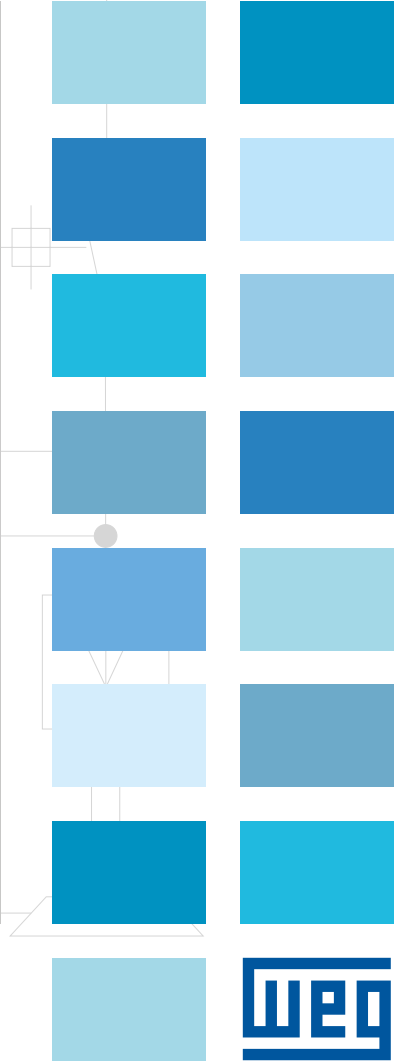
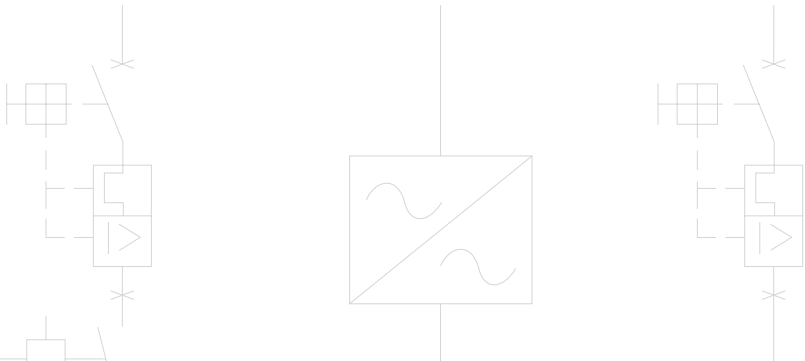
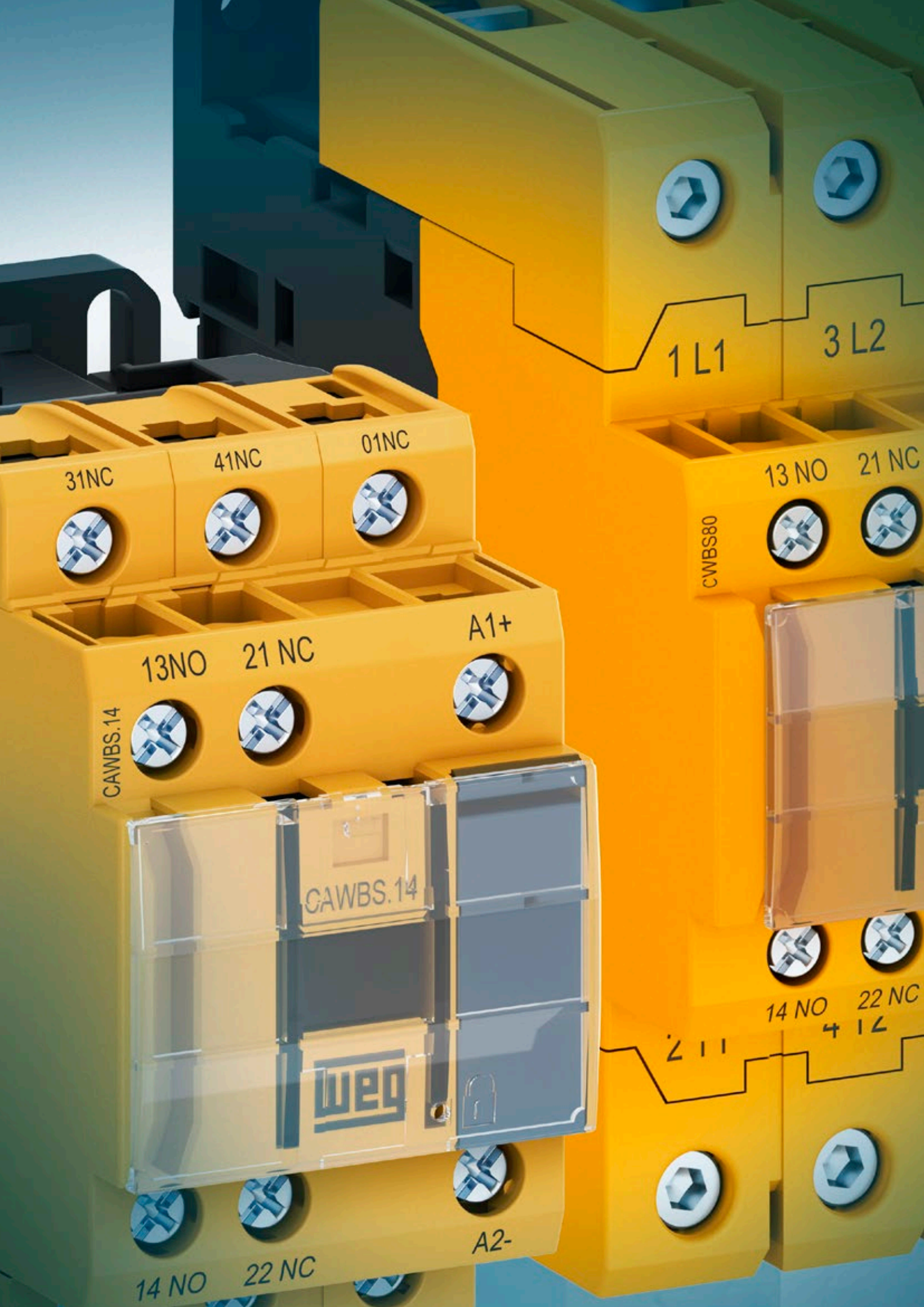


Automation

Contactors for Safety Applications - CWBS Line





31NC

41NC

01NC

1 L1

3 L2

13NO

21 NC

A1+

CWBS.14

CWBS.14

weidmüller

CWBS80

13 NO

21 NC

14 NO

22 NC

2 I I

4 I L

14 NO

22 NC

A2-

Contactors for Safety Applications - CWBS Line

Summary

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SAFETY ASSURANCE

FOR OPERATORS AND EQUIPMENT

WEG's new CWBS line of contactors for safety applications (from 9 A to 80 A in AC-3) was developed in compliance with IEC and UL standards, featuring mechanically linked contacts (IEC/EN 60947-5-1) and mirror contacts (IEC/EN 60947-4-1), which provide proper operation of safety circuits of machines and equipment that must operate in compliance with international safety standards, including the Brazilian machine safety standard (NR12).

