

BREAKERS

STANDARD FAMILY CODE IR 4060/4080 SERIES F

Product configuration	
Mounting Position	Vertical
Control Voltage Rating Uc [Vdc]	24 - 36 - 48 - 72 - - 110 - 125 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	42870649C
Layout Drawing IR 4060 HC	42870722C01
Layout Drawing IR 4080 HC	42870716C01

Commercial Code			
Voltage	Holding System	Thermal Current	
		6000 A	8000 A
900 V	Holding Coil	IR 4060 FC 09M	IR 4080 FC 09M
1800 V		IR 4060 FC 18M	IR 4080 FC 18M



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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 bidirectional direct acting over-current trip device. Unidirectional optional. Reference standard IEC 61992 and IEC 60947.

Insulation Characteristics		09M	18M
Rated Operational Voltage U_{Ne} [V _{dc}] ¹		900	1800
Max Operational Voltage [V _{dc}]		1000	2000
Rated Insulation Voltage U_{Nm} [V _{dc}]		3000	3000
Electrical Characteristics		09M	18M
Conventional Free Air Thermal Current I_{th} [A] at 40°C ²		6000/8000 ¹	
Breaking Capacity [kA/ms]			
Rated Short Circuit		125/100	100/63
Duty F: Maximum Fault		125 / 0 (peak 180 kA)	100 / 0 (peak 140 kA)
Duty E: Maximum Energy		62.5 / 50	50 / 31.5
Duty D: Distant Fault		16 / 100	16 / 63
Rated Duty Cycle		0-15s-CO-15s-CO-60s-CO	
Peak arc voltage [\hat{U}_{arc}]		up to 4 x U_n	
Standard direct acting trip device [kA] ³			
Setting Range A1		6 ÷ 12	6 ÷ 12
Setting Range B2		12 ÷ 24	12 ÷ 24
Blow Out Circuit Type		Indirect coil with arcing contacts	
Mechanical Characteristics			
Mechanical Endurance (cycles)		4x25000	
Electrical durability [I_{Ne} @ U_{Ne}]		4x200	
Weight [kg] for IR6060 / IR6080		190/195	
Control circuit			
Control Voltage Range		0.85 U_c ÷ 1.1 U_c	
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]		350 x 1.5	
Nominal holding power @ 20°C [W]		50	
Nominal opening power @ 20°C [W]		0	
Controlled opening time: de-energize holding coil [ms]		< 50	
Controlled opening time: opening coil (optional) [ms]		< 20	
Controlled opening time: FOD (optional) [ms] ⁷		4 ÷ 6	

Auxiliary Contacts

Type	Reed Contacts (Vacuum Technology)
Voltage [V _{dc}]	24/36/48/72/110/125 ¹
Rated Current [A]	5
Maximum Breaking Power with Inductive Load $\tau=2\text{ms}$ [W]	120
Maximum Breaking Current with Inductive Load $\tau=2\text{ms}$ [A]	3
Maximum Breaking Voltage with Inductive Load $\tau=2\text{ms}$ [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	-10°C ÷ +60°C
Operational Temperature Range	-25°C ÷ +50°C
Pollution Degree - Overvoltage Category (IEC 62497-1)	PD3A – OV4
Clearance in air [mm]	36
Creepage distance [mm]	75
Comparative Tracking Index (CTI)	> 600
Max Altitude without Performance Derating [m]	2000
Humidity ⁴	10 ÷ 95% RH

¹ To be specified in order phase

² Device cabled according IEC 60947

³ Tripping point reached up with $di/dt=200\text{A/s}$.

Other setting range are available on request

⁴ According to EN 50125-1

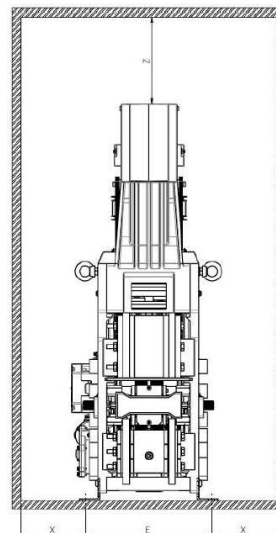
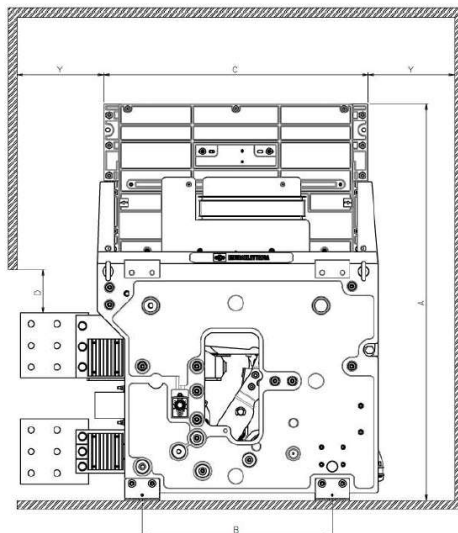
⁵ Reduced distances should be approved by Microelettrica

