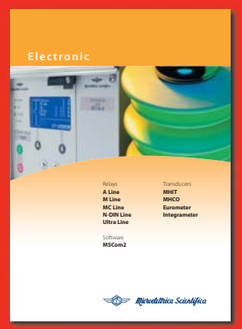

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www.microelettrica.com

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KNORR-BREMSE

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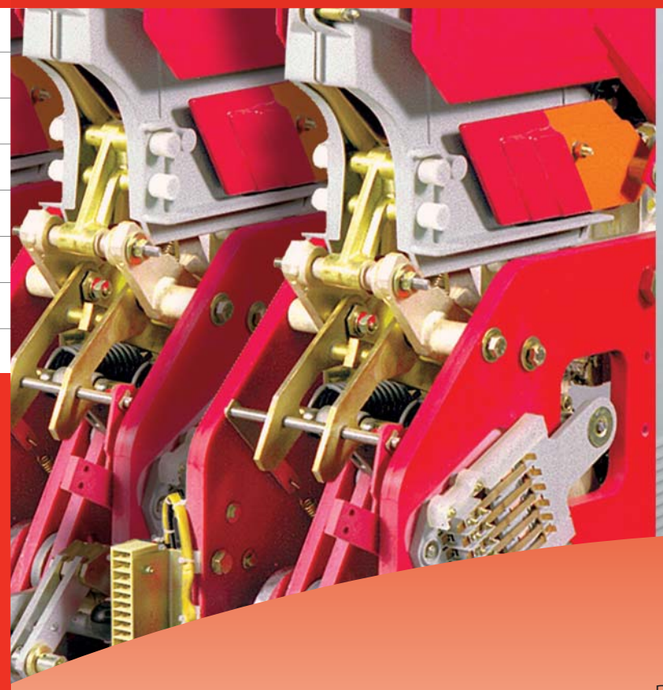
EMC Traction S.r.l.

KNORR-BREMSE
WESTINGHOUSE platform screen doors
IFE Automatic Door Systems
merak
Microelettrica Scientifica
transportdata
ZELISKO
railservice



DC High Speed Circuit Breakers
IR2000
IR6000
IR6000MP
IR6000ML
IRA
IR2000SV
IR6000SV

DC Switchgears
DIACLAD

EMC traction

Microelettrica Scientifica

EMC Traction

Applications
Rail On Board
Industry
DC Substation

EMC Traction S.r.L. is one of the worldwide leading companies in the design and production of DC Circuit Breakers and DC Switchgears for traction and industry market.

The Company provides a whole range of DC Circuit Breakers for vehicles and substations.

EMC Traction quality system is in compliance with standards ISO 9001: 2000 and IRIS.

EMC Traction is located in the North-East hinterland of Milan, only 10 minutes from Linate airport and 50 minutes from Malpensa airport. The factory site comprises 6700 square-meters of which 5500 indoor.

EMC Traction experience and tradition begins in the 1930's as CGE (General Company of Electricity leader in Italy in the electric traction field) with the production of the first DC Circuit breakers for Italian railways, based on General Electric USA licence agreement.

In the 60's the activity moved to ASGEN and later to ANSALDO as EMC Operating Unit.

EMC Traction was then "born" in 2000 as a spin-off of the EMC Operating Unit from Ansaldo: EMC was acquired by IMPulse NC (part of Marmon Group) the US leading supplier of transit turnkey substation solutions.

In 2009 EMC Traction was then acquired by Microelettrica Scientifica (part of Knorr Bremse Group), a global leader in electromechanical and electronic components for rail and industrial applications.

