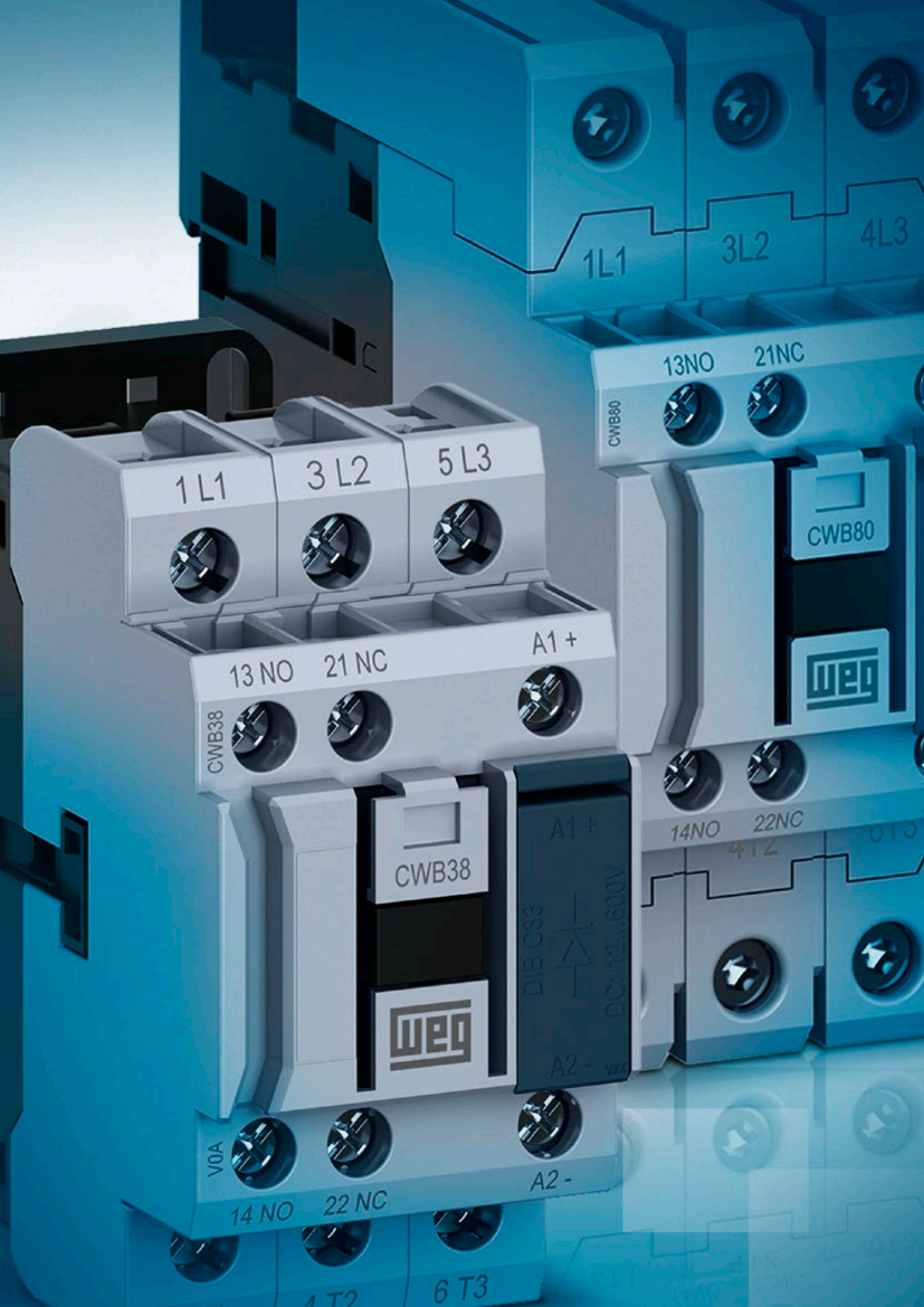
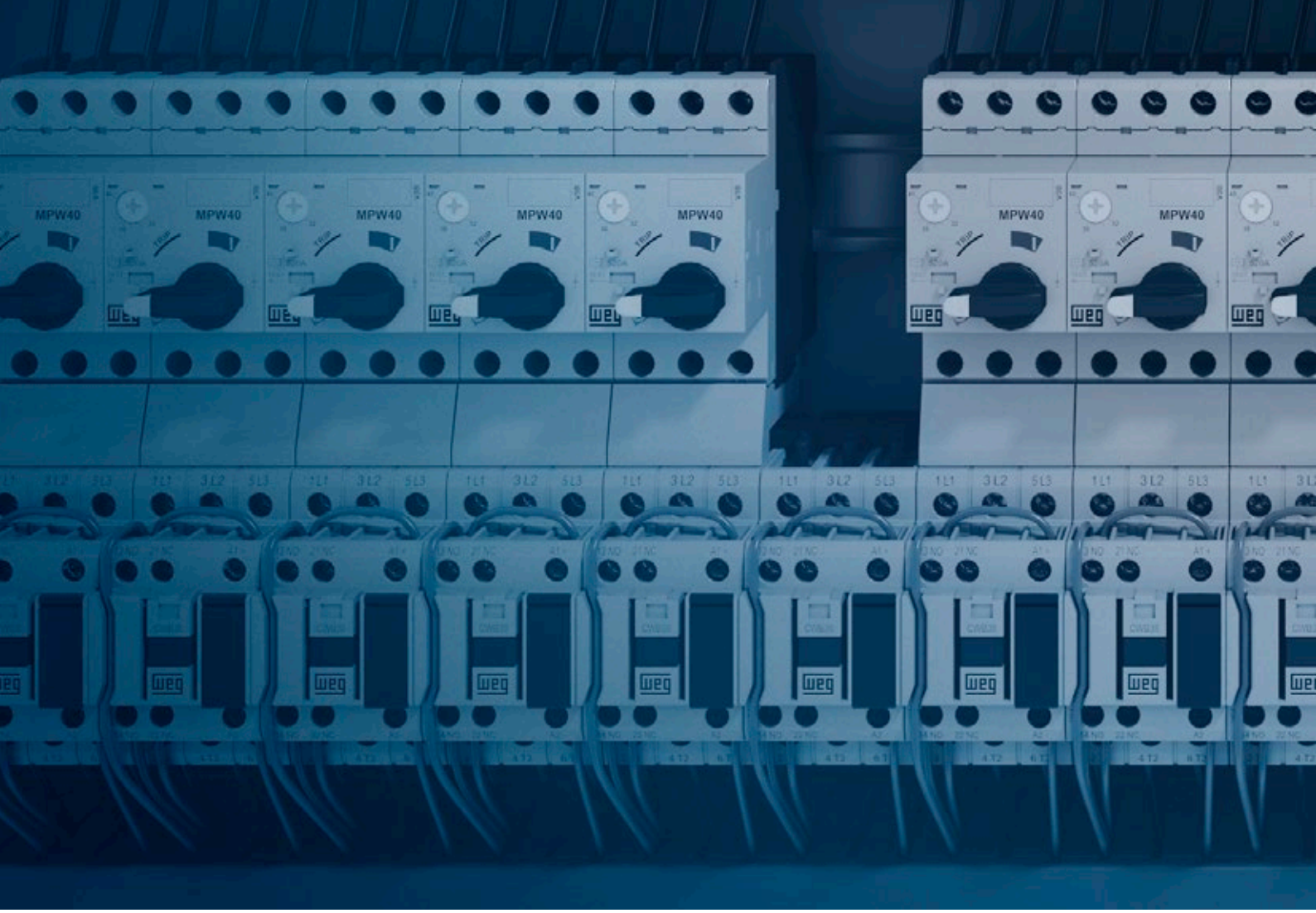
Automation

Contactors - CWB Line


1L1
3L2
4L3
13NO
21NC
CWB80
1 L1
3 L2
5 L3
CWB80
13 NO
21 NC
A1 +
CWB38
14NO
22NC
CWB38
A1 +
DIE C33
DC 12...600V
A2 -
V0A
14 NO
22 NC
A2 -
6 T3

Contactors - CWB Line

Summary

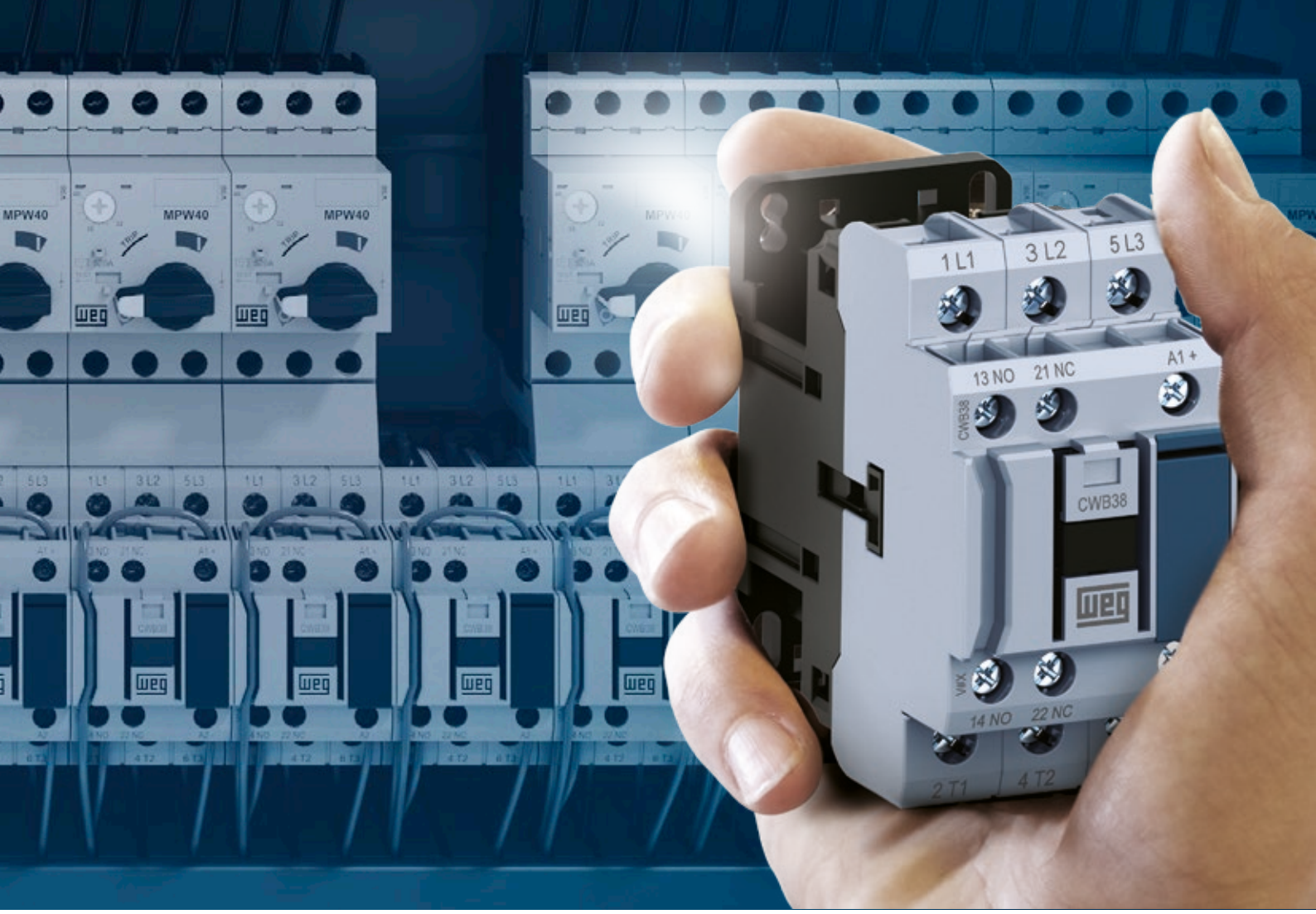


COMPACT IN SIZE.
GIANT IN TECHNOLOGY.

Developed according to IEC/EN 60947 and UL 508 international standards, the CWB and CAWB line of contactors complies with the global requirements of a wide range of industrial applications.

Characteristics

- Currents from 9 to 80 A (AC-3);
- Power supply from 24 V to 690 V ac/dc;
- Low-consumption coils, 5.8 W at 24 V dc;
- Compact, 18% smaller than the CWM line;
- Built-in auxiliary contacts 1 NO and 1 NC;
- Enclosure for surge suppressors;
- Easy identification of the control voltage;
- "Zero-width" mechanical interlock;
- Easy connection busbars for quick assembly of more compact reversing and star-delta starters;
- Allows the assembly of compact starters with the MPW18, MPW40 and MPW80 motor protective circuit breakers and RW27-2D and RW67-5D thermal relays;
- Choice of up to six auxiliary contacts on the power contactors;
- Compatible with accessories of the whole CWB line;
- 45 mm wide auxiliary contactors and five built-in contacts;
- Quick mounting on DIN rail 35mm or with screw.



Benefits

- Modular and compact
- Highly reliable
- Suitable for different applications
- Internationally-recognized quality
- Simplified installation
- Energy saving

Certifications

Comunidade Européia

Canada e EUA [1)]

Argentina [2)]

SABS - South Africa [3)]

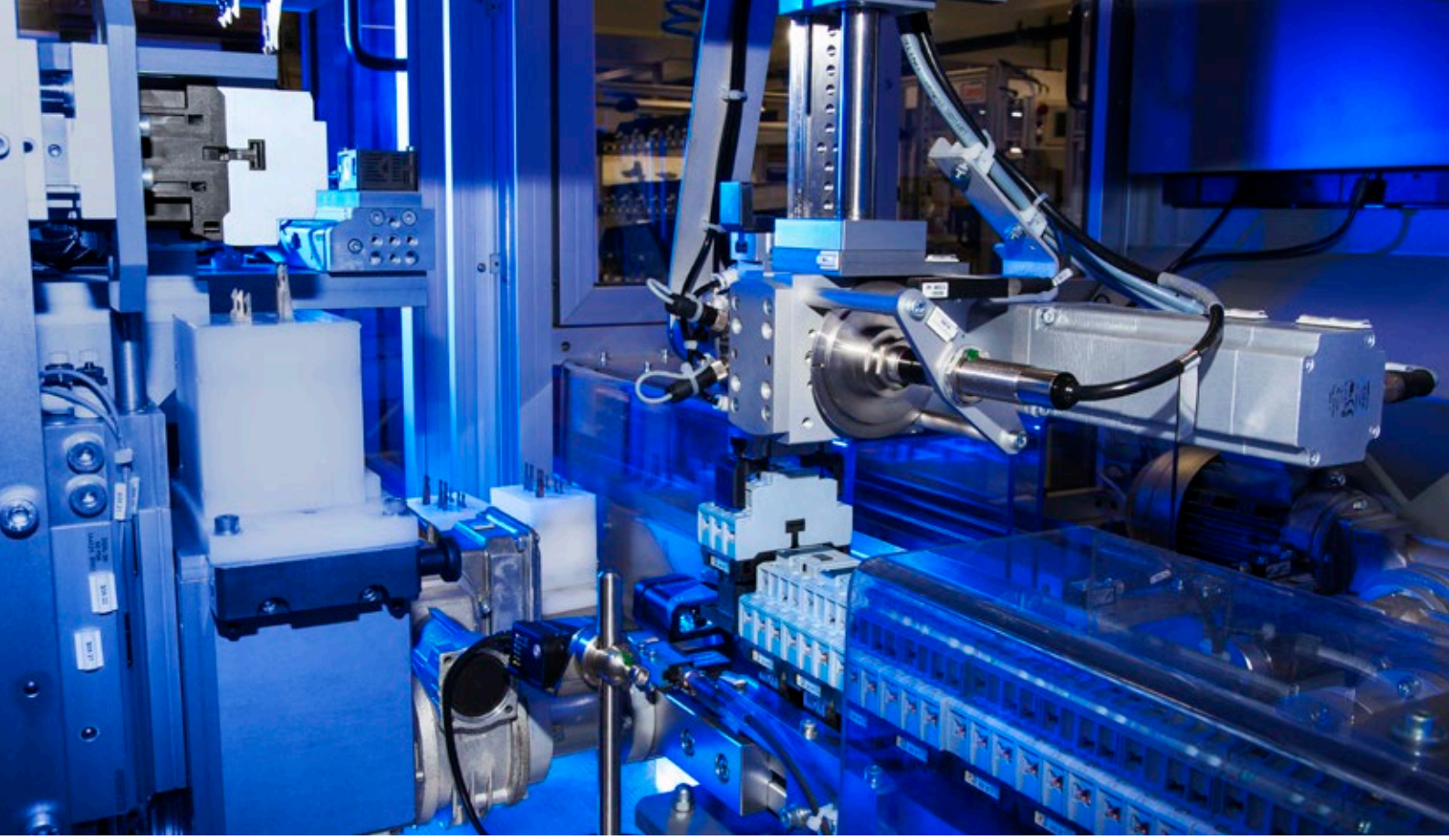
Africa do Sul

ISO 9001

Colômbia

Rússia

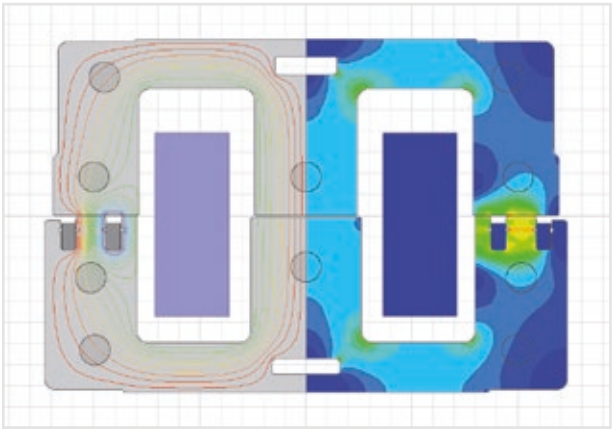
Note: 1) Certification for CAWB in progress.
2) Not available for CAWB yet.
3) Not available for CAWB yet/certification for CWB40-80 in progress.



