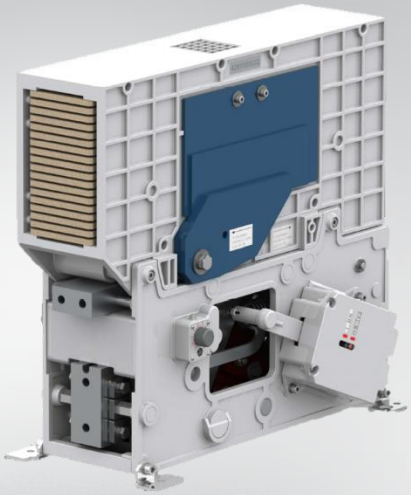


BREAKERS

STANDARD FAMILY CODE
IR 3000 F SERIES M

Mounting Position	Vertical
Control Voltage Rating Uc [Vdc]	24 – 36 – 48 – 72 – 110 - 220[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

Voltage	Holding System	Thermal Current	Layout drawing	Electrical diagram	Type
900	Holding Coil	1500 A	42870728C	42870370B	**IR3015 FC 09M**
900	Holding Coil	3000A	42870555C	42870370B	**IR3030 FC 09M**
900	Permanent Magnet	1500 A	42870746C	42870579B	**IR3015 FP 09M**
900	Permanent Magnet	3000A	42870556C	42870579B	**IR3030 FP 09M**
1800	Holding Coil	1500 A	42870728C	42870370B	**IR3015 FC 18M**
1800	Holding Coil	3000A	42870555C	42870370B	**IR3030 FC 18M**
1800	Permanent Magnet	1500 A	42870746C	42870579B	**IR3015 FP 18M**
1800	Permanent Magnet	3000A	42870556C	42870579B	**IR3030 FP 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 or permanent magnet. The breaker is equipped with a direct acting over-current trip device, which may be either unidirectional or bi-directional. Reference standard IEC61992 and IEC 60947.

Insulation Characteristics	09M	18M
Rated Operational Voltage U_r [V_{dc}]	900	1800
Max Operational Voltage [V_{dc}]	1000	2000
Rated Insulation Voltage [V_{dc}] @ OV3/PD3	2300	2300

Electric Characteristics	09M		18M	
Conventional Free Air Thermal Current [A] at 40°C [2]	1500[1]	3000[1]	1500[1]	3000[1]
Occasional Overloads [A] for 30'	2000	3600	2000	3600
Occasional Overloads [A] for 60''	4000	7200	4000	7200
Rated Short Circuit Making and Breaking Capacity / Time constant [kA/ms]				
Duty F: Maximum Fault	50 / 0 (peak 71 kA)		30 / 0 (peak 42 kA)	
Duty E: Maximum Energy	32.5 / 20.5		19.5 / 20.5	
Duty D: Distant Fault	6 / 31.5		6 / 31.5	
Rated Duty Cycle	O-15s-CO-15s-CO-60s-CO		O-15s-CO-15s-CO-60s-CO	
Peak arc voltage [$\hat{U}_{arc}$]	up to 4 x U_{Nm}			
Standard Bidirectional acting trip device [kA][3]				
Setting Range A[1]	1 ÷ 1.8	1 ÷ 1.8	1 ÷ 1.8	1 ÷ 1.8
Setting Range B[1]	1.5 ÷ 2.7	1.5 ÷ 2.7	1.5 ÷ 2.7	1.5 ÷ 2.7
Setting Range C[1]	N.A.	2.2 ÷ 4	N.A.	2.2 ÷ 4
Setting Range D[1]	N.A.	3.3 ÷ 6	N.A.	3.3 ÷ 6
Blow Out Circuit Type	Indirect blow out Coil with arcing contact			

Mechanical Characteristics	
Mechanical Endurance (cycles)	6 x 50.000
Electrical durability [Ir @ Ur]	4 x 200
Shock and Vibrations (IEC61373)	Cat.1 – Class B
Weight [kg]	54

