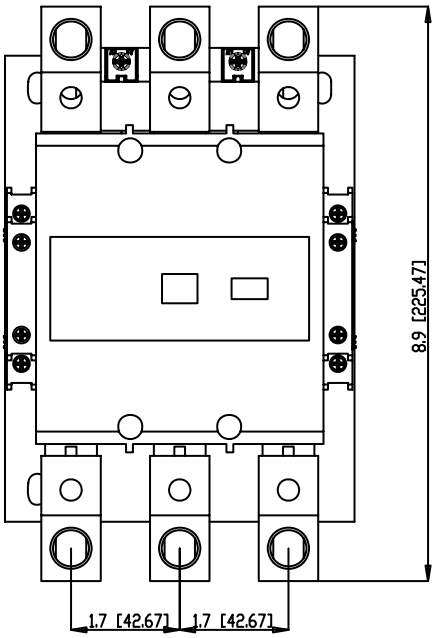


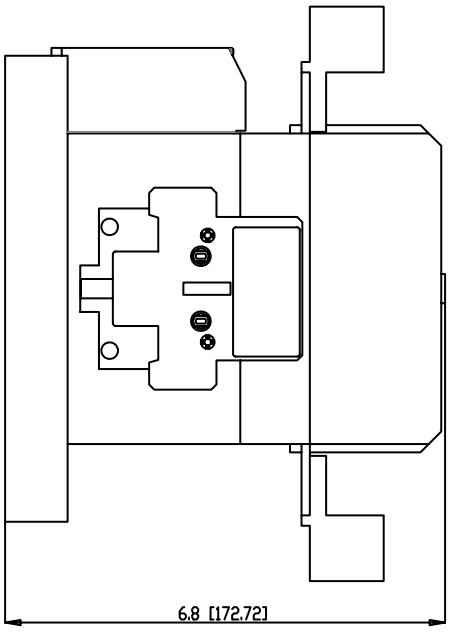


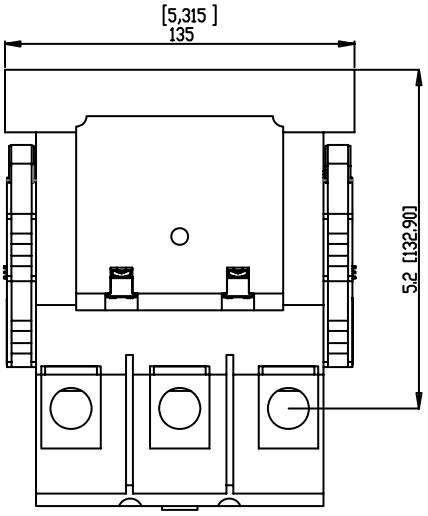


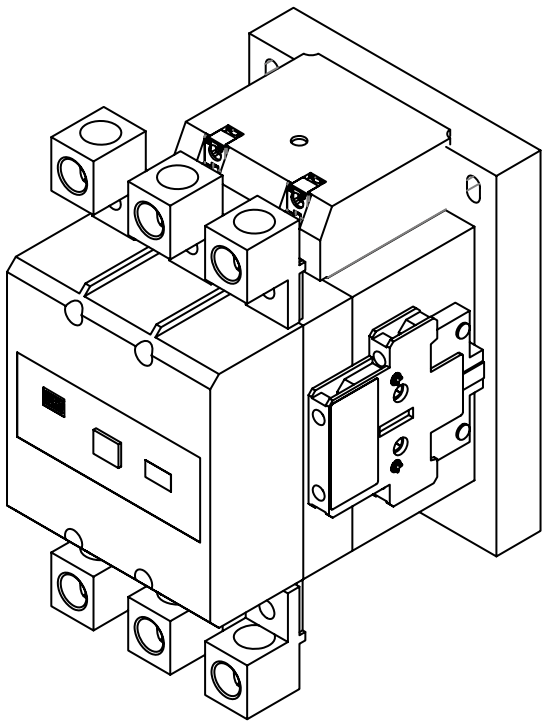
Mechanical Drawings mm (in)

WCM180 + LW2-S300 (contactor with lugs)







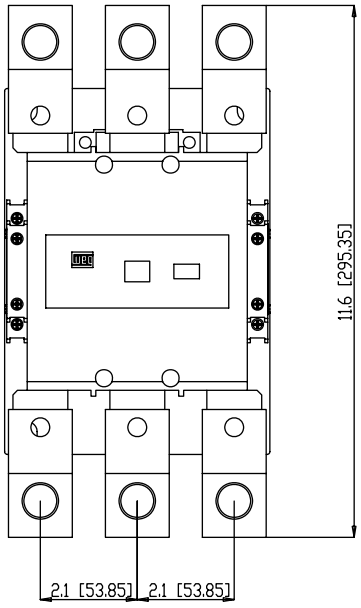


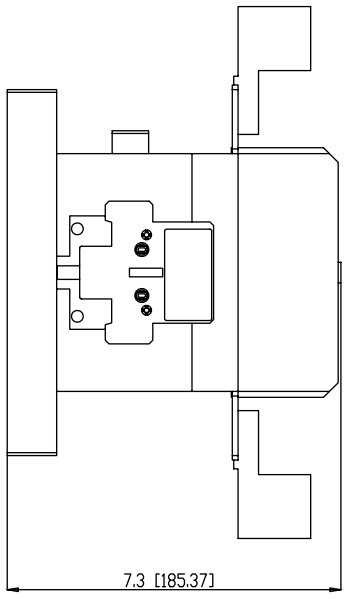
Contactors

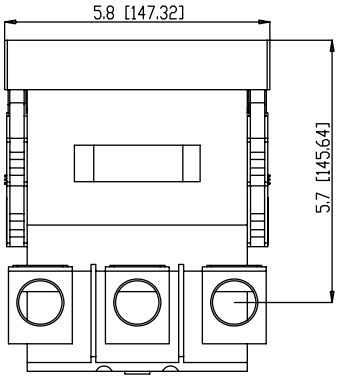
WCM Series - IEC Standard Contactors

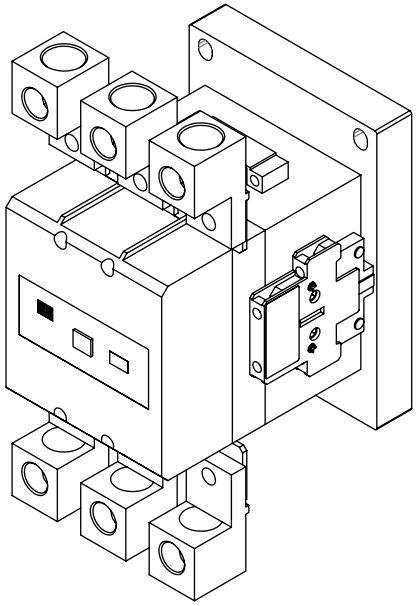
Mechanical Drawings mm (in)

WCM250 + LW1-S600 (contactor with lugs)



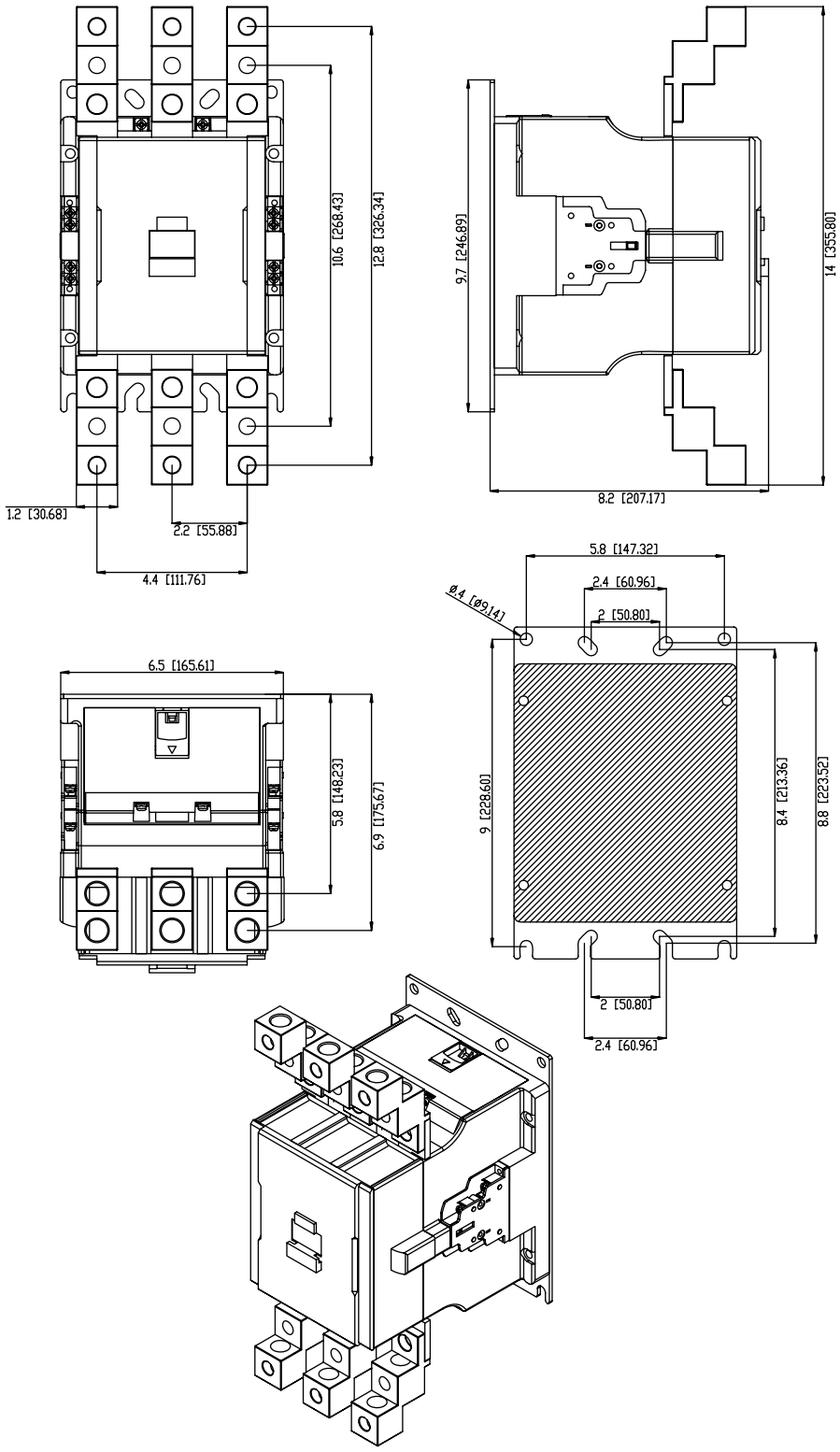






Mechanical Drawings mm (in)

WCM400 + BMJ (contactor with lugs)

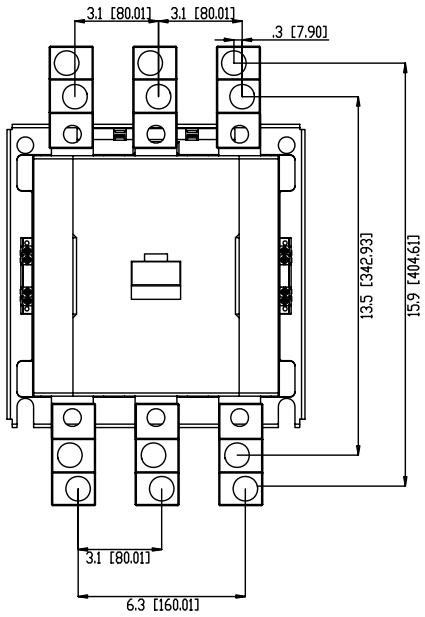


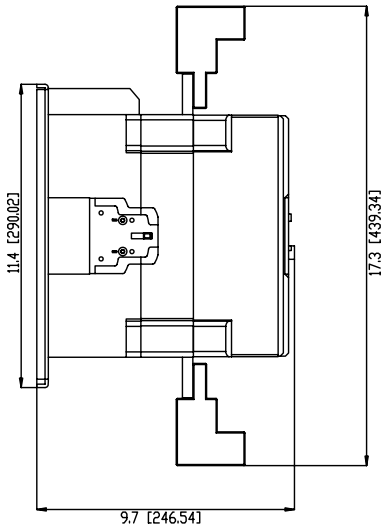
Contactors

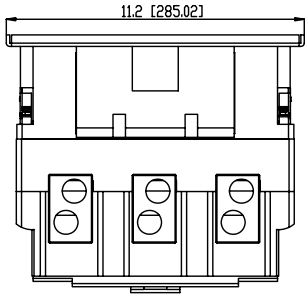
WCM Series - IEC Standard Contactors

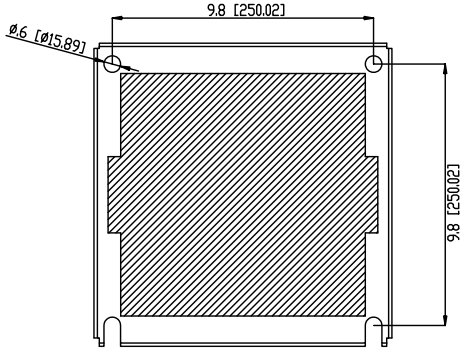
Mechanical Drawings mm (in)

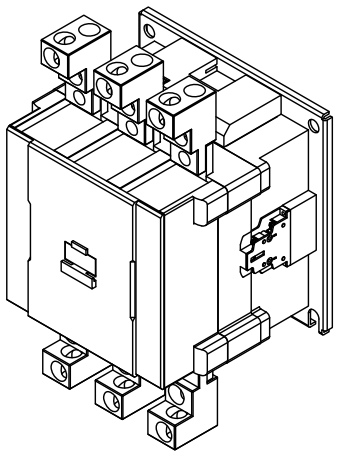
WCM630-WCM800 + BMJ (contactor with lugs)





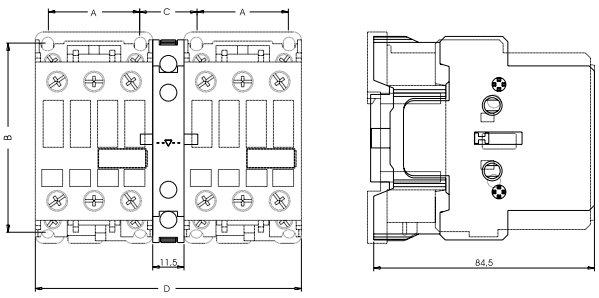






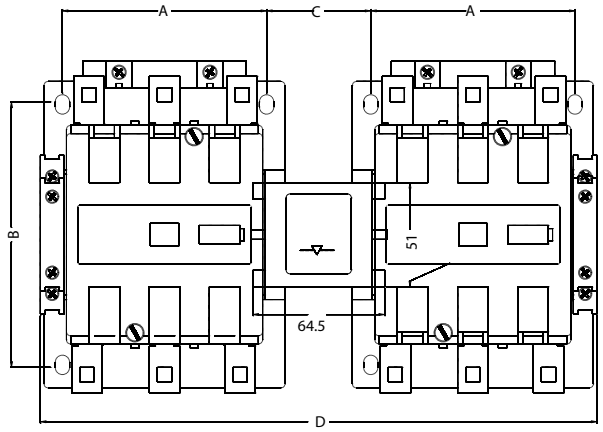
Reversing Contactors mm (in)

WBLIM9-105



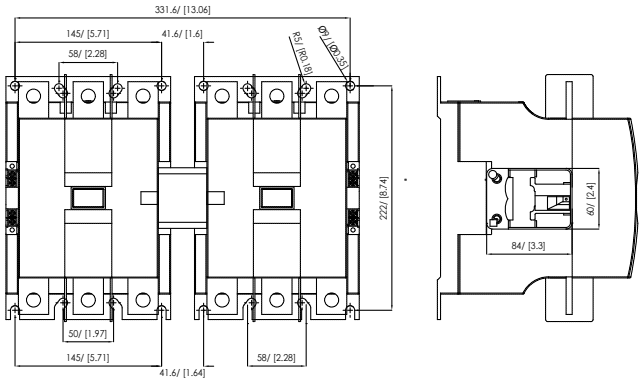
Models	A	B	C	D
WCM9…25	35 (1,4)	72,5 (2,9)	22 (0,9)	102 (4)
WCM32…40	45 (1,8)	79 (3,1)	22 (0,9)	122 (4,8)
WCM50…80	57 (2,2)	90 (3,5)	21 (0,8)	144 (5,7)
WCM95…105	57 (2,2)	90 (3,5)	29,8 (1,2)	153 (6)

WBLIM112-300

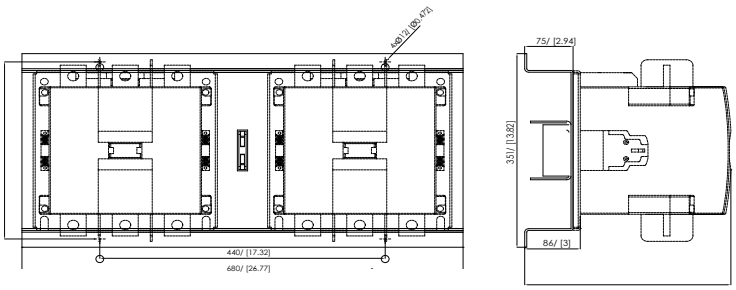


Models	A	B	C	D
WCM112…150	100 (3,9)	130 (5,1)	51 (2)	272,5 (10,7)
WCM180	110 (4,3)	160 (6,3)	58,5 (2,3)	303,5 (11,9)
WCM250…300	120 (4,7)	180 (7,1)	57 (2,2)	325,4 (12,8)

WBLIM WCM400



WWBLIM WCM800

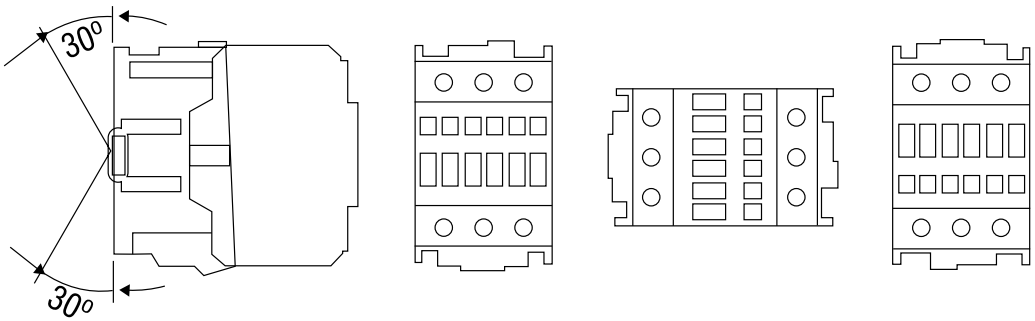


Contactors

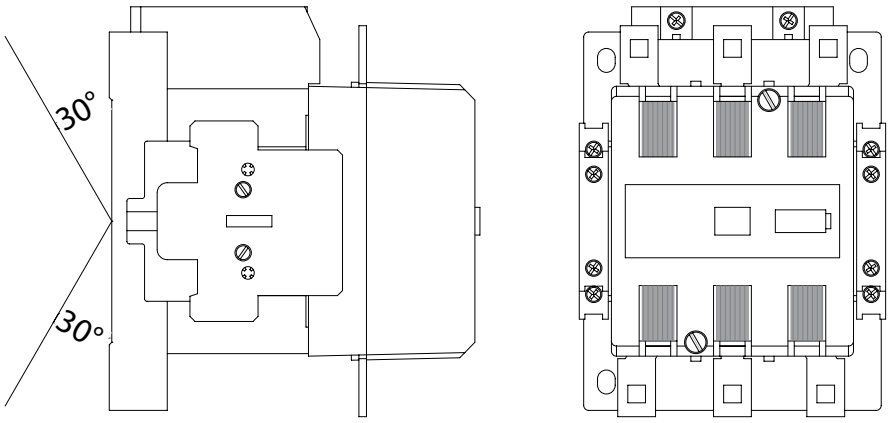
WCM Series - IEC Standard Contactors

Mounting position [1]

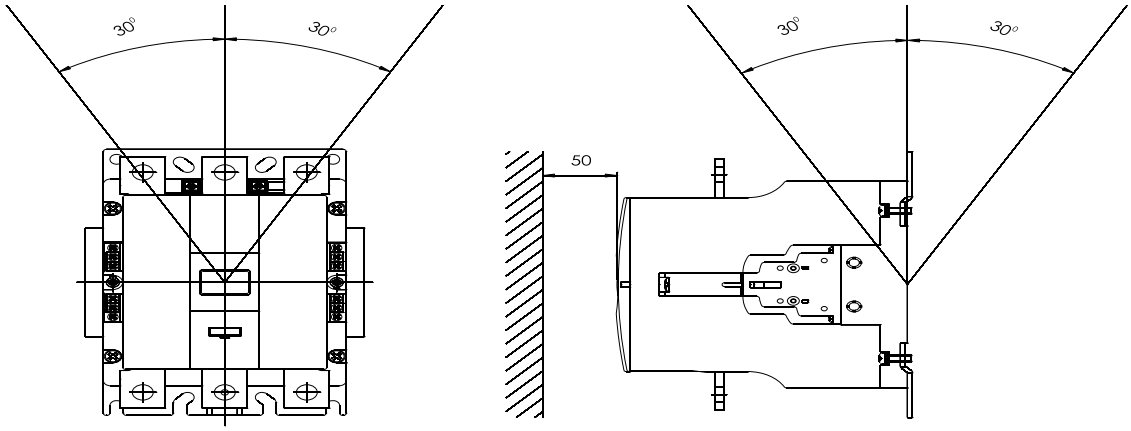
WCM9...105



WCM112...300



WCM400...800



Note: 1) Consult Westinghouse if application requires a different mounting position

WR Series - Bi-Metallic

Thermal Overload Relays

An extended operational service life is one of the main features you can find in WR overload relays . WESTINGHOUSE's WR Thermal Overload Relays are designed for use with, and as perfect complement to, WESTINGHOUSE contactors . Effectively, WR overload relays can be mounted directly under WESTINGHOUSE contactors, assuring electrical and mechanical operation as an open across-the-line starter . Accessories are also available for separate mounting .

UL File No . E189202

Standard Features:

- 2 and 3 pole versions available
- Direct mounting to WESTINGHOUSE contactors with no accessory (Accessories also available for separate mounting)
- Phase loss & current unbalance sensitivity protection
- Class 10 Trip characteristics
- Selectable RESET button (auto or manual)
- Isolated 1NO & 1NC auxiliary contacts

WR Series Catalog Number Sequence

WR	27-1D	3	-	U004

Overload Relay Series
WR: Thermal Overload Relay

Power Pole
3: 3NO Power Poles
2: 2NO Power Poles

Frame, Size and Terminal Type
17-1D: to use with WCC07…016
17-2D: to use with WCC025
27-1D: to use with WCM9…25
27-2D: to use with WBC9...38
27-2D: to use with WBC9...38
67-1D: to use with WCM32…40
117-1D: to use with WCM95…105
117-2D: to use with WCM112…150
317-1D: to use with WCM112…300
407-1D: to use with WCM400…800

Overload Setting Current

WR17	WR117
D004: 0,28…0,40A	U080: 63…80A
U032: 11…32A	U112: 90…112A
WR27	**WR317**
DOO4: 0,28…0,40A	U150: 100…150A
U032: 11…32A	U420: 275…420A
WR67	**WR407**
U040: 25…40A	U600: 400…600A
U080: 63…80A	U840: 560…840A

For more details refer to selection table

Chart intended for reference only and not to create part numbers.

Multifunction Reset / Test Button

The thermal overload relay has a multifunction RESET / TEST button that can be set in four different positions:
A - Automatic RESET only;
AUTO - Automatic RESET / TEST;
HAND - Manual RESET / TEST;
H - Manual RESET only.
In HAND and **AUTO** positions, when RESET button is pressed, both NO (97-98) and NC (95-96) contacts change states.

Operation description:

In H (manual RESET only) or A (automatic RESET only) position, the test function is blocked . However in the positions HAND (manual RESET / TEST) or AUTO (automatic RESET / TEST) it is possible to simulate the test and the trip functions by pressing the RESET button .
When set in the H or HAND position the RESET button must be pressed manually to reset the overload relay after a tripping event . On the other hand, when set in A or AUTO position, the overload relay will reset automatically after a tripping event .
The H, HAND, AUTO and A function setting is carried out by rotating without pressing the red button and placing it on the desired position of the RESET button .
When changing from HAND to AUTO, the RESET button must be slightly pressed while the red button is rotated .

Functions	H	HAND	AUTO	A
Relay reset	Manual1)	Manual1)	Automatic	Automatic
Auxiliary contact trip test 95-96 (NC)	Function is disabled	Test is allowed	Test is allowed	Function is disabled
Auxiliary contact trip test 97-98 (NO)	Function is disabled	Test is allowed	Test is allowed	Function is disabled

Note: 1) A recovery time of a few minutes is necessary before resetting the thermal overload relay.

Recovery Time

The WR thermal overload relays have thermal memory.
After tripping due to an overload, the relay requires a certain period of time for the bimetal strips to cool down .This period of time is so-called recovery time. The relay can only be reset once it has cooled down . The recovery time depends on the characteristic tripping curves and the level of the tripping current . After tripping due to overload, the recovery time allows the load to cool down .

Operation in the Output Side of Frequency Inverters

The WR27-2D thermal overload relays are designed for operation on 50/60 Hz up to 400 Hz and the tripping values are related to the heating by currents within this frequency range . Depending on the design of the frequency inverter, the switching frequency can reach several kHz and generate harmonic currents at the output that result in additional temperature rise in the bimetal strips . In such applications, the temperature rise not only depends on the rms value of the current, but on the induction effects of the higher frequency currents in the metal parts of the device (skin effect caused by eddy currents).
Due to these effects, the current settings on the overload relay should be higher than the motor rated current .

Dial FLA Setting

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

Temperature Compensation

Because WR overload relays include a forth 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 Failure Sensitivity

WESTINGHOUSE overload relays include phase failure sensitivity protection as a standard This feature ensures fast tripping in case of phase loss, protecting your motor and avoiding expensive repairs/corrective maintenance .

