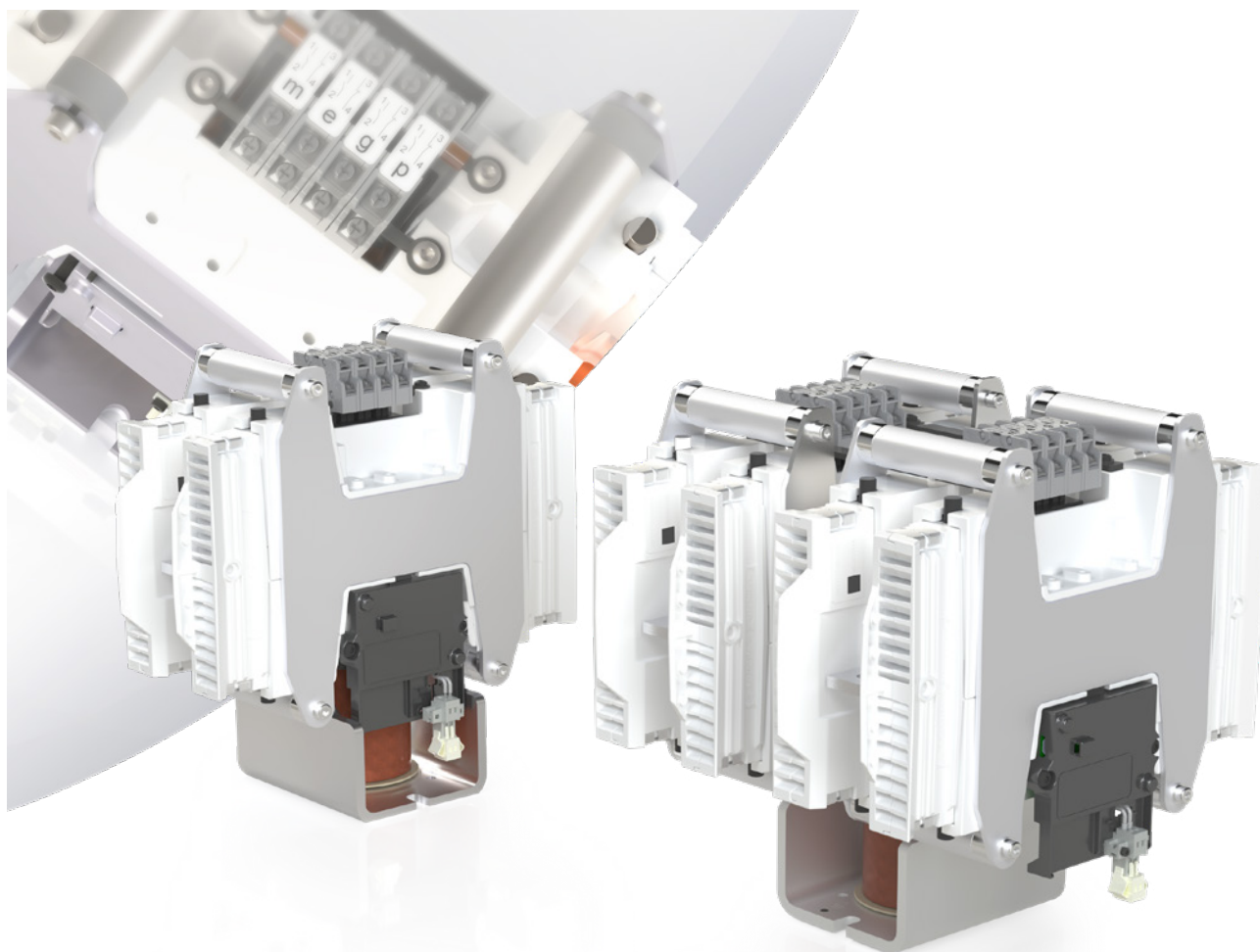


CONTACTORS

Type **BXS18.0X range**
Bidirectional DC contactors

ELECTRIC TRANSPORT VEHICLES / FIXED INSTALLATIONS



GENERAL INFORMATION

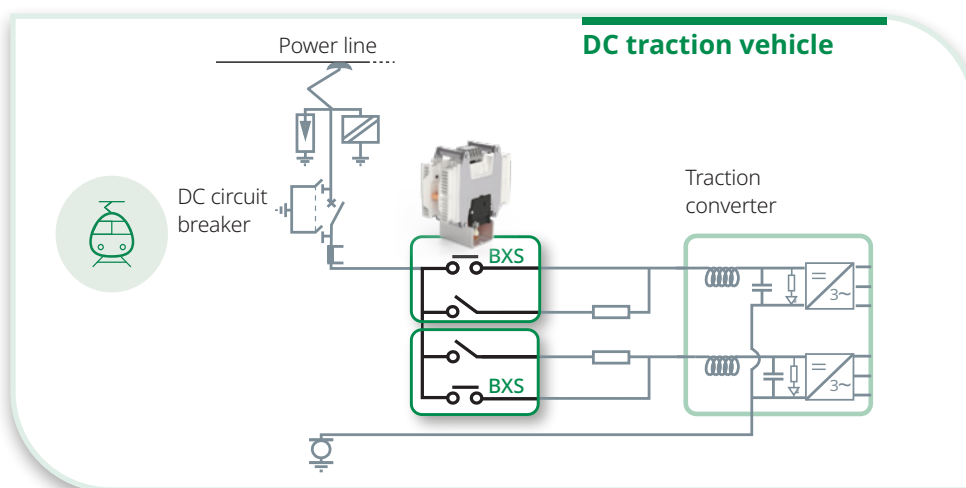
The **BXS18.0X** contactor range has been designed to cover multiple applications on electric transport vehicles and fixed installation up to rated