

Industrial Motors  
Commercial &  
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**Automation**  
Digital &  
Systems  
Energy  
Transmission &  
Distribution  
Coatings

# VBWB - Vacuum Circuit Breaker

**Reliability** and  
**robustness** for  
your needs



Driving efficiency and sustainability





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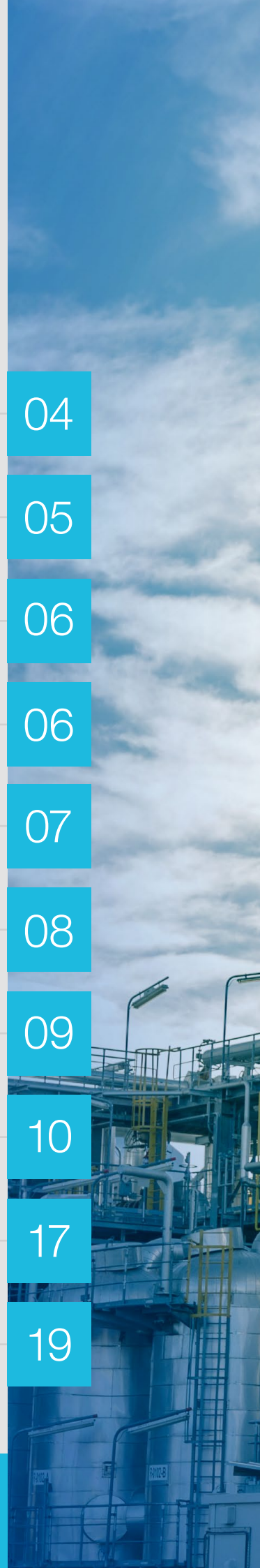
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# Reliability and robustness for your needs

The VBWB Vacuum Circuit Breaker for secondary distribution has a sturdy and compact structure for electrical circuit protection cubicles that require reliability and robustness.

The circuit breaker has electrical contacts inside vacuum ceramic bottles that guarantees the interruption of the electric current during a short circuit, extinguishing the electric arc inside the bottle.

The bottle efficiently reduces the energy generated by the electric arc, thus extending the service life of the electrical contact.





## Benefits



Complete range of accessories



Compliance with severe electrical circuit protection requirements



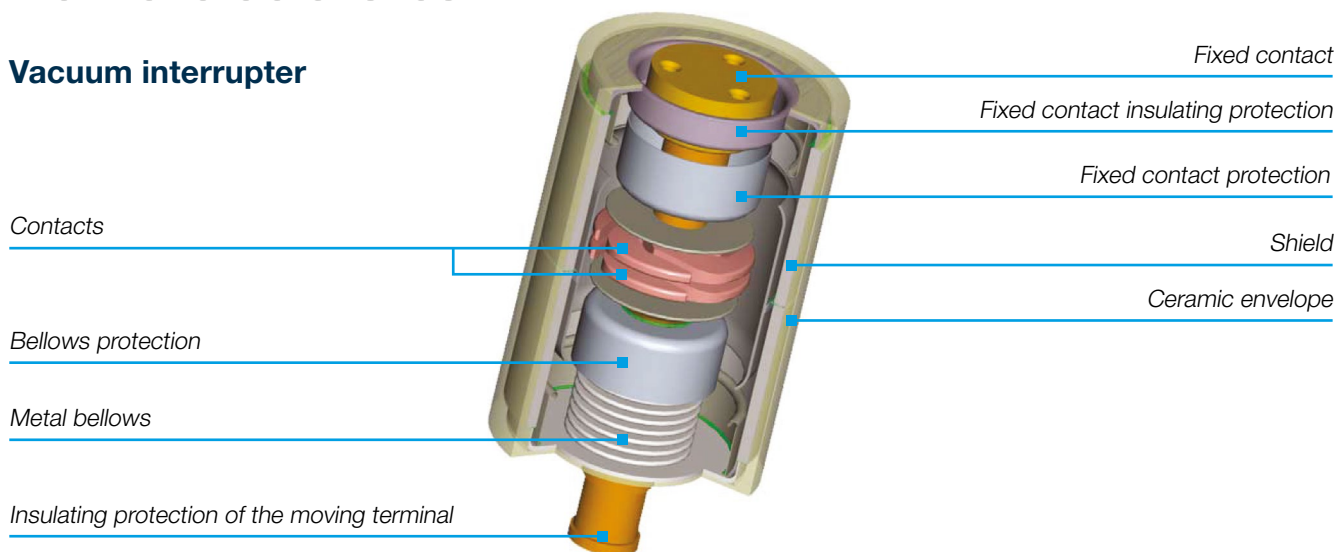
Easy accessory assembly and product setup



Embedded bottles that reduce the electrical arc and guarantee extended service life

# Main characteristics

## Vacuum interrupter

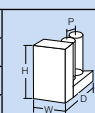


The VBWB line with side mechanism offers circuit breakers with voltage class of 17.5 kV, short circuit breaking capacity of 16 kA and rated current of 630 and 1,000 A.

