

CWB Line

Developed according to IEC 60947 and UL 508 international standards, the new WEG CWB line of contactors meets the requirements of a wide range of industrial applications. The CWBs are designed with the visual pattern and identity of WEG, a brand recognized worldwide for its quality.



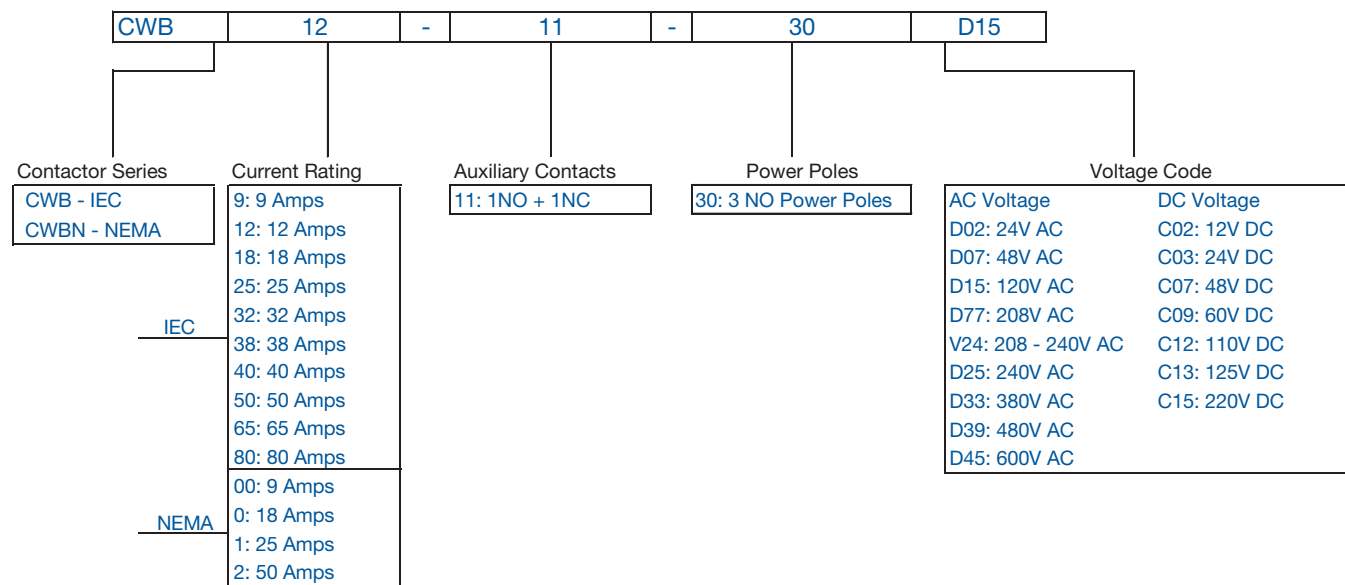
Standard Features:

- “Zero-Width” Mechanical Interlock
- Simple and Compact Mounting of Surge Suppressor Blocks
- Contactor Coil Operated on AC or DC
- Simple and Organized Control Circuits
- Additional Contact Blocks
- Easy Access Power and Control Terminals



UL File No. E202315

CWB Contactor Catalog Number Sequence



Selection Table

Three-Pole CWB Contactors from 9 A to 80 A (AC-3)

AC-3 A	AC-1 A	Maximum UL Horsepower						Built-in auxiliary contacts per contactor		Catalog Number	List Price AC Coil	List Price DC Coil	Multiplier
		Single Phase		Three Phase				 •3 •4 NO	 •1 •2 NC				
		115V	230V	200V	230V	480V	575V						
9	25	3/4	1.5	3	3	5	7 1/2	1	1	CWB9-11-30*	\$72	\$118	Z1
12	25	3/4	2	3	3	7 1/2	10	1	1	CWB12-11-30*	\$89	\$123	
18	32	1	3	5	5	10	15	1	1	CWB18-11-30*	\$103	\$150	
25	40	2	5	7 1/2	7 1/2	15	15	1	1	CWB25-11-30*	\$118	\$177	
32	50	3	5	10	10	20	25	1	1	CWB32-11-30*	\$140	\$220	
38	50	3	7.5	10	10	25	25	1	1	CWB38-11-30*	\$164	\$282	
40	60	3	7 1/2	10	15	30	30	1	1	CWB40-11-30*	\$164	\$282	
50	90	3	10	15	15	40	40	1	1	CWB50-11-30*	\$225	\$310	
65	110	5	10	20	20	50	50	1	1	CWB65-11-30*	\$255	\$350	
80	110	7 1/2	15	20	25	50	60	1	1	CWB80-11-30*	\$270	\$417	

Three-Pole CWB NEMA Rated Sizes 00 - 2

AC-3 A	AC-1 A	Maximum UL Horsepower						Built-in auxiliary contacts per contactor		Catalog Number	List Price AC Coil	List Price DC Coil	Multiplier
		Single Phase		Three Phase				 •3 •4 NO	 •1 •2 NC				
		115V	230V	200V	230V	480V	575V						
9	25	4-Mar	1 1/2	3	3	5	7 1/2	1	1	CWBN00-11-30*	\$103	\$150	Z1
18	32	1	3	5	5	10	15	1	1	CWBN0-11-30*	\$118	\$177	
25	40	2	5	7 1/2	7 1/2	15	15	1	1	CWBN1-11-30*	\$164	\$220	
50	90	3	10	15	15	40	40	1	1	CWBN2-11-30*	\$233	\$330	

Replace “♦” by the appropriate coil voltage code³⁾.

Alternating Current

Code	D02	D07	D15	D77	D25	D33	D39	D45	V24
V (50/60 Hz)	24	48	120	208	240	380	480	600	208-254v

Direct Current

Code	C03	C07	C09	C12	C13	C15
V dc	24	48	60	110	125	220

Notes: 1) Orientative values.

2) Weight for contactors with control circuit in alternate current. For control circuit in direct current, add 0.121 kg to the alternating-current models.

3) Other voltages on request.