voltage 1.8 kVDC. Taking advantages on the tried and tested design of the BMS range, and thanks to its rational and compact layout, the BXS 18.0X allows 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

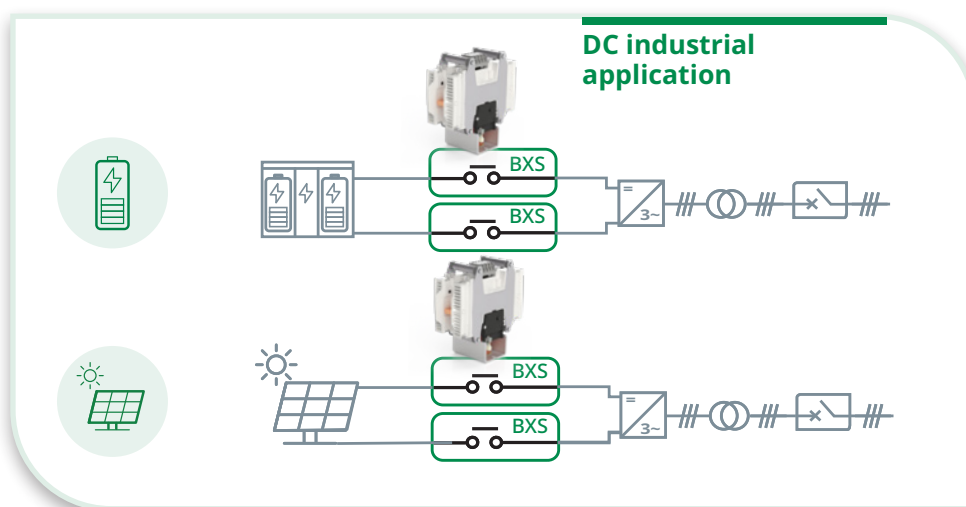
Transport Vehicles

- Line contactor for DC vehicles



Fixed installation

- Battery Storage Systems, Solar Farms, etc.