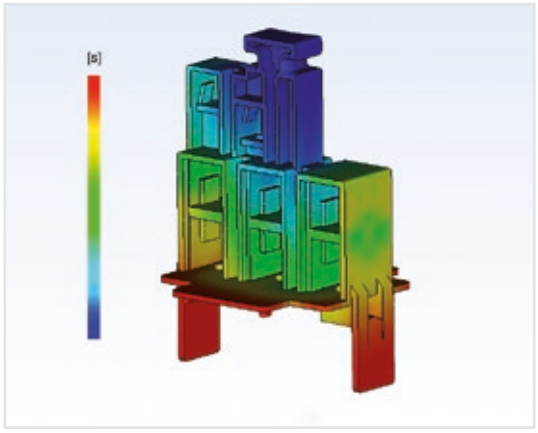
Technology within your Reach

The use of finite-element analysis and state-of-the-art modeling softwares for simulation of electromagnetic and electromechanical systems provide WEG CWB contactors with an improved project with reduced contact bouncing. The outcome reached by WEG's R&D team ensures a product with long mechanical and electrical lifespan in a reduced size and with lower energy consumption.

The electric contacts of CWB contactors are manufactured with special silver alloys which ensure excellent electric conductibility and high contact reliability. During operation, the double-break contacts and arc chutes ensure fast arc quenching and provide high resistance against the wear effects of the electric arc and, consequently, a long electrical lifespan.



Analysis of CWB electromagnetic system



Process manufacturing simulation to ensure high quality of the injected parts

Manufactured with the best raw materials and high-quality parts, the CWB line uses high-precision injection molds and metal stamping tools, ensuring very reliable products with the best cost-benefit on the market.

Energy Savings

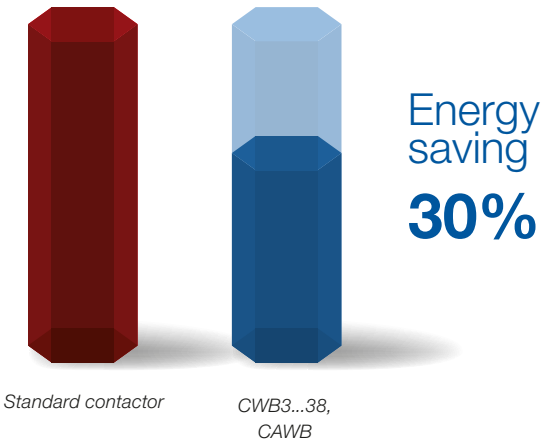
Low Consumption Coils

The low-consumption coils of the CWB contactors enable safe operation with minimum energy consumption of up to 5.8 W in direct current, and up to 7.5 VA in alternating current (for power contactors up to 38 A and auxiliary contactors). In addition to the energy saving, the low consumption of the contactor coils allows reducing the supply of control transformers. When well dimensioned and properly applied, the traditional electric motor starting methods, such as direct (reversing and non-reversing) and star-delta starters that use contactors, are the safest and the best cost-benefit options to start and protect low-voltage electric motors. Up to at least 55 kW, direct starters and star-delta starters that use contactors are still the best and most common starting method in all kinds of industry in the whole world. Even when electronic methods are used to start and control motors, such as frequency inverters and soft-starters, contactors are still necessary in combination with the electronic devices.

Consequently, we can imagine the huge number of contactors installed and in operation, consuming energy in the whole world.

Therefore, the CWB contactors were designed to operate safe and reliably with the **lowest energy consumption**.

Coil Consumption
DC Operated Contactor



DC Coils

In addition to the low energy consumption, the DC coils enable direct control of the CWB (up to 38 A) and CAWB contactors via PLC or digital outputs of devices such as frequency inverters or soft-starters without requiring relay interfaces.

Green

Manufactured with nontoxic and low-impact materials, the CWB line of contactors is safe and sustainable, complying with the RoHS international requirements.

Easy Panel Optimization

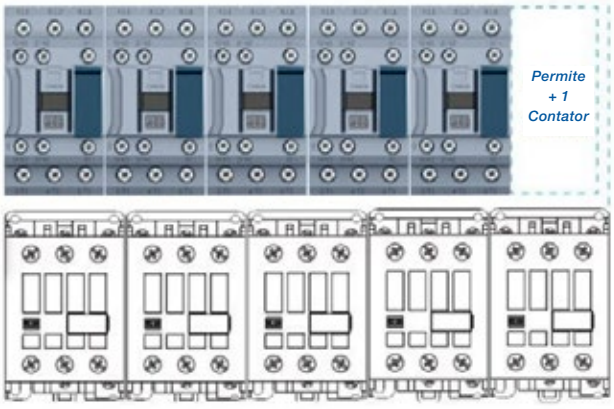
Compact Solution

As they are compact, 45 mm wide available in up to 38 A (18.5 kW at 380 V AC-3 three-phase), and 54 mm wide available from 40 to 80 A (37 kW at 380 V AC-3 three-phase), the CWB contactors provide a general reduction in size of electrical panels in comparison to traditional solutions with contactors of the same specification.

18% <

Side by side mounting CWB38

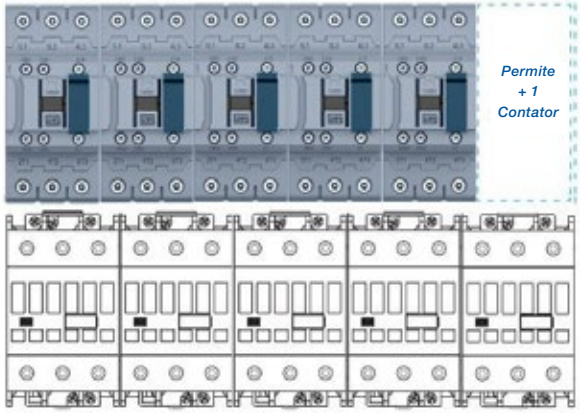
45 mm



55 mm

Side by side mounting CWB80

54 mm



60 mm

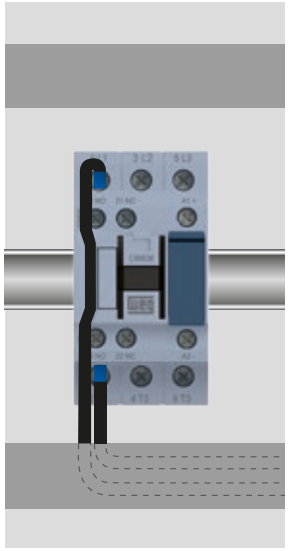
Built-In Auxiliary Contacts 1NO + 1NC

The configuration of two built-in auxiliary contacts (1NO + 1NC) makes the application of CWB contactors more flexible in most automation systems, contributing to the optimization of internal space of electrical panels.

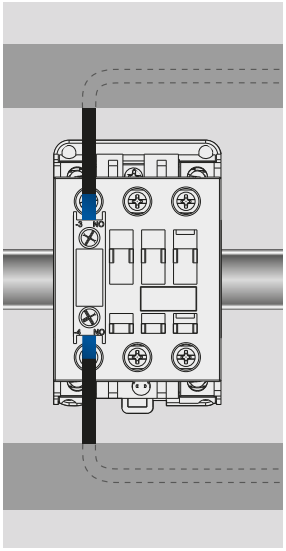
More Simple and Organized Control Circuits

In order to optimize the space in electrical panels even more, the CWB line of contactors has a front slot for passing control cables. That can reduce or eliminate the necessity of routing control cables through the side or front part of the contactors, providing a "cleaner" and more organized assembly of the control circuit.

CWB Line



Standard Contactors



Easy Panel Optimization

Simple and Compact Mounting of Surge Suppressor Blocks

The coils of CWB contactors operate smoothly with a low level of disturbance in the control circuits. However, in order to reduce voltage surges due to the coil switching even further, WEG has developed surge suppressor blocks especially for the CWB line of contactors, which ensure limitation or even completely eliminate the undesired interferences that may be caused on opening the contactor coil. Surge suppressor blocks are easily mounted on CWB contactors without the need of any kind of tools and also without increasing volume.

Contactor Coil Operated on AC or DC

A wide range of voltages available in only two coil versions (one for AC and another for DC) for the whole line of contactors from 9 to 80 A. With easy replacement of the AC coil in currents from 9 to 80 A and DC coils in currents from 40 to 80 A with visual indication of the coil voltage.

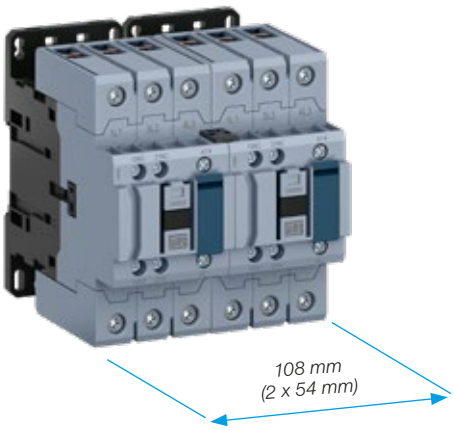
CWB9...38 A
AC coil

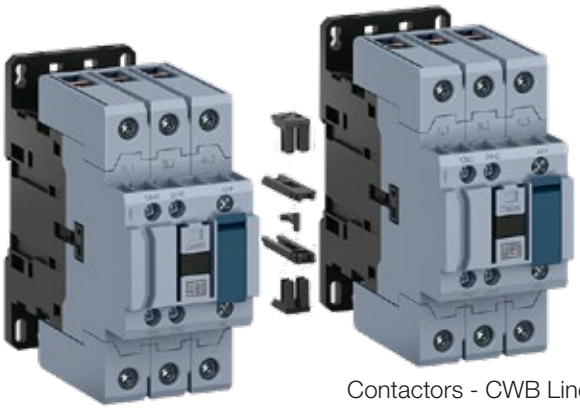
CWB9...80 A
DC coil

CWB40...80 A
AC coil

"Zero-Width" Mechanical Interlock

For applications which require a mechanical interlock between contactors WEG developed a new mechanical system that ensures compact and safe mounting without any tools. The new WEG mechanical interlocking system enables the mechanical interlock between the contactors of the CWB line without adding side space, and it is possible to mount reversing starters of up 80 A.

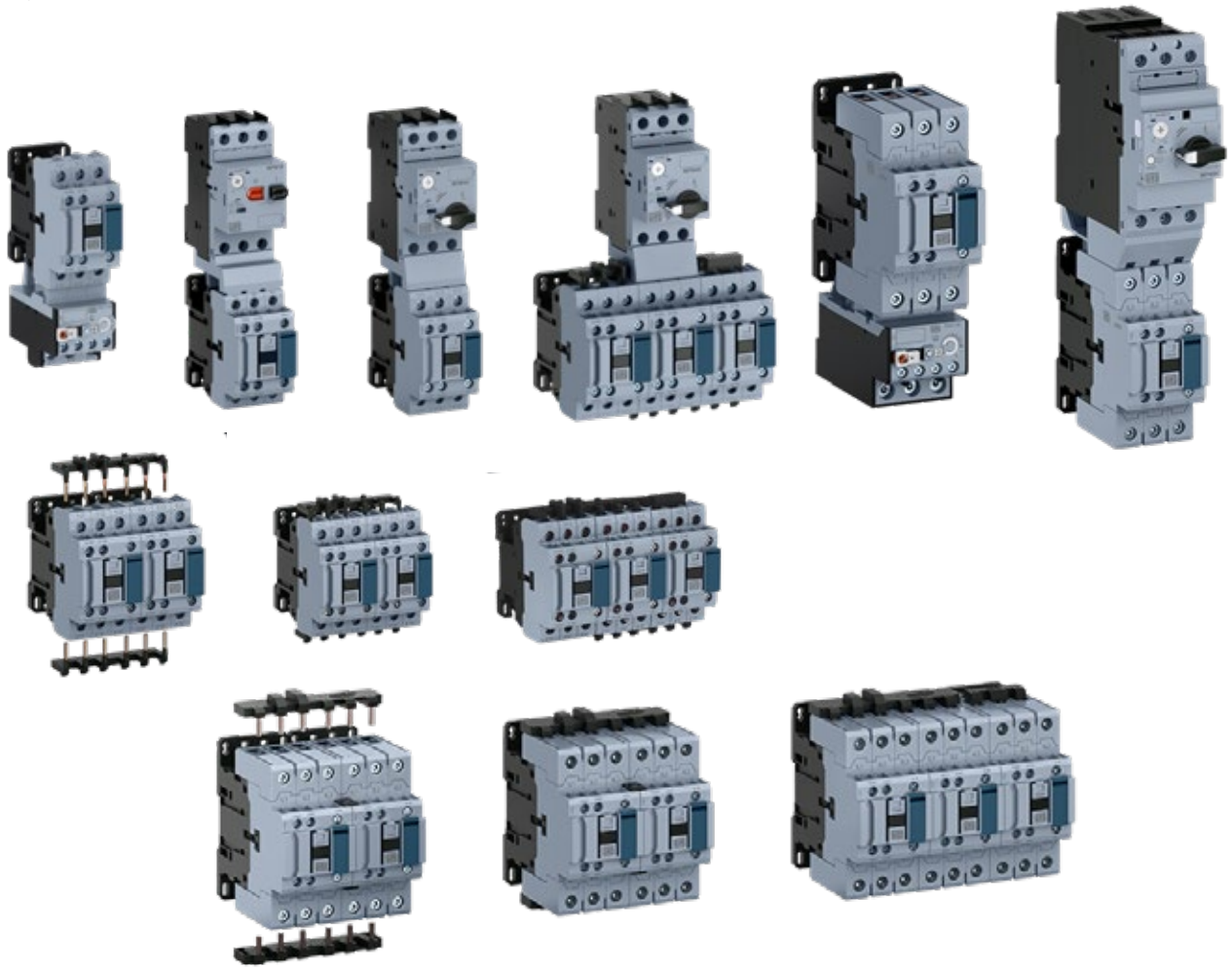




Flexibility and Modularity in Assembly of Electric Panels

Easy-Connection Busbars and Connectors

The smooth integration between the CWB contactor line, overload relays and manual motor protectors enables simple and quick mounting of compact starters, besides protection sets for low-voltage electric motors with excellent cost effectiveness. The modularity and flexibility of the easy-connection busbars and connectors reduce the mounting time, also preventing possible errors. Available for the whole CWB line, the easy-connection system allows the mounting combined with WEG manual motor protectors and overload relays, forming compact and robust direct starters, reversing and non-reversing starters, in addition to star-delta starters.



Easy Access Power and Control Terminals

All power terminals, auxiliary contacts and coils provide users with fast front access, facilitating installation, measurements and interventions for preventive and corrective maintenance of starters.

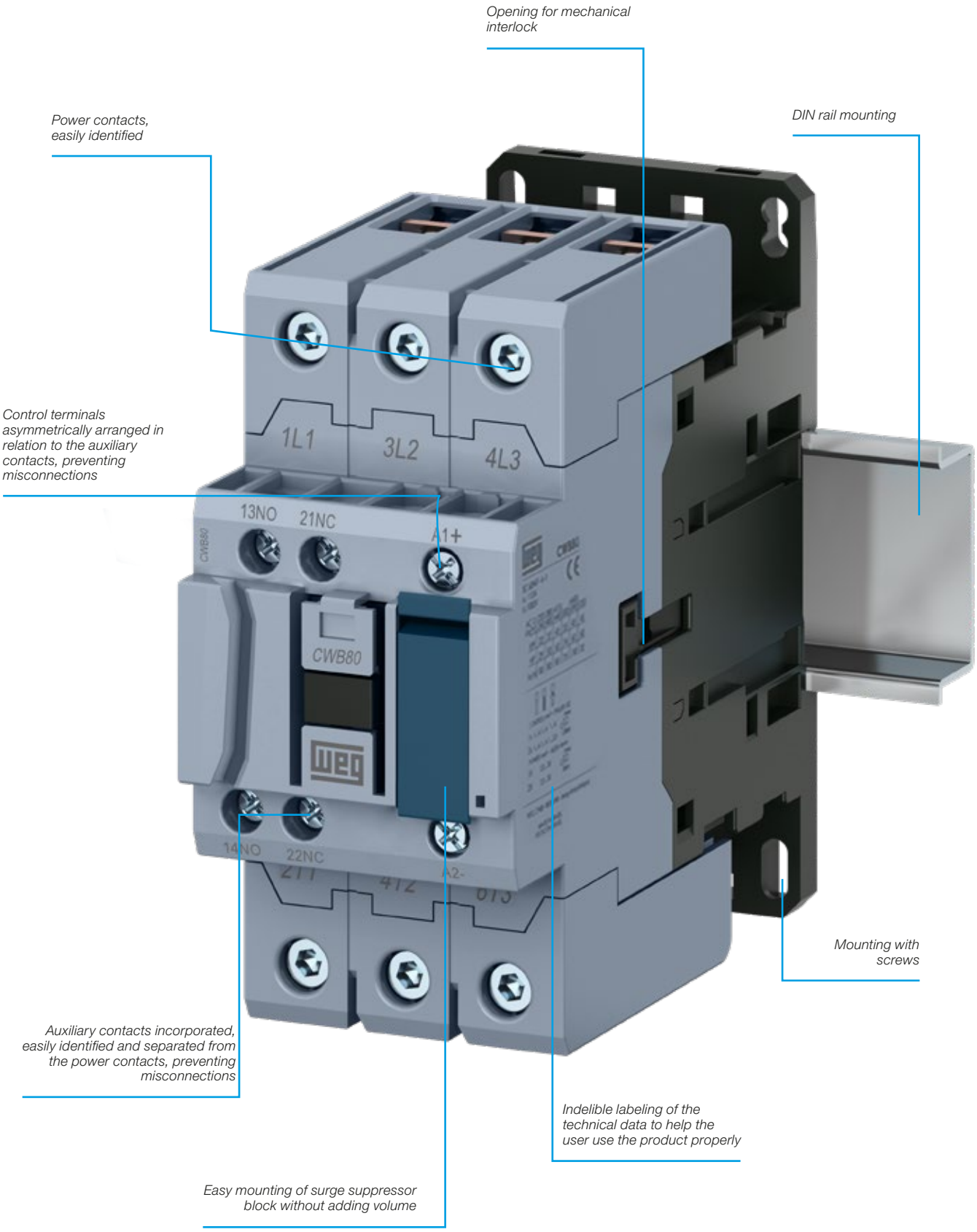
Additional Contact Blocks

Besides the 1NO + 1NC built-in auxiliary contacts, in order to meet the most complex control needs, WEG has also developed auxiliary high performance contact blocks which can be easily mounted on the front or side of CWB contactors, allowing the combination of up to six auxiliary contacts per contactor up to 80 A.
An important characteristic of the side auxiliary contact blocks of the CWB line is the small dimension (only 9 mm wide) which meets the requirements of modularity, allowing more compact combinations of motor starters with motor protective circuit breakers when easy-connection busbars are used.