General Information
Circuit Protection
Disconnect Switches
Motor Protectors
Contactors
Overloads
Enclosed Starters
Relays
Pushbuttons and Pilot Lights
Terminal Blocks
Power Factor Correction
Appendix A
Appendix B

CWB Series

Accessories and Spare Parts

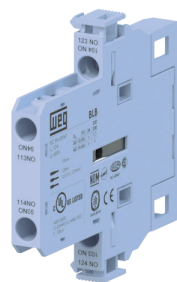
Front Mounted Auxiliary Contact Blocks⁴⁾



.063 kg

For use with	Max. n° of additional contacts / contactor	Auxiliary contacts		Catalog Number	List Price	Multiplier
		NO	NC			
CWB9...38	4 / CWB9...38 4 / CWB40...80 4 / CWB00...2	1	1	BFB-11¹⁾	\$20	Z1
		2	0	BFB-20		
		0	2	BFB-02¹⁾		
		2	2	BFB-22¹⁾		
		2	2	BFB-22 EL³⁾		
		4	0	BFB-40		
		0	4	BFB-04¹⁾		
		3	1	BFB-31¹⁾		
		1	3	BFB-13¹⁾		

Side Mounted Auxiliary Contact Blocks⁴⁾



.034 kg

For use with	Max. n° of additional contacts / contactor	Auxiliary contacts		Catalog Number	List Price	Multiplier
		NO	NC			
CWB9...38	4 / CWB9...38 4 / CWB40...80 4 / CWB00...2	1	1	BLB-11¹⁾	\$22	Z1
		2	0	BLB-20		
		0	2	BLB-02¹⁾		
		1	1	BLRB-11¹⁾²⁾		
		2	0	BLRB-20²⁾		
		0	2	BLRB-02¹⁾²⁾		

Plug-In Surge Suppressors



.008 kg

For use with	Voltage	Diagram	Catalog Number	List Price	Multiplier	
CWB9...38 CWB40...80 CWB00...2	24...48 V 50/60 Hz		RCB-D53	\$30	Z1	
	50...127 V 50/60 Hz		RCB-D55			
	130...250 V 50/60 Hz		RCB-D63			
	12...48 V 50/60 Hz / 12...60 V dc		VRB-E49			
	50...127 V 50/60 Hz / 60...180 V dc		VRB-E34			
	130...250 V 50/60 Hz / 180...300 V dc		VRB-E50			
	277...380 V 50/60 Hz / 300...510 V dc		VRB-E41			
	400...510 V 50/60 Hz		VRB-D73			
	12...600 V dc					DIB-C33
	12...250 V dc					DIZB-C26

Notes: 1) The arrangement of the contacts meets IEC 60947-4-1 Annex F (Mirror Contact) and IEC 60947-5-1 Annex L (Mechanically Linked Contact) requirements.
 2) For combination of 2 side-mounted auxiliary contact blocks at the same side of the contactor.
 3) BFB-22-EL: besides the regular contacts NO and NC, there are two special contacts: early make and late break.
 4) The maximum number of auxiliary contacts assembled on the contactor are 4.

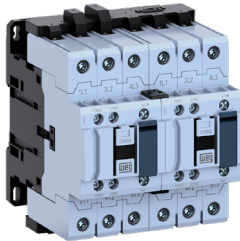
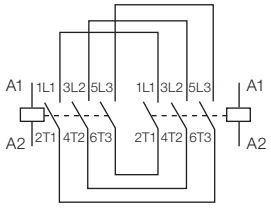
Accessories and Spare Parts

Mechanical Interlock

Image	For use with	Description	Catalog Number	List Price	Multiplier
	CWB9...38 CWB00...1	Mounting set for interlocking two contactors with the same frame type. Fitting through snaps without tools.	IM1	\$12	Z1
	CWB40...80 CWB2		IM2	\$15	

Easy-Connection Setting of the Power Terminals for Reversing Starters

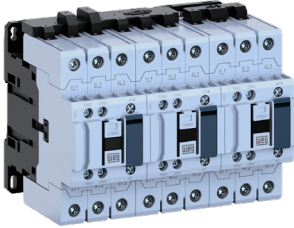
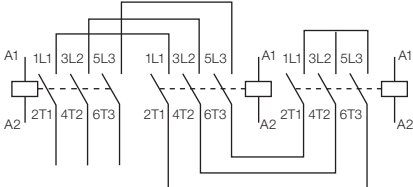
Image	For use with		Orientative rated operational power for reversing starters (AC-4 duty) for three-phase 4-pole motors - 60 Hz - 1,800 rpm		Catalog Number	List Price	Multiplier
	K1=K2		230 V kW / cv	400 V kW / cv			
	CWB9/CWB00		1.5 / 2.0	2.2 / 2.9	EC-R1	\$60	Z1
	CWB12		1.5 / 2.0	3.7 / 5.0			
	CWB18/CWB0		2.2 / 2.9	4 / 5.4			
	CWB25/CWB1		3 / 4.0	5.5 / 7.4			
	CWB32		4 / 5.4	7.5 / 10.1			
	CWB38		4 / 5.4	7.5 / 10.1	EC-R2	\$75	
	CWB40		4.5 / 6.0	9.2 / 12.3			
	CWB50/CWB2		5.5 / 7.4	11 / 14.7			
	CWB65		7.5 / 10.1	15 / 20.1			
	CWB80		11 / 14.7	18.5 / 24.8			

Electric diagram

Power Terminal Easy-Connection Set for Star-Delta Starters

Image	For use with		Orientative rated operational power in AC-3 Three-phase motor - IV poles - 1,800 rpm		Catalog Number	List Price	Multiplier
	K1=K2	K3	230 V kW / cv	400 V kW / cv			
	CWB9	CWB9	4 / 5.4	7.5 / 10	EC-SD1	\$75	Z1
	CWB12	CWB9	5.5 / 7.5	11 / 15			
	CWB18	CWB12	9.2 / 12.5	15 / 20			
	CWB25	CWB18	11 / 15	22 / 30			
	CWB32	CWB18	15 / 20	-			
	CWB38	CWB25	18.5 / 25	30 / 40	EC-SD2	\$90	
	CWB50	CWB40	22 / 30	45 / 61			
	CWB65	CWB40	30 / 40	55 / 75			
	CWB80	CWB50	45 / 61	75 / 102			