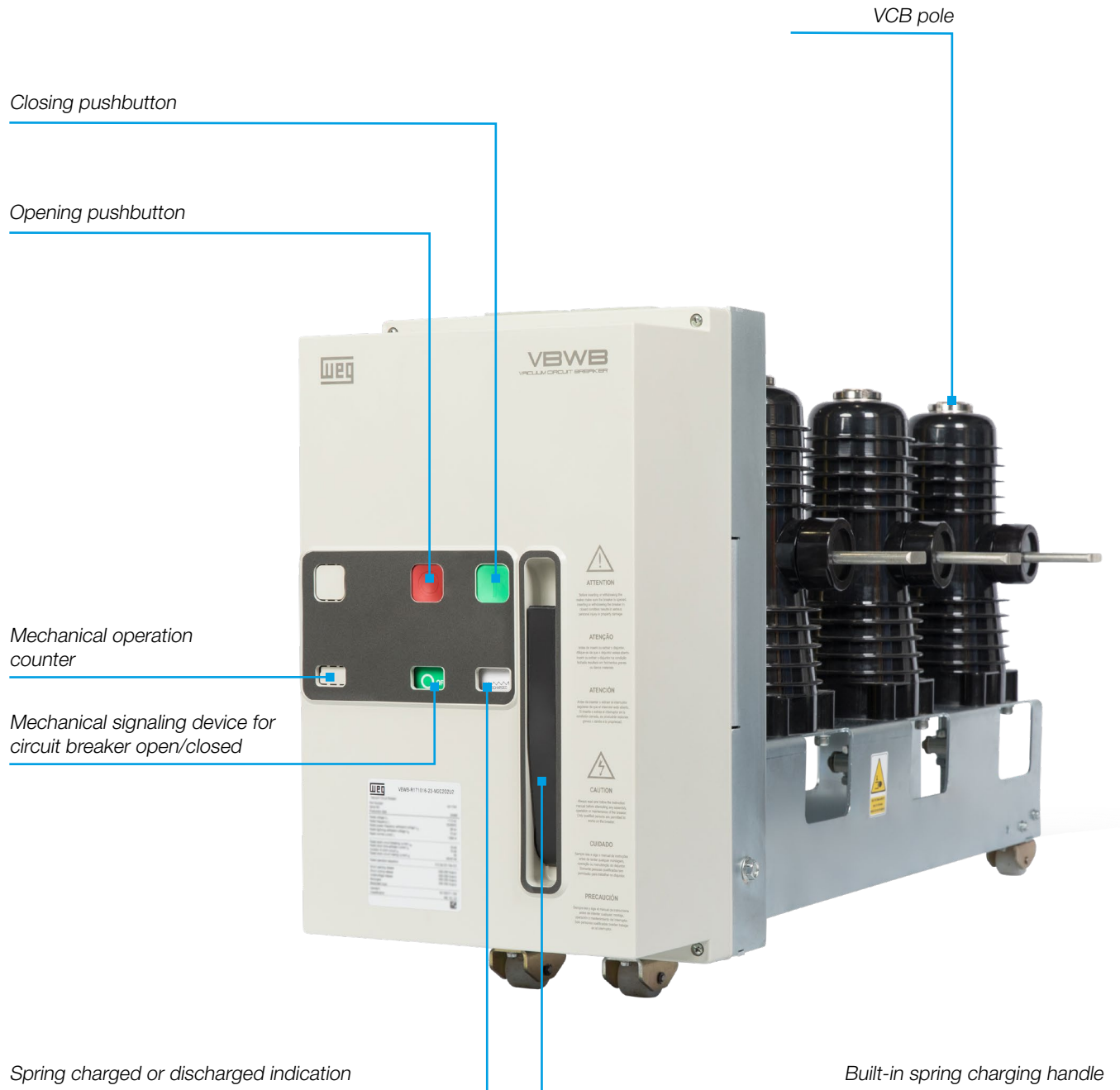
Ur (kV)	Isc (kA)	Ir (A)
17.5	16	630 A
17.5	16	1,000 A

## Technical data

Standard		IEC 62271-100	
Poles		3P	3P
Rated voltage	Ur [kV]	17.5	17.5
Rated insulation voltage	Us [kV]	17.5	17.5
Withstand voltage	Ud (1min) [kV]	38	38
Impulse withstand voltage	Up [kV]	95	95
Rated frequency	fr [Hz]	50 / 60 Hz	50 / 60 Hz
Rated normal current (40°C)	Ir [A]	630	1,000
Rated breaking capacity (rated short-circuit breaking current symmetrical)	Isc [kA]	16	16
Rated short-time withstand current (3s)	Ik [kA]	16	16
Making capacity (50Hz)	Ip [kA]	40	40
Making capacity (60Hz)	Ip [kA]	42	42
Making capacity considering Isc		2.5 x Isc (50Hz) 2.6 x Isc (60Hz)	2.5 x Isc (50Hz) 2.6 x Isc (60Hz)
Operation sequence		0 - 0.3s - CO - 15s - CO	0 - 0.3s - CO - 15s - CO
Electric Contacts		8 NA + 8 NF	8 NA + 8 NF
Maximum switching quantity without load	Cycles	2,000	2,000
Mechanical switching class		M1	M1
Electrical switching class		E2	E2
Operating switching class		S1	S1
Opening time	[ms]	≤60	≤60
Closing time	[ms]	≤70	≤70
Arching time	[ms]	10 - 15	10 - 15
Total breaking time	[ms]	≤75	≤75
Weight	[kg]	48	48
High	H [mm]	491	491
Width	W [mm]	265	265
Deep	D [mm]	1,012	1,012
Distance between poles	P [mm]	230	230
Operating temperature	[°C]	-5...+40	-5...+40



# Construction characteristics



# Coding

## VCB VBWB - R 17 10 16 - 23 - M1 C1 O1

Pole position <sup>4)</sup>	Code
Right side	R
Left side	L

Rated voltage	Code
17.5 kV	17

Rated current	Code
630 A	06
1,000 A	10

Capacidade de interrupção de curto-circuito	Código
16 kA	16

Poles distance	Code
230 mm	23

Spring charging motor	Code
Without	M0
100 - 130 V <sub>AC/DC</sub>	M1
200 - 250 V <sub>AC/DC</sub>	M2
24 V <sub>DC</sub>	M3

Shunt closing release	Code
Without	C0
100 - 130 V <sub>AC/DC</sub>	C1
200 - 250 V <sub>AC/DC</sub>	C2
24 V <sub>DC</sub>	C3

Accessories	Code
Key block	K
Individual paddlock for pushbuttons	I
Simultaneous paddlock for pushbuttons	S
Protection for pushbuttons	P

Mechanical locking coil <sup>3)</sup>	Code
Without	
100 - 130 V <sub>AC/DC</sub>	L1
200 - 250 V <sub>AC/DC</sub>	L2
24 V <sub>DC</sub>	L3

