

CDR SERIES

CHANGE OVER DISCONNECTOR / EARTHING SWITCH

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ST527174R2EN



MAIN CHARACTERISTICS

The CDR series have been designed by ELERON to perform the commutation, sectioning or earthing of electric circuits in various application fields. In particular, in the sector of railway rolling stock, they are used properly configured in order to perform series/parallel switching between the winding of drive motors, brake resistors and Earthing switch.

The combiners of CDR series are object of ELERON's patent.

BUILDING CHARACTERISTICS

The "core" of CDR series is constituted by a body of modular, compact structure which allows to realize various solutions. Each module is constituted by two stators done by insulating material which have the function to support the fixed contacts in copper alloy.

The rotor is located inside the modules, which is also made of insulating material and has the function to support movable contacts in silver-plated copper. Since the rotor can take up to two or more different positions, it performs the commutation of the electric circuit.

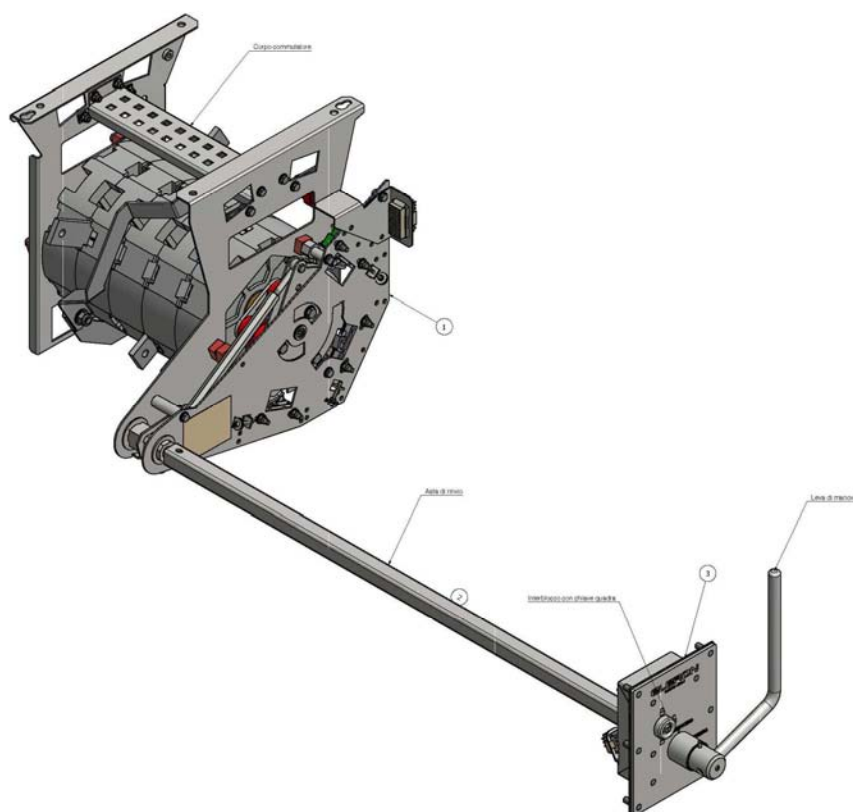
The particular design of the contacts allows to obtain optimal functioning during regular operation, and also in case of high short-circuit currents, without suffering any damage.

The main body of CDR can be enclosed inside a metal case which has the purpose to protect it from foreign bodies, such as water and dust.

In addition to the connector for the connection of auxiliary circuits, a series of bushing insulators in epoxy resin are mounted on the case and are connected inside of the CDR body through copper laminated bridges.

The container can be equipped with a few removable panels located on the ground for safety reasons.

In case it is used in the sector of railway rolling stock, the CDR can be mounted externally on the roof or under the case and it can work properly in any assembling position.



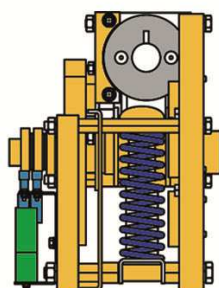
MANOEUVRE AND COMMAND DEVICES

The devices can be of 4 different type: manual or motorized, direct or independently torque moving.
In case of using motorized independent device, moving of CDR contacts is obtained by joining an independently operated command to its body, equipped with a spring which is charged through electric motor.
When requested it is supplied with keys interlocking.