Characteristics

CWBS Power Contactors

- TÜV certification for mechanically linked contacts (IEC 60947-5-1 - Annex L) and mirror contacts (IEC 60947-4-1 - Annex F);
- 45 mm wide up to 38 A and 54 mm wide in models from 40 to 80 A, having two built-in auxiliary contacts (1 NO +1 NC);
- Choice of up to six auxiliary contacts;
- Compact starters can be assembled with MPW18, MPW40 and MPW80 manual motor protectors, and RW27-2D and RW67-5D thermal relays.

CAWBS Auxiliary Contactors

- TÜV certification for mechanically linked contacts (IEC 60947-5-1 - Annex L);
- 45 mm wide in versions with 5, 7 or up to 9 contacts.



Benefits



Protection against inadvertent operation



Protection for operators and equipment



Contactors to retrofit machines and equipment so as to comply with Brazilian standard NR12



Machine safety applications



Certificate for worldwide use



Fast mounting on DIN rail 35 mm or with screws



Auxiliary contact block assembled and tested at the factory



Different color, enabling easy identification in safety systems on panels and equipment

Certifications



Note: 1) Under process.

Rússia

Applications



Safety light screens



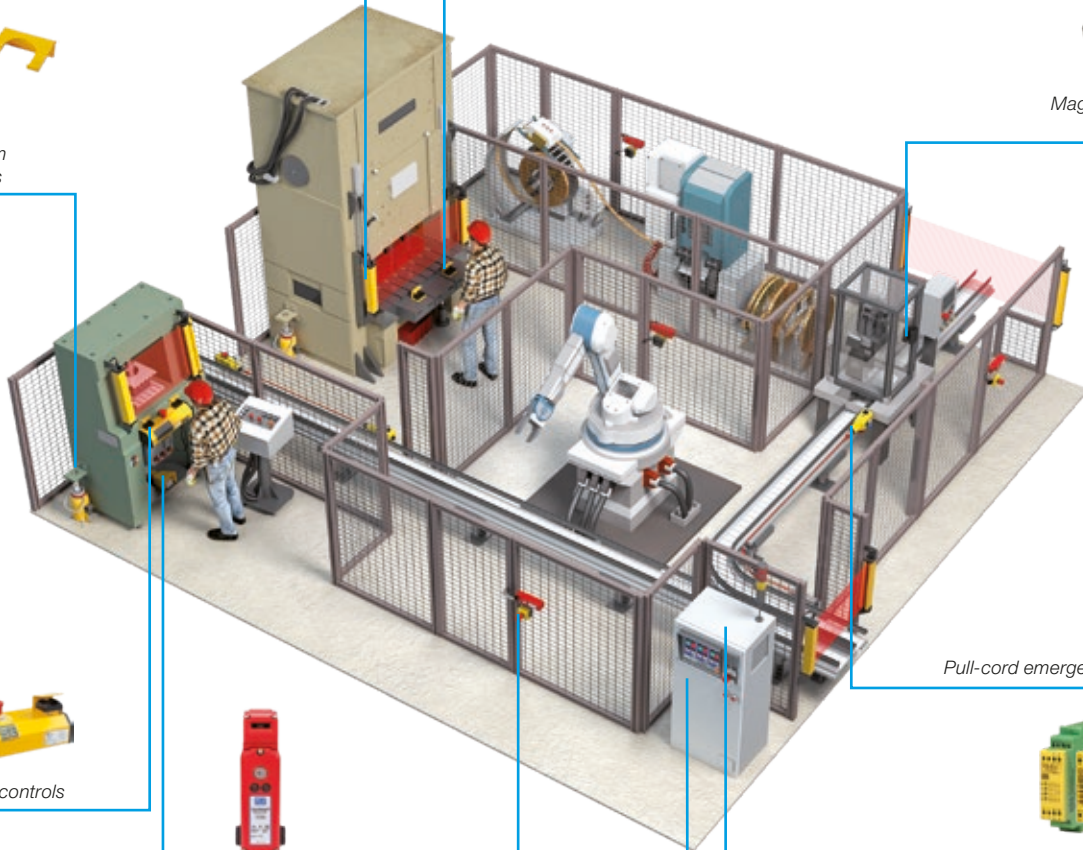
Zero-force electronic pushbuttons



Magnetic sensors with safety function



Safety shim for presses



Pull-cord emergency-stop switches



Two-hand controls



Safety interlock switches



Safety relays



3-stage safety pedals



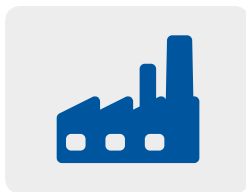
Emergency push-button with monitored contact



Contactors for safety applications



Conformation to safety standards

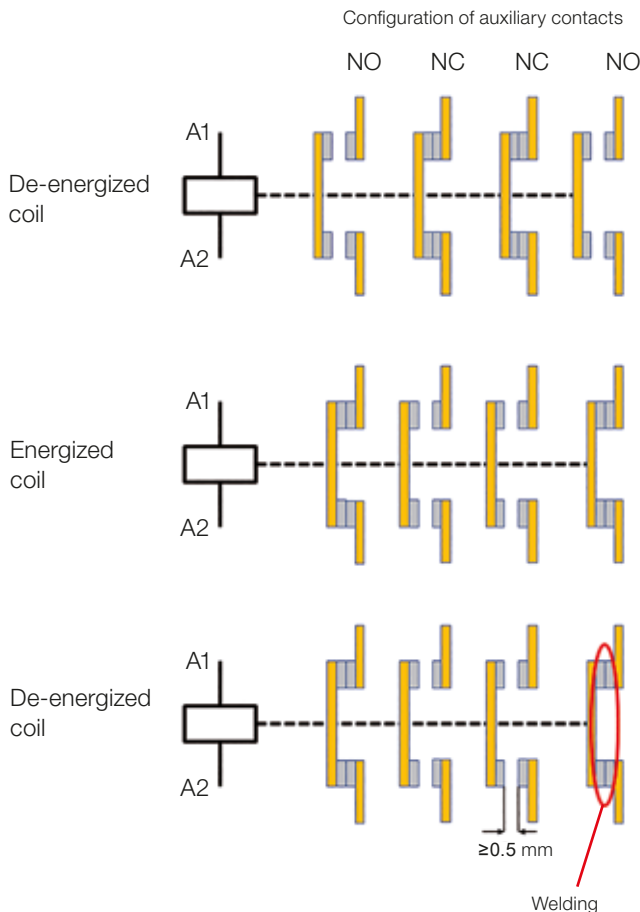


Wide range of industrial applications

Mechanically Linked Contacts (IEC/EN 60947-5-1 - Annex L)



Applicable to the auxiliary contacts used in auxiliary control circuits those contacts can be built into the contactor or blocks of external auxiliary contacts mounted on the contactors. According to IEC/EN 60947-5-1 - Annex L, open contacts and closed contacts cannot be simultaneously closed. In case welding occurs on the NO contacts, the NC contacts must remain open, and in case welding occurs on the NC contacts, the NO auxiliary contacts must remain open. The following example shows that characteristic:



Some other names may also be given to this same requirement of the standard in technical documents, such as: forced contacts, positively activated contacts, linked contacts and positively guided contacts. Contactors with that characteristic are often used in self-monitoring circuits combined with safety interfaces (e.g., safety relays) used in the automation and safety of machinery and equipment. Contactors which do not meet that requirement may damage the equipment or harm the operator.