Undervoltage release <sup>1)2)</sup>	Code
Without	
100 - 130 V <sub>AC/DC</sub>	U1
200 - 250 V <sub>AC/DC</sub>	U2
24 V <sub>DC</sub>	U3

Additional shunt opening <sup>1)</sup>	Code
Without	
100 - 130 V <sub>AC/DC</sub>	S1
200 - 250 V <sub>AC/DC</sub>	S2
24 V <sub>DC</sub>	S3

Shunt opening release	Code
Without	O0
100 - 130 V <sub>AC/DC</sub>	O1
200 - 250 V <sub>AC/DC</sub>	O2
24 V <sub>DC</sub>	O3

Standard accessories	Operation counter
	RTC Contact (Ready to Close) - (all versions)
	With antipumping system

- Notes: 1) It is not possible to install undervoltage release and additional shunt opening. It must be selected undervoltage or additional shunt opening.  
 2) Undervoltage release must be actuated all the time for keeping the VCB operating.  
 3) The mechanical locking coil must be actuated for closing the VCB.  
 4) Pole output connection side.

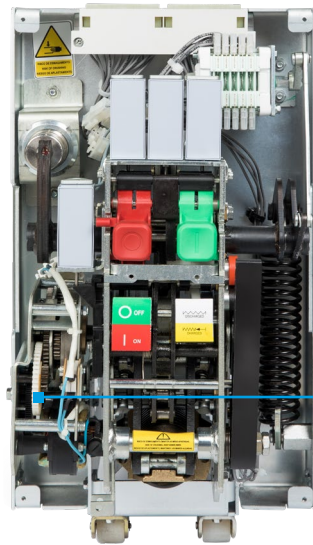
# Accessories

The VBWB circuit breaker has a complete line of accessories to guarantee a complete solution for industrial applications.

## Geared motor for loading closing spring (-MAS)

- The geared motor charges the spring for closing the circuit breaker.
- The spring is automatically charged after the circuit breaker closes.

Characteristics	Specification		
Reference	VBWB-AM C03	VBWB-AM D13	VBWB-AM D23
Code	17175264	17175261	17175260
Supply voltage (Vn)	24 V <sub>DC</sub>	100 - 130 V <sub>AC</sub> / V <sub>DC</sub>	200 - 250 V <sub>AC</sub> / V <sub>DC</sub>
Rated current (A)	6.5	1.4	0.7
Rated output power	V <sub>DC</sub> = 40 W; V <sub>AC</sub> = 40 VA	V <sub>DC</sub> = 40 W; V <sub>AC</sub> = 40 VA	V <sub>DC</sub> = 40 W; V <sub>AC</sub> = 40 VA
Rated rotational speed	8 rpm	8 rpm	8 rpm
Rated torque	50 Nm	50 Nm	50 Nm
Charging time	6 - 7 s	6 - 7 s	6 - 7 s
Duty cycle	S2 (1min)	S2 (1min)	S2 (1min)
Operating voltage	85 - 110%	85 - 110%	85 - 110%



Geared motor for loading closing spring

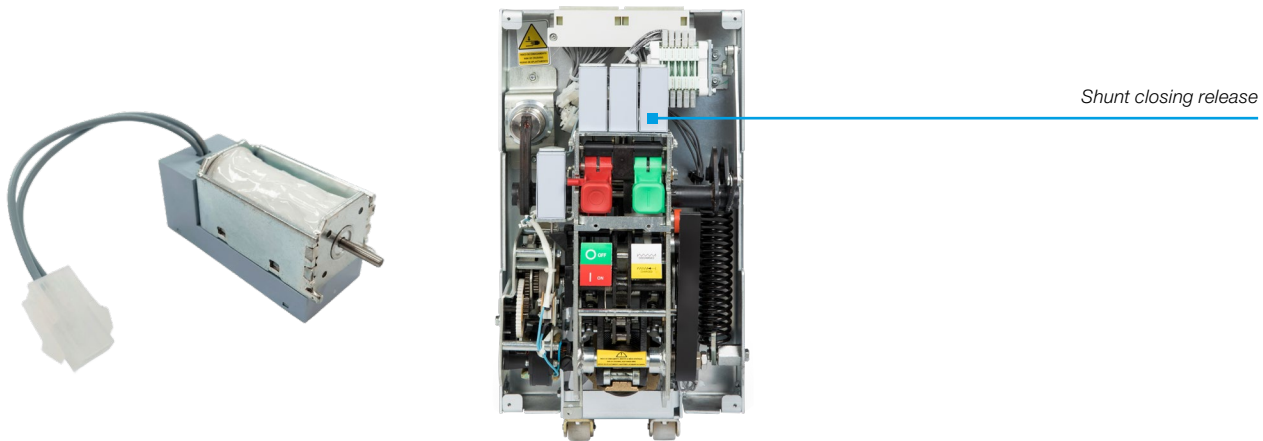
Note: illustrative drawings.

## Accessories

### Shunt closing release (-MBC)

- It allows switching on the circuit breaker by means of an electrical command (the springs must be pre-charged).
- The electrical command pulse must be gretear than 200 ms.