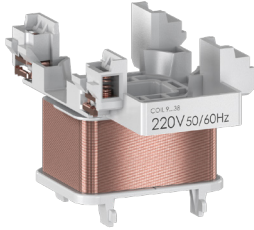
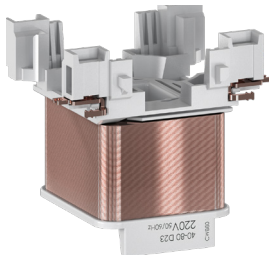
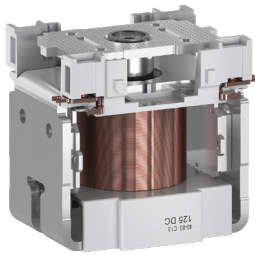



Electric diagram

CWB Series

Accessories and Spare Parts

Spare Coils for Contactors¹⁾

Image	For use with	Control type	Reference to fill in with the control voltage	List Price	Multiplier
	CWB9...38 CWB00...1	AC	BRB-38♦	\$22	
	CWB40...80 CWB2	AC	BRB-80♦	\$40	Z1
	CWB40...80 CWB2	DC	BRB-80♦	\$110	

Replace “♦” by the appropriate coil voltage code.

To complete the Part Number, replace “♦” by the appropriate coil voltage code.

Alternating Current

Coil voltage code	D02	D07	D13	D15	D17	D77	D23	D24	D25	D33	D34	D35	D36	D39	D45
V (50/60 Hz)	24	48	110	120	127	208	220	230	240	380	400	415	440	480	600

Note: other coil voltages available upon request.

Direct Current

Code	C03	C07	C09	C12	C13	C15
V dc	24	48	60	110	125	220

Note: 1) Spare coil in direct current (DC) only for CWB40...80 A.

General Information

Circuit Protection

Disconnect Switches

Motor Protectors

Contactors

Overloads

Enclosed Starters

Relays

Pushbuttons and Pilot Lights

Terminal Blocks

Power Factor Correction

Appendix A

Appendix B

Technical Data

Terminal Markings According to IEC/EN 60947

Diagram	Configuration	Auxiliary contacts		Reference code
		NO	NC	
3-poles contactors with built-in auxiliary contacts				
	11	1	1	CWB9-11-30◆ CWB12-11-30◆ CWB18-11-30◆ CWB25-11-30◆ CWB32-11-30◆ CWB38-11-30◆ CWB40-11-30◆ CWB50-11-30◆ CWB65-11-30◆ CWB80-11-30◆
Front mounted auxiliary contact blocks				
	20	2	0	BFB-20
	11	1	1	BFB-11
	02	0	2	BFB-02
	40	4	0	BFB-40
	22	2	2	BFB-22
	22	2	2	BFB-22 EL
	04	0	4	BFB-04
	31	3	1	BFB-31
	13	1	3	BFB-13
Side mounted auxiliary contact blocks				
	11	1	1	BLB11
	20	2	0	BLB20
	02	2	0	BLB02
	11	1	1	BLRB11
	20	2	0	BLRB20
	02	2	0	BLRB02

Technical Data

Terminal Markings According to EN 50012

Diagram	Configuration	Auxiliary contacts		Reference code
		NO	NC	
Front mounting auxiliary contact blocks				
	20	2	0	BFB-20 EN
	11	1	1	BFB-11 EN
	02	0	2	BFB-02 EN
	40	4	0	BFB-40 EN
	22	2	2	BFB-22 EN
	04	0	4	BFB-04 EN
	31	3	1	BFB-31EN
	13	1	3	BFB-13 EN

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Technical Data

General Data

Reference code			CWB9	CWB12	CWB18	CWB25	CWB32	CWB38	CWB40	CWB50	CWB65	CWB80	
Compliance with the standards			IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1, UL 508										
Rated insulation voltage U_i (pollution degree 3)	IEC/EN 60947-4-1	(V)	690 V					1,000 V					
	UL, CSA	(V)	600 V										
Rated impulse-withstand voltage U_{imp}	IEC/EN 60947-1	(kV)	6 kV										
Frequency limits		(Hz)	25...400										
Mechanical lifespan	AC coil (million cycles)		10					6					
	DC coil (million cycles)		10					6					
Electrical lifespan	I_e AC-3 (million cycles)		2.0	2.0	1.8	1.6	1.6	1.2	1.6	1.6	1.6	1.2	
Degree of protection (IEC/EN 60529)	Main terminals		IP10 (front)										
	Coil and auxiliary contacts		IP20 (front)										
Mounting			By screws or DIN 35 mm rail (EN 50022)										
Coil connection points	Contactors with AC coil		2										
	Contactors with DC coil		2										
Vibration resistance (IEC/EN 60068-2-6)	Open contactor	(g)	4										
	Closed contactor	(g)	4										
Resistance to mechanical shocks (½ sine wave = 11 ms - IEC/EN 60068-2-27)	Open contactor	(g)	10										
	Closed contactor	(g)	15										
Ambient temperature	Operating		-25 °C...+55 °C										
	Storage		-55 °C...+80 °C										
Maximum operation altitude without modification in the rated values ¹⁾			3,000 m										

Control Circuit - Alternating Current (AC)

Reference code			CWB9...38				CWB40...80			
Rated insulation voltage U_i (pollution degree 3)	IEC/EN 60947-4-1	(V)	690				1,000			
	UL, CSA	(V)	600				600			
Standard voltages at 50/60 Hz		(V)	12...600				24...600			
Coil operating limits		(xUs)	0.8...1.1				0.8...1.1			
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			Operating at 60 Hz		Operating at 50 Hz		Operating at 60 Hz		Operating at 50 Hz	
Coil 50/60 Hz	Magnetic circuit closed	(VA)	7.5		9		17.2		27	
	Power factor switching on (cos φ)		0.7		0.8		0.55		0.56	
	Power factor switched on		0.27		0.24		0.28		0.25	
	Thermal power dissipation	(W)	5...7		5...7		3.7...6.3		3.7...6.3	
	Closing of the magnetic circuit	(VA)	75		90		185		202	
Operation average time	Closing of the NO contacts	(ms)	15...25				10...15			
	Opening of the NO contacts	(ms)					8...12			