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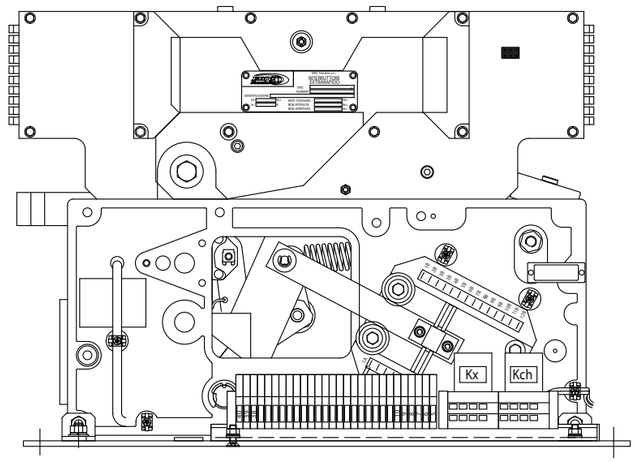
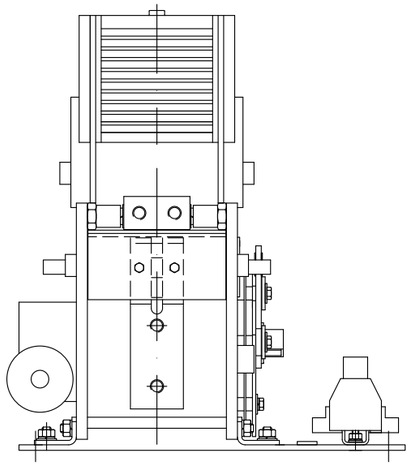
Fax +39 02 2651824
info@emctraction.it
www.emctraction.it

Products	
HSCB	IR2000 series
	IR6000 series
	IR6000MP series
	IR6000ML series
	IRA
	IR2000SV series
	IR6000SV
DC Switchgear	DIACLAD





IR2000 series

High Speed Circuit Breaker Type IR2000 for Substation and Industry Applications

Applications

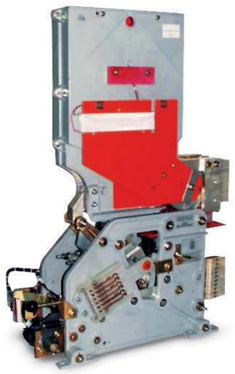
DC Substation

Industry

The IR2000 series are single pole, magnetic blow out, trip free, air circuit breakers.
The breakers closing mechanism is the indipendent type motor operated.
The IR2000 Circuit Breaker is held closed by holding coil or by permanent magnet device and is equipped with a direct acting over - current trip device which may be either unidirectional and bidirectional.
The breaker conforms to ANSI C 37-14, ANSI C 37-16 and EN 50123 Standard.

Technical Data

Rated Voltage [V]	U_n	750	1500
Rated Current [A]	I_n	Up to 3000	Up to 3000
Short Circuit Breaking Capacity (ANSI C 37-14)	U_e	800 [V]	
	I_{cc}	89 [kA]-Peak	
	I_{cc}	82 [kA]-Steady State	
Short Circuit Breaking Capacity (EN 50123)	U_e	900 [V]	1800 [V]
	I_{cc}	50 [kA]-Peak	45 [kA]-Peak
	I_{cc}	30 [kA]-Steady State	25 [kA]-Steady State
Rated Voltage Auxiliary Circuit [V_{DC}]	U_n	24 ÷220	24 ÷220



IR6000 series

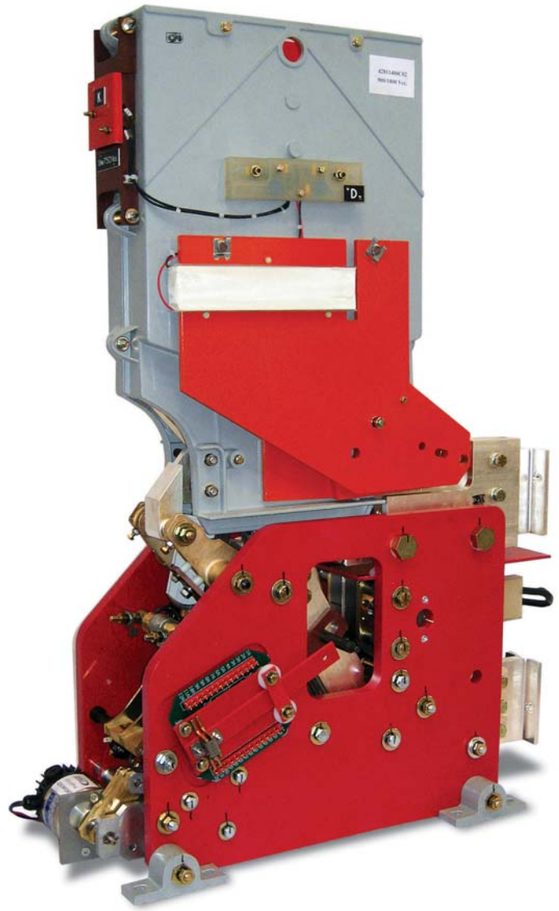
High Speed Circuit Breaker Type IR6000 with Electromagnetic latch for Substations and Industry Applications