Side indication of the symbols of mechanically linked contacts.

Mirror Contact - IEC/EN 60947-4-1 - Annex F





Applicable to the auxiliary contacts mechanically linked to the power contacts. When the contactor coil is energized, the power contacts will be closed and at the same time the NC auxiliary contacts will be open. Those auxiliary contacts are called mirror contacts.

Construction Features



Power Contactors for Safety Applications

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

I _e max. (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 complete with the control voltage	Weight ³⁾ kg
		220 V 230 V	380 V 400 V	415 V 440 V	500 V	660 V 690 V				
AC-3	AC-1									
A	A	kW / cv	kW / cv	kW / cv	kW / cv	kW / cv	NO	NC		
9	25	2.2 / 3	4 / 5.5	4.5 / 6	5.5 / 7.5	5.5 / 7.5	1	1	CWBS9-11-30♦	0.372
							1	3	CWBS9-13-30♦	
							1	5	CWBS9-15-30♦	
							2	2	CWBS9-22-30♦	
							2	4	CWBS9-24-30♦	
							3	1	CWBS9-31-30♦	
							3	3	CWBS9-33-30♦	
							4	2	CWBS9-42-30♦	
12	25	3 / 4	5.5 / 7.5	6.5 / 8.7	7.5 / 10	7.5 / 10	1	1	CWBS12-11-30♦	0.372
							1	3	CWBS12-13-30♦	
							1	5	CWBS12-15-30♦	
							2	2	CWBS12-22-30♦	
							2	4	CWBS12-24-30♦	
							3	1	CWBS12-31-30♦	
							3	3	CWBS12-33-30♦	
							4	2	CWBS12-42-30♦	
18	32	4.5 / 6	7.5 / 10	9.2 / 12.5	10 / 13.4	11 / 15	1	1	CWBS18-11-30♦	0.372
							1	3	CWBS18-13-30♦	
							1	5	CWBS18-15-30♦	
							2	2	CWBS18-22-30♦	
							2	4	CWBS18-24-30♦	
							3	1	CWBS18-31-30♦	
							3	3	CWBS18-33-30♦	
							4	2	CWBS18-42-30♦	
25	40	6.5 / 8.7	12.5 / 16.8	12.5 / 16.8	15 / 20	15 / 20	1	1	CWBS25-11-30♦	0.49
							1	3	CWBS25-13-30♦	
							1	5	CWBS25-15-30♦	
							2	2	CWBS25-22-30♦	
							2	4	CWBS25-24-30♦	
							3	1	CWBS25-31-30♦	
							3	3	CWBS25-33-30♦	
							4	2	CWBS25-42-30♦	
32	50	7.5 / 10	15 / 20	15 / 20	18.5 / 25	18.5 / 25	1	1	CWBS32-11-30♦	0.49
							1	3	CWBS32-13-30♦	
							1	5	CWBS32-15-30♦	
							2	2	CWBS32-22-30♦	
							2	4	CWBS32-24-30♦	
							3	1	CWBS32-31-30♦	
							3	3	CWBS32-33-30♦	
							4	2	CWBS32-42-30♦	
38	50	9.2 / 12.5	18.5 / 25	18.5 / 25	18.5 / 25	18.5 / 25	1	1	CWBS38-11-30♦	0.49
							1	3	CWBS38-13-30♦	
							1	5	CWBS38-15-30♦	
							2	2	CWBS38-22-30♦	
							2	4	CWBS38-24-30♦	
							3	1	CWBS38-31-30♦	
							3	3	CWBS38-33-30♦	
							4	2	CWBS38-42-30♦	
							5	1	CWBS38-51-30♦	

Replace “♦” by the control voltage code²⁾.

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	C02	C03	C07	C09	C12	C13	C15
V dc	12	24	48	60	110	125	220



Notes: 1) Orientative values;

2) Other voltages on request;

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

Power Contactors for Safety Applications

Three-pole from 40 A to 80 A (AC-3)

I _e máx. (A) (U _e ≤ 440 V)	I _e = I _{th} (A) (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 in with the control voltage	Weight ³⁾ kg
		220 V 230 V	380 V 400 V	415 V 440 V	500 V	660 V 690 V	 NO	 NC		
A	A	kW / cv	kW / cv	kW / cv	kW / cv	kW / cv				
40	60	11 / 15	18.5 / 25	22 / 29	22 / 29	30 / 40	1	1	CWBS40-11-30♦	0.973
							1	3	CWBS40-13-30♦	
							1	5	CWBS40-15-30♦	
							2	2	CWBS40-22-30♦	
							2	4	CWBS40-24-30♦	
							3	1	CWBS40-31-30♦	
							3	3	CWBS40-33-30♦	
							4	2	CWBS40-42-30♦	
50	90	15 / 20	22 / 29	30 / 40	30 / 40	33 / 44	5	1	CWBS40-51-30♦	0.973
							1	1	CWBS50-11-30♦	
							1	3	CWBS50-13-30♦	
							1	5	CWBS50-15-30♦	
							2	2	CWBS50-22-30♦	
							2	4	CWBS50-24-30♦	
							3	1	CWBS50-31-30♦	
							3	3	CWBS50-33-30♦	
65	110	18.5 / 25	30 / 40	37 / 50	37 / 50	37 / 50	4	2	CWBS50-42-30♦	0.973
							5	1	CWBS50-51-30♦	
							1	1	CWBS65-11-30♦	
							1	3	CWBS65-13-30♦	
							1	5	CWBS65-15-30♦	
							2	2	CWBS65-22-30♦	
							2	4	CWBS65-24-30♦	
							3	1	CWBS65-31-30♦	
80	110	22 / 29	37 / 50	45 / 60	55 / 74	45 / 60	3	3	CWBS65-33-30♦	0.973
							4	2	CWBS65-42-30♦	
							5	1	CWBS65-51-30♦	
							1	1	CWBS80-11-30♦	
							1	3	CWBS80-13-30♦	
							1	5	CWBS80-15-30♦	
							2	2	CWBS80-22-30♦	
							2	4	CWBS80-24-30♦	
3	1	CWBS80-31-30♦	0.973							
3	3	CWBS80-33-30♦								
4	2	CWBS80-42-30♦								
5	1	CWBS80-51-30♦								

NEW

Replace "♦" by the control voltage code²⁾.