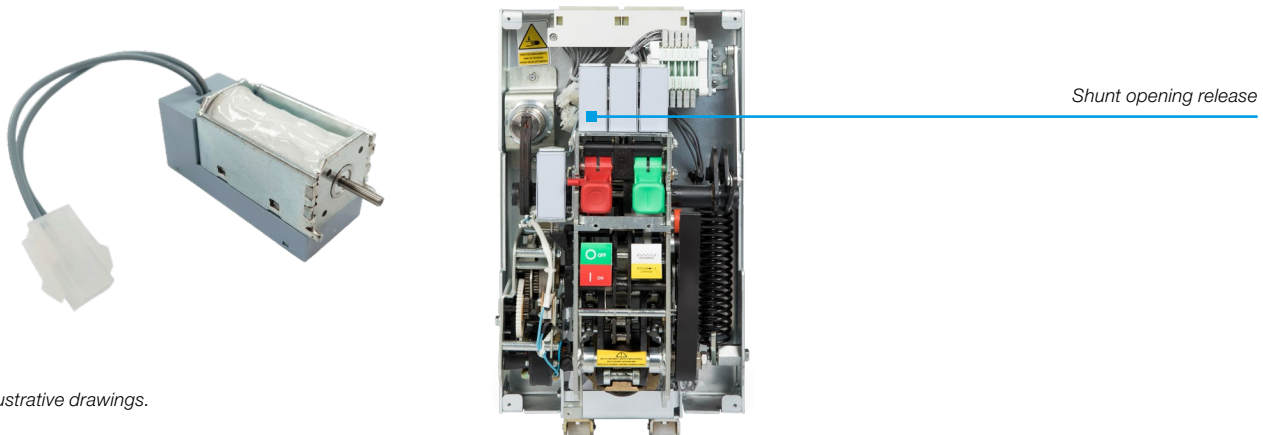
Characteristics		Specification		
Reference		MBC VBWB C03	MBC VBWB E56	MBC VBWB E57
Code		16119643	16119644	16119646
Supply voltage	(Vn)	24 V <sub>DC</sub>	100 - 130 V <sub>AC</sub> / V <sub>DC</sub>	200 - 250 V <sub>AC</sub> / V <sub>DC</sub>
Operating voltage		85 - 110% V <sub>AC</sub>	85 - 110% V <sub>AC</sub>	85 - 110% V <sub>AC</sub>
		70 - 110% V <sub>DC</sub>	70 - 110% V <sub>DC</sub>	70 - 110% V <sub>DC</sub>
Consumption	Inrush power	V <sub>DC</sub> = 300 W / V <sub>AC</sub> = 300 VA	V <sub>DC</sub> = 400 W / V <sub>AC</sub> = 400 VA	V <sub>DC</sub> = 500 W / V <sub>AC</sub> = 500 VA
	Continuos power	V <sub>DC</sub> = 2 W / V <sub>AC</sub> = 2 VA	V <sub>DC</sub> = 2 W / V <sub>AC</sub> = 2 VA	V <sub>DC</sub> = 2 W / V <sub>AC</sub> = 2 VA
Opening time		≤ 50 ms	≤ 50 ms	≤ 50 ms
Closing time		≤ 70 ms	≤ 70 ms	≤ 70 ms
Insulation voltage		2000 V 50/60 Hz (1 min)	2000 V 50/60 Hz (1 min)	2000 V 50/60 Hz (1 min)



### Shunt opening release (-MB01)

- It allows switching off the circuit breaker by means of an electrical command.
- The electrical command pulse must be gretear than 35 ms.

Characteristics		Specification		
Code		MB01 VBWB C03	MB01 VBWB E56	MB01 VBWB E57
Reference		16119584	16119585	15830558
Supply voltage	(Vn)	24 V <sub>DC</sub>	100 - 130 V <sub>AC</sub> / V <sub>DC</sub>	200 - 250 V <sub>AC</sub> / V <sub>DC</sub>
Operating voltage		85 - 110% V <sub>AC</sub>	85 - 110% V <sub>AC</sub>	85 - 110% V <sub>AC</sub>
		70 - 110% V <sub>DC</sub>	70 - 110% V <sub>DC</sub>	70 - 110% V <sub>DC</sub>
Consumption	Inrush power	V <sub>DC</sub> = 300 W / V <sub>AC</sub> = 300 VA	V <sub>DC</sub> = 400 W / V <sub>AC</sub> = 400 VA	V <sub>DC</sub> = 500 W / V <sub>AC</sub> = 500 VA
	Continuos power	V <sub>DC</sub> = 2 W / V <sub>AC</sub> = 2 VA	V <sub>DC</sub> = 2 W / V <sub>AC</sub> = 2 VA	V <sub>DC</sub> = 2 W / V <sub>AC</sub> = 2 VA
Opening time		≤ 50 ms	≤ 50 ms	≤ 50 ms
Closing time		≤ 70 ms	≤ 70 ms	≤ 70 ms
Insulation voltage		2000 V 50/60 Hz (1 min)	2000 V 50/60 Hz (1 min)	2000 V 50/60 Hz (1 min)



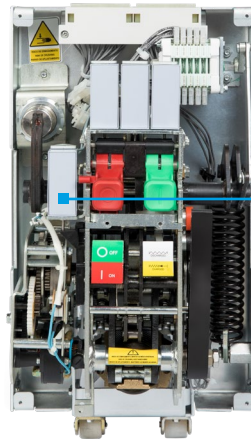
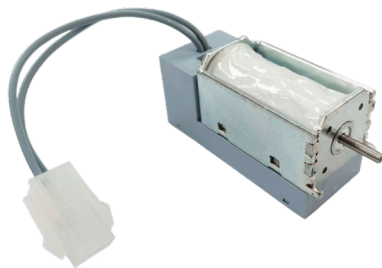
Note: illustrative drawings.

# Accessories

## Additional shunt opening release (-MB02)

- It allows opening the circuit breaker by an electrical command.
- The electrical command pulse must be gretear than 35 ms.