MAIN FEATURES

- Rated Voltage up to 1,800 Vbc
- Conventional free air thermal current 400 and 600 A
- Low voltage control with electronic board
- Available in 1 and 2 pole version
- 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 NO + 4 NC auxiliary contacts for each pole.
- ✓ 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			BXS18.0X
MAIN HIGH VOLTAGE CIRCUIT			
Pole quantity			1, 2
Component category			A2
Type of main contacts			Normally Open
Current interruption direction			Bidirectional
Rated operational voltage	U_r	[V _{DC}]	900 / 1,800
Rated insulation voltage	U_{Nm}	[V _{DC}]	2,300
Overvoltage category			OV3
Conventional free air thermal current	I_{th}	[A]	400 (T _{amb} =+40°C) 600 (T _{amb} =+40°C)
Rated operational current/operational frequency	I_r	[A]	400 A / 15 ms @ 900 and 1,800 V _{DC} Horizontal: Category C2 / Vertical: Category C1
Short-circuit making and breaking capacity	I_{bc} / I_{mc}	[A]	800 A 15 ms @ 900 and 1800 V _{DC}
Critical current		[A]	No critical current
Rated short-time withstand current	$I_{cw/t}$	[kA]/[ms]	12 / 100 for 1P 8 / 100 for 2P
Short-circuit making capacity		[kA]	8 for 1P 6 for 2P
Power-frequency test voltage (50 Hz / 1min)	U_a	[kV]	6.9
Rated impulse withstand voltage	U_{Ni}	[kV]	15
LOW VOLTAGE CIRCUIT			
Control circuit			
Nominal supply voltage	U_n	[V _{DC}]	[24-36] , [48-110] ⁽¹⁾
Range of voltage			[0.7 - 1.25] U_n
Typical mechanical closing time ⁽²⁾	t_{cc}	[ms]	approx 120 ms for 1P / 165 ms for 2P
Typical mechanical opening time ⁽²⁾	t_{co}	[ms]	approx 80 ms for 1P / 65 ms for 2P
⁽¹⁾ For other voltage, please contact sécheron. ⁽²⁾ At U_n and T _{amb} = +20°C.			
Auxiliary contacts			
Type of contacts			Dual break type
Rated voltage		[V _{DC}]	24 to 110
Conventional thermal current	I_{th}	[A]	6 or 10 A depending from the type
Utilization category according to EN60947			
- AC-15 230 V _{AC}			1.0 A
- DC-13 110 V _{DC}			0.5 A
Minimum let-through current at 24 V _{DC} ⁽⁴⁾		[mA]	≥ 10 (silver contacts) or 4≤I≤10 (gold contacts)
⁽⁴⁾ 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 20-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
Minimum mechanical durability	N	Operations	≥ 2 millions

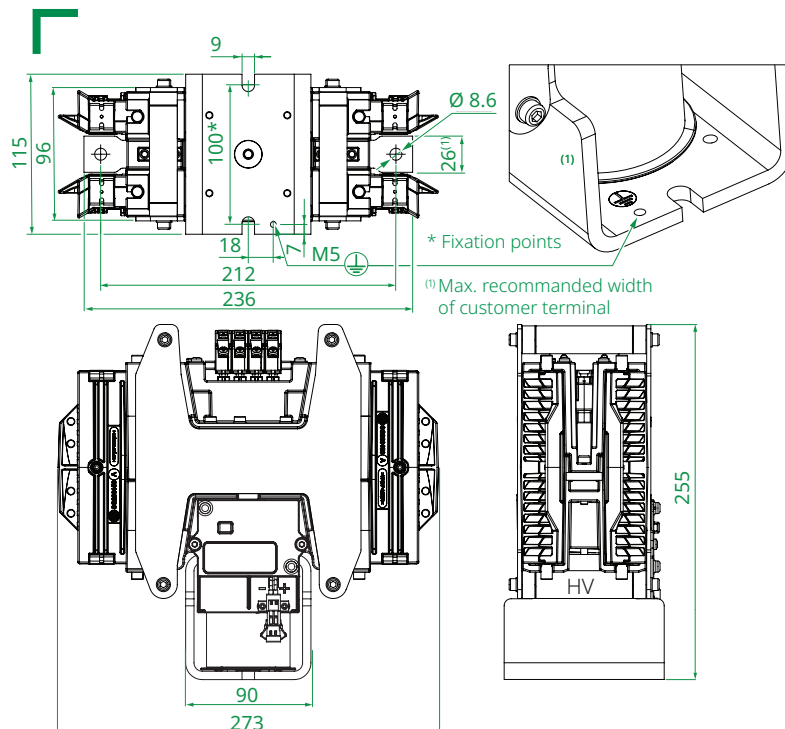
PRODUCT INTEGRATION

MAIN DIMENSIONS

HV connections	M8 screws
Earth connections	M5 screw, thread length 5 mm max.
LV Connections (standard)	Control: WAGO 734 (2 poles) Auxiliary switches: M3 screws WAGO 734 (20 poles) as option
Fixing points	M8 screws

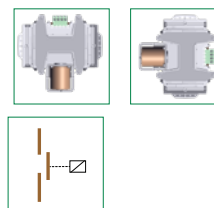
Dimensions without tolerances are indicative. All dimensions are in mm.

BXS18.0X

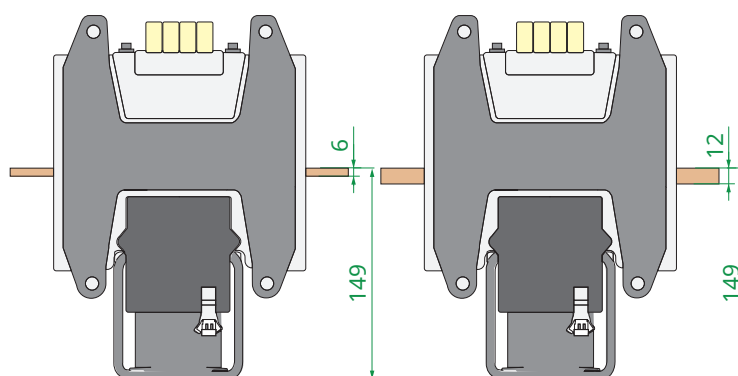


BXS18.0X

1-POLE
Horizontal/vertical
installation



HV connections

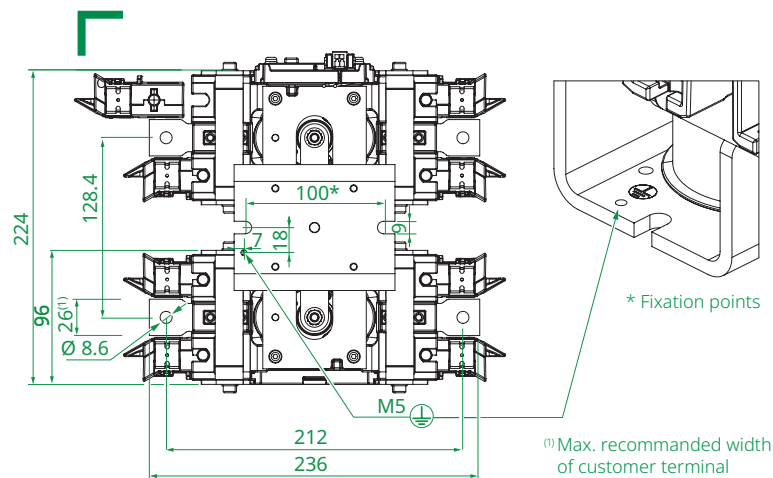


BXS18.04

BXS18.06

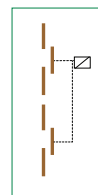
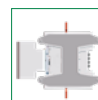
HV connections