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	C02	C03	C07	C09	C12	C13	C15
V dc	12	24	48	60	110	125	220

Notes: 1) Orientative values;

2) Other voltages on request;

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

Auxiliary Contactors for Safety Applications

- Protected against foreign bodies and unintentional touch
- Auxiliary contacts permanently connected to the contactors
- Factory assembled and tested units
- Specific color that enables easy identification on panels of machinery and equipment
- Directly mounted on DIN rail 35 mm or tightened with screws
- TÜV certification regarding the characteristics of mechanically linked contacts (IEC 60947-5-1- Annex L)



CAWBS

I _e máx. (A)		Auxiliary contacts		Reference	Weight kg
(U _e ≤230 V) AC-14 / AC-15	(U _e ≤24 V) DC-13	*3 NO	*1 NC		
10	4	1	4	CAWBS-14-00 ♦	0.372
		2	3	CAWBS-23-00 ♦	
		3	2	CAWBS-32-00 ♦	
		4	1	CAWBS-41-00 ♦	
		4	3	CAWBS-43-00 ♦	0.435
		4	5	CAWBS-45-00 ♦	
		5	2	CAWBS-52-00 ♦	
		5	4	CAWBS-54-00 ♦	
		6	1	CAWBS-61-00 ♦	
		6	3	CAWBS-63-00 ♦	
		7	2	CAWBS-72-00 ♦	
		8	1	CAWBS-81-00 ♦	

NEW

Alternating Current

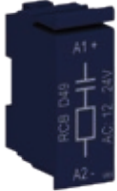
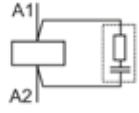
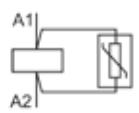
Code	D02	D07	D13	D23	D24	D25	D33	D34	D35	D36	D39
V (50/60 Hz)	24	48	110	220	230	240	380	400	415	440	480

Direct Current

Code	C02	C03	C07	C09	C12	C13	C15
V dc	12	24	48	60	110	125	220

Accessories

Surge Protectors - Plug-In Type



Illustrative figure	Use with	Voltages	Diagram	Reference	Code	Weight kg
	CWBS9...38 CWBS40...80 CAWBS	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 ¹⁾	12242560	
		12...250 V dc		DIZBC26 ²⁾	12242561	

Notes: 1) Contactors with control in direct current assembled with DIB surge suppressor blocks increases the opening time by six times.



2) Contactors with control in direct current assembled with DIZB surge suppressor blocks increases the opening time by four times.

Accessories

Mechanical Interlock

Illustrative figure	Use with	Description	Reference	Code	Weight kg
	CWBS9...38 CAWBS	Mounting set for interlocking two contactors with the same frame type. Fitting through snaps without tools. Content: lock + 2 clips	IM1	12244300	0.004
	CWBS40...80	Mounting set for interlocking two contactors with the same frame type. Fitting through snaps without tools.	IM2	13765620	

Spare Coils for Contactors¹⁾

Illustrative figure	Use with	Control type	Reference to fill in with the control voltage	Code	Weight kg
	CWBS9...38 CAWBS	CA	BRB-38 ♦	On request	0.08
	CWBS40...80	CA	BRB-80 ♦	On request	0.09
	CWBS40...80	DC	BRB-80 ♦	On request	0.40

Replace “♦” by the control 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.

Technical Data

Application of Contactors on Direct Current Circuits¹⁾

Utilization Category DC-1 (L/R <1ms)

U _e	Models	CWBS9	CWBS12	CWBS18	CWBS25	CWBS32	CWBS38	CWBS40	CWBS50	CWBS65	CWBS80
	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)

U _e	Models	CWBS9	CWBS12	CWBS18	CWBS25	CWBS32	CWBS38	CWBS40	CWBS50	CWBS65	CWBS80
	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	-	-	-	-

Notes: 1) Service 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

Use of Contactors in Direct Current Circuits¹⁾

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

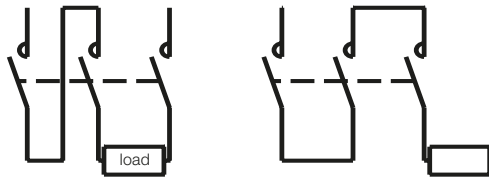
Models		CWBS9	CWBS12	CWBS18	CWBS25	CWBS32	CWBS38	CWBS40	CWBS50	CWBS65	CWBS80
U _e	Poles in series	Rated operational current I _e (A)									
≤24 V	1	12	12	12	18	25	32	36	45	55	55
	2	18	18	18	25	40	40	36	45	55	55
	3	18	18	18	25	40	40	36	45	55	55
≤48 V	1	9	9	9	12	18	20	36	45	55	55
	2	18	18	18	25	40	40	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

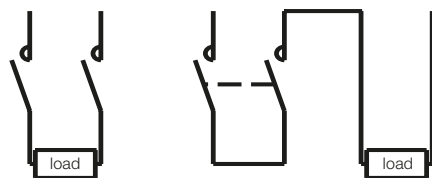
1 Pole in Series



3 Poles in Series



2 Poles in Series



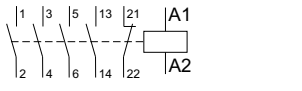
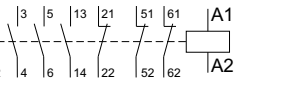
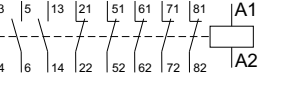
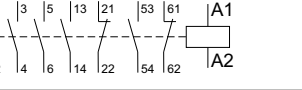
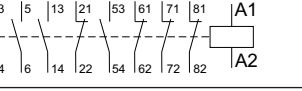
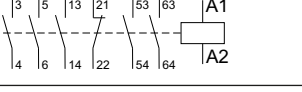
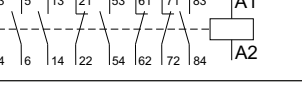
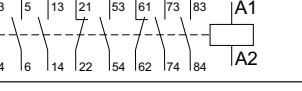
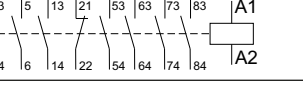
Notes: 1) Service duty according to IEC/EN 60947-4-1:

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).

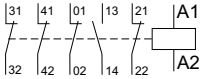

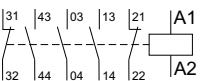



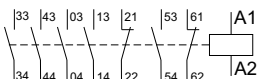
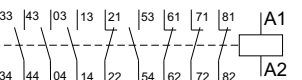

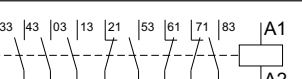
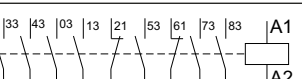
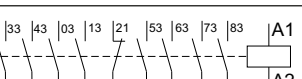
Contact Numbering According to IEC/EN 60947

Diagram	Configuration	Auxiliary contacts		Reference
		NO	NC	
Three-pole power contactors with built-in auxiliary contact				
	11	1	1	CWBSxx.11.30
	13	1	3	CWBSxx.13.30
	15	1	5	CWBSxx.15.30
	22	2	2	CWBSxx.22.30
	24	2	4	CWBSxx.24.30
	31	3	1	CWBSxx.31.30
	33	3	3	CWBSxx.33.30
	42	4	2	CWBSxx.42.30
	51	5	1	CWBSxx.51.30