Overloads

WR Series - Bi-Metallic

For use with WCC and WCM Contactors

Three-pole Thermal Overload Relay Class 10

- Adjustable tripping current
- Phase-loss sensitivity
- Tripping class 10
- Auxiliary contacts 1NO + 1NC
- Temperature compensation from -40F to +140F
- Hand/Auto/Reset button

Matching Contactor	Setting Range [A]		Max. Fuse [A]	Catalog Number	Ref.No.	Multiplier
	Min.	Max.				
WCC07…WCC016 WCCA0 (Mini-contactor)	0.28	0.40	15	WR17-1D3-D004	W605663	
	0.40	0.63	15	WR17-1D3-C063	W605664	
	0.56	0.80	15	WR17-1D3-D008	W605665	
	0.80	1.20	15	WR17-1D3-D012	W605666	
	1.20	1.80	15	WR17-1D3-D018	W605667	
	1.80	2.80	15	WR17-1D3-D028	W605668	
	2.80	4.00	15	WR17-1D3-U004	W605669	
	4.00	6.30	25	WR17-1D3-D063	W605670	
	5.60	8.00	30	WR17-1D3-U008	W605671	
	7.00	10.0	40	WR17-1D3-U010	W605672	
	8.00	12.5	50	WR17-1D3-D125	W605673	
	10.0	15.0	60	WR17-1D3-U015	W605674	
	11.0	17.0	60	WR17-1D3-U017	W605675	
WCC025 (Mini-contactor)	15.0	23.0	90	WR17-2D3-U023	W605676	
	22.0	32.0	100	WR17-2D3-U032	W605677	
WCM9...WCM40 WCM9N...WCM32N	0.28	0.40	15	WR27-1D3-D004	W605678	
	0.40	0.63	15	WR27-1D3-C063	W605679	
	0.56	0.80	15	WR27-1D3-D008	W605680	
	0.80	1.20	15	WR27-1D3-D012	W605681	
	1.20	1.80	15	WR27-1D3-D018	W605682	
	1.80	2.80	15	WR27-1D3-D028	W605683	
	2.80	4.00	15	WR27-1D3-U004	W605684	
	4.00	6.30	25	WR27-1D3-D063	W605685	
	5.60	8.00	30	WR27-1D3-U008	W605686	
	7.00	10.0	40	WR27-1D3-U010	W605687	Z2
	8.00	12.5	50	WR27-1D3-D125	W605688	
	10.0	15.0	60	WR27-1D3-U015	W605689	
	11.0	17.0	60	WR27-1D3-U017	W605690	
	15.0	23.0	90	WR27-1D3-U023	W605691	
	22.0	32.0	90	WR27-1D3-U032	W605692	
WCM32...WCM40 WCM32N	25.0	40.0	90	WR67-1D3-U040	W605693	
	32.0	50.0	125	WR67-1D3-U050	W605694	
WCM50...WCM80 WCM50N	25.0	40.0	90	WR67-2D3-U040	W605695	
	32.0	50.0	125	WR67-2D3-U050	W605696	
	40.0	57.0	150	WR67-2D3-U057	W605697	
	50.0	63.0	150	WR67-2D3-U063	W605698	
	57.0	70.0	175	WR67-2D3-U070	W605699	
	63.0	80.0	175	WR67-2D3-U080	W605700	
WCM95...WCM105 WCM95N	63.0	80.0	200	WR117-1D3-U080	W605701	
	75.0	97.0	225	WR117-1D3-U097	W605702	
	90.0	112	250	WR117-1D3-U112	W605703	
WCM112...WCM150 WCM150N	75.0	97	225	WR117-2D3-U097	W605704	
	90.0	112	250	WR117-2D3-U112	W605705	
WCM112…WCM300 WCM300N	100	150	300	WR317-1D3-U150	W605706	
	140	215	350	WR317-1D3-U215	W605707	
	200	310	500	WR317-1D3-U310	W605708	
WCM400...WCM800	275	420	700	WR317-1D3-U420	W605709	
	400	600	1000	WR407-1D3-U600	W605710	
	560	840	1250	WR407-1D3-U840	W605711	

Note: WR117-2D, WR317-1D and WR407-1D are for separate mounting -
Connector links for contactors WCM112…WCM300 are available as an accessory.

For use with WBC Contactors

Three-pole Thermal Overload Relay Class 10

- Adjustable Trip Current
- Phase Loss Sensitivity
- Trip Class 10
- Built-In Auxiliary Contacts: 1NO + 1NC
- Ambient Temperature Compensation: -4°F to +140°F
- Multi-Function Button: Hand/Auto/Reset

Matching Contactor	Setting Range [A]		Max. Fuse [A]	Catalog Number	Ref.No.	Multiplier
	Min.	Max.				
WBC9 - WBC38	0.28	0.40	15	WR27-2D3-D004	W605712	Z2
	0.40	0.63	15	WR27-2D3-C063	W605713	
	0.56	0.80	15	WR27-2D3-D008	W605714	
	0.80	1.20	15	WR27-2D3-D012	W605715	
	1.20	1.80	15	WR27-2D3-D018	W605716	
	1.80	2.80	15	WR27-2D3-D028	W605717	
	2.80	4.00	15	WR27-2D3-U004	W605718	
	4.00	6.30	25	WR27-2D3-D063	W605719	
	5.60	8.00	30	WR27-2D3-U008	W605720	
	7.00	10.0	40	WR27-2D3-U010	W605721	
	8.00	12.5	50	WR27-2D3-D125	W605722	
	10.0	15.0	60	WR27-2D3-U015	W605723	
	11.0	17.0	60	WR27-2D3-U017	W605724	
	15.0	23.0	90	WR27-2D3-U023	W605725	
	22.0	32.0	90	WR27-2D3-U032	W605726	
	32.0	40.0	90	WR27-2D3-U040	W605727	
WBC40-WBC80	25.0	40.0	90	WR67-5D3-U040	W605728	Z2
	32.0	50.0	125	WR67-5D3-U050	W605729	
	40.0	57.0	150	WR67-5D3-U057	W605730	
	50.0	63.0	150	WR67-5D3-U063	W605731	
	57.0	70.0	175	WR67-5D3-U070	W605732	
	63.0	80.0	200	WR67-5D3-U080	W605733	

Overloads

WR Series - Bi-Metallic

For use with WCC and WCM Contactors

Two-pole Thermal Overload Relays Class 10 (used for single phase applications)

- Adjustable tripping current
- Phase-loss sensitivity
- Tripping class 10
- Auxiliary contacts 1NO + 1NC
- Temperature compensation from -40°F to +140°F
- Hand/Auto/Reset button

Matching Contactor	Setting Range [A]		Max. Fuse [A]	Catalog Number	Ref.No.	Multiplier
	Min.	Max.				
WCM9...WCM40	0.28	0.40	15	WR27-1D2-D004	W605734	Z2
	0.40	0.63	15	WR27-1D2-C063	W605735	
	0.56	0.80	15	WR27-1D2-D008	W605736	
	0.80	1.20	15	WR27-1D2-D012	W605737	
	1.20	1.80	15	WR27-1D2-D018	W605738	
	1.80	2.80	15	WR27-1D2-D028	W605739	
	2.80	4.00	15	WR27-1D2-U004	W605740	
	4.00	6.30	25	WR27-1D2-D063	W605741	
	5.60	8.00	30	WR27-1D2-U008	W605742	
	7.00	10.0	40	WR27-1D2-U010	W605743	
	8.00	12.5	50	WR27-1D2-D125	W605744	
	10.0	15.0	60	WR27-1D2-U015	W605745	
	11.0	17.0	60	WR27-1D2-U017	W605746	
	15.0	23.0	90	WR27-1D2-U023	W605747	
	22.0	32.0	90	WR27-1D2-U032	W605748	
WCM32...WCM40	25.0	40.0	90	WR67-1D2-U040	W605749	
	32.0	50.0	125	WR67-1D2-U050	W605750	
WCM50...WCM80	25.0	40.0	90	WR67-2D2-U040	W605751	
	32.0	50.0	125	WR67-2D2-U050	W605752	
	40.0	57.0	150	WR67-2D2-U057	W605753	
	50.0	63.0	150	WR67-2D2-U063	W605754	
	57.0	70.0	175	WR67-2D2-U070	W605755	
	63.0	80.0	175	WR67-2D2-U080	W605756	

Note: 1 Availability upon request.

For use with WBC Contactors

Two-pole Thermal Overload Relays Class 10 (used for single phase applications)

- Adjustable tripping current
- Phase-loss sensitivity
- Tripping class 10
- Auxiliary contacts 1NO + 1NC
- Temperature compensation from -40F to +1400F
- Hand/Auto/Reset button

2 POLE THERMAL OVERLOAD RELAYS - CLASS 10

Matching Contactor	Setting Range [A]		Max. Fuse [A]	Catalog Number	Ref.No.	Multiplier
	Min.	Max.				
WBC9 - WBC38	0.28	0.40	15	WR27-2D2-D004	W605757	Z2
	0.40	0.63	15	WR27-2D2-C063	W605758	
	0.56	0.80	15	WR27-2D2-D008	W605759	
	0.80	1.20	15	WR27-2D2-D012	W605760	
	1.20	1.80	15	WR27-2D2-D018	W605761	
	1.80	2.80	15	WR27-2D2-D028	W605762	
	2.80	4	15	WR27-2D2-U004	W605763	
	4	6.30	25	WR27-2D2-D063	W605764	
	5.60	8.00	30	WR27-2D2-U008	W605765	
	7.00	10.0	40	WR27-2D2-U010	W605766	
	8.00	12.5	50	WR27-2D2-D125	W605767	
	10.0	15.0	60	WR27-2D2-U015	W605768	
	11.0	17.0	60	WR27-2D2-U017	W605769	
	15.0	23.0	90	WR27-2D2-U023	W605770	
	22.0	32.0	90	WR27-2D2-U032	W605771	
	32.0	40.0	90	WR27-2D2-U040	W605772	
WBC40-WBC80	25.0	40.0	90	WR67-1D2-U040	W605773	Z2
	32.0	50.0	125	WR67-1D2-U050	W605774	
	25.0	40.0	90	WR67-2D2-U040	W605775	
	32.0	50.0	125	WR67-2D2-U050	W605776	
	40.0	57.0	150	WR67-2D2-U057	W605777	
	50.0	63.0	150	WR67-2D2-U063	W605778	
	57.0	70.0	175	WR67-2D2-U070	W605779	
	63.0	80.0	200	WR67-2D2-U080	W605780	

Overloads

WR Series - Bi-Metallic

Separate Mounting Bracket

Description	Mounting on Overload Relays (2 or 3 pole)	Catalog Number	Ref.No.	Multiplier
Enables overload relay to be directly mounted to a back panel via screws or DIN rail	WR27-1D	WBF27D	W605781	Z2
	WR27-2D	WBF27-2D	W605782	
	WR67-1D and WR67-2D	WBF67.1D	W605783	
	WR117-1D	WBF117D	W605784	

External Reset Button

Description	Mounting in Cover of Control Panel	Catalog Number	Ref.No.	Multiplier
Enables overload relay to be Reset from control panel, without opening the cover	22 MM Flush Reset PB Blue 'R'	WCS-WRSBF4R	W605785	Z5
	30 MM Flush Reset PB Black 'Reset'	WCS30-WRSBW	W605786	

Connector links (3 per package)

Description	Contactor	Overload Relay	Catalog Number	Ref.No.	Multiplier
Link connectors for easier WCM contactors and WR overload relays assembly	WCM112	WR117-2D3	WGA117D	W605787	Z2
	WCM150	WR317-1D3	WGA317-1D	W605788	
	WCM180	WR317-1D3	WGA317-2D	W605789	
	WCM250 / WCM300	WR317-1D3	WGA317-3D	W605790	
	WCM400	WR317-1D3	WGA317-10D	W605791	

Lugs for WR Series (Overload Relay) (3 units per package)

Description / Wire Range	Mounting on Overloads	Catalog Number	Ref.No.	Multiplier
(2) 600 MCM...2AWG	WR407-2D (400A-840A)	LW1-2S600-B	W605792	Z2
600 MCM…4AWG	WR317-1D (200A-420A)	LW2-S600	W605793	
300 MCM...6AWG	WR317-1D (100A-215A)	LW3-S300	W605794	

General Data and Main Contacts

Catalog Number			WR17	WR27	WR67	WR117	WR317	WR407
Standards		Units	IEC 60947 / UL 508					
Setting current		(A)	0.28...17	0.28...32	25...80	75...112	100...420	400...840
Tripping class			10					
Temperature compensation			Continuous					
Rated insulation voltage Ui (pollution degree 3)	IEC 60947	(V)	690				1,000	
	UL/CSA	(V)	600					
Rated impulse withstand voltage Uimp		(kV)	6				8	
Rated operational frequency		(Hz)	0...400					
Degree of protection Protection against direct contact from the front when actuated by a perpendicular test finger (IEC 536)			IP 20 Finger and back-of-hand proof					
Ambient temperature Operating temperature Storage temperature			-25 °C to +60 °C -40 °C to +70 °C					
Climating proof IEC 60 068-2-3 IEC 60 068-2-30			Damp heat. constant Damp heat. constant					
Current heat loss Lower value of setting range Higher value of setting range		(W) (W)	0.9 1.4	0.9 1.7	1.5 4.7	2.3 4.7	1 1.9	

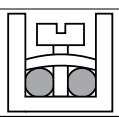
Auxiliary Contacts

Models			WR17	WR27	WR67	WR117	WR317	WR407
Standards			IEC 60 947-4-1 and UL 508					
Rated insulation voltage Ui (pollution degree 3)	IEC	(V)	690					
	UL, CSA	(V)	600					
Rated operational voltage Ue	IEC	(V)	690					
	UL, CSA	(V)	600					
Rated thermal current Ith (≤55 °C)		(A)	6					
Rated operational current Ie								
AC-14 / AC-15 (IEC 60947-5-1)	24 V	(A)	4					
	60 V	(A)	3.5					
	125 V	(A)	3					
	230 V	(A)	2					
	400 V	(A)	1.5					
	500 V	(A)	0.5					
	690 V	(A)	0.3					
UL, CSA			C600					
DC-13 / DC-14 (IEC 60947-5-1)	24 V	(A)	1					
	60 V	(A)	0.5					
	110 V	(A)	0.25					
	220 V	(A)	0.1					
UL, CSA			R300					
Short-circuit protection with fuse (gL/gG)		(A)	6					
Minimum voltage / admissible current (IEC 60947-5-4)			17 V / 5 mA					

Terminal Capacity and Tightening Torque - Main Contacts

Reference			WR17	WR27	WR67	WR117	WR317		WR407
Current setting	(A)		0.28...17	0.28...32	25...80	75...112	100...215	200...420	400...840
Cable size (75 °C / Cu cable)									
Flexible cable	1 cable	(mm^2)	1,5...10		6,0...35	25...35	35...120	95...150	-
	2 cables	(mm^2)			-	-			
Cable with terminal or rigid cable	1 cable	(mm^2)	1,5...6,0		6,0...35	25...35	35...120	95...150	-
	2 cables	(mm^2)			-	-			
Busbar	(mm^2)		-				Max 2x (25x5)		Max 2x (60x10)
Tightening torque	(N.m)		2,3		4,0	6,0	16,0	26,0	26,0
UL cable size (75 °C - Cu cable)	AWG		16...8		10...3	6...1/0	3–300 kc-mil	3/0 – 600 kcmil	2x 600 kcmil 2x (1/4"x2")
Tightening torque (UL)	(lb.in)		20		35	53	141	230	230

Terminal Capacity and Tightening Torque - Auxiliary Contacts

Models			WR17	WR27	WR67	WR117	WR317	WR407
Type of screws			M3.5 x 10 Philips					
Cable size (75 °C / Cu cable)								
Cable with or without terminal	(mm^2)		2 x 1...2.5					
AWG-wire			16...12					
Tightening torque	(N.m / lb.in)		1.5 / 13					

Overloads

WR Series - Bi-Metallic

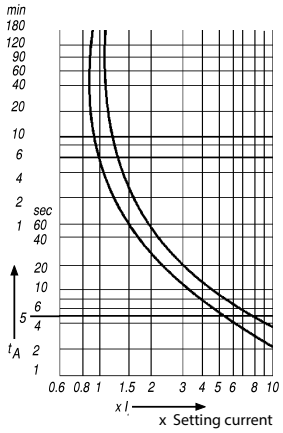
Technical Data

Main Data

Models			WR27
Standards			IEC 60947-1 and UL 508
Rated insulation voltage Ui (pollution degree 3)	IEC 60947-4-1	(V)	690
	UL, CSA	(V)	600
Rated impulse withstand voltage Uimp (IEC 60947-1)		(kV)	6
Rated operational frequency		(Hz)	25...400
Use with direct current			Yes
Maximum operation per hour		(ops./h)	15
Protection degree (IEC 60529)	Main contacts		IP10
	Auxiliary contacts		IP20
	Frontal		IP20
Mounting			Direct on the contactor
Resistance to impact (IEC 60068-2-27 - 1/2 sinusoid)		(g/ms)	10/11
Ambient temperature	Transport and storage		-50 °C...+80 °C
	Operating		-20 °C...+70 °C
	Temperature compensation		-20 °C...+60 °C
Altitude		(m)	2000

Main Contacts

Models			WR27
Rated operational voltage Ue	IEC 60947-4-1	(V)	690
	UL, CSA	(V)	600
Setting current / max fuse (gL/gG)1)		(A)	0.28...0.4 / 2
			0.43...0.63 /2
			0.56...0.8 / 2
			0.8...1.2 / 4
			1.2...1.8 / 6
			1.8...2.8 / 6
			2.8...4 / 10
			4...6.3 / 16
			5.6... 8 / 20
			7...10 / 25
			8...12.5 / 25
			10...15 / 35
			11...17 / 40
			15...23 / 50
			22...32 / 63
			32...40 / 90
Average power dissipation per pole		(W)	≤3



WR Tripping Characteristics

These tripping characteristics show the tripping of WR in relation to the current. They show the mean values of the tolerance ranges at on ambient temperature of 68°F (20°C), starting from cold stats . The tripping time of the overload releases at operational temperature is reduced to approximately 25% of the values shown. Under normal operational conditions, all three phases of the WRs should be loaded .

Altitude & Temperature Derating

The derating of a WR overload relay has two possible factors:

1) Ambient temperature

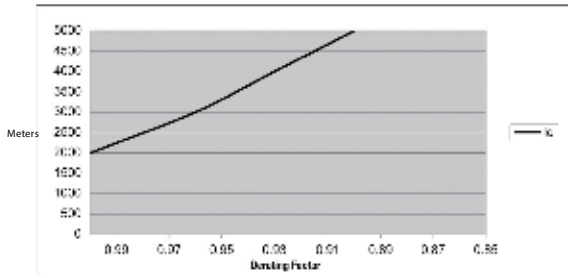
- Temperature compensation considers a factor according to which the rated current must be reduced when ambient temperature is higher than 60°C (140°F) .

2) Altitude

- Altitude compensation involves both, rated current and voltage .
- Current compensation considers a factor according to the rated current must be reduced.
- For voltage, altitude limits the higher operating voltage the overload relay can be used .

Temperature Compensation		Current Correction ffactor
149°F	(65°C)	0.94
158°F	(70°C)	0.87
167°F	(75°C)	0.81
176°F	(80°C)	0.73

Altitude	Voltage Correction [Ue]
Up to 2,000m (6,667ft)	690
Up to 3,000m (10,000ft)	550
Up to 4,000m (13,333ft)	480
Up to 5,000m (16,667ft)	420



The derating of the permissible operating current for installation altitudes above 2,000m (6,667 ft) and ambient temperatures over 60°C (140°F) is calculated according to:

Total derating = Derating altitude x Derating ambient temperature

Example;
Altitude: 3,000 m (10,000 ft)
K1 = 0 .96
Ambient temperature: 70°C (158°F)
K2 = 0 .87

Total current derating = 0 .96 x 0 .87 = 0 .84 x Ie
In this case, the maximum rated voltage we can connect to our WR overload relay is 550V .

In order to select the proper overload relay, you have to choose a device with a current range that accommodates:
Overload Setting Point = FLA motor / (K1 x K2)

As in the example above, K1 x K2 = 0.84
For a motor with FLA = 20Amps

Overload Setting Point = 20 / 0.84 = 23 .8Amps

Overloads

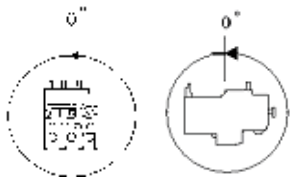
WR Series - Bi-Metallic

Operating Positions [1]

WR17D, WR27D, WR67D, WR117D, WR317D, WR407D

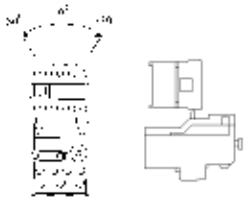
Mounting without contactor

The overload relays can be mounted at any position .



WR17D with WCC Series

As showed at the left figure below, the inclination can not exceed ± 30º degrees for a perfectly functioning of the contactor . Laterally, as showed at the right figure below, the mounting position is equivalent to 0º degrees - not requiring a correction factor on the dial of the relay . The assembly can work with mounting variations of 0º to 180º

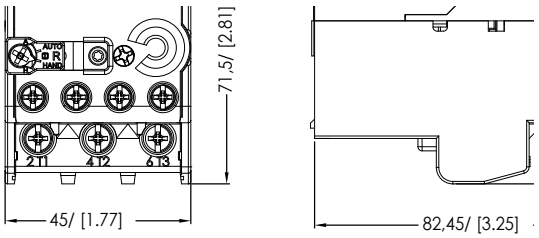


WR27D, WR67D, WR117D, WR317D, WR407

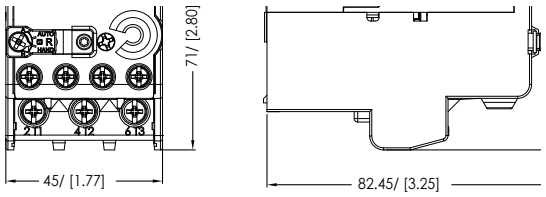
The mounting position showed at the left figure below is equivalent to 0º degrees - not requiring a correction factor on the dial of the relay . The assembly can work with mounting variations of 0º to 135º for each side, however the mounting with the relay above the contactor, position between 135º and 225º, is required a correction factor of +10% on the dial of the relay . Laterally, as showed at the right figure below, the inclination can not exceed ± 30º for a perfect functioning of the contactor. D with WCM/WCM Series

Note: 1)Please consult WESTINGHOUSE for different mounting positions.

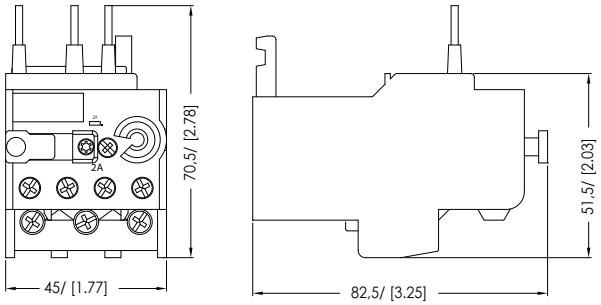
WR17-1D



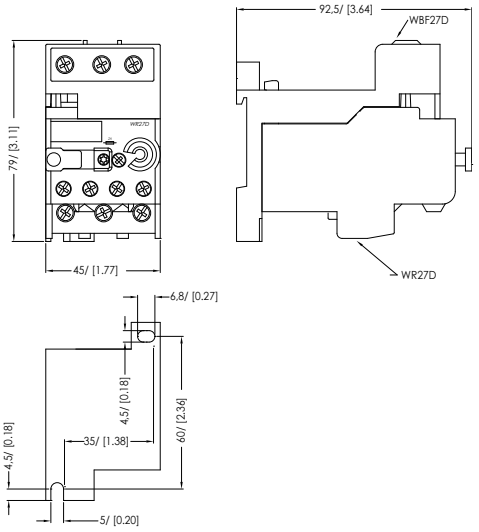
WR17-2D



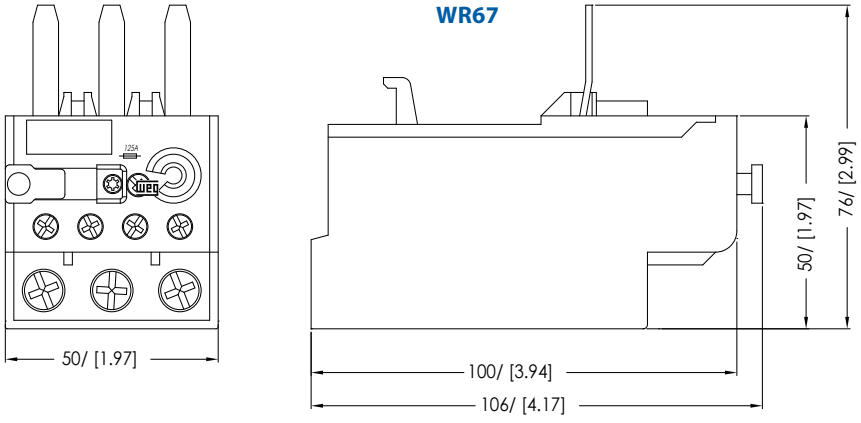
WR27



WR27 + WBF27



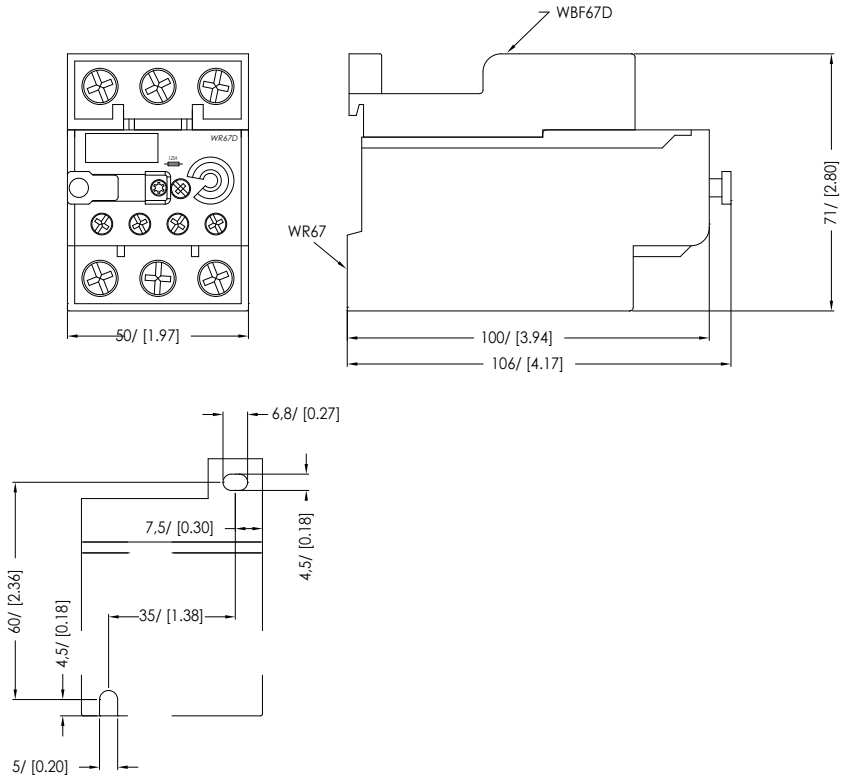
WR67



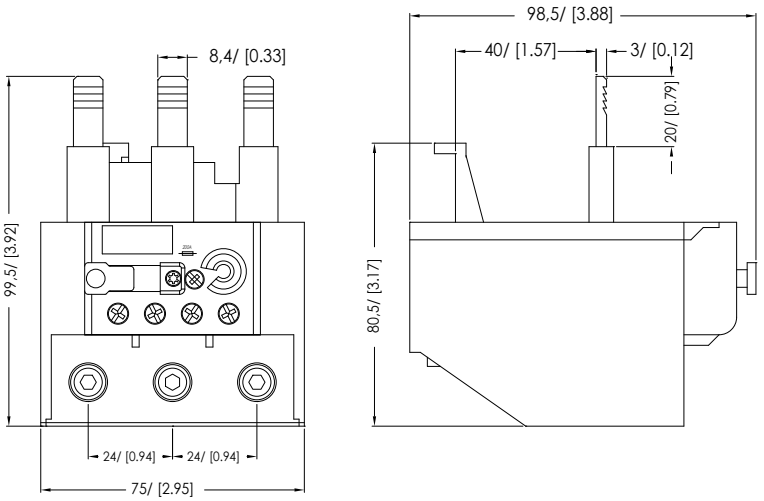
Overloads

WR Series - Bi-Metallic

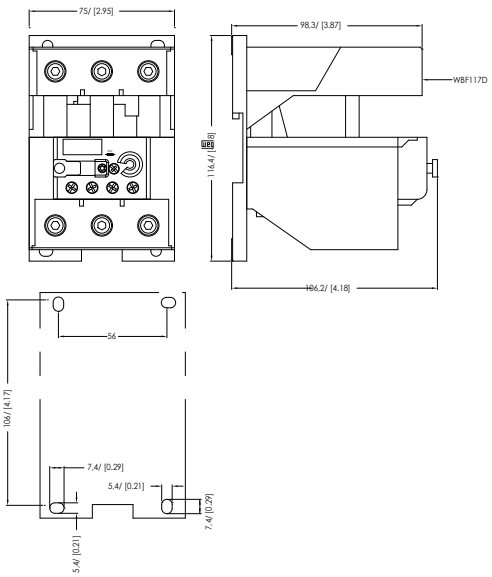
WR67 + WBF67



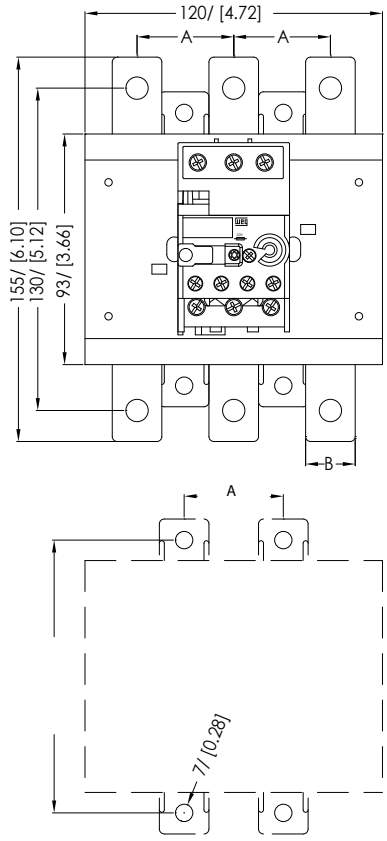
WR117-1D

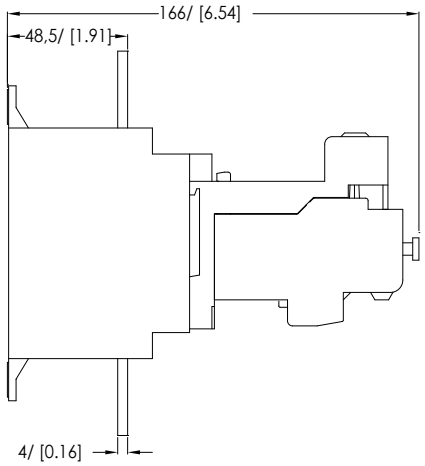


WR117-2D



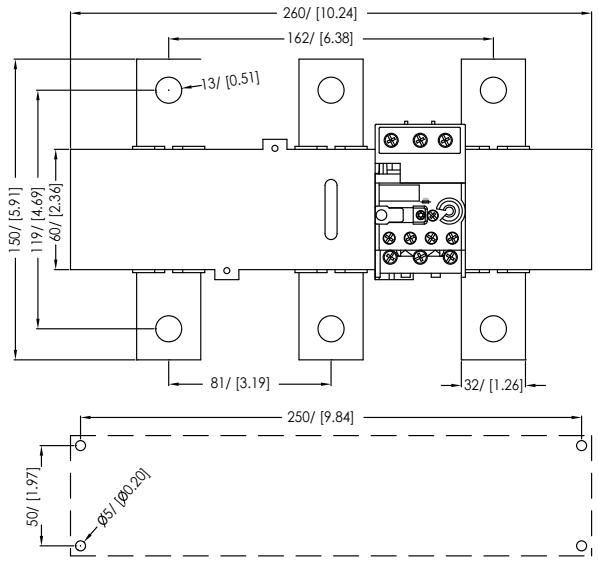
WR317

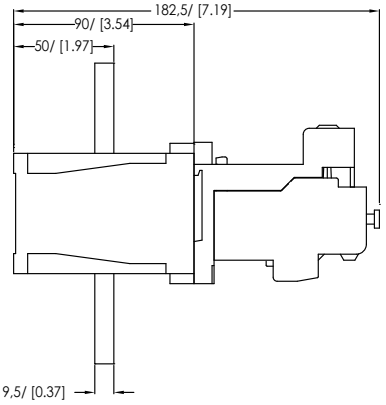




Current ranges	A	B
100...150A	39(1.5)	20(0.8)
140...215A		
200...310A	45(1.8)	25(1.0)
275...420A		