Control Circuit - Direct Current (DC)

Reference code			CWB9...38				CWB40...80			
Rated insulation voltage U_i (pollution degree 3)	IEC/EN 60947-4-1	(V)	690				1,000			
	UL, CSA	(V)	600				600			
Standard voltages		(V)	12...500				12...500			
Coil operating limits		(xUs)	0.8...1.1				0.8...1.1			
	Pick up	(xUs)	0.5...0.8				0.5...0.8			
	Drop out	(xUs)	0.1...0.4				0.1...0.4			
Average consumption			1.0 x use the coil cold				1.0 x use the coil cold			
	Magnetic circuit closed	(W)	5.8				14.5			
	Closing of the magnetic circuit	(W)	5.8				105			
Operation average time	Closing of the NO contacts	(ms)	35...45				20...30			
	Opening of the NO contacts	(ms)	8...12				4...8			
Thermal power dissipation		(W)	5...7				12...16			

Note: 1) For altitudes of 3,000...4,000 m ($0.90 \times I_e$ and $0.80 \times U_i$) and of 4,000...5,000 m ($0.80 \times I_e$ and $0.75 \times U_i$).

CWB Series

Technical Data

Main Contacts

Reference code			CWB9	CWB12	CWB18	CWB25	CWB32	CWB38	CWB40	CWB50	CWB65	CWB80	
Rated operational current I_o	AC-3 ($U_e \leq 440$ V)	(A)	9	12	18	25	32	38	40	50	65	80	
	AC-4 ($U_e \leq 440$ V)	(A)	4.4	5.8	8.5	10.4	13.7	13.7	18.5	18.5	26	32	
	AC-1 ($\theta \leq 55$ °C, $U_e \leq 690$ V)	(A)	25	25	32	40	50	50	60	90	110	110	
Rated operational voltage U_e	IEC/EN 60947-4-1	(V)	690 V					1,000 V					
	UL, CSA	(V)	600 V										
Conventional thermal current I_m ($\theta \leq 55$ °C)		(A)	25	25	32	40	50	50	60	90	110	110	
Making capacity - IEC/EN 60947		(A)	250	250	300	450	550	550	550	1,000	1,000	1,000	
Breaking capacity IEC/EN 60947	($U_e \leq 400$ V)	(A)	250	250	300	450	550	550	550	1,000	1,000	1,000	
	($U_e = 500$ V)	(A)	220	220	250	350	450	450	480	880	880	880	
	($U_e = 690$ V)	(A)	150	150	180	250	350	350	350	640	640	640	
Acceptable short-time current (no current flowing during re-recovery time of 15min and $\theta \leq 40$ °C)	1s	(A)	210	210	240	380	400	430	720	820	900	900	
	10s	(A)	105	105	145	240	260	310	320	400	520	640	
	1min	(A)	60	60	80	120	130	150	165	230	340	360	
	10min	(A)	30	30	40	50	60	60	85	110	130	130	
Short circuit protection of the main contacts	@600 V - UL/CSA	(kA)	5										
	Coordination type 1	(A)	25	40	50	63	63	63	80	100	125	160	
Fuse (g/L/gG)	Coordination type 2	(A)	20	20	25	35	50	50	63	80	100	125	
Impedance per pole		(m Ω)	2.5	2.5	2.5	2	2	2	1.6	1.6	1.6	1.6	
Average power dissipation per pole	AC-1	(W)	1.5	1.5	2.5	3.2	5	5	6	13	19	19	
	AC-3	(W)	0.2	0.4	0.8	1.2	2	3	3	4	7	10	
Utilization category AC-3													
Rated operational current I_o ($\theta \leq 55$ °C)	$U_e \leq 440$ V	(A)	9	12	18	25	32	38	40	50	65	80	
	$U_e \leq 500$ V	(A)	9	12	15.8	23	28.5	28.5	35	45	55	75	
	$U_e \leq 690$ V	(A)	7	9	12.8	16.5	21	21	32	35	40	50	
Orientative rated operational power Three-phase induction motors (50/60 Hz) IV poles - 1,800 rpm	220/240 V	(kW)	2.2	3	4.5	6.5	7.5	9.2	11	15	18.5	22	
		(cv)	3	4	6	8.7	10	12.5	15	20	25	29	
	380/400 V	(kW)	4	5.5	7.5	12.5	15	18.5	18.5	22	30	37	
		(cv)	5.5	7.5	10	16.8	20	25	25	29	40	50	
	415/440 V	(kW)	4.5	6.5	9.2	12.5	15	18.5	22	30	37	45	
		(cv)	6	8.7	12.5	16.8	20	25	29	40	50	60	
	500 V	(kW)	5.5	7.5	10	15	18.5	18.5	22	30	37	55	
		(cv)	7.5	10	13.4	20	25	25	29	40	50	74	
	660/690 V	(kW)	5.5	7.5	11	15	18.5	18.5	30	33	37	45	
		(cv)	7.5	10	15	20	25	25	40	44	50	60	
Maximum percentage	600 ops./h	(%)	100	100	100	100	100	100	100	100	100	100	
Utilization category AC-4													
Rated operational current I_o	($U_e \leq 440$ V)	(A)	4.4	5.8	8.5	10.4	13.7	13.7	18.5	18.5	26	32	
	($U_e \leq 500$ V)	(A)	3.9	5.1	7.5	12	13.9	13.9	17.5	23.5	28.5	33	
	($U_e \leq 690$ V)	(A)	2.8	3.7	5.4	12	12.8	12.8	14	18	22	26	
Orientative rated operational power Three-phase induction motors (50/60 Hz) IV poles - 1,800 rpm (200,000 operations)	220/240 V	(kW)	1.5	1.5	2.2	3	4	4	4.5	5.5	7.5	11	
		(cv)	2.0	2.0	2.9	4.0	5.4	5.4	6.0	7.4	10.1	14.7	
	380/400 V	(kW)	2.2	3.7	4	5.5	7.5	7.5	9.2	11	15	18.5	
		(cv)	2.9	5.0	5.4	7.4	10.1	10.1	12.3	14.7	20.1	24.8	
	415/440 V	(kW)	2.2	3	3.7	5.5	7.5	7.5	11	11	15	22	
		(cv)	2.9	4.0	5.0	7.4	10.1	10.1	14.7	14.7	20.1	29.5	
	500 V	(kW)	2.2	3	5	7.5	9	9	11	15	18.5	22	
		(cv)	2.9	4.0	6.7	10.1	12.1	12.1	14.7	20.1	24.8	29.5	
	660/690 V	(kW)	2.2	3	5	10	11	11	12.5	15	20	25	
		(cv)	2.9	4.0	6.7	13.4	14.7	14.7	16.8	20.1	26.8	33.5	