Technical Data

Contact Numbering According to IEC/EN 60947

Diagram	Configuration	Auxiliary contacts		Reference
		NO	NC	
Auxiliary contactors				
	14	1	4	CAWBS-14-00 ♦
	23	2	3	CAWBS-23-00 ♦
	32	3	2	CAWBS-32-00 ♦
	41	4	1	CAWBS-41-00 ♦
	43	4	3	CAWBS-43-00 ♦
	45	4	5	CAWBS-45-00 ♦
	52	5	2	CAWBS-52-00 ♦
	54	5	4	CAWBS-54-00 ♦
	61	6	1	CAWBS-61-00 ♦
	63	6	3	CAWBS-63-00 ♦
	72	7	2	CAWBS-72-00 ♦
	81	8	1	CAWBS-81-00 ♦



Basic Data

Models	CAWBS CWBS9 CWBS12 CWBS18 CWBS25 CWBS32 CWBS38 CWBS40 CWBS50 CWBS65 CWBS80												
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 life	AC coil (millions of operations)	10						6					
	DC coil (millions of operations)	10						6					
Electrical life	I_e AC-3 (millions of operations)	-	2.0	2.0	1.8	1.6	1.6	1.2	1.6	1.6	1.6	1.2	
Degree of protection (IEC 60529)	Main terminals	IP10 (front)											
	Coil and auxiliary contacts	IP20 (front)											
Mounting	Screws or DIN rail 35 mm (EN 50022)												
Coil connection points	Contactors with AC coil	2											
	Contactors with DC coil	2											
Resistance to vibrations (IEC 60068-2-6)	Open contactor (g)	4											
	Closed contactor (g)	4											
Resistance to mechanical shocks (½ sine wave = 11ms - IEC 60068-2-27)	Open contactor (g)	10											
	Closed contactor (g)	15											
Ambient temperature	Operation	-25 °C...+55 °C											
	Storage	-55 °C...+80 °C											
Maximum operation altitude without modification in the rated values ¹⁾	3,000 m												

Control Circuit - Alternating Current (AC)

Models	CWBS9...38, CAWBS		CWBS40...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 operation 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 coil consumption 50/60 Hz	Closed magnetic circuit (VA)	7.5	17.5	
	Power factor switched on (cos φ)	0.27	0.28	
	Thermal power dissipation (W)	1.5...2.5	4...5.5	
	Closing of the magnetic circuit (VA)	75	185	
	Power factor switching on (cos φ)	0.7	0.55	
Average commute time	Closing of the NO contacts (ms)	15...25	10...15	
	Opening of the NO contacts (ms)	8...12	8...12	

Control Circuit - Direct Current (DC)

Models	CWBS9...38, CAWBS		CWBS40...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 operation 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 DC coil consumption	Closed magnetic circuit (W)	5.8	10.6	
	Closing of the magnetic circuit (W)	5.8	105.5	
Average commute time	Closing of the NO contacts (ms)	35...45	20...30	
	Opening of the NO contacts (ms)	8...12	4...8	

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

Technical Data

Main Contacts

Models		CWBS9	CWBS12	CWBS18	CWBS25	CWBS32	CWBS38	CWBS40	CWBS50	CWBS65	CWBS80	
Rated operational current I_e	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						1,000 V				
	UL, CSA (V)	600										
Conventional thermal current I_{th} ($\theta \leq 55$ °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 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 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)	61	61	84	120	138	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	25	35	40	63	63	63	80	100	125	
Average 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	
Reliability ¹⁾ (V/mA)		50/100										
Utilization category AC-3												
Rated operational current I_e ($\theta \leq 55$ °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	220/230 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	($U_e \leq 440$ 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

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.

Main Contacts

Models	Utilization category AC-1										
	CWBS9	CWBS12	CWBS18	CWBS25	CWBS32	CWBS38	CWBS40	CWBS50	CWBS65	CWBS80	
	3P (NO)										
Conventional thermal current I_{th} ($\theta \leq 55^\circ\text{C}$)	(A)	25	25	32	40	50	50	60	90	110	110
Maximum orientative operational current according to the ambient temperature $\theta \leq 60^\circ\text{C}$ ($U_e \leq 690\text{ V}$)	(A)	25	25	32	40	50	50	60	90	110	110
Maximum operational power $\theta \leq 55^\circ\text{C}$ (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
Actual values for connections	2 poles in parallel	$I_e \times 1.7$									
	3 poles in parallel	$I_e \times 2.4$									
Percentage of maximum operational current	600 ops./h (%)	100	100	100	100	100	100	100	100	100	100

Auxiliary Contacts

Models	CWBS9...80 (built-in), CAWBS		BFBS (Front mounted blocks)
Compliance with the standards	IEC 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} ($\theta \leq 55^\circ\text{C}$)	(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	$U_e \leq 690\text{ V}$ 50/60 Hz - AC-15 (A)	$10 \times I_e$	
Breaking capacity	$U_e \leq 400\text{ V}$ 50/60 Hz - AC-15 (A)	$1 \times I_e$	
Short circuit protection with fuse (gL/gG)	(A)	10	
Control circuit reliability	(V / mA)	17 / 5	
Electrical life (millions of operations)		1	
Mechanical life (millions of operations)		10	
Non-overlapping time between NO and NC contacts	(ms)	1.5	
Impedance of the contacts	(m Ω)	2.5	

