ELECTRICAL
SAFETY
SOLUTIONS

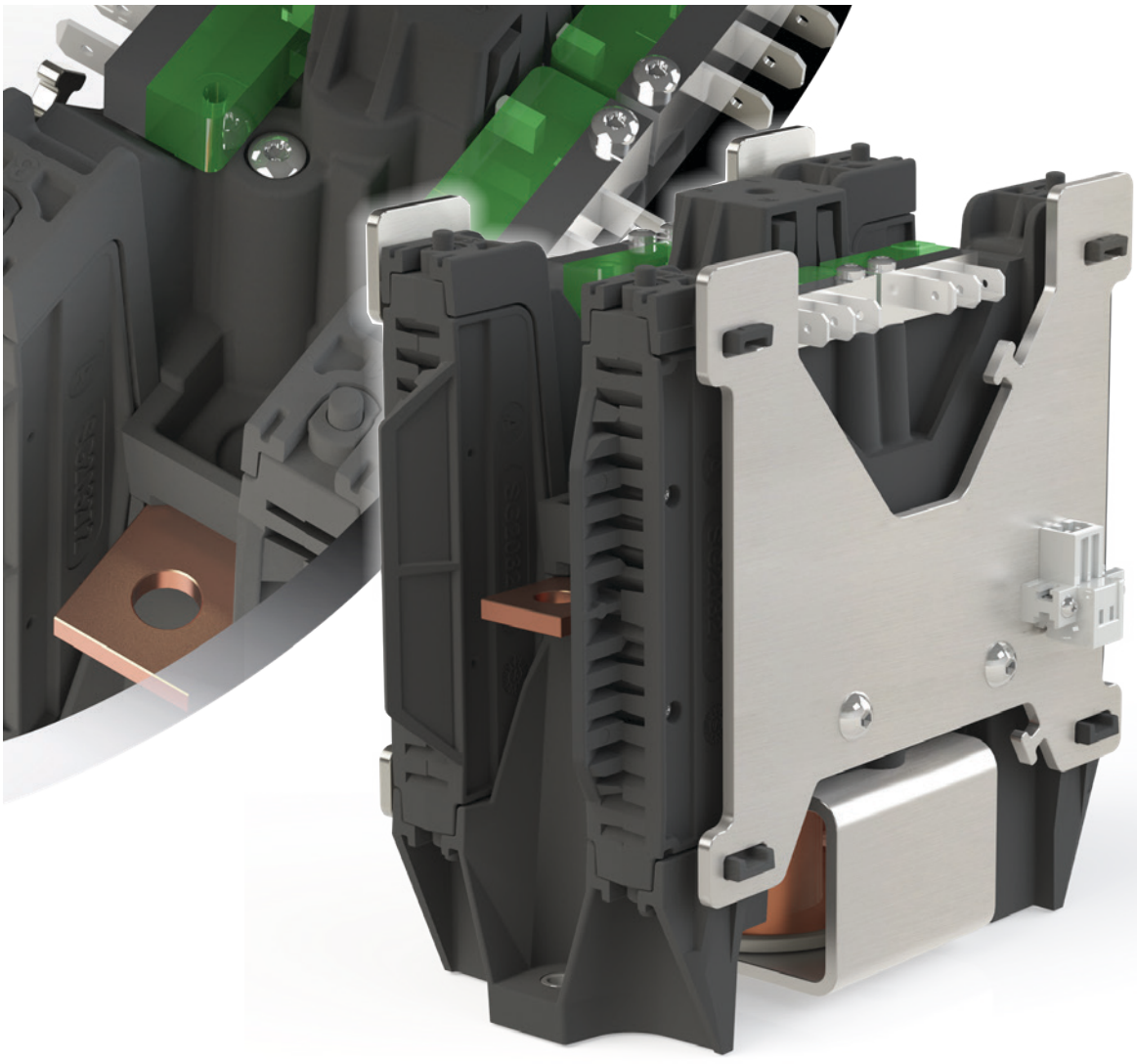
Sécheron

CONTACTORS

Type **BXS09.0X range**

Bidirectional DC contactors

ELECTRIC TRANSPORT VEHICLES / FIXED INSTALLATIONS



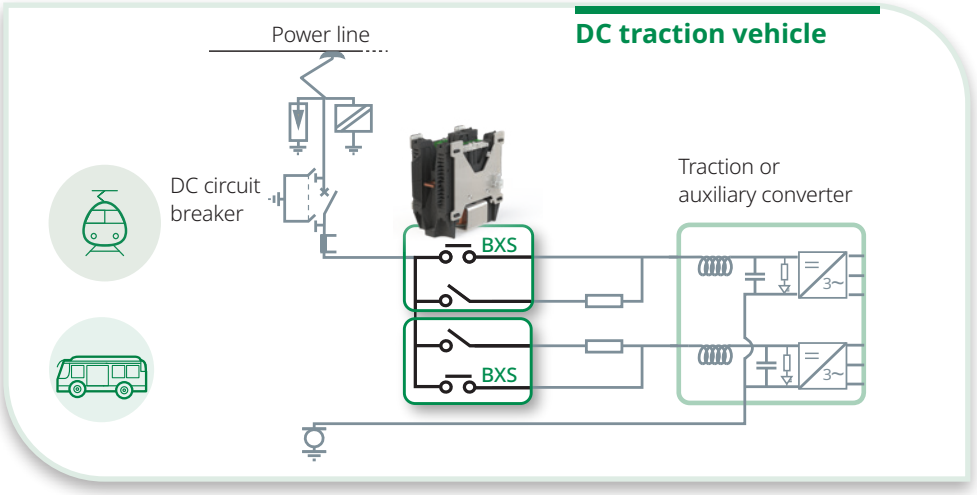
GENERAL INFORMATION

The **BXS09.0X** contactor range has been designed to cover multiple applications on electric transport vehicles and fixed installation up to rated voltage 1,500 V_{DC}. Taking advantages on the tried and tested design of the BMS range, and thanks to its rational and compact layout, the BXS 09.0X allows to reduce to a minimum the overall volume required in the electrical cubicle. Its bidirectional current breaking capability, the absence of critical