Characteristics		Specification		
Reference		MB02 VBWB C03	MB02 VBWB E56	MB02 VBWB E57
Code		16119586	16119587	16119638
Supply voltage	(Vn)	24 V <sub>DC</sub>	100 - 130 V <sub>AC</sub> / V <sub>DC</sub>	200 - 250 V <sub>AC</sub> / V <sub>DC</sub>
Operating voltage		85 - 110% V <sub>AC</sub>	85 - 110% V <sub>AC</sub>	85 - 110% V <sub>AC</sub>
		70 - 110% V <sub>DC</sub>	70 - 110% V <sub>DC</sub>	70 - 110% V <sub>DC</sub>
Consumption	Inrush power	V <sub>DC</sub> = 300 W / V <sub>AC</sub> = 300 VA	V <sub>DC</sub> = 400 W / V <sub>AC</sub> = 400 VA	V <sub>DC</sub> = 500 W / V <sub>AC</sub> = 500 VA
	Continuos power	V <sub>DC</sub> = 2 W / V <sub>AC</sub> = 2 VA	V <sub>DC</sub> = 2 W / V <sub>AC</sub> = 2 VA	V <sub>DC</sub> = 2 W / V <sub>AC</sub> = 2 VA
Opening time		≤ 50 ms	≤ 50 ms	≤ 50 ms
Closing time		≤ 70 ms	≤ 70 ms	≤ 70 ms
Insulation voltage		2000 V 50/60 Hz (1 min)	2000 V 50/60 Hz (1 min)	2000 V 50/60 Hz (1 min)

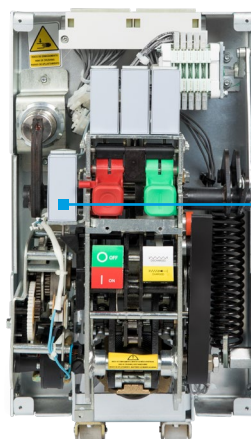
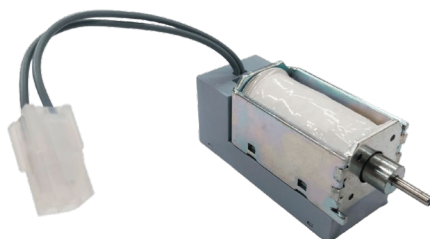


Additional shunt opening release

## Shunt undervoltage release (-MBU)

- It requires a constant power supply to keep the circuit breaker in the closed position and to trigger a trip in case of a voltage drop or control power failure.

Characteristics		Specification		
Reference		MBU VBWB C03	MBU VBWB E56	MBU VBWB E57
Code		16119647	16119678	16119679
Supply voltage	(Vn)	24 V <sub>DC</sub>	100 - 130 V <sub>AC</sub> / V <sub>DC</sub>	200 - 250 V <sub>AC</sub> / V <sub>DC</sub>
Consumption	Inrush power	V <sub>DC</sub> = 600 W / V <sub>AC</sub> = 600 VA	V <sub>DC</sub> = 1200 W / V <sub>AC</sub> = 1200 VA	V <sub>DC</sub> = 500 W / V <sub>AC</sub> = 500 VA
	Continuos power	V <sub>DC</sub> = 5 W / V <sub>AC</sub> = 5 VA	V <sub>DC</sub> = 5 W / V <sub>AC</sub> = 5 VA	V <sub>DC</sub> = 5 W / V <sub>AC</sub> = 5 VA
Operating voltage range (closing the circuit breaker)		85 - 110%	85 - 110%	85 - 110%
Dropout voltage range (opening the circuit breaker)		35 - 70%	35 - 70%	35 - 70%
Opening time		≤ 70 ms	≤ 70 ms	≤ 70 ms
Insulation voltage		2000 V 50/60 Hz (1 min)	2000 V 50/60 Hz (1 min)	2000 V 50/60 Hz (1 min)



Shunt undervoltage release

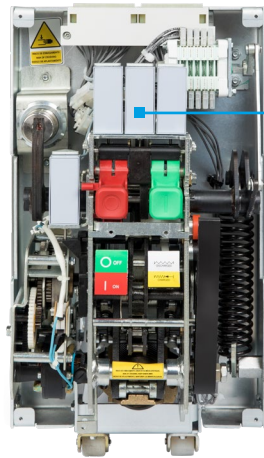
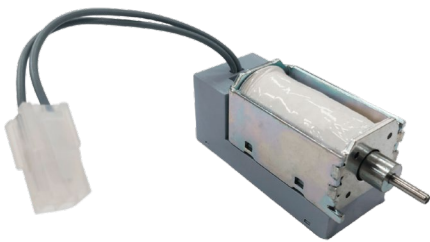
Note: illustrative drawings.

## Accessories

### Mechanical locking coil (-RLE1)

- Requires power to enable breaker closing.
- It can be de-energized once closed.
- Re-energization required for subsequent closing.

Characteristics	Specification		
	RLE1 VBWB C03	RLE1 VBWB E56	RLE1 VBWB E57
Reference	16119685	16119686	16119698
Code	16119685	16119686	16119698
Supply voltage (Vn)	24 V <sub>DC</sub>	100 - 130 V <sub>AC</sub> / V <sub>DC</sub>	200 - 250 V <sub>AC</sub> / V <sub>DC</sub>
Consumption	Inrush power	V <sub>DC</sub> = 600 W / V <sub>AC</sub> = 600 VA	V <sub>DC</sub> = 500 W / V <sub>AC</sub> = 500 VA
	Continuous power	V <sub>CC</sub> = 5 W / V <sub>CA</sub> = 5 VA	V <sub>CC</sub> = 5 W / V <sub>CA</sub> = 5 VA
Operating voltage range (closing the circuit breaker)	85 - 110%	85 - 110%	85 - 110%
Dropout voltage range (opening the circuit breaker)	35 - 70%	35 - 70%	35 - 70%
Opening time	≤ 70 ms	≤ 70 ms	≤ 70 ms
Insulation voltage	2000 V 50/60 Hz (1 min)	2000 V 50/60 Hz (1 min)	2000 V 50/60 Hz (1 min)