Technical Data

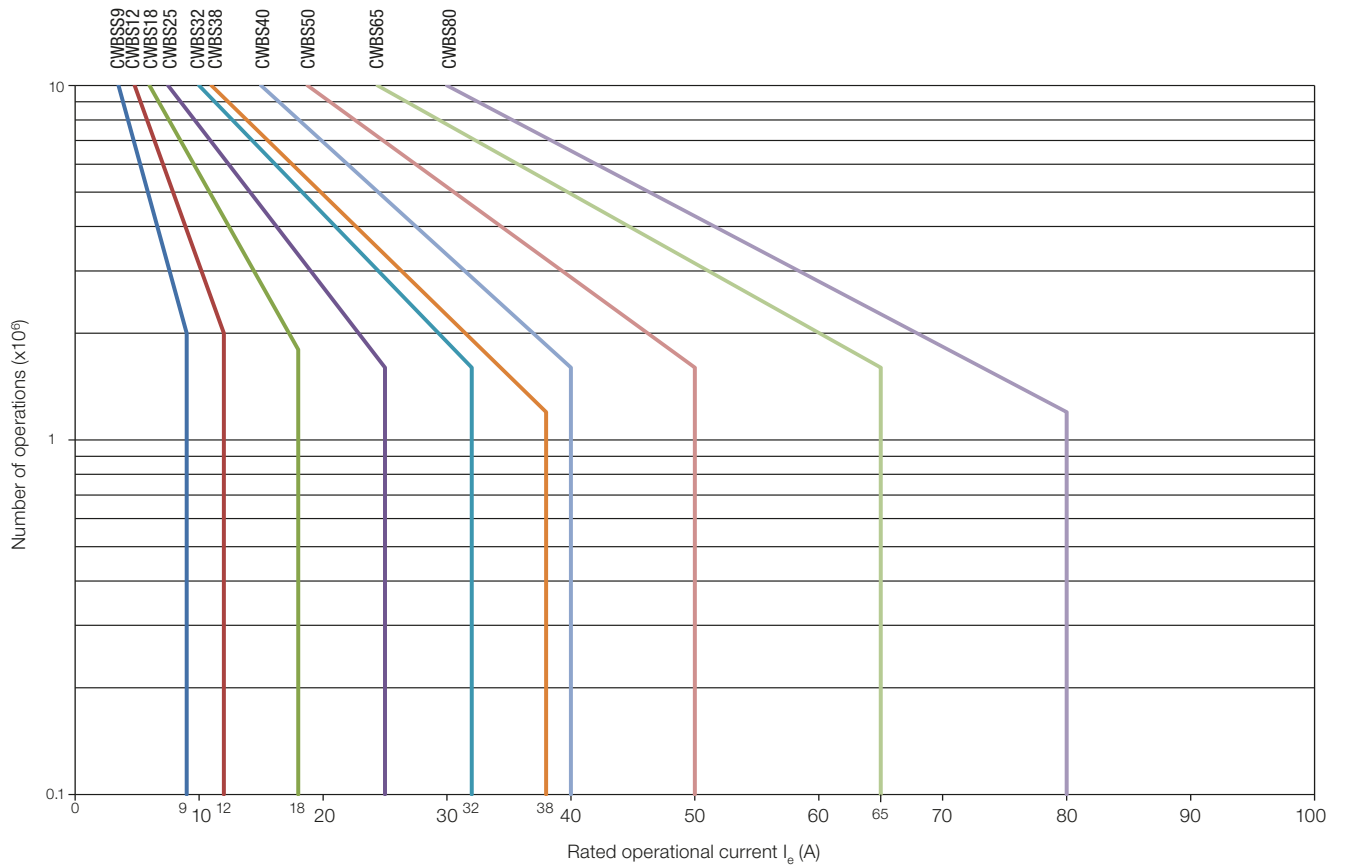
Terminal Capacity and Tightening Torque

Power circuit		Conductor cross-section		
		CWBS9...18, CAWBS	CWBS25...38	CWBS40...80
Models		M4 Slot / Philips	M4 Slot / Philips	ALLEN 4 mm
Mounting system screw type				
Flexible conductor without terminal	(mm ²)		1 x 1...6 2 x 1...6	1 x 2.5...10 2 x 2.5...10
Flexible conductor with terminal	(mm ²)		1 x 1...6 2 x 1...4	1 x 1.5...10 2 x 1.5...6
Solid wire	(mm ²)		1 x 1...6 2 x 1...6	1 x 2.5...10 2 x 2.5...10
Tightening torque	(Nm)		1.7	2.5
Tightening torque				5.0
Control and auxiliary circuit		Conductor cross-section		
Models		CWBS9...38, CAWBS		CWBS40...80
Mounting system screw type		M3.5 Slot / Philips		Phillips number 2
Flexible conductor without terminal	(mm ²)		1 x 1...4 2 x 1...4	1 x 1...4 2 x 1...4
Flexible conductor with terminal	(mm ²)		1 x 1...4 2 x 1...2.5	1 x 1...4 2 x 1...2.5
Solid wire	(mm ²)		1 x 1...4 2 x 1...4	1 x 1...4 2 x 1...4
Tightening torque	(Nm)		1.0	1.0
Tightening torque				
Auxiliary contact blocks		Conductor cross-section		
Models		BFBS (front)		
Mounting system screw type		M3.5 Slot / Philips		
Conductor cross-section				
Flexible conductor without terminal	(mm ²)		1 x 1...2.5 2 x 1...2.5	
Flexible conductor with terminal	(mm ²)		1 x 1...2.5 2 x 1...2.5	
Solid wire	(mm ²)		1 x 1...2.5 2 x 1...2.5	
Tightening torque	(Nm)		1.0	

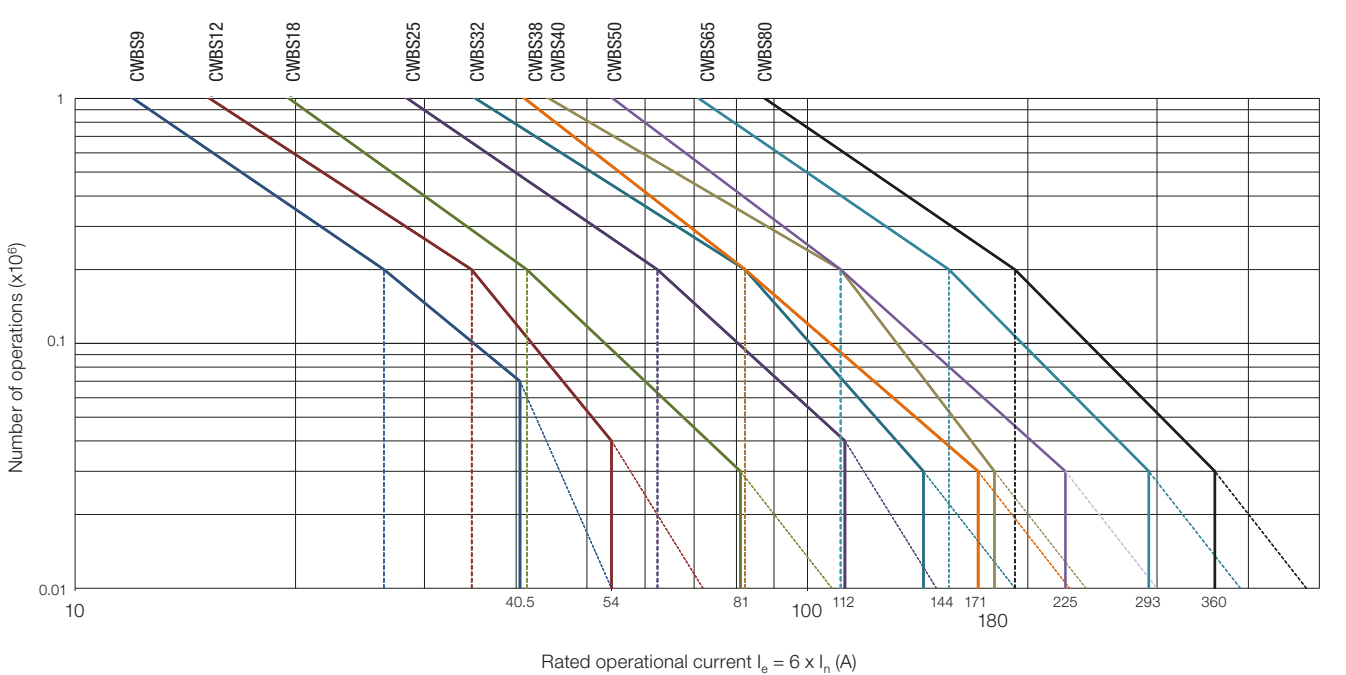


Electrical Lifespan

Category AC-3 ($U_e < 440 \text{ V ac}$)