current as well as the high value of short time withstand current make this product perfectly suitable for a variety of applications ranging from Rolling Stock to Industrial and Renewables, both for refurbishment and for new installations.

APPLICATIONS, TYPICAL EXAMPLES

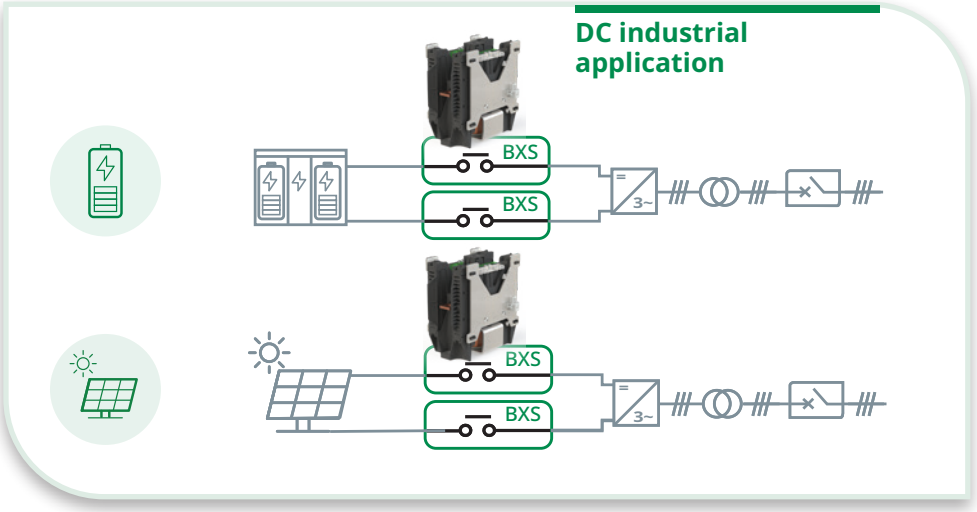
Transport Vehicles

- Line contactor for DC vehicles



Fixed installation

- Battery Storage Systems, Solar Farms, etc.



MAIN FEATURES

- Rated Voltage up to 1,500 VDC
- Conventional free air thermal current 300 and 400 A
- Low voltage control with electronic board
- Suitable for ambient temperature from -40°C to +70°C.
- Reference standards: EN/IEC 60077-1/-2, EN/IEC 61373, EN 45545, EN 50657.

