

Standard Family Code IR 4000 SERIES VV

Type			
Voltage	Holding System	Thermal Current	
		3000 A	4500 A
1800 V	Holding Coil	IR 4030 VV 18M	IR 4045 VV 18M
3600 V		IR 4030 VV 36M	IR 4045 VV 36M

Mounting Position	Vertical
Control Voltage Rating U_c [Vdc]	24 - 36 - 48 - 72 - 110 ¹
Auxiliary Contact Blocks	5 a1 + 6 b0
Block Type	Reed
Arc chute Material	Ceramic
Main Contacts tips Material	AgSnO ₂
Arcing Contacts tips Material	AgW
Electric Diagram HC	42870370B
Layout Drawing HC	42870555C



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.

Insulation Characteristics	18M	36M
Rated Operational Voltage U_{Ne} [Vdc]	1800	3600
Max Operational Voltage [Vdc]	2000	4000
Rated Insulation Voltage [Vdc] @ OV4/PD3	3700	3700
Rated Insulation Voltage [Vdc] @ OV4/PD3	4800	4800

Electrical Characteristics	18M	36M
Conventional Free Air Thermal Current [A] at 40°C ²	3000 / 4500 ¹	3000 / 4500 ¹
Rated Short Circuit Making and Breaking Capacity / Time constant [kA/ms]		
τ_1	100 / 0	55 / 0
τ_2	60 / 15	50 / 15
τ_3	50 / 40	50 / 30
τ_4	35 / 100	50 / 50
Rated Duty Cycle	0-15s-CO-15s-CO-60s-CO	0-15s-CO-15s-CO-60s-CO
Peak arc voltage x U_{Nm} [\dot{U}_{arc}]	up to 3 x U_{Ne}	up to 3 x U_{Ne}
Standard Bidirectional direct acting trip device [kA] ¹		
Setting Range A1	0.9 ÷ 1.5	0.9 ÷ 1.5
Setting Range A2	1.4 ÷ 2.7	1.4 ÷ 2.7
Setting Range A3	2 ÷ 3.4	2 ÷ 3.4
Setting Range A4	2.8 ÷ 4.7	2.8 ÷ 4.7
Blow Out Circuit Type	Coil	Coil

Mechanical Characteristics

Mechanical Endurance (cycles)	6x50000
Electrical durability [I_n @ U_n]	4x200
Shock and Vibrations (IEC61373)	Cat.1 - Class B
Weight [kg] for 3000 [A] / for 4500 [A]	173 / 180

Control Circuit

Control Voltage Range	$0.7U_c \div 1.25U_c$
Operated by	D.C. Motor
Holding closed by	Holding Coil
Peak closing power and time [W x s]	400 x 0.01
Nominal closing power and time [W x s]	250 x 1.5
Holding Coil version	
Nominal holding power @ 20°C [W]	15
Nominal opening power @ 20°C [W]	0
Controlled opening time [ms]	< 50

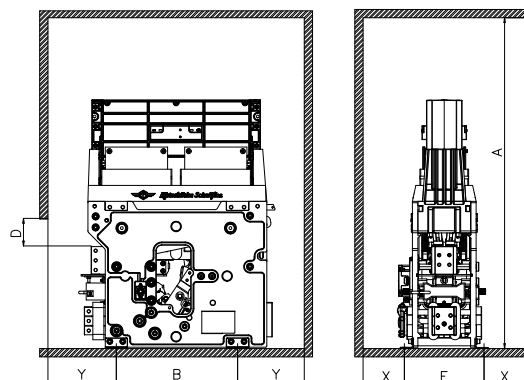
Auxiliary Circuit

Type	Reed Contacts (Vacuum Technology)
Voltage [V_{ac}]	24 / 36 / 48 / 72 / 110 ¹
Rated Current [A]	5
Maximum Breaking Power with Inductive Load $\tau=2ms$ [W]	120
Maximum Breaking Current with Inductive Load $\tau=2ms$ [A]	3
Maximum Breaking Voltage with Inductive Load $\tau=2ms$ [V]	250
Minimum let-through Current at 24Vdc [mA]	5
Electrical Connections	Fast-on 2.5 x 0.8mm or customized LV Connection ¹