Applications

DC Substation

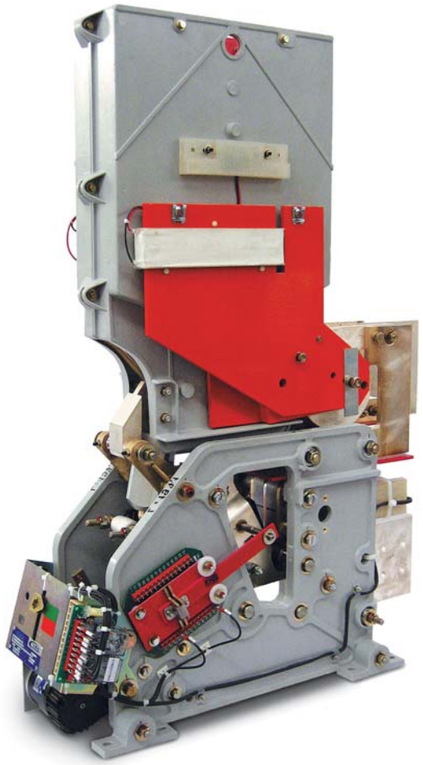
Industry

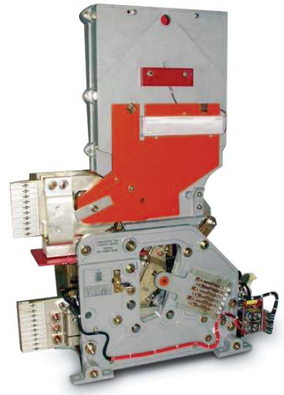
The IR6000 Electromagnetic latch series are fixed or withdrawable, single pole magnetic blow out, trip free, air circuit breakers.
The closing mechanism is an independent motor operated type.
The breaker is held closed by holding coil and is equipped with a direct acting over – current trip device which may be either unidirectional or bidirectional.
The breaker conforms to ANSI C 37-14, ANSI C 37-16 and EN 50123 Standard.



Technical Data

Rated Voltage [V]	U_n	750	1200	1500	3000
Rated Current [A]	I_n	Up to 8000	Up to 8000	Up to 8000	Up to 4000
Short Circuit Breaking Capacity (ANSI C 37-14) (IR6000 4kA)	U_e	800 [V]	1200 [V]		
	I_{cc}	200 [kA]-Peak	132 [kA]-Peak		
	I_{cc}	120 [kA]-Steady State	80 [kA]-Steady State		
Short Circuit Breaking Capacity (EN 50123)	U_e	800 [V]		1800[V]	3600[V]
	I_{cc}	120 [kA] - Peak		100 [kA] - Peak	61<[kA] - Peak
	I_{cc}	90 [kA]-Steady State		70 [kA] - Steady State	40 [kA] - Steady State
					100 [kA] - Steady State
					70 [kA] - Steady State
Rated Voltage Auxiliary Circuit [V_{DC}]	U_n	24 ÷220	24 ÷220	24 ÷220	24 ÷220





IR6000 MP series

High Speed Circuit Breaker Type IR6000 with Permanent Magnet Latch for DC Substation and Industry Applications