WR407





Overloads

Solid-State Overload Relays

WR-E

The new WR_E Solid State Overload relays are developed with cutting edge technology according to the most demanding standards worldwide. With its wide current/AMP setting; the WR_E OL Relay can be used for protection of electric motors of different power ratings. The benefit is versatility and flexibility for manufacturers due to the possibility of standardization of control panels . This Solid State Overload Relay can be directly mounted on WESTINGHOUSE Contactors (WCM and WBC lines) providing very reliable and flexible motor starter units. The WR_E counts on two independent and highly reliable built in auxiliary contacts that assure the motor is switched off when a failure occurs.

UL File No . E189202

Standard Features:

- 3-pole solid state overload relays with adjustable trip class: 10, 20 and 30
- Self-powered
- Wide adjustment range (5:1)
- Thermal memory
- Phase loss protection (less than 5 seconds)
- Phase unbalance protection (>40% between phases)
- Temperature compensated (-20 °C up to +60 °C)
- Manual or automatic reset modes
- Direct mounting on WBC9 ... 38 and WCM9 ... 105 contactors
- Separate mounting is possible with accessories 1NO + 1NC built in auxiliary contacts

Solid-State Overload Relay Catalog Number Sequence

WRB	40	E	-	3	-	A4U040

Contactor Series
- WRM - Solid State OL for WCM
- WRB - Solid State OL for WBC

Contactor Frame
- 40: 40A Contactor
- 112: 112A Contactor
- 420: 420A Contactor
- 840: 840A Contactor

OL Relay Type
- E: Electronic OL

Power Poles
- 3: 3-Phase Relay

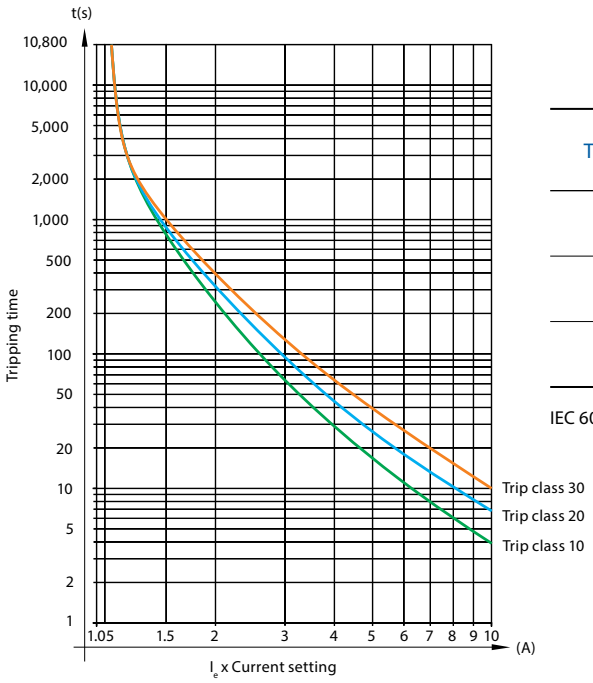
Overload Current Settings
- A4U002: 0.4 - 2.0A
- A4U008: 1.6 - 8.0A
- A4U025: 5 - 25A
- A4U040: 8 - 40A
- A4U056: 14 - 56A
- A4U112: 28 - 112A
- A4U250: 50 - 250A
- A4U420: 85 - 420A
- A4U840: 170 - 840A

Suitable for Great Variety of Applications

The solid-state overload relays WR_E are suitable to protect motors in a wide range of industrial applications including those where long starting time is required . This way, motors on low, medium or heavy duty applications can be properly protected just by selecting the proper trip class (10, 20 or 30 according to IEC 60947-4-1) in the DIP-switches.

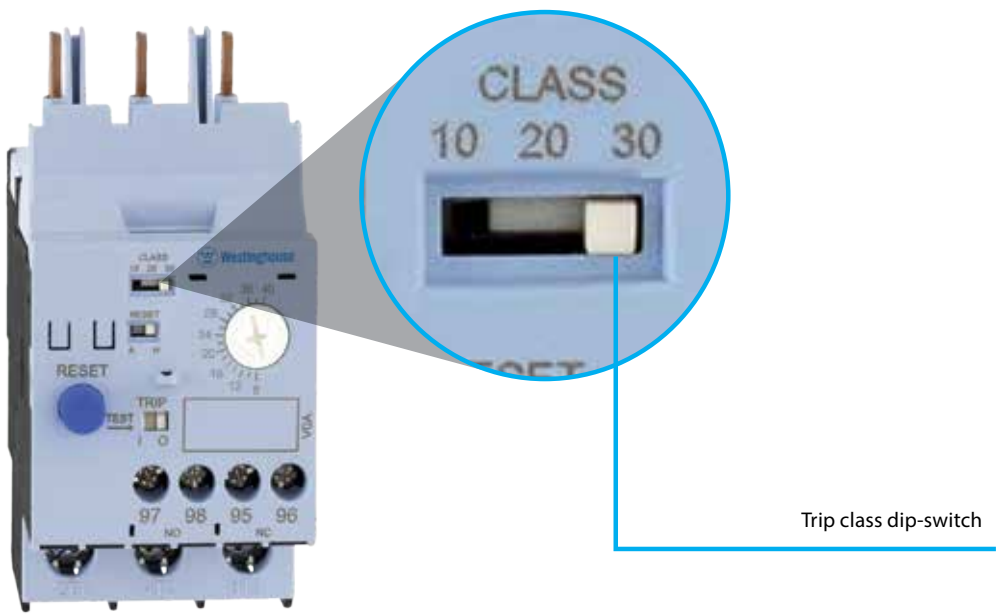
Additionally, the microprocessed electronic circuits of WR_E are temperature compensated according to IEC 60947-4-1, which means that throughout the temperature range of -20 °C up to +60 °C, the tripping point is not affected and it performs consistently without undesirable tripping .

The WR_E also features thermal memory which assures that the heating and cooling effects of motors are modeled and proper protection is guaranteed even after downtime periods.



Trip class	Multiples of current setting			
	1.05 x Ir	1.2 x Ir	1.5 x Ir	7.2 x Ir
10	-	Tp <2h	Tp <4min	4 <Tp ≤10s
20	-	Tp <2h	Tp <8min	6 <Tp ≤20s
30	-	Tp <2h	Tp <12min	9 <Tp ≤30s

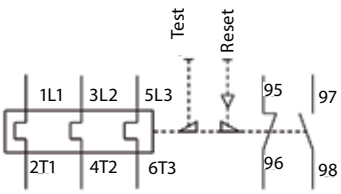
IEC 60947-4-1



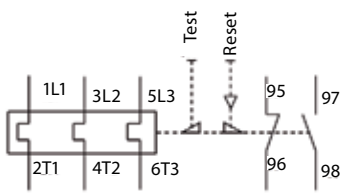
Overloads

Solid-State Overload Relays

WR_E Solid-State Overload Relays from 0.4 up to 840 A

For direct mounting on contactors	Current range A	Diagram	Max fuse (gL/gG) A	Catalog Number	Weight kg	Ref.No.	Multiplier
WBC9...38	0.4...2		16	WRB40E-3-A4U002	0.250		Z2
WBC9...38	1.6...8		32	WRB40E-3-A4U008			
WBC9...38	5...25		63	WRB40E-3-A4U025			
WBC9...38	8...40		125	WRB40E-3-A4U040	0.250		
WCM9...40	0.4...2		16	WRM40E-3-A4U002	0.250		
WCM9...40	1.6...8		32	WRM40E-3-A4U008			
WCM9...40	5..25		63	WRM40E-3-A4U025			
WCM9...40	8...40		125	WRM40E-3-A4U040	0.918		
WCM50...105	14...56		160	WRM112E-3-A4U056	0.918		
WCM50...105	28...112		250	WRM112E-3-A4U112	0.918		

Note: Not to be used in single-phase applications.

For separate mounting or by connector links[1]	Current range A	Diagram	Max fuse (gL/gG) A	Catalog Number	Weight kg	Ref.No.	Multiplier
WCM112...500	50...250		500	WRM420E-3-A4U250	2,520		Z2
	85...420		710	WRM420E-3-A4U420			
WCM150...800	170....840		1,250	WRM840E-3-A4U840	4,150		

Note: Not to be used in single-phase applications.
Note: 1) WRM840E model allows two different types of connection to contactor:
a) By connecting the contactor cables to relay busbars;
b) By removing the relay busbars and using the Ø32 mm window for the passage of the contactor cables.

Accessories

Mounting Kit

Image	For use with relays	Description	Catalog Number	Weight kg	Ref.No.	Multiplier
	WRM40E	Enables the overload relay to be mounted directly to a panel via screws or 35 mm DIN rail	WBF27D	0.050		Z2
	WRB40E		WBF27D-2D			
	WRM112E		WBF112	0.230		

Connector Links for Direct Mounting of Overload Relay on Contactor

Image	For use with relays	For use with contactors	Catalog Number	Weight kg	Ref.No.	Multiplier
	WRM112E	WCM112/150	WGA117D	0.135		Z2
	WRM420E	WCM150	WGA317-1D	0.250		
		WCM180	WGA317-2D	0.270		
		WCM250/300	WGA317-3D	0.630		
		WCM400	WGA317-10D	0.500		

Phase Barriers

Image	For use with relays	Description	Catalog Number	Weight kg	Ref.No.	Multiplier
	WRM420E	Contains 1 set of plastic insulators (top / bottom) and fixing screws to be used where the overload relay power terminals external dimension exceed the busbar external dimension	WBIR317	0.044		Z2

Reset Pushbutton with Shaft

Image	For use with relays	Description	Catalog Number	Weight kg	Ref.No.	Multiplier
	WR_E	Blue Flush pushbutton - Engraved Reset - with shaft. Length: max. 250 mm and min. 22.5 mm	WCS-WBHF437	0.032		Z2

Overloads

Solid-State Overload Relays

Technical Data

General Data

Product model			WRM40E / WRB40E	WRM112E	WRM420E	WRM840E
Standards			IEC 60947-4-1, IEC 60947-5-1, IEC 60947-1, UL 60947-1, UL 60947-4-1A and UL 508			
Rated insulation voltage U (pollution degree 3)	IEC 60947-4-1	(V)	690		100	
	UL, CSA	(V)	600			
Rated impulse withstand voltage U_{imp} (IEC 60947-1)		(kV)	6		8	
Rated operational frequency (sinusoidal networks)		(Hz)	50/60			
Suitable for use	Three phase loads		Yes			
	Single phase / two phase loads		No			
	DC current loads		No			
Trip class (IEC 60947-4-1)			10, 20 or 30 - selectable			
Additional featured protections	Phase loss		Yes / less than <5s			
	Phase unbalance		Yes / >40%			
Reset	Manual / minimum downtime for reset		Yes / instantaneous			
	Automatic / minimum downtime for reset		Yes / ≥90s			
Maximum operation per hour		(ops./h)	30			
Protection degree (IEC 60529)	Main contacts		IP10		IP00	
	Auxiliary contacts		IP20			
Mounting			1)		2)	
Mechanical shock resistance - 1/2 sinusoid			15 g / 11ms			
Vibration resistance (IEC 60068-2-6)			6 g / 30...300 Hz			
Ambient temperature	Transport and storage		-50 °C...+80 °C			
	Operating		-20 °C...+60 °C			
	Temperature compensation		-20 °C...+60 °C			
Altitude			2,000 m			

Notes: 1) Direct mounting on contactor or directly on the panel via screws or 35 mm DIN rail when using the mounting kit accessory (WBF27D and WBF112)
2) Direct mounting on contactor when using the Connector Link WGA117 / WGA317 accessory or directly on the panel via screws.

Main Contacts

Product model			WRM40E / WRB40E	WRM112E	WRM420E	WRM840E
Rated operational voltage Ue	IEC 60947-4-1	(V)	690		100	
	UL, CSA	(V)	600			
Current setting / max fuse (gL/gG)		(A)	0.4...2 / 16 1.6...8 / 32 5...25 / 63 8...40 / 125	14...56 / 160 28....112 / 250	50...250 / 500 85...420 / 710	170...840 / 1,250
Setting current / average power dissipation per pole		(W)	0.4...2 / 0.07 1.6...8 / 0.06 5...25 / 0.38 8...40 / 1.5	14...56 / 2 28....112 / 2.6	50...250 / 12 85...420 / 12	170...840 / 14.5

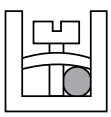
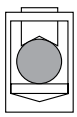
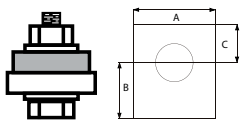
Notes: 1) Direct mounting on contactor or directly on the panel via screws or 35 mm DIN rail when using the mounting kit accessory (WBF27D and WBF112);
2) Direct mounting on contactor when using the Connector Link WGA117 / WGA317 accessory or directly on the panel via screws.

Technical Data

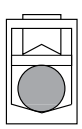
Auxiliary Contacts

Product model			WRM40...840E / WRB40E
Rated insulation voltage Ui (pollution degree 3)	IEC 60947-4-1	(V)	250
	UL, CSA	(V)	600
Rated impulse withstand voltage Uimp (IEC 60947-1)		(kV)	4
Rated operational voltage Ue	IEC 60947-4-1	(V)	250
	UL, CSA	(V)	600
Rated thermal current Ith ≤ 60 °C)		(A)	5
Rated operational current Ie			
AC-14/AC-15 (IEC 60947-5-1)	24 V	(A)	3
	120 V	(A)	3
	250 V	(A)	1.5
DC-13 (IEC 60947-5-1)	24 V	(A)	2
	60 V	(A)	0.4
	110 V	(A)	0.22
	125 V	(A)	0.22
	250 V	(A)	0.1
NEMA control circuit ratings	UL, CSA		C300 / R300
Short-circuit protection with fuse		(A)	6
Minimum voltage / admissible current (IEC 60947-5-4)			12 V / 10 mA

Terminal Capacity and Tightening Torque - Main Contacts

Product model			WBF27D	WRM40E / WRB40E	WR112E	WBF112
Type of screw			M4 Flat / Phillips #2	M3.5 Flat / Phillips #2	M10 Allen #4	M10 Allen #4
Cable size						
Flexible cable	(mm^2)		1.5...10	-	-	-
Cable with terminal / rigid cable	(mm^2)		1.5...6	-	-	-
AWG wire			16...10	-	-	-
Tightening torque	(Nm)		2.3	-	-	-
Flexible cable	(mm^2)		-	1...10	2.5...35	2.5...35
Cable with terminal / rigid cable	(mm^2)		-	1...10	2.5...35	2.5...35
AWG wire			-	16...8	14...2	14...2
Tightening torque	(Nm)		-	1.7	6	6
Product model			WRM420E		WRM840E	
Type of screw			M10 Hexagon Head		M12 Hexagon Head	
Cable with terminal	(mm^2)		2 x (25...150)		2 x (60 x 10)	
Busbar (A x B x C)	(mm)		25 x 18.5 x 12.5		31.7 x 28.3 x 15	
Tightening torque	(Nm)		26		26	

Terminal Capacity and Tightening Torque - Auxiliary Contacts

Product model			WRM40...840E / WRB40E
Type of screw			Flat / Phillips #1
Cable size			
Cable with or without terminal	(mm^2)		1 x 1...2.5
AWG wire			16...12
Tightening torque	(Nm)		0.8

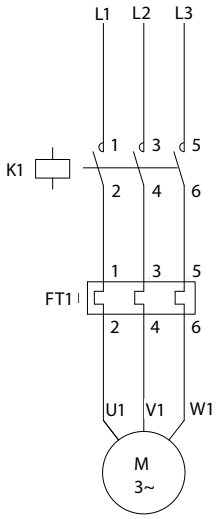
Overloads

Solid-State Overload Relays

Technical Data

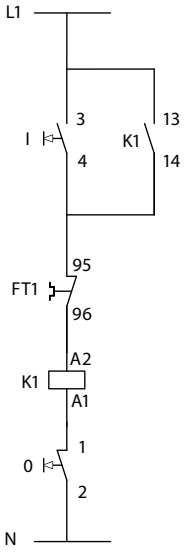
Motor Protection - Alternating Current

3-pole

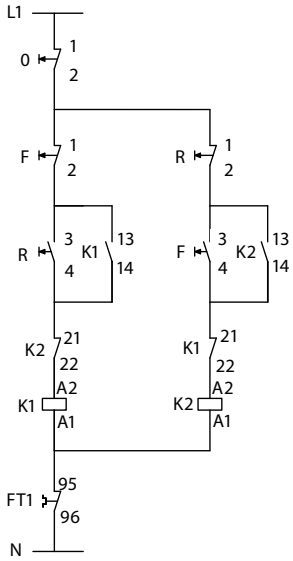


Typical Connection - Contactor + Overload Relay

Direct On Line Starter (1 Direction of Rotation)

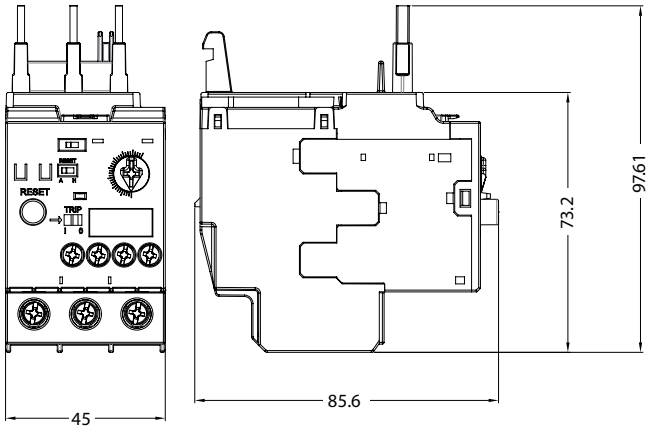


Direct On Line Starter (2 Directions of Rotation)

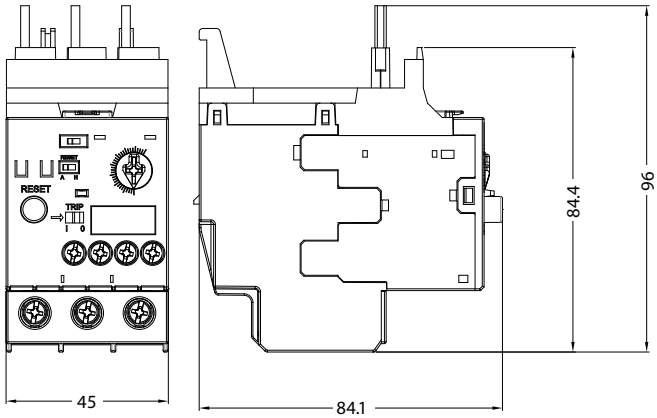


Dimensions (mm)

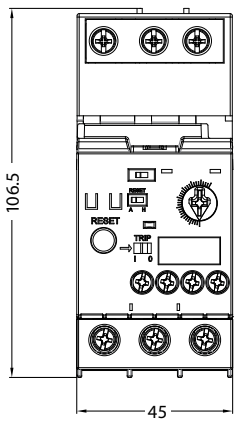
WRM40E

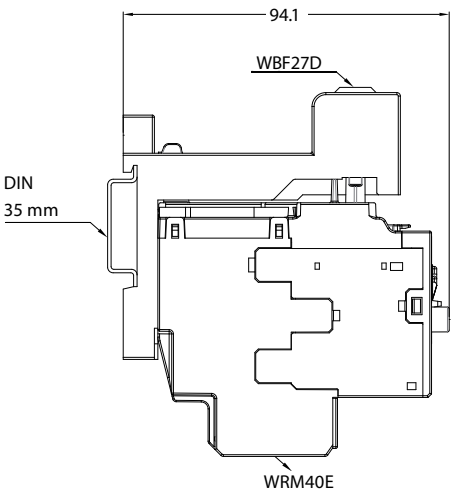


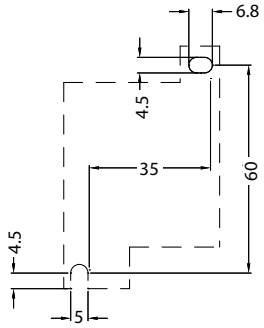
WRB40E



WRM40E + WBF27





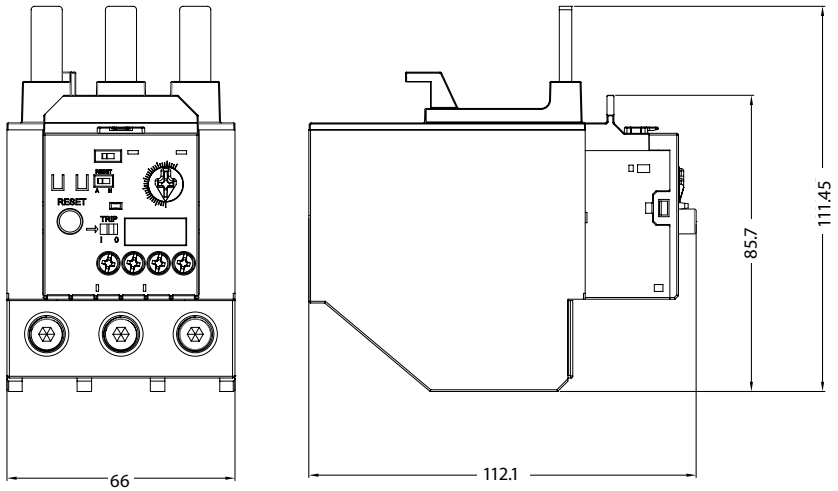


Overloads

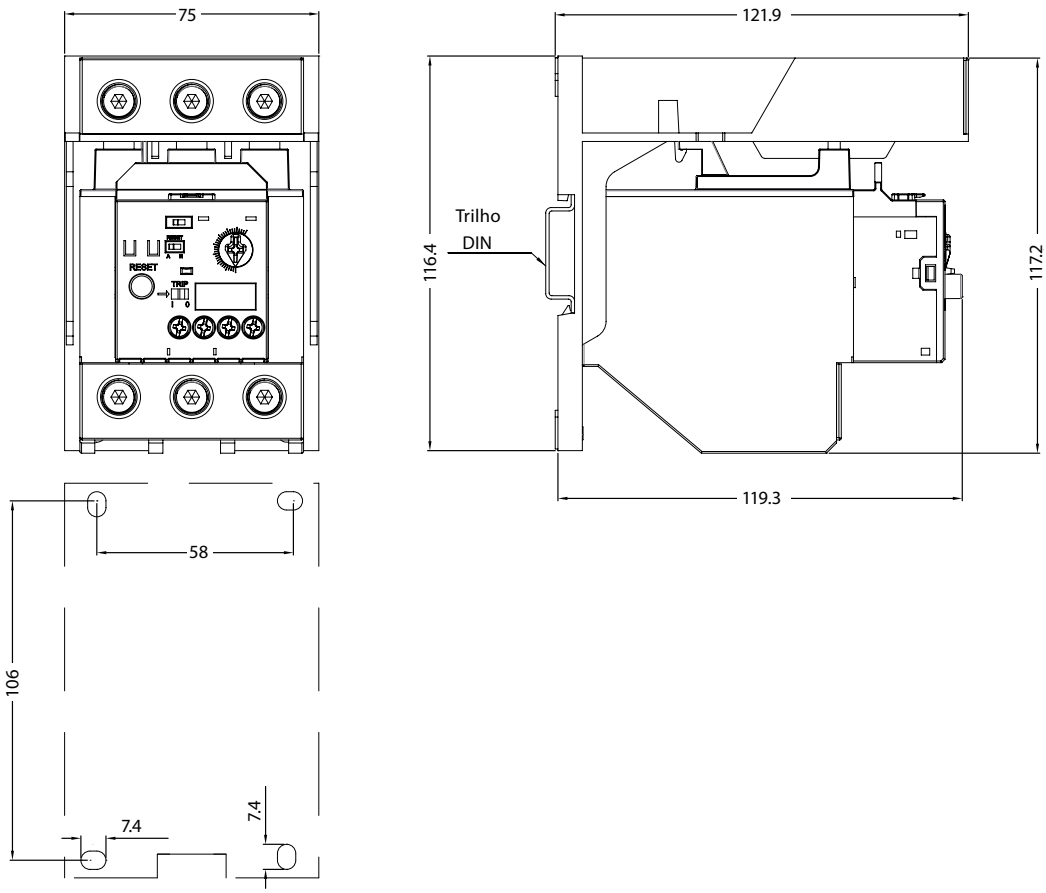
Solid-State Overload Relays

Dimensions (mm)