Panel Assembly Flexibility

CWB contactors can be easily assembled on panels using 35 mm DIN rails or screws because their oblong holes are compatible with the old and traditional lines of contactors on the market.

Construction Characteristics



Applications

The characteristics of the CWB contactors make them suitable for applications in many different segments.

Paper & Cellulose | Wood | Cement | Chemical and Petrochemical | Mining

Steel | Oil & Gas | Irrigation and Pumping Systems | Sugar & Alcohol | Fans

Civil Construction | Refrigeration | Machines and Processes in General | Load Lifting | Automation

Reliability and Safety

Safety Against Accidental Contact

All the power and control terminals of the CWB contactors have degree of protection that ensure total safety against accidental front contacts.

Safety-Related Applications

In automation systems of machines and equipment, it is common to use special contactors in combination with specific safety relays. The CWB line allows such combination due to the arrangement of the contacts, which comply with the requirements of IEC/EN 60947-4-1 Annex F (Mirror Contacts) and IEC/EN 60947-5-1 Annex L (Mechanically Linked Contacts and NR12 regulatory standard).

IEC/EN 60947-5-1
Mechanically linked contacts

IEC/EN 60947-4-1
Mirror contacts

Selection Table

Three-Pole Power Contactors from 9 A to 38 A (AC-3)

I_e máx. (U_e ≤440 V)	$I_e = I_{th}$ (U_e ≤690 V) θ ≤55 °C	Orientative rated operational power in AC-3[1] Three-phase motor - IV poles - 60 Hz - 1,800 rpm					Auxiliary contacts per contactor		Reference to fill the control voltage in	Weight[2]
AC-3	AC-1	220 V 230 V	380 V 400 V	415 V 440 V	500 V	660 V 690 V	•3 | •4	•1 •2		
A	A	kW / cv	kW / cv	kW / cv	kW / cv	kW / cv	NA	NF		kg
9	25	2.2 / 3	4 / 5.5	4.5 / 6	5.5 / 7.5	5.5 / 7.5	1	1	CWB9-11-30♦	0.372
12	25	3 / 4	5.5 / 7.5	6.5 / 8.7	7.5 / 10	7.5 / 10	1	1	CWB12-11-30♦	0.372
18	32	4.5 / 6	7.5 / 10	9.2 / 12.5	10 / 13.4	11 / 15	1	1	CWB18-11-30♦	0.372
25	40	6.5 / 8.7	12.5 / 16.8	12.5 / 16.8	15 / 20	15 / 20	1	1	CWB25-11-30♦	0.408
32	50	7.5 / 10	15 / 20	15 / 20	18.5 / 25	18.5 / 25	1	1	CWB32-11-30♦	0.408
38	50	9.2 / 12.5	18.5 / 25	18.5 / 25	18.5 / 25	18.5 / 25	1	1	CWB38-11-30♦	0.408

Three-Pole Power Contactors from 10 A to 80 A (AC-3)

I_e máx. (U_e ≤440 V)	$I_e = I_{th}$ (U_e ≤690 V) θ ≤55 °C	Orientative rated operational power in AC-3[1] Three-phase motor - IV poles - 60 Hz - 1,800 rpm					Auxiliary contacts per contactor		Reference to fill the control voltage in	Weight[2]
AC-3	AC-1	220 V 230 V	380 V 400 V	415 V 440 V	500 V	660 V 690 V	•3 •4	•1 •2		
A	A	kW / cv	kW / cv	kW / cv	kW / cv	kW / cv	NA	NF		kg
40	60	11 / 15	18.5 / 25	22 / 29	22 / 29	30 / 40	1	1	CWB40-11-30♦	0.91
50	90	15 / 20	22 / 29	30 / 40	30 / 40	33 / 44	1	1	CWB50-11-30♦	0.91
65	110	18.5 / 25	30 / 40	37 / 50	37 / 50	37 / 50	1	1	CWB65-11-30♦	0.91
80	110	22 / 29	37 / 50	45 / 60	55 / 74	45 / 60	1	1	CWB80-11-30♦	0.91

Auxiliary Contactors

I_e máx. (A)		Auxiliary contacts		Reference	Weight (kg)
(U_e ≤230 V) AC-14 / AC-15	(U_e ≤24 V) DC-13	•3 •4	•1 •2		
		NA	NF		
10	4	1	4	CAWB-14-00♦	0.372
10	4	2	3	CAWB-23-00♦	0.372
10	4	3	2	CAWB-32-00♦	0.372
10	4	4	1	CAWB-41-00♦	0.372

NEW

Replace "♦" by the appropriate coil voltage code[3].

Alternating Current

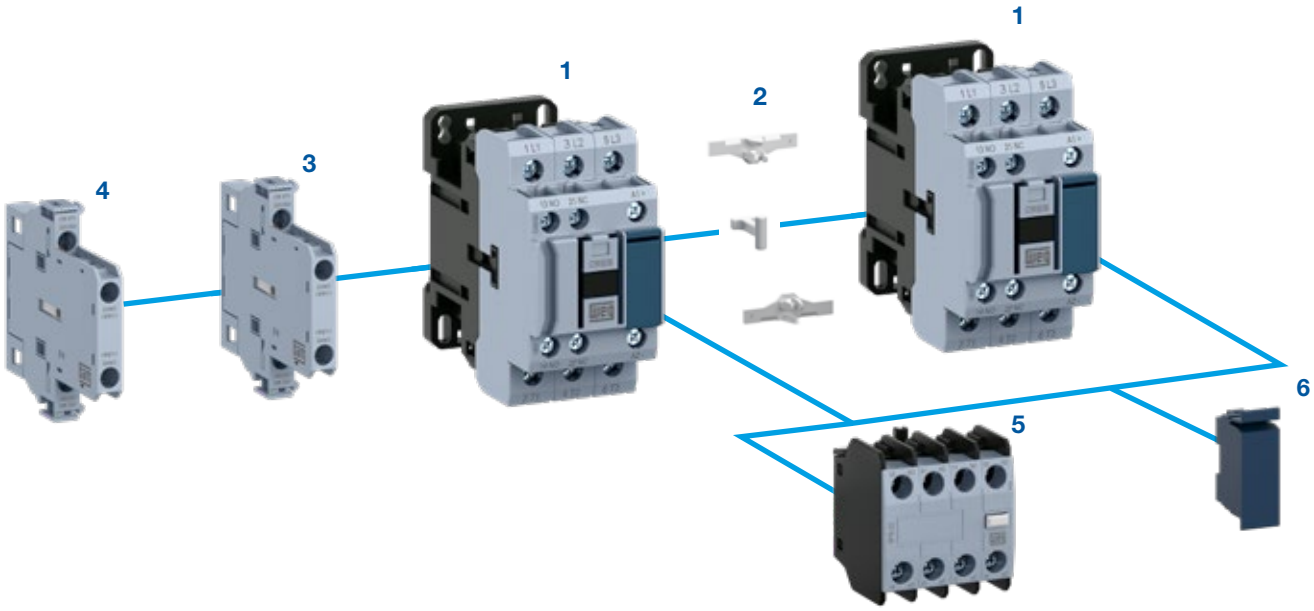
Code	D02	D07	D13	D23	D24	D25	D33	D34	D35	D36	D39
V (50/60 Hz)	24	48	110	220	230	240	380	400	415	440	480

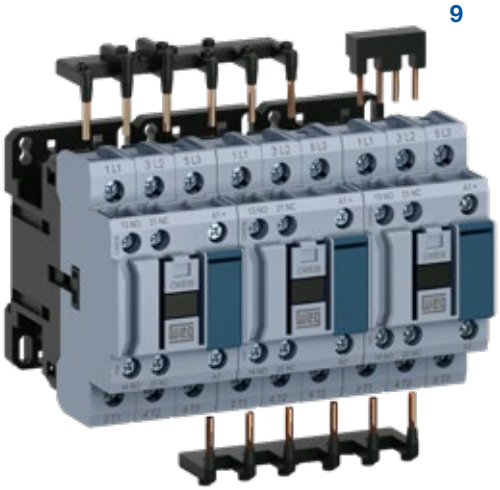
Direct Current

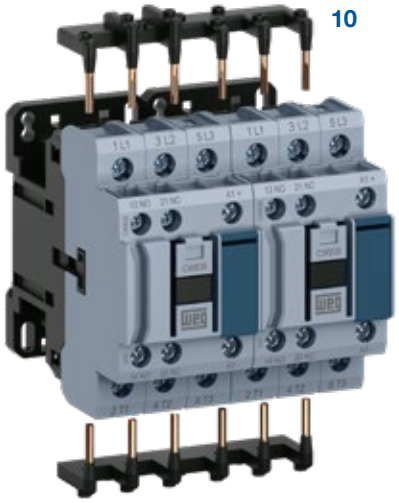
Code	C03	C07	C09	C12	C13	C15
V dc	24	48	60	110	125	220

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.

Accessory Overview

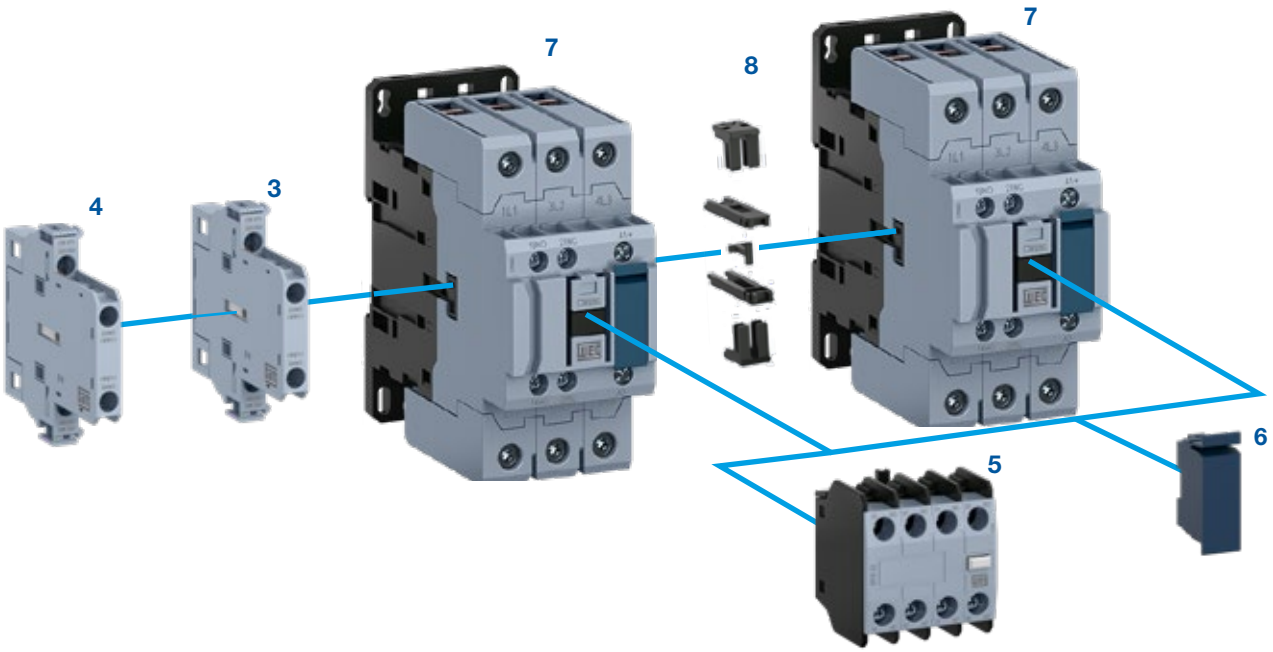


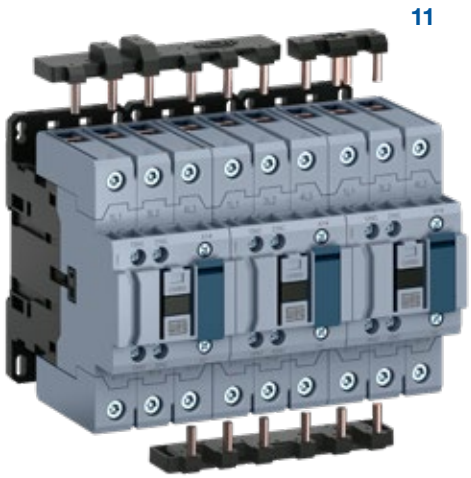


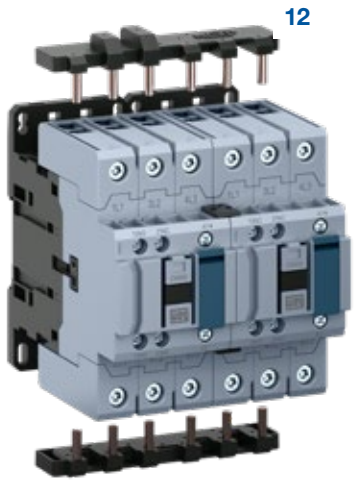


1 - CWB9 ... 38 or CAWB contactors
2 - "Zero" mechanical interlocking set (IM1)
3 - BLB side mounting auxiliary contact block
4 - BLRB side mounting laterais auxiliary contact block
5 - BFB front auxiliary contact blocks
6 - Surge suppressor block

Accessory Overview







7 - CWB40...80 contactors
8 - "Zero" mechanical interlocking set (IM2)
9 - Busbar for quick connections for star-delta starters (EC-SD-1)
10 - Busbar for quick connections for reversing starters (EC-R-1)
11 - Busbar for quick connections for star-delta starters (EC-SD-2)
12 - Busbar for quick connections for reversing starters (EC-R-2)

Accessories

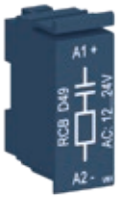
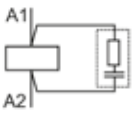
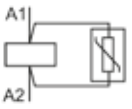
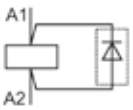
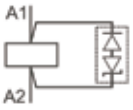
Front Mounted Auxiliary Contact Blocks

Illustrative picture	For use with	Max. nº of additional contacts / contactor	Auxiliary contacts NO	Auxiliary contacts NC	Reference	Code	Weight kg
	CWB9...38 CWB40...80 CAWB	4 / CWB9...38 4 / CWB80...80 4 / CAWB	**Auxiliary contact blocks according to IEC/EN 60947**				
			1	1	BFB-11[1)]	12123053	0.063
			2	0	BFB-20	12122434	
			0	2	BFB-02[1)]	12122946	
			2	2	BFB-22[1)]	12123051	
			2[2)]	2[2)]	BFB-22 EL[2)]	12771537	
			4	0	BFB-40	12122947	
			0	4	BFB-04[1)]	12123048	
			3	1	BFB-31[1)]	12123049	
			1	3	BFB-13[1)]	12123052	
			Auxiliary contact blocks according to EN 50012				
			1	1	BFB-11 EN[1)]	12979242	0.063
			2	0	BFB-20 EN	12979240	
			0	2	BFB-02 EN[1)]	12979241	
			2	2	BFB-22 EN[1)]	12979246	
			4	0	BFB-40 EN	12979243	
			0	4	BFB-04 EN[1)]	12979244	
			3	1	BFB-31 EN[1)]	12979245	
			1	3	BFB-13 EN[1)]	12979247	

Side Mounted Auxiliary Contact Block

Illustrative picture	For use with	Max. nº of additional contacts / contactor	Auxiliary contacts NO	Auxiliary contacts NC	Reference	Code	Weight kg
	CWB9...38 CWB40...80 CAWB	2 / CWB9...38 2 / CWB40...80 2 / CAWB	1	1	BLB-11[1)]	12187899	0.034
			2	0	BLB-20	12187334	
			0	2	BLB-02[1)]	12187898	
			1	1	BLRB-11[1)3)]	12230321	
			2	0	BLRB-20[3)]	12230319	
			0	2	BLRB-02[1)3)]	12230320	

Plug-In Surge Suppressors

Illustrative picture	For use with	Voltage	Diagram	Reference	Code	Weight kg
	CWB9...38 CWB40...80 CAWB	24...48 V 50/60 Hz		RCBD53	12242511	0.008
		50...127 V 50/60 Hz		RCBD55	12242512	
		130...250 V 50/60 Hz		RCBD63	12242513	
		12...48 V 50/60 Hz / 12...60 V dc		VRBE49	12242514	
		50...127 V 50/60 Hz / 60...180 V dc		VRBE34	12242515	
		130...250 V 50/60 Hz / 180...300 V dc		VRBE50	12242516	
		277...380 V 50/60 Hz / 300...510 V dc		VRBE41	12242517	
		400...510 V 50/60 Hz		VRBD73	12242558	
		12...600 V dc		DIBC33[4)]	12242560	
		12...250 V dc		DIZBC26[5)]	12242561	

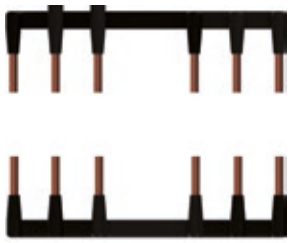
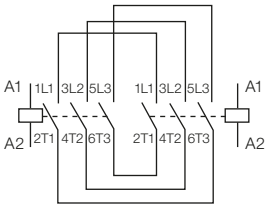
Notes: 1) They comply with the requirements of IEC/EN 60947-4-1 about mirror contacts and the requirements of IEC/EN 60947-5-1 about mechanically linked contacts.
2) BFB-22-EL: besides the regular contacts NO and NC, there are two special contacts: early make and late break.
3) For side mounting of two side-auxiliary contact blocks on the same contactor side.
4) Contactors assembled with surge suppressor DIB will increase in 6 times the opening time.
5) Contactors assembled with surge suppressor DIZB will increase in 4 times the opening time.