Applications

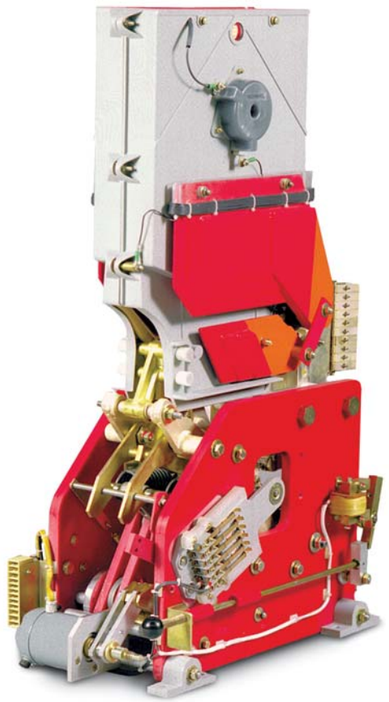
DC Substation

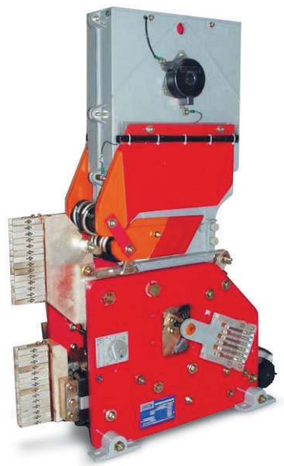
Industry

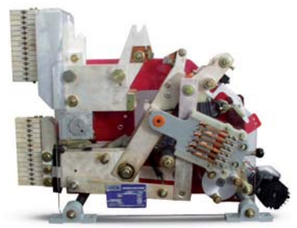
The IR6000 Permanent magnet latch series are fixed or withdrawable, single pole, magnetic blow out, trip free, air circuit breakers.
The closing mechamism is an independent motor operated type.
The breaker is held closed by a permanent magnet device and is equipped with a direct acting over – current trip device which may be either unidirectional or bidirectional.
The breaker conforms to ANSI C 37-14, ANSI C 37-16 and EN50123 Standard.

Technical Data

Rated Voltage [V]	U_n	750	1200	1500
Rated Current [A]	I_n	Up to 8000	Up to 8000	Up to 8000
Short Circuit Breaking Capacity (ANSI C 37-14) (IR6000 4kA)	U_e	800 [V]	1200 [V]	
	I_{cc}	200 [kA]-Peak	135 [kA]-Peak	
	I_{cc}	120 [kA]-Steady State	80 [kA]-Steady State	
Short Circuit Breaking Capacity (EN 50123)	U_e	800 [V]		1800[V]
	I_{cc}	120 [kA] - Peak		100 [kA] - Peak
	I_{cc}	90 [kA]-Steady State		70 [kA] - Steady State
Rated Voltage Auxiliary Circuit [V_{DC}]	U_n	24 ÷220	24 ÷220	24 ÷220







IR6000 ML series

High Speed Circuit Breaker Type IR6000 ML Mechanical Latch for Substation and Industry Applications