WRM112E

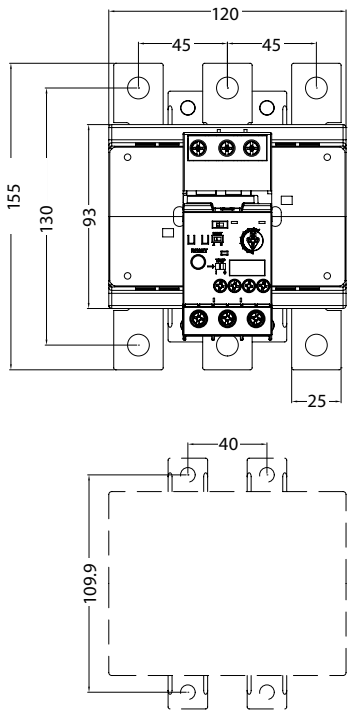


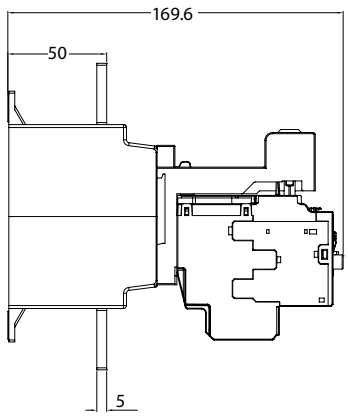
WRM112E + WBF112



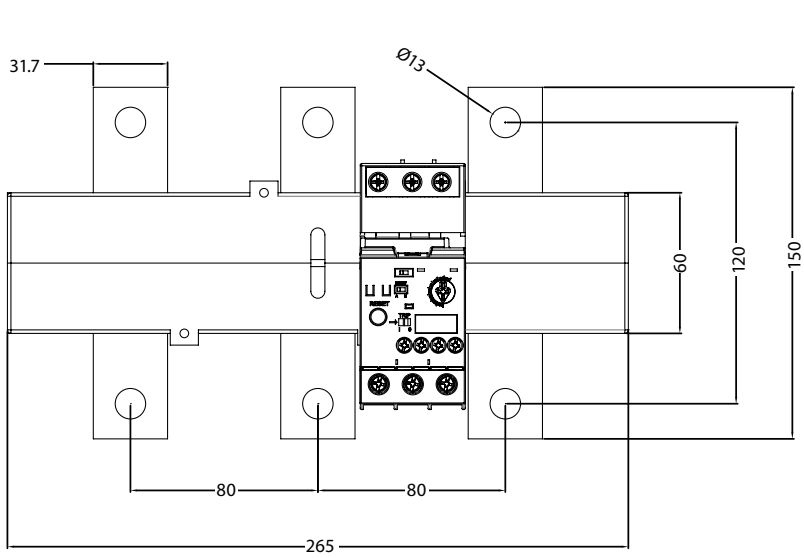
Dimensions (mm)

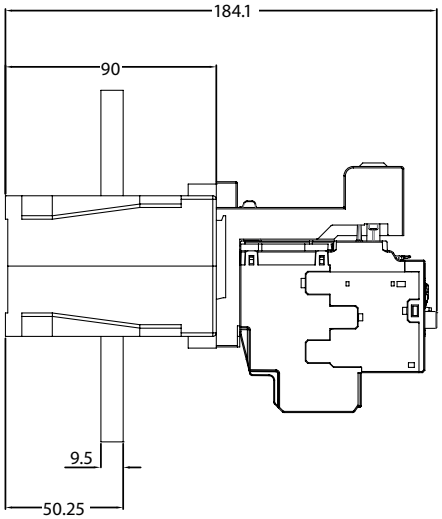
WRM420E

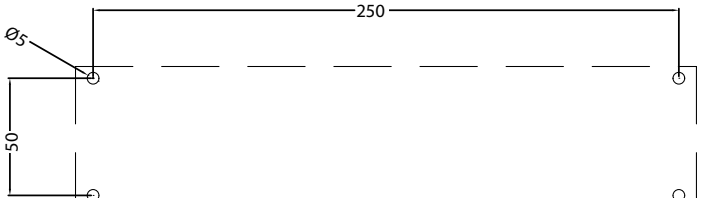




WRM840E





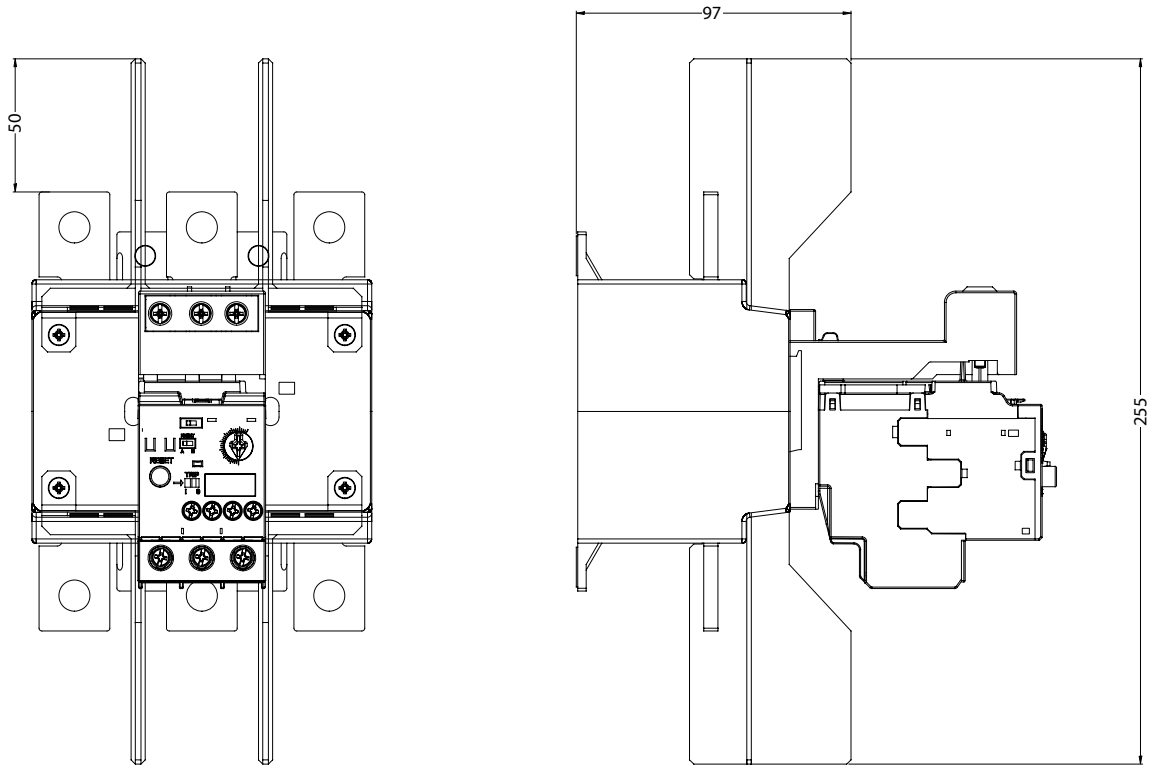


Overloads

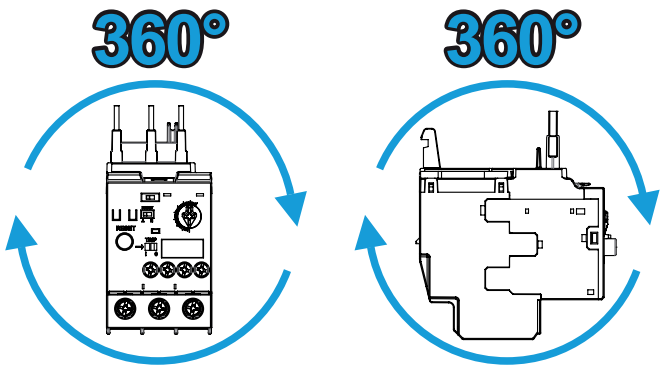
Solid-State Overload Relays

Dimensions (mm)

WRM420E + WBIR317



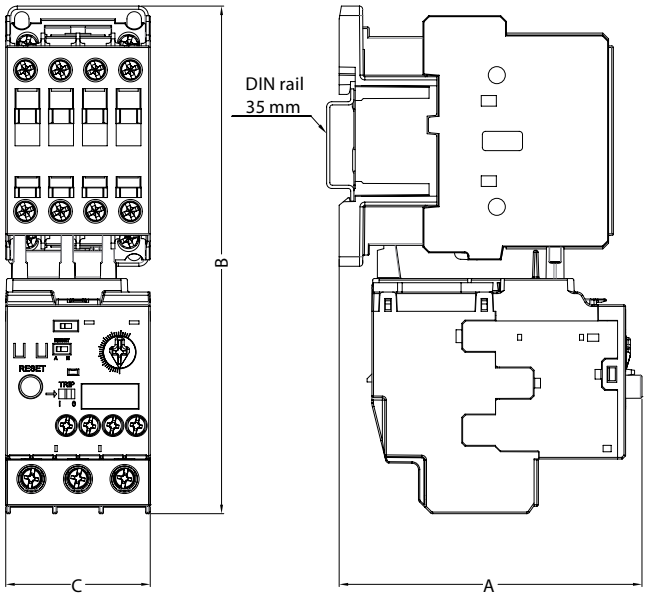
WRM40...840E / WRB40E



Mounting Position

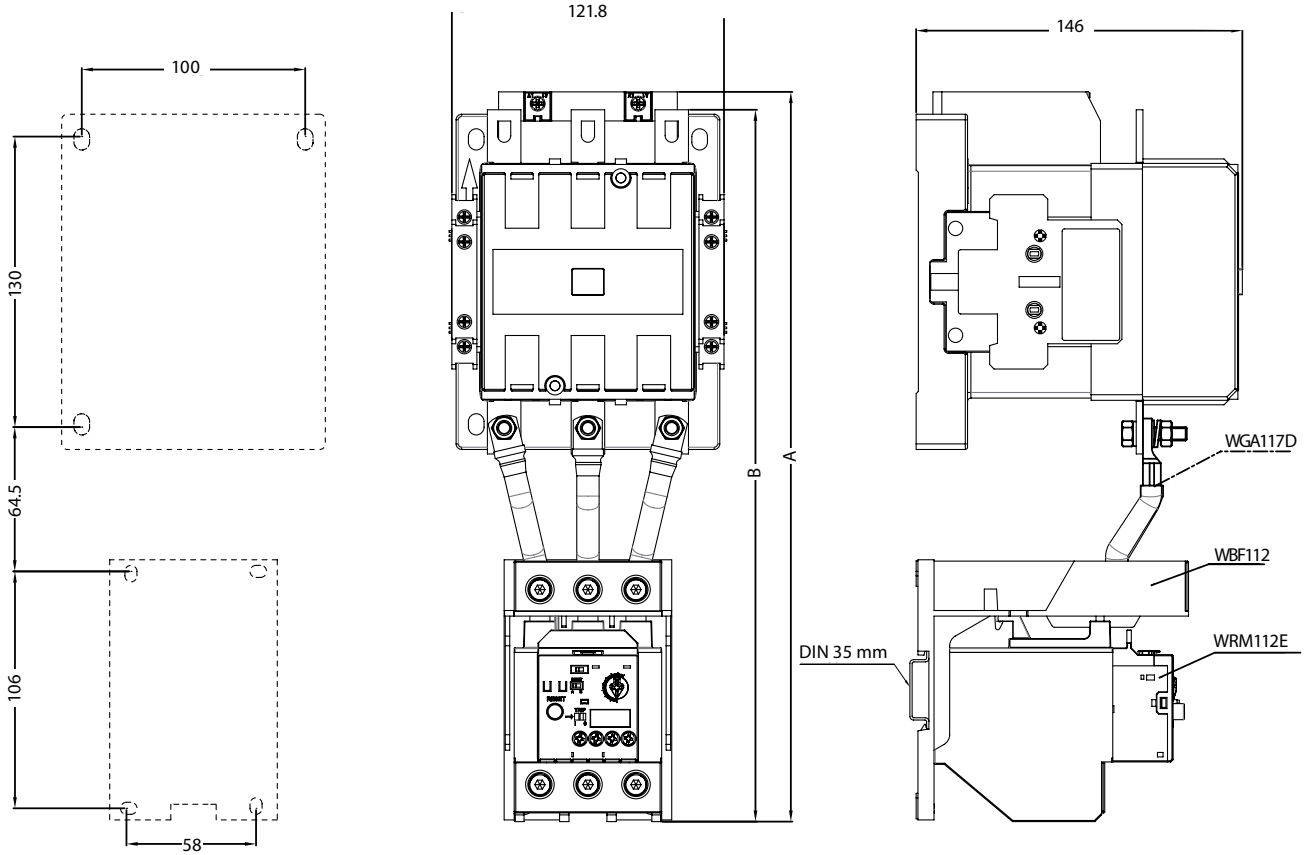
Dimensions (mm)

WCM9...105 + WRM40...112E and WBC9...38 + WRB40E



Contactor	Type of contactor coil	A	B	C
WCM9...18	CA	94.3	158	45
	CC	125.1		
WCM25	CA	94.9	159.3	45
	CC	124.8		
WCM32/40	CA	98.6	166.5	55
	CC	118.6		
WCM50...80	CA	122.6	202.7	66
	CC			
WCM95/105	CA	126	201.1	75.4
	CC			
WBC9...18	CA	89.5	163.1	45
	CC	98.7		
WBC25...38	CA	93	166.5	
	CC	102.2		

WCM112 + WRM112E + WBF112



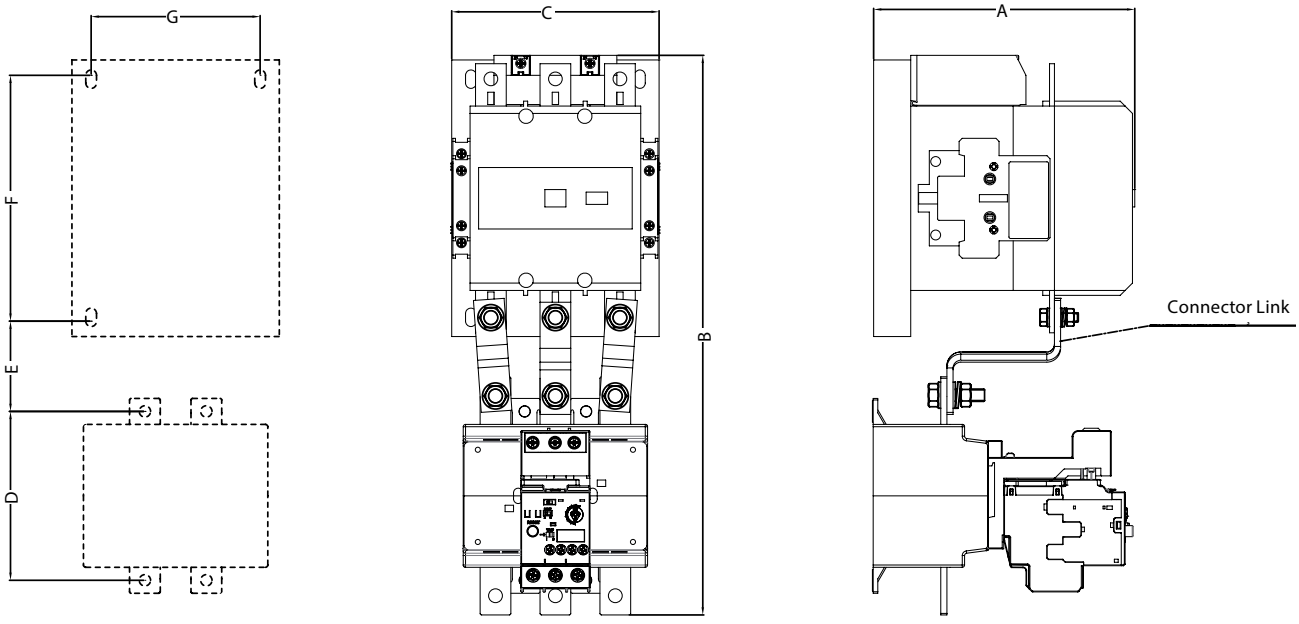
WCM112	A	B
AC conventional coil	-	318.5
Electronic coil	326.5	318.5

Overloads

Solid-State Overload Relays

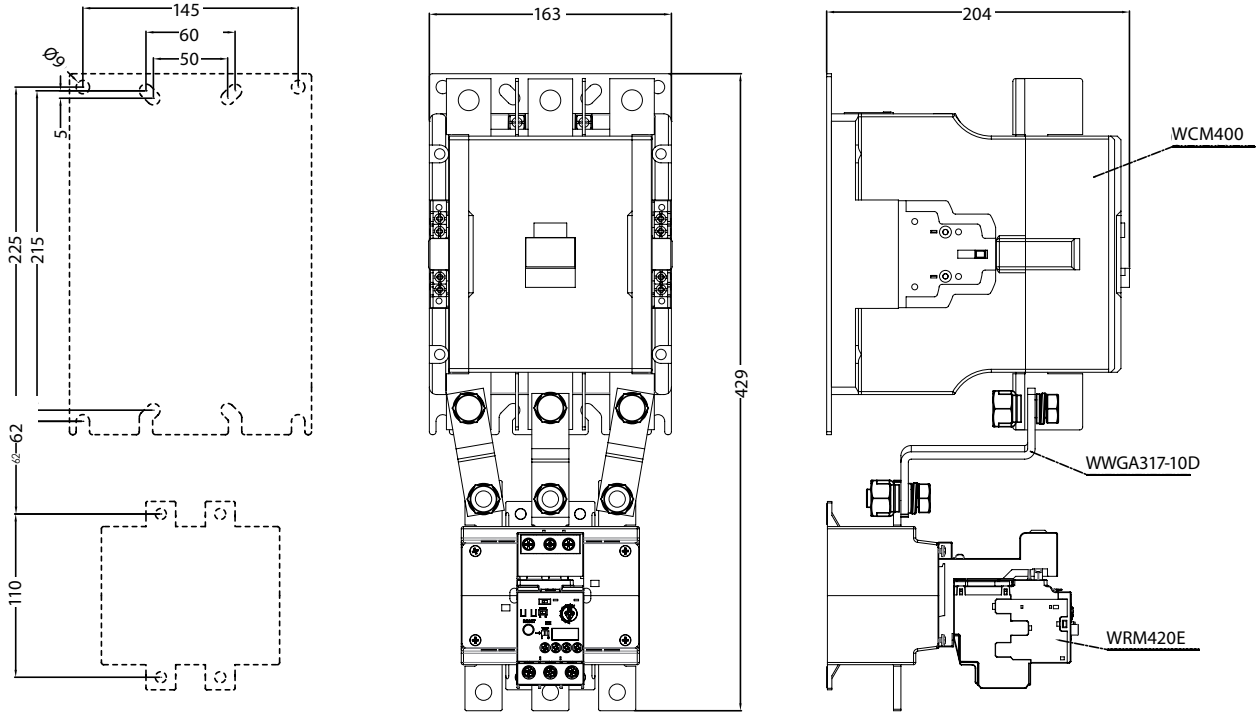
Dimensions (mm)

WCM112...300 + WRM112/420E



Contactor	Connector links	Overload relay	A	B	C	D	E	F	G
WCM112/150	WGA117D	WRM112E	147	325	121.5	106	64	130	100
WCM112/150	WGA317-1D	WR420E	166	343		110	60.5		
WCM180	WGA317-2D	WR420E	172	358	139		52.5	160	110
WCM250/300	WGA317-3D	WR420E	181	380	148.4		55	180	120

WCM400 + WRM420E



Westinghouse

COMPACT CONTACTORS WCC

Your best solution for electrical switching operations

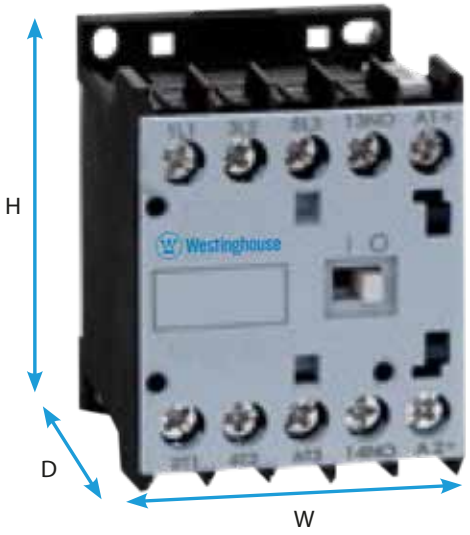
Your best solution for
Electrical Switching Operations

Compact Contactors - WCC

Developed according to international standards IEC/EN 60947 (CE) and UL 508 (USA), they meet the requirements of a wide range of applications around the world. Ideal for applications where conventional contactors are too large for the space available and where streamlined projects are necessary. Although small, they are able to switch loads up to 690 V. They present high performance in electrical switching operations, reaching over one million operations.

Versions

- Three-pole (3NA) up to 22 A @ AC-3
- Four-pole (4NO or 2NO+2NC) up to 16 A @ AC-3
- Auxiliary (4NO, 3 NO+1NC, 3NC+1NO, 2NO+2NC) up to 10 A @ AC-15
- Contactors with AC and DC coil with the same size up to 16 A (WCC7...16) and a wide range of coil voltages available



Mechanical Interlock

Mechanical interlock without addition of side space. It allows the WCC7...16 contactors to be mounted side by side, providing better use of space in panels for reversing and star-delta starters. This accessory is mounted in the front, and no tools are required for the installation. Its use does not prevent the addition of auxiliary contact blocks, surge suppressor blocks, and other accessories connected to the power terminals.

Efficiency in the Mounting

The mounting on DIN rail 35 mm (EN 50022-35) provides fast and efficient installations. Its mounting base allows up to four fastening points, making the installation flexible and totally compatible with most existing contactors, simplifying its replacement by the WCC lines.

Safety in Installation

All the contactors have degree of protection IP20 to prevent inadvertent contacts with the live parts without requiring additional accessories.

Surge Suppressor Blocks

Designed to prevent current or voltage surges on the command circuit, the suppressor blocks of the WCC line were developed with the clip fastening system without using cables. The assembly and disassembly do not require any tools. Available in the versions: varistor, resistor-capacitor, diode and Zener diode.

Indication of Position or State

Front identification of the state of the contactor by means of indicator in the place marked with “I” (ON) and “O” (OFF). Contactors, even installed with accessories, allow the view of their state.

Mirror and Mechanically Linked Contacts

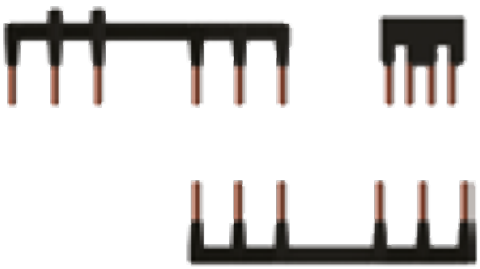
In order to meet the requirements of the safest and most demanding machine and equipment applications, the contactors were developed according to IEC/EN 60947-4-1 - Annex F, about “Mirror Contacts), and IEC/EN 60947-5-1 - Annex L, about “Mechanically Linked Contacts".

IEC/EN 60947-5-1 Symbol Mechanically Linked Contacts

IEC/EN 60947-4-1 Symbol Mirror Contacts

Connection Busbars

Developed for customers that need to save time, avoid errors and standardize operations in the assembly of motor starters on electrical panels. Available in the reversing and star-delta versions, they also allow to add protections (WMP motor-protective circuit breakers or WR17 overload relays) together with these contactors.



Built-In Auxiliary Contacts - 1NO or 1NC

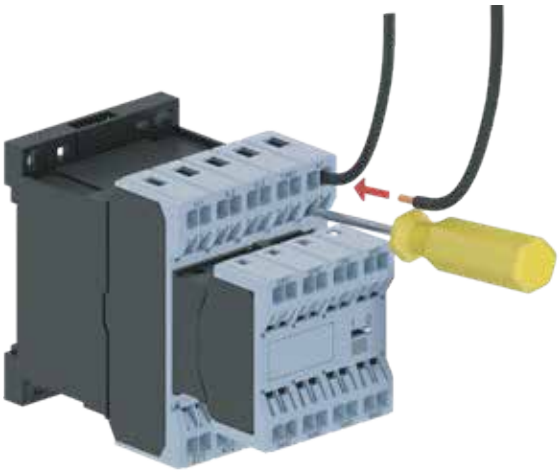
They meet the needs of most applications without requiring any additional contacts, reducing items in the inventory. They have self-cleaning characteristics by means of sliding contacts, providing high reliability in low voltage and current (17 V / 5 mA) switching operations.

Additional Contact Blocks

Available in the frontal version, they allow the expansion of 4 or 2 auxiliary contacts per contactor. Assembly and disassembly without tools. They have self-cleaning characteristics by means of sliding contacts, providing high reliability in low voltage and current (17 V / 5 mA) switching operations. Numbering according to EN 50005 and EN 50012.

Faster and Securer Connections

The cage clamp connections of the WCC7...16 contactors provide faster installation of power cables and accessories. Using a screwdriver, it is possible to make the connections in a shorter time in comparison to screw terminals. Due to special springs on the connection terminals, retightening is not necessary, because the connection system ensures constant pressure on the cables.



Drive Control

Low-consumption, direct current coils (5.8 W) enable the direct drive of the contactors via PLCs, inverter outputs or soft-starter, without using relay interfaces. Low and extremely low-consumption coils allow to reduce power supplies and command transformers, ensuring better use of the energy resources and lower costs on your electrical panel.

Wide Range of Accessories

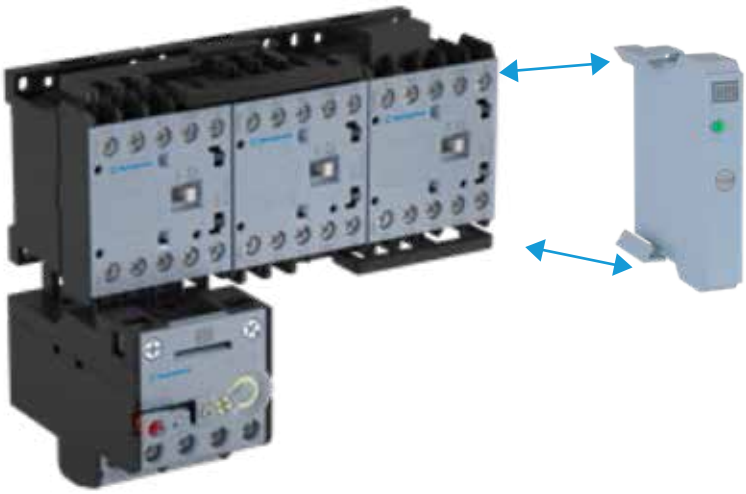
All the accessories are interchangeable between the WCC7...16 and WCCA0 models, enabling the optimization of items and greater flexibility of their applications. Example: the same front contact block, suppressor blocks, interlock and mechanical retention may be installed in different models of contactors.

