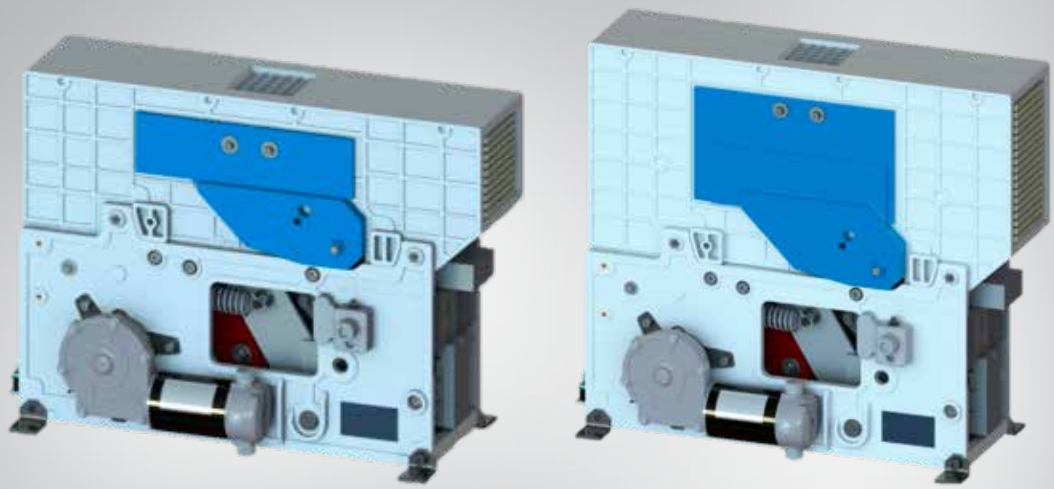


BREAKERS

STANDARD FAMILY CODE
IR 3000 SERIES VV

Mounting Position	Vertical
Control Voltage Rating Uc [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

Type			
Voltage	Holding System	Thermal Current	
		1500 A	3000 A
900 V	Holding Coil	**IR 3015 VV 09L**	**IR 3030 VV 09L**
1800 V		**IR 3015 VV 09M**	**IR 3030 VV 09M**
		IR 3015 VV 18M	**IR 3030 VV 18M**

MICROELETTRICA

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.

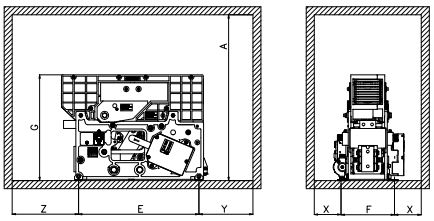
Insulation Characteristics	**09L**	**09M**	**18M**
Rated Operational Voltage U_r [V_{dc}]	900	900	1800
Max Operational Voltage [V_{dc}]	1000	1000	2000
Rated Insulation Voltage [Vdc] @ OV4/PD3	2300	2300	2300
Electrical Characteristics	**09L**	**09M**	**18M**
Conventional Free Air Thermal Current [A] at 40°C [2]	1500 / 3000[1]	1500 / 3000[1]	1500 / 3000[1]
Rated Short Circuit Making and Breaking Capacity / Time constant [kA/ms]			
τ_1	30 / 0 (42kA Peak)	50 / 0 (70kA Peak)	30 / 0 (42kA Peak)
τ_2	30 / 15	32.5 / 15	30 / 15
τ_3	30 / 50	30 / 50	30 / 40
τ_4	30 / 150	30 / 150	30 / 100
Rated Duty Cycle	0-20s-CO-60s-CO	0-20s-CO-60s-CO	0-20s-CO-60s-CO
Peak arc voltage [$\hat{U}_{arc}$]	up to 3 x U_{Nm}	up to 3 x U_{Nm}	up to 3 x U_{Nm}
Standard Bidirectional direct acting trip device [kA][1]			
Setting Range A1	1 ÷ 1.8	1 ÷ 1.8	1 ÷ 1.8
Setting Range A2	1.5 ÷ 2.7	1.5 ÷ 2.7	1.5 ÷ 2.7
Setting Range B1	2.2 ÷ 4	2.2 ÷ 4	2.2 ÷ 4
Setting Range B2	3.3 ÷ 6	3.3 ÷ 6	3.3 ÷ 6
Blow Out Circuit Type	Coil	Coil	Coil