MAIN BENEFITS

- Bidirectional current breaking.
- No critical current.
- High level of Short Time Withstand Current (STWC).
- High insulation level against pollution PD3A class.
- Compact size for effective integration.
- Reduced insulation clearances required for installation.
- Up to 4 change-over auxiliary contacts.
- High mechanical and electrical durability.
- Horizontal or vertical mounting to match tight installation constraint.
- Low power consumption.
- Designed for maintenance free operation.

DATA FOR PRODUCT SELECTION

	Symbol	Unit	BXS09.0X	
MAIN HIGH VOLTAGE CIRCUIT				
Pole quantity			1	
Component category			A2	
Type of main contacts			NO Normally Open	
Current interruption direction			Bidirectional	
Rated operational voltage	U_r	[V_{DC}]	900 / 1,500	
Rated insulation voltage	U_{Nm}	[V_{DC}]	1,800	
Overvoltage category			OV3	
Conventional free air thermal current	I_{th}	[A]	300 (T_{amb}=+40°C)	400 (T_{amb}=+40°C)
Rated operational current/operational frequency	I_r	[A]	C1 at 150 A / 1 ms @ 900 V_{DC} C1 at 30 A / 15 ms @ 900 V_{DC}	
Short-circuit breaking capacity	I_{bc} / I_{mc}	[A]	1,000 A 1 ms 1,000 V (1 mH) 500 A 1 ms 1,500 V (3 mH) 70 A 15 ms 1,000 V (220 mH) 40 A 15 ms 1,500 V (565 mH)	
Critical current		[A]	No critical current	
Rated short-time withstand current	$I_{cw\,/\,t}$	[kA]/[ms]	5 / 100	
Power-frequency test voltage (50 Hz / 1min)	U_a	[kV]	4.6	
Rated impulse withstand voltage	U_{Ni}	[kV]	10	
LOW VOLTAGE CIRCUIT				
Control circuit				
Nominal supply voltage	U_n	[V_{DC}]	24; 32; 36; 48; 72; 84; 96 or 110 (1)	
Range of voltage			[0.7 - 1.25] U_n	
Typical mechanical closing time (2)	t_{cc}	[ms]	100	
Typical mechanical opening time (2)	t_{co}	[ms]	30	

(1) For other voltage, please contact sécheron. (2) At U_n and T_{amb} = +20°C.

Auxiliary contacts				
Type of contacts			Change over type S870	
Conventional thermal current	I_{th}	[A]	10	
Utilization category according to EN60947				
- AC-15 230 V_{AC}			1.5 A	
- DC-13 60 V_{DC}			0.5 A	
- DC-13 24 V_{DC}			2 A	
Minimum let-through current at 24 Vdc (3)		[mA]	≥ 10 (silver contacts)	

(3) For a dry and clean environment.

Low voltage interface				
Control circuit			WAGO 734 2-poles cage-clamp connector (standard)	
Auxiliary switches			Direct connection (standard) Wired on WAGO 734 12 poles cage-clamp connector (option)	
Insulation				
Power-frequency test voltage (50 Hz / 1min)	U_a	[kV]	1.5	
OPERATING CONDITIONS				
Installation			Indoor	
Altitude		[m]	≤ 2,000	
Working ambient temperature	T_{amb}	[°C]	-40 to +70	
Humidity			95% at + 40°C	
Pollution degree			PD3A @ U_{Nm} 1,200 V_{DC} / PD3 @ U_{Nm} 1,800 V_{DC}	
Minimum mechanical durability	N	Operations	≥ 2 millions	