Accessories

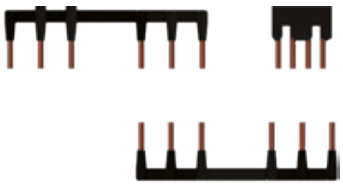
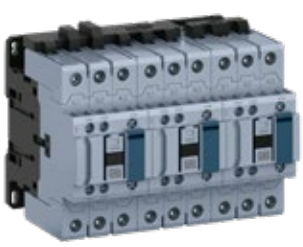
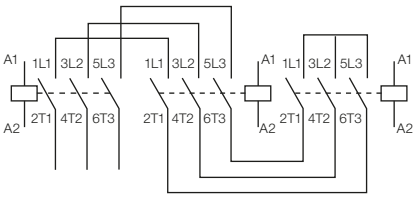
Mechanical Interlock

Illustrative picture	For use with	Description	Reference	Code	Weight kg
	CWB9...38 CAWB	Mounting set for interlocking two contactors with the same frame type. Fitting through snaps without tools.	IM1	12244300	0.004
	CWB40...80		IM2	13765620	

Easy-Connection Setting of the Power Terminals for Reversing Starters

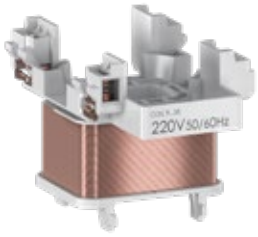
Illustrative picture	For use with	Orientative rated operational power for reversing starters (AC-4 duty) for three-phase 4-pole motors - 60 Hz - 1,800 pm		Reference	Code	Weight kg
	K1=K2	230 V kW / cv	400 V kW / cv			
	CWB9	1.5 / 2.0	2.2 / 2.9	EC-R-1	12241229	0.042
	CWB12	1.5 / 2.0	3.7 / 5.0			
	CWB18	2.2 / 2.9	4 / 5.4			
	CWB25	3 / 4.0	5.5 / 7.4			
	CWB32	4 / 5.4	7.5 / 10.1			
	CWB38	4 / 5.4	7.5 / 10.1			
	CWB40	4.5 / 6.0	9.2 / 12.3	EC-R-2	13619637	0.073
	CWB50	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

Illustrative picture	For use with		Orientative rated operational power in AC-3 Three-phase motor - IV poles - 1,800 rpm		Reference	Code	Weight kg
	K1=K2	K3	230 V kW / cv	400 V kW / cv			
	CWB9	CWB9	4 / 5.4	7.5 / 10	EC-SD-1	12241230	0.046
	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			
	CWB50	CWB40	22 / 30	45 / 61	EC-SD-2	13619635	0.036
	CWB65	CWB40	30 / 40	55 / 75			
	CWB80	CWB50	45 / 61	75 / 102			
				 *Electric diagram*			

Accessories

Spare Coils for Contactors[1)]

Illustrative picture	For use with	Control type	Reference to fill in with the control voltage	Code	Weight kg
	CWB9...38 CAWB	AC	BRB-38♦	On request	0.8
	CWB40...80	AC	BRB-80♦	On request	0.09
	CWB40...80	DC	BRB-80♦	On request	0.40

Replace "♦" by the appropriate coil voltage code.

Alternating Current

Code	D02	D07	D13	D23	D24	D25	D33	D34	D35	D36	D39
V (50/60 Hz)	24	48	110	220	230	240	380	400	415	440	480

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.

Application Forms

Motor Starters

With the CWB contactors, the MPW manual motor protectors and the RW overload relays, WEG offers a complete line of compact starters that stand out on the market.

Easy Installation

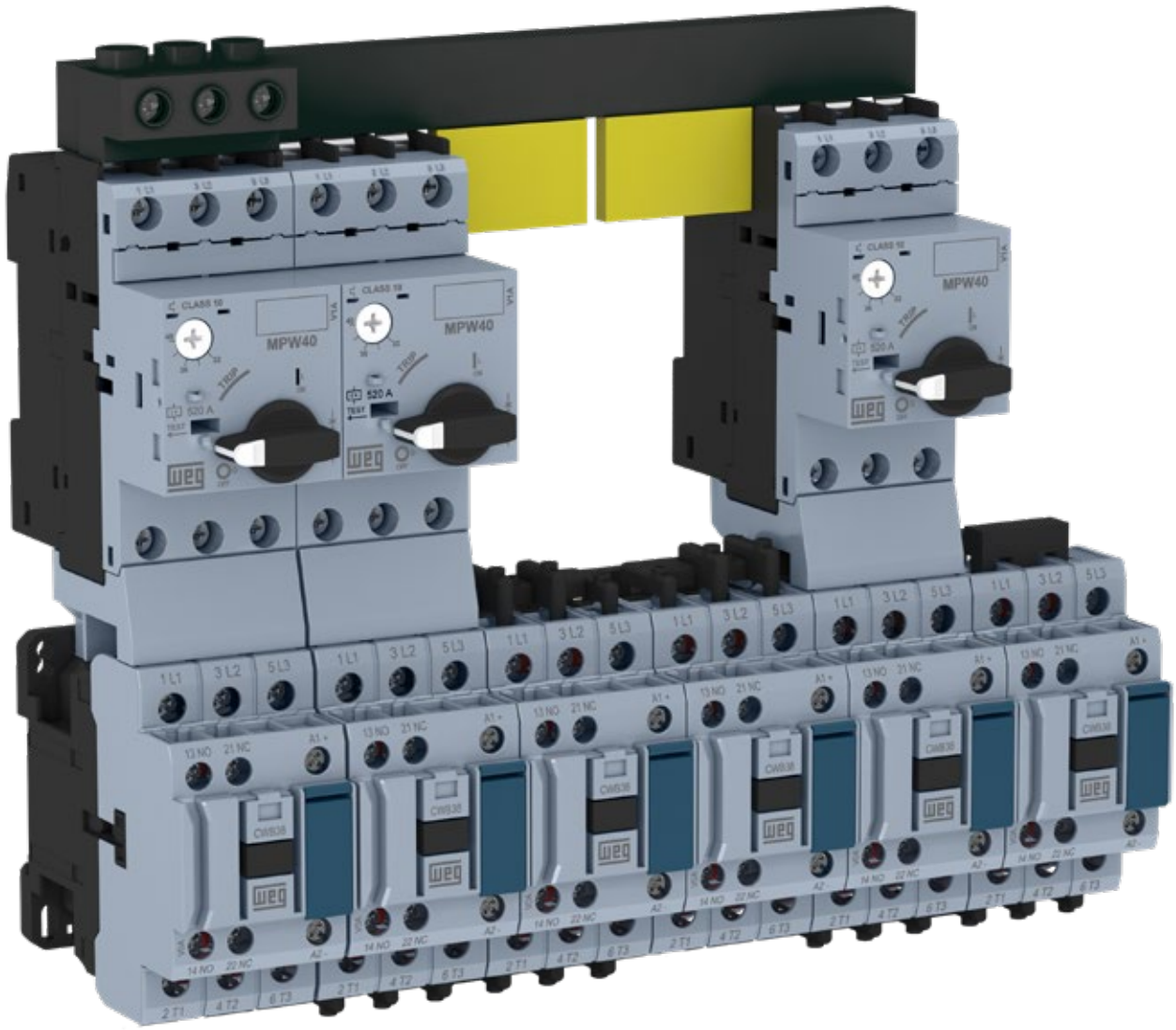
- Contactors, overload relays and manual motor protectors with a compact design up to 80 A (37 kW @ 380/415 V)
- Easy-connection bars for direct on-line, reversing and star-delta starters, saving mounting time
- Easy combination of all the starter parts
- Contactors with built-in auxiliary contacts 1NO + 1NC

Panel Optimization

- 45 mm wide up to 38 A
- 54 mm wide from 40 to 80 A
- 9 mm wide side contact blocks
- Compact starters
- “Zero” mechanical interlock without adding side space
- Simple and reliable parts

Easy Operation

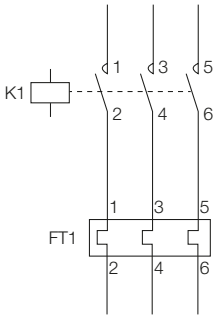
- High performance and reliability for a wide range of applications
- Energy savings
- Without peak currents for contactors with DC coil
- Built-in overload and short circuit protections (when MPW is used)



Direct On-Line Starters

CWB Contactor + RW27-2D/RW67-5D Thermal Overload Relay

- Remote load handling
- Overload protection
- Phase-loss sensitive
- Trip class 10
- Temperature compensation
- DIN rail mounting by fixing only one part
- Manual/local or automatic reset



Motor current (A)	AC-3 contactor		Overload relay		CWB + RW27-2D / CWB + RW67-5D	Total weight (kg)
	Reference	Maximum rated current AC-3 (A)	Reference	Current I adjustment range (A)	Maximum fuse (gL/gG) (coordination type 1) (A)	
0.28...0.4	CWB9-11-30♦	9	RW27-2D3-D004	0.28...0.4	2	0.54
0.43...0.63	CWB9-11-30♦	9	RW27-2D3-C063	0.43...0.63	2	0.54
0.56...0.8	CWB9-11-30♦	9	RW27-2D3-D008	0.56...0.8	2	0.54
0.8...1.2	CWB9-11-30♦	9	RW27-2D3-D012	0.8...1.2	4	0.54
1.2...1.8	CWB9-11-30♦	9	RW27-2D3-D018	1.2...1.8	6	0.54
1.8...2.8	CWB9-11-30♦	9	RW27-2D3-D028	1.8...2.8	6	0.54
2.8...4	CWB9-11-30♦	9	RW27-2D3-U004	2.8...4	10	0.54
4...6.3	CWB9-11-30♦	9	RW27-2D3-D063	4...6.3	16	0.54
5.6...8	CWB9-11-30♦	9	RW27-2D3-U008	5.6...8	20	0.54
7...9	CWB9-11-30♦	9	RW27-2D3-U010	7...10	25	0.54
8...12	CWB12-11-30♦	12	RW27-2D3-D125	8...12.5	25	0.54
10...15	CWB18-11-30♦	18	RW27-2D3-U015	10...15	35	0.54
11...17	CWB18-11-30♦	18	RW27-2D3-U017	11...17	40	0.54
15...23	CWB25-11-30♦	25	RW27-2D3-U023	15...23	50	0.57
22...32	CWB32-11-30♦	32	RW27-2D3-U032	22...32	63	0.57
32...40	CWB38-11-30♦	38	RW27-2D3-U040	32...40	90	0.57
25...40	CWB40-11-30♦	40	RW67-5D3-U040	25...40	80	1.25
32...50	CWB50-11-30♦	50	RW67-5D3-U050	32...50	100	1.25
40...57	CWB65-11-30♦	65	RW67-5D3-U057	40...57	100	1.25
50...63	CWB65-11-30♦	65	RW67-5D3-U063	50...63	100	1.25
57...70	CWB80-11-30♦	80	RW67-5D3-U070	57...70	125	1.25
63...80	CWB80-11-30♦	80	RW67-5D3-U080	63...80	125	1.25

Notes: Reference values valid for operating voltages up to 440 V, altitude up to 2,000 m, ambient temperature range from -20 °C to +55 °C, and maximum switching frequency up to 15 operations/hour.
For other conditions, check the technical data of each part.

To complete the reference code, replace "♦" by the appropriate coil voltage code

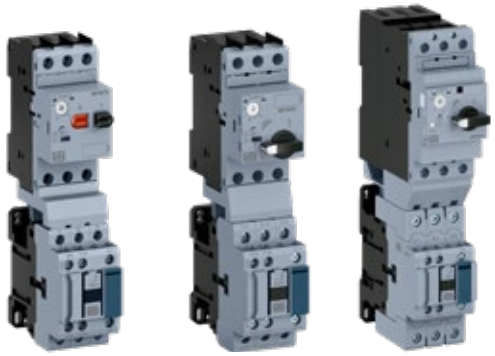
Coil voltage codes	D02	D07	D13	D15	D17	D77	D23	D24	D25	D33	D34	D35	D36
V (50/60 Hz)	24	48	110	120	127	208	220	230	240	380	400	415	440

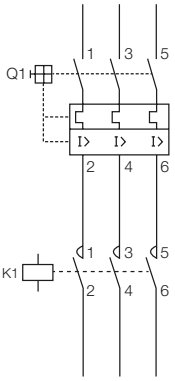
Coil voltage codes	C03	C07	C09	C12	C13	C15
V dc	24	48	60	110	125	220

Direct On-Line Starters

CWB Contator + MPW18/MPW40/MPW80 Manual Motor Protectors

- Remote load handling
- Overload protection
- Phase-loss sensitive
- Temperature compensation
- DIN rail mounting by fixing only one part
- Manual/local reset
- Isolation and disconnection functions
- Protection against short circuit
- High short-circuit interrupting capacity
- Short circuit tripping device fixed at 13 x Iu





Motor current (A)	AC-3 contactor		Motor-protective circuit breaker			Accessories	Total weight (kg)
	Reference	Maximum rated current AC-3 (A)	Reference	Current I adjustment range (A)	Instantaneous magnetic trip (Im) (A)	Connector	
0.1...0.16	CWB9-11-30♦	9	MPW18-3-C016	0.1...0.16	2.0	ECCMP-18B38 (CWB - AC Coil)	0.66
0.16...0.25	CWB9-11-30♦	9	MPW18-3-C025	0.16...0.25	3.2		0.66
0.25...0.4	CWB9-11-30♦	9	MPW18-3-D004	0.25...0.4	5.2		0.66
0.4...0.63	CWB9-11-30♦	9	MPW18-3-C063	0.4...0.63	8.1		0.66
0.63...1	CWB9-11-30♦	9	MPW18-3-U001	0.63...1	13		0.66
1...1.6	CWB9-11-30♦	9	MPW18-3-D016	1...1.6	20.8		0.66
1.6...2.5	CWB9-11-30♦	9	MPW18-3-D025	1.6...2.5	32.5		0.66
2.5...4	CWB9-11-30♦	9	MPW18-3-U004	2.5...4	52		0.66
4...6.3	CWB9-11-30♦	9	MPW18-3-D063	4...6.3	81.9		0.66
6.3...10	CWB12-11-30♦	12	MPW18-3-U010	6.3...10	130		0.66
10...16	CWB18-11-30♦	18	MPW18-3-U016	10...16	208		0.66
16...18	CWB18-11-30♦	18	MPW18-3-U020	16...20	260		0.66
0.1...0.16	CWB9-11-30♦	9	MPW40-3-C016	0.1...0.16	2	ECCMP-40B38 (CWB - AC Coil) ECCMP-40B38DC (CWB - DC Coil)	0.73
0.16...0.25	CWB9-11-30♦	9	MPW40-3-C025	0.16...0.25	3.2		0.73
0.25...0.4	CWB9-11-30♦	9	MPW40-3-D004	0.25...0.4	5.2		0.73
0.4...0.63	CWB9-11-30♦	9	MPW40-3-C063	0.4...0.63	8.1		0.73
0.63...1	CWB9-11-30♦	9	MPW40-3-U001	0.63...1	13		0.73
1...1.6	CWB9-11-30♦	9	MPW40-3-D016	1...1.6	20.8		0.73
1.6...2.5	CWB9-11-30♦	9	MPW40-3-D025	1.6...2.5	32.5		0.73
2.5...4	CWB9-11-30♦	9	MPW40-3-U004	2.5...4	52		0.73
4...6.3	CWB9-11-30♦	9	MPW40-3-D063	4...6.3	81.9		0.73
6.3...10	CWB12-11-30♦	12	MPW40-3-U010	6.3...10	130		0.73
10...16	CWB18-11-30♦	18	MPW40-3-U016	10...16	208		0.73
16...20	CWB25-11-30♦	25	MPW40-3-U020	16...20	260		0.77
20...25	CWB25-11-30♦	25	MPW40-3-U025	20...25	325		0.77
25...32	CWB32-11-30♦	32	MPW40-3-U032	25...32	416		0.77
32...40	CWB38-11-30♦	38	MPW40-3-U040	32...40	520		0.77
32...40	CWB40-11-30♦	40	MPW80-3-U040	32...40	520	ECCMP-80B80 (CWB - AC and DC Coil)	2
45...50	CWB50-11-30♦	50	MPW80-3-U050	45...50	650		2
55...65	CWB65-11-30♦	65	MPW80-3-U065	55...65	845		2
65...80	CWB80-11-30♦	80	MPW80-3-U080	65...80	1,040		2

Notes: Reference values valid for operating voltages up to 440 V, altitude up to 2,000 m, ambient temperature range from -20 °C to +55 °C, and maximum switching frequency up to 15 operations/hour.
For other conditions, check the technical data of each part.