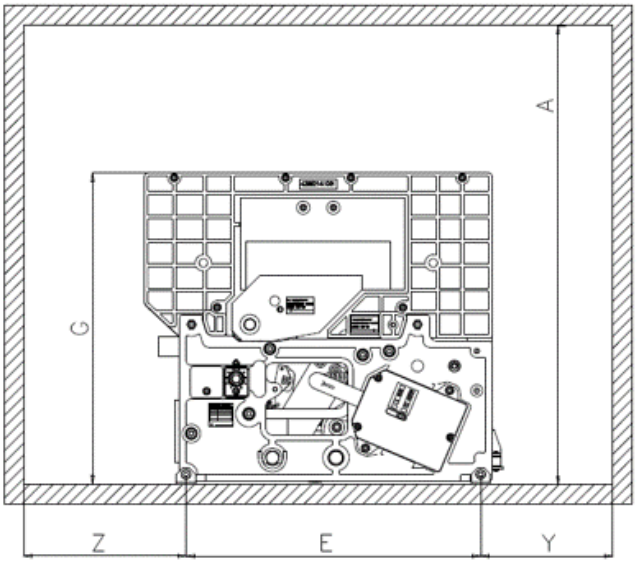
Control Circuit	
Control Voltage Range	0.7Uc ÷ 1.25Uc
Operated by	D.C. Motor
Holding closed by	Holding Coil or Permanent Magnet
Peak closing power and time [W x s]	400 x 0.01
Nominal closing power and time [W x s]	250 x 1.5
Holding Coil version	
Nominal holding power @ 20°C [W]	15
Nominal opening power @ 20°C [W]	0
Controlled opening time: de-energize holding coil [ms]	< 50
Permanent Magnet version	
Nominal holding power @ 20°C [W]	0
Nominal opening power and time @ 20°C [Wxs]	400 x 0.02
Controlled opening time: energizing opening coil [ms]	< 20

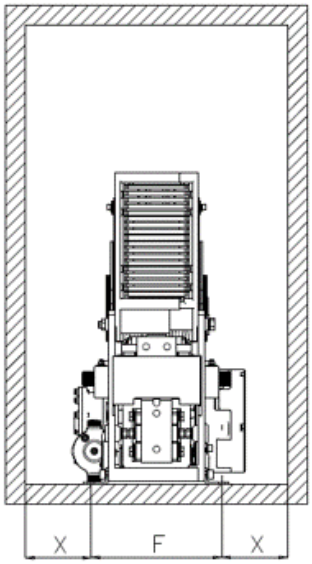
Auxiliary Circuit	
Type	Reed Contacts (Vacuum Technology)
Voltage [V_{dc}]	24 – 36 – 48 – 72 - 110[1]
Rated Current [A]	5
Maximum Breaking Power with Inductive Load τ=2ms [W]	120
Maximum Breaking Current with Inductive Load τ=2ms [A]	3
Maximum Breaking Voltage with Inductive Load τ=2ms [V]	250
Minimum 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]:

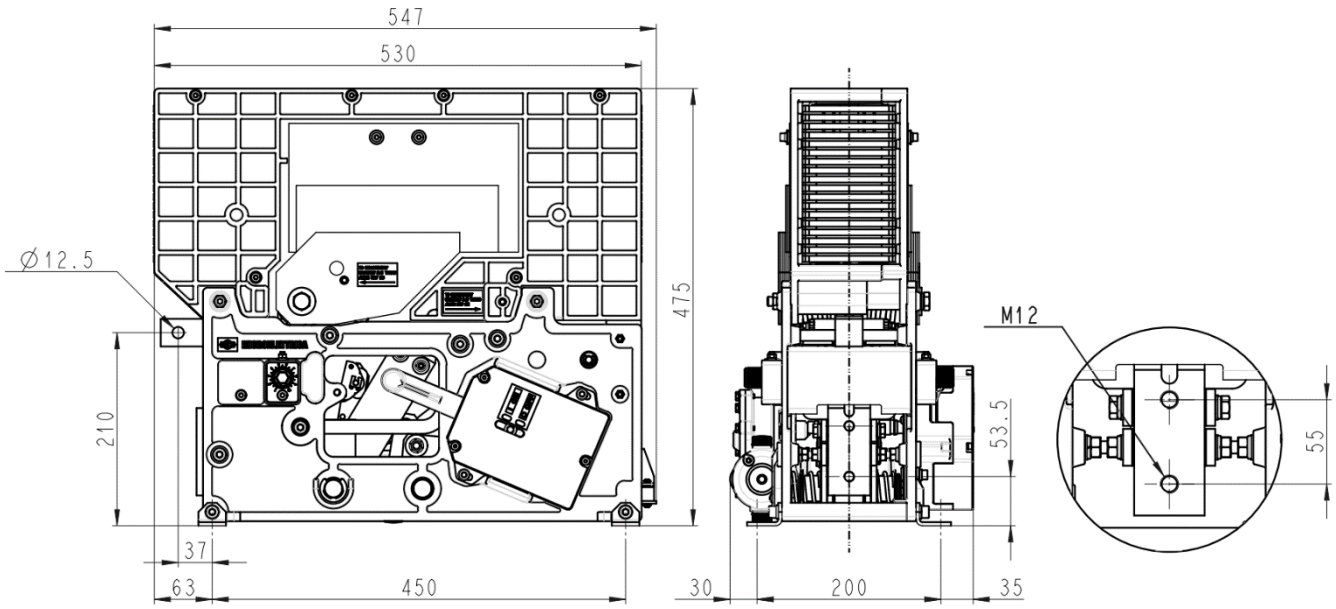
Rated Operational Voltage [V_{dc}]		A[6]	E	F	G	X	Y[6]	Z[6]
900	Metal Parts	700	450	200	475	100	202	248
	Plastic Parts	600				50	150	198
1800	Metal Parts	700	450	200	475	100	202	248
	Plastic Parts	600				50	150	198