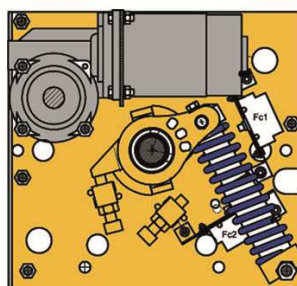
This case has the advantage to obtain quick closing and opening of the CDR contacts with the benefit to interrupt small electric loads, and it is also built so as not to allow movable contacts to move from their position due to gravity, vibrations and collisions.

A series of additional contacts directly enabled by the central rotor, remotely indicate the CDR position.
In case of using manual device, this can be direct connected to the shaft of the CDR contacts or can be indirect, equipped with spring system to be sure about the speed of moving contacts.

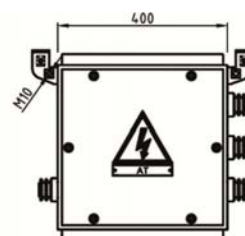
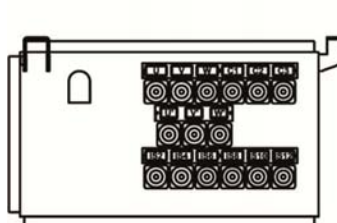
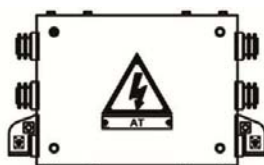
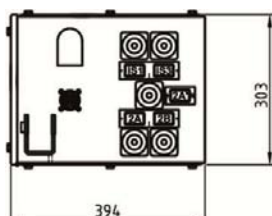
INDEPENDENTLY-OPERATED MOTORIZED COMMAND



Lateral



Section



**STANDARDS, CERTIFICATIONS, QUALITY SYSTEM**

ELERON operates according to a certified Quality Assurance System in compliance with standard UNI EN ISO 9001.

CDR series comply with the following standards and specifications:

Standard CEI EN 60077-1
Standard CEI EN 60077-2
Standard CEI EN 60694
Standard CEI EN 61373
Standard CEI EN 50124-1
Standard CEI EN 50124-2

Standard CEI EN 50129
Standard CEI EN 60068-2-1
Standard CEI EN 50124-2-2
Standard CEI EN 50124-2-52
Standard CEI EN 45545

CDR series comply with regulation AFNOR F16-102 on materials' fire resistance, and with standard EN 60077-1 with regards to the ability to withstand vibrations and collisions.

ROUTINE TESTS

Switchboards must pass with success the following routine tests carried out in the factory test room:

- Mechanical operating tests
- Power frequency voltage withstand tests
- Power frequency voltage withstand tests on auxiliary circuits
- Measurement of the resistance of the main circuits
- Voltage signalling device test
- Surface treatment tests

ENVIRONMENTAL OPERATING CONDITIONS

Minimum temperature	[C°]	-25
Maximum temperature	[C°]	+70
Casing protection degree		IP65
Stand-alone protection degree		IP00
Overvoltage categories		OV4
Pollution degree		PD4
Fire resistance requirements		HL3

MECHANICAL CHARACTERISTICS

Duration of operation (including charging of spring)	[s]	6
Duration of switching operation	[ms]	15
Mechanical life	[cycles]	20.000
Weight	[Kg]	10÷...

ELECTRICAL CHARACTERISTICS**AUXILIARY CONTACTS**

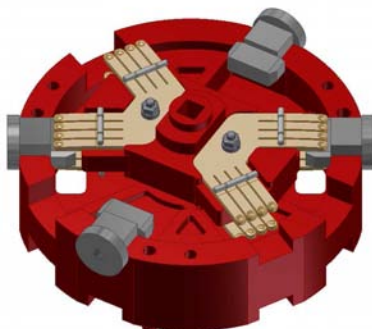
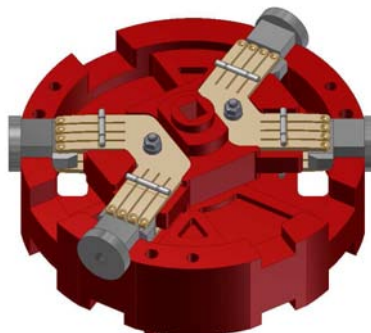
Nominal voltage	[V]	24÷250
Rated normal thermal current	[A]	10