Applications

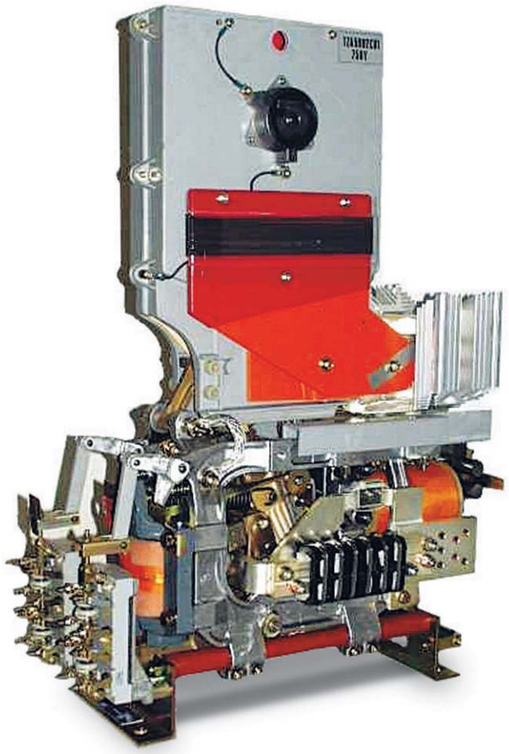
DC Substation

Industry

The IR6000 ML series are single pole, magnetic blow out, trip free, mechanical latch, air circuit breakers.
The closing mechanism is an independent motor operated type.
The breaker is held closed by a mechanical latched and is equipped with a direct acting over – current trip device which may be either unidirectional or bidirectional, instantaneous or delayed.
The breakers is designed to be installed in fixed plants or withdrawable type.
The breaker conforms to ANSI C 37-14, ANSI C 37-16 Standard.

Technical Data

Type		RECTIFIER	RECTIFIER	FEEDER	FEEDER
Rated Voltage [V]	U_n	750	1200	750	1200
Rated Current [A]	I_n	Up to 10000	Up to 10000	Up to 10000	Up to 10000
Short Circuit Breaking Capacity (ANSI C 37-14)	U_e	800 [V]	1200 [V]	800 [V]	1200 [V]
	I_{cc}	149 [kA]-Peak	100 [kA]-Peak	200 [kA] - Peak	132 [kA] - Peak
	I_{cc}	90 [kA]-Steady State	60 [kA]-Steady State	120 [kA]-Steady State	80 [kA]-Steady State
Rated Voltage Auxiliary Circuit [V_{DC}]	U_n	48 ÷ 225	48 ÷ 225	48 ÷ 225	48 ÷ 225



IRA series

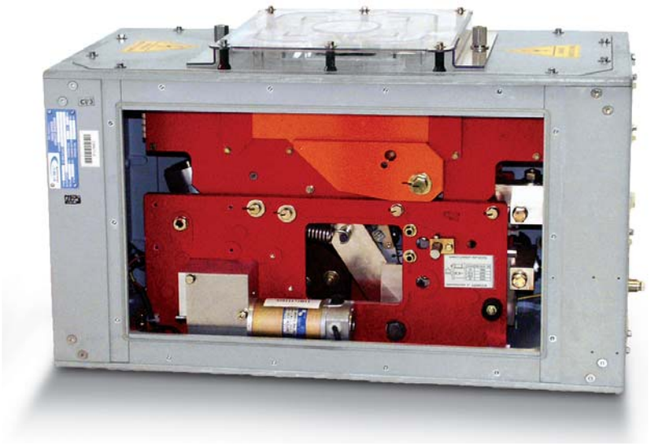
High Speed Circuit Breaker Type IRA With Holding Coil for Substations and Industrial Applications or Closing Pneumatic Mechanism for Locomotives

Applications
DC Substation
Industry
Locomotives
EMU

The IRA series are single pole, magnetic blow out, trip free, air circuit breakers.
The breaker closing device is electromagnetic (for Substation and Industry applications) or electropneumatic (for Locomotives) type.
The breaker is held closed by an holding coil and is equipped with a direct acting unidirectional over-current trip device.

Technical Data

Type		IRA Magnetic	IRA Magnetic / Pneumatic
Rated Voltage [V]	U_n	1500	3000
Rated Current [A]	I_n	Up to 3000	Up to 3000
Short Circuit Breaking Capacity (EN 50123) (IEC77)	U_e	1800 [V]	3600 [V]
	I_{cc}	100 [kA]-Peak	60 [kA]-Peak
	I_{cc}	60 [kA]-Steady State	40 [kA]-Steady State
Rated Voltage Auxiliary Circuit [V_{DC}]	U_n	24 ÷250	24 ÷250