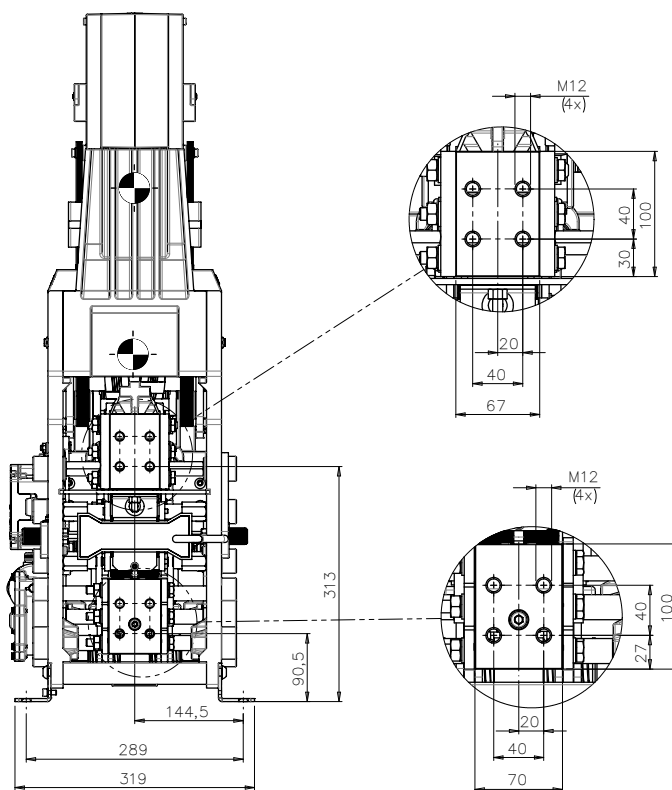
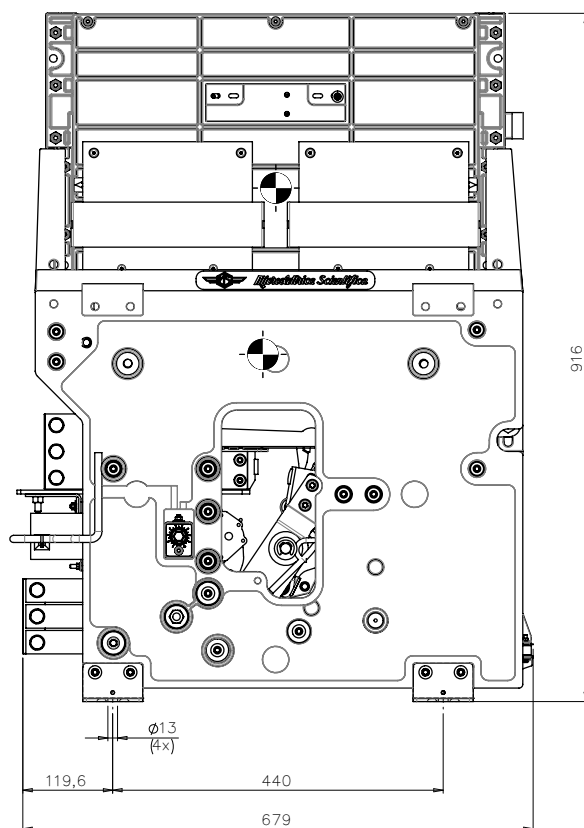
Environmental Conditions

Stock Temperature Range	-50°C ÷ +85°C
Operational Temperature Range	-30°C ÷ +70°C
Clearance in air [mm]	40
Creepage distance [mm]	80
Comparative Tracking Index (CTI)	>600
Max Altitude without Performance Derating [m]	2000
Humidity ⁴	10 ÷ 95% RH

Minimum clearances [mm] from ⁵ :		A ⁶	B	D	E	X	Y
1800	Metal Parts	1200	440	100	289	115	175
	Plastic Parts	1100	440	100	289	65	125
3600	Metal Parts	1200	440	100	289	150	250
	Plastic Parts	1100	440	100	289	100	200



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



Notes:

1. To be specified in order phase
2. Device cabled according IEC 60947
3. Other setting range are available on request
4. According to IEC 62498-1

5. Reduced distances should be approved by M.S.
6. These quotes are referred to a 50% surface opening grid



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