Compact Starters

The most compact starters on the market up to 25 A. Contactors fully compatible with the WR17 overload relays and WMP18 e WMP40 motor-protective circuit breakers, enabling the installation of direct on-line starters up to 9.2 kW / 12.5 cv @ 380 V and star-delta starters up to 22 kW / 30 cv @ 380 V.

Timer Blocks

Extremely compact electronic timers only 9 mm wide. They are installed on the side of the WCC7...25 contactors without tools, allowing timing between 0.3s and 1,800s (30min) at voltages of 24...240 V ac/V dc. Models with Power up Delay (WTCE), Power down Delay (WTD) and for star-delta starters (WTEC).



WRC Mechanical Retention Block

It allows to keep the electrical contacts of the contactors operated without continuous supply of its coil. Ideal for circuits with a low number of switching operations, such as: ventilation systems, illumination, etc. The front mounting of this accessory on two contactors mounted side by side allows the mechanical retention of one contactor (K1).

After a command pulse on the coil of contactor K1 (minimum duration of 100ms), this accessory will keep its contacts retained. For contactor K1 to return to its initial state, it is necessary a command pulse on the coil of contactor K2 (RESET), releasing the mechanical retention of contactor K1. If the coil of contactor K2 keeps energized, the WRC accessory will not actuate on contactor K1. Accessory compatible with WCC7...16 and WCC contactors, front contact blocks, suppressor blocks and timers.

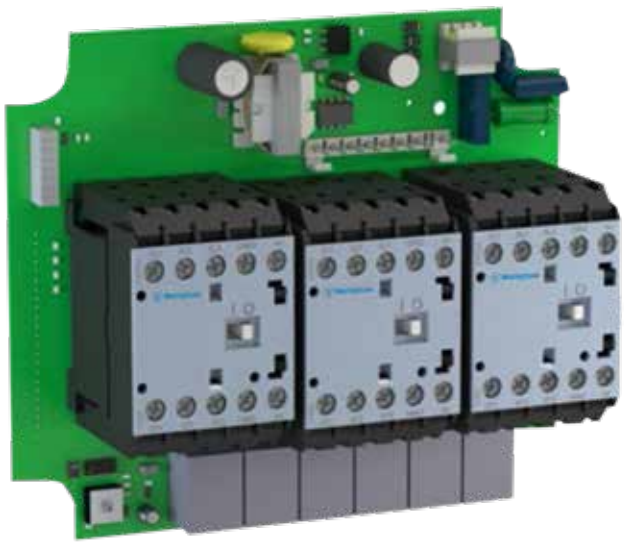
Environmentally Friendly

Manufactured with materials of low impact on the environment and according to the RoHS international requirements.

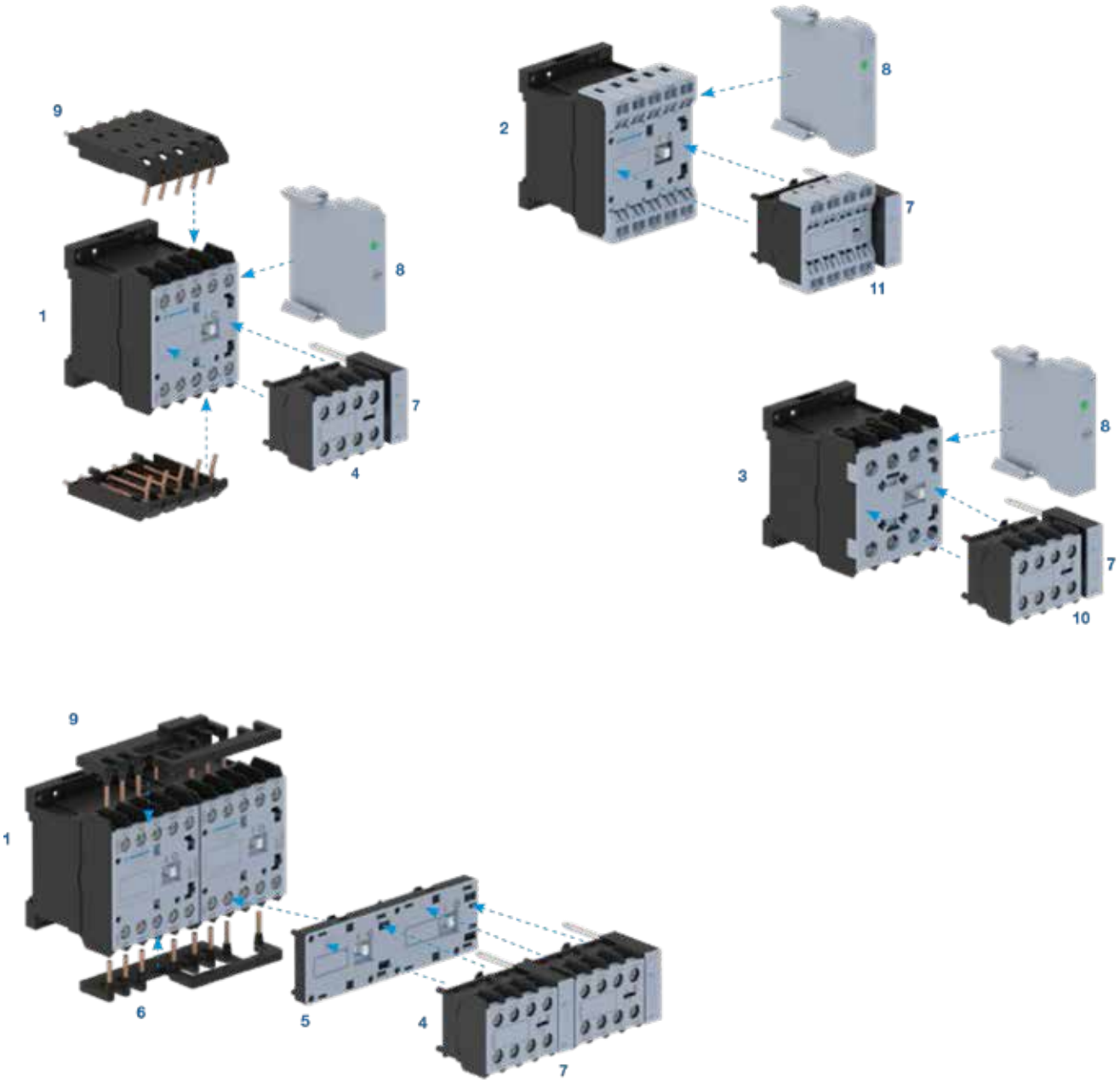
Issued by the Parliament and by the European Council, the RoHS restricts the use of hazardous substances on electronic products traded in the countries members of the EU, prohibiting the ingress of new products on the market in case they contain lead, cadmium, hexavalent chromium, mercury, polybrominated biphenyl (PBB) and polybrominated diphenyl ethers (PBDE). The WCC line complies with the RoHS requirements.

Connectors for WIC Printed Circuit Boards

The accessory allows mounting the WCC7...16 and WCCA contactors with screw terminal on printed circuit boards. Ideal for OEMs (automatization of vehicle barriers, automatic gates, fans, etc.) that require operations with robust components developed for specific applications, such as the switching of electric motors. Connectors manufactured with metallic terminals with special coating for better adherence of the weld and support in plastic flame resistant material.



WCC Compact Contactors - Accessories Overview



1 - Compact contactors WCC7...16 and WCCA0 (screw terminal)
2 - Compact contactors WCC7...12_S and WCCA0_S (spring terminal)
3 - Compact contactor WCC25 (screw terminal)
4 - Auxiliary contact block BFC (screw terminal)
5 - Mechanical interlock block WBCI or latch block WRC
6 - Easy connection busbars
7 - Surge supressor blocks WRCC (RC), WVRC (varistor), WDIC (diode), WRCAC (RC), WDIZ (diode+zener)
8 - Electronic timers WTCE, WTD and WTEC
9 - Block module for printed circuit board WIC
10 - Auxiliary contact block WBFC25 (screw terminal)
11 - Auxiliary contact block WBFC_S (spring terminal)

WCC Compact Contactors - Selection Table



Three-Pole - 7 A to 22 A (AC-3) [4]

Rated operational current I_e AC-3 ($U_e \leq 440$ V)	Conv. thermal current $I_{th} = I_e$ AC-1	Maximum rated operational power of three-phase motors 50/60 Hz[1]						Built-in auxliary contacts		Reference to complete with control voltage code		AC coil	DC coil
		220 V 230 V	380 V	400 V 415 V	440 V	500 V	660 V 690 V	3 4	1 2	Screw terminal	Spring terminal	Weight	
A	A	kW /HP	kW / HP	kW /HP	kW /HP	kW /HP	kW /HP	NO	NC			kg	
7	18	1.5 / 2	3 / 4	3 / 4	3.7 / 5	3.7 / 5	3 / 4	1 0	0 1	WCC7-10-30 ♦ WCC7-01-30 ♦	WCC7-10-30 ♦S WCC7-01-30 ♦S	0.195	0.230
9	20	2.2 / 3	4 / 5	4 / 5	4.5 / 6	4.5 / 6	4 / 5	1 0	0 1	WCC9-10-30 ♦ WCC9-01-30 ♦	WCC9-10-30 ♦S WCC9-01-30 ♦S		
12	22	3 / 4	5.5 / 7.5	5.5 / 7.5	5.5 / 7.5	5.5 / 7.5	5.5 / 7.5	1 0	0 1	WCC12-10-30 ♦ WCC12-01-30 ♦	WCC12-10-30 ♦S WCC12-01-30 ♦S		
16	22	4 / 5	7.5 / 10	7.5 / 10	7.5 / 10	7.5 / 10	7.5 / 10	1 0	0 1	WCC16-10-30 ♦ WCC16-01-30 ♦	- -		
22	32	5.5 / 7.5	11 / 15	11 / 15	11 / 15	11 / 15	11 / 15	0	0	WCC25-00-30 ♦	-	0.200	-

Replace " ♦" with the appropriate coil voltage code [2].

AC coil - 50/60 Hz											
Applicable for WCC7…WCC25 models											
Coil voltage codes	D02	D07	D13	D23	D24	D25	D33	D34	D35	D36	D39
V ac - 50/60 Hz	24	48	110	220	230	240	380	400	415	440	480

DC coil - Standard consumption coil					
Applicable for WCC7…WCC16 models					
Coil voltage codes	C03	C06	C07	C12	C15
V dc	24	42	48	110	220

DC coil - Low consumption coil[3]					
Applicable for WCC7…WCC16 models					
Coil voltage codes	L03	L06	L07	L12	L15
V dc	24	42	48	110	220

Order Reference			
Screw terminal	Ref.No.	Spring terminal	Ref.No.
WCC7-10-30	W605983	WCC7-10-30 ♦S	W605992
WCC7-01-30	W605984	WCC7-01-30 ♦S	W605993
WCC9-10-30	W605985	WCC9-10-30 ♦S	W605994
WCC9-01-30	W605986	WCC9-01-30 ♦S	W605995
WCC12-10-30	W605987	WCC12-10-30 ♦S	W605996
WCC12-01-30	W605988	WCC12-01-30 ♦S	W605997
WCC16-10-30	W605989		
WCC16-01-30	W605990		
WCC25-00-30	W605991		

Notes: 1) For 50/60 Hz three-phase, 4 poles WESTINGHOUSE standard motors. These values are only for reference and may change on the number of poles and motor design;
2) Other voltages available;
3) The compact contactor WCC with low consumption coil allows only 2 additional auxiliary contacts;

WCC Compact Contactors - Selection Table

Three-Pole Reversing Starter with Mechanical Interlock - 7 A to 16 A (AC-3)

Rated operational current I_e AC-3 ($U_e \le 440$ V)	Conv. thermal current $I_{th} = I_e$ AC-1	Maximum rated operational power of three-phase motors 50/60 Hz						Built-in auxliary contacts		Reference to complete with control voltage code		AC coil	DC coil
		220 V 230 V	380 V	400 V 415 V	440 V	500 V	660 V 690 V	3 4 NO	1 2 NC	Screw terminal	Spring terminal	Weight	
A	A	kW / HP	kW / HP	kW / HP	kW / HP	kW / HP	kW / HP					kg	
7	18	1.5 / 2	3 / 4	3 / 4	3.7 / 5	3.7 / 5	3 / 4	1 0	0 1	WCCI07-10-30♦ WCCI07-01-30♦	WCCI07-10-30♦S WCCI07-01-30♦S	0.395	0.480
9	20	2.2 / 3	4 / 5	4 / 5	4.5 / 6	4.5 / 6	4 / 5	1 0	0 1	WCCI09-10-30♦ WCCI09-01-30♦	WCCI09-10-30♦S WCCI09-01-30♦S		
12	22	3 / 4	5.5 / 7.5	5.5 / 7.5	5.5 / 7.5	5.5 / 7.5	5.5 / 7.5	1 0	0 1	WCCI012-10-30♦ WCCI012-01-30♦	WCCI012-10-30♦S WCCI012-01-30♦S		
16	22	4 / 5	7.5 / 10	7.5 / 10	7.5 / 10	7.5 / 10	7.5 / 10	1 0	0 1	WCCI016-10-30♦ WCCI016-01-30♦	– –		

Replace " ♦" with the appropriate coil voltage code [2].

AC coil - 50/60 Hz											
Applicable for WCC7…WCC25 models											
Coil voltage codes	D02	D07	D13	D23	D24	D25	D33	D34	D35	D36	D39
V ac - 50/60 Hz	24	48	110	220	230	240	380	400	415	440	480

DC coil - Standard consumption coil					
Applicable for WCCI07…WCCI016 models					
Coil voltage codes	C03	C06	C07	C12	C15
V dc	24	42	48	110	220

Order Reference			
Screw terminal	Ref.No.	Spring terminal	Ref.No.
WCCI07-10-30♦	W605998	WCCI07-10-30♦S	W606007
WCCI07-01-30♦	W605999	WCCI07-01-30♦S	W606008
WCCI09-10-30♦	W606000	WCCI09-10-30♦S	W606009
WCCI09-01-30♦	W606001	WCCI09-01-30♦S	W606010
WCCI09-01-30♦	W606002	WCCI012-10-30♦S	W606011
WCCI012-10-30♦	W606003	WCCI012-01-30♦S	W606012
WCCI012-01-30♦	W606004		
WCCI016-10-30♦	W606005		
WCCI016-01-30♦	W606006		

Notes: 1) For 50/60 Hz three-phase, 4 poles WESTINGHOUSE standard motors. These values are only for reference and may change on the number of poles and motor design;
2) Other voltages available;

WCC Compact Contactors - Selection Table

Three-Pole for Printed Circuit Boards - 7 A to 16 A (AC-3)

Rated operational current I_e AC-3 ($U_e \leq 440$ V)	Conv. thermal current $I_{th} = I_e$ AC-1	Maximum rated operational power of three-phase motors 50/60 Hz [1]						Built-in auxiliary contacts		Reference to complete with control voltage code		AC coil	DC coil
		220 V 230 V	380 V	400 V 415 V	440 V	500 V	660 V 690 V	•3 •4	•1 •2			Weight	
A	A	kW / HP	kW / HP	kW / HP	kW / HP	kW / HP	kW / HP	NO	NC	Cat.No.	Ref.No.	kg	
7	18	1.5 / 2	3 / 4	3 / 4	3.7 / 5	3.7 / 5	3 / 4	1 0	0 1	WCC7-10-30 ♦I WCC7-01-30 ♦I	W606013 W606014	0.395	0.480
9	20	2.2 / 3	4 / 5	4 / 5	4.5 / 6	4.5 / 6	4 / 5	1 0	0 1	WCC9-10-30 ♦I WCC9-01-30 ♦I	W606015 W606016		
12	22	3 / 4	5.5 / 7.5	5.5 / 7.5	5.5 / 7.5	5.5 / 7.5	5.5 / 7.5	1 0	0 1	WCC12-10-30 ♦I WCC12-01-30 ♦I	W606017 W606018		
16	22	4 / 5	7.5 / 10	7.5 / 10	7.5 / 10	7.5 / 10	7.5 / 10	1 0	0 1	WCC16-10-30 ♦I WCC16-01-30 ♦I	W606019 W606020		

Replace " ♦" with the appropriate coil voltage code [2].

AC coil - 50/60 Hz											
Applicable for WCC7…WCC25 models											
Coil voltage codes	D02	D07	D13	D23	D24	D25	D33	D34	D35	D36	D39
V ac - 50/60 Hz	24	48	110	220	230	240	380	400	415	440	480

DC coil - Standard consumption coil					
Applicable for WCC7…WCC16 models					
Coil voltage codes	C03	C06	C07	C12	C15
V dc	24	42	48	110	220

DC coil - Low consumption coil					
Applicable for WCC7…WCC16 models					
Coil voltage codes	L03	L06	L07	L12	L15
V dc	24	42	48	110	220

Notes: 1) For 50/60 Hz three-phase, 4 poles WESTINGHOUSE standard motors. These values are only for reference and may change on the number of poles and motor design;
2) Other voltages available;
3) The compact contactor WCC with low consumption coil allows only 2 additional auxiliary contacts;

WCC Compact Contactors - Selection Table

Control Relay

Rated thermal current I_{th} AC-1 A	Rated current I_e AC-15 A					Reference to complete with control voltage code		AC coil	DC coil
	220 V 230 V	380 V 400 V	415 V 440 V	500 V	660 V 690 V	Screw terminal	Spring terminal	Weight kg	
10	10	6	5	4	2	WCCA0-22-00♦	WCCA0-22-00♦S	0.180	0.200
						WCCA0-31-00♦	WCCA0-31-00♦S		
						WCCA0-40-00♦	WCCA0-40-00♦S		
						WCCA0-13-00♦	WCCA0-13-00♦S		
						WCCA0-04-00♦	WCCA0-04-00♦S		

Replace " ♦" with the appropriate coil voltage code [1].

AC coil - 50/60 Hz											
Applicable for WCC7…WCC25 models											
Coil voltage codes	D02	D07	D13	D23	D24	D25	D33	D34	D35	D36	D39
V ac - 50/60 Hz	24	48	110	220	230	240	380	400	415	440	480

DC Coil - Standard consumption					
Applicable for WCCA0 models					
Coil voltage codes	C03	C07	C09	C12	C15
V dc	24	48	60	110	220

DC Coil - Low consumption [2]					
Applicable for WCCA0 models					
Coil voltage codes	L03	L06	L07	L12	L15
V dc	24	42	48	110	220

Order Reference			
Screw terminal	Ref.No.	Spring terminal	Ref.No.
WCCA0-22-00♦	W606021	WCCA0-22-00♦S	W606026
WCCA0-31-00♦	W606022	WCCA0-31-00♦S	W606027
WCCA0-40-00♦	W606023	WCCA0-40-00♦S	W606028
WCCA0-13-00♦	W606024	WCCA0-13-00♦S	W606029
WCCA0-04-00♦	W606025	WCCA0-04-00♦S	W606030

Notes: 1) Other voltages available;
2) The compact contactor WCC with low consumption coil allows only 2 additional auxiliary contacts;

WCC Compact Contactors - Selection Table

Four-Pole (4P and 2P/2R) up to 22 A (AC-1)

Conventional thermal current $I_e=I_{th}$ AC-1 A	Main contacts		Reference to complete with control voltage code		AC coil	DC coil
	NO	NC	Screw terminal	Spring terminal	Weight kg	
18	4	0	WCC7-00-40 ♦	WCC7-00-40 ♦S	0.195	0.230
20			WCC9-00-40 ♦	WCC9-00-40 ♦S		
22			WCC12-00-40 ♦	WCC12-00-40 ♦S		
22			WCC16-00-40 ♦	-		
18	2	2	WCC7-00-22 ♦	WCC7-00-22 ♦S		
20			WCC9-00-22 ♦	WCC9-00-22 ♦S		
22			WCC12-00-22 ♦	WCC12-00-22 ♦S		
22			WCC16-00-22 ♦	-		

Replace " ♦" with the appropriate coil voltage code [1].

AC coil - 50/60 Hz											
Applicable for WCC7…WCC25 models											
Coil voltage codes	D02	D07	D13	D23	D24	D25	D33	D34	D35	D36	D39
V ac - 50/60 Hz	24	48	110	220	230	240	380	400	415	440	480

DC Coil - Standard consumption					
Applicable for WCC7...WCC16 four-pole (4NO) models					
Coil voltage codes	C03	C07	C09	C12	C15
V dc	24	48	60	110	220

DC Coil - Low consumption[2]					
Applicable for WCC7...WCC16 four-pole (4NO) models					
Coil voltage codes	L03	L06	L07	L12	L15
V dc	24	42	48	110	220

DC Coil (0.75 x Uc)					
Applicable for WCC7...WCC16 four-pole 2P/2R (2NO+2NC) models					
Coil voltage codes	R03	R06	R07	R12	R15
V dc	24	42	48	110	220

Order Reference			
Screw terminal	Ref.No.	Spring terminal	Ref.No.
WCC7-00-40 ♦	W606031	WCC7-00-40 ♦S	W606039
WCC9-00-40 ♦	W606032	WCC9-00-40 ♦S	W606040
WCC12-00-40 ♦	W606033	WCC12-00-40 ♦S	W606041
WCC16-00-40 ♦	W606034	WCC7-00-22 ♦S	W606042
WCC7-00-22 ♦	W606035	WCC9-00-22 ♦S	W606043
WCC9-00-22 ♦	W606036	WCC12-00-22 ♦S	W606044
WCC12-00-22 ♦	W606037		
WCC16-00-22 ♦	W606038		

Notes: 1) Other voltages available;
2) The compact contactor WCC with low consumption coil allows only 2 additional auxiliary contacts;

WCC Compact Contactors - Selection Table

Three-Pole with Latch Block - 5.6 A to 12.8 A (AC-3)

Rated operational current I_e AC-3 ($U_e \le 440$ V)	Conv. thermal current $I_{th} = I_e$ AC-1	Maximum rated operational power of three-phase motors 50/60 Hz [1]						Built-in auxiliary contacts		Reference to complete with control voltage code		AC coil	DC coil
		220 V 230 V	380 V	400 V 415 V	440 V	500 V	660 V 690 V	3 / 4	1 / 2	Screw terminal	Spring terminal	Weight	
A	A	kW /HP	kW / HP	kW / HP	kW / HP	kW / HP	kW / HP	NO	NC			kg	
5.6	14.4	1.1 / 1.5	2.2 / 3	2.2 / 3	2.2 / 3	2.2 / 3	3 / 4	1 0	0 1	WCCH-10-30 ♦ WCCH-01-30 ♦	WCCH-10-30 ♦S WCCH-01-30 ♦S	0.395	0.480
7.2	16	1.5 / 2	3 / 4	3 / 4	3.7 / 5	3.7 / 5	3.7 / 5	1 0	0 1	WCCH09-10-30♦ WCCH09-01-30♦	WCCH09-10-30 ♦S WCCH09-01-30 ♦S		
9.6	17.6	2.2 / 3	4.5 / 6	4.5 / 6	4.5 / 6	5.5 / 7.5	5.5 / 7.5	1 0	0 1	WCCH012-10-30♦ WCCH012-01-30♦	WCCH012-10-30 ♦S WCCH012-01-30 ♦S		
12.8	17.6	3 / 4	5.5 / 7.5	5.5 / 7.5	5.5 / 7.5	7.5 / 10	7.5 / 10	1 0	0 1	WCCH016-10-30♦ WCCH016-01-30♦	WCCH016-10-30 ♦S WCCH016-01-30 ♦S		

Control Relay with Latch Block

Rated operational current Ie		Number of auxiliary contacts		Reference code to complete with voltage code		AC coil	DC coil
AC-14 / AC-15 ($U_e \le 230$ V)	DC-13 ($U_e \le 24$ V)	3 / 4	1 / 2	Screw terminal	Spring terminal	Weight	
A	A	NO	NC			kg	
8	4.8	2	2	WCCHA0-22-00 ♦	WCCHA0-22-00 ♦S	0.377	0.444
8	4.8	3	1	WCCHA0-31-00 ♦	WCCHA0-31-00 ♦S		
8	4.8	4	-	WCCHA0-40-00 ♦	WCCHA0-40-00 ♦S		
8	4.8	1	3	WCCHA0-13-00 ♦	WCCHA0-13-00 ♦S		
8	4.8	-	4	WCCHA0-04-00 ♦	WCCHA0-04-00 ♦S		

Replace " ♦" with the appropriate coil voltage code [2].

AC coil - 50/60 Hz											
Applicable for WCC7…WCC25 models											
Coil voltage codes	D02	D07	D13	D23	D24	D25	D33	D34	D35	D36	D39
V ac - 50/60 Hz	24	48	110	220	230	240	380	400	415	440	480

DC coil - Standard consumption coil					
Applicable for WCCH07...WCCH016 models					
Coil voltage codes	C03	C06	C07	C12	C15
V dc	24	42	48	110	220

Order Reference Three-Pole with Latch Block - 5.6 A to 12.8 A (AC-3)				Control Relay with Latch Block			
Screw terminal	Ref.No.	Spring terminal	Ref.No.	Screw terminal	Ref.No.	Spring terminal	Ref.No.
WCCH-10-30 ♦	W606045	WCCH-10-30 ♦S	W606053	WCCHA0-22-00 ♦	W606061	WCCHA0-22-00 ♦S	W606066
WCCH-01-30 ♦	W606046	WCCH-01-30 ♦S	W606054	WCCHA0-31-00 ♦	W606062	WCCHA0-31-00 ♦S	W606067
WCCH09-10-30 ♦	W606047	WCCH09-10-30 ♦S	W606055	WCCHA0-40-00 ♦	W606063	WCCHA0-40-00 ♦S	W606068
WCCH09-01-30 ♦	W606048	WCCH09-01-30 ♦S	W606056	WCCHA0-13-00 ♦	W606064	WCCHA0-13-00 ♦S	W606069
WCCH012-10-30♦	W606049	WCCH012-10-30 ♦S	W606057	WCCHA0-04-00 ♦	W606065	WCCHA0-04-00 ♦S	W606070
WCCH012-01-30♦	W606050	WCCH012-01-30 ♦S	W606058				
WCCH016-10-30♦	W606051	WCCH016-10-30 ♦S	W606059				
WCCH016-01-30♦	W606052	WCCH016-01-30 ♦S	W606060				

Notes: 1) For 50/60 Hz three-phase, 4 poles WESTINGHOUSE standard motors. These values are only for reference and may change depending on the number of poles and motor design;
2) Other voltages available;

Accessories

Auxiliary Contact Blocks

Illustrative picture	For use with	Max. number of contacts/ compact contator	Auxiliary contacts		For use with WCC (3 pole)		For use with WCC (4 pole)		For use with WCCA0		Weight
					Reference code		Reference code		Reference code		
			NO	NC	Screw terminal	Spring terminal	Screw terminal	Spring terminal	Screw terminal	Spring terminal	kg
 	WCC7...16 WCCA0	2	2	0	WBFC-20	WBFC-20S	WBC4-20	WBC4-20S	WBCA-20	WBCA-20S	0.03
			1	1	WBFC-11	WBFC-11S	WBC4-11	WBC4-11S	WBCA-11	WBCA-11S	
			0	2	WBFC-02	WBFC-02S	WBC4-02	WBC4-02S	WBCA-02	WBCA-02S	
		4	4	0	WBFC-40 [1]	WBFC-40S [1]	WBC4-40 [1]	WBC4-40S [1]	WBCA-40[1]	WBCA-40S[1]	
			2	2	WBFC-22 [1]	WBFC-22S [1]	WBC4-22 [1]	WBC4-22S [1]	WBCA-22[1]	WBCA-22S[1]	
			0	4	WBFC-04 [2]	WBFC-04S [2]	WBC4-04 [2]	WBC4-04S [2]	WBCA-04[2]	WBCA-04S[2]	
			3	1	WBFC-31 [1]	WBFC-31S [1]	WBC4-31 [1]	WBC4-31S [1]	WBCA-31[1]	WBCA-31S[1]	
			1	3	WBFC-13[2]	WBFC-13S [2]	WBC4-13 [2]	WBC4-13S [2]	WBCA-13[2]	WBCA-13S[2]	
	WCC25	2	2	0	WBFC25-20	-	-		-		
			1	1	WBFC25-11	-	-		-		
			0	2	WBFC25-02	-	-		-		
		4	2	2	WBFC25-22	-	-		-		

Mechanical Interlock [2]

Illustrative picture	For use with	Description	Reference code	Weight kg
	WCC7...16 WCCA0	- Front mouting; - For the mechanical interlock using 2 compact contactors (AC or DC coil); - Can be mounted with the following accessories: auxiliary contact block, surge suppressor and timers.	WBCI	0.014

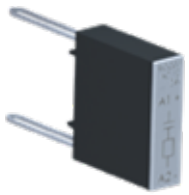
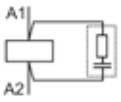
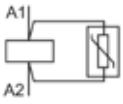
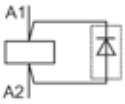
Mechanical Latch Block [2]

Illustrative picture	For use with	Description	Reference code	Weight kg
	WCC7...16 WCCA0	- Front mouting; - For the mechanical interlock using 2 compact contactors (AC or DC coil); - Can be mounted with the following accessories: auxiliary contact block, surge suppressor and timers.	WRC	0.014

Notes: 1) The compact contactors WCC with DC low consumption coils allows only 2 additional auxiliary contacts. For applications that use 4 auxiliary contacts use WCC with standard DC coils.
2) Not suitable to be used with WCC compact contactors or WCCA0 control relays with DC Low Consumption coils (coil voltage code "L").