To complete the reference code, replace "♦" by the appropriate coil voltage code

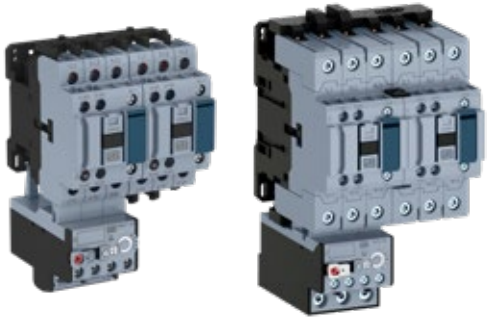
Coil voltage codes	D02	D07	D13	D15	D17	D77	D23	D24	D25	D33	D34	D35	D36
V (50/60 Hz)	24	48	110	120	127	208	220	230	240	380	400	415	440

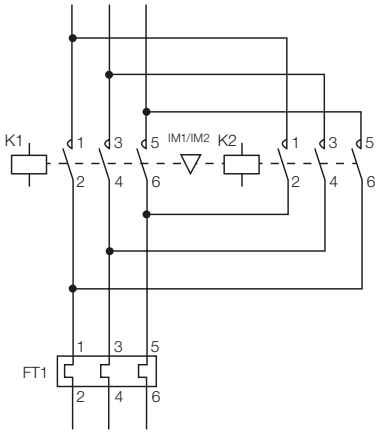
Coil voltage codes	C03	C07	C09	C12	C13	C15
V dc	24	48	60	110	125	220

Reversing Starters

CWB Contactor + RW27-2D/RW67-5D Thermal Overload Relay

- Remote load handling
- Overload protection
- Phase-loss sensitive
- Trip class 10
- Temperature compensation
- DIN rail mounting by fixing the contactors
- Manual/local or automatic reset





Motor current (A)	AC-3 contactor		Overload relay		Accessories		CWB + RW27-2D / CWB + RW27-5D3	Total weight (kg)
	Reference	Maximum rated current AC-3 (A)	Reference	Current I adjustment range (A)	Mechanical interlock kit	Easy-connection busbar	Maximum fuse (gL/gG) (coordination type 1) (A)	
0.28...0.4	CWB9-11-30♦	9	RW27-2D3-D004	0.28...0.4	IM1	EC-R1	2	0.91
0.43...0.63	CWB9-11-30♦	9	RW27-2D3-C063	0.43...0.63			2	0.91
0.56...0.8	CWB9-11-30♦	9	RW27-2D3-D008	0.56...0.8			2	0.91
0.8...1.2	CWB9-11-30♦	9	RW27-2D3-D012	0.8...1.2			4	0.91
1.2...1.8	CWB9-11-30♦	9	RW27-2D3-D018	1.2...1.8			6	0.91
1.8...2.8	CWB9-11-30♦	9	RW27-2D3-D028	1.8...2.8			6	0.91
2.8...4	CWB9-11-30♦	9	RW27-2D3-U004	2.8...4			10	0.91
4...6.3	CWB9-11-30♦	9	RW27-2D3-D063	4...6.3			16	0.91
5.6...8	CWB9-11-30♦	9	RW27-2D3-U008	5.6...8			20	0.91
7...9	CWB12-11-30♦	12	RW27-2D3-U010	7...10			25	0.91
8...12	CWB25-11-30♦	25	RW27-2D3-D125	8...12.5			25	0.98
10...15	CWB25-11-30♦	25	RW27-2D3-U015	10...15			35	0.98
11...17	CWB25-11-30♦	25	RW27-2D3-U017	11...17			40	0.98
15...23	CWB25-11-30♦	25	RW27-2D3-U023	15...23			50	0.98
22...32	CWB32-11-30♦	32	RW27-2D3-U032	22...32			63	0.98
32...38	CWB38-11-30♦	38	RW27-2D3-U040	32...40			90	0.98
25...40	CWB40-11-30♦	40	RW67-5D3-U040	25...40	IM2	EC-R2	80	2.3
32...50	CWB50-11-30♦	50	RW67-5D3-U050	32...50			100	2.3
40...57	CWB65-11-30♦	65	RW67-5D3-U057	40...57			100	2.3
50...63	CWB65-11-30♦	65	RW67-5D3-U063	50...63			100	2.3
57...70	CWB80-11-30♦	80	RW67-5D3-U070	57...70			125	2.3
63...80	CWB80-11-30♦	80	RW67-5D3-U080	63...80			125	2.3

Notes: Reference values valid for operating voltages up to 440 V, altitude up to 2,000 m, ambient temperature range from -20 °C to +55 °C, and maximum switching frequency up to 15 operations/hour.
For other conditions, check the technical data of each part.

To complete the reference code, replace "♦" by the appropriate coil voltage code

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

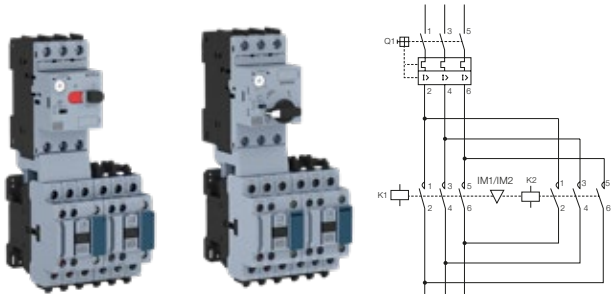
Coil voltage codes	C03	C07	C09	C12	C13	C15
V dc	24	48	60	110	125	220

Reversing Starters

CWB Contator + MPW18/MPW40/MPW80 Manual Motor Protectors

- Remote load handling
- Overload protection
- Phase-loss sensitive
- Temperature compensation
- DIN rail mounting by fixing only one part[1)]
- Manual/local or automatic reset
- Isolation and disconnection functions
- Protection against short circuit
- High short-circuit interrupting capacity
- Short circuit tripping device fixed at 13 x Iu

Note: 1) For reversing or star-delta starters, mount the contactors with screws.



Motor current (A)	AC-3 contactor		Motor-protective circuit breaker			Accessories			Total weight (kg)
	Reference	Maximum rated current AC-3 (A)	Reference	Current I adjustment range (A)	Instantaneous magnetic trip (Im) (A)	Connector	Easy-connection busbar	Mechanical interlock kit	
0.1...0.16	CWB9-11-30♦	9	MPW18-3-C016	0.1...0.16	2.0	ECCMP-18B38 (CWB - AC Coil)	EC-R1	IM1	1
0.16...0.25	CWB9-11-30♦	9	MPW18-3-C025	0.16...0.25	3.2				1
0.25...0.4	CWB9-11-30♦	9	MPW18-3-D004	0.25...0.4	5.2				1
0.4...0.63	CWB9-11-30♦	9	MPW18-3-C063	0.4...0.63	8.1				1
0.63...1	CWB9-11-30♦	9	MPW18-3-U001	0.63...1	13				1
1...1.6	CWB9-11-30♦	9	MPW18-3-D016	1...1.6	20.8				1
1.6...2.5	CWB9-11-30♦	9	MPW18-3-D025	1.6...2.5	32.5				1
2.5...4	CWB9-11-30♦	9	MPW18-3-U004	2.5...4	52				1
4...6.3	CWB9-11-30♦	9	MPW18-3-D063	4...6.3	81.9				1
6.3...10	CWB12-11-30♦	12	MPW18-3-U010	6.3...10	130				1
10...16	CWB18-11-30♦	18	MPW18-3-U016	10...16	208				1
16...20	CWB25-11-30♦	25	MPW18-3-U020	16...20	260				1.1
0.1...0.16	CWB9-11-30♦	9	MPW40-3-C016	0.1...0.16	2	ECCMP-40B38 (CWB - AC Coil) ECCMP-40B38DC (CWB - DC Coil)	EC-R1	IM1	1.1
0.16...0.25	CWB9-11-30♦	9	MPW40-3-C025	0.16...0.25	3.2				1.1
0.25...0.4	CWB9-11-30♦	9	MPW40-3-D004	0.25...0.4	5.2				1.1
0.4...0.63	CWB9-11-30♦	9	MPW40-3-C063	0.4...0.63	8.1				1.1
0.63...1	CWB9-11-30♦	9	MPW40-3-U001	0.63...1	13				1.1
1...1.6	CWB9-11-30♦	9	MPW40-3-D016	1...1.6	20.8				1.1
1.6...2.5	CWB9-11-30♦	9	MPW40-3-D025	1.6...2.5	32.5				1.1
2.5...4	CWB9-11-30♦	9	MPW40-3-U004	2.5...4	52				1.1
20...25	CWB25-11-30♦	25	MPW40-3-U025	20...25	325				1.18
25...32	CWB32-11-30♦	32	MPW40-3-U032	25...32	416				1.18
32...40	CWB38-11-30♦	38	MPW40-3-U040	32...40	520				1.18
32...40	CWB40-11-30♦	40	MPW80-3-U040	32...40	520	ECCMP-80B80 (CWB - - AC and DC Coil)	EC-R2	IM2	2.9
40...50	CWB50-11-30♦	50	MPW80-3-U050	40...50	650				2.9
50...65	CWB65-11-30♦	65	MPW80-3-U065	50...65	845				2.9
65...80	CWB80-11-30♦	80	MPW80-3-U080	65...80	1,040				2.9

Notes: Reference values valid for operating voltages up to 440 V, altitude up to 2,000 m, ambient temperature range from -20 °C to +55 °C, and maximum switching frequency up to 15 operations/hour.
For other conditions, check the technical data of each part.

To complete the reference code, replace "♦" by the appropriate coil voltage code

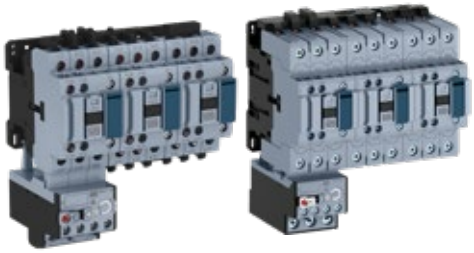
Coil voltage codes	D02	D07	D13	D15	D17	D77	D23	D24	D25	D33	D34	D35	D36
V (50/60 Hz)	24	48	110	120	127	208	220	230	240	380	400	415	440

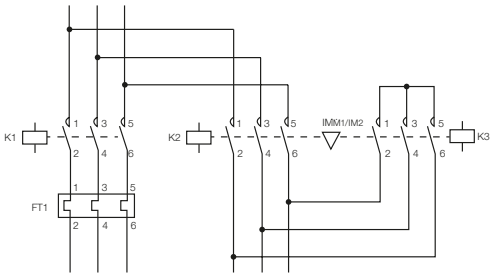
Coil voltage codes	C03	C07	C09	C12	C13	C15
V dc	24	48	60	110	125	220

Star-Delta Starters

CWB Contactor + RW27-2D/RW67-5D Thermal Overload Relay

- Remote load handling
- Overload protection
- Phase-loss sensitive
- Trip class 10
- Temperature compensation
- DIN rail mounting by fixing the contactors
- Manual/local or automatic reset





Motor current (A)	AC-3 contactor		Overload relay		Accessories			CWB + RW27-2D / CWB + RW27-5D	Total weight (kg)
	Contactor Δ (K1 and K2)	Contactor Y (K3)	Reference	Current I adjustment range (A)	Mechanical interlock kit	Easy-connection busbar	Timing relay Y-Δ	Maximum fuse (gL/gG) Coordination type 1	
0.5...0.7	CWB9-11-30♦	CWB9-11-30♦	RW27-2D3-D004	0.28...0.4	IM1	EC-SD1	RTW17-G02	2	1.3
0.7...1.1	CWB9-11-30♦	CWB9-11-30♦	RW27-2D3-C063	0.4...0.63				2	1.3
1.1...1.4	CWB9-11-30♦	CWB9-11-30♦	RW27-2D3-D008	0.63...0.8				2	1.3
1.4...2.1	CWB9-11-30♦	CWB9-11-30♦	RW27-2D3-D012	0.8...1.2				4	1.3
2.1...3.1	CWB9-11-30♦	CWB9-11-30♦	RW27-2D3-D018	1.2...1.8				6	1.3
3.1...4.8	CWB9-11-30♦	CWB9-11-30♦	RW27-2D3-D028	1.8...2.8				6	1.3
4.8...6.9	CWB9-11-30♦	CWB9-11-30♦	RW27-2D3-U004	2.8...4				10	1.3
6.9...10.9	CWB9-11-30♦	CWB9-11-30♦	RW27-2D3-D063	4...6.3				16	1.3
9.6...13.8	CWB9-11-30♦	CWB9-11-30♦	RW27-2D3-U008	5.6...8				20	1.3
12.1...17.2	CWB12-11-30♦	CWB9-11-30♦	RW27-2D3-U010	7...10				25	1.3
13.8...21.6	CWB18-11-30♦	CWB9-11-30♦	RW27-2D3-D125	8...12.5				25	1.3
17.2...25.9	CWB18-11-30♦	CWB9-11-30♦	RW27-2D3-U015	10...15				35	1.3
19...29.3	CWB18-11-30♦	CWB12-11-30♦	RW27-2D3-U017	11...17				40	1.3
25.9...39.7	CWB25-11-30♦	CWB18-11-30♦	RW27-2D3-U023	15...23				50	1.35
37.9...55.2	CWB32-11-30♦	CWB25-11-30♦	RW27-2D3-U032	22...32				63	1.4
43.1...65.5	CWB38-11-30♦	CWB25-11-30♦	RW27-2D3-U040	32...40				90	1.4
43.1...69	CWB40-11-30♦	CWB40-11-30♦	RW67- 5D3 -U040	25...40	IM2	EC-SD2		80	3.1
55.2...86.2	CWB50-11-30♦	CWB40-11-30♦	RW67- 5D3 -U050	32...50				100	3.1
69...98.3	CWB65-11-30♦	CWB40-11-30♦	RW67- 5D3 -U057	40...57				100	3.1
86.2...108.6	CWB65-11-30♦	CWB40-11-30♦	RW67- 5D3 -U063	50...63				100	3.1
98.3...120.7	CWB80-11-30♦	CWB40-11-30♦	RW67- 5D3 -U070	57...70				125	3.1
108.6...137.9	CWB80-11-30♦	CWB40-11-30♦	RW67- 5D3 -U080	63...80				125	3.1

Notes: Reference values valid for operating voltages up to 440 V, altitude up to 2,000 m, ambient temperature range from -20 °C to +55 °C, and maximum switching frequency up to 15 operations/hour.
For other conditions, check the technical data of each part.
The electronic timer is not shown in the figure.

To complete the reference code, replace "♦" by the appropriate coil voltage code

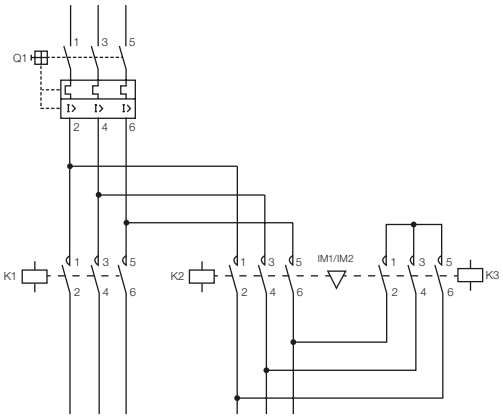
Coil voltage codes	D02	D07	D13	D15	D17	D77	D23	D24	D25	D33	D34	D35	D36
V (50/60 Hz)	24	48	110	120	127	208	220	230	240	380	400	415	440

Coil voltage codes	C03	C07	C09	C12	C13	C15
V dc	24	48	60	110	125	220

Star-Delta Starters

CWB Contator + MPW18 Manual Motor Protectors

- Remote load handling
- Protection against overload
- Phase-loss sensitive
- Temperature compensation
- DIN rail mounting by fixing only one part[1)]
- Manual/local reset
- Isolation and disconnection functions
- Protection against short circuit
- High short circuit interrupting capacity
- Short circuit tripping device fixed at 13 x Iu



Note: 1) For reversing or star-delta starters, mount the contactors with screws.

Motor current (A)	AC-3 contactor		Motor-protective circuit breaker			Accessories				Total weight (kg)
	Contactor Δ (K1 and K2)	Contactor Y (K3)	Reference	Current I adjustment range (A)	Instantaneous magnetic trip Im (A)	Connector	Mechanical interlock kit	Easy-connection busbar	Timing relay Y-Δ	
0.1...0.16	CWB9-11-30♦	CWB9-11-30♦	MPW18-3-C016	0.1...0.16	2.0	ECCMP-18B38 (CWB - AC Coil)	IM1	EC-SD1	RTW17-G02	1.4
0.16...0.25	CWB9-11-30♦	CWB9-11-30♦	MPW18-3-C025	0.16...0.25	3.2					1.4
0.25...0.4	CWB9-11-30♦	CWB9-11-30♦	MPW18-3-D004	0.25...0.4	5.2					1.4
0.4...0.63	CWB9-11-30♦	CWB9-11-30♦	MPW18-3-C063	0.4...0.63	8.1					1.4
0.63...1	CWB9-11-30♦	CWB9-11-30♦	MPW18-3-U001	0.63...1	13					1.4
1...1.6	CWB9-11-30♦	CWB9-11-30♦	MPW18-3-D016	1...1.6	20.8					1.4
1.6...2.5	CWB9-11-30♦	CWB9-11-30♦	MPW18-3-D025	1.6...2.5	32.5					1.4
2.5...4	CWB9-11-30♦	CWB9-11-30♦	MPW18-3-U004	2.5...4	52					1.4
4...6.3	CWB9-11-30♦	CWB9-11-30♦	MPW18-3-D063	4...6.3	81.9					1.4
6.3...10	CWB9-11-30♦	CWB9-11-30♦	MPW18-3-U010	6.3...10	130					1.4
10...16	CWB12-11-30♦	CWB9-11-30♦	MPW18-3-U016	10...16	208					1.4
12...18	CWB12-11-30♦	CWB9-11-30♦	MPW18-3-U018	12...18	260					1.4

Notes: Reference values valid for operating voltages up to 440 V, altitude up to 2,000 m, ambient temperature range from -20 °C to +55 °C, and maximum switching frequency up to 15 operations/hour. For other conditions, check the technical data of each part.
The electronic timer is not shown in the figure.

To complete the reference code, replace "♦" by the appropriate coil voltage code

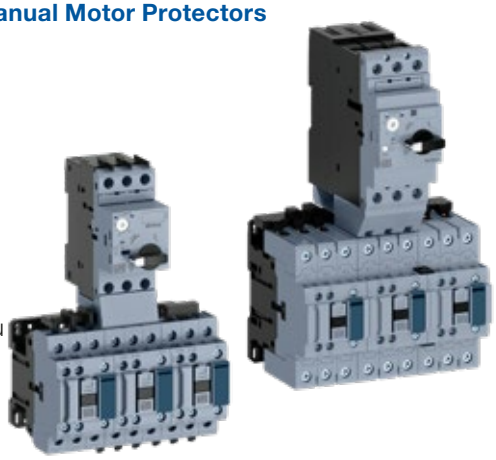
Coil voltage codes	D02	D07	D13	D15	D17	D77	D23	D24	D25	D33	D34	D35	D36
V (50/60 Hz)	24	48	110	120	127	208	220	230	240	380	400	415	440

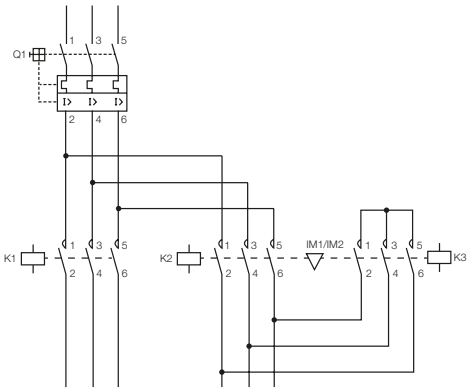
Coil voltage codes	C03	C07	C09	C12	C13	C15
V dc	24	48	60	110	125	220

Star-Delta Starters

CWB Contator + MPW40/MPW80 Manual Motor Protectors

- Remote load handling
- Protection against overload
- Phase-loss sensitive
- Temperature compensation
- DIN rail mounting by fixing only one part[1)]
- Manual/local or automatic reset
- Isolation and disconnection functions
- Protection against short circuit
- High short circuit interrupting capacity
- Short circuit tripping device fixed at 13 x Iu





Note: 1) For reversing or star-delta starters, mount the contactors with screws.