BXS18.0X - 2 poles

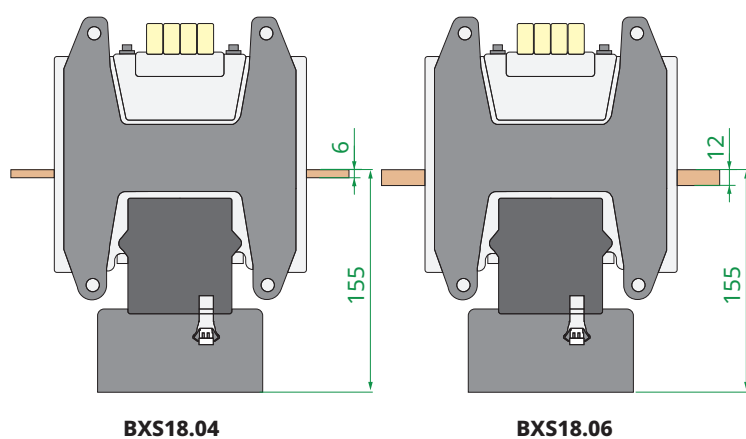


BXS18.0X

2-POLES
Horizontal/vertical
installation



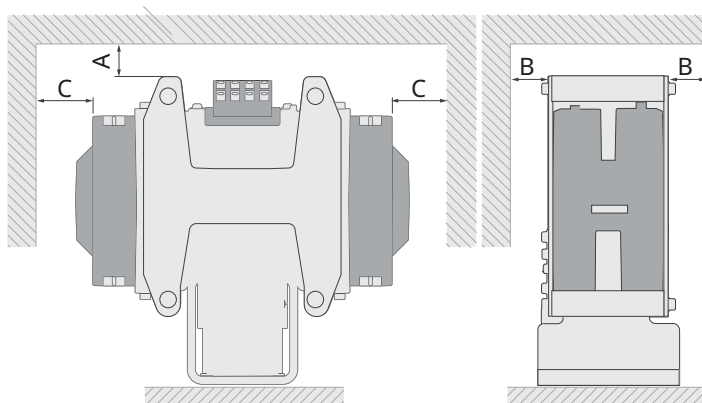
HV connections



HV connections

INSULATION DISTANCES AND WEIGHTS

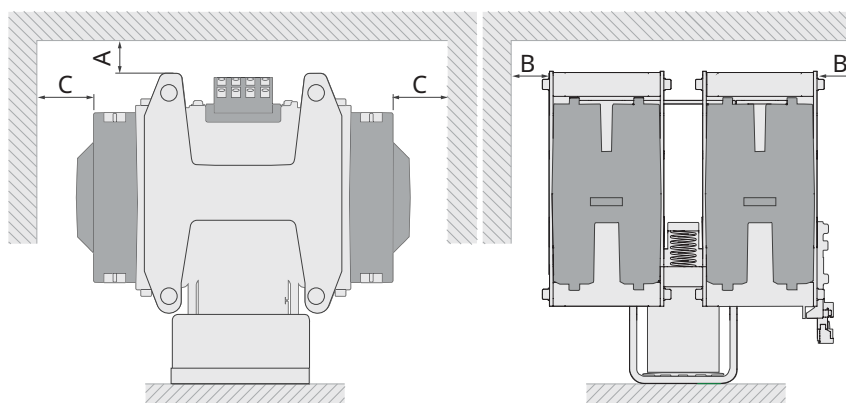
/// BXS18.0X - 1 pole



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

contactor type	Insulating distance [mm]						Arc chute removal distance [mm]	Weight: ± 0.5 kg [kg]		
	To earthed wall			To insulating wall				1 Pole		
	A	B	C	A	B	C		...04	...06	
BXS18...	20	40	60	10	20	60	35	7.7	8	

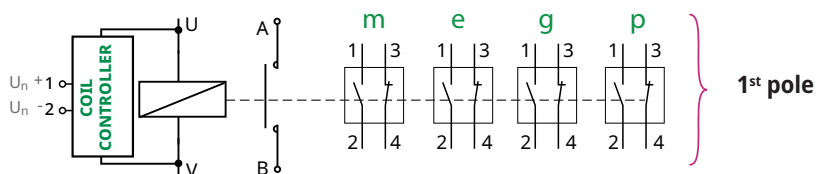
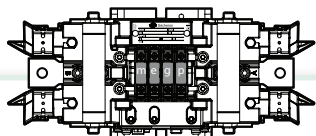
/// BXS18.0X - 2 poles