Mechanical Characteristics	
Mechanical Endurance (cycles)	6x50000
Electrical durability [Ir @ Ur]	4x200
Shock and Vibrations (IEC61373)	Cat.1 - Class B
Weight LP/MP [kg]	44 / 54
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]	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_{dc}]	24 / 36 / 48 / 72 / 110[1]
Rated Current [A]	5
Maximum Breaking Power with Inductive Load τ=2ms [W]	120
Maximum Breaking Current with Inductive Load τ=2ms [A]	3
Maximum Breaking Voltage with Inductive Load τ=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]

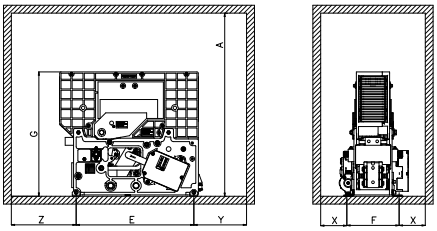
Environmental Conditions	
Stock Temperature Range	-50°C ÷ +85°C
Operational Temperature Range	-30°C ÷ +70°C
Clearance in air [mm]	14
Creepage distance [mm]	32.2
Comparative Tracking Index (CTI)	>600
Max Altitude without Performance Derating [m]	2000
Humidity [4]	10 ÷ 95% RH

Minimum clearances [mm] from[5]:

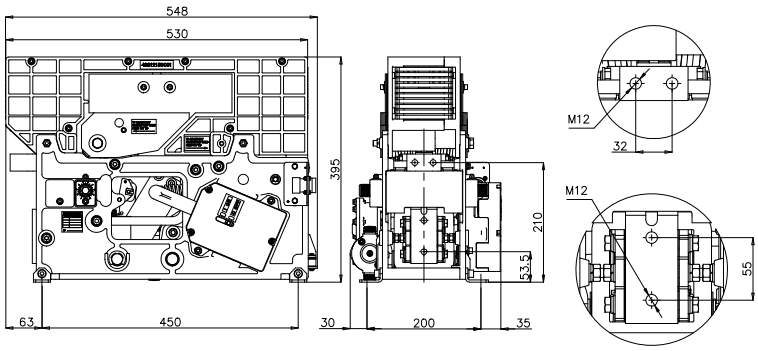
Rated Operational Voltage [Vdc]		A[6]	E	F	G	X	Y	Z
900	Metal Parts	620	450	200	396	100	202	248
	Plastic Parts	520				50	150	198
1800	Metal Parts	700			476	100	202	248
	Plastic Parts	600				50	150	198



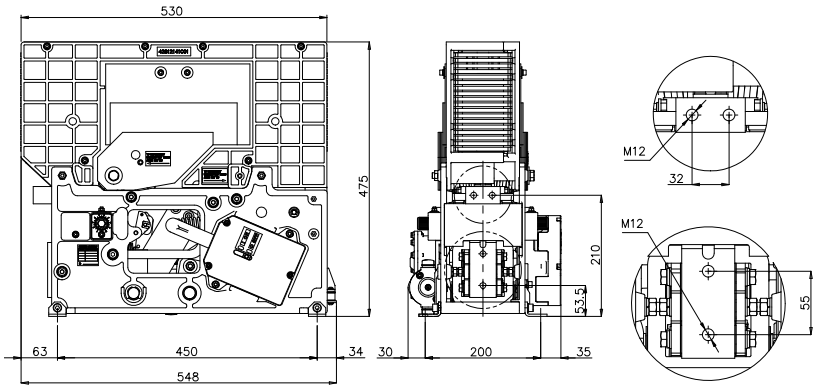
IR 3000 VV Low Power



IR 3000 VV Medium Power



IR 3000 VV Low Power



IR 3000 VV Medium Power

[1] To be specified in order phase
[2] Device cabled according IEC 60947
[3] Tripping point reached up with di/dt=200A/s. Other setting range are available on request
[4] According to IEC 62498-1
[5] Reduced distances should be approved by Microelettrica
[6] These quotes are referred to a 50% surface opening grid

The technical specifications reported are not binding and they should be agreed in the contract.

For further technical information on our products visit www.microelettrica.com

Microelettrica Scientifica S.p.A.

20090 Buccinasco (MI) , Via Lucania 2, Italy
Tel.: +39 02 575731
E-mail: info@microelettrica.com
www.microelettrica.com

KNORR-BREMSE
SELECTRON
NEW YORK AIR BRAKE
KIEPE ELECTRIC
IFE
EVAC
MERAK
ZELISKO
MICROELETTRICA
RAILSERVICES