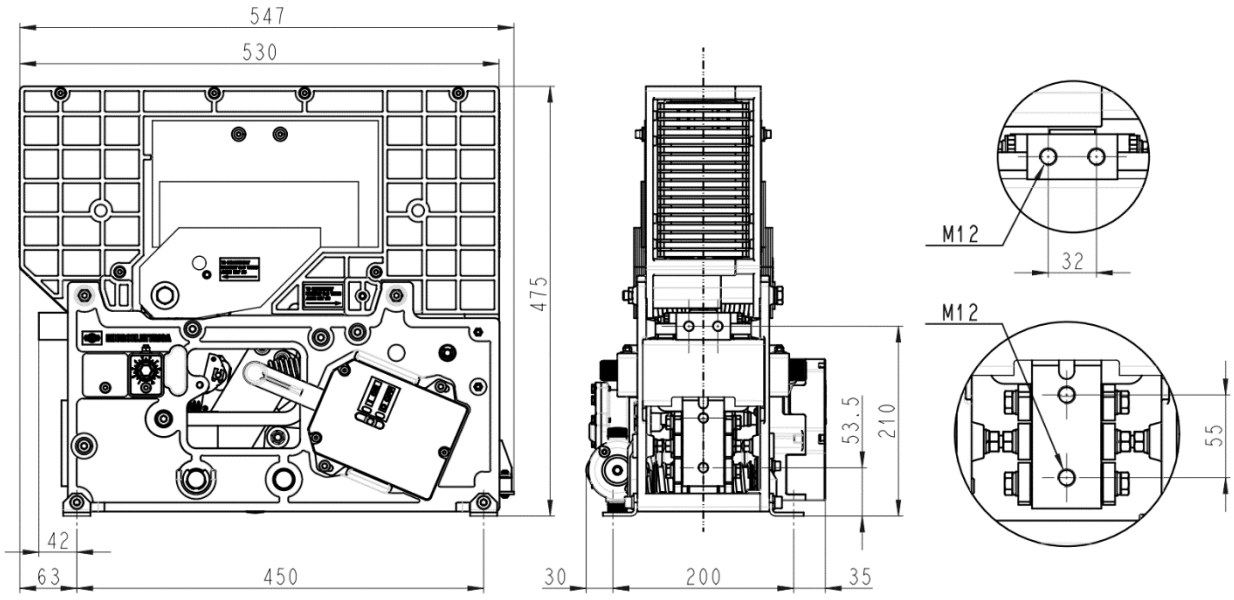


[1] To be specified in order phase
[2] Device cabled according IEC 60947
[3] Tripping poit reached up with di/dt=200A/s. Other setting range are available on request
[4] According IEC 62498-1
[5] reduced distances should be approved by Microelettrica
[6] these quotes are referred to a 50% surface opening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

IR3015 FC 09M ; IR3015 FP 09M ; IR3015 FC 18M ; IR3015 FP 18M



IR3030 FC 09M ; IR3030 FP 09M ; IR3030 FC 18M ; IR3030 FP 18M



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