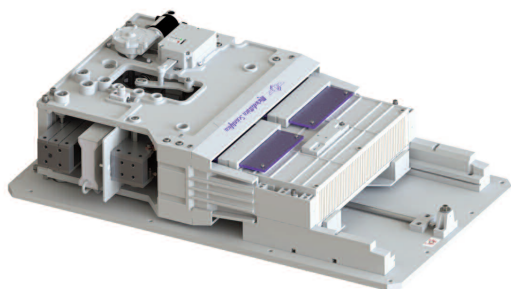


HSCBs

Standard Family Code IR 4000 SERIES VH



Description

DC single pole, magnetic blowout, trip free, air circuit breaker. The closing mechanism is motor-operated independent type while the holding mechanism is magnetic type, provided with holding coil. The breaker is equipped with a direct acting over-current trip device, which may be either unidirectional or bi-directional. Reference standard IEC 60077.

Family Code			
Voltage	Holding System	Thermal Current	
		3000 A	4500 A
1800 V	Holding Coil	IR 4030 VH 18M	IR 4045 VH 18M
3600 V		IR 4030 VH 36M	IR 4045 VH 36M

Type	IR4000 VH
Number of Poles	1 NO
Mounting Position	Horizontal
Control Voltage Rating U_c [Vdc]	24 - 36 - 48 - 72 - 110 ¹
Auxiliary Contact Blocks	5 N.O. + 6 N.C.
Block Type	Reed
Arc chute Material	Ceramic
Main Contacts tips Material	AgSnO ₂
Arcing Contacts tips Material	AgW
Electric Diagram HC	42870635C
Layout Drawing HC	42812314C

¹ To be specified in order phase.

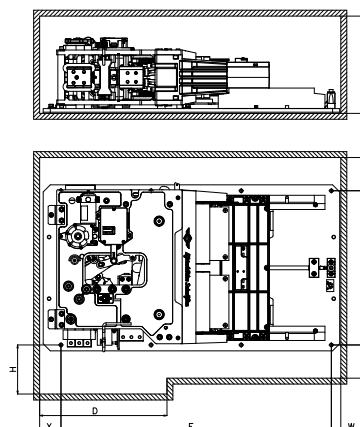
Electrical Characteristics	18M	36M
Rated Operational Voltage U_{Ne} [V _{dc}] ¹	1800	3600
Max Operational Voltage [V _{dc}]	2000	4000
Rated Insulation Voltage [V _{dc}]	2300	4000
Conventional Free Air Thermal Current [A] at 40°C ²	3000 / 4500 ¹	
Rated Short Circuit Making and Breaking Capacity / Time constant [kA/ms]		
τ_1	90 / 0	55 / 0
τ_2	60 / 15	50 / 15
τ_3	50 / 40	50 / 30
τ_4	35 / 100	50 / 50
Rated Duty Cycle	0 - 20s - CO - 60s - CO	
Peak arc voltage x U_{Nm} [\dot{U}_{arc}]	up to 3 x U_{Nm}	
Standard direct acting trip device [kA] ¹		
Setting Range 1	0.9 ÷ 1.5	
Setting Range 2	1.4 ÷ 2.7	
Setting Range 3	2 ÷ 3.4	
Setting Range 4	2.8 ÷ 4.7	
Blow Out Circuit Type	Coil	

² Device cabled according IEC 60947

Minimum clearances [mm] from ³ :								
Rated Operational Voltage [V _{dc}]	A ⁴	B	D	E	H	X	Y	W ⁴
1800	Metal Parts	410	650	540	1140	210	90	140
	Plastic Parts	360						90
3600	Metal Parts	410						140
	Plastic Parts	360						90

³ Reduced distances should be approved by M.S.

⁴ These quotes are referred to a 50 % surface opening grid.



For further technical information, please contact M.S. or refer to the product technical specification

Mechanical Characteristics

Mechanical Endurance (cycles)	6x50000
Electrical durability [In @ Un]	4x200
Shock and Vibrations (IEC61373)	Cat.1 - Class B
Weight [kg]	205

Control Circuit

Control Voltage Range	0.7Uc ÷ 1.25Uc
Operated by	D.C. Motor
Holding closed by	Holding Coil
Peak closing power and time [W x s]	500 x 0.01
Nominal closing power and time [W x s]	250 x 1.5

Holding Coil version

Nominal holding power @ 20°C [W]	50
Nominal opening power @ 20°C [W]	0
Controlled opening time [ms]	< 40

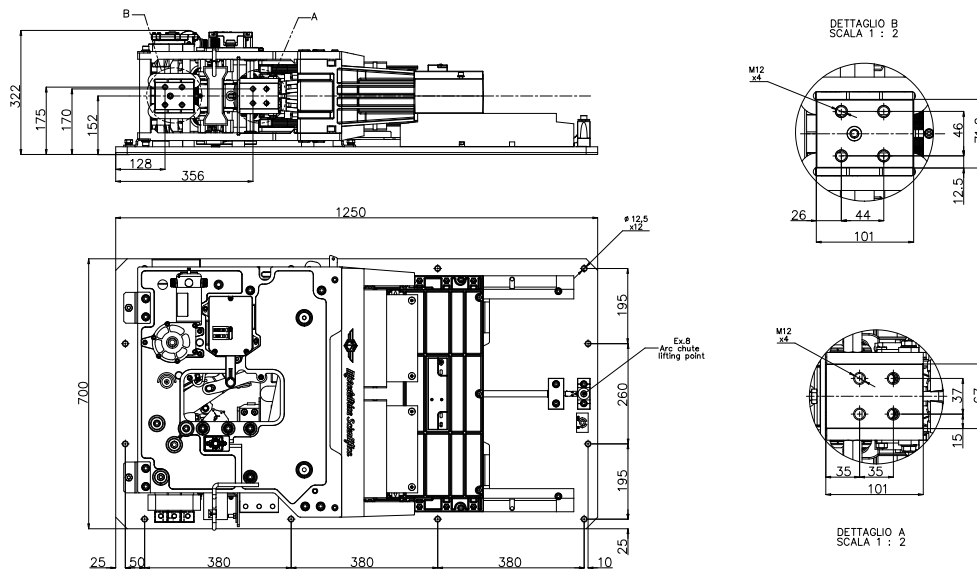
Auxiliary Contacts

Type	Reed Contacts (Vacuum Technology)
Voltage [V _{dc}]	24 / 36 / 48 / 72 / 110
Rated Current [A]	5
Minimum let-through Current @ 24 V _{dc} [mA]	5
Electrical Connections	Fast-on 2.5 x 0.8mm or customized LV Connection

Environmental Conditions

Stock Temperature Range	-50°C ÷ +85°C
Operational Temperature Range	-30°C ÷ +70°C
Pollution Degree - Overvoltage Category (EN 50124-1)	PD3A - OV4
Clearance in air [mm]	40
Creepage distance [mm]	80
Comparative Tracking Index (CTI)	>600
Max Altitude without Performance Derating [m]	2000
Humidity ⁵	10 ÷ 95% RH

⁵ According to EN 50125-1



KNORR-BREMSE



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