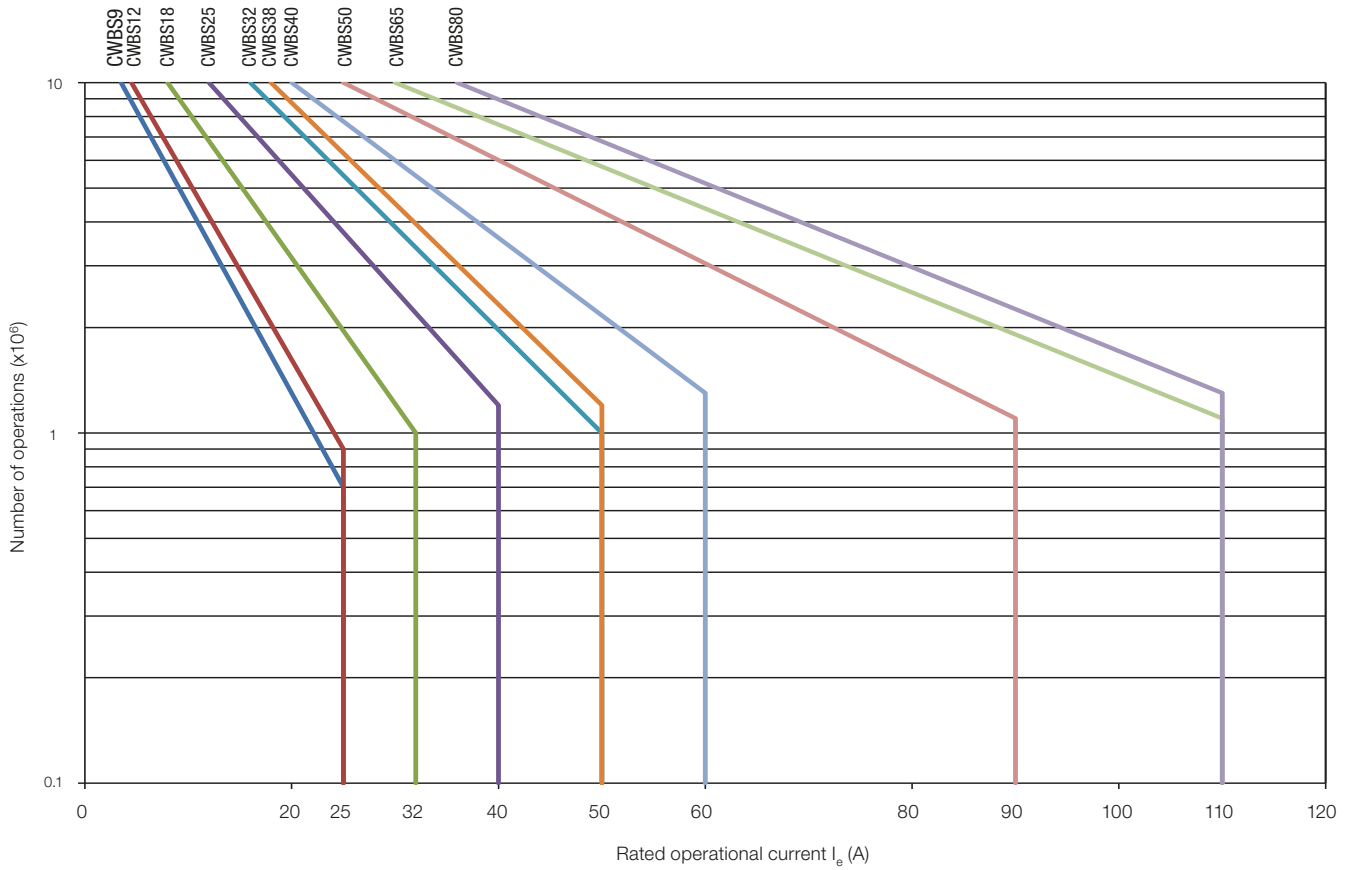
Category AC-4 ($U_e < 440 \text{ V ac}$)



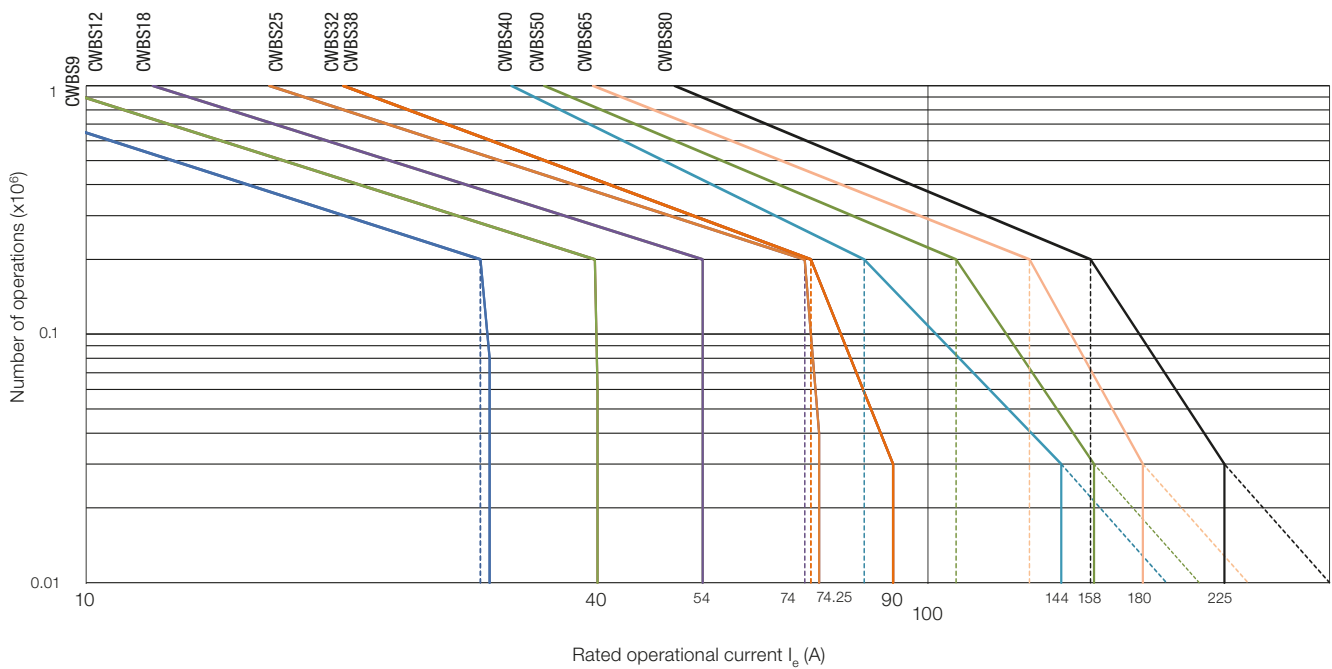
Technical Data

Electrical Lifespan

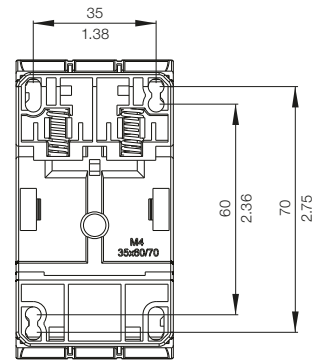
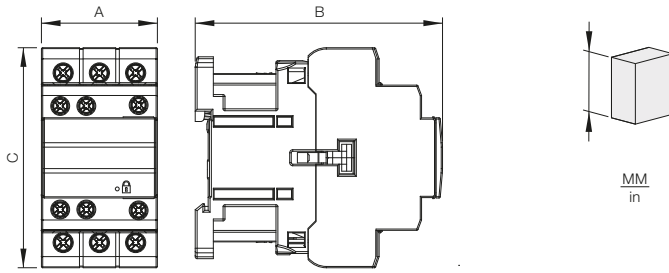
Category AC-1 ($U_e \leq 690$ V ac)