Surge Suppressors

- Fast front mounting (clip on)
- Can be mounted with all the accessories

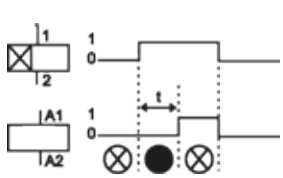
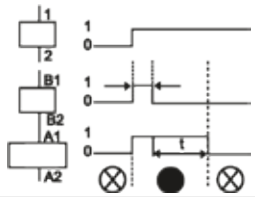
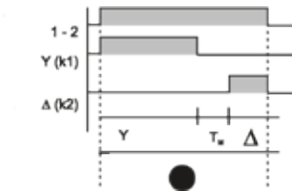
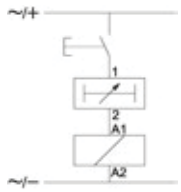
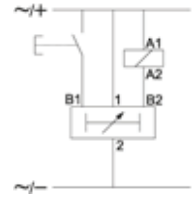
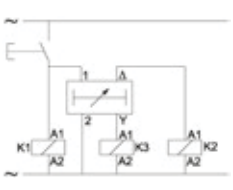
Illustrative picture	For use with	Circuit diagram	Voltages	Reference code	Ref.No.	Weight kg
	WCC7...25 WCCA0		12-24 V 50/60 Hz	WRCC-1 D49	W606071	0.008
			24-48 V 50/60 Hz	WRCC-2 D53	W606072	
			50-127 V 50/60 Hz	WRCC-3 D55	W606073	
			130-250 V 50/60 Hz	WRCC-4 D63	W606074	
			275-380 V 50/60 Hz	WRCC-5 D84	W606075	
			400-510 V 50/60 Hz	WRCC-6 D73	W606076	
	WCC7...16 WCCA0		180...230 V 50/60 Hz	WRCAC D87 [1]	W606077	
	WCC7...25 WCCA0		12-48 V 50/60 Hz / 12-60 V dc	WVRC-1 E49	W606078	
			50-127 V 50/60 Hz / 60-180 V dc	WVRC-2 E34	W606079	
			130-250 V 50/60 Hz / 180-300 V dc	WVRC-3 E50	W606080	
			277-380 V 50/60 Hz / 300-510 V dc	WVRC-4 E41	W606081	
			400-510 V 50/60 Hz	WVRC-5 D73	W606082	
	WCC7...16 WCCA0		12-600 V dc	WDIC-1 C33	W606083	
			12...250 V dc	WDIZ C26	W606084	

Note: 1) To protect snubbers against overvoltage peaks caused by the switching off of the contactors with AC coils. It is recommended to use in circuits with residual current over than (Us/230 V)x1.4 mA. (Us = Rated voltage).

Eletronic Timing Relay

- Right-side fast mounting
- Up to 30 minutes timing
- LED status indication

Illustrative picture	Function	Timing	Voltages	Reference code		Weight kg
	On-Delay (TECO)	3 - 0.3 to 3 seconds	24-240 V 50/60 Hz - DC	WTCE-U003S-E05		0.02
		10 - 1 to 10 seconds		WTCE-U010S-E05		
		30 - 3 to 30 seconds		WTCE-U030S-E05		
		60 - 6 to 60 seconds		WTCE-U060S-E05		
		100 - 10 to 100 seconds		WTCE-U100S-E05		
		300 - 30 to 300 seconds		WTCE-U300S-E05		
		1,800 - 180 to 1,800 seconds		WTCE-U030M-E05		
	Off-Delay (TDCO)	-	24-60 V 50/60 Hz - DC 100-240 V 50/60 Hz - DC	24-60 V ac/dc	100-240 V ac/dc	
		3 - 0.3 to 3 seconds		WTD-U010S-E04	WTD-U003S-E09	
		10 - 1 to 10 seconds		WTD-U003S-E04	WTD-U010S-E09	
		30 - 3 to 30 seconds		WTD-U030S-E04	WTD-U030S-E09	
		60 - 6 to 60 seconds		WTD-U060S-E04	WTD-U060S-E09	
		100 - 10 to 100 seconds		WTD-U100S-E04	WTD-U100S-E09	
		300 - 30 to 300 seconds		WTD-U300S-E04	WTD-U300S-E09	
		1,800 - 180 to 1,800 seconds		WTD-U030M-E04	WTD-U030M-E09	
	Start-Delta (TETCO)	30 - 3 to 30 seconds	24-28 V 50/60 Hz	WTEC-U030S-D52		
			110-130 V 50/60 Hz	WTEC-U030S-D61		
			220-240 V 50/60 Hz	WTEC-U030S-D66		

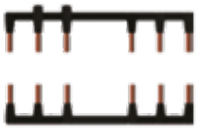
Functions	On-Delay WTCE	Off-Delay WTD	Start-Delta WTEC
Functionals diagrams Led On Led Off			
Diagrams			

Accessories

Printed Circuit Board Link Module

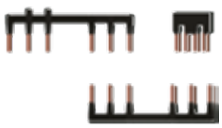
Illustrative picture	For use with	Description	Reference code	Weight kg
	WCC7...16 WCCA0	- Direct mounting on the terminals - Allows direct mounting on printed circuit board - Same current capacity (up to 16 A in AC-3 and 22 A in AC-1)	WIC	0.130

Reversing Wiring Kits



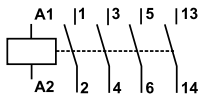
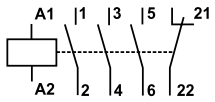
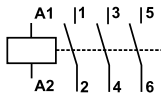
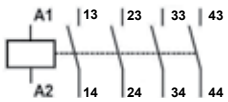
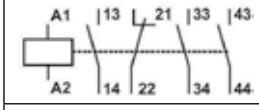
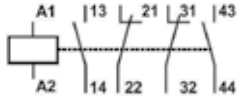
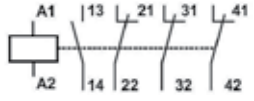
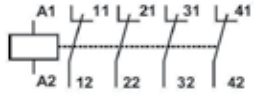
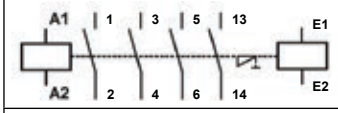
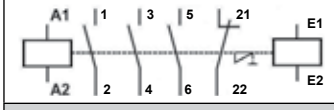
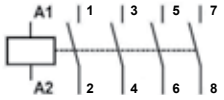
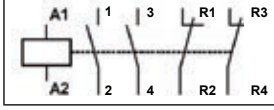
Rated operational current I_e AC - 3 ($U_e \leq 440$ V) A	Max. rated operational power of three-phase motors 50/60 Hz						Compact contactors	Reference code	Weight kg
	220 V 230 V kW /HP	380 V kW / HP	400 V 415 V kW /HP	440 V kW / HP	500 V kW / HP	660 V 690 V kW /HP	K1 = K2		
7	1.5 / 2	3 / 4	3 / 4	3.7 / 5	3.7 / 5	3 / 4	WCC7	WECC-R (with electrical interlock)	0.13
9	2.2 / 3	4 / 5	4 / 5	4.5 / 6	4.5 / 6	4 / 5	WCC9	WECC-RNI (without electrical interlock)	
12	3 / 4	5.5 / 7.5	5.5 / 7.5	5.5 / 7.5	5.5 / 7.5	5.5 / 7.5	WCC12		
16	4 / 5	7.5 / 10	7.5 / 10	7.5 / 10	7.5 / 10	7.5 / 10	WCC16		

Star-Delta Wiring



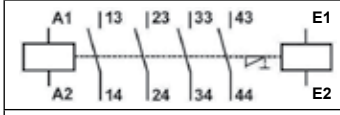
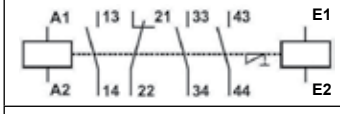
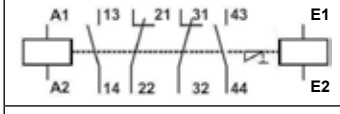
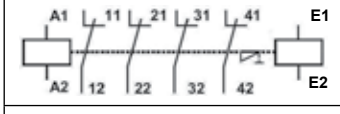
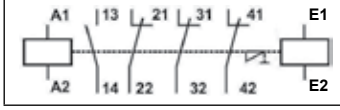
Rated operational current I_e AC - 3 ($U_e \leq 440$ V) A	Max. rated operational power of three-phase motors 50/60 Hz			Compact contactors		Reference code	Weight kg
	220-230 V kW / HP	400-415 V kW / HP	660-690 V kW / HP	K1 = K2	K3		
12	3.7 / 5	5.5 / 7.5	5.5 / 7.5	WCC7	WCC7	WECC-SD	0.13
18	3.7 / 5	7.5 / 10	9.2 / 12.5	WCC12			
25	5.5 / 7.5	11 / 15	15 / 20	WCC16	WCC9		

Terminal Markings

Circuit diagram	Auxiliary contacts configuration	Auxiliary contacts		Contactor base reference
		NO	NC	
Three-pole compact contactors with built-in auxiliary contact				
	10	1	0	WCC7-10-30 ♦ WCC9-10-30 ♦ WCC12-10-30 ♦ WCC16-10-30 ♦
	01	0	1	WCC7-01-30 ♦ WCC9-01-30 ♦ WCC12-01-30 ♦ WCC16-01-30 ♦
Three-pole compact contactors without built-in auxiliary contact				
	00	0	0	WCC25-00-30 ♦
Control relay				
	40	4	0	WCCA0-40-00♦
	31	3	1	WCCA0-31-00♦
	22	2	2	WCCA0-40-00♦
	13	1	3	WCCA0-13-00♦
	04	0	4	WCCA0-04-00♦
Three-pole compact contactors with built-in auxiliary contact and latch block				
	10	1	0	WCCH07-10-30♦ WCCH09-10-30♦ WCCH012-10-30♦ WCCH016-10-30♦
	01	0	1	WCCH07-01-30 ♦ WCCH09-01-30 ♦ WCCH012-01-30 ♦ WCCH016-01-30 ♦
Circuit diagram	Main contacts configuration	Main contacts		Contactor base reference
		NO	NC	
Four-pole compact contactors				
	40	4	0	WCC7-00-40 ♦ WCC9-00-40 WCC12-00-40 ♦ WCC16-00-40
	22	2	2	WCC7-00-22 ♦ WCC9-00-22 ♦ WCC12-00-22 ♦ WCC16-00-22 ♦

Technical Data

Terminal Markings

Circuit diagram	Auxiliary contacts configuration	Auxiliary contacts		Contactor base reference
		NO	NC	
Control relay with latch block				
	40	4	0	WCCHA0-40-00 ♦
	31	3	1	WCCHA0-31-00 ♦
	22	2	2	WCCHA0-22-00 ♦
	04	0	4	WCCHA0-04-00 ♦
	13	1	3	WCCHA0-13-00 ♦

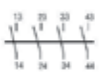
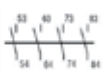
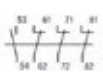
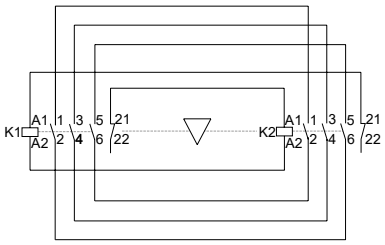
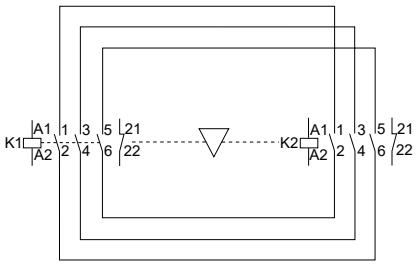
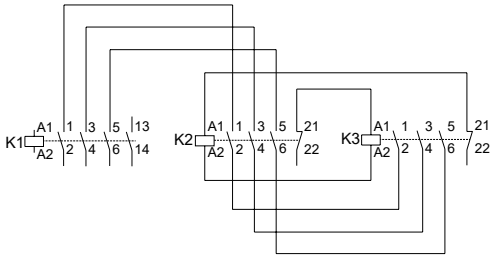
Auxiliary contacts configuration	Auxiliary contacts		For use with (3-pole)		For use with WCC (4-pole)		For use with WCCA0	
	NO	NC	Circuit diagram	Reference	Circuit diagram	Reference	Circuit diagram	Reference
Frontal auxiliary contact block								
20	2	0		WBFC-20♦ WBFC25-20		WBC4-20♦		WBCA-20 ♦
11	1	1		WBFC-11♦ WBFC25-11		WBC4-11♦		WBCA-11 ♦
02	0	2		WBFC-02♦ WBFC25-02		WBC4-02♦		WBCA-02 ♦
40	4	0		WBFC-40♦		WBC4-40♦		WBCA-40 ♦
22	2	2		WBFC-22♦ WBFC25-22		WBC4-22♦		WBCA-22 ♦
04	0	4		WBFC-04♦		WBC4-04♦		WBCA-04 ♦
31	3	1		WBFC-31♦		WBC4-31♦		WBCA-31 ♦
13	1	3		WBFC-13♦		WBC4-13♦		WBCA-13 ♦

Diagram	Components
	WCC7...16 + WBCI + WECC-R
	WCC7...16 + WBCI + WECC-RNI
	WCC7...16 + WECC-SD

Technical Data

General Data

Reference code			WCCA0	WCC7	WCC9	WCC12	WCC16	WCC25
Standards			IEC/EN 60947 / UL 508					
Rated insulation voltage U_i (pollution degree 3)	IEC/EN 60947-4-1, VDE 0660	(V)	690					
	UL, CSA	(V)	600					
Rated impuse withstand voltage U_{imp} (IEC/EN 60947-1)		(kV)	4					
Rated operational frequency		(Hz)	25...400					
Mechanical lifespan	AC coil Ops x 10 "6"		10					3
	DC coil Ops x 10 "6"		12					-
Electrical lifespan	I_e AC-3 Ops x 10 "6"		-	1.4	1.3	1.2	1.1	0.6
Degree of protection (VDE 0160)	Main circuits		IP20					
	Control circuits and auxiliary contacts		IP20					
Mounting			Screw or DIN rail 35 mm					
Coil terminals			2					
Vibration resistance	Contactor open	(g)	2					
	Contactor closed	(g)	4					
Mechanical shock resistance (½ sinusoid = 11ms)	Contactor open	(g)	6					
	Contactor closed	(g)	10					
Ambient temperature	Operation		-25 °C ...+55 °C					
	Storage		-55 °C ... +80 °C					
Normal values			Up to 3,000 m					
Altitude	90% I_e / 80% U_e		3,000 to 4,000 m					
	80% I_e / 75% U_e		4,000 to 5,000 m					

Control Circuit - Alternating Current (AC)

Reference code			WCCA0, WCC7...16	WCC25
Rated insulation voltage U_i (pollution degree 3)	IEC/EN 60947-4-1, VDE 0660	(V)	1,000	1,000
	UL, CSA	(V)	600	600
Coils rated voltage 50 Hz		(V)	10...550	10...550
Coils rated voltage 60 Hz		(V)	12...660	12...660
Coils rated voltage 50/60 Hz		(V)	12...660	12...660
Coils rated voltage				
Coil operating limits		(xUs)	0.85...1.1	
Coil 60 Hz	Pick up	(xUs)	0.4...0.76	0.4...0.76
	Drop out	(xUs)	0.25...0.65	0.25...0.65
Coil 50/60 Hz	Pick up	(xUs)	0.5...0.8	0.5...0.8
	Drop out	(xUs)	0.2...0.6	0.2...0.6
Average consumption			1.0 x Us coil cold state	
Coil 60 Hz	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
Coil 50/60 Hz	Magnetic circuit closed	(VA)	2...3	7.6...11.6
	Magnetic circuit closing	(VA)	30	67
Average time	Closing NO contacts	(ms)	8...20	13...16
	Opening NO contacts	(ms)	6...13	13.5...17

Control Circuit - Direct Current (DC)

Reference code			WCCA0, WCC7...16		WCC7...16
Coil type			Conventional	Low consumption	4P (2P/2R)
Rated insulation voltage U_i (pollution degree 3)	IEC/EN 60947-4-1, VDE 0660	(V)	1,000		
	UL, CSA	(V)	600		
Standard voltages		(V)	12...440		
Coil operating limits		(xUs)	0.85...1.1		
	Pick up	(xUs)	0.4...0.7		
	Drop out	(xUs)	0.15...0.4		
Power consumption			1.0 x Us coil cold state		
	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
Operation time	Closing NO contacts	(ms)	35...45		
	Opening NO contacts	(ms)	7...12		

Power Circuit

Reference code			WCC7	WCC9	WCC12	WCC16	WCC25
Rated operational current I_e	AC-3 ($U_e \leq 440$ V)	(A)	7	9	12	16	22
	AC-4 ($U_e \leq 440$ V)	(A)	2.8	3.5	4.5	5	9
	AC-1 ($\theta \leq 55$ °C, $U_e \leq 690$ V)	(A)	18	20	22	22	32
Rated operational voltage U_e	IEC/EN 60947-4-1, VDE 0660	(V)	690				
	UL, CSA [1]	(V)	600				
Rated thermal current I_{th} ($\theta \leq 55$ °C)		(A)	18	20	22	22	32
Making capacity - IEC/EN 60947		(A)	70	90	120	160	250
Breaking capacity IEC/EN 60947	($U_e \leq 400$ V)	(A)	50	72	96	128	200
	($U_e = 500$ V)	(A)	50	72	96	128	200
	($U_e = 690$ V)	(A)	35	54	72	96	150
Short-time current (no current flowing during recovery time of 10 min and $\theta \leq 40$ °C)	1 seg	(A)	250	250	250	250	-
	5 seg	(A)	125	125	125	125	-
	10 seg	(A)	95	95	95	95	-
	30 seg	(A)	70	70	70	70	-
	1 min	(A)	50	50	50	50	-
	3 min	(A)	40	40	40	40	-
Protection against short-circuits with fuses (gL/gG)	@600 V - UL/CSA [1]	(kA)	5				
	Coordination type 1	(A)	35	35	35	35	50
	Coordination type 2	(A)	20	20	25	25	35
Average impedance per pole		(mΩ)	6	6	5	5	6
Average power dissipation per pole	AC-1	(W)	1.9	2.4	2.4	2.4	6.1
	AC-3	(W)	0.3	0.5	0.7	1.3	3.8
Utilization category AC-3							
Rated operational current I_e ($\theta \leq 55$ °C)	$U_e \leq 440$ V	(A)	7	9	12	16	22
	$U_e \leq 500$ V	(A)	6.2	7.5	8.8	13	16
	$U_e \leq 690$ V	(A)	4.5	5.5	6.6	10	13
	$U_e \leq 1{,}000$ V	(A)	Not available				
Rated operational power	220 / 230 V	(kW)	1.5	2.2	3	3.7	5.5
		(cv)	2	3	4	5	7.5
	380 / V	(kW)	3	3.7	5.5	7.5	11
		(cv)	4	5	7.5	10	15
	400 / 415 V	(kW)	3	3.7	5.5	7.5	11
		(cv)	4	5	7.5	10	15
	440 V	(kW)	3.7	4.5	5.5	7.5	11
		(cv)	5	6	7.5	10	15
	500 V	(kW)	3.7	4.5	5.5	7.5	11
		(cv)	5	6	7.5	10	15
	660 / 690 V	(kW)	3	3.7	5.5	7.5	11
		(cv)	4	5	7.5	10	15
Max. electrical operational per hour	600 ops./h	(%)	100	100	100	100	100
	1,200 ops./h	(%)	75	75	75	75	75
	3,000 ops./h	(%)	50	50	50	50	50
Utilization category AC-4							
Rated operational current I_e AC-4 ($U_e \leq 440$ V)		(A)	2.8	3.5	4.5	5	9
Rated operational power [1] (200,000 operations)	220 / 230 V	(kW)	0.55	0.75	0.75	1.1	2.2
		(cv)	0.7	1	1	1.5	2.9
	380 / 400 V	(kW)	1.1	1.1	1.8	2.2	4
		(cv)	1.5	1.5	2.4	2.9	5.4
	415 V	(kW)	1.1	1.5	2.2	2.2	4.5
		(cv)	1.5	2	2.9	2.9	6
	440 V	(kW)	1.1	1.5	2.2	2.2	4.5
		(cv)	1.5	2	2.9	2.9	6
	500 V	(kW)	1.1	1.5	2.2	2.2	4.5
		(cv)	1.5	2	2.9	2.9	6
	660 / 690 V	(kW)	1.1	1.5	2.2	2.2	4.5
		(cv)	1.5	2	2.9	2.9	6

Note: 1) For 50/60 Hz three-phase, 4 poles WESTINGHOUSE standard motors. These values are only for reference and may change on the number of poles and motor design.

Technical Data

Power Circuit

Reference code			WCC7	WCC9	WCC12	WCC16	WCC25
			Utilization category AC-1				
			3P (NO) or 4P (4NO)				3P (NO)
Rated thermal current I_{th} ($\theta \leq 55$ °C)		(A)	18	20	22	22	32
Maximum operational current (up to 690 V)	$\theta \leq 40$ °C	(A)	18	20	22	22	32
	$\theta \leq 55$ °C	(A)	18	20	22	22	32
	$\theta \leq 70$ °C	(A)	14.4	16	17.6	17.6	25.6
Maximum operational power $\theta \leq 55$ °C 3-phase resistors	220 / 230 V	(kW)	6.8	7.5	8.3	8.3	12
	380 / 400 V	(kW)	11.5	13	14.5	14.5	21
	415 / 440 V	(kW)	13	14.5	16	16	23
	500 V	(kW)	14.8	16.5	18	18	26
	660 / 690 V	(kW)	20	22	25	25	36
Current values for connection of	2 poles in parallel		I_e x 1.7				
	3 poles in parallel		I_e x 2.4				
	4 poles in parallel		I_e x 3.2				
Percentage of the max. operational current at	600 ops./h	(%)	100				
	1,200 ops./h	(%)					
	3,000 ops./h	(%)					
			2P (NO/NC) or 4P (2NO + 2NC)				2P (NO/NC)
Maximum operational power $\theta \leq 55$ °C (resistive load)	220 / 230 V	(kW)	3.9	4.4	4.8	4.8	6.6
	380 / 400 V	(kW)	6.8	7.6	8.4	8.4	11.4
	415 / 440 V	(kW)	7.5	8.4	9.2	9.2	12.5
	500 V	(kW)	8.6	9.5	10.5	10.5	14.5
	660 / 690 V	(kW)	11.8	13.1	14.4	14.4	19.5

UL Power Ratings

Reference code			WCC7	WCC9	WCC12	WCC16	WCC25
General purpose current	(600 V)	(A)	18	20	22	22	30
1-phase	110 / 120 V	(HP)	1/3	1/3	1/2	1	1 1/2
	208 V	(HP)	3/4	1/2	1/2	2	3
	220 / 240 V	(HP)	3/4	1/2	2	2	3
3-phase	110 / 120 V	(HP)	3/4	1	1 1/2	2	3
	200 V	(HP)	1 1/2	2	3	3	5
	220 / 240 V	(HP)	1 1/2	3	3	5	7 1/2
	440 / 480 V	(HP)	5	5	7 1/2	10	15
	550 / 600 V	(HP)	5	7 1/2	7 1/2	10	15

Built-In Auxiliary Contacts

Reference code			WCC7...16	WCCA0
Standards			IEC/EN 60947-5-1, IEC/EN 60947-4-1	
Rated insulation voltage U_i (pollution degree 3)	IEC/EN, VDE 0660	(V)	690	
	UL, CSA	(V)	600	
Rated operational voltage U_e	IEC/EN, VDE 0660	(V)	690	
	UL, CSA	(V)	600	
Rated thermal current I_{th} ($\theta \leq 55$ °C)		(A)	10	
Rated operational current I_e				
AC-15 (IEC/EN 60947-5-1)	$U_e \leq 240$ V	(A)	10	
	380-400 V	(A)	6	
	415-440 V	(A)	5	
	500 V	(A)	4	
	660-690 V	(A)	2	
UL, CSA			A600	
DC-13 (IEC/EN 60947-5-1)	24 V	(A)	6	
	48 V	(A)	4	
	110 V	(A)	2	
	220 V	(A)	0.7	
UL, CSA			Q600	
Making capacity (rms)	$U_e \leq 400$ V 50/60 Hz - AC-15	(A)	10 x I_e(AC-15)	
Breaking capacity (rms)	$U_e \leq 400$ V 50/60 Hz - AC-15	(A)	10 x I_e(AC-15)	
Max.fuse class gL-gG without welding (short-circuit protection) gL/gG		(A)	10	
Control circuit reliability		(V / mA)	17 / 5	
Electrical endurance		(millions operations)	1	
Mechanical endurance		(millions operations)	10	

Auxiliary Contacts

Reference code			WBFC / WBFC25
Standards			IEC/EN 60947-5-1, IEC/EN 60947-4-1
Rated insulation voltage U_i (pollution degree 3)	IEC/EN, VDE 0660	(V)	1,000
	UL, CSA[1)]	(V)	600
Rated operational voltage U_e	IEC/EN, VDE 0660	(V)	690
	UL, CSA[1)]	(V)	600
Rated thermal current I_{th} ($\theta \leq 55$ °C)		(A)	10
Rated operational current I_e			
AC-15 (IEC/EN 60947-5-1)	$U_e \leq 240$ V	(A)	10
	380-400 V	(A)	6
	415-440 V	(A)	6
	500 V	(A)	4
	660-690 V	(A)	-
UL, CSA [1)]			A600
DC-13 (IEC/EN 60947-5-1)	24 V	(A)	1.5
	60 V	(A)	0.5
	110 V	(A)	0.4
	220-240 V	(A)	0.4
UL, CSA [1)]			Q600
Making capacity (rms)	$U_e \leq 400$ V 50/60 Hz - AC-15	(A)	30
Breaking capacity (rms)	$U_e \leq 400$ V 50/60 Hz - AC-15	(A)	3
Max.fuse class gL-gG without welding (short-circuit protection)		(A)	10
Control circuit reliability		(V / mA)	17 / 5
Electrical endurance		(millions operations)	1
Mechanical endurance		(millions operations)	10

Electronic Timer Relays

Reference code		WTCE, WTD, WTEC
Rated insulation voltage (U_i)	V	300
Supply voltage (U_e)	1 - 2 terminals	24...240 V dc/ V ac 50/60 Hz (WTCE)
		24...60 V dc/ V ac 50/60 Hz (WTD)
		100...240 V dc/ V ac 50/60 Hz (WTD)
		220-240 V ac 50/60 Hz (WTEC)
		110-130 V ac 50/60 Hz (WTEC)
		24-28 V ac 50/60 Hz (WTEC)
Control voltage (U_c) only WTD	2 - B1 terminals	24...60 V dc/ V ac 50/60 Hz (WTD)
		100...240 V dc/ V ac 50/60 Hz (WTD)
Voltage operational limits		0.85...1.1 x Uc (V ac)
		0.8...1.25 x Uc (V dc)
Consumption	mA	≤ 5
Minimum time for reset (recovery time)	ms	650
Minimum control time (only WTD)	ms	50
Setting accuracy (% of the full scale value)	%	+/-5
Repeat accuracy	%	+/-1
Changeover time Y - Δ	ms	50

Technical Data

Terminal Capacity and Tightening Torque - Power and Built-In Auxiliary Terminals

Reference code	WCC7...WCC16 / WCCA0			WCC25		
Screw type	M3x 8 Flat / Phillips			M3.5x 9 Flat / Phillips		
Power terminal and built-in auxiliary terminal [1)]	Finely stranded with end sleeve	Stranded and finely stranded without end sleeve	Solid	Finely stranded with end sleeve	Stranded and finely stranded without end sleeve	Solid
mm^2	1x 0.5...2.5 2x 0.5...1.5	1x 0.75...2.5 2x 0.75...2.5	1x 0.5...2.5 2x 0.5...2.5	1x 1...6 2x 1...2.5 2x 2.5...4	1x 1...6 2x 1...2.5 2x 2.5...6	1x 1...6 2x 1...2.5 2x 2.5...6
AWG (UL)	18...12			18...10		
Tightening torque (N.m)	1.1			1.5		
Tightening torque (lb.in) (UL)	10			13		

Note: 1) Built-in auxiliary terminals not available for WCC25.

