

# BREAKERS

## STANDARD FAMILY CODE IR 4060/4080 SERIES F

Product configuration	
Mounting Position	Vertical
Control Voltage Rating Uc [Vdc]	24 - 36 - 48 <sup>1</sup> 72 - 110 <sup>1</sup>
Auxiliary Contact Blocks	5 a1 + 6 b0
Block Type	Reed
Arc chute Material	Ceramic
Main Contacts tips Material	AgSnO <sub>2</sub>
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	<b>IR 4060 FC 09M</b>	<b>IR 4080 FC 09M</b>
1800 V		<b>IR 4060 FC 18M</b>	<b>IR 4080 FC 18M</b>



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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 <sub>dc</sub> ] <sup>1</sup>	900	1800
Max Operational Voltage [V <sub>dc</sub> ]	1000	2000
Rated Insulation Voltage $U_{Nm}$ [V <sub>dc</sub> ]	3000	3000
Electrical Characteristics		
	09M	18M
Conventional Free Air Thermal Current $I_{th}$ [A] at 40°C <sup>2</sup>	6000/8000 <sup>1</sup>	
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] <sup>3</sup>		
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]	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 [ms]	< 50	

## Auxiliary Contacts

Type	Reed Contacts (Vacuum Technology)
Voltage [V <sub>dc</sub> ]	24 / 36 / 48 / 72 / 110 <sup>1</sup>
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 <sup>1</sup>

## 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 <sup>4</sup>	10 ÷ 95% RH

<sup>1</sup> To be specified in order phase

<sup>2</sup> Device cabled according IEC 60947

<sup>3</sup> Tripping point reached up with di/dt=200A/s.

Other setting range are available on request

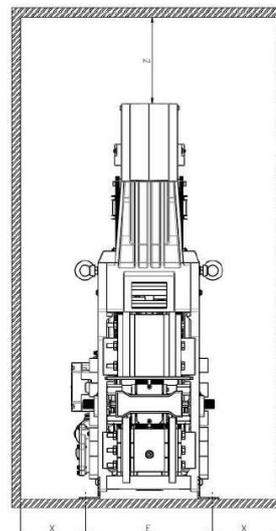
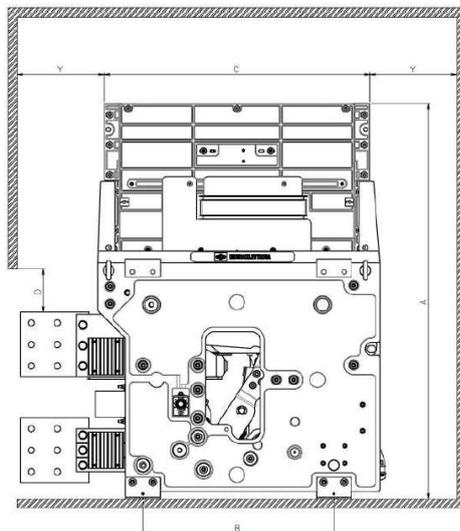
<sup>4</sup> According to EN 50125-1

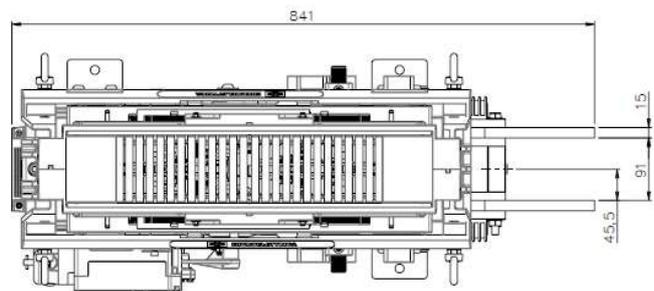
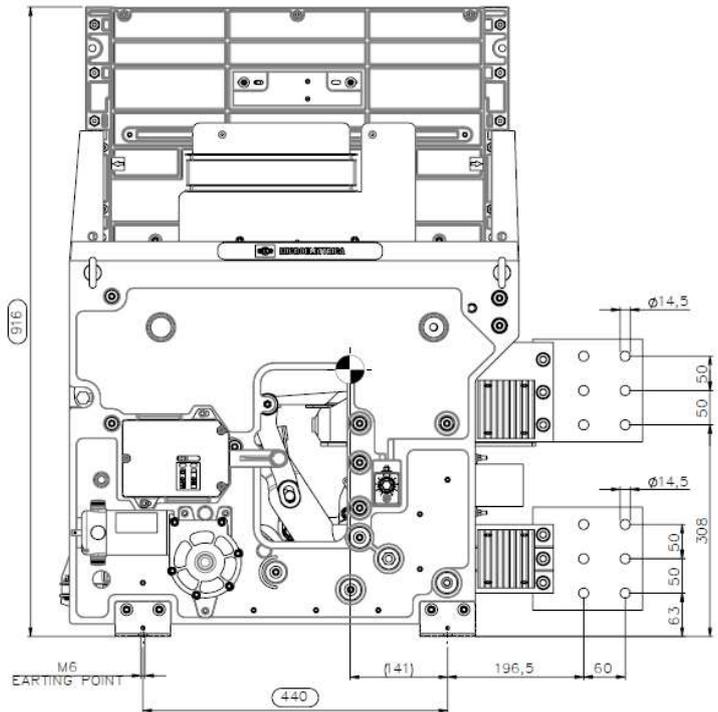
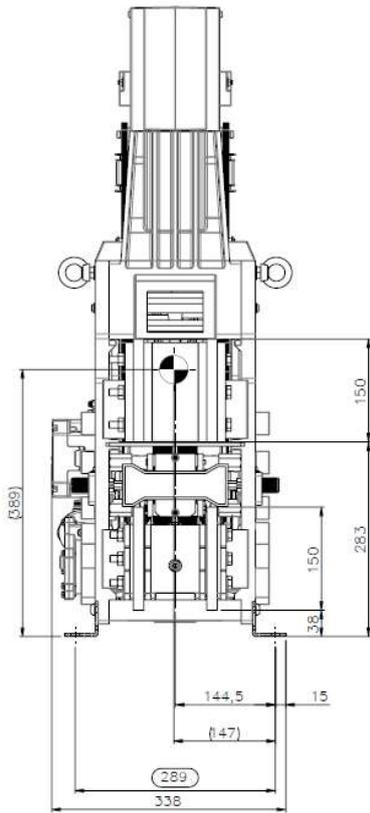
<sup>5</sup> Reduced distances should be approved by Microelettrica

<sup>6</sup> These quotes are referred to a 50% surface opening grid

## Minimum clearances [mm] from<sup>5</sup>:

Rated Operational Voltage [V <sub>dc</sub> ]		A <sup>6</sup>	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](http://www.microelettrica.com)**

**Microelettrica Scientifica S.p.A.**  
 20090 Buccinasco (MI) , Via Lucania 2, Italy  
 Tel.: +39 02 575731  
 E-mail: [info@microelettrica.com](mailto:info@microelettrica.com)  
[www.microelettrica.com](http://www.microelettrica.com)