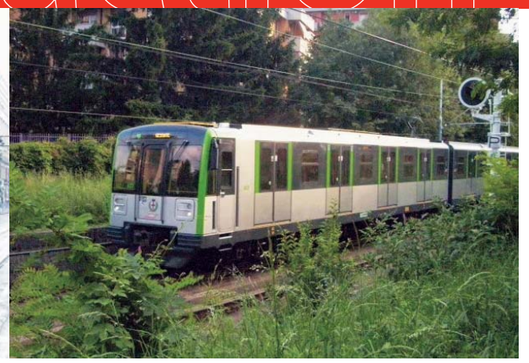


IR2000 SV series

High Speed Circuit Breaker Type IR2000 for Vehicles

Applications
Trolleybuses
Metros
Trams

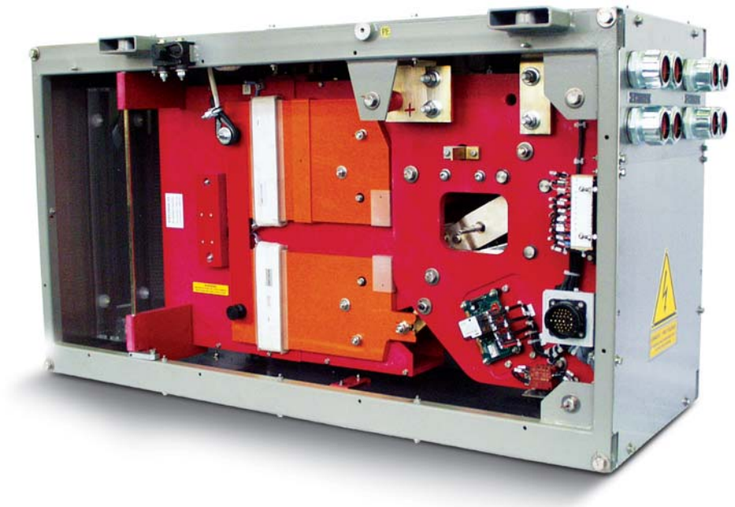
The IR2000 series are single pole, magnetic blow out, trip free, air circuit breakers.
The breakers closing mechanism is an indipendent motor operated type.
The IR2000 Circuit Breaker is held closed by holding coil or by permanent magnet and is equipped with a direct acting over-current trip device which may be either unidirectional and bidirectional.
This breaker for on-boad application is available with or without metallic or insulating enclosure.
The breaker may operate with single voltage (750, 1500V) or dual voltage (750/1500V).
The breaker conforms to EN60077 Standard.

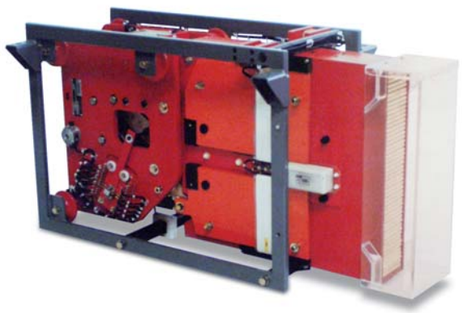


Optional enclosure metallic/insulated box

Technical Data

Rated Voltage [V]	U_n	750	1500
Rated Current [A]	I_n	Up to 3000	Up to 3000
Short Circuit Breaking Capacity (IEC 60077)	U_e	900 [V]	1800 [V]
	I_{cc}	50 [kA]-Peak	45 [kA]-Peak
	I_{cc}	30 [kA]-Steady State	25 [kA]-Steady State
Rated Voltage Auxiliary Circuit [V_{DC}]	U_n	24 ÷110	24 ÷110





IR6000 SV series

High Speed Circuit Breaker Type IR6000 SV
Permanent Magnet or Electromagnetic Latch Single or Dual Voltage for Locomotives and EMU

Applications

Locomotives

EMU

The IR6000 SV series are single pole, magnetic blow out, trip free, magnetic latch, air circuit breakers.
The breaker closing mechanism is an independent motor operated type.
The breaker is held closed by holding coil or by a permanent magnet and is equipped with a direct acting over – current trip device which may be either unidirectional or bidirectional.
The breaker may be operated as single voltage (1500, 3000V) or dual voltage (1500/3000V).
The breaker conforms to EN60077 Standard.