Technical Data
Main Contacts

Reference code			CWB9	CWB12	CWB18	CWB25	CWB32	CWB38	CWB40	CWB50	CWB65	CWB80
			Utilization category AC-1									
			3P (NO)									
Conventional thermal current I _{th} (θ ≤ 55 °C)	(A)		25	25	32	40	50	50	60	90	110	110
Maximum orientative operational current according to the ambient temperature	θ ≤ 60 °C (U _e ≤ 690 V)	(A)	25	25	32	40	50	50	60	90	110	110
Max. operational power θ ≤ 55 °C (three-phase resistors)	220/230 V	(kW)	9.5	9.5	12	15	19	19	22.5	34	42	42
	380/400 V	(kW)	16.5	16.5	21	26	33	33	39.5	59	72.5	72.5
	415/440 V	(kW)	19	19	24.5	30.5	38	38	45.5	68.5	84	84
	500 V	(kW)	21.5	21.5	27.5	34.5	43	43	52	77	95	95
	660/690 V	(kW)	28.5	28.5	36.5	45.5	57	57	66	100	125	125
Current values for connection	2 poles in parallel		I _b x 1.7									
	3 poles in parallel		I _b x 2.4									
	4 poles in parallel		-									
Percentage of maximum operational current	600 ops./h	(%)	100	100	100	100	100	100	100	100	100	100

Auxiliary Contacts

Reference code			CWB9...38 (built-in)	BFB (front mounted)	BLB (side mounted)
Compliance with the standards			IEC/EN 60947-5-1		
Rated insulation voltage U _i (pollution degree 3)	IEC/EN 60947-4-1, VDE 0660	(V)	690		
	UL, CSA	(V)	600		
Rated operational voltage U _e	IEC/EN 60947-4-1, VDE 0660	(V)	690		
	UL, CSA	(V)	600		
Conventional thermal current I _{th} (θ ≤ 55 °C)	(A)	10			
Rated operational current I _b					
AC-15 (IEC/EN 60947-5-1)	220/230 V	(A)	10		
	380/440 V	(A)	4		
	500 V	(A)	2.5		
	660/690 V	(A)	1.5		
DC-13 (IEC/EN 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		
Making capacity	U _e ≤ 690 V 50/60 Hz - AC-15	(A)	10 x I _b		
Breaking capacity	U _e ≤ 400 V 50/60 Hz - AC-15	(A)	1 x I _b		
Short circuit protection with fuse (gL/gG)	(A)	10			
Control circuit reliability	(V / mA)	17 / 5			
Electrical lifespan	(million cycles)	1			
Mechanical lifespan	(million cycles)	10			
Non-overlapping time between NO and NC contacts	(ms)	1.5			
Impedance of the contacts	(mΩ)	2.5			

CWB Series

Technical Data

Terminal Capacity and Tightening Torque

			Conductor cross-section		
			Power circuit		
Model			CWB9...18	CWB25...38	CWB40...80
Mounting system screw type			Phillips number 2	Phillips number 2	ALLEN 4 mm
Flexible conductor without terminal	AWG		1 x 16-10 2 x 16-10	1 x 16-10 2 x 16-10	1 x 14-3 2 x 14-3
Flexible conductor with terminal	AWG		1 x 16-10 2 x 16-12	1 x 16-8 2 x 16-10	1 x 14-3 2 x 14-3
Solid wire	AWG		1 x 16-10 2 x 16-10	1 x 14-18 2 x 14-18	1 x 14-3 2 x 14-3
Tightening torque	(Nm)		1.7	2.5	5.0
Control and auxiliary circuit					
Models			CWB9...38	CWB40...80	
Mounting system screw type			Phillips number 2		Phillips number 2
Flexible conductor without terminal	AWG		1 x 16-12 2 x 16-12		1 x 16-12 2 x 16-12
Flexible conductor with terminal	AWG		1 x 16-12 2 x 16-14		1 x 16-12 2 x 16-14
Solid wire	AWG		1 x 16-12 2 x 16-12		1 x 16-12 2 x 16-12
Tightening torque	(Nm)		1.0		1.0
Auxiliary contact blocks					
Models			BFB (front)	BLB (side)	
Mounting system screw type			Phillips number 2		
Conductor cross-section					
Flexible conductor without terminal	AWG		1 x 16-14 2 x 16-14		
Flexible conductor with terminal	AWG		1 x 16-14 2 x 16-14		
Solid wire	AWG		1 x 16-14 2 x 16-14		
Tightening torque	(Nm)		1.0		