Terminal Capacity and Tightening Torque - Coil Terminals

Reference code	WCC7...WCC25 / WCCA0		
Screw type	M3.5x 8 Flat / Phillips		
Coil terminals	Finely stranded with end sleeve	Stranded and finely stranded without end sleeve	Solid
mm^2	1x 0.5...2.5 2x 0.5...1.5	1x 0.75...2.5 2x 0.75...2.5	1x 0.5...2.5 2x 0.5...2.5
AWG (UL)	22...12		
Tightening torque (N.m)	1.1		
Tightening torque (lb.in) (UL)	10		

Terminal Capacity and Tightening Torque - Auxiliary Contact Blocks

Reference code	WBFC / WBCA / WBC4 / WBFC25		
Screw type	M3.5x9 Flat / Phillips		
Auxiliary contact block	Finely stranded with end sleeve	Stranded and finely stranded without end sleeve	Solid
mm^2	1x 0.5...2.5 2x 0.5...1.5	1x 0.75...4 2x 0.75...2.5	1x 0.5...4 2x 0.5...2.5
AWG (UL)	22...14		
Tightening torque (N.m)	1.1		
Tightening torque (lb.in) (UL)	10		

Terminal Capacity - Power, Coil and Auxiliary Contact Blocks

Reference code	WCC7_S... WCC12_S / WCCA0_S		WBFC_S / WBCA_S / WBC4_S
Terminal type	Spring terminal		
Power terminal	Finely stranded with end sleeve	Solid	
mm^2	2x 1...1.5	2x 1...1.5	
Auxiliary contact block / built-in auxiliary terminal / or coil terminal	Finely stranded with end sleeve	Solid	Solid or finely stranded with end sleeve
mm^2	2x 0.5...1.5	2x 0.5...1.5	2x 0.5...1.5
AWG	18...12		22...16

Utilization Category DC-1, DC-3 and DC-5

DC-1(L/R ≤ 1ms)

	Reference	WCC7	WCC9	WCC12	WCC16	WCC25
U_e	Serie poles	Rated operational current I_e(A)				
≤ 24 V	1	10	10	16	16	18
	2	15	15	20	20	25
	3	15	15	22	22	25
	4	15	15	22	22	-
≤ 48 V	1	10	10	13	13	16
	2	15	15	20	20	25
	3	15	15	22	22	25
	4	15	15	22	22	-
≤ 60 V	1	8	8	10	10	13
	2	15	15	18	18	25
	3	15	15	22	22	25
	4	15	15	22	22	-
≤ 125 V	1	4	4	5	5	6
	2	8	8	10	10	13
	3	12	12	16	16	18
	4	15	15	19	19	-
≤ 220 V	1	0.6	0.6	0.7	0.7	1
	2	5	5	6	6	8
	3	9	9	10	10	14
	4	12	12	15	15	-
≤ 440 V	1	0.2	0.2	0.3	0.3	0.4
	2	0.6	0.6	0.7	0.7	1.5
	3	3.5	3.5	4	4	5
	4	8	8	9	9	-
≤ 600 V	1	-	-	-	-	-
	2	0.2	0.2	0.3	0.3	0.6
	3	1	1	1.5	1.5	2
	4	2	2	4	4	-

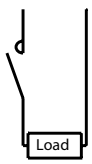
DC-3(L/R ≤ 2.5ms)

	Reference	WCC7	WCC9	WCC12	WCC16	WCC25
U_e	Serie poles	Rated operational current I_e(A)				
≤ 24 V	1	9	9	9	9	10
	2	12	12	12	12	15
	3	15	15	15	15	18
	4	15	15	15	15	-
≤ 48 V	1	8	8	8	8	10
	2	12	12	12	12	15
	3	15	15	15	15	18
	4	15	15	15	15	-
≤ 60 V	1	5	5	5	5	8
	2	10	10	10	10	13
	3	14	14	14	14	18
	4	15	15	15	15	-
≤ 125 V	1	1.5	1.5	1.5	1.5	2
	2	5.5	5.5	5.5	5.5	7
	3	10	10	10	10	13
	4	14	14	14	14	-
≤ 220 V	1	0.4	0.4	0.4	0.4	0.6
	2	1.5	1.5	1.5	1.5	2
	3	7	7	7	7	8
	4	11	11	11	11	-
≤ 440 V	1	-	-	-	-	-
	2	0.2	0.2	0.2	0.2	0.3
	3	1	1	1	1	1.5
	4	3	3	3	3	-
≤ 600 V	1	-	-	-	-	-
	2	-	-	-	-	-
	3	0.6	0.6	0.6	0.6	0.8
	4	1.5	1.5	1.5	1.5	-

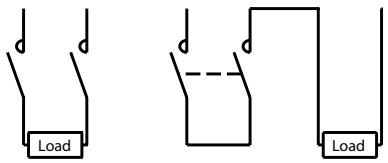
DC-5(L/R ≤ 15ms)

	Reference	WCC7	WCC9	WCC12	WCC16	WCC25
U_e	Serie poles					
≤ 24 V	1	8	8	8	8	10
	2	12	12	12	12	14
	3	15	15	15	15	18
	4	15	15	15	15	-
≤ 48 V	1	8	8	8	8	9
	2	12	12	12	12	14
	3	15	15	15	15	18
	4	15	15	15	15	-
≤ 60 V	1	5	5	5	5	7
	2	10	10	10	10	12
	3	14	14	14	14	18
	4	15	15	15	15	-
≤ 125 V	1	1.5	1.5	1.5	1.5	0.8
	2	5.5	5.5	5.5	5.5	5
	3	9	9	9	9	12
	4	14	14	14	14	-
≤ 220 V	1	0.4	0.4	0.4	0.4	-
	2	0.7	0.7	0.7	0.7	0.8
	3	2.5	2.5	3	3	3
	4	9	9	9	9	-
≤ 440 V	1	-	-	-	-	-
	2	-	-	-	-	-
	3	0.3	0.3	0.3	0.3	0.5
	4	0.7	0.7	0.7	0.7	-
≤ 600 V	1	-	-	-	-	-
	2	-	-	-	-	-
	3	-	-	-	-	-
	4	0.2	0.2	0.2	0.2	-

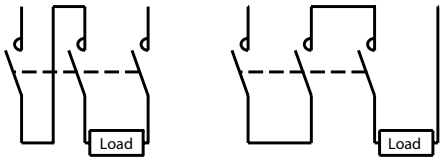
1 Serie Pole



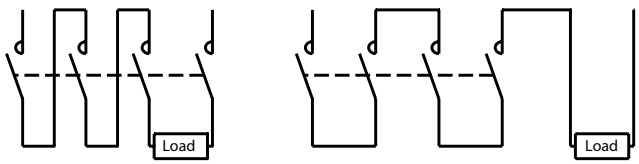
2 Serie Poles



3 Serie Poles

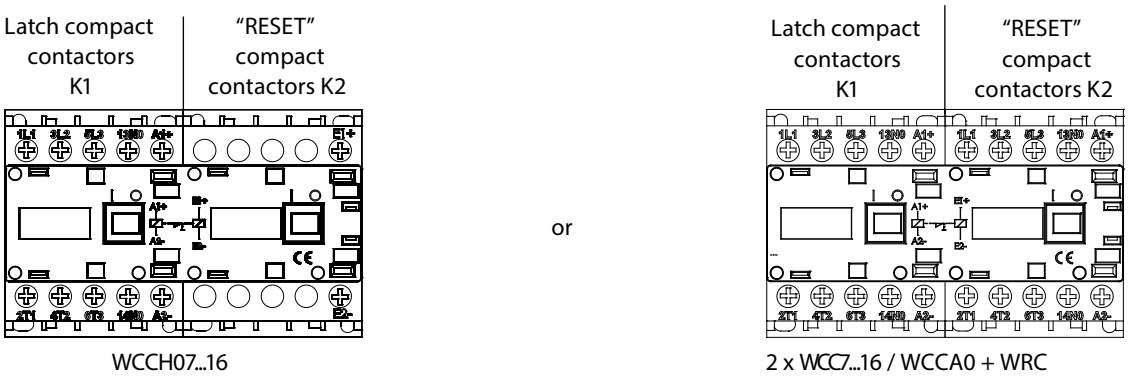


4 Serie Poles



Technical Data

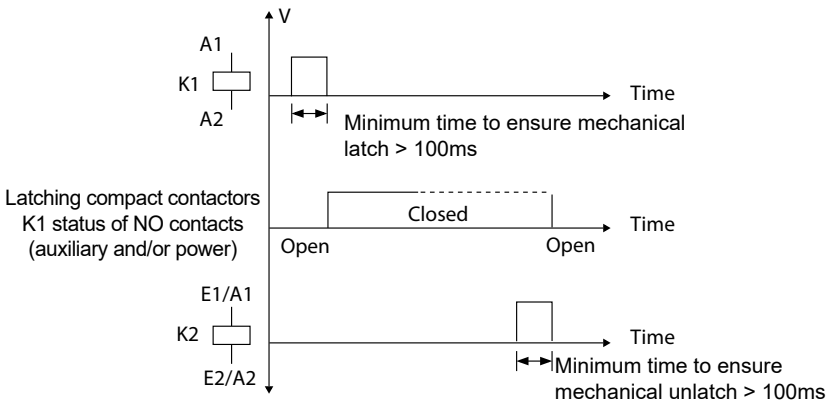
Operation Description of Latch Block WRC or WCCH0



WCCH07...16

2 x WCC7...16 / WCCA0 + WRC

Functional Diagram

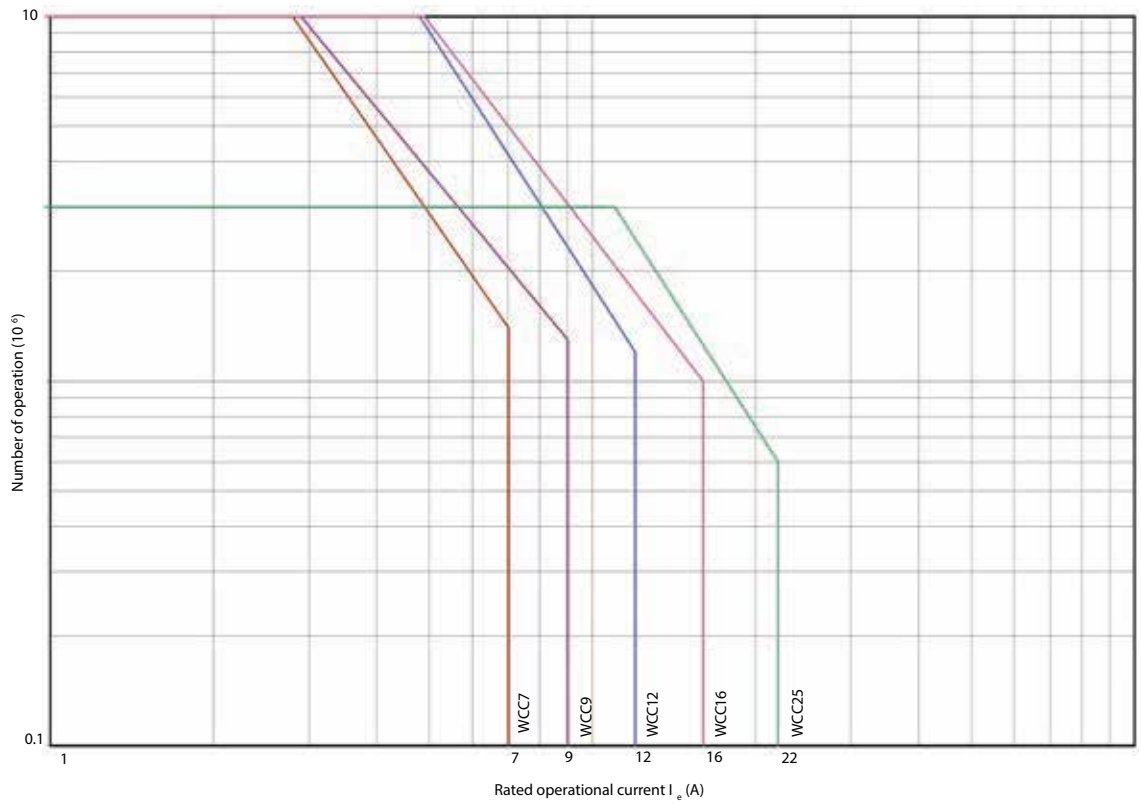


- After a minimum pulse of 100ms on compact contactors coil (K1), the WRC will keep K1 contacts switched on.
- The compact contactors K1 will only return to rest position after compact contactors coil (K2) be energized by a releasing pulse.
- The mechanical latch will always and only happen on compact contactors (K1).

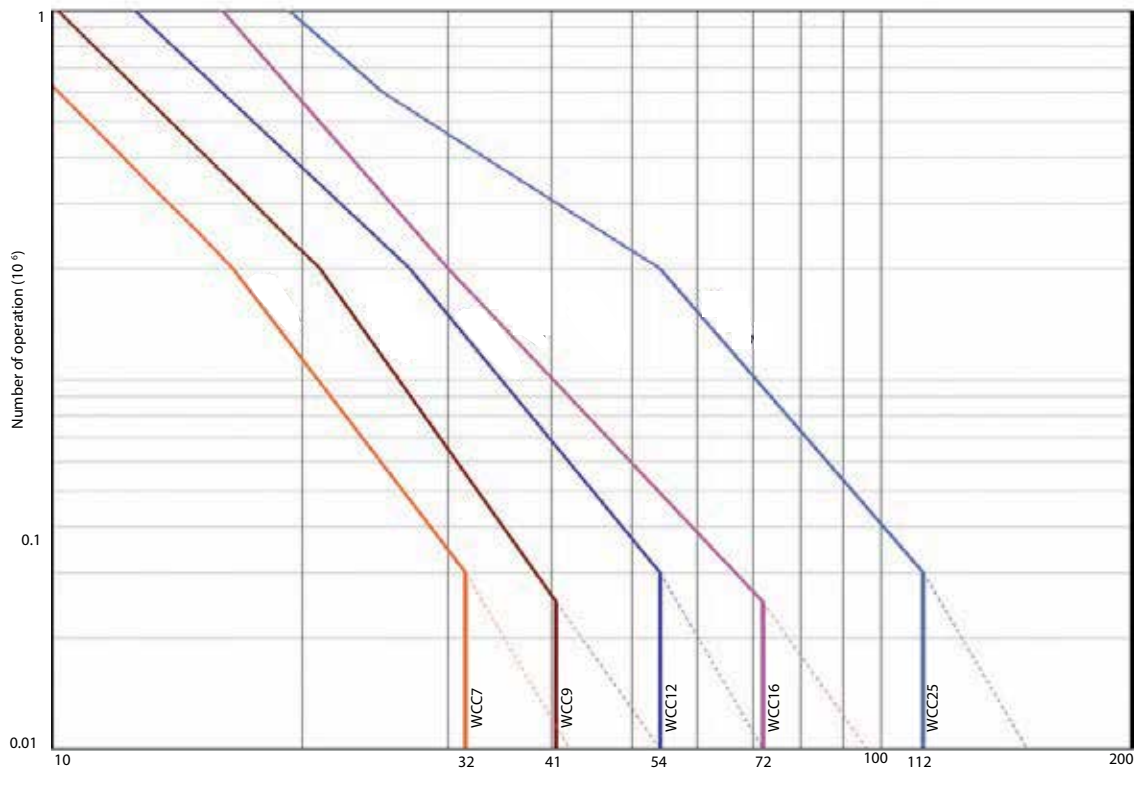
Note: if RESET compact contactors coil (K2) remains energized, the latching of compact contactors (K1) is not enabled.

Electrical Lifespan

AC-3 ($U_e \leq 440$ V ac)

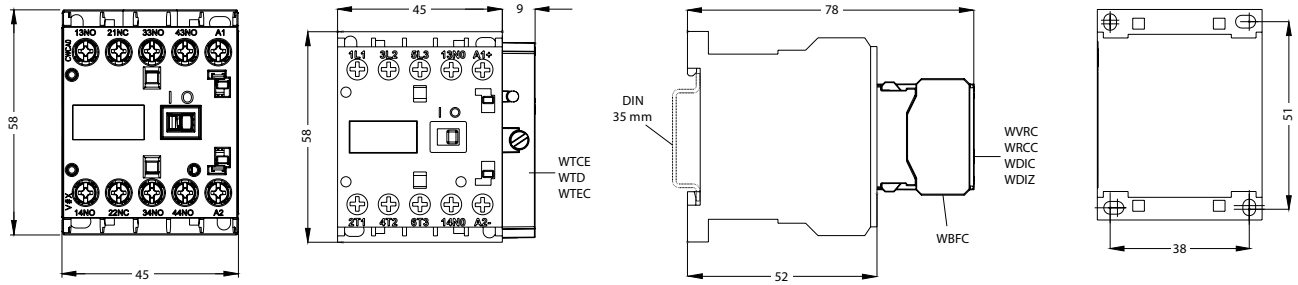


AC-4 ($U_e \leq 440$ V ac)

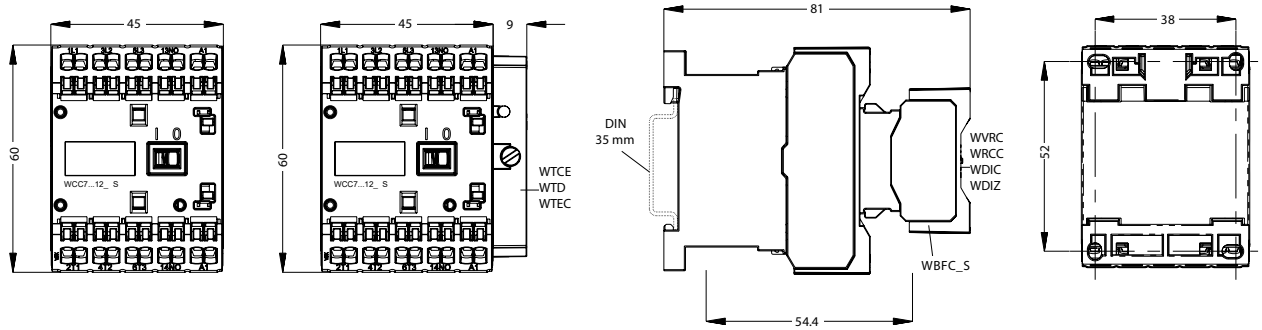


Dimensions (mm)

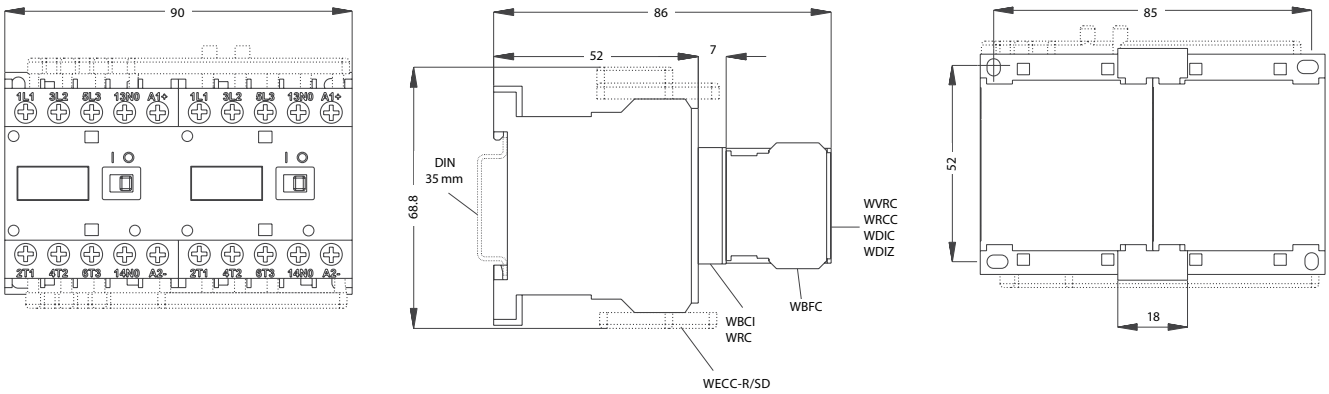
WCC7...16 and WCCA0 - (AC and DC Coil) - Screw Terminal



WCC7...012_S, and WCCA0_S - (AC and DC Coil) - Spring Terminal



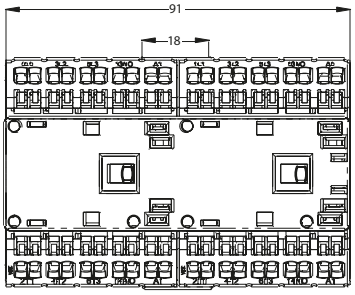
WCCI07...16 [1] + WECC-R and WCCH07...16 [2] - Screw Terminal

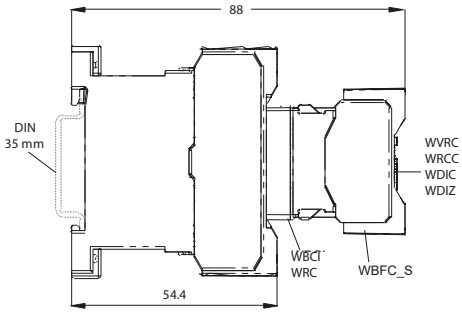


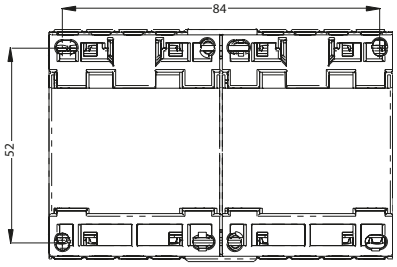
Notes: 1) Same dimensional of 2 x WCC7...16 + WBCI.
2) Same dimensional of 2 x (WCC7...16/WCCA0) + WRC.

Dimensions (mm)

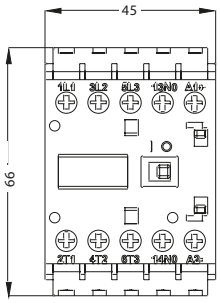
WCCI07...12 [1] or WCCH07...12/WCCHA0 [2] - Spring Terminal

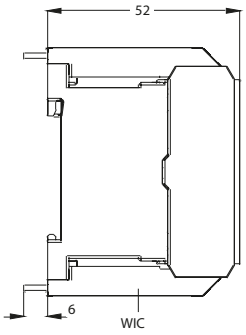


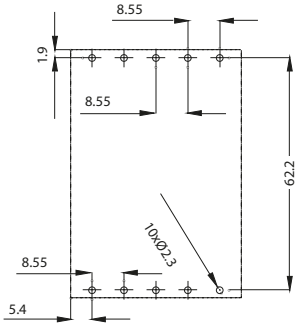




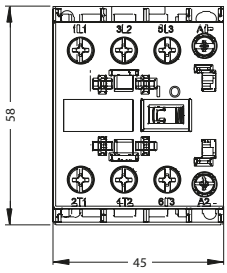
WCC7...16 ♦I [3] - Printed Circuit Boards

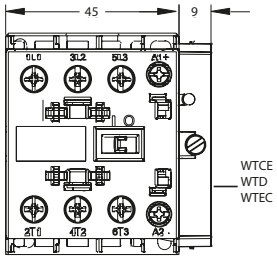


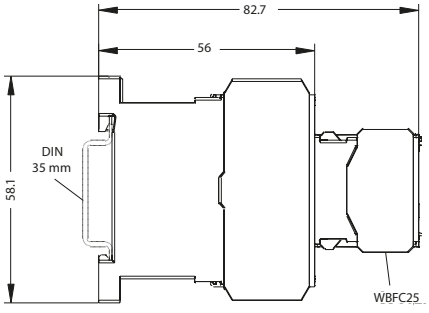


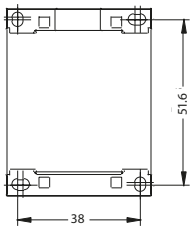


WCC25

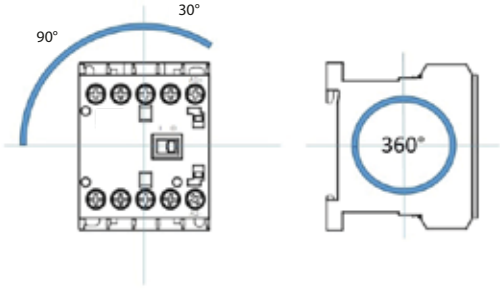








Mounting Position of All Compact Contactors



Notes: 1) Same dimensional of 2 x WCCI07...16_S + WBCI.
2) Same dimensional of 2 x (WCC7...16_S/WCCA0_S) + WRC.
3) Same dimensional WCC7...16 + WIC.

Westinghouse

WCMC - CONTACTORS FOR SWITCHING OF CAPACITORS

Full solution for switching of capacitor for power factor correction

CE

Contactors for Switching of WCMC Capacitors

Switching of Power Factor Correction Capacitors

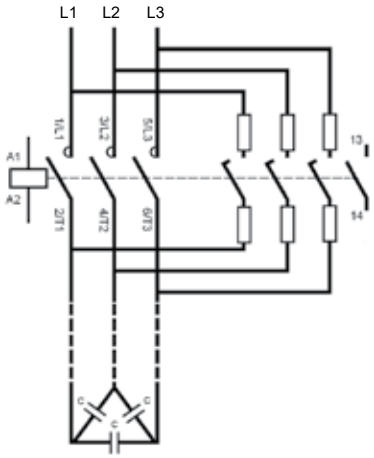
WESTINGHOUSE's special WCMC contactors series for switching of capacitors is designed according to IEC 60947-1 and UL, and provides the best solution for the switching of power factor correction capacitors.