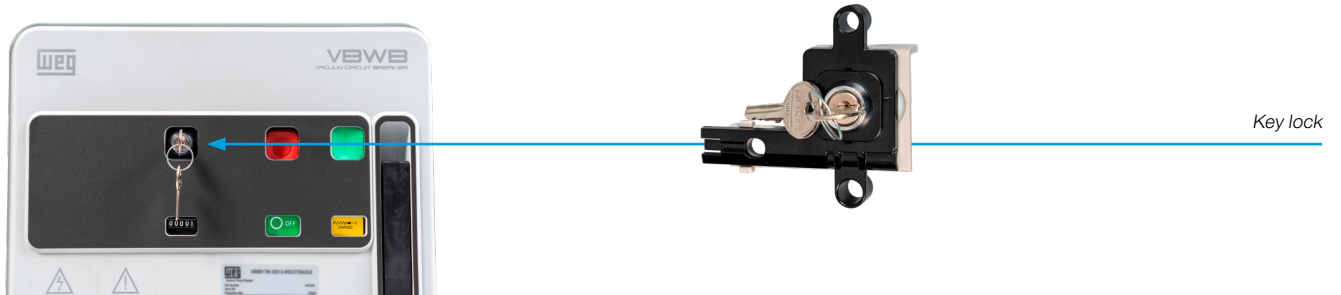
Mechanical locking coil (-RLE1)

# Accessories

## Key lock

- It allows locking the circuit breaker in the OFF position.
- Code for selection: K

Circuit breakers	Reference	Code
VBWB	VBWB-BK1	17175103



## Padlocks

- They allow you to simultaneously or individually lock the VBWB operation buttons.
- Code for selection of simultaneous VBWB lock: S
- Code for selection of individual VBWB lock: I
- Code for selection of button protection: P

Circuit breakers	Reference	Code	Action
VBWB	Simultaneous VBWB lock	17175106	Simultaneously locks the opening and closing buttons
VBWB	Individual VBWB lock	17175105	Allows individual lock of the opening or closing pushbuttons
VBWB	VBWB button protection	17175101	Protects the operation buttons and only allows operation with the button key

Simultaneous lock



Individual lock



Button protection



# Accessories

## Condenser trip device

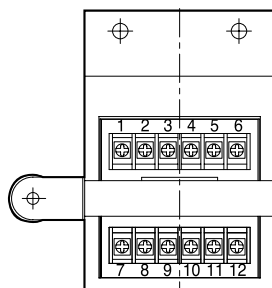
This device electrically trips the circuit breaker within a preset time when the control power is OFF. It operates by means of the discharge of a capacitor on the shunt opening release, with that being possible within the period indicated in the table below.

It includes an indication lamp to signal whether the capacitor is charged and a discharge button. Installation on panel door

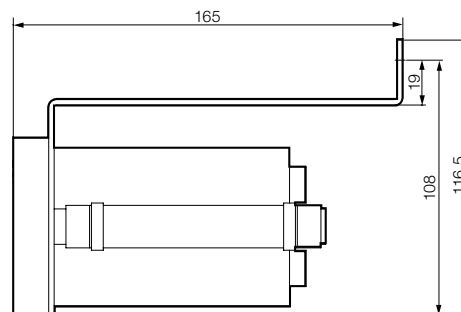
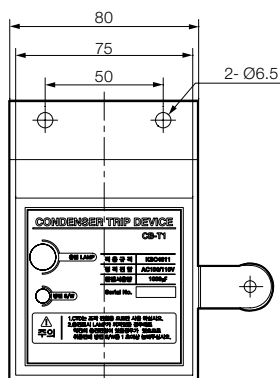


Characteristics	Specification	
Reference	VBW-UC D58	VBW-UC D64
Code	12231110	12231111
Power supply (V <sub>ac</sub> )	100 - 110	200 - 220
Frequency (Hz)	50/60	50/60
Rated output voltage (V)	140 - 155	280 - 310
Charging time (s)	10s	10s
Operation time (m)	30s	30s
Operating voltage range	85 - 110%	85 - 110%
Capacitance (μF)	1,000	560