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Technical Data

CWBN

General Data

Reference code			CWBN00	CWBN0	CWBN1	CWBN2
Compliance with the standards			IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1, UL 508			
Rated insulation voltage U_i (pollution degree 3)	IEC/EN 60947-4-1	(V)	690 V			1,000 V
	UL, CSA	(V)	600 V			
Rated impulse-withstand voltage U_{imp}	IEC/EN 60947-1	(kV)	6 kV			
Frequency limits		(Hz)	25...400			
Mechanical lifespan	AC coil	(million cycles)	10		6	
	DC coil	(million cycles)	10		6	
Electrical lifespan	le AC-3	(million cycles)	2.0	1.8	1.6	1.6
Degree of protection (IEC/EN 60529)	Main terminals		IP10 (front)			
	Coil and auxiliary contacts		IP20 (front)			
Mounting			By screws or DIN 35 mm rail (EN 50022)			
Coil connection points	Contactors with AC coil		2			
	Contactors with DC coil		2			
Vibration resistance (IEC/EN 60068-2-6)	Open contactor	(g)	4			
	Closed contactor	(g)	4			
Resistance to mechanical shocks (½ sine wave = 11ms - IEC/EN 60068-2-27)	Open contactor	(g)	10			
	Closed contactor	(g)	15			
Ambient temperature	Operating		-25 °C...+55 °C			
	Storage		-55 °C...+80 °C			
Maximum operation altitude without modification in the rated values1)			3,000 m			

Control Circuit - Alternating Current (AC)

Reference code			CWBN00...1		CWBN2	
Rated insulation voltage U_i (pollution degree 3)	IEC/EN 60947-4-1	(V)	690		1,000	
	UL, CSA	(V)	600		600	
Standard voltages at 50/60 Hz		(V)	12...600		24...600	
Coil operating limits		(xUs)	0.8...1.1		0.8...1.1	
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			Operating at 60 Hz	Operating at 50 Hz	Operating at 60 Hz	Operating at 50 Hz
Coil 50/60 Hz	Magnetic circuit closed	(VA)	7.5	9	17.2	27
	Power factor switching on	(cos ϕ)	0.7	0.8	0.55	0.56
	Power factor switched on		0.27	0.24	0.28	0.25
	Thermal power dissipation	(W)	5...7	5...7	3.7...6.3	3.7...6.3
	Closing of the magnetic circuit	(VA)	75	90	185	202
Operation average time	Closing of the NO contacts	(ms)	15...25		10...15	
	Opening of the NO contacts	(ms)	8...12			

Control Circuit - Direct Current (DC)

Reference code			CWBN00...1		CWBN2	
Rated insulation voltage U_i (pollution degree 3)	IEC/EN 60947-4-1	(V)	690		1,000	
	UL, CSA	(V)	600		600	
Standard voltages		(V)	12...500		12...500	
Coil operating limits		(xUs)	0.8...1.1		0.8...1.1	
Coil 50/60 Hz	Pick up	(xUs)	0.5...0.8		0.5...0.8	
	Drop out	(xUs)	0.1...0.4		0.1...0.4	
Average consumption			1.0 x use the coil cold		1.0 x use the coil cold	
Operation average time	Magnetic circuit closed	(W)	5.8		14.5	
	Closing of the magnetic circuit	(W)	5.8		105	
	Closing of the NO contacts	(ms)	35...45		20...30	
	Opening of the NO contacts	(ms)	8...12		4...8	
Thermal power dissipation		(W)	5...7		12...16	

Note: 1) For altitudes of 3,000...4,000 m (0.90 x l_e and 0.80 x U_i) and of 4,000...5,000 m (0.80 x l_e and 0.75 x U_i).

CWBN

Technical Data

Main Contacts

Reference code			CWBN00	CWBN0	CWBN1	CWBN2	
Rated operational current Ie	AC-3 (Ue ≤440 V)	(A)	9	18	25	50	
	AC-4 (Ue ≤440 V)	(A)	4.4	8.5	10.4	18.5	
	AC-1 (0 ≤55 °C, Ue ≤690 V)	(A)	25	32	40	90	
Rated operational voltage Ue	IEC/EN 60947-4-1	(V)	690 V			1,000 V	
	UL, CSA	(V)	600 V				
Conventional thermal current Ith (0≤55 °C)		(A)	25	32	40	90	
Making capacity - IEC/EN 60947		(A)	250	300	450	1,000	
Breaking capacity IEC/EN 60947	(Ue ≤400 V)	(A)	250	300	450	1,000	
	(Ue = 500 V)	(A)	220	250	350	880	
	(Ue = 690 V)	(A)	150	180	250	640	
Acceptable short-time current (no current flowing during recovery time of 15min and 0 ≤40 °C)	1s	(A)	210	240	380	820	
	10s	(A)	105	145	240	400	
	1min	(A)	60	80	120	230	
	10min	(A)	30	40	50	110	
Short circuit protection of the main contacts Fuse (gL/gG)	@600 V - UL/CSA	(kA)	5				
	Coordination type 1	(A)	25	50	63	100	
	Coordination type 2	(A)	20	25	35	80	
Impedance per pole		(m)	2.5	2.5	2	1.6	
Average power dissipation per pole	AC-1	(W)	1.5	2.5	3.2	13	
	AC-3	(W)	0.2	0.8	1.2	4	
Utilization category AC-3							
Rated operational current Ie (0 ≤55 °C)	Ue ≤440 V	(A)	9	18	25	50	
	Ue ≤500 V	(A)	9	15.8	23	45	
	Ue ≤690 V	(A)	7	12.8	16.5	35	
Orientative rated operational power Three-phase induction motors (50/60 Hz) IV poles - 1,800 rpm	220/240 V	(kW)	2.2	4.5	6.5	15	
		(cv)	3	6	8.7	20	
	380/400 V	(kW)	4	7.5	12.5	22	
		(cv)	5.5	10	16.8	29	
	415/440 V	(kW)	4.5	9.2	12.5	30	
		(cv)	6	12.5	16.8	40	
	500 V	(kW)	5.5	10	15	30	
		(cv)	7.5	13.4	20	40	
	660/690 V	(kW)	5.5	11	15	33	
		(cv)	7.5	15	20	44	
	Maximum percentage	600 ops./h	(%)	100	100	100	100
	Utilization category AC-4						
Rated operational current Ie	(Ue ≤440 V)	(A)	4.4	8.5	10.4	18.5	
	(Ue ≤500 V)	(A)	3.9	7.5	12	23.5	
	(Ue ≤690 V)	(A)	2.8	5.4	12	18	
Orientative rated operational power Three-phase induction motors (50/60 Hz) IV poles - 1,800 rpm (200,000 operations)	220/240 V	(kW)	1.5	2.2	3	5.5	
		(cv)	2.0	2.9	4.0	7.4	
	380/400 V	(kW)	2.2	4	5.5	11	
		(cv)	2.9	5.4	7.4	14.7	
	415/440 V	(kW)	2.2	3.7	5.5	11	
		(cv)	2.9	5.0	7.4	14.7	
	500 V	(kW)	2.2	5	7.5	15	
		(cv)	2.9	6.7	10.1	20.1	
	660/690 V	(kW)	2.2	5	10	15	
		(cv)	2.9	6.7	13.4	20.1	