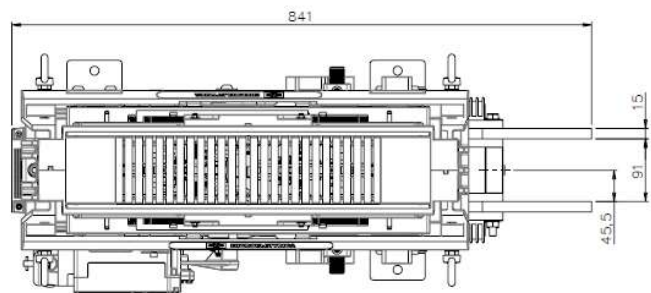
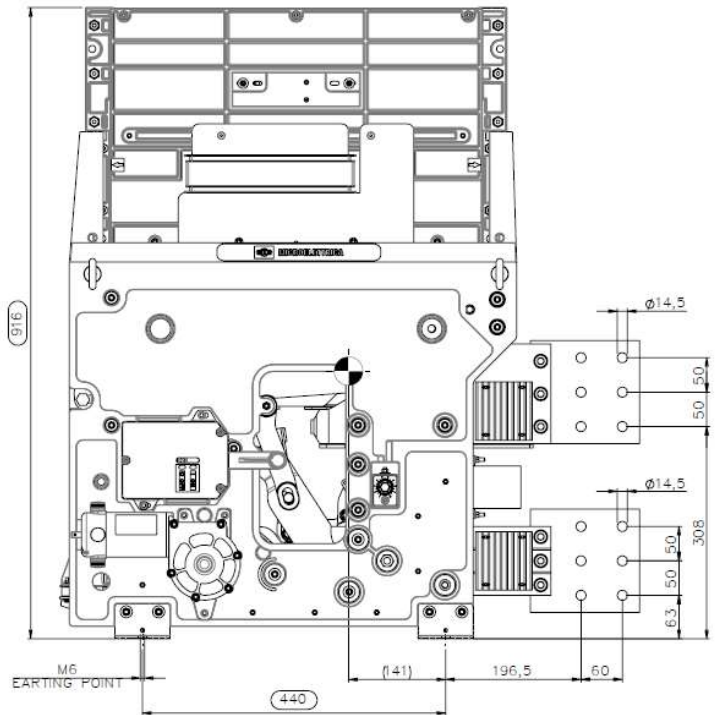
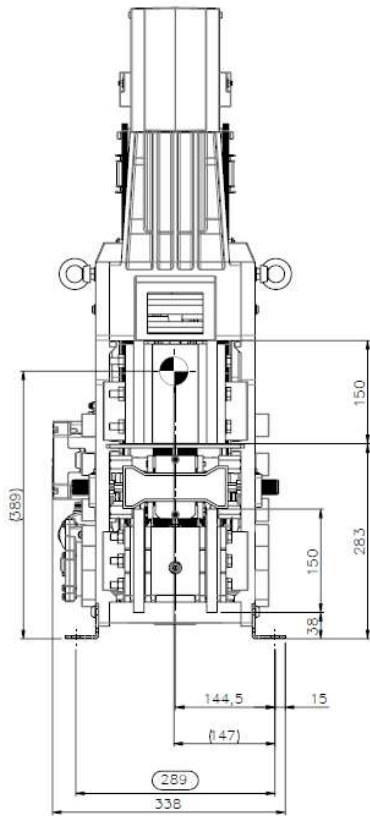
⁶ These quotes are referred to a 50% surface opening grid

⁷ For optional fast opening device (FOD) information please contact Microelettrica Sales Department, FOD option is available with U_c equal to 24 / 110 Vdc

Minimum clearances [mm] from⁵:

Rated Operational Voltage [V _{dc}]		A ⁶	B	C	D	E	X	Y	Z
900	Metal Parts	916	440	612	100	289	150	150	300
	Plastic Parts						100	100	200
1800	Metal Parts						200	200	300
	Plastic Parts						150	150	200





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

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