MOTORIZED DEVICE

Nominal voltage	[V DC]	24÷110
Continuous power	[W]	200

APPLICATIONS

- Change over switch
- Earthing switch
- Disconnecter
- Security system isolator

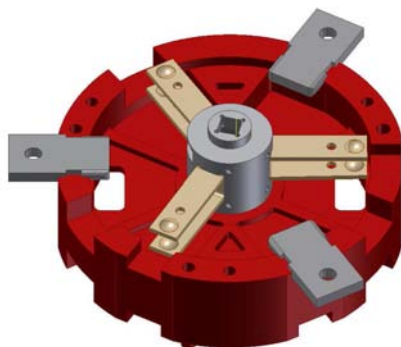
SWITCH - CHANGE OVER SWITCH**Position 1****Position 2****Electrical Characteristics**

Rated normal voltage	[V]	750	1500	4000
Power frequency withstands voltage toward earth and between phases	[kV]		11.5	
Power frequency withstands voltage between open contacts	[kV]		14	
Impulse withstand voltage toward earth	[kV]		25	
Rated normal thermal current	[A]		250÷2000	
Rated admissible short-time current (0.25 sec.)	[kA]		62.5	

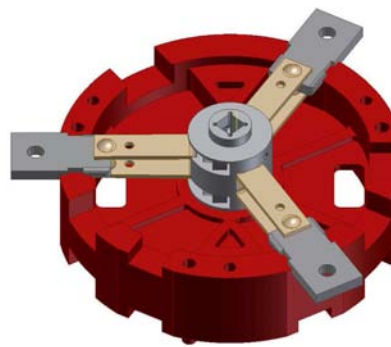


EARTHING SWITCH

Position 1

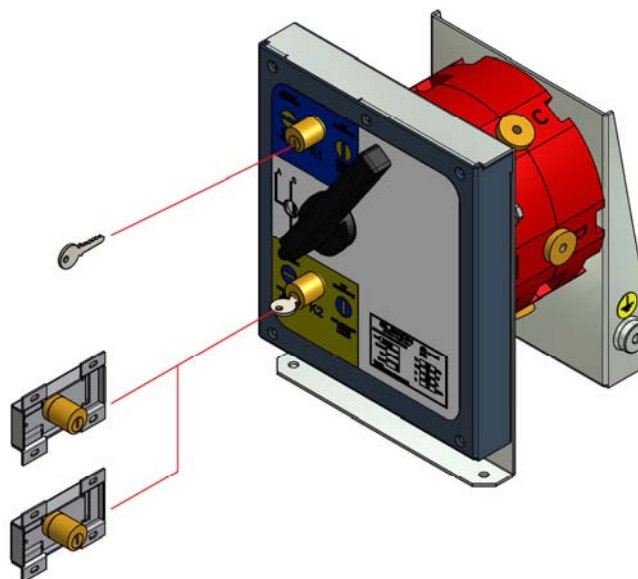


Position 2



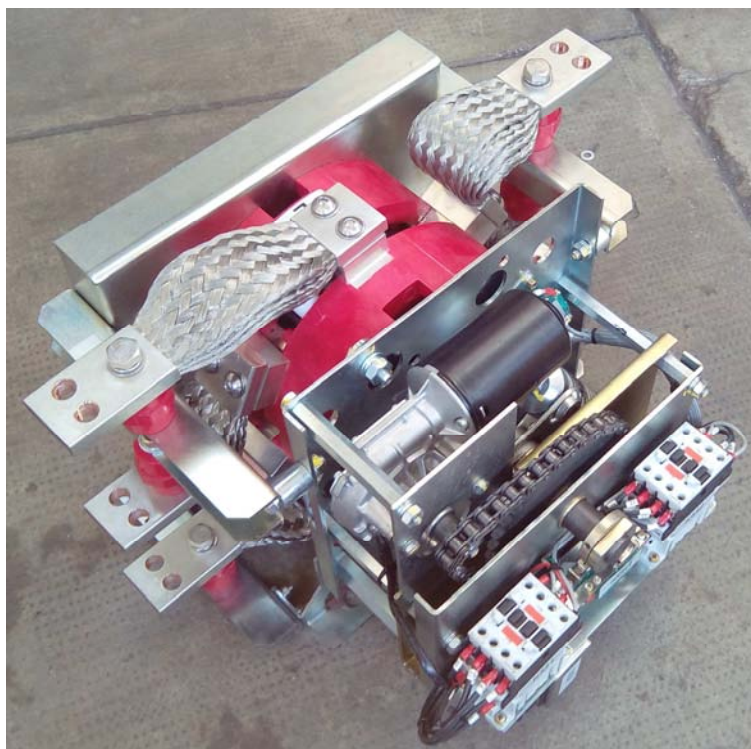
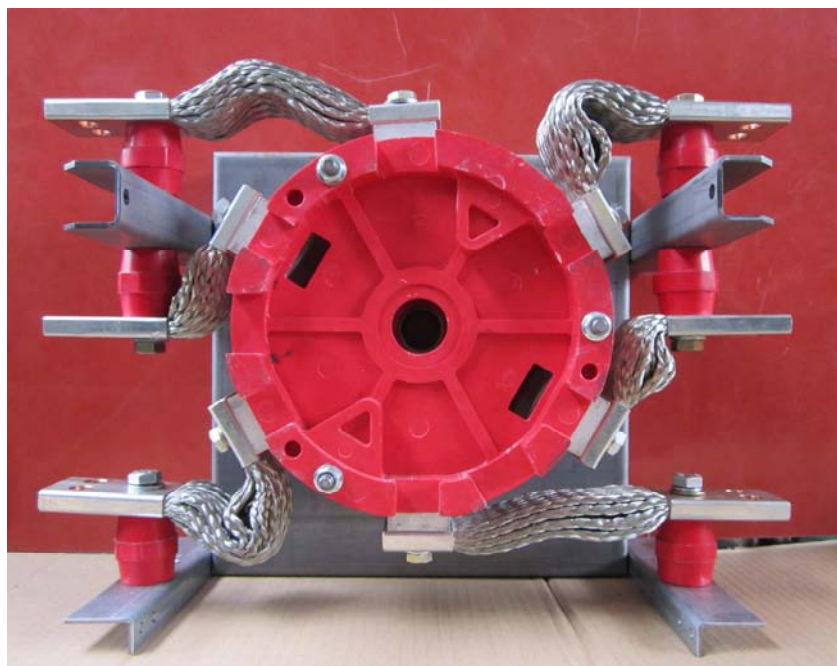
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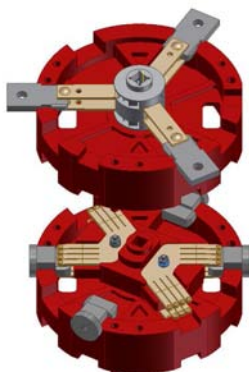
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OTHER APPLICATIONS

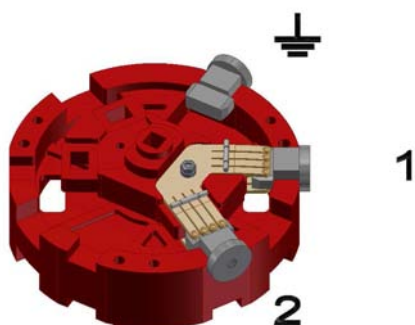
MIXED CONFIGURATION: EARTHING SWITCH AND LINE SWITCH



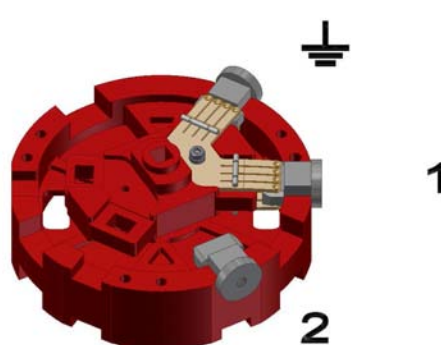
Mixed type of moving contact can be assembled in the same CDR to fix the customer requirement and save space onto the final dimension.