Technical Data

Main Contacts

Reference code			CWBN00	CWBN0	CWBN1	CWBN2
			Utilization category AC-1			
			3P (NO)			
Conventional thermal current I _{th} (0 ≤ 55 °C)	(A)		25	32	40	90
Maximum orientative operational current according to the ambient temperature 0 ≤ 60 °C (U _e ≤ 690 V)	(A)		25	32	40	90
Max. operational power 0 ≤ 55 °C (three-phase resistors)	220/230 V	(kW)	9.5	12	15	34
	380/400 V	(kW)	16.5	21	26	59
	415/440 V	(kW)	19	24.5	30.5	68.5
	500 V	(kW)	21.5	27.5	34.5	77
	660/690 V	(kW)	28.5	36.5	45.5	100
Current values for connection	2 poles in parallel		I _e x 1.7			
	3 poles in parallel		I _e x 2.4			
	4 poles in parallel		-			
Percentage of maximum current	600 ops./h operational	(%)	100	100	100	100

Auxiliary Contacts

Reference code			CWBN00 (built-in)	BFB (front mounted)	BLB (side mounted)
			IEC/EN 60947-5-1		
Compliance with the standards			IEC/EN 60947-5-1		
Rated insulation voltage U _i (pollution degree 3)	IEC/EN 60947-4-1, VDE 0660	(V)	690		
	UL, CSA	(V)	600		
Rated operational voltage U _e	IEC/EN 60947-4-1, VDE 0660	(V)	690		
	UL, CSA	(V)	600		
Conventional thermal current I _{th} (0 ≤ 55 °C)		(A)	10		

Rated operational current I_e

AC-15 (IEC/EN 60947-5-1)	220/230 V	(A)	10		
	380/440 V	(A)	4		
	500 V	(A)	2.5		
	660/690 V	(A)	1.5		
DC-13 (IEC/EN 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		
Making capacity	U _e ≤ 690 V 50/60 Hz - AC-15		(A)	10 x I _e	
Breaking capacity	U _e ≤ 400 V 50/60 Hz - AC-15		(A)	1 x I _e	
Short circuit protection with fuse (gL/gG)		(A)	10		
Control circuit reliability (V / mA)			17 / 5		
Electrical lifespan (million cycles)			1		
Mechanical lifespan (million cycles)			10		
Non-overlapping time between NO and NC contacts		(ms)	1.5		
Impedance of the contacts		(mΩ)	2.5		

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CWBN

Technical Data

Terminal Capacity and Tightening Torque

		Conductor cross-section		
Power circuit				
Model		CWBN00/CWBNO	CWBN1	CWBN2
Mounting system screw type		Phillips number 2		
Flexible conductor without terminal		1 x 1...6 mm ² / 16...10 AWG 2 x 1...6 mm ² / 16...10 AWG	1 x 2.5...10 mm ² / 14...8 AWG 2 x 2.5...10 mm ² / 14...8 AWG	1 x 2.5...35 mm ² / 14...2 AWG 2 x 2.5...35 mm ² / 14...2 AWG
Flexible conductor with terminal		1 x 1...6 mm ² / 16...10 AWG 2 x 1...4 mm ² / 16...12 AWG	1 x 1.5...10 mm ² / 16...8 AWG 2 x 1.5...6 mm ² / 16...10 AWG	1 x 2.5...35 mm ² / 14...2 AWG 2 x 2.5...35 mm ² / 14...2 AWG
Solid wire		1 x 1...6 mm ² / 16...10 AWG 2 x 1...6 mm ² / 16...10 AWG	1 x 2.5...10 mm ² / 14...8 AWG 2 x 2.5...10 mm ² / 14...8 AWG	1 x 2.5...35 mm ² / 14...2 AWG 2 x 2.5...35 mm ² / 14...2 AWG
Tightening torque		1.7 Nm / 15 lb.in	2.5 Nm / 22 lb.in	5.0 Nm / 60 lb.in
Control and auxiliary circuit				
Models		CWBN00..1	CWBN2	
Mounting system screw type		Phillips number 2		
Flexible conductor without terminal		1 x 1...4 mm ² / 16...12 AWG 2 x 1...4 mm ² / 16...12 AWG	1 x 1...4 mm ² / 16...12 AWG 2 x 1...4 mm ² / 16...12 AWG	
Flexible conductor with terminal		1 x 1...4 mm ² / 16...12 AWG 2 x 1...2.5 mm ² / 16...14 AWG	1 x 1...4 mm ² / 16...12 AWG 2 x 1...2.5 mm ² / 16...14 AWG	
Solid wire		1 x 1...4 mm ² / 16...12 AWG 2 x 1...4 mm ² / 16...12 AWG	1 x 1...4 mm ² / 16...12 AWG 2 x 1...4 mm ² / 16...12 AWG	
Tightening torque		1.0 Nm / 8.8 lb.in	1.0 Nm / 8.8 lb.in	
Auxiliary contact blocks				
Models		BFB (front)	BLB (side)	
Mounting system screw type		Phillips number 2		
Conductor cross-section				
Flexible conductor without terminal		1 x 1...2.5 mm ² / 16...14 AWG 2 x 1...2.5 mm ² / 16...14 AWG	1 x 1...2.5 mm ² / 16...14 AWG 2 x 1...2.5 mm ² / 16...14 AWG	
Flexible conductor with terminal		1 x 1...2.5 mm ² / 16...14 AWG 2 x 1...2.5 mm ² / 16...14 AWG	1 x 1...2.5 mm ² / 16...14 AWG 2 x 1...2.5 mm ² / 16...14 AWG	
Solid wire		1 x 1...2.5 mm ² / 16...14 AWG 2 x 1...2.5 mm ² / 16...14 AWG	1 x 1...2.5 mm ² / 16...14 AWG 2 x 1...2.5 mm ² / 1...1.5/16 AWG	
Tightening torque		1.0 Nm / 8.8 lb.in		