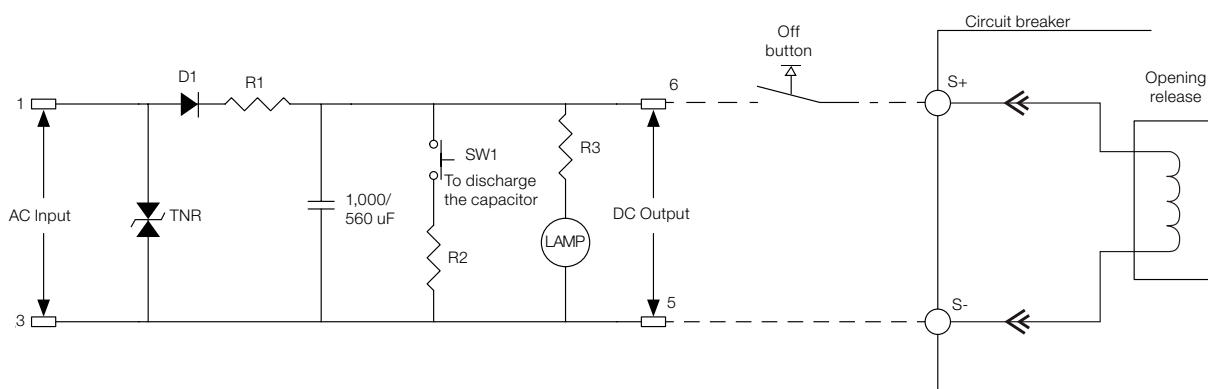
### Terminal arrangement



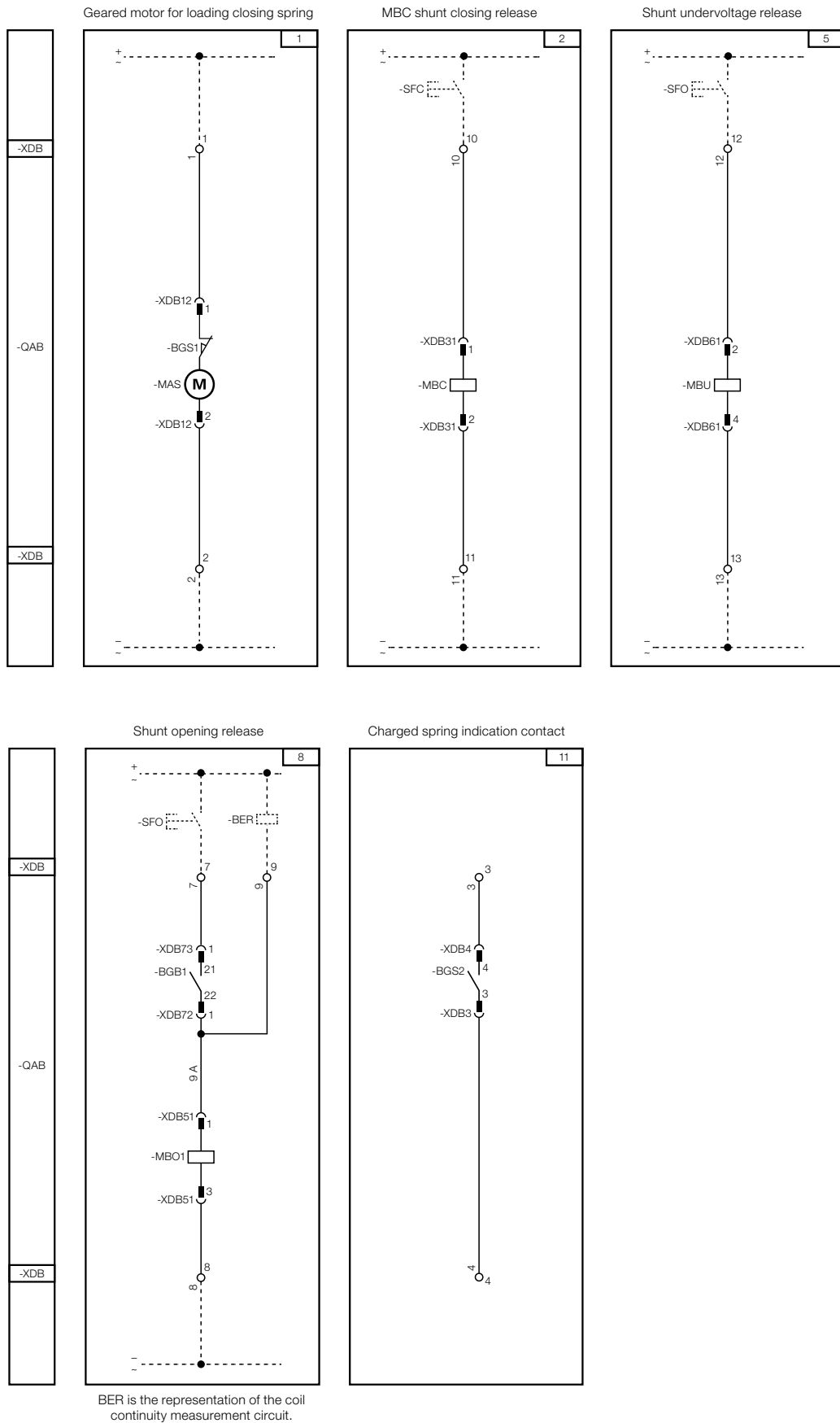
### External dimension



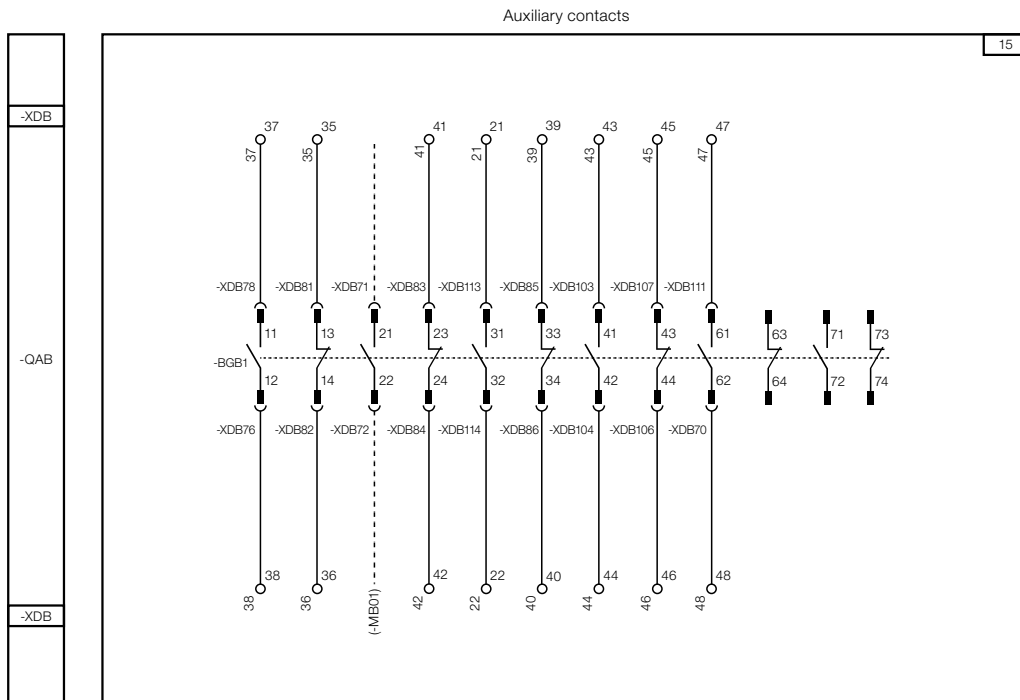
### Circuit diagram



# Wiring diagram



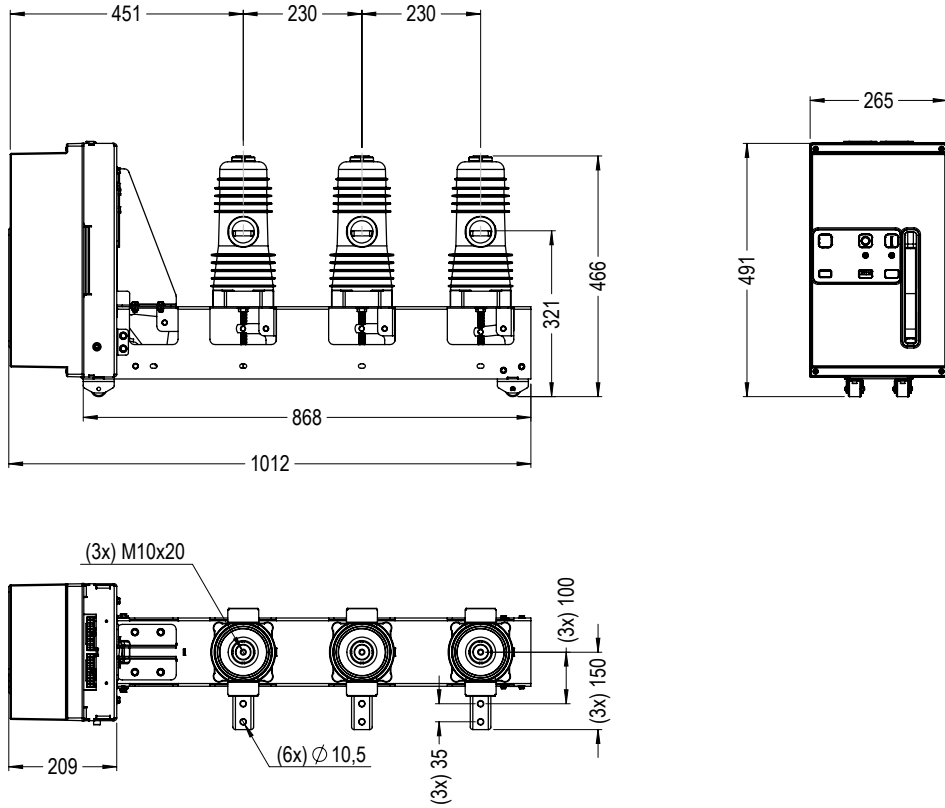
# Wiring diagram



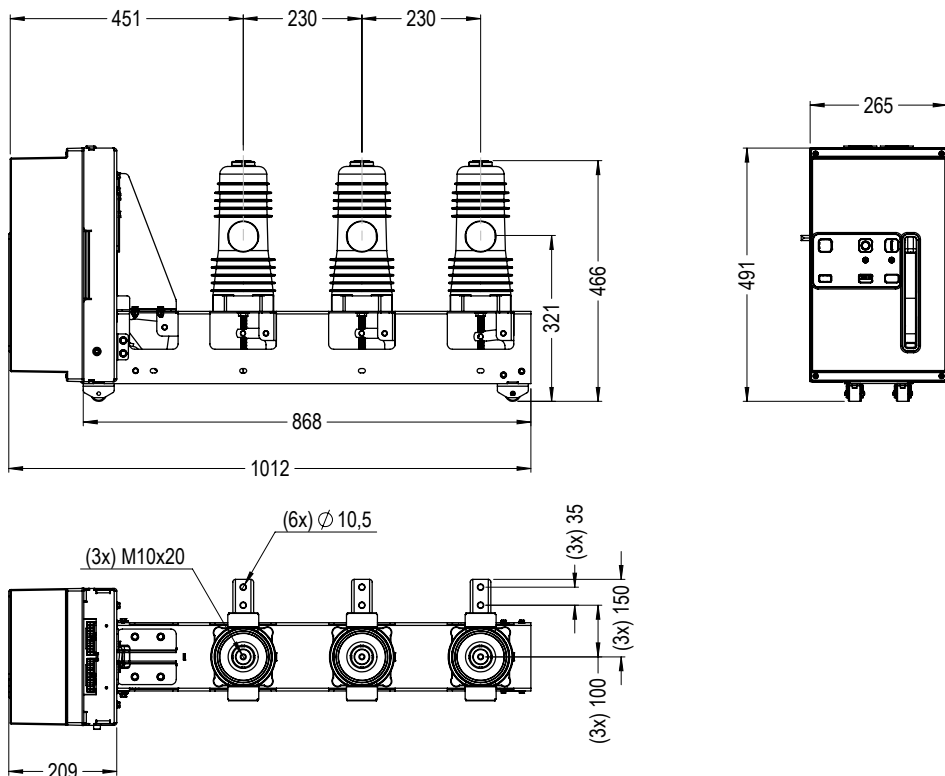
# Dimensions

## VBWB 17.5 kV, 16 kA

### Dimensions VBWB-R17



### Dimensions VBWB-L17











# Global presence

is essential, as much as understanding your needs.