Motor current (A)	AC-3 contactor		Motor-protective circuit breaker			Accessories				Total weight (kg)
	Contactor Δ (K1 and K2)	Contactor Y (K3)	Reference	Current I adjustment range (A)	Instantaneous magnetic trip Im (A)	Connector	Mechanical interlock kit	Easy-connection busbar	Timing relay Y-Δ	
0.1...0.16	CWB9-11-30♦	CWB9-11-30♦	MPW40-3-C016	0.1...0.16	2.0	ECCMP-40B38 (CWB - AC Coil) ECCMP-40B38DC (CWB - DC Coil)	IM1	EC-SD1	RTW17-G02	1.48
0.16...0.25	CWB9-11-30♦	CWB9-11-30♦	MPW40-3-C025	0.16...0.25	3.2					1.48
0.25...0.4	CWB9-11-30♦	CWB9-11-30♦	MPW40-3-D004	0.25...0.4	5.2					1.48
0.4...0.63	CWB9-11-30♦	CWB9-11-30♦	MPW40-3-C063	0.4...0.63	8.1					1.48
0.63...1	CWB9-11-30♦	CWB9-11-30♦	MPW40-3-U001	0.63...1	13					1.48
1...1.6	CWB9-11-30♦	CWB9-11-30♦	MPW40-3-D016	1...1.6	20.8					1.48
1.6...2.5	CWB9-11-30♦	CWB9-11-30♦	MPW40-3-D025	1.6...2.5	32.5					1.48
2.5...4	CWB9-11-30♦	CWB9-11-30♦	MPW40-3-U004	2.5...4	52					1.48
4...6.3	CWB9-11-30♦	CWB9-11-30♦	MPW40-3-D063	4...6.3	81.9					1.48
6.3...10	CWB9-11-30♦	CWB9-11-30♦	MPW40-3-U010	6.3...10	130					1.48
10...16	CWB12-11-30♦	CWB9-11-30♦	MPW40-3-U016	10...16	208					1.48
16...20	CWB12-11-30♦	CWB9-11-30♦	MPW40-3-U020	16...20	260					1.48
20...25	CWB18-11-30♦	CWB9-11-30♦	MPW40-3-U025	20...25	325					1.48
25...32	CWB25-11-30♦	CWB12-11-30♦	MPW40-3-U032	25...32	416					1.55
32...40	CWB25-11-30♦	CWB18-11-30♦	MPW40-3-U040	32...40	520					1.55
32...40	CWB40-11-30♦	CWB40-11-30♦	MPW80-3-U040	32...40	520	ECCMP-80B80 (CWB - AC and DC Coil)	IM2	EC-SD2		3.83
40...50	CWB50-11-30♦	CWB40-11-30♦	MPW80-3-U050	40...50	650					3.83
50...65	CWB65-11-30♦	CWB40-11-30♦	MPW80-3-U065	50...65	845					3.83
65...80	CWB80-11-30♦	CWB40-11-30♦	MPW80-3-U080	65...80	1,040					3.83

Notes: Reference values valid for operating voltages up to 440 V, altitude up to 2,000 m, ambient temperature range from -20 °C to +55 °C, and maximum switching frequency up to 15 operations/hour.
For other conditions, check the technical data of each part.
The electronic timer is not shown in the figure.

To complete the reference code, replace "♦" by the appropriate coil voltage code

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

Coil voltage codes	C03	C07	C09	C12	C13	C15
V dc	24	48	60	110	125	220

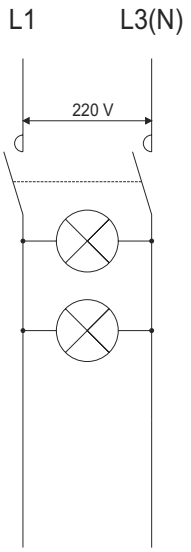
Contactors for Lighting Circuits

- **Single-Phase Circuit**
  Total number of light bulbs shown in the next figure.

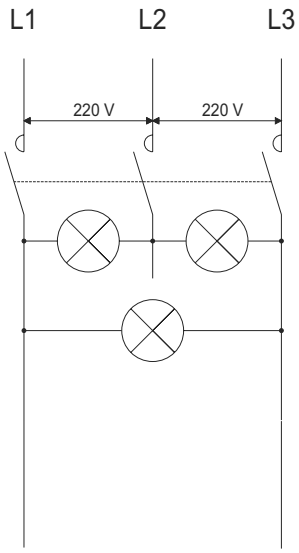
- **Three-Phase Circuit Connected in Delta**
  Total number of light bulbs shown in the next figure, multiplied by 1.73 and distributed in three equal quantities.

- **Three-Phase Circuit Connected in Delta**
  Total number of light bulbs shown in the next figure, multiplied by 3 and distributed in three equal quantities.

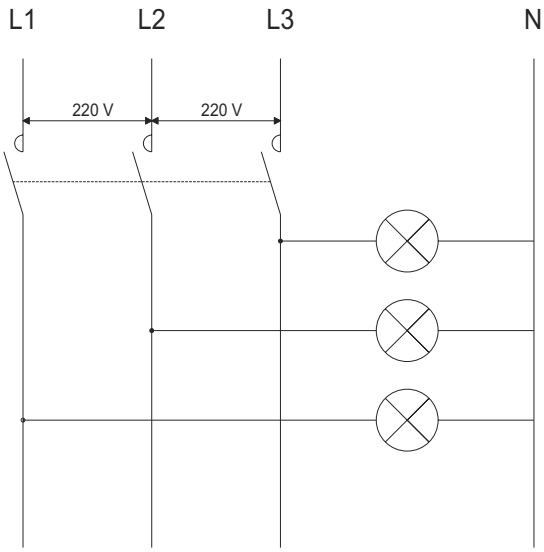
Diagrams



Single-phase circuit



Three-phase circuit connected in delta



Three-phase circuit connected in star

Most Common Characteristics of the Illumination Systems

- **Incandescent Light Bulbs**
  High inrush current (≈15 x I_n). Despite the short duration, it must be taken into account so that this current will not be greater than the making capacity of the contactor. Power factor is always 1.

- **Fluorescent Lamps**
  Current slightly above the rated inrush current. Power factor is normally 0.5, and it can be improved up to 0.9 by using capacitors. In some cases, the connection of capacitors must be taken into consideration, as they may cause some damages to smaller contactors.

- **High-Pressure Mercury-Vapor and Metal-Halide Lamps**
  Inrush current varies according to the lamp type, around 1.6....2 x I_n and it remains for 3 to 5 minutes. The power factor is around 0.6 and may be improved up to 1 by using capacitors. In some cases, the connection of capacitors must be taken into consideration, as they may cause some damages to smaller contactors.

- **High-Pressure Sodium Lamps**
  Inrush current varies according to the lamp type, around 1.3....1.6 x I_n e se mantém por 3 a 5 minutos. and it remains for 3 to 5 minutes. The power factor is around 0.45 and may be improved up to 1 using capacitors. In some cases, the connection of capacitors must be taken into consideration, as they may cause some damages to smaller contactors.

Contactors for Lighting Circuits

				Maximum number of lamps per phase at 220 V									
Lamp type	W	A[2)]	µF	CWB9	CWB12	CWB18	CWB25	CWB32	CWB38	CWB40	CWB50	CWB65	CWB80
Incandescent and halogen	60	0.27	-	56	56	67	101	118	135	148	185	241	296
	100	0.45	-	33	33	40	60	71	81	89	111	144	178
	150	0.68	-	22	22	26	40	47	53	59	74	96	118
	200	0.91	-	16	16	19	29	35	40	44	55	71	88
	300	1.4	-	10	10	12	19	22	26	29	36	46	54
	500	2.3	-	6	6	7	11	13	15	17	22	28	35
	750	3.4	-	4	4	5	8	9	10	12	15	19	24
	1,000	4.6	-	3	3	3	5	6	7	9	11	14	17
	AC-5b [1)] (A)			15	15	18	28	32	36	40	50	65	80
Fluorescent lamps with electronic starter													
Single arrangement													
Without compensation	20	0.39	-	41	41	53	66	89	112	115	144	187	230
	40	0.45	-	35	35	46	57	77	97	100	124	162	199
	65	0.7	-	22	22	30	37	50	62	64	80	104	128
	80	0.8	-	20	20	26	32	43	55	56	70	91	112
	110	1.2	-	13	13	17	21	29	36	37	47	61	75
With paralel compensation	20	0.17	5	94	94	123	152	205	258	264	329	428	527
	40	0.26	5	61	61	80	100	134	169	172	215	280	345
	65	0.42	7	38	38	50	61	83	104	107	133	173	213
	80	0.52	7	30	30	40	50	67	84	86	108	140	172
	110	0.72	16	22	22	29	36	48	61	62	78	101	124
Dual mounting													
Without compensation	2x20	2x0.22	-	2x36	2x36	2x46	2x58	2x78	2x100	2x102	2x127	2x165	2x204
	2x40	2x0.41	-	2x18	2x18	2x24	2x30	2x42	2x52	2x55	2x68	2x89	2x109
	2x65	2x0.67	-	2x10	2x10	2x14	2x18	2x26	2x32	2x33	2x42	2x54	2x67
	2x80	2x0.82	-	2x8	2x8	2x12	2x14	2x20	2x26	2x27	2x34	2x44	2x55
	2x110	2x1.10	-	2x6	2x6	2x8	2x10	2x14	2x18	2x20	2x25	2x33	2x41
With series compensation	2x20	2x0.13	-	2x60	2x60	2x80	2x100	2x134	2x168	2x172	2x215	2x280	2x345
	2x40	2x0.24	-	2x32	2x32	2x42	2x54	2x72	2x90	2x93	2x117	2x152	2x187
	2x65	2x0.39	-	2x20	2x20	2x26	2x32	2x44	2x56	2x57	2x72	2x93	2x115
	2x80	2x0.48	-	2x16	2x16	2x20	2x26	2x36	2x44	2x47	2x58	2x76	2x93
	2x110	2x0.65	-	2x12	2x12	2x16	2x20	2x26	2x32	2x34	2x43	2x56	2x69
Fluorescent lamps without electronic starter													
Single mounting													
Without compensation	20	0.43	-	37	37	48	60	97	102	104	130	169	208
	40	0.55	-	29	29	38	47	63	80	81	102	132	163
	65	0.8	-	20	20	26	32	43	55	56	70	91	112
	80	0.95	-	16	16	22	27	36	46	47	59	77	94
	110	1.4	-	11	11	15	18	25	31	32	40	52	64
With paralel compensation	20	0.19	5	84	84	110	136	184	231	236	295	383	472
	40	0.29	5	55	55	72	89	101	151	154	193	251	309
	65	0.46	7	34	34	45	56	76	95	97	122	158	195
	80	0.57	7	28	28	36	45	61	77	79	98	128	157
	110	0.79	16	20	20	26	32	44	55	57	71	92	113
Dual mounting													
Without compensation	2x20	2x0.25	-	2x32	2x32	2x42	2x52	2x70	2x88	2x90	2x112	2x146	2x179
	2x40	2x0.47	-	2x16	2x16	2x22	2x26	2x36	2x46	2x48	2x60	2x77	2x95
	2x65	2x0.76	-	2x10	2x10	2x12	2x16	2x22	2x28	2x29	2x37	2x48	2x59
	2x80	2x0.93	-	2x8	2x8	2x10	2x12	2x18	2x22	2x24	2x30	2x39	2x48
	2x110	2x1.3	-	2x6	2x6	2x8	2x10	2x12	2x16	2x17	2x22	2x28	2x34
With paralel compensation	2x20	2x0.14	-	2x56	2x56	2x74	2x92	2x124	2x156	2x16	2x200	2x260	2x320
	2x40	2x0.26	-	2x30	2x30	2x40	2x50	2x66	2x84	2x86	2x108	2x140	2x172
	2x65	2x0.43	-	2x18	2x18	2x24	2x30	2x40	2x50	2x52	2x65	2x85	2x104
	2x80	2x0.53	-	2x14	2x14	2x18	2x24	2x32	2x40	2x42	2x53	2x69	2x51
	2x110	2x0.72	-	2x10	2x10	2x14	2x18	2x24	2x30	2x31	2x39	2x51	2x62

Notes: 1) Indicative values - It's highly recommended to take into consideration the values of making capacity and rated AC-1 current when dimensioning the contactor for AC-5b utilization category (switching of incandescent lamps).
2) Rated current for each lamp at rated voltage.

Contactors for Lighting Circuits

				Maximum number of lamps per phase at 220 V									
Lamp type	W	A	µF	CWB9	CWB12	CWB18	CWB25	CWB32	CWB38	CWB40	CWB50	CWB65	CWB80
Low pressure sodium vapor													
Without compensation	35	1.2	-	10	10	12	15	21	27	37	46	60	73
	55	1.6	-	7	7	9	11	16	20	28	34	45	55
	90	2.4	-	5	5	6	7	10	13	18	23	30	37
	135	3.1	-	3	3	4	6	8	10	14	18	23	28
	150	3.2	-	3	3	4	5	8	10	14	17	22	28
	180	3.3	-	3	3	4	5	7	10	14	17	22	27
	200	3.4	-	3	3	4	5	7	9	13	16	21	26
With paralel compensation	35	0.3	17	40	40	50	63	86	110	149	187	243	299
	55	0.4	17	30	30	37	47	65	82	112	140	182	224
	90	0.6	25	-	-	25	31	43	55	75	93	121	149
	135	0.9	36	-	-	-	21	28	36	50	62	81	100
	150	1	36	-	-	-	19	26	33	45	56	73	90
	180	1.2	36	-	-	-	15	21	27				
	200	1.3	36	-	-	-	14	20	25				
High pressure sodium vapor													
Without compensation	150	1.9	-	6	6	7	10	13	17	21	26	34	42
	250	3.2	-	3	3	4	5	8	10	13	16	20	25
	400	5	-	2	2	3	3	5	6	8	10	13	16
	700	8.8	-	1	1	1	2	2	3	5	6	7	9
	1,000	12.4	-	-	-	1	1	2	2	3	4	5	6
With paralel compensation	150	0.84	20	-	-	17	22	30	39	48	60	77	95
	250	1.4	32	-	-	-	13	18	23	29	36	46	57
	400	2.2	48	-	-	-	8	11	15	18	23	30	36
	700	3.9	96	-	-	-	-	6	8	10	13	17	21
	1,000	5.5	120	-	-	-	-	-	6	7	9	12	15
High pressure mercury vapor													
Without compensation	50	0.54	-	22	22	27	35	48	61	74	93	120	148
	80	0.81	-	14	14	18	23	32	40	49	62	80	99
	125	1.2	-	9	9	12	15	21	27	33	42	54	67
	250	2.3	-	5	5	6	8	11	14	17	22	28	35
	400	4.1	-	2	2	3	4	6	8	10	12	16	20
	700	6.8	-	1	1	2	2	3	4	6	7	10	12
	1,000	9.9	-	1	1	1	1	2	3	4	5	7	8
With paralel compensation	50	0.3	10	40	40	50	63	86	110	133	167	217	267
	80	0.45	10	26	26	33	42	57	73	89	111	144	178
	125	0.67	10	17	17	22	28	38	49	60	75	97	119
	250	1.3	18	9	9	11	14	20	25	31	38	50	62
	400	2.3	25	-	-	6	8	11	14	17	22	28	35
	700	3.8	40	-	-	-	5	6	8				
	1,000	5.5	60	-	-	-	3	4	6				
Metal iodide													
Without compensation	250	2.5	-	4	4	6	7	10	12	16	20	26	32
	400	3.6	-	3	3	4	5	7	8	11	14	18	22
	1,000	9.5	-	1	1	1	2	2	3	4	5	7	8
	2,000	20	-	-	-	-	-	1	1	2	3	3	4
With paralel compensation	250	1.4	32	-	-	-	13	18	21	29	36	46	57
	400	2	32	-	-	-	9	13	15	20	25	33	40
	1,000	5.3	64	-	-	-	-	4	6	8	9	12	15
	2,000	11.2	140	-	-	-	-	-	-	4	4	6	7

Contactors for DC Switching

Utilization Category DC-1 (L/R ≤1ms)

Reference code		CWB9	CWB12	CWB18	CWB25	CWB32	CWB38	CWB40	CWB50	CWB65	CWB80
U_e	Poles in series	Rated operational current I_e (A)									
≤24 V	1	18	18	18	25	32	40	40	50	65	65
	2	25	25	32	45	60	60	40	50	65	65
	3	25	25	32	45	60	60	40	50	65	65
≤48 V	1	15	15	15	20	25	35	40	50	65	65
	2	25	25	32	45	60	60	40	50	65	65
	3	25	25	32	45	60	60	40	50	65	65
≤60 V	1	12	12	12	18	18	32	40	50	65	65
	2	25	25	32	45	60	60	40	50	65	65
	3	25	25	32	45	60	60	40	50	65	65
≤125 V	1	6	6	6	8	8	8	10	10	10	10
	2	18	18	18	25	45	45	40	50	60	60
	3	25	25	25	32	60	60	40	60	65	65
≤220 V	1	0.8	0.8	0.8	0.8	1	1	2	2	2	2
	2	7.5	7.5	7.5	8	8	8	10	10	10	10
	3	25	25	25	32	50	50	40	50	60	60
≤440 V	1	0.4	0.4	0.4	0.4	0.5	0.5	1	1	1	1
	2	0.8	0.8	0.8	0.8	1	1	2	2	2	2
	3	8	8	8	10	10	10	10	10	10	10
≤600 V	1	-	-	-	-	-	-	-	-	-	-
	2	0.4	0.4	0.4	0.4	0.5	0.5	1	1	1	1
	3	4	4	4	5	5	5	2	2	2	2

Utilization Category DC-3 (L/R ≤2.5ms)

Reference code		CWB9	CWB12	CWB18	CWB25	CWB32	CWB38	CWB40	CWB50	CWB65	CWB80
U_e	Poles in series	Rated operational current I_e (A)									
≤24 V	1	12	12	12	18	25	32	36	45	55	55
	2	18	18	18	25	40	40	36	45	55	55
	3	18	18	18	25	40	40	36	45	55	55
≤48 V	1	9	9	9	12	18	20	36	45	55	55
	2	18	18	18	25	40	40	36	45	55	55
	3	18	18	18	25	40	40	36	45	55	55
≤60 V	1	7.5	7.5	7.5	10	15	15	36	45	55	55
	2	18	18	18	25	40	40	36	45	55	55
	3	18	18	18	25	40	40	36	45	55	55
≤125 V	1	2	2	2	2	3	3	5	5	5	5
	2	10	10	12	18	25	32	36	45	50	50
	3	15	15	18	25	32	40	36	54	55	55
≤220 V	1	0.6	0.6	0.6	0.6	0.6	0.6	1	1	1	1
	2	2	2	2	2	2	2	5	5	5	5
	3	12	12	12	18	25	32	36	45	50	50
≤440 V	1	-	-	-	-	-	-	-	-	-	-
	2	0.3	0.3	0.3	0.3	0.5	0.5	1	1	1	1
	3	1.5	1.5	1.5	1.5	3	3	5	5	5	5
≤600 V	1	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	1	1	1	1
	3	0.8	0.8	0.8	0.8	1.5	1.5	-	-	-	-

Note: 1) Operating duty according to IEC/EN 60947-4-1:
DC-1 (non-inductive or slightly inductive loads, resistive furnaces);
DC-3 (shunt-motors: starting, plugging and inching. Dynamic braking of DC motors);
DC-5 (series-motors: starting, plugging and inching, dynamic braking of DC motors).