General Information

Circuit Protection

Disconnect Switches

Motor Protectors

Contactors

Overloads

Enclosed Starters

Relays

Pushbuttons and Pilot Lights

Terminal Blocks

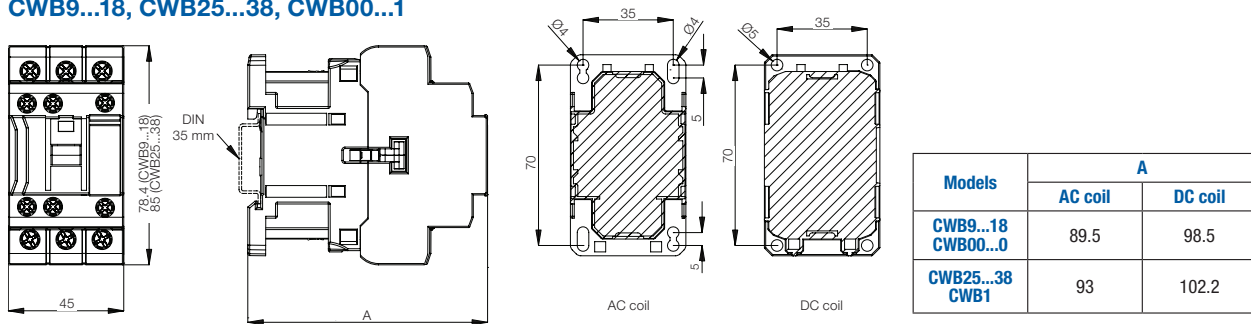
Power Factor Correction

Appendix A

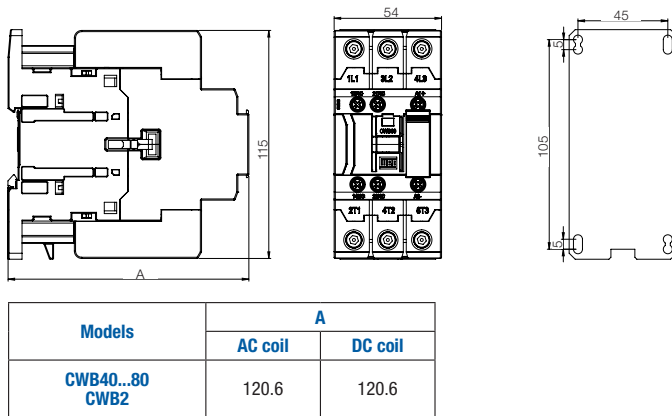
Appendix B

Dimensions (mm)

CWB9...18, CWB25...38, CWB00...1

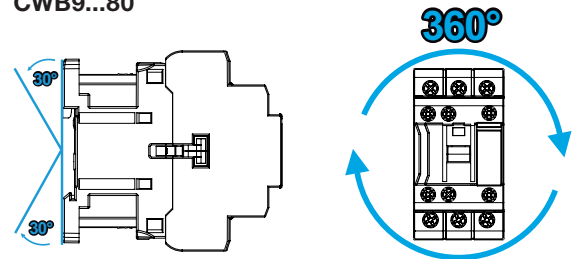


CWB40...80, CWB2

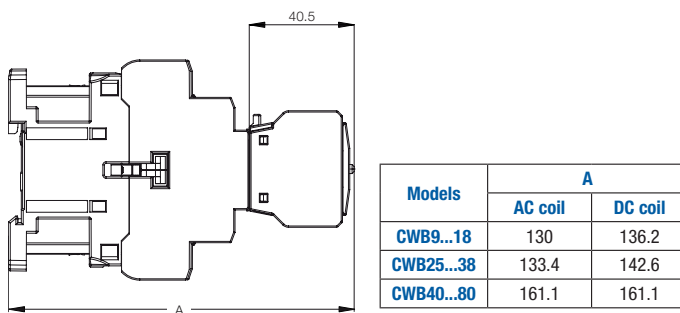


Mounting Position

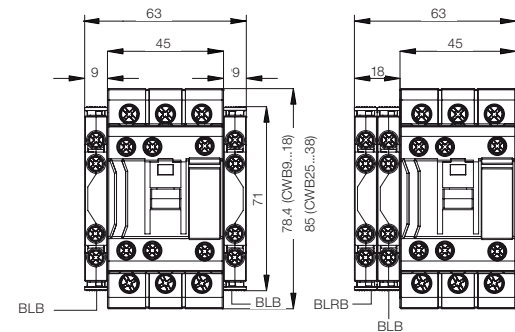
CWB9...80



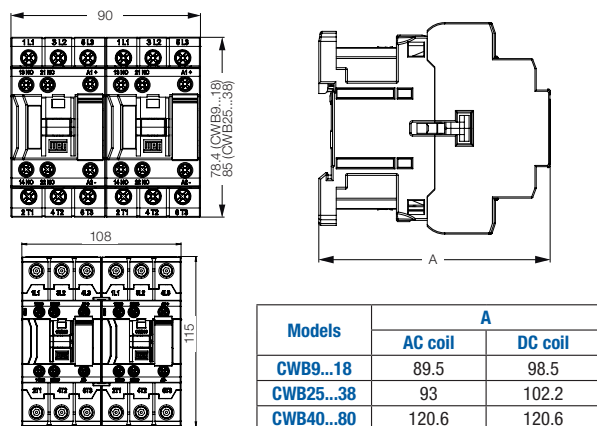
CWB9...18, CWB25...38, CWB40...80 + FBF (Front Mounted Auxiliary Contact Block)



CWB9...18, CWB25...38 + BLB (Side Mounted Auxiliary Contact Block)



2 x CWB9...38 + IM1 (Mechanical Interlock) 2 x CWB40...80 + IM2 (Mechanical Interlock)



CWB40...80 + BLB (Side-Mounted Contact Block)