## Global Presence

With more than 47,000 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 **VBWB - Vacuum Circuit Breaker** is the right choice for your application and business, assuring safety, efficiency and reliability.



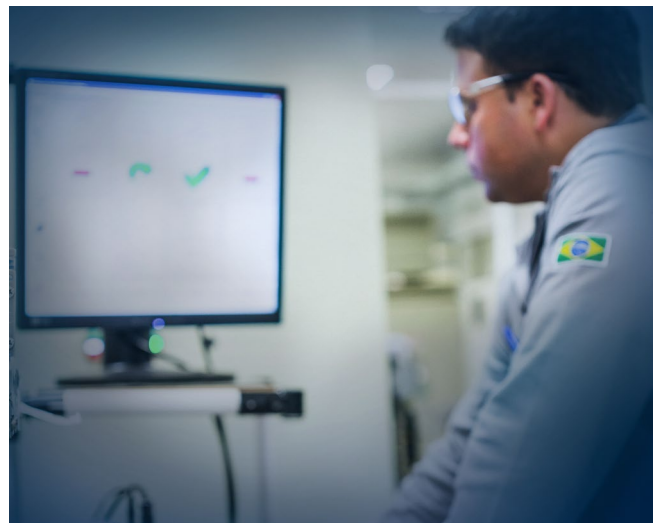
**Availability** is to have a global support network



**Partnership** is to create solutions that suits your needs



**Competitive edge** is to unite technology and innovation



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Cod: 50151768 | Rev: 02 | Date (m/y): 03/2026.

The values shown are subject to change without prior notice.  
The information contained is reference values.