Technical Data

Type		IR6000 SV VERTICAL		IR6000 SV HORIZONTAL	
Rated Voltage [V]	U_n	1500	3000	1500	3000
Rated Current [A]	I_n	Up to 4000	Up to 4000	Up to 2500	Up to 2500
Short Circuit Breaking Capacity (CEI EN 60077)	U_e	1800 [V]	3600 [V]	1800 [V]	3600 [V]
	I_{cc}	100 [kA]-Peak	60 [kA]-Peak	100 [kA]-Peak	60 [kA]-Peak
	I_{cc}	70 [kA]-Steady State	40 [kA]-Steady State	70 [kA]-Steady State	40 [kA]-Steady State
Rated Voltage Auxiliary Circuit [V_{DC}]	U_n	24 ÷110	24 ÷110	24 ÷110	24 ÷110

DC Switchgears Type DIACLAD

For substations (750V DC - 1.5 KV DC - 3KV DC)

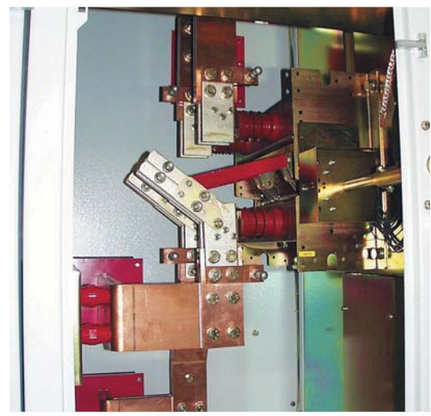
Applications

DC Substation

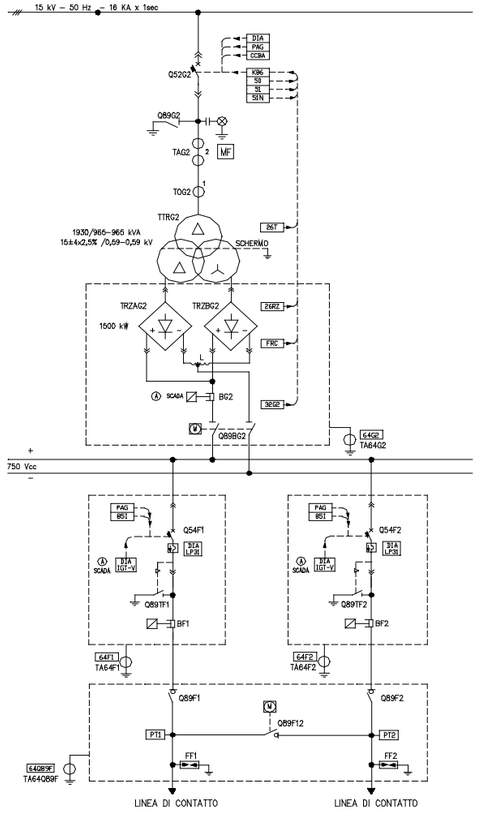
The DC Switchgears type "DIACLAD" are designed and manufactured for 750, 1500 and 3000 V according to EN 50123. The Diaclad Switchgears are capable to withstand internal arc at 50 kA – 300 ms. The cubicle, metalclad type, are pre-fabricated with IP 30 degree of protection, suitable for indoor installation. The minimum thickness of the frame is 3 mm.
The doors, panels and diaphragms are made with 2 mm minimum thickness plates. When the doors are open an IP20 degree of protection is guaranteed. Any device location of each cubicle is aimed to ease maintenance and replacement operations. The quality and technology of Diaclad components enable to limit the dimensions and ease the maintenance: live components are completely separate allowing access to high and low voltage devices even when adjacent cell's are in operation.

Diaclad Switchgears

Rectifier Cubicle



Disconnector Cubicle



Feeder Cubicle

Protection Relay