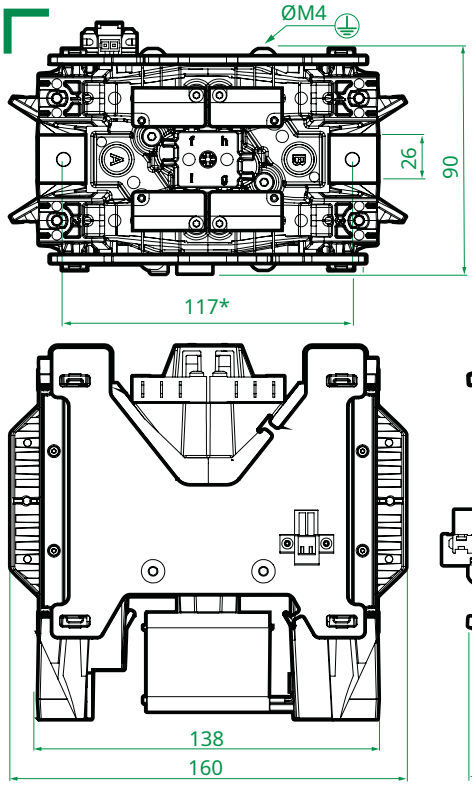
PRODUCT INTEGRATION

MAIN DIMENSIONS

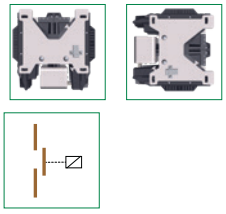
HV connections	M8 screws
Earth connections	M4 screw, thread length 8 mm
LV Connections	Control: WAGO 734 (2 poles)
(standard)	Auxiliary switches: fast-on terminals
	WAGO 734 (12 poles) as option
Fixing points	M5 screws

Dimensions without tolerances are indicative. All dimensions are in mm.

BXS09.0X

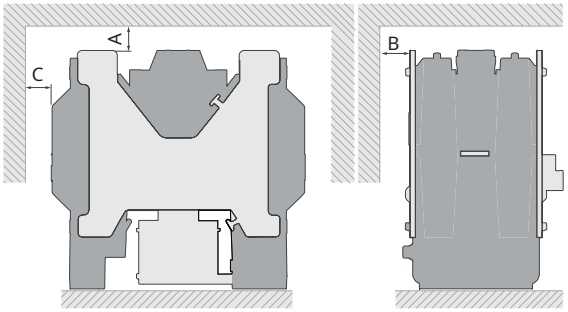


BXS09.0X
1-POLE
Horizontal/vertical installation



* Fixing points

INSULATION DISTANCES AND WEIGHTS



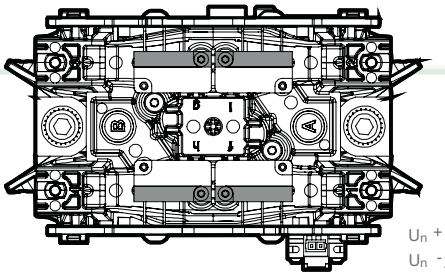
BXS contactors have been homologated according to IEC 60077-2 with the following insulation distances.

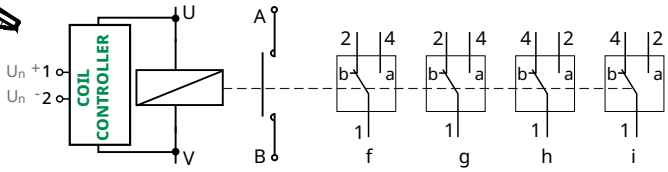
contactor type	Insulating distance [mm] To earthed wall			Arc chute removal distance [mm]	Weight: ± 0.5 kg [kg]
	A	B	C		1 Pole
BXS09.0X	30	25	35	25	2.3 to 2.5*

*Depending of the the version. Please contact Sécheron

AUXILIARY CONTACTS CONFIGURATION

BXS09.0X



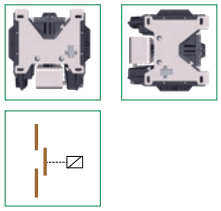


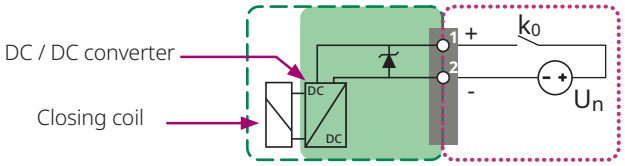
LOW VOLTAGE CONTROL DIAGRAM

CONTACTOR CONFIGURATION (1)		Nominal supply voltage U_n [V_{DC}]	Closing power (P_c) / Holding power (P_h) [W] / [W]
BXS09.0X horizontal / vertical installation	**1 pole**	**all voltage**	≤ **30** / ≤ **10**

(1) For details refer to pages 5 & 6.