Contactors for DC Switching

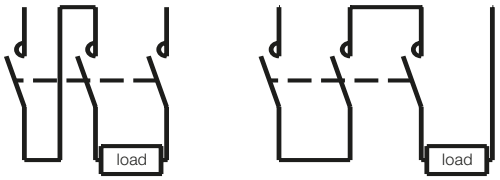
Utilization Category DC-5 (L/R ≤15ms)

Reference code		CWB9	CWB12	CWB18	CWB25	CWB32	CWB38	CWB40	CWB50	CWB65	CWB80
U_e	Poles in series	Rated operational current I_e (A)									
≤24 V	1	12	12	12	18	25	32	36	45	55	55
	2	18	18	18	25	40	40	36	45	55	55
	3	18	18	18	25	40	40	36	45	55	55
≤48 V	1	9	9	9	12	18	20	36	45	55	55
	2	18	18	18	25	40	40	36	45	55	55
	3	18	18	18	25	40	40	36	45	55	55
≤60 V	1	7.5	7.5	7.5	10	15	15	36	45	55	55
	2	18	18	18	25	40	40	36	45	55	55
	3	18	18	18	25	40	40	36	45	55	55
≤125 V	1	0.8	0.8	0.8	0.8	1.2	1.2	5	5	5	5
	2	5	5	5	5	5	5	36	45	50	50
	3	15	15	15	20	25	32	36	54	55	55
≤220 V	1	-	-	-	-	-	-	1	1	1	1
	2	0.8	0.8	0.8	0.8	0.8	0.8	5	5	5	5
	3	3	3	3	3	3	3	36	45	50	50
≤440 V	1	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	1	1	1	1
	3	0.4	0.5	0.5	0.5	0.7	0.7	5	5	5	5
≤600 V	1	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-

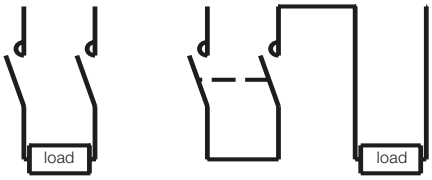
Wiring Diagrams

1 Pole in Series

3 Poles in Series



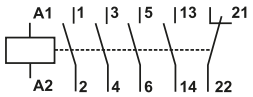
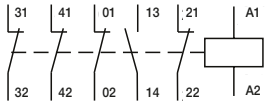
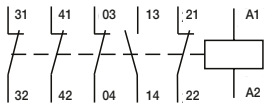
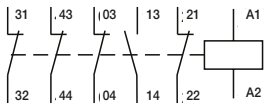
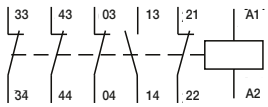
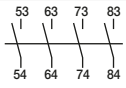
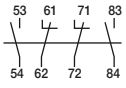
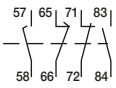
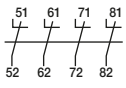
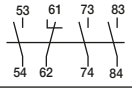
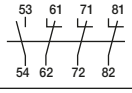
2 Poles in Series



Note: 1) Operating duty according to IEC/EN 60947-4-1:
DC-1 (non-inductive or slightly inductive loads, resistive furnaces);
DC-3 (shunt-motors: starting, plugging and inching. Dynamic braking of DC motors);
DC-5 (series-motors: starting, plugging and inching, dynamic braking of DC motors).

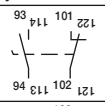
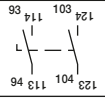
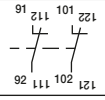
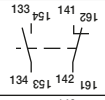
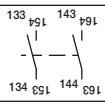
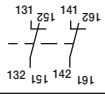
Technical Data

Terminal Markings According to IEC/EN 60947

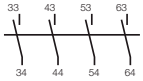
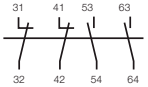
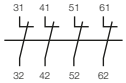
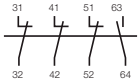
Diagram	Configuration	Auxiliary contacts		Reference code
		NO	NC	
3-poles contactors with built-in auxiliary contacts				CWB9...80 A
	11	1	1	CWB9-11-30♦ CWB12-11-30♦ CWB18-11-30♦ CWB25-11-30♦ CWB32-11-30♦ CWB38-11-30♦ CWB40-11-30♦ CWB50-11-30♦ CWB65-11-30♦ CWB80-11-30♦
Auxiliary contactors				
	14	1	4	CAWB-14-00♦
	23	2	3	CAWB-23-00♦
	32	3	2	CAWB-32-00♦
	41	4	1	CAWB-41-00♦
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

Technical Data

Terminal Markings According to IEC/EN 60947

Side mounted auxiliary contact blocks				
	11	1	1	BLB11
	20	2	0	BLB20
	02	0	2	BLB02
	11	1	1	BLRB11
	20	2	0	BLRB20
	02	0	2	BLRB02

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

Technical Data

General Data

Reference code			CAWB	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							1000 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 = 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 values[1)]			3,000 m										

Control Circuit - Alternating Current (AC)

Reference code			CWB9...38, CAWB		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, CAWB	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 operationg 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 x I_e and 0.80 x U_i) and of 4,000...5,000 m (0.80 x I_e and 0.75 x U_i).

Technical Data

Main Contacts

Reference code			CWB9	CWB12	CWB18	CWB25	CWB32	CWB38	CWB40	CWB50	CWB65	CWB80
Rated operational current I_e	AC-3 (U_e ≤440 V)	(A)	9	12	18	25	32	38	40	50	65	80
	AC-4 (U_e ≤440 V)	(A)	4.4	5.8	8.5	10.4	13.7	13.7	18.5	18.5	26	32
	AC-1 (θ ≤55 °C, Ue ≤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_{th} (θ ≤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 ≤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 recovery time of 15min and θ ≤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 Fuse (gL/gG)	@600 V - UL/CSA	(kA)	5									
	Coordination type 1	(A)	25	40	50	63	63	63	80	100	125	160
	Coordination type 2	(A)	20	20	25	35	50	50	63	80	100	125
Impedance per pole		(mΩ)	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
Control circuit reliability[1)]	(V/mA)		50/100									
Utilization category AC-3												
Rated operational current I_e (θ ≤55 °C)	U_e ≤440 V	(A)	9	12	18	25	32	38	40	50	65	80
	U_e ≤500 V	(A)	9	12	15.8	23	28.5	28.5	35	45	55	75
	U_e ≤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_e	(U_e ≤440 V)	(A)	4.4	5.8	8.5	10.4	13.7	13.7	18.5	18.5	26	32
	(U_e ≤500 V)	(A)	3.9	5.1	7.5	12	13.9	13.9	17.5	23.5	28.5	33
	(U_e ≤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

Note: 1) In order to achieve acceptable reliability for application and/or continuity test on the power contacts, a minimum voltage and current of 50 V and 100 mA, respectively, must be used. For lower values, the auxiliary contacts must be used.

Technical Data

Main Contacts

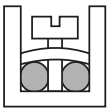
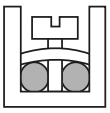
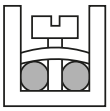
Reference code			CWB9	CWB12	CWB18	CWB25	CWB32	CWB38	CWB40	CWB50	CWB65	CWB80
			Utilization category AC-1									
			3P (NO)									
Conventional thermal current Ith (θ ≤55 °C)		(A)	25	25	32	40	50	50	60	90	110	110
Maximum orientative operational current according to the ambient temperature	θ ≤60 °C (Ue ≤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_e x 1.7									
	3 poles in parallel		I_e 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, CAWB (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_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		

Technical Data

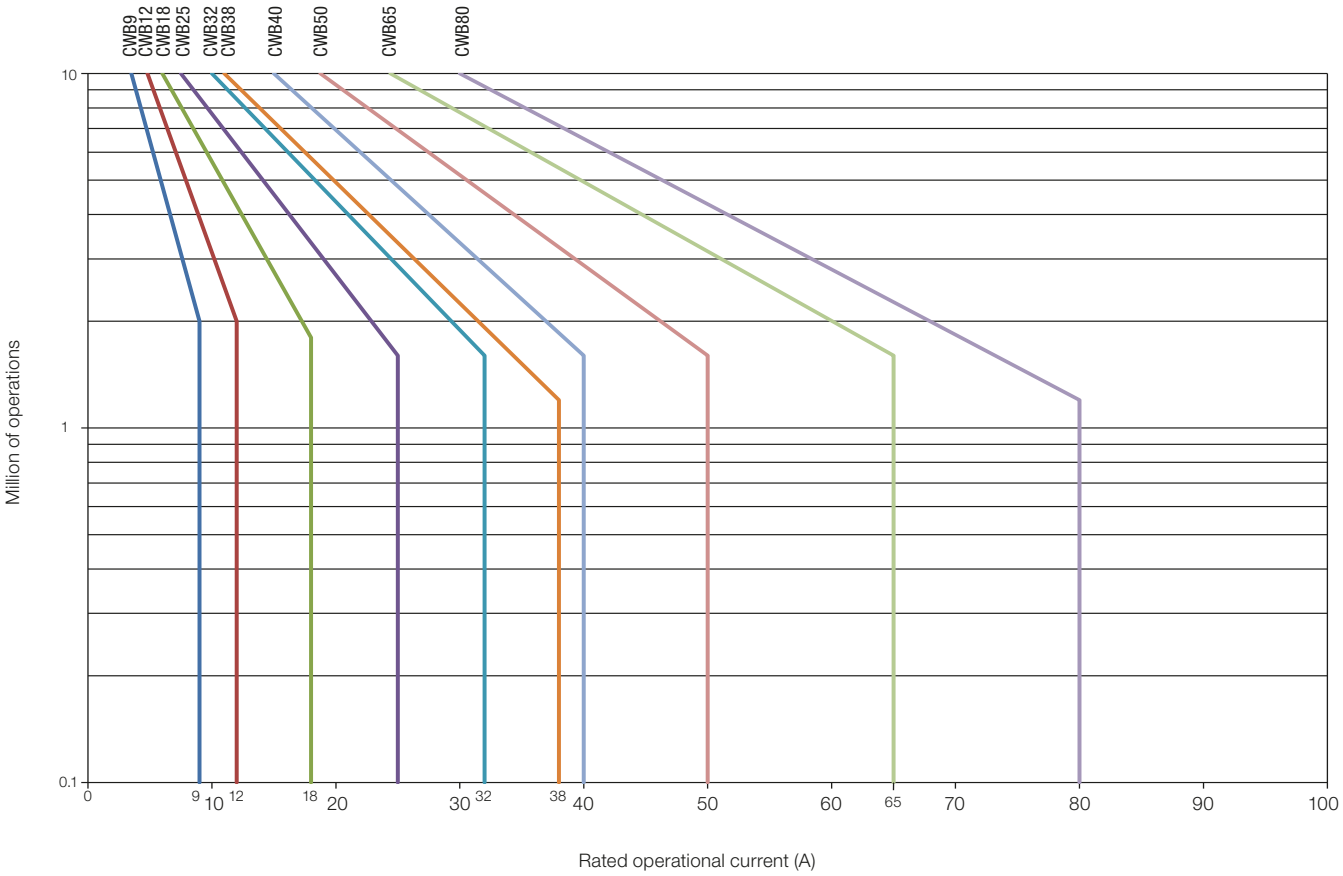
Terminal Capacity and Tightening Torque

			Conductor cross-section		
Power circuit					
Model			**CWB9...18, CAWB**	**CWB25...38**	**CWB40...80**
Mounting system screw type			Phillips number 2	Phillips number 2	ALLEN 4 mm
Flexible conductor without terminal	**(mm²)**		1 x 1...6 2 x 1...6	1 x 2.5...10 2 x 2.5...10	1 x 2.5...30 2 x 2.5...30
Flexible conductor with terminal	**(mm²)**		1 x 1...6 2 x 1...4	1 x 1.5...10 2 x 1.5...6	1 x 2.5...30 2 x 2.5...30
Solid wire	**(mm²)**		1 x 1...6 2 x 1...6	1 x 2.5...10 2 x 2.5...10	1 x 2.5...30 2 x 2.5...30
Tightening torque	**(Nm)**		1.7	2.5	5.0
Control and auxiliary circuit					
Models			**CWB9...38 , CAWB**		**CWB40...80**
Mounting system screw type			Phillips number 2		Phillips number 2
Flexible conductor without terminal	**(mm²)**		1 x 1...4 2 x 1...4		1 x 1...4 2 x 1...4
Flexible conductor with terminal	**(mm²)**		1 x 1...4 2 x 1...2.5		1 x 1...4 2 x 1...2.5
Solid wire	**(mm²)**		1 x 1...4 2 x 1...4		1 x 1...4 2 x 1...4
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	**(mm²)**		1 x 1...2.5 2 x 1...2.5		
Flexible conductor with terminal	**(mm²)**		1 x 1...2.5 2 x 1...2.5		
Solid wire	**(mm²)**		1 x 1...2.5 2 x 1...2.5		
Tightening torque	**(Nm)**		1.0		

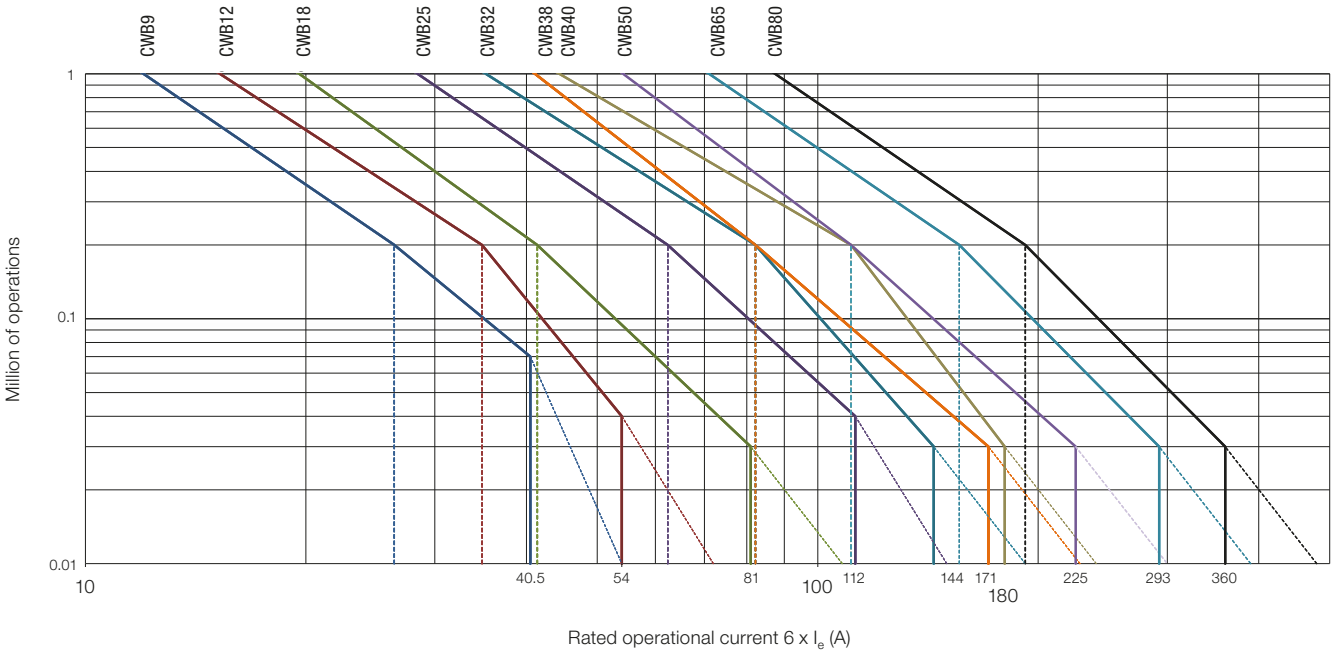
Technical Data

Electrical Lifespan Curves

Utilization Category AC-3 (U_e ≤440 V ac)