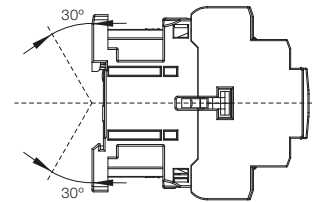
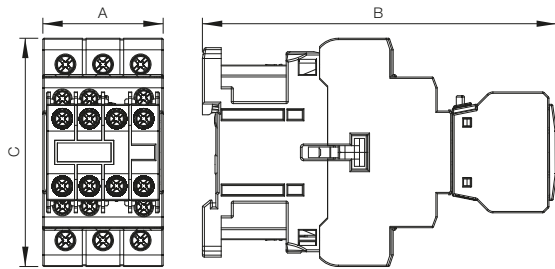
Category AC-4 ($U_e \leq 660 / 690$ V)






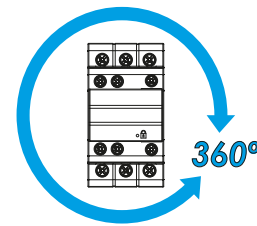
Dimensions (mm)



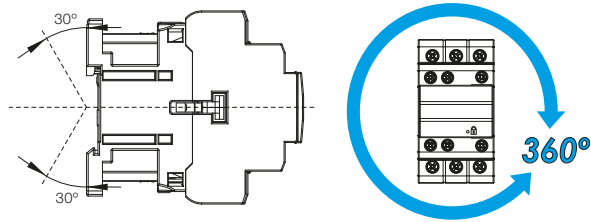
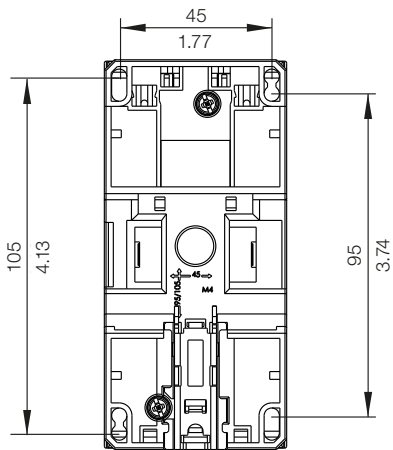
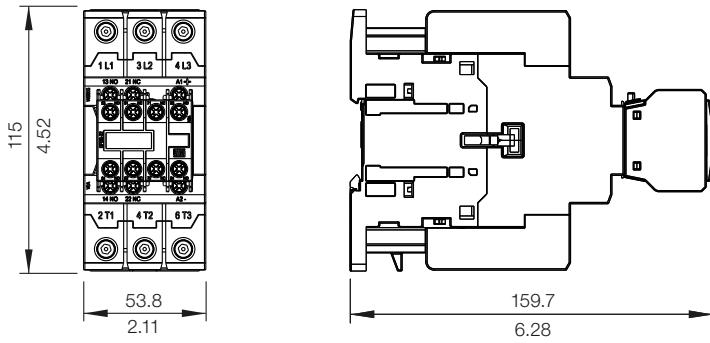
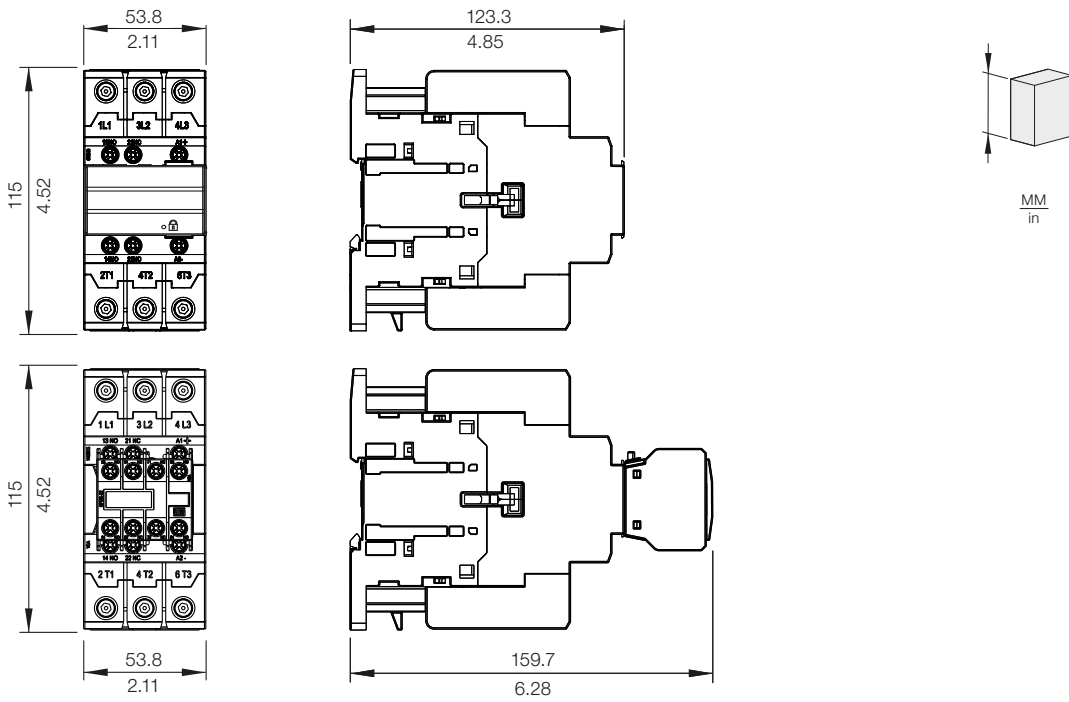
mm in	CWBS9-18 AC	CWBS9-18 DC	CWBS25-38 AC + cover	CWBS25-38 DC + cover
				
A	45 1.772			
B	89.5 3,524	98.3 3,870	95.6 3,764	104.8 4,126
C	78.4 3,087		85 3,346	



mm in	(CWBS9-18 AC) + BFBS	(CWBS9-18 DC) + BFBS	CWBS25-38 AC + BFBS	CWBS25-38 DC + BFBS
				
A	45 1,772			
B	125.8 4,953	134.6 5,299	131.9 5,193	141.1 5,555
C	78.4 3,087		85 3,346	



Dimensions (mm)





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