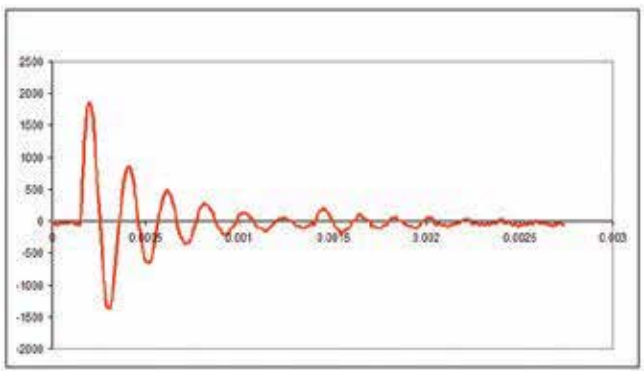
In-Rush Currents

When capacitor banks are switched, the voltage associated with a low line impedance may produce high currents on the capacitors.

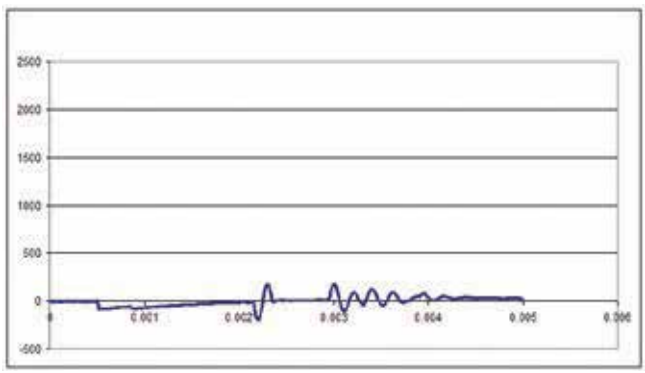
This current may reach 100 x In, being one of the main causes of reduction in the capacitor useful life.

The WCMC contactors feature pre-charge resistors that limit the "in-rush current" when the capacitors are switched. The resistors, mounted in series with the advanced contact blocks, are connected before the main contacts. After the main contacts close, they are disconnected, and only the capacitors in parallel with their inductive load remain for the proper power factor correction.





I_n (A) with standard contactors



I_n (A) with WESTINGHOUSE WCMC contactor

Modular Design

For 35 mm DIN rail
or screw fixing

Damping Resistors

Avoids high in-rush current

Auxiliary Contact

WCMC allows use of standard contact blocks, the same used in CWM line, being either NO or NC

Early Make Contact Block

They connect the pre-charge resistors and then disconnect them after a few moments

Contactors for Switching of WCMC Capacitors

Three-pole from 16 A up to 92 A (θ = 55 ºC)

I_e AC-6b ($T_{amb.}$ = 55 °C) A	Reactive power for capacitors banks AC-6b ($T_{amb.}$ = 55 °C) 220 V 230 V kvar	380 V 415 V kvar	440 V kvar	480 V kvar	660 V kvar	Integrated auxiliary contacts per contator •3 \ •4 NA	•1 / •2 NF	Reference to complete with voltage code	Ref.No.	Weight [2] kg
16	6	10	13	14	14	1	-	WCMC9-10-30 ♦	W606105	0.395
						-	1	WCMC9-01-30 ♦	W606106	
22	8	15	16	17	20	1	-	WCMC18-10-30 ♦	W606107	0.395
						-	1	WCMC18-01-30 ♦	W606108	
30	11	20	23	25	30	1	-	WCMC25-10-30 ♦	W606109	0.440
						-	1	WCMC25-01-30 ♦	W606110	
40	15	26	30	33	40	1	-	WCMC32-10-30 ♦	W606111	0.670
						-	1	WCMC32-01-30 ♦	W606112	
60	25	40	45	50	65	1	-	WCMC50-10-30 ♦	W606113	1.370
						-	1	WCMC50-01-30 ♦	W606114	
77	30	50	60	65	70	1	-	WCMC65-10-30 ♦	W606115	1.370
						-	1	WCMC65-01-30 ♦	W606116	
93	35	61	71	77	87	1	-	WCMC80-10-30 ♦	W606117	1.595
						-	1	WCMC80-01-30 ♦	W606118	

Replace "♦" with the appropriate coil voltage code.[1)]

Alternate Current

Code	X04	X15	X18	X26	X32	X37	X41	X42	X47
V (50 Hz)	20	95	110	190	220	240	325	380	415
V (60 Hz)	24	110	120	220	255	277	380	440	480

Direct Current

Code (WCMC32...65)	C34	C37	C40	C44
V Ac	24...28	42...50	110...130	208...240

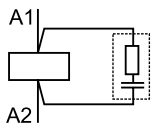
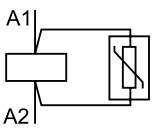
Notes: 1) Other voltages on request;
2) Weights for contactors with alternating current control circuit. For direct current control circuit, add 0.020 kg to the WCMC32 models, and 0.050 kg to the WCMC50/65 models;
3) For WCMC9...32, auxiliary blocks cannot be included in addition to those that are already built-in.

Accessories

Front Mounted Auxiliary Contact Block

Illustrative picture	For use with	Max. number of contacts / contactor	Auxiliary contacts NO	Auxiliary contacts NC	Reference	Ref.No	Weight kg
	WCMC50…80	1 / WCMC50…80	1	0	WCMF10	W606119	0.016
			0	1	WCMF01	W606120	

Surge Suppressors - Connect Directly to Coil Terminals A1-A2 [2)]

Illustrative picture	For use with	Voltage	Circuit diagram	Reference	Code	Weight kg
	WCMC9...32	24 ..48V50/60 Hz		WAMR4 D53	W606121	0.014
		50 ...127V50/60 Hz		WAMR5 D55	W606122	
		130..250V50/60 Hz		WAMR6 D63	W606123	
	WCMC50...80	24..48V50/60 Hz		WAMR7 D53	W606124	
		50..127V50/60 Hz		WAMR8 D55	W606125	
		130..250V50/60 Hz		WAMR9 D63	W606126	
	WCMC9...80	270..380V50/60 Hz		AMAV D68	W606127	
		400..510V50/60 Hz		AMAV D73	W606128	

Spare Coils

Illustrative picture	Control type	For use with	Reference to complete with voltage code	Code	Weigh kg
	AC	WCMC9...25	BCA4-25♦	On request	0.065
		WCMC32	BCA4-40♦	On request	0.110
		WCMC50...80	BCA-105♦	On request	0.140
	DC	WCMC32	BECC4-40♦	On request	0.240
		WCMC50...65	BECC-105♦	On request	0.300

Replace "♦" with the appropriate coil voltage code.[1)]

Alternate Current (0.75 x U_e)

Code	X04	X06	X10	X11	X15	X18	X26	X30	X32	X37	X41	X42	X45	X46	X47	X50
V (50 Hz)	20	24	42	48	95	110	190	208	220	240	325	380	-	400	415	440
V (60 Hz)	24	28	48	56	110	120	220	240	255	277	380	440	400	460	480	510

Direct Current

Code (WCMC32...65)	C34	C37	C40	C44
Vdc	24...28	42...50	110...130	208...240

Notes: 1) Other voltages on request ;
2) WCMC32...65 contactors with DC coil do not require surge suppression blocks, as they have a suppressor built in the coil;
3) For WCMC9...32, auxiliary blocks cannot be included in addition to those that are already built-in.

Technical Data

Basic Data

Models			WCMC9/18	WCMC25	WCMC32	WCMC50/65	WCMC80
Compliance with the standards			IEC 60947-1, IEC 60947-4, DIN VDE 0660(102)				
Rated insulation voltage U_i (pollution degree 3)	IEC 60947-4-1, VDE 0660	(V)	1,000				
	UL, CSA	(V)	600				
Rated impulse withstand voltage U_{imp} (IEC 60947-1)		(kV)	6			8	
Frequency limits		(Hz)	25...400				
Mechanical life	AC coil	(million operations)	1				
	DC coil	(million operations)	1				
Electrical life	I_e (AC-6b)	(million operations)	0.1				
Maximum frequency of operation cycles		(operations/h)	120 (1 operation every 30 seconds)				
Protection rating (IEC 60529)	Main terminals		IP10				
	Coil and auxiliary contacts		IP20			IP10 (coil) and IP20 (auxiliary contacts)	
Mounting			Screws or DIN rail 35 mm (EN 50022)				
Coil connection points	Contactors with AC coil		4		4	3	
	Contactors with DC coil		3		4	3	
Vibration resistance (IEC 60068-2-6)	Open contactor	(g)	3	4.5	7	4.5	5
	Closed contactor	(g)	6	5	9		
Resistance to mechanical shocks (½ sine wave = 11ms - IEC 60068-2-27)	Open contactor	(g)	8		7	6	
	Closed contactor	(g)	12			10	
Ambient temperature	Operation		-25 °C...+55 °C				
	Storage		-55 °C...+80 °C				
Maximum operation altitude without modification in the rated values[1)]			3,000 m				

Control Circuit - Alternate Current (AC)

Models			WCMC9...25	WCMC32	WCMC50...80
Rated insulation voltage U (pollution degree 3)	IEC 60947-4-1, VDE 0660	(V)	1,000	1,000	1,000
	UL, CSA	(V)	600	600	600
Standard voltages at 50 Hz		(V)	10...550	10...550	10...550
Standard voltages at 60 Hz		(V)	12...660	12...660	12...660
Standard voltages at 50/60 Hz		(V)	12...660	12...660	12...660
Control voltage limits					
Coil operation limits		(xUs)	0.85...1.1		
50 Hz and 60 Hz coil	Pick up	(xUs)	0.4...0.76	0.5...0.76	0.5...0.76
	Drop out	(xUs)	0.25...0.65	0.3...0.65	0.25...0.6
Average consumption			1.0 x Us and cold coil		
Coil 0.75 x U_e (50 Hz e 60 Hz)	Closed magnetic circuit	(VA)	6.1...10.2	11.4...15.0	16.8...26
	Power factor	($\cos\varphi$)	0.28	0.34	0.32
	Thermal power dissipation	(W)	2.6	4.3	8
	Closing of the magnetic circuit	(VA)	120.36	177	307
	Power factor	($\cos\varphi$)	0.85	0.69	0.54
Operation average time	Closing of the NO contacts	(ms)	8...20	10...19	15...30
	Opening of the NO contacts	(ms)	6...13	5...25	9...15

Note: 1) For 3,000...4,000 m altitudes (0.90xI_e and 0.80xU_i) and 4,000...5,000 m (0.80xI_e 0.75xU_i).

Control Circuit - Direct Current (DC)

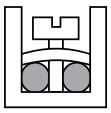
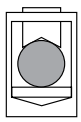
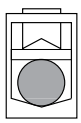
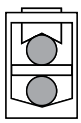
Models			WCMC32	WCMC50...65
Rated insulation voltage U_i (pollution degree 3)	IEC 60947-4-1, VDE 0660	(V)	1,000	1,000
	UL, CSA	(V)	600	600
Standard voltages		(V)	24...240	24...240
Control voltage limits				
Coil operation limits		(xUs)	0.85...1.1	
	Pick up	(xUs)	0.7...0.8	0.7...0.8
	Drop out	(xUs)	0.4...0.6	0.4...0.6
Average consumption			1.0 x Us	
	Closed magnetic circuit	(W)	6	6.5
	Closing of the magnetic circuit	(W)	240	340
Operation average time	Closing of the NO contacts	(ms)	50...60	50...60
	Opening of the NO contacts	(ms)	55...60	55...60

Auxiliary Contact Block

Models			WCMF10 and WCMF01
Compliance with the standards			IEC 60947-5-1, IEC 60947-4-1
Rated insulation voltage U_i (pollution degree 3)	IEC, VDE 0660	(V)	1,000
	UL, CSA	(V)	600
Rated operational voltage U_e	IEC, VDE 0660	(V)	690
	UL, CSA	(V)	600
Conventional thermal current I_{th} (θ ≤55 °C)		(A)	10
Rated operational current I_e			
AC-15 (IEC 60947-5-1)	110-120 V	(A)	10
	220-230 V	(A)	10
	380-400 V	(A)	6
	415-440 V	(A)	5
	500 V	(A)	4
	660-690 V	(A)	2
UL, CSA			A600
DC-13(IEC 60947-5-1)	24 V	(A)	4
	48 V	(A)	2
	110 V	(A)	0.7
	220 V	(A)	0.3
	440 V	(A)	0.15
UL, CSA			Q600
Making capacity	U_e ≤400 V 50/60 Hz - AC-15	(A)	90
Breaking capacity	U_e ≤400 V 50/60 Hz - AC-15	(A)	60
Short circuit protection with fuse (gL/gG)		(A)	10
Control circuit reliability		(V / mA)	17 / 5
Electrical life		(million operations)	1
Mechanical life		(million operations)	10
Non-overlapping time between NO and NC contacts		(ms)	>1.5
Impedance of the contacts		(mΩ)	1.28

Technical Data

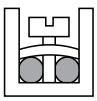
Terminal Capacity and Tightening Torque - Power Circuit

Models			WCMC9/18	WCMC25	WCMC32	WCMC50/65	WCMC80
Mounting system screw type			M3.5 Slot / Phillips	M4 Slot / Phillips	M4 Slot / Phillips	M8 Hexagon socket	M10 Hexagon socket
Conductor cross-section							
Flexible conductor without terminal	(mm²)		1x 1...6 2x 1...2.5 2x 2.5...6	1x 2.5...10 2x 2.5...10	-	-	-
Flexible conductor with terminal	(mm²)		1x 0.5...4 2x 0.5...2.5	1x 1...6.0 2x 1...2.5 2x 2.5...4	-	-	-
Solid wire	(mm²)		1x 0.5...6 2x 0.5...2.5 2x 2.5...6	x 1...10 2x 1...2.5 2x 2.5...10			
Torque	(Nm)		1...1.5	1.6...2.5	-	-	-
Connection of the conductors on top - bottom not used							
Flexible conductor without terminal	(mm²)		-	-	1...16	1.5...35	2.5...50
Flexible conductor with terminal	(mm²)		-	-	0.75...16	1...35	1.5...50
Solid wire	(mm²)		-	-	0.75...16	1...35	1.5...50
Torque	(Nm)		-	-	2...2.5	4...6	5...6.5
Connection of the conductors at the bottom - top not used							
Flexible conductor without terminal	(mm²)		-	-	1.5...16	6...35	6...35
Flexible conductor with terminal	(mm²)		-	-	1...16	2.5...35	4...35
Solid wire	(mm²)		-	-	1...16	2.5...35	4...35
Torque	(Nm)		-	-	2...2.5	4...6	5...6.5
2-conductor connection							
First conductor/top							
Flexible conductor without terminal	(mm²)		-	-	1...16	1.5...35	2.5...50
Flexible conductor with terminal	(mm²)		-	-	0.75...16	1...35	1.5...50
Solid wire	(mm²)		-	-	0.75...16	1...25	1.5...50
Second conductor/bottom							
Flexible conductor without terminal	(mm²)		-	-	1.5...16	6...35	6...35
Flexible conductor with terminal	(mm²)		-	-	1...16	2.5...25	4...35
Solid wire	(mm²)		-	-	1...16	2.5...35	4...35
Torque	(Nm)		-	-	2...2.5	4...6	5...6.5

Terminal Capacity and Tightening Torque - Control Circuit

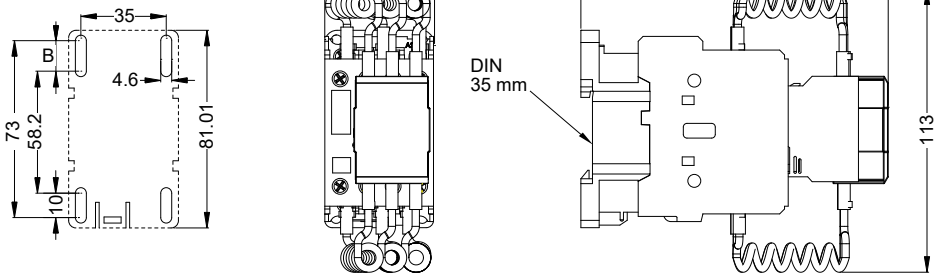
Models			WCMC9...25	WCMC32...80
Mounting system screw type			M3.5 Slot / Phillips	
Conductor cross-section				
Flexible conductor without terminal	(mm²)		1x 1...4 or 2x 1...2.5	
Flexible conductor with terminal / solid wire	(mm²)		1x 0.5...4 or 2x 0.5...1.5 or 2x 1...2.5	
Torque	(Nm)		0.8...1.1	0.8...1.5

Terminal Capacity and Tightening Torque - Auxiliary Contacts

Models			WCMF10 and WCMF01
Mounting system screw type			M3.5 Slot / Phillips
Conductor cross-section			
Conductor with or without terminal	(mm²)		0.75...2.5 or 2x 0.75...2.5
Flexible conductor with terminal / solid wire	(mm²)		1x 0.5...4 or 2x 0.5...2.5
Torque	(Nm)		0.8...1.5

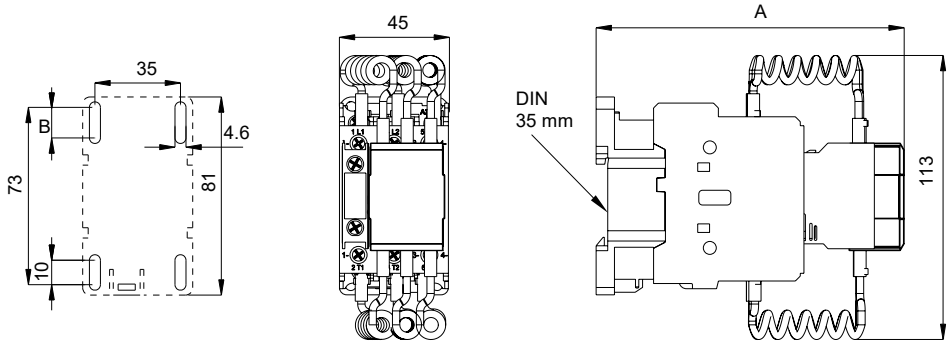
Dimensions (mm)

WCMC9/18



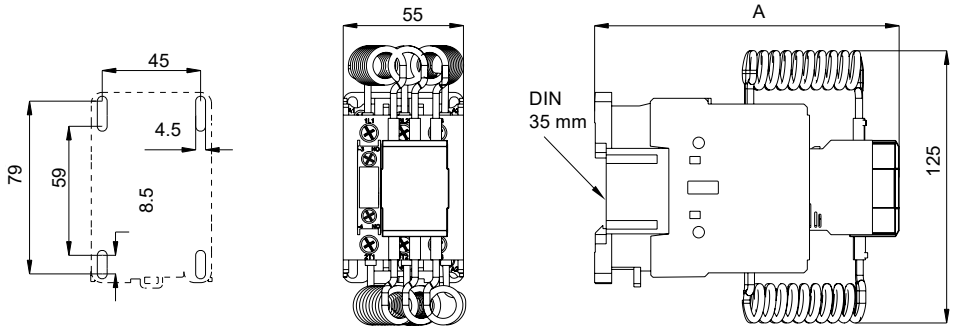
Coil	
AC	DC
A = 126.4	A = 156.7
B = 4.8	B = 12.5

WCMC25



Coil	
AC	DC
A = 129	A = 159
B = 4.8	B = 12.5

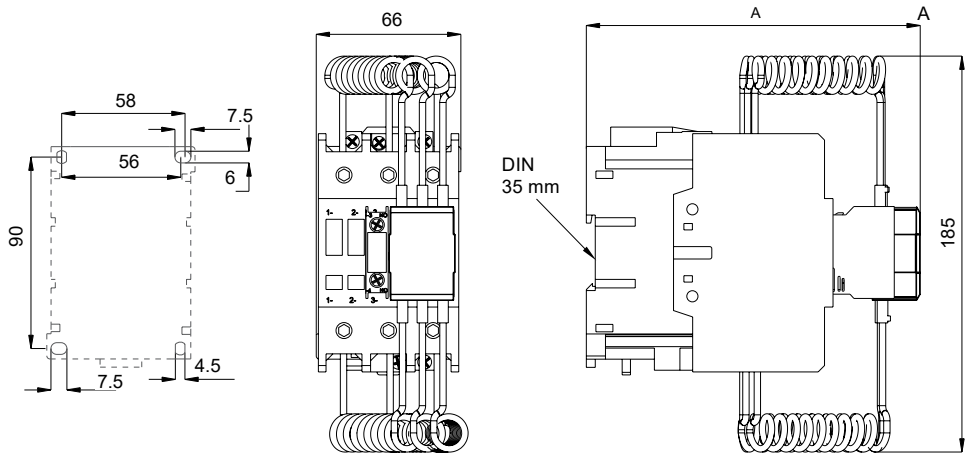
WCMC32



Coil	
AC	DC
A = 140	A = 160

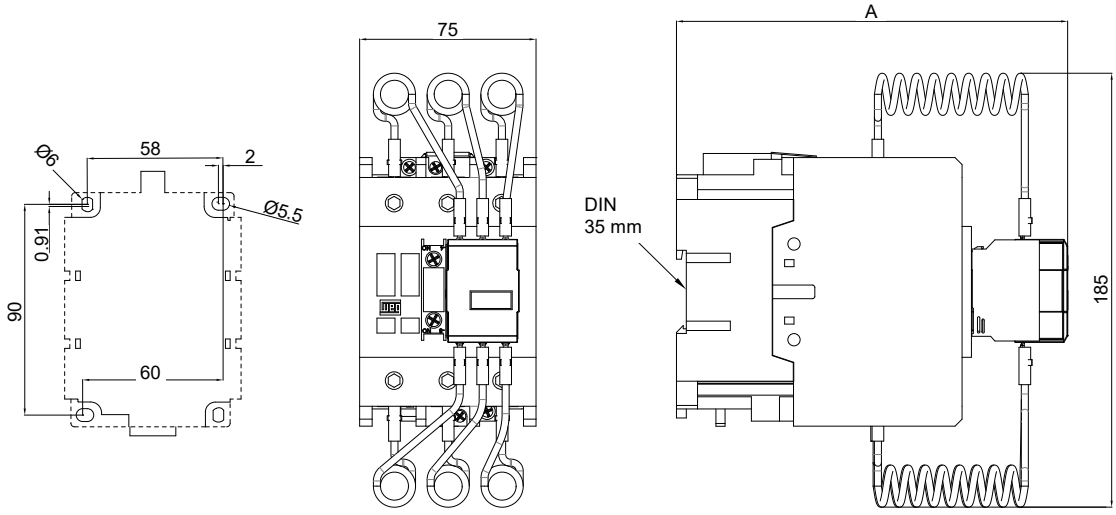
Dimensions (mm)

WCMC50 and WCMC65



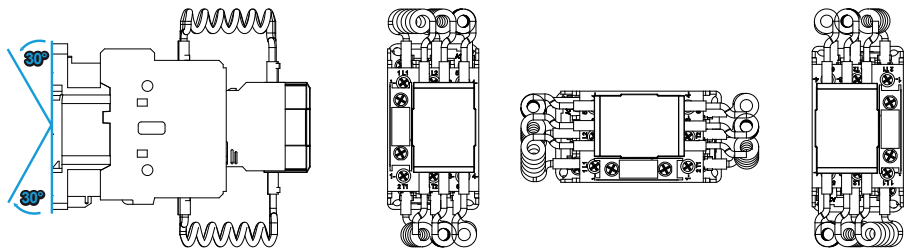
Coil	
AC	DC
A = 158	A = 158

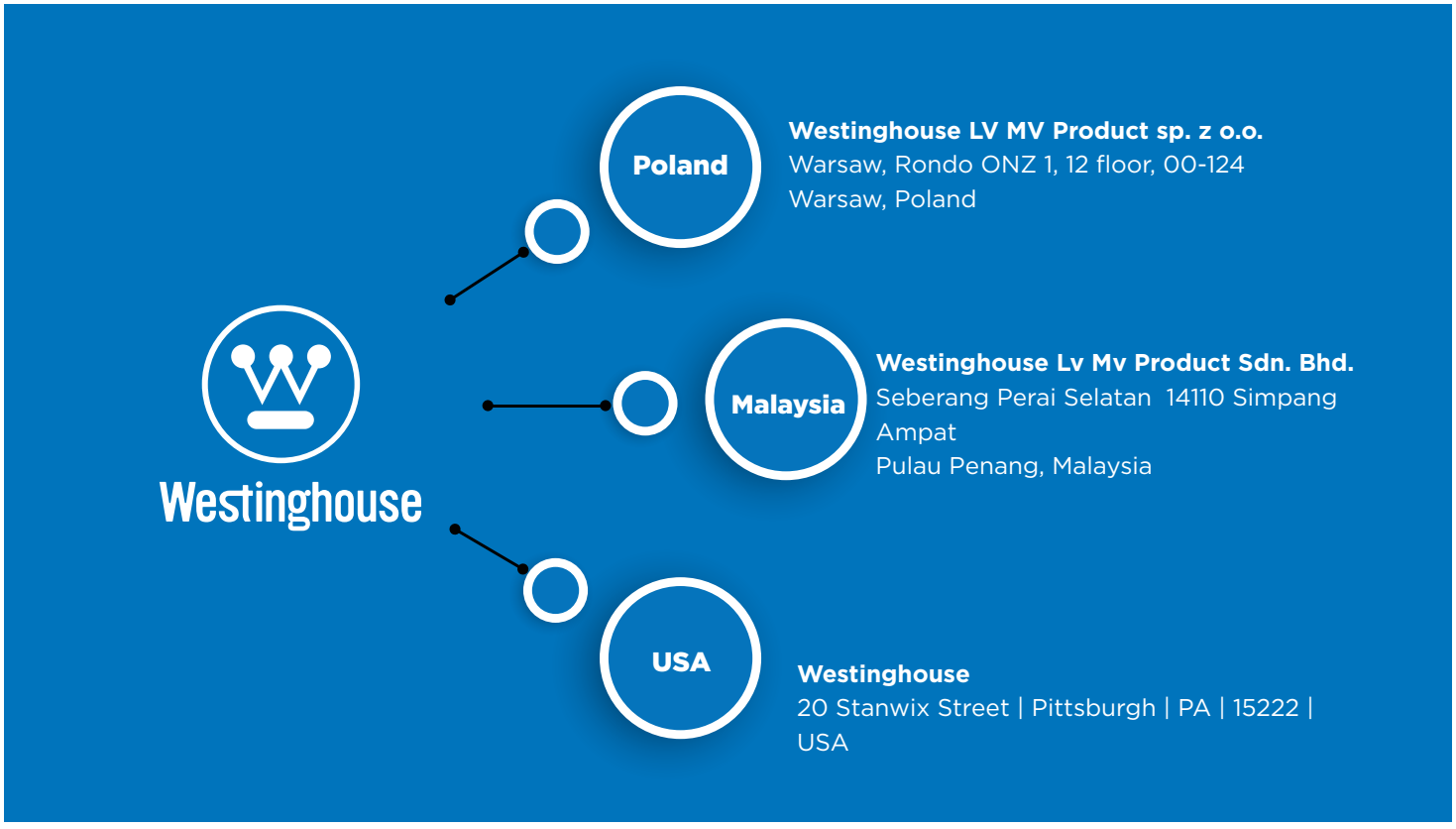
WCMC80



Coil	
AC	DC
A = 167	A = 167

Mounting Position





WWW.westinghouselvmv.com
Email: info@westinghouselvmv.com