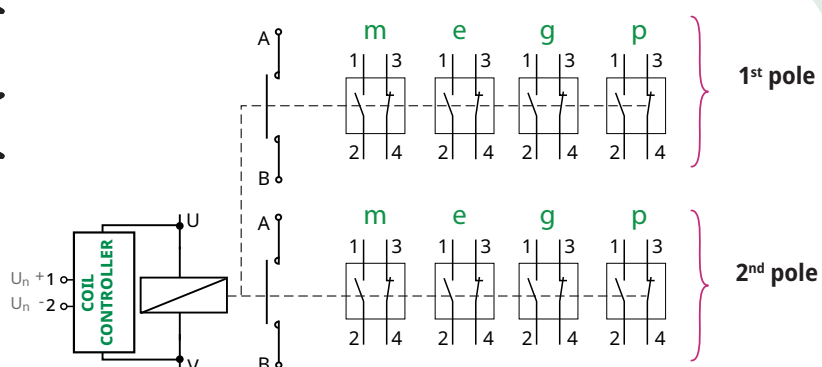
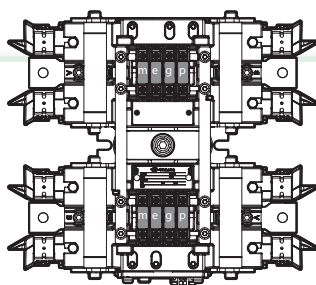
contactor type	Insulating distance [mm]						Arc chute removal distance [mm]	Weight: ± 0.5 kg [kg]	
	To earthed wall			To insulating wall				2 Poles	
	A	B	C	A	B	C		...04	...06
BXS18...	20	40	60	10	20	60	35	11	12

AUXILIARY CONTACTS CONFIGURATION

BXS18.0X - 1 pole



BXS18.0X - 2 poles



// AUXILIARY SWITCH POSITION PER POLE

Function of the selected quantity of poles and of auxiliary switches per BXS's pole, the location of the switches will be as follows:

BXS18.0X - 1 pole

	1 st pole			
1 switch per pole		e		
2 switches per pole		e	g	
3 switches per pole	m	e	g	
4 switches per pole	m	e	g	p

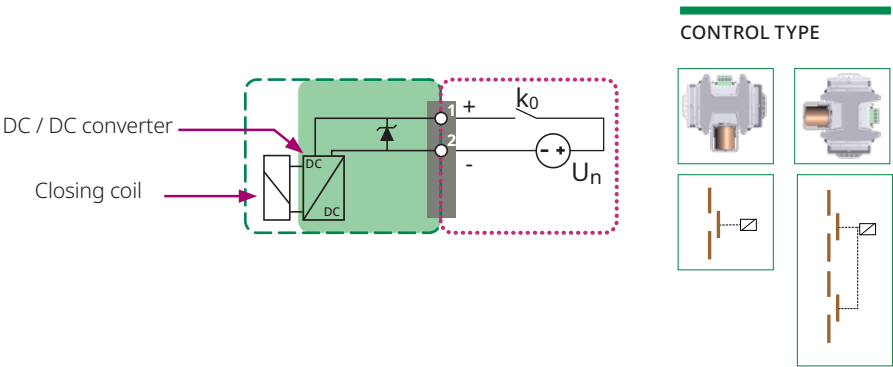
BXS18.0X - 2 poles

	1 st pole				2 nd pole			
1 switch per pole		e				e		
2 switches per pole		e	g			e	g	
3 switches per pole	m	e	g		m	e	g	
4 switches per pole	m	e	g	p	m	e	g	p

LOW VOLTAGE CONTROL DIAGRAM

CONTACTOR CONFIGURATION ⁽¹⁾		Nominal supply voltage U _n [V _{DC}]	Closing power (P _c) / Holding power (P _h)
BXS18.0X horizontal / vertical installation	1 pole & 2 poles	[24-36], [48-110]	P_c (RMS, < 550 ms) ≤ 65 W P_h = 5W

⁽¹⁾ For details refer to pages 5 & 6.