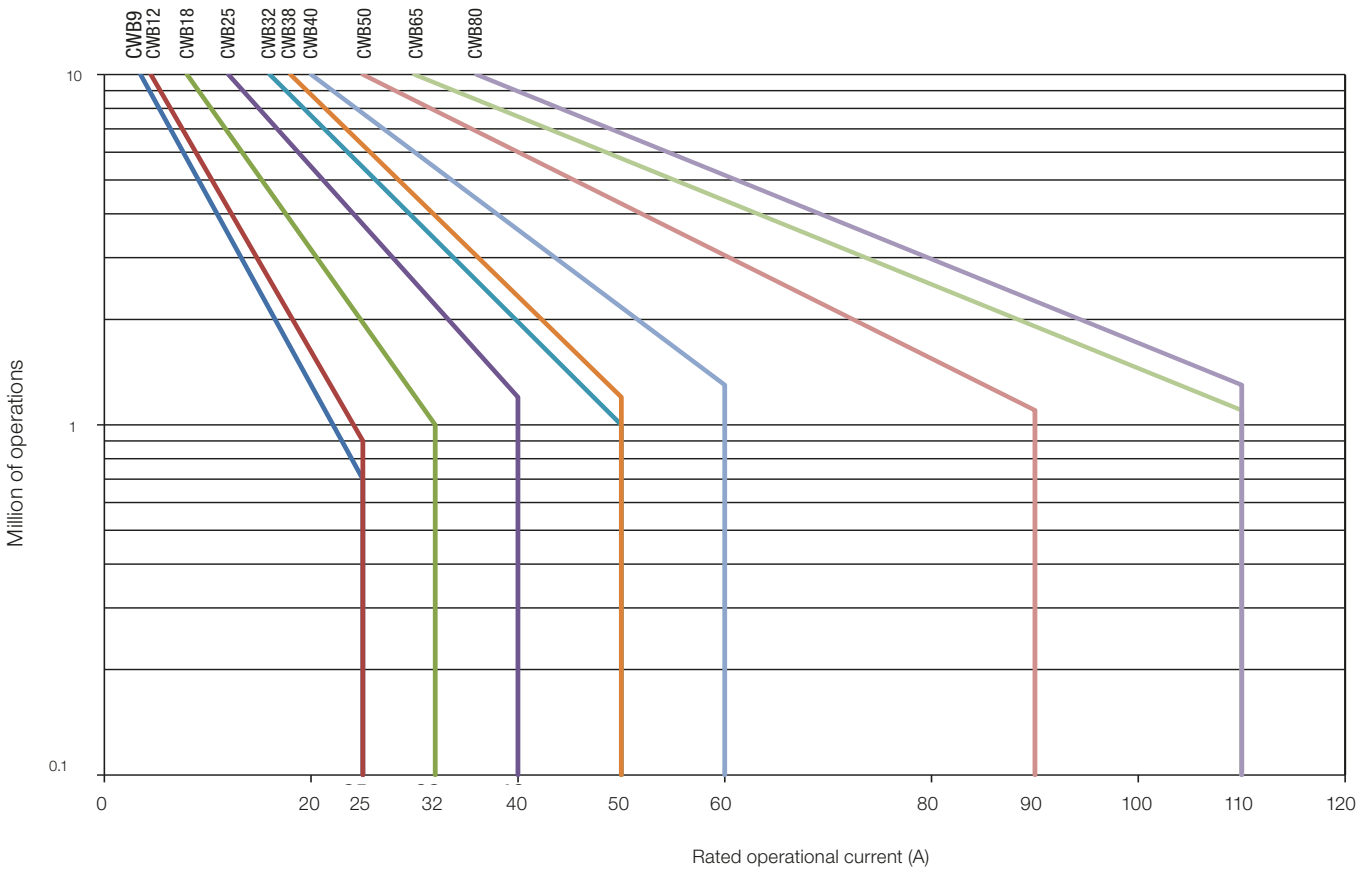
Utilization Category AC-4 (U_e ≤440 V ac)



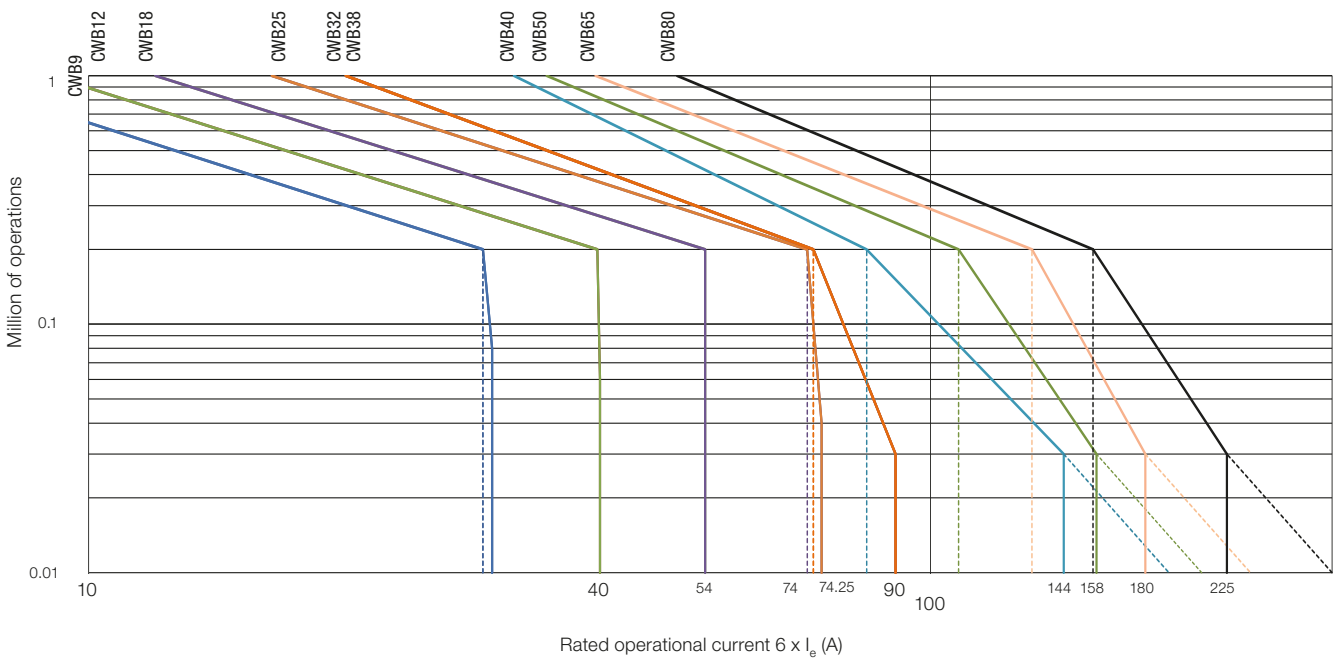
Technical Data

Electrical Lifespan Curves

Utilization Category AC-1 (U_e ≤690 V ac)

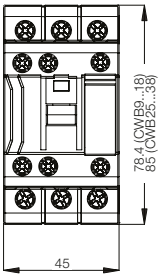


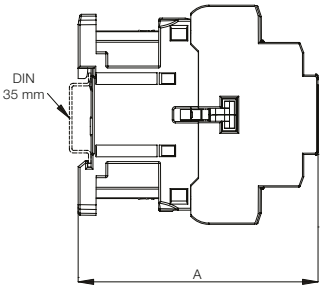
Utilization Category AC-4 (U_e ≤ 660 / 690 V)

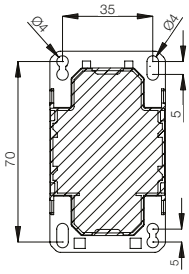


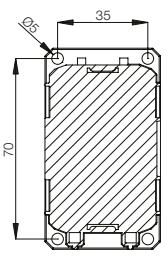
Dimensions (mm)

CWB9...18 and CAWB, CWB25...38



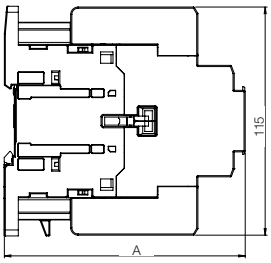


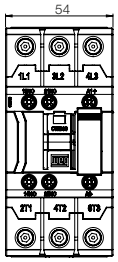


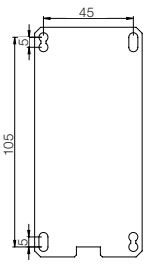


Models	A	
	AC coil	DC coil
CWB9...18, CAWB	89.5	98.5
CWB25...38	93	102.2

CWB40...80



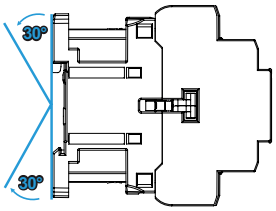


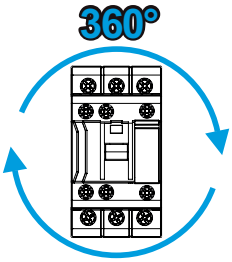


Models	A	
	AC coil	DC coil
CWB40...80	120.6	120.6

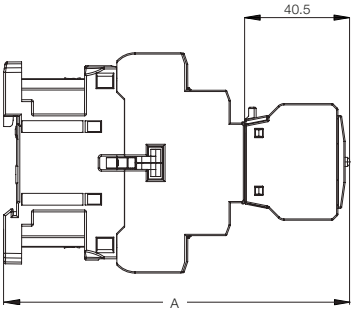
Mounting Position

CWB9...80, CAWB



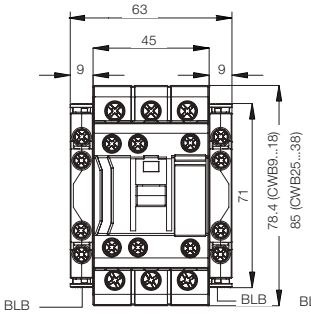


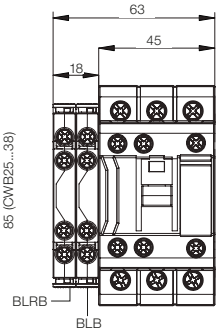
CWB9...18, CAWB, CWB25...38, CWB40...80 + BFB (Front-Mounted Contact Block)



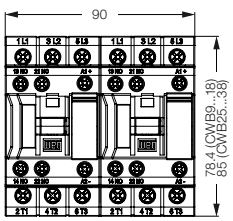
Models	A	
	AC Coil	DC Coil
CWB9...18, CAWB	130	136.2
CWB25...38	133.4	142.6
CWB40...80	161.1	161.1

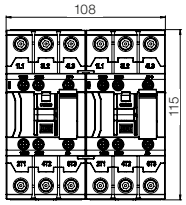
CWB9...18 and CAWB, CWB25...38 + BLB (Side-Mounted Contact Block)

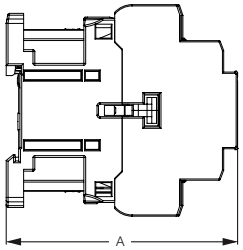




2 x CWB9...38, CAWB + IM1 (Mechanical Interlock)
2 x CWB40...80 + IM2 (Mechanical Interlock)

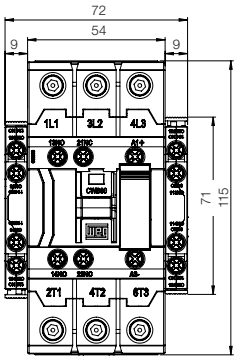


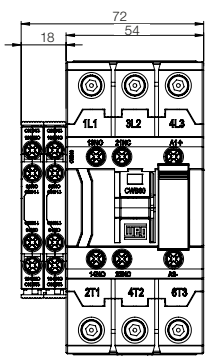




Models	A	
	AC Coil	DC Coil
CWB9...18 e CAWB	89.5	98.5
CWB25...38	93	102.2
CWB40...80	120.6	120.6

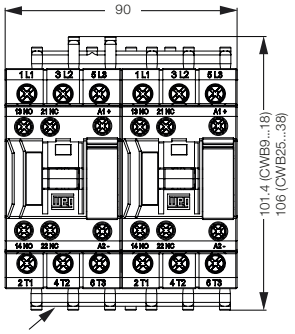
CWB40...80 + BLB (Side-Mounted Contact Block)



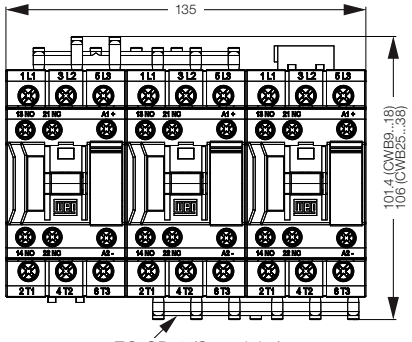


Dimensions (mm)

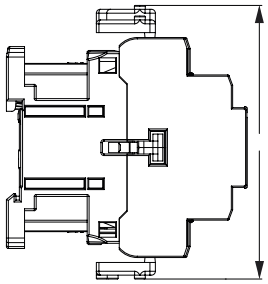
CWB9...38 + Easy Connection Busbars



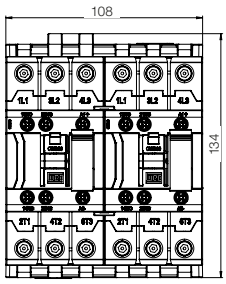
EC-R-1 (Reversing)



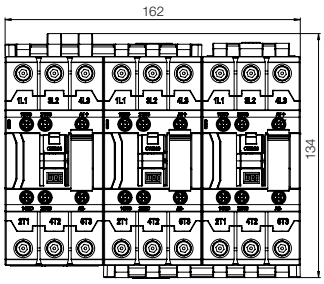
EC-SD-1 (Star-delta)



CWB40...80 + Easy Connection Busbars

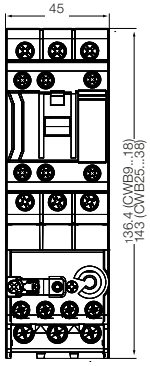


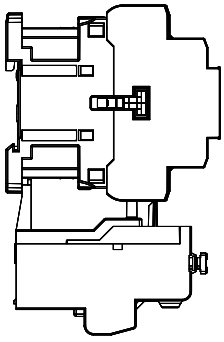
EC-R-2 (Reversing)



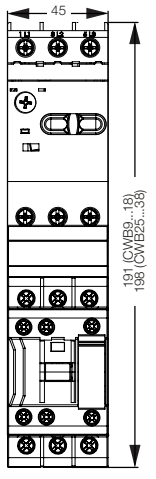
EC-SD-2 (Star-delta)

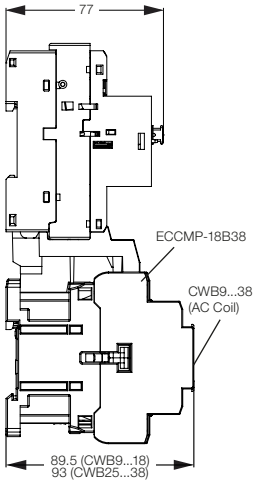
CWB9...38 + RW27-2D (Overload Relay)



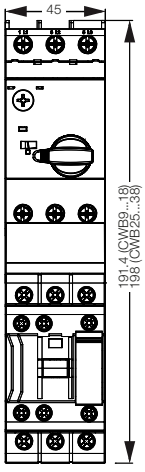


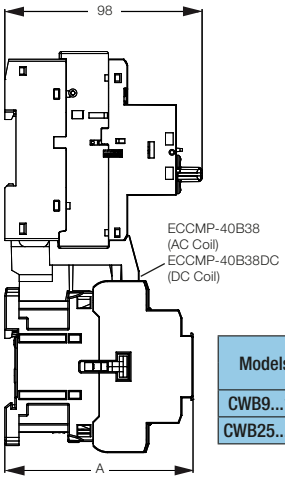
CWB9...38 + MPW16/18 (Manual Motor Protector)





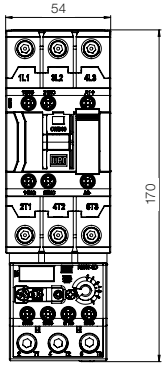
CWB9...38 + MPW25/40 (Manual Motor Protector)

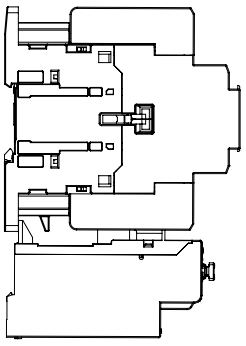




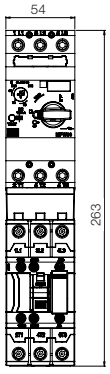
Models	A	
	AC coil	DC coil
CWB9...18	89.5	98.5
CWB25...38	93	102.2

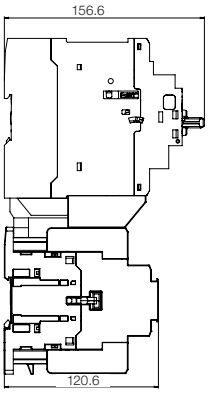
CWB40 + RW67-5D (Overload Relay)





CWB40...80 + MPW80 (Manual Motor Protector)





Notes

Notes

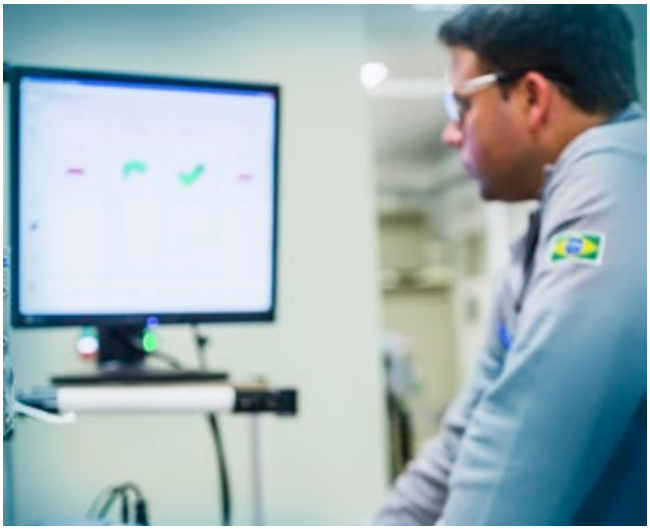
Global presence is essential, as much as understanding your needs.

Global Presence

With more than 30,000 employees worldwide, WEG is one of the largest electric motors, electronic equipments and systems manufacturers. We are constantly expanding our portfolio of products and services with expertise and market knowledge. We create integrated and customized solutions ranging from innovative products to complete after-sales service.

WEG's know-how guarantees our ***contactors - CWB line*** is the right choice for your application and business, assuring safety, efficiency and reliability.

- ***Availability*** is to have a global support network
- ***Partnership*** is to create solutions that suits your needs
- ***Competitive edge*** is to unite technology and inovation



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