CONTROL TYPE



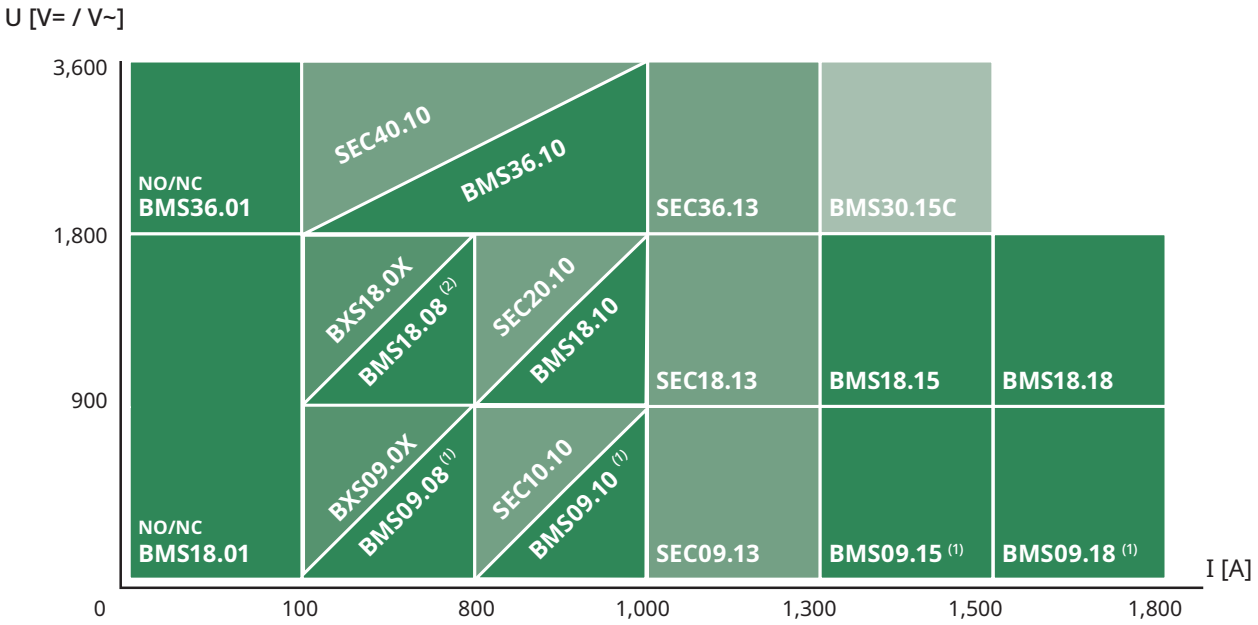


Sécheron's scope
Customer's scope

Low voltage interface
Coil controller

U_n : DC power supply
k_0 : Supply relay

SECHERON CONTACTORS RANGE



BMS15.002 and **HS** contactors are still available for delivery on repeat order or as spares.

(1) **BMS09...** can be used for rated voltages up to 2,000 VAC

(2) A specific version of **BMS18.08** can also be used for rated voltage up to 4,000 VAC

DESIGNATION CODE FOR ORDERING

- Be sure to establish the designation code from the latest version of our brochure by downloading it from the website: www.secheron.com.
- Be careful to write down the complete alphanumerical designation code with 16 characters when placing your order.
- For technical reasons some variants and options indicated in the designation code might not be combined, therefore validate your configuration with Sécheron before ordering.
- For other configurations not described in the brochure, please contact Sécheron.

Example of customer's choice:	**BXS**	**09**	**03**	Z	1	Z	Z	E	A	Z	V	D
Line:	10	11	12	13	14	15	16	17	18	19	20	21

The bold characters of the designation code define the device type.

Note: some combinations may not be possible, therefore validate your configuration with Sécheron before ordering

DESIGNATION CODE

Line	Description		Designation		Customer's
			Standard	**Options**	**choice**
10	Product type	**BXS**	**BXS**		**BXS**
11	Rated operational voltage	900/1,500 V	09		09
12	Rated conventional free air thermal current	300 A	03		
		400 A	04		
13	Spare digit		Z		
14	Number of poles	1 pole	1		
15	Spare digit		Z		
16	Spare digit		Z		
17	Nominal supply voltage	24 V_{DC}	A		
		36-48 V_{DC}	D		
		72-84 V_{DC}	G		
		96-110 V_{DC}	J		
18	Auxiliary contacts BXS	2 Change over - (switch PF) - silver type	C		
		4 Change over - (switch PF) - silver type	G		
19	Spare digit		Z		
20	Installation configuration	Horizontal & Vertical	V		
21	Application type	(Direct Current) DC	D		

Signature:

Name:

Place and date:

Sécheron

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