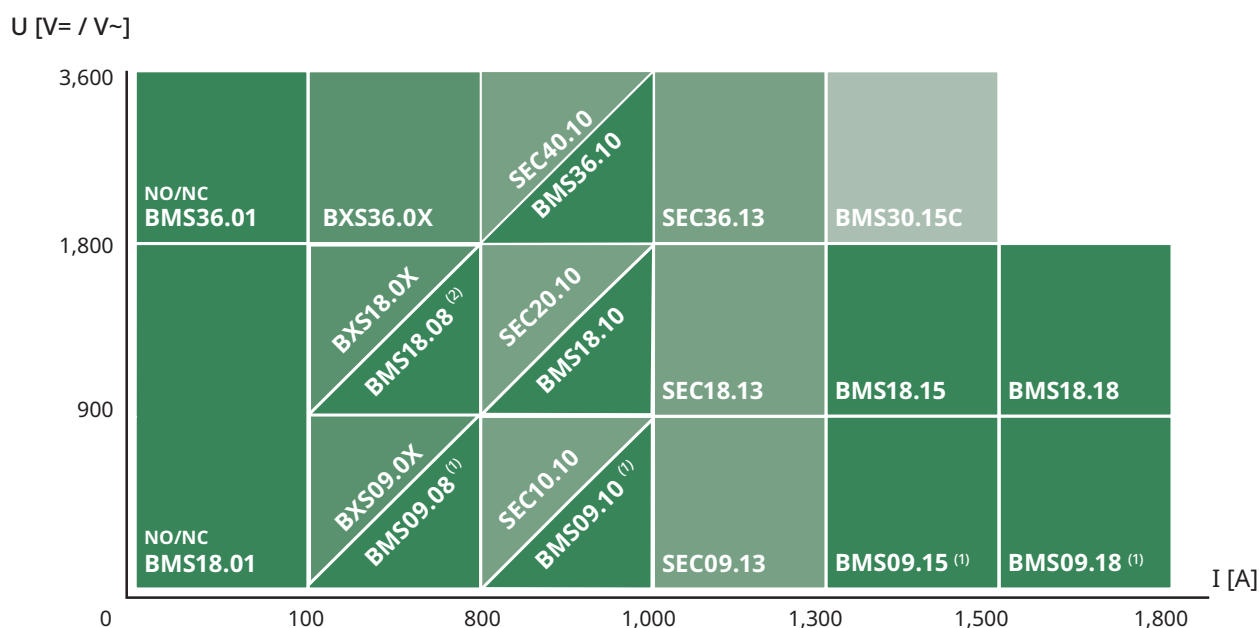


--- Sécheron's scope
..... Customer's scope

Low voltage interface
Coil controller

U_n : DC power supply
k₀ : 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 V_{AC}

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

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	18	06	Z	1	Z	Z	E	A	S	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	1,800 V	18	18
12	Rated conventional free air thermal current	400 A 600 A	04 06	
13	Spare digit	Z		
14	Number of poles	1 pole 2 poles	1 2	
15	Spare digit	Z		
16	Spare digit	Z		
17	Nominal supply voltage	24-36 V _{DC} 48-110 V _{DC}	A E	
18	Auxiliary contacts per pole	1NO+1NC - (switch PF) - silver type 1NO+1NC - (switch PF) - gold type 2NO+2NC - (switch PF) - silver type 2NO+2NC - (switch PF) - gold type 3NO+3NC - (switch PF) - silver type 3NO+3NC - (switch PF) - gold type 4NO+4NC - (switch PF) - silver type 4NO+4NC - (switch PF) - gold type	A C E H K M O P	
19	Spare digit	S		
20	Installation configuration	Horizontal & Vertical	V	
21	Application type	(Direct Current) DC	D	

Signature:

Name:

Place and date:



Sécheron SA
Rue du Pré-Bouvier 25
1242 Satigny - Geneva
CH-Switzerland

www.secheron.com
Tel: +41 22 739 41 11
Fax: +41 22 739 48 11
ess@secheron.com