SINGLE MODULE WITH LINE AND EARTH CONNECTION

Position 1

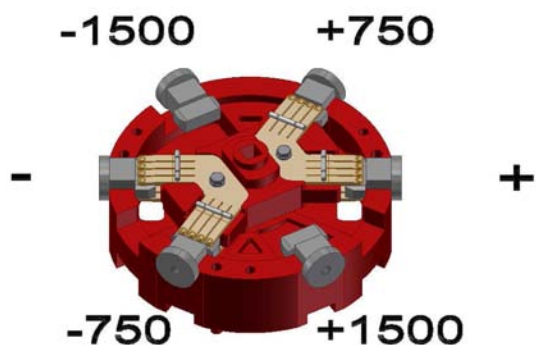


Position 2

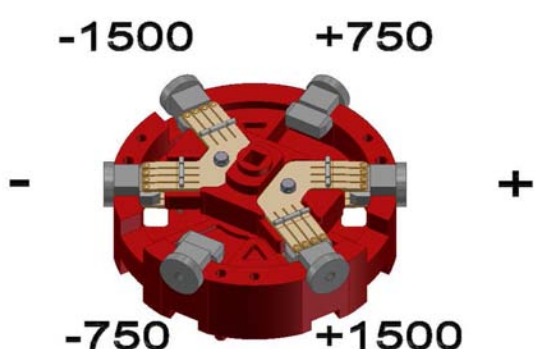


CHANGE OVER CONFIGURATION

Position 1

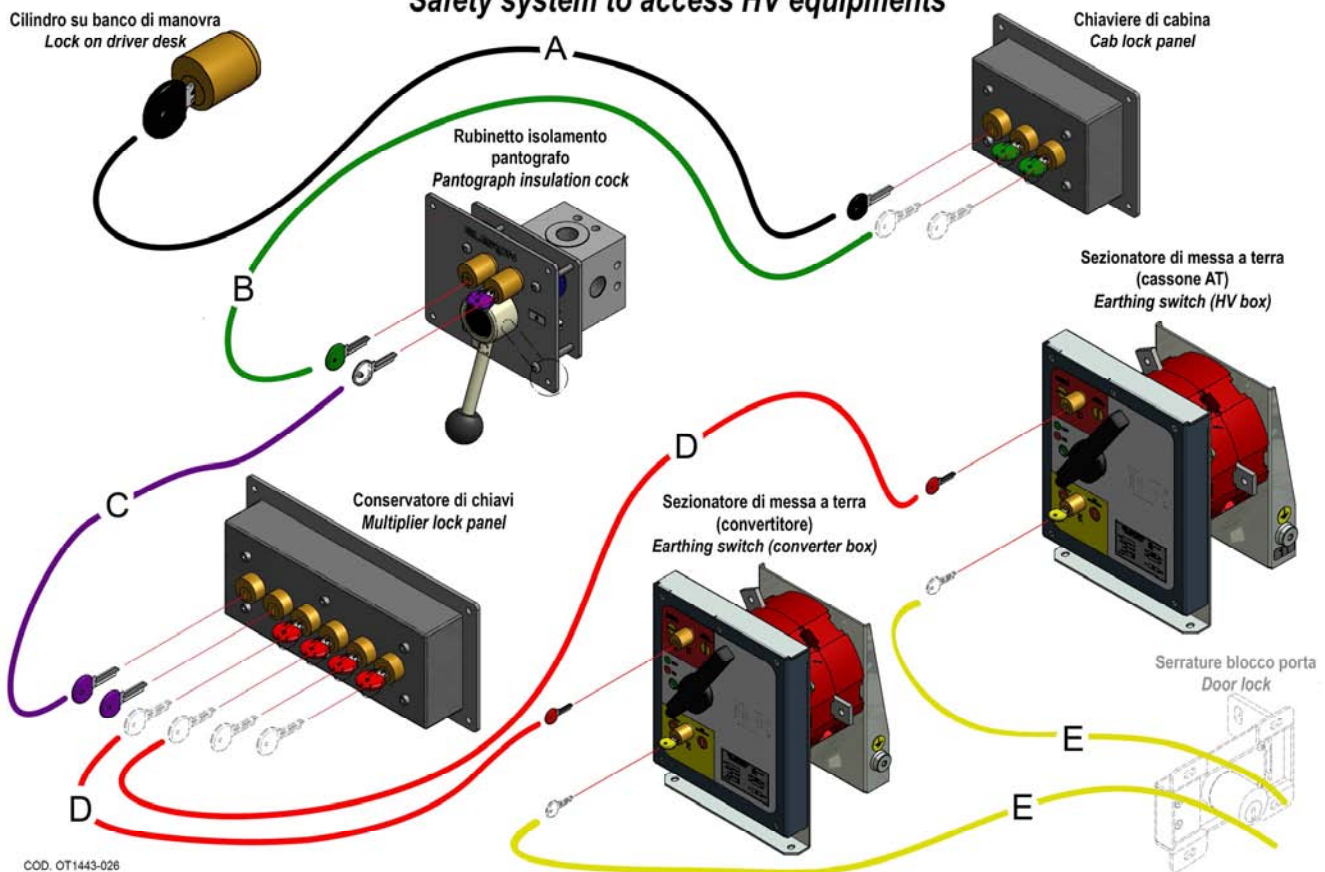


Position 2



SISTEMA DI SICUREZZA PER L'ACCESSO ALLE APPARECCHIATURE AT

Safety system to access HV equipments



Data and images are not binding; for different characteristics, please contact ELERON directly.
The product may be subjected to changes during technical development, therefore we reserve the right to apply modifications.

NOTE:



