RM6 up to 24 kV

Gas Insulated Ring Main Unit

EGEMAC
Egyptian German Electrical Manufacturing Co.

License from

Schneider Electric

PARTNERSHIP &

LICENCE AGREEMENT

Between

The Egyptian German Electrical Manufacturing Co. S.A.E (EGEMAC)

&

Schneider Electric Industries SAS

For the manufacturing and sale of

RM6 Level I

This Agreement is made on **2018**

BY AND BETWEEN

SCHNEIDER ELECTRIC INDUSTRIES SAS, a company organised and existing in accordance with the laws of France, registered under the number 954 503 439 RCS Nanterre, having its registered office at 35, rue Joseph Monier 92500 Rueil-Malmaison (France),
duly represented by Frédéric GODEMEL, Senior Vice President, Commercial & Automation;

hereinafter referred to as "**Licensor**"

AND

THE EGYPTIAN GERMAN ELECTRICAL MANUFACTURING CO. S.A.E (EGEMAC), a company organised and existing in accordance with the laws of Egypt, having its registered office at Kablaat Street, Mattaria, Cairo (Egypt),
duly represented by Mr Medhat RAMADAN, Chairman and Managing Director,

hereinafter referred to as "**Licensee**".

For SCHNEIDER ELECTRIC INDUSTRIES SAS

By Mr Frédéric GODEMEL,
Energy Commercial Senior Vice President,
Energy Division,

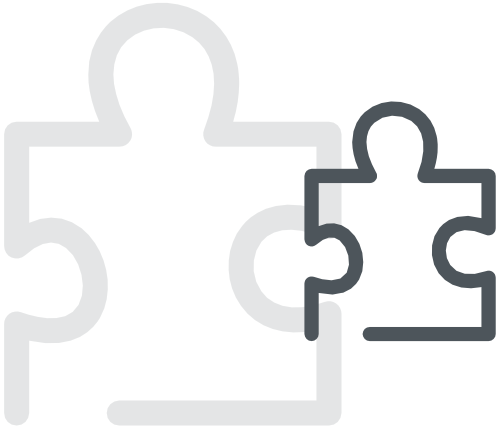
For THE EGYPTIAN GERMAN ELECTRICAL MANUFACTURING CO. S.A.E (EGEMAC)

By Mr Medhat RAMADAN
Chairman and Managing Director

Witnessed by Mr Walid SHETA
Schneider Electric - North East Africa and Levant Cluster President

Your Needs

FIABILITY



SIMPLICITY

SAFETY

Gas Insulated Switchgear (GIS)
Ring Main Unit up to 24 kV

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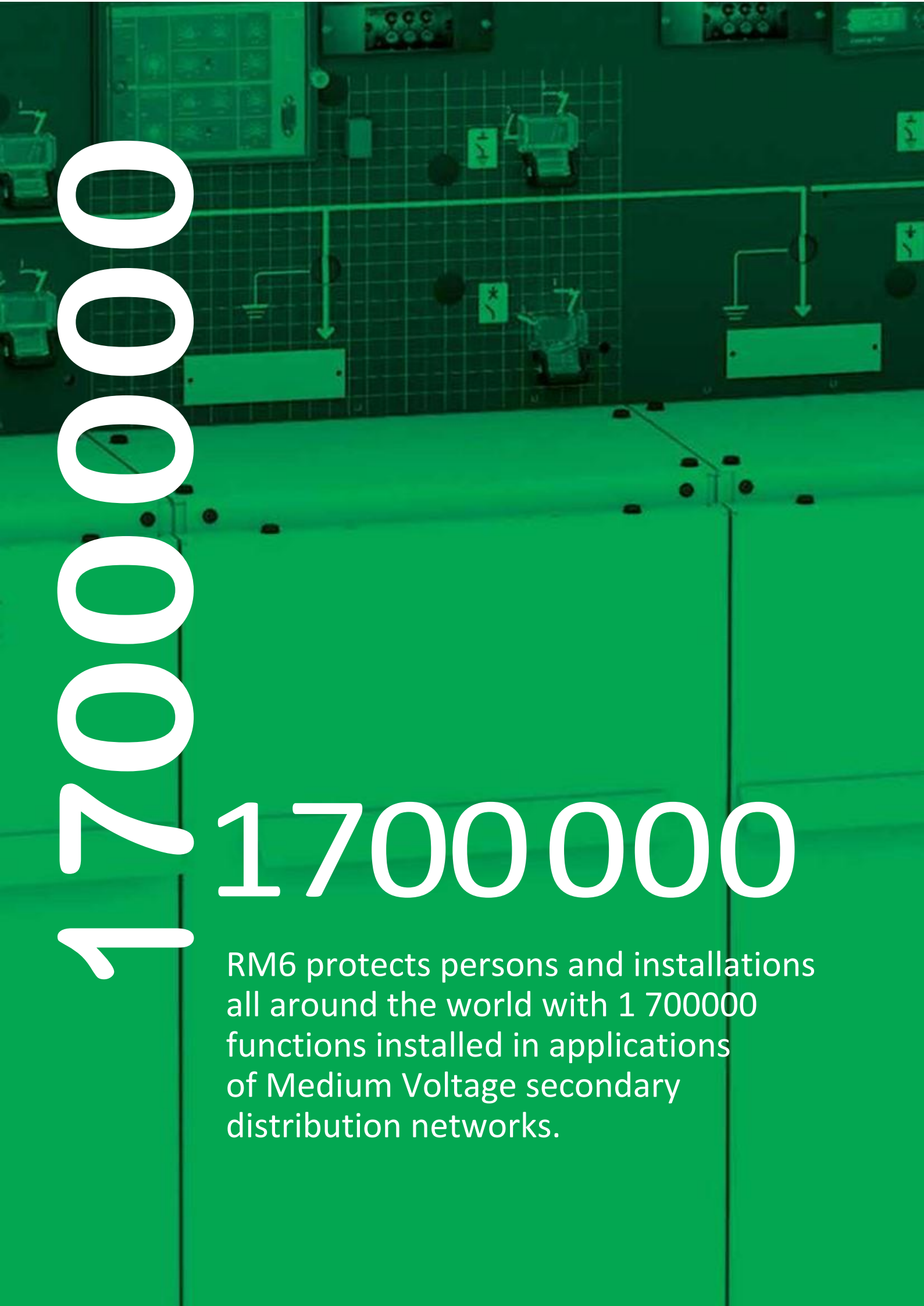
RM6 solution

The RM6 is a compact unit combining all MV functional units to enable connection, supply and protection of transformers on an open ring or radial network:
it is a complete range to meet the needs of sectors of the energy, of the industry and the building.

- An uncomparable field-proven experience: with over 1 300 000 functions installed worldwide.
- High Quality: thanks to the stringent application of the standards of ISO quality 9001 and ISO 9002 during the Conception, Manufacture, and rigorous Tests and Control of the product.
- An assurance of maintain of continuity of service: the conception of the RM6 confers it a real complete insulation which ensures to the switchgear a total resistance against severe environments, whether it is the dust, or humidity.
- A simple and limited maintenance: with a periodicity from 5 to 10 years
- Easy to install: due to its compact dimensions and quick settle. If your installation evolves, RM6 adapts itself to respond to your growing needs: on-site extensibility without manipulation of gas nor particular preparation of the ground allow you to develop your installation simply and safely.
- Operate safely: The safety of the person is for us a major commitment. RM6 guarantees a total safety thanks to the internal arc proof.
  - □ Contact of earthing is clearly visible.
  - □ The voltage indicators are located on the front face.
  - □ Ultra-reliable device and a natural interlocking ensured by a simple to understand overview diagram on the front side.
- Safety for operator: the real position of the contact on earth position before working on the cubicle. The moving contacts of the earthing switch are visible in the closed position through transparent windows.
- Transformer protection with a circuit breaker: offering adjustable tripping curve, overload protection, earth fault protection always ready, and avoiding fuse replacement, and stock. In addition it allows immediate reclosing possibility even remotely.



1700000

1700000

RM6 protects persons and installations all around the world with 1 700000 functions installed in applications of Medium Voltage secondary distribution networks.

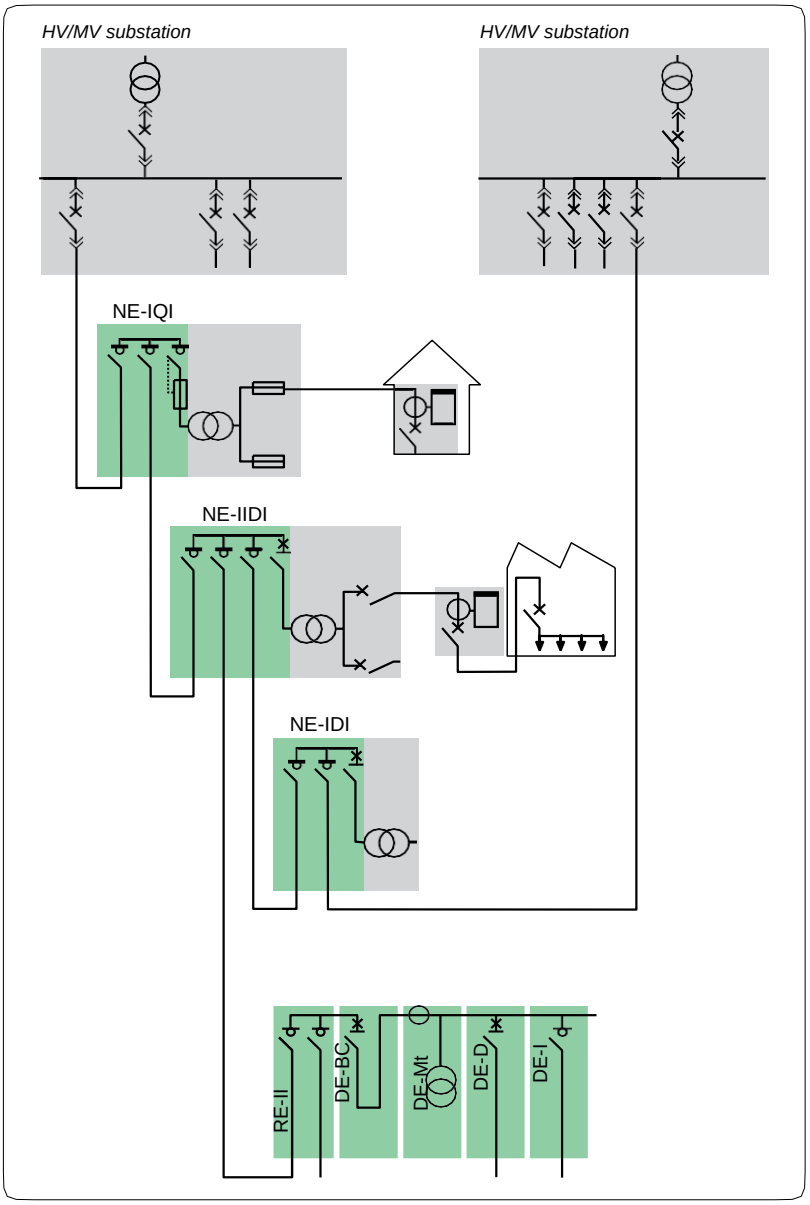
Applications

The RM6 can be adapted to meet all Medium Voltage power distribution needs, up to 24 kV.

The RM6 is a compact unit combining all MV functional units to enable connection, supply and protection of transformers on an open ring or radial network:

- **by a fuse-switch combination, up to 2000 kVA ;**
- **by a circuit breaker with protection unit, up to 8000 kVA.**

The switchgear and busbars are enclosed in a gas-tight chamber, filled with SF6 and sealed for life.



Advantages of a proven design RM6 switchgear

■ Ensures personal safety:
□ internal arc withstand in conformity with IEC 62271-200
□ visible earthing
□ 3 position switchgear for natural interlocking
□ dependable position indicating devices.
■ Is insensitive to the environment:
□ stainless steel sealed tank
□ disconnectable, sealed, metallized fuse chambers.
■ Is of approved quality:
□ conforms to national and international standards
□ design and production are certified to ISO 9000 (version 2008)
□ benefits from the experience accumulated from 1,000,000 functional units installed world-wide.
■ Respects the environment:
□ end-of-life gas recovery possible
□ ISO 14001 approved production site.
■ Is simple and rapid to install:
□ front cable connections at the same height
□ easily fixed to the fl oor with 4 bolts.
■ Is economical:
□ from 1 to 5 functional units, integrated within the same metal enclosurefor which insulation and breaking take place in SF6 gas
□ lifetime of 30 years.
■ Has maintenance free live parts:
□ in conformity with IEC 62271-1, pressure system, sealed for life.

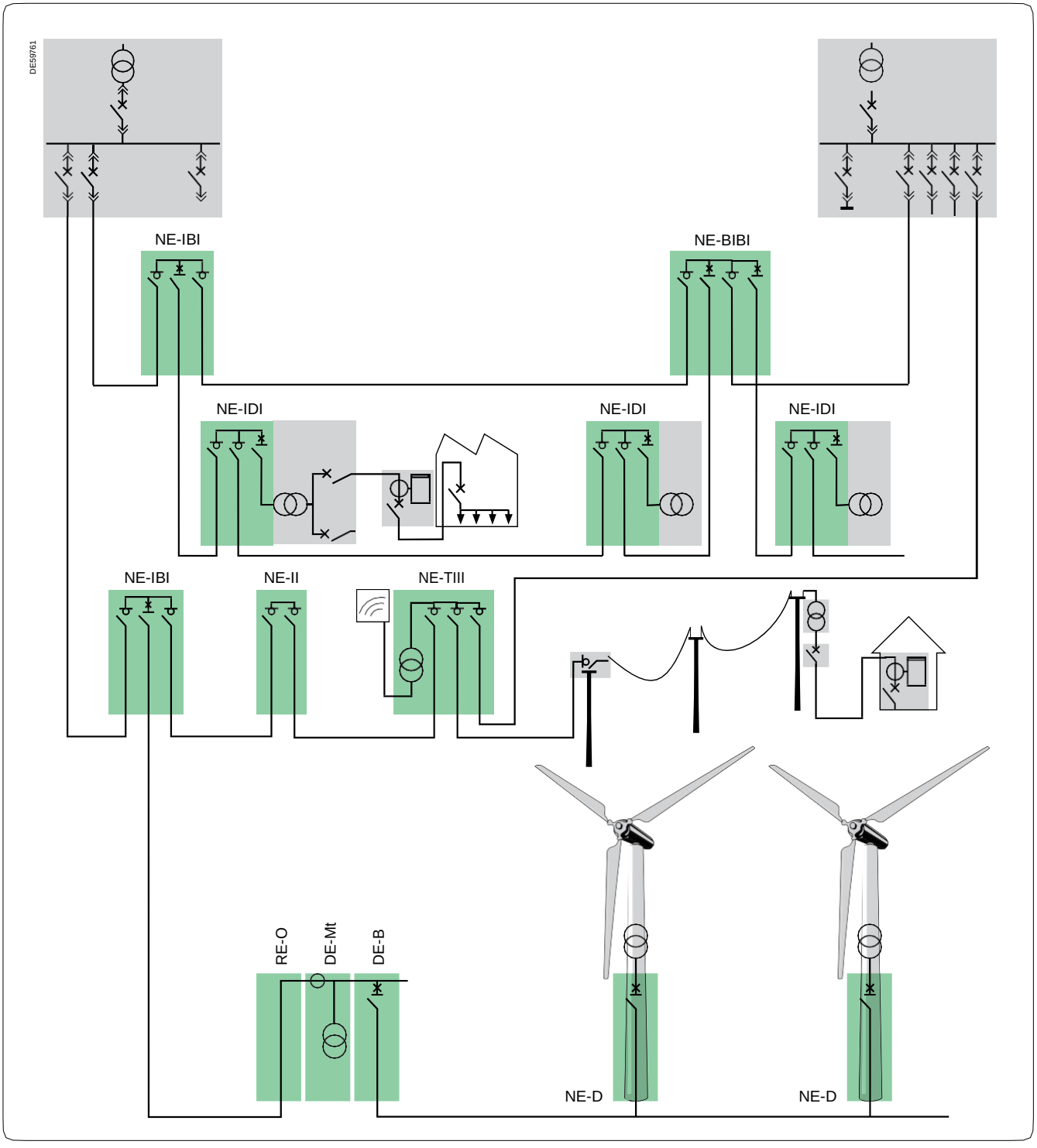
Applications

A complete range, enabling you to equip MV network points, and enhance electrical power dependability.

Operating a distribution network sometimes requires switching points in addition to the HV/MV substations, in order to limit the effect of a fault on the network.

The RM6 offers a choice of solutions to make 2, 3, 4 or 5 directional connections

- **with line protection by 630 A circuit breakers**
- **with network switching by switch-disconnectors**
- **with integrated power supply telecontrol devices.**



Range advantages

Compact and scalable, the RM6 range covers all of your requirements

Compact

RM6 Medium Voltage switchgear cubicles are perfectly suited for very simple configuration of 2, 3, 4 or 5 directional connections.

- Choice of “all in one” units integrated in a single metal enclosure
- Cubicles insensitive to climatic conditions
- Optimized dimensions
- Quick installation through floor fixing with four bolts and front cable connection.

Extensible

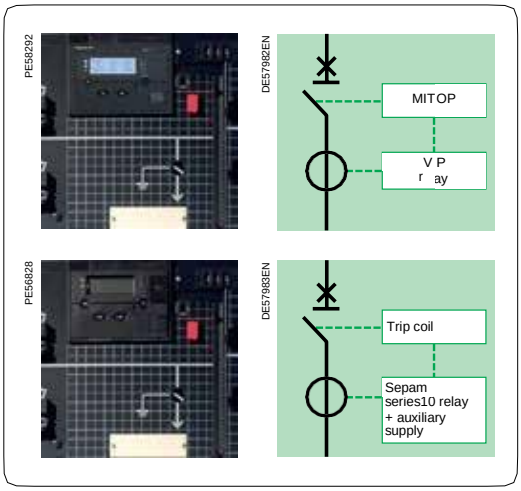
Just as compact and insensitive to climatic conditions the extensible RM6 is modular to suit your requirements.
The addition of functional unit modules, allows you to build the Medium Voltage switchboard suited to your requirements.
Your organization develops, you build a new building - RM6 adapts with you.
It can be extended on site without handling gases or requiring any special floor preparation to develop your installation simply and in complete safety.

On standard range only : see the exception.

Possibilities to add cubicle	1st position	2nd position	3rd position	Last position
Ø	RE-x	DE-x	DE-x	LE-x
RE-x*	DE-x	DE-x	LE-x	Ø

** It is not possible to add RE-x if switchboard with a station DE is in first position*

Circuit breakers, for greater safety and lower costs



The RM6 range offers 200 A and 630 A circuit breakers to protect both transformers and lines. They are associated with independent protection relays that are selfpowered via current sensors or with auxiliary supply protection relays.

- Greater operating staff safety and improved continuity of service
  - □ increased protection device co-ordination with the source substation, circuit breaker and the LV fuses
  - □ rated current is normally high, allowing use of a circuit breaker to provide disconnection
  - □ the isolating system is insensitive to the environment.
- Simplified switching operations and remote control
  - □ Reduction of losses thanks to the low value of RI2 (the fuse-switches of a 1000 kVA transformer feeder can dissipate 100 W).
- Reduced maintenance costs no work in progress to replace fuses.

Experience of a world leader

RM6, a world-wide product

Main references

Asia/Middle East

- BSED, Bahrein
- DEWA, Dubaï
- WED, Abu Dhabi
- Tianjin Taifeng Industrial Park, China
- TNB, Malaysia
- China Steel Corporation, Taiwan
- TPC, Taiwan
- SCECO/SEC, Saudi Arabia
- PSB, China

Africa

- Electricité de Mayotte
- EDF Reunion
- Total, Libya
- SONEL, Cameroon
- South Africa

South America/Pacific

- CELESC, Santa Catarina, Brazil
- PETROBRAS, Rio de Janeiro, Brazil
- Guarulhos International Airport
- Sao Paulo, Brazil
- CEMIG, Minas Gerais, Brazil
- EDF, French Guiana
- Tahiti Electricity
- Métro de Mexico, Mexico

Europe

- EDF, France
- Channel tunnel, France
- Iberdrola, Spain
- Compagnie Vaudoise d'électricité
- SEIC, Switzerland
- Electrabel, Belgium
- Union Fenosa, Spain
- ENHER, Spain
- Oslo Energie, Norway
- STOEN, Poland
- Bayernwerke, Germany
- London Electricity, United Kingdom
- Mosenergo, Russia

Oceania

- Eau et Electricité de Calédonie
- New-Caledonia
- Enercal, New-Caledonia
- United Energy, Australia

Quality - Standards

IEC standards

RM6 is designed in accordance with the following standards:

General operation conditions for indoor switchgears

IEC 62271-1 (common specifications for high voltage switchgear and controlgear)

■ Ambient temperature: class –25°C indoor
□ lower than or equal to 40°C without derating
□ lower than or equal to 35°C on 24 hours average without derating
□ greater than or equal to –25°C.

■ Altitude :
□ lower than or equal to 1000 m
□ above 1000 m, and up to 2000 m with directed field connectors
□ greater than 2000 m: please consult us for specific precaution.
DE-Mt needs voltage derating after 1000m.

Please consider altitude and temperature when selecting Q function fuses.

IEC 62271-200 (A.C. metal enclosed switchgear and controlgear for rated voltage above 1 kV and up to and including 52 kV)
■ Switchgear classification: PM class (metallic partitioning)
■ Loss of service continuity: LSC2B class for circuit breaker and switch (LSC2A for fuse-switch combinations)
■ Internal arc classification: class A-FL up to 20 kA 1 s on request (access restricted to authorized personnel only, for front and lateral access).
■ Maximum relative humidity: 95%

Switch-disconnectors

IEC 62271-103 (high voltage switches for rated voltage above 1 kV and less than 52 kV)

■ Class M1/E3
□ 100 CO cycles at rated current and 0.7 p.f.
□ 1000 mechanical opening operations.

Circuit breakers: 200 A feeder or 630 A line protection

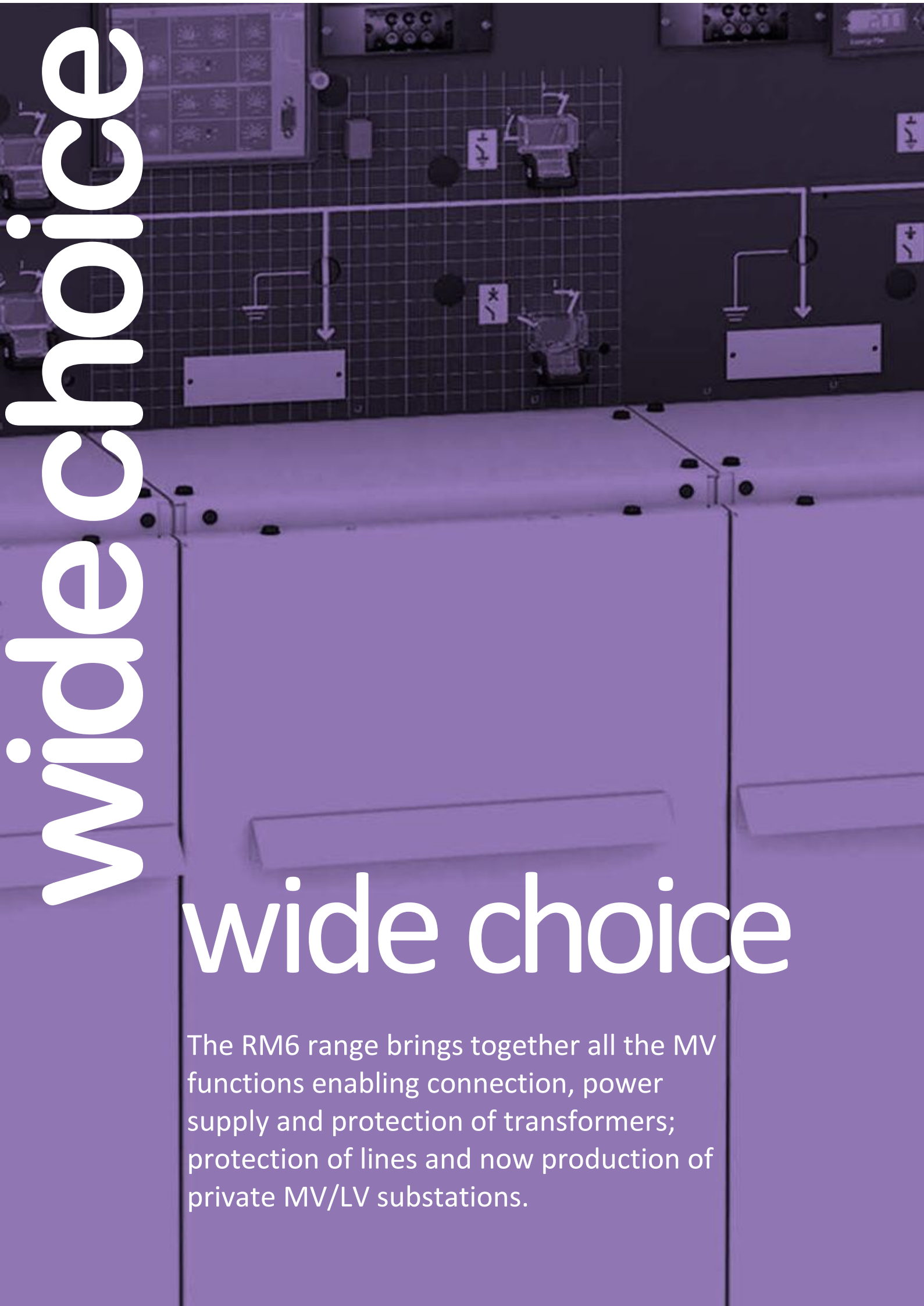
IEC 62271-100 (high voltage alternating current circuit breakers)

■ Class M1/E2
□ 2000 mechanical opening operations,
□ O-3 min.-CO-3 min.-CO cycle at rated short circuit current.

Other applicable standards

IEC 62271-100 (high voltage alternating current circuit breakers)

■ Switch-fuse combinations: IEC 62271-105: alternating current switch-fuse combination.
■ Earthing switch: IEC 62271-102: alternating current disconnectors and earthing switches.
■ Electrical relays: IEC 60255.



wide choice

wide choice

The RM6 range brings together all the MV functions enabling connection, power supply and protection of transformers; protection of lines and now production of private MV/LV substations.

RM6 switchgear description

RM6 switchgear comprises 2, 3, 4 or 5 directional connections integrated, low dimension functional units.

This self-contained, totally insulated unit comprises:

- a stainless steel, gas-tight metal enclosure, sealed for life, which groups together the live parts, switch-disconnector, earthing switch, fuse switch or the circuit breaker
- one to four cable compartments with interfaces for connection to the network or to the transformer
- a low voltage cabinet
- an electrical operating mechanism cabinet
- a fuse chamber compartment for fused switch-disconnectors or fuse switches.

The performance characteristics obtained by the RM6 meet the definition of a “sealed pressure system” laid down in the IEC recommendations.
The switch-disconnector and the earthing switch offer the operator all necessary usage guarantees:

Tightness
The enclosure is filled with SF6 at a 0.2 bar gauge pressure. It is sealed for life after filling. Its tightness, which is systematically checked at the factory, gives the switchgear an expected lifetime of 30 years. No maintenance of live parts is necessary with the RM6 breaking.

Switch-disconnector
Electrical arc extinction is obtained using the SF6 puffer technique.

Circuit breaker
Electrical arc extinction is obtained using the rotating arc technique plus SF6 auto-expansion, allowing breaking of all currents up to the short-circuit current.

A range that is extensible on site

When harsh climatic conditions or environmental restrictions make it necessary to use compact switchgear, but the foreseeable evolution of the power distribution network makes it necessary to provide for future changes, RM6 offers a range of extensible switchgear.
The addition of one or more functional units can be carried out by simply adding modules that are connected to each other at busbar level by directed field bushings.
This very simple operation can be carried out on-site:

- without handling any gas
- without any special tooling
- without any particular preparation of the floor.

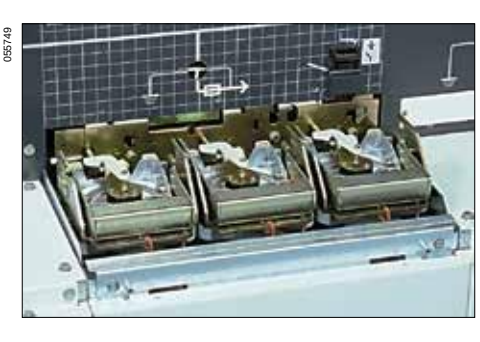
The only technical limitation to the evolution of an extensible RM6 switchboard is therefore the rated current acceptable by the busbar: 630 A at 40°C.

Insensitivity to the environment

Complete insulation

- **A metal enclosure** made of stainless steel, which is unpainted and gas-tight (IP67), contains the live parts of the switchgear and the busbars.
- **Three sealed fuse chambers,** which are disconnectable and metallized on the outside, insulate the fuses from dust, humidity...
- **Metallization of the fuse chambers and directed field terminal connectors** confines the electrical field in the solid insulation.

Taken together, the above elements provide the RM6 with genuine total insulation which makes the switchgear completely insensitive to environmental conditions, dust, extreme humidity, temporary soaking. (IP67: immersion for 30 minutes, as laid down in IEC standard 60529, § 14.2.7).



Safety of people

Switchgear

Switch-disconnectors and circuit breakers have similar architecture:

- **a moving contact assembly with 3 stable positions** (closed, open and earthed) moves vertically (see sketch). Its design makes simultaneous closing of the switch or circuit breaker and the earthing switch impossible.
- **the earthing switch** has a short-circuit making capacity, as required by the standards.
- the RM6 combines both the isolating and interrupting function.
- the earth collector has the correct dimensions for the network.
- access to the cable compartment can be interlocked with the earthing switch and/or the switch or circuit breaker.

3 stable position switch

Internal arc withstand

The robust, reliable and environmentally insensitive design of the RM6 makes it highly improbable that a fault will appear inside the switchgear. Nevertheless, in order to ensure maximum personal safety, the RM6 is designed to withstand an internal arc supplied by a rated short-circuit current for 1 second, without any danger to the operator.
Accidental overpressure due to an internal arc is limited by the opening of the safety valve, at the bottom of the metal enclosure. The internal arc withstand of the tank is of 20 kA 1 s.
With the option of the internal arc in cable compartment, the RM6 cubicle has an internal arc withstand up to 20 kA 1 s, which meets all the criteria of IAC class A-FL as defined by IEC 62271-200 standard, appendix A. The gas is released to the rear or to the bottom of the RM6 without affecting conditions in the front. When the gas is exhausted to the rear, the maximum internal arc withstand is of 16 kA 1 s. In case the gas is exhausted to the bottom, the internal arc withstand is up to 20 kA 1 s.

Reliable operating mechanisms

The electrical and mechanical operating mechanisms are located behind a front plate displaying the mimic diagram of the switchgear status (closed, open, earthed):

- **closing:** the moving contact assembly is manipulated by means of a fast-acting operating mechanism. Outside these manipulations, no energy is stored. For the circuit breaker and the fuse-switch combination, the opening mechanism is charged in the same movement as the closing of the contacts.
- **opening:** opening of the switch is carried out using the same fast-acting mechanism, manipulated in the opposite direction. For the circuit breaker and fuse-switch combination, opening is actuated by:
  - □ a pushbutton
  - □ a fault.
- **earthing:** a specific operating shaft closes and opens the earthing contacts. The hole providing access to the shaft is blocked by a cover which can be opened if the switch or circuit breaker is open, and remains locked when it is closed.
- **switchgear status indicators:** are placed directly on the moving contact assembly operating shafts. They give a definite indication of the position of the switchgear (attachment A of IEC standard 62271-102).
- **operating lever:** this is designed with an anti-reflex device which prevents any attempt to immediately reopen the switch-disconnector or the earthing switch after closing.
- **padlocking facilities:** 1 to 3 padlocks can be used to prevent:
  - □ access to the switch or circuit breaker operating shaft
  - □ access to the earthing switch operating shaft
  - □ operation of the opening pushbutton.

Earthing display

Earthing switch closed position indicators: these are located on the upper part of the RM6. They can be seen through the transparent earthing covers, when the earthing switch is closed.

Safety of people

Operating safety

Cable insulation test
In order to test cable insulation or look for faults, it is possible to inject a direct voltage of up to 42 kVdc for 15 minutes through the cables via the RM6, without disconnecting the connecting devices.
The earthing switch is closed and the moving earthing connection is opened in order to inject the voltage via the “earthing covers”. This system, a built-in feature of the RM6, requires the use of injection fingers (supplied as an option).
The moving contacts of the earthing switch shall be visible in the closed position through transparent covers.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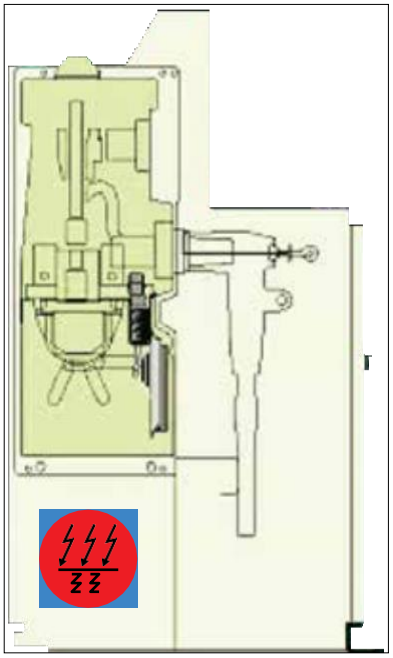
Arc short-circuiting

RM6 Arc short-circuiting device : Arc Killer, safety of persons, environnment friendly
Transforms an internal arc in the tank into short -circuit.
Prevent overpressure inside the gas tank in case of internal arc fault (no gaz outside the tank).
Available on switch function (I). No Extensible or not on a side of extension.



Voltage indicator lamps

A device (supplied as an option) on all functional units makes it possible to check
the presence (or absence) of voltage in the cables.
Two types of indicator can be proposed according to network operating habits:

- a device with built-lamps, of the VPIS type (Voltage Presence Indicating System) complying with standard IEC 62271-206.

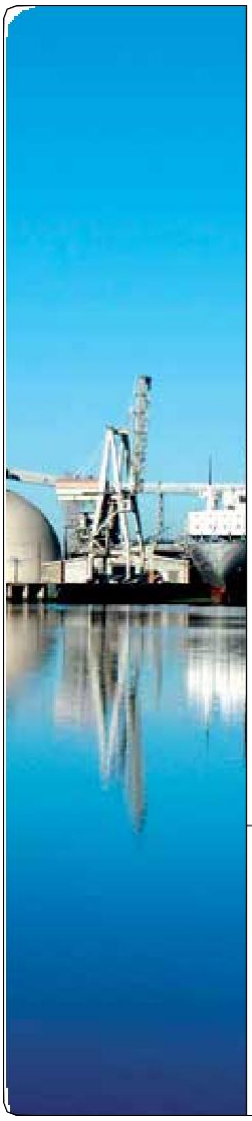
PE56866


- or a system with separate luminous modules, of the VDS type (Voltage Detection System) complying with standard IEC 61243-5.


PE56418

RM6 for Marine applications

PE90007



RM6 Marine: benefi ts of the MV loop adapted to the boat

The RM6 has the DNV type approval certifi cate for Marine applications.

A MV loop confi guration offers significant advantages:

- main MV switchboard smaller (only two cells to feed a MV loop)
- length of MV cables reduced (shortening average ratio > 30% for the configuration)
- the maintainability and availability of the network are also improved.

Actually:

- a failed cable section on the MV loop can be disconnected
- an automatic reconfiguration of the MV loop after a fault detection can be achieved.

Safety for personal

If RM6 is equipped with special “filter” LRU (internaL arc Reduction Unit), internal arc classification is AFLR 20 kA 1 s defined in the standard IEC 62271-200.

Resistance to vibrations

- Conform to IACS marine standards
- RM6 has a very low centre of gravity.

Resistance to vibrations

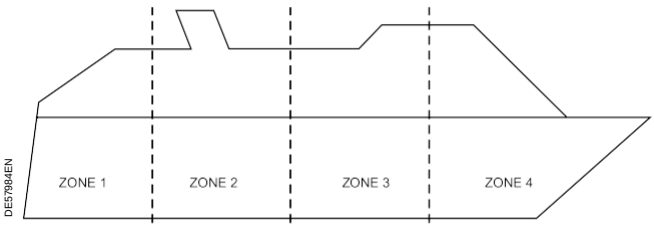
Resist to agressive atmosphere.

Some Marine references

- Aker Yards:
  - NCL Cruise Liner
  - Genesis 1 & 2.
- Meyer Werft:
  - Aïda ships
  - Norvegian Gem
  - Norvegian Pearl
  - Pride of Hawaï,
  - Norvegian Jewel
  - Jewel of the seas…

IACS
INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES LTD.

Example of a cruise liner architecture



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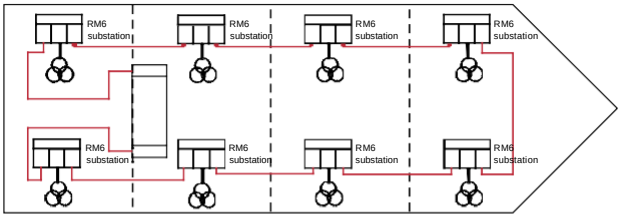
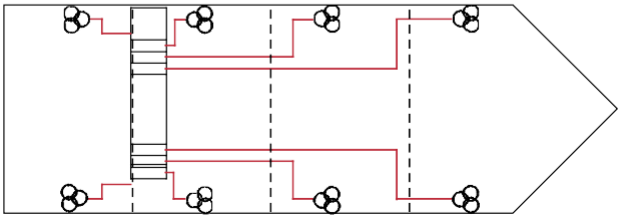
MV loop configuration



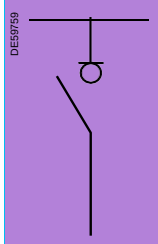
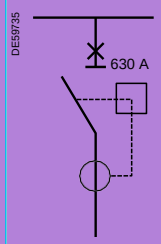
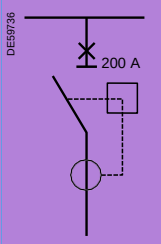
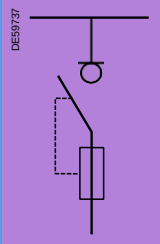
Radial configuration



A wide choice of functions

RM6 range functions

The RM6 range brings together all of the MV functions enabling:
- connection, power supply and protection of transformers on a radial or open-ring network via **200 A circuit breakers** with an independent protection chain or via **combined fuse-switches**
- protection of lines by **a 630 A circuit breaker**
- and now production of **private MV/LV substations** with MV metering.

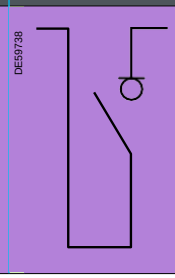
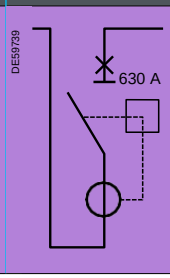
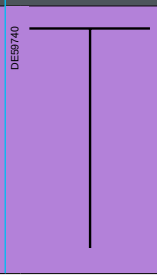
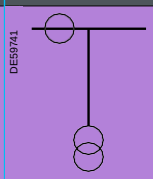
Function	Network switch	Line feeder	Transformer feeder	
Functional unit	I	B	D	Q
Device	Circuit breaker	630 A circuit breaker	200 A circuit breaker	Combined fuse-switch
Single line diagrams				

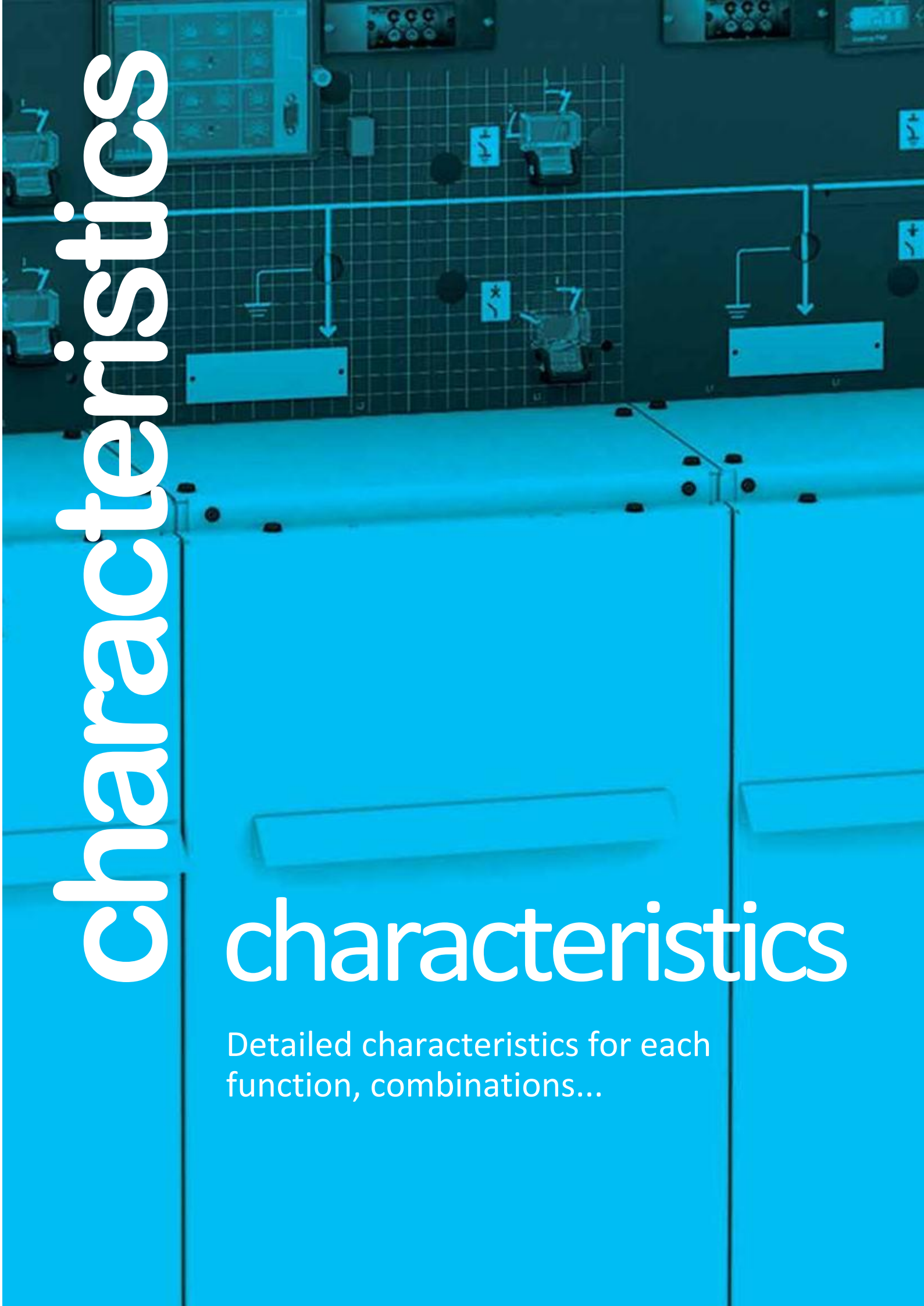
Device designation

Type of tank	Multifunction configurations *				Unit configurations
NE: non-extensible **RE:** extensible to the right **LE:** extensible to the left **DE:** extensible module to the right or left (one function)	I B D Q	I	I B D Q	I	I B D Q IC BC O Mt
	N° 4	N° 3	N° 2	N° 1	N° 1
Examples of designation	RM6 NE-DIDI RM6 RE-IDI RM6 NE-IQI				RM6 DE-I RM6 NE-D RM6 DE-Mt

* *Refer to the table on page 68 for the choice of different combinations*

A wide choice of functions

	Network coupling		Cable connection	MV metering
	IC	BC	O	Mt
	Switch	630 A circuit breaker		
				



characteristics

Detailed characteristics for each function, combinations...

Main characteristics

Electrical characteristics

Rated voltage		**Ur** (kV)	12	17.5	24
Frequency		**f** (Hz)	50 or 60		
Insulation level					
Industrial frequency 50 Hz 1 mn	Insulation(1)	**Up** (kV rms)	28	38	50
	Isolation(2)	**Ud** (kV rms)	32	45	60
Impulse 1.2/50 µs	Insulation(1)	**Up** (kV peak)	75	95	125
	Insulation(1)	**Up** (kV peak)	85	110	145
Tank internal arc withstand			20 kA 1 s		

(1) Phase-to-phase, phase-to-earth
(2) Across the isolating distance

Climatic conditions

		(°C)	40	45	50	55	60
Busbars 630 A	**Ir**	(A)	630	575	515	460	425
Busbars 400 A	**Ir**	(A)	400	400	400	355	
Functions: I, O, B (with bushing type C)		(A)	630	575	515	460	425
Function D (with bushing type B or C)		(A)	200	200	200	200	200
Function Q		(A)	(3)	(4)	(4)	(4)	(4)

(3) Depends on fuse selection
(4) Please consult us

Global options

- Manometer or pressure switch
- Additional earth busbar in cable compartment
- Internal arc cable box 20 kA 1 s for I, D or B functions.

Accessories

- Raising plinth
- Set of 3 MV fuses Fusarc CF
- Phase comparator
- Test box for circuit breaker relay (VAP6)
- Additional operating handle.

Additional instructions:
Installation and civil Engineering instructions.

Option for operation

Voltage indicator
- VPIS
- VDS.

Connectors and adaptaters for RM6

- Connectors for 630 A (1 set = 1 function)
- Connectors for 400 A (1 set = 1 function)
- Connectors for 250 A (1 set = 1 function).

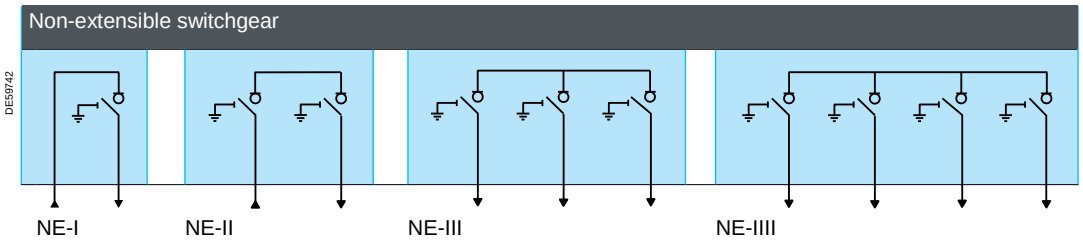
Protection index

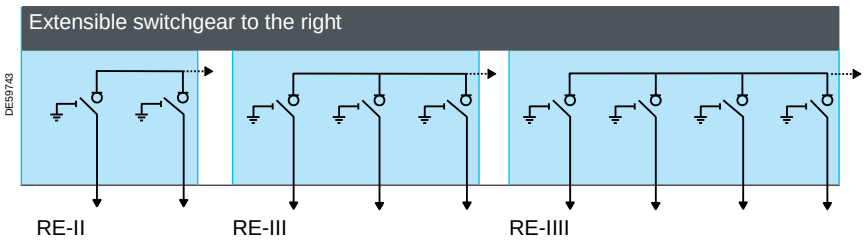
- Tank with HV parts: IP67
- Low voltage control compartment: IP3X
- Front face + mechanism: IP3X
- Cable compartment: IP2XC
- Protection against mechanical impact: IK07.

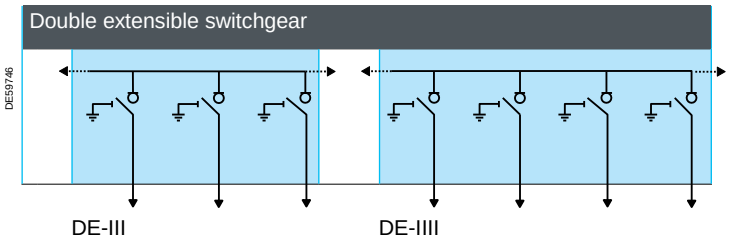
Detailed characteristics for each function

Network points with switch-disconnector (I function)

Rated voltage		**Ur**	(kV)	12	17.5	24	24	24	24
Short-time withstand current		**Ik**	(kA rms)	25	21	12.5	16	16	20
		tk	Duration (s)	1	1 or 3	1	1	1	1 or 3
Rated current busbars		**Ir**	(A)	630	630	400	400	630	630
Network switch (I function)									
Rated current		**Ir**	(A)	630	630	400	400	630	630
Breaking capacity	Active load	**Iload**	(A)	630	630	400	400	630	630
	Earth fault	**Ief1**	(A)	320	320	320	320	320	320
	Cable charging	**Icc**	(A)	110	110	110	110	110	110
Making capacity of switch and earthing switches		**Ima**	(kA peak)	62.5	52.5	31.25	40	40	50
Bushing				C	C	B or C	B or C	C	C







Accessories and options (I function)

Remote operation
Motorization including auxiliary contacts (LBSw 2 NO-2 NC and ESw 1 O/C).

Auxiliary contacts alone
For main switch position indication LBSw 2 NO - 2 NC and ESw 1 O/C (this option is included in remote operation option).

Front door of cable connection compartment
- Bolted
- Removable with ESw interlocking
- Removable with ESw interlocking and LBSw interlocking.

Self-powered fault passage and load current indicators
- Flair 21D
- Flair 22D
- Flair 23D
- Flair 23DM
- Amp 21D.

Key locking devices
- Type R1
- Type R2.

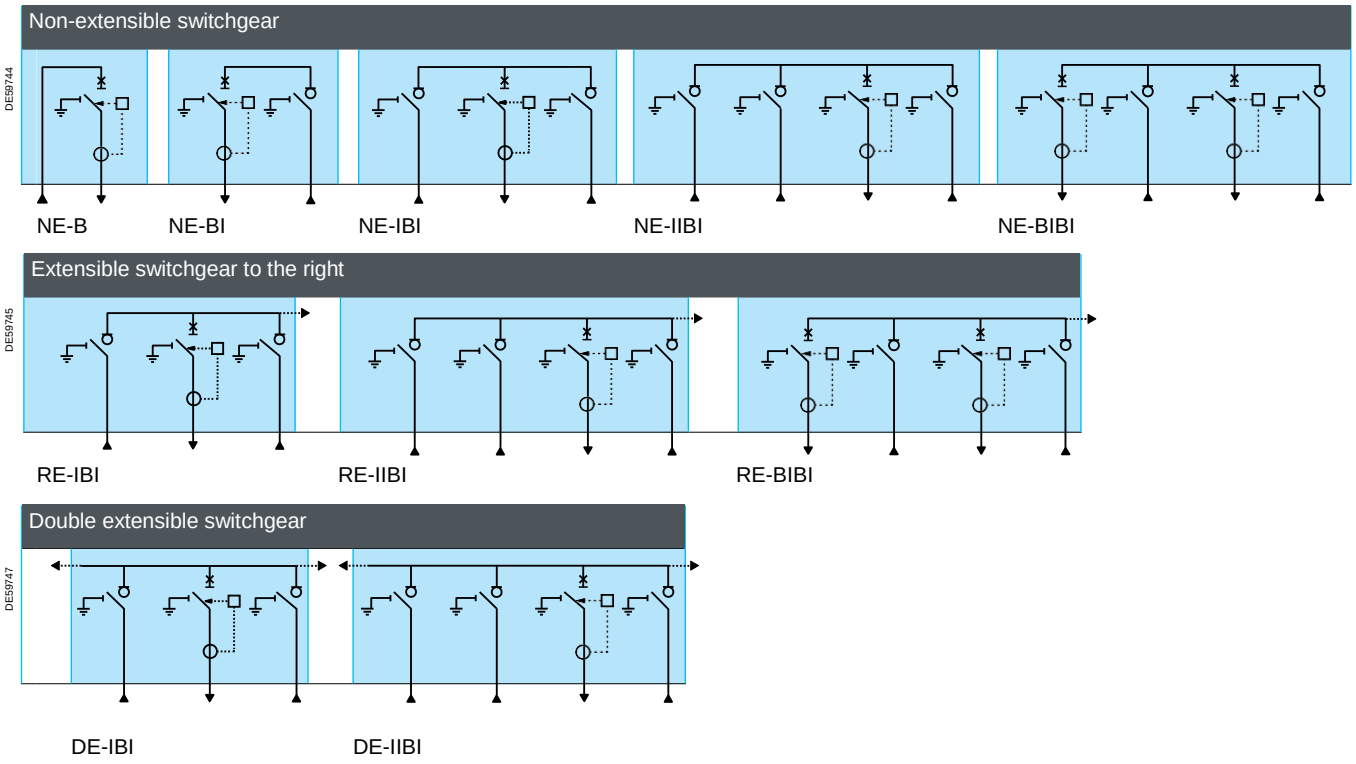
Arc Killer: RM6 arc short-circuiting device.
Transforms an internal arc into short-circuit
Available for Non Extensible cubicle or not on a side of extension because arc Killer block is not compatible with the extension bushing.
See decision tree (or Elonet) for applicable offers.

Metallic VT in some RM6 cubicles

Detailed characteristics for each function

Network points with 630 A disconnecting circuit breaker (B function)

Rated voltage		**Ur**	(kV)	12	17.5	24	24
Short-time withstand current		**Ik**	(kA rms)	25	21	16	20
		tk	Duration (s)	1	1 or 3	1	1 or 3
Rated current busbars		**Ir**	(A)	630	630	630	630
Network switch (I function)							
Rated current		**Ir**	(A)	630	630	630	630
Breaking capacity	Active load	**Iload**	(A)	630	630	630	630
	Earth fault	**Ief1**	(A)	320	320	320	320
	Cable charging	**Icc**	(A)	110	110	110	110
Making capacity of switch and earthing switches		**Ima**	(kA peak)	62.5	52.5	40	50
Bushing				C	C	C	C
Line protection feeder (B function)							
Rated current		**Ir**	(A)	630	630	630	630
Short-circuit breaking capacity		**Isc**	(kA)	25	21	16	20
Making capacity		**Ima**	(kA peak)	62.5	52.5	40	50
Bushing				C	C	C	C



Accessories and options (B function)

Remote operation
Motorization including shunt trip coil and auxiliary contacts circuit breaker (CB 2 NO - 2 NC and ESw 1 O/C).

Auxiliary contacts alone
For circuit breaker position indication CB 2 NO - 2 NC and ESw 1 O/C (this option is included in remote operation option).

Front door of cable connection compartment
- Bolted
- Removable with ESw interlocking
- Removable with ESw interlocking and CB interlocking.

Shunt trip coil for external tripping
- 24 Vdc
- 48/60 Vdc
- 120 Vac
- 110/125 Vdc - 220 Vac
- 220 Vdc/380 Vac.

Undervoltage coil
- 24 Vdc
- 48 Vdc
- 125 Vdc
- 110-230 Vac.

Protection relay for CB transformer protection
(VIP 400, 410 or Sepam series 10)*

Forbidden closing under fault 1 NC

Auxiliary contact D or B tripping

Key locking devices
- Type R1
- Type R2.

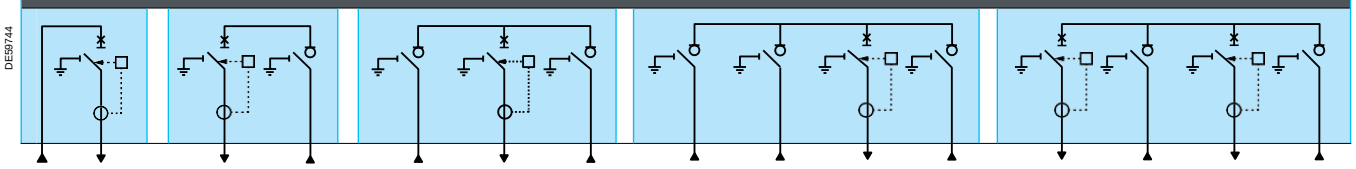
** In case of such relays, ring-core CTs are mandatory*

Detailed characteristics for each function

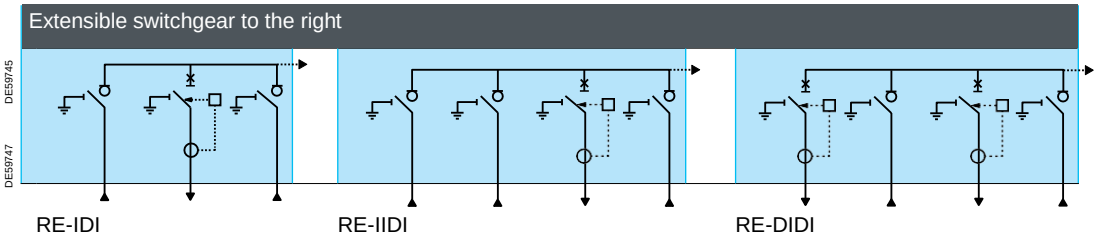
Transformer feeder 200 A with disconnecting circuit breaker (D function)

Rated voltage		**Ur**	(kV)	12	17.5	24	24	24	24	24
Short-time withstand current		**Ik**	(kA rms)	25	21	12.5	16	12.5	16	20
		tk	Duration (s)	1	1 or 3	1	1	1	1	1 or 3
Rated current busbars		**Ir**	(A)	630	630	400	400	630	630	630
Network switch (I function)										
Rated current		**Ir**	(A)	630	630	400	400	630	630	630
Breaking capacity	Active load	**Iload**	(A)	630	630	400	400	630	630	630
	Earth fault	**Ief1**	(A)	320	320	320	320	320	320	320
	Cable charging	**Icc**	(A)	110	110	110	110	110	110	110
Making capacity of switch and earthing switches		**Ima**	(kA peak)	62.5	52.5	31.25	40	31.25	40	50
Bushing				C	C	B or C	B or C	C	C	C
Transformer feeder by disconnecting circuit breaker (D function)										
Rated current		**Ir**	(A)	200	200	200	200	200	200	200
No-load transformer breaking capacity		**I3**	(A)	16	16	16	16	16	16	16
Short-circuit breaking capacity		**Isc**	(kA)	25	21	12.5	16	12.5	16	20
Making capacity		**Ima**	(kA peak)	62.5	52.5	31.25	40	31.25	40	50
Bushing				C	C	A	B or C	A	B or C	C

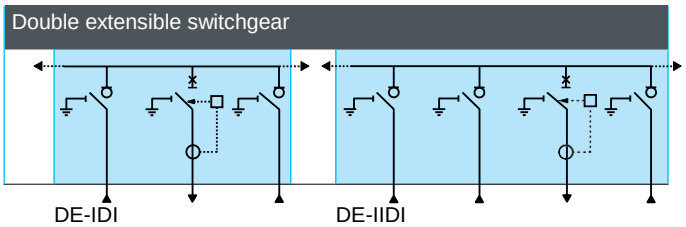
Non-extensible switchgear



Extensible switchgear to the right



Double extensible switchgear



** For NE-DI, the rated current is of 200 A for the I and D functions.*

Accessories and options (D function)

Remote operation
Motorization including shunt trip coil and auxiliary contacts circuit breaker (CB 2 NO - 2 NC and ESw 1 O/C).

Auxiliary contacts alone
For circuit breaker position indication CB 2 NO - 2 NC and ESw 1 O/C (this option is included in remote operation option).

Front door of cable connection compartment
- Bolted
- Removable with ESw interlocking
- Removable with ESw interlocking and CB interlocking.

Shunt trip coil for external tripping
- 24 Vdc
- 48/60 Vdc
- 120 Vac
- 110/125 Vdc - 220 Vac
- 220 Vdc/380 Vac.

Undervoltage coil
- 24 Vdc
- 48 Vdc
- 125 Vdc
- 110-230 Vac.

Protection relay for CB transformer protection
(VIP 40, 45, 400, 410 or Sepam series 10)

Forbidden closing under fault 1 NC

Auxiliary contact D or B tripping

Key locking devices
- Type R6
- Type R7
- Type R8.

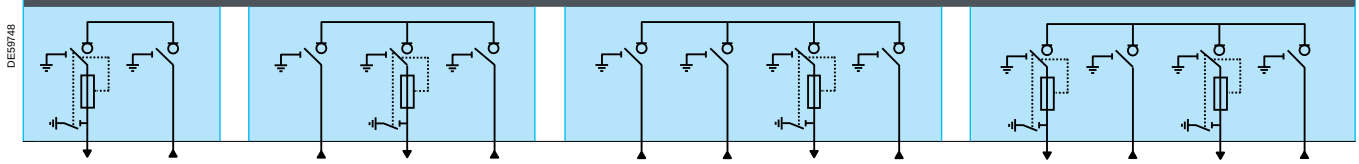
Detailed characteristics for each function

Transformer feeder with fuse-switch combinations (Q function)

Rated voltage		**Ur**	(kV)	12	12	17.5	24	24	24	24
Rated current busbars		**Ir**	(A)	630	630	630	400	400	630	630
Network switch (I function)										
Rated current		**Ir**	(A)	630	630	630	400	400	630	630
Breaking capacity	Active load	**Iload**	(A)	630	630	630	400	400	630	630
	Earth fault	**Ief1**	(A)	320	320	320	320	320	320	320
	Cable charging	**Icc**	(A)	110	110	110	110	110	110	110
Short-time withstand current		**Ik**	(kA rms)	21	25	21	12.5	16	16	20
		tk	Duration (s)	1	1	1 or 3	1	1	1	1 or 3
Making capacity of switch and earthing switches		**Ima**	(kA peak)	52.5	62.5	52.5	31.25	40	40	50
Bushing				C	C	C	B or C	B or C	C	C
Transformer feeder with fuse-switch protection (Q function)										
Rated current		**Ir**	(A)	200	200	200	200	200	200	200
No-load transformer breaking capacity		**I3**	(A)	16	16	16	16	16	16	16
Short-circuit breaking capacity		**Isc**	(kA)	21	25	21	12.5	16	16	20
Making capacity		**Ima**	(kA peak)	52.5	62.5	52.5	31.25	40	40	50
Bushing				A	A	A	A	A	A	A

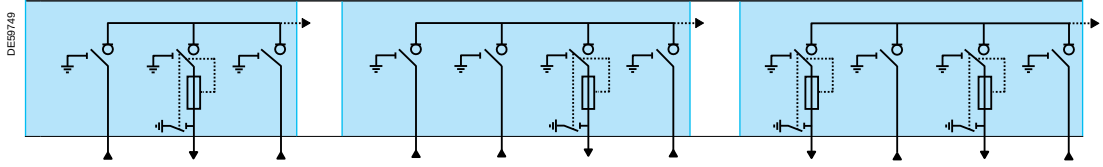
Please consider altitude and temperature when selecting Q function fuses.

Non-extensible switchgear



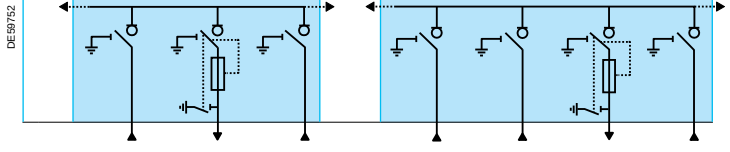
NE-QI* NE-IQI NE-IIQI NE-QIQI

Extensible switchgear to the right



RE-IQI RE-IIQI RE-QIQI

Double extensible switchgear



DE-IQI DE-IIQI

** For NE-QI, the rated current is of 200 A for the I and D functions.*

Accessories and options (Q function)

Remote operation
Motorization including auxiliary contacts fuse-switch combinations (2 NO - 2 NC).

Auxiliary contacts alone
For fuse-switch combinations position indication LBSw 2 NO - 2 NC (this option is included in remote operation option).

Auxiliary contact for fuses blown

Shunt trip coil for external tripping
- 24 Vdc
- 48/60 Vdc
- 120 Vac

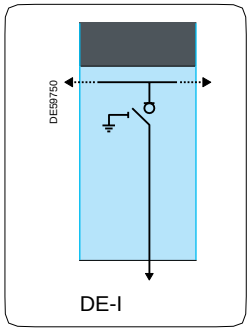
Undervoltage coil
- 24 Vdc
- 48 Vdc
- 125 Vdc
- 110-230 Vac.

Key locking devices
- Type R6
- Type R7
- Type R8.
- 110/125 Vdc - 220 Vac
- 220 Vdc/380 Vac.

Detailed characteristics for each function

Extensible modules (DE-I function)

Rated voltage		**Ur**	(kV)	12	17.5	24	24	24	24
Short-time withstand current		**Ik**	(kA rms)	25	21	12.5	16	16	20
		tk	Duration (s)	1	1 or 3	1	1	1	1 or 3
Rated current busbars		**Ir**	(A)	630	630	630	630	630	630
Network switch (DE-I function)									
Rated current		**Ir**	(A)	630	630	400	400	630	630
Breaking capacity	Active load	**Iload**	(A)	630	630	400	400	630	630
	Earth fault	**Ief1**	(A)	320	320	320	320	320	320
	Cable charging	**Icc**	(A)	110	110	110	110	110	110
Making capacity of switch and earthing switches		**Ima**	(kA peak)	62.5	52.5	31.25	40	40	50
Bushing				C	C	B or C	B or C	C	C



DE-I

Accessories or options (I function)

Remote operation
Motorization including auxiliary contacts (LBSw 2 NO - 2 NC and ESw 1 O/C).

Auxiliary contacts alone
For main switch position indication LBSw 2 NO - 2 NC and ESw 1 O/C (this option is included in remote operation option).

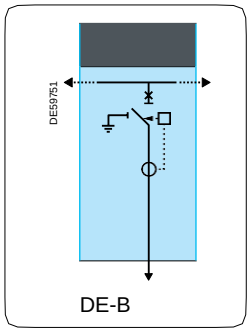
Front door of cable connection compartment
- Bolted
- Removable with ESw interlocking
- Removable with ESw interlocking and LBSw interlocking.

Self-powered fault passage and load current indicators
- Flair 21D
- Flair 22D
- Flair 23D
- Flair 23DM
- Amp 21D.

Key locking devices
- Type R1
- Type R2.

Network points with 630 A disconnecting circuit breaker (DE-B function)

Rated voltage	**Ur**	(kV)	12	17.5	24	24
Short-time withstand current	**Ik**	(kA rms)	25	21	16	20
	tk	Duration (s)	1	1 or 3	1	1 or 3
Rated current busbars	**Ir**	(A)	630	630	630	630
Network disconnecting circuit breaker (DE-B function)						
Rated current	**Ir**	(A)	630	630	630	630
Short-circuit breaking capacity	**Isc**	(kA)	25	21	16	20
Making capacity	**Ima**	(kA peak)	62.5	52.5	40	50
Bushing			C	C	C	C



DE-B

Accessories and options

Remote operation
Motorization including shunt trip coil and auxiliary contacts circuit breaker (CB 2 NO - 2 NC and ESw 1 O/C).

Auxiliary contacts alone
For circuit breaker position indication CB 2 NO - 2 NC and ESw 1 O/C (this option is included in remote operation option).

Front door of cable connection compartment
- Bolted
- Removable with ESw interlocking
- Removable with ESw interlocking and CB interlocking.

Shunt trip coil for external tripping
- 24 Vdc
- 48/60 Vdc
- 120 Vac
- 110/125 Vdc - 220 Vac
- 220 Vdc/380 Vac.

Undervoltage coil
- 24 Vdc
- 48 Vdc
- 125 Vdc
- 110-230 Vac.

Protection relay for CB transformer protection
(VIP 40, 400 or Sepam series 10)

Forbidden closing under fault 1 NC

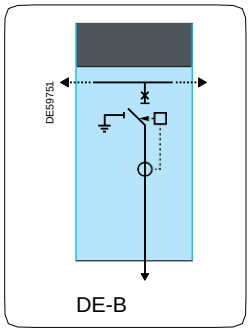
Auxiliary contact D or B tripping

Key locking devices
- Type R1
- Type R2.

Detailed characteristics for each function

Transformer feeder 200 A with disconnecting circuit breaker (DE-D function)

Rated voltage	**Ur**	(kV)	12	17.5	24	24	24
Short-time withstand current	**Ik**	(kA rms)	25	21	12.5	16	20
	tk	Duration (s)	1	1 or 3	1	1	1 or 3
Rated current busbars	**Ir**	(A)	630	630	400	400	630
200 A disconnecting circuit breaker (DE-D function)							
Rated current	**Ir**	(A)	200	200	200	200	200
No-load transformer breaking capacity	**I3**	(A)	16	16	16	16	16
Short-circuit breaking capacity	**Isc**	(kA)	25	21	12.5	16	20
Making capacity	**Ima**	(kA peak)	62.5	52.5	31.25	40	50
Bushing			C	C	A	B or C	C



DE-B

Accessories and options

Remote operation
Motorization including shunt trip coil and auxiliary contacts circuit breaker (CB 2 NO - 2 NC and ESw 1 O/C).

Auxiliary contacts alone
For circuit breaker position indication CB 2 NO - 2 NC and ESw 1 O/C (this option is included in remote operation option).

Front door of cable connection compartment
- Bolted
- Removable with ESw interlocking
- Removable with ESw interlocking and CB interlocking.

Shunt trip coil for external tripping
- 24 Vdc
- 48/60 Vdc
- 120 Vac
- 110/125 Vdc - 220 Vac
- 220 Vdc/380 Vac.

Undervoltage coil
- 24 Vdc
- 48 Vdc
- 125 Vdc
- 110-230 Vac.

Protection relay for CB transformer protection
(VIP 40, 45, 400 or Sepam series 10)

Forbidden closing under fault 1 NC

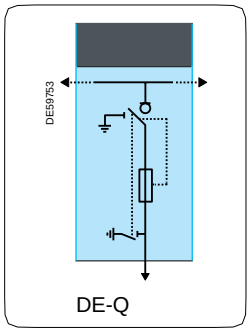
Auxiliary contact D or B tripping

Key locking devices
- Type R6
- Type R7
- Type R8.

Extensible modules (DE-Q function)

Rated voltage	**Ur**	(kV)	12	12	17.5	24	24	24
Rated current busbars	**Ir**	(A)	630	630	630	630	630	630
Fuses (DE-Q function)								
Rated current	**Ir**	(A)	200	200	200	200	200	200
Off-load transformer laking capacity	**I3**	(A)	16	16	16	16	16	16
Short-circuit breaking capacity	**Isc**	(kA)	21	25	21	12.5	16	20
Making capacity	**Ima**	(kA peak)	52.5	62.5	52.5	31.25	40	50
Bushing			A	A	A	A	A	A

Please consider altitude and temperature when selecting Q function fuses.



DE-Q

Accessories and options

Remote operation
Motorization including auxiliary contacts fuse-switch combinations (2 NO - 2 NC).

Auxiliary contacts alone
For fuse-switch combinations position indication LBSw 2 NO - 2 NC (this option is included in remote operation option).

Auxiliary contact for fuses blown

Shunt trip coil for external tripping
- 24 Vdc
- 48/60 Vdc
- 120 Vac
- 110/125 Vdc - 220 Vac
- 220 Vdc/380 Vac.

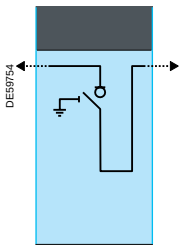
Undervoltage coil
- 24 Vdc
- 48 Vdc
- 125 Vdc
- 110-230 Vac.

Key locking devices
- Type R6
- Type R7
- Type R8.

Detailed characteristics for each function

Bus coupler by switch-disconnector (DE-IC function)

Rated voltage		**Ur**	(kV)	12	17.5	24	24
Short-time withstand current		**Ik**	(kA rms)	25	21	16	20
		tk	Duration (s)	1	1 or 3	1	1 or 3
Rated current busbars		**Ir**	(A)	630	630	630	630
Network switch (DE-I function)							
Rated current		**Ir**	(A)	630	630	630	630
Breaking capacity	Active load	**Iload**	(A)	630	630	630	630
	Earth fault	**Ief1**	(A)	320	320	320	320
	Cable charging	**Icc**	(A)	110	110	110	110
Making capacity of switch and earthing switches		**Ima**	(kA peak)	62.5	52.5	40	50



DE-IC

Accessories and options

Remote operation
Motorization including auxiliary contacts (LBSw 2 NO - 2 NC and ESw 1 O/C).

Auxiliary contacts alone
For switch position indication LBSw 2 NO - 2 NC and ESw 1 O/C (this option is included in remote operation option).

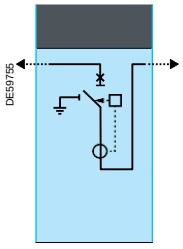
Front door of cable connection compartment
- Bolted
- Removable with ESw interlocking
- Removable with ESw interlocking and LBSw interlocking.

Key locking devices
- Type R1
- Type R2.

With or without earthing switch

Bus coupler by 630 A disconnecting circuit breaker (DE-BC function)

Rated voltage	**Ur**	(kV)	12	17.5	24	24
Short-time withstand current	**Ik**	(kA rms)	25	17.5	16	20
	tk	Duration (s)	1	1 or 3	1	1 or 3
Rated current busbars	**Ir**	(A)	630	630	630	630
Network disconnecting circuit breaker (DE-B function)						
Rated current	**Ir**	(A)	630	630	630	630
Short-circuit breaking capacity	**Isc**	(kA)	25	21	16	20
Making capacity	**Ima**	(kA peak)	62.5	52.5	40	50



DE-IC

Accessories and options

Remote operation
Motorization including shunt trip coil and auxiliary contacts circuit breaker (CB 2 NO - 2 NC and ESw 1 O/C).

Auxiliary contacts alone
For circuit breaker position indication CB 2 NO - 2 NC and ESw 1 O/C (this option is included in remote operation option).

Front door of cable connection compartment
- Bolted
- Removable with ESw interlocking
- Removable with ESw interlocking and CB interlocking.

Shunt trip coil for external tripping
- 24 Vdc
- 48/60 Vdc
- 120 Vac
- 110/125 Vdc - 220 Vac
- 220 Vdc/380 Vac.

Undervoltage coil
- 24 Vdc
- 48 Vdc
- 125 Vdc
- 110-230 Vac.

Protection relay for CB transformer protection
(VIP 400, 410 or Sepam series 10)

Forbidden closing under fault 1 NC

Auxiliary contact D or B tripping

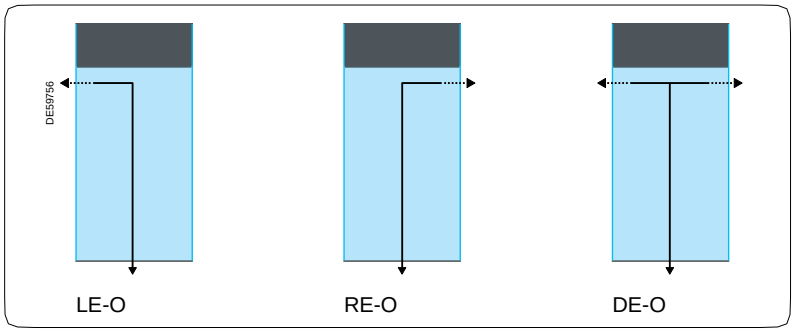
Key locking devices
- Type R6
- Type R7
- Type R8.

With or without earthing switch

Detailed characteristics for each function

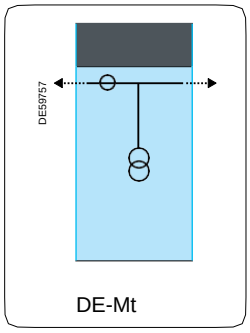
Cable connection cubicles LE-O, RE-O, DE-O

Rated voltage	**Ur**	(kV)	12	12	17.5	17.5	24	24	24
Rated current busbars	**Ir**	(A)	630	630	630	630	630	630	630
Cable connection (O function)									
Rated current	**Ir**	(A)	200	630	200	630	200	630	630
Short-time withstand current	**Ik**	(kA rms)	25	25	21	21	16	16	20
	tk	Duration (s)	1	1	3	3	1	1	1 or 3
Bushing			C	C	C	C	C	C	C



Metering module DE-Mt

Rated voltage	**Ur**	(kV)	12	17.5	24	24
Rated current busbars	**Ir**	(A)	630	630	630	630
MV metering (DE-Mt function)						
Rated current	**Ir**	(A)	630	630	630	630
Short-time withstand current	**Ik**	(kA rms)	25	21	16	20
	tk	Duration (s)	1	1 or 3	1	1 or 3
Cubicle internal arc withstand			16 kA 1 s	16 kA 1 s	16 kA 1 s	16 kA 1 s



Voltage transformers configuration
Schneider Electric models or DIN 42600 type section 9.
2 phase-phase VT, 2 phase-earth VT, 3 TT phase-earth VT.
Fitted right or left of the CT's.
Optional fuse protection.

Current transformers configuration
Schneider Electric models or DIN 42600 type section 8.
2 CT or 3 CT.

Accessories and options
- ■ Additional low voltage unit
- ■ Door key locking devices
- □ Type R7 tubular.

Transformer protection by fuse-switches

Fuse replacement
IEC recommendations stipulate that when a fuse has blown, **all three fuses must be replaced.**

Characteristics

Ratings for fuses for transformer protection depend, among other points, on the following criteria:
b service voltage
b transformer rating
b thermal dissipation of the fuses
b fuse technology (manufacturer).

Type of fuse may be installed:
b **Fusarc CF type:** according to IEC 60282-1 dimensional standard, with or without striker.

Example (using the selection table below) general case, for protection of a 400 kVA transformer at 10 kV, **Fusarc CF** fuses with a rating of 50 A are chosen.

Correct operation of the RM6 is not guaranteed when using fuses from other manufacturers.

Selection table

(Rating in A, no overload, – 25°C < θ < 40°C)

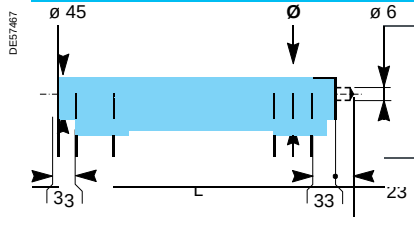
Fuse type Fusarc CF and SIBA (1) (General case, IEC 60282-1 standard, IEC 62271-105 (to replace IEC 60420) and DIN 43625 standard)

Operating voltage (kV)	Transformer rating (kVA) 50	75	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	Rated voltage (kV)
3	20	31.5	40	50	50	63	80	100	125 (2)	160 (1) (2)							12
3.3	20	25	40	40	40	63	80	80	125 (2)	125 (2)	160 (1) (2)						
4.2	20	25	25	40	50	50	63.5	80	80	100	125 (2)	160 (1) (2)					
5.5	16	20	25	25	40	40	50	63	80	80	100	125 (2)	160 (1) (2)				
6	16	20	25	25	31.5	40	50	50	63	80	100	125 (2)	160 (1) (2)				
6.6	10	20	25	25	31.5	40	50	50	63	63	80	100	125 (2)	160 (1) (2)			
10	10	10	16	20	25	25	31.5	40	50	50	63	80	100	125 (2)			
11	10	10	16	20	20	25	25	40	40	50	50	63	80	100	125 (2)		
13.8	10	10	10	16	16	20	25	31.5	40	40	50	50	63	100 (2)			24
15	10	10	10	10	16	20	25	31.5	31.5	40	50	50	63	80	100 (2)		
20	10	10	10	10	16	16	20	25	25	31.5	40	40	63	63	80	100 (2)	
22	10	10	10	10	10	16	16	20	25	31.5	40	40	50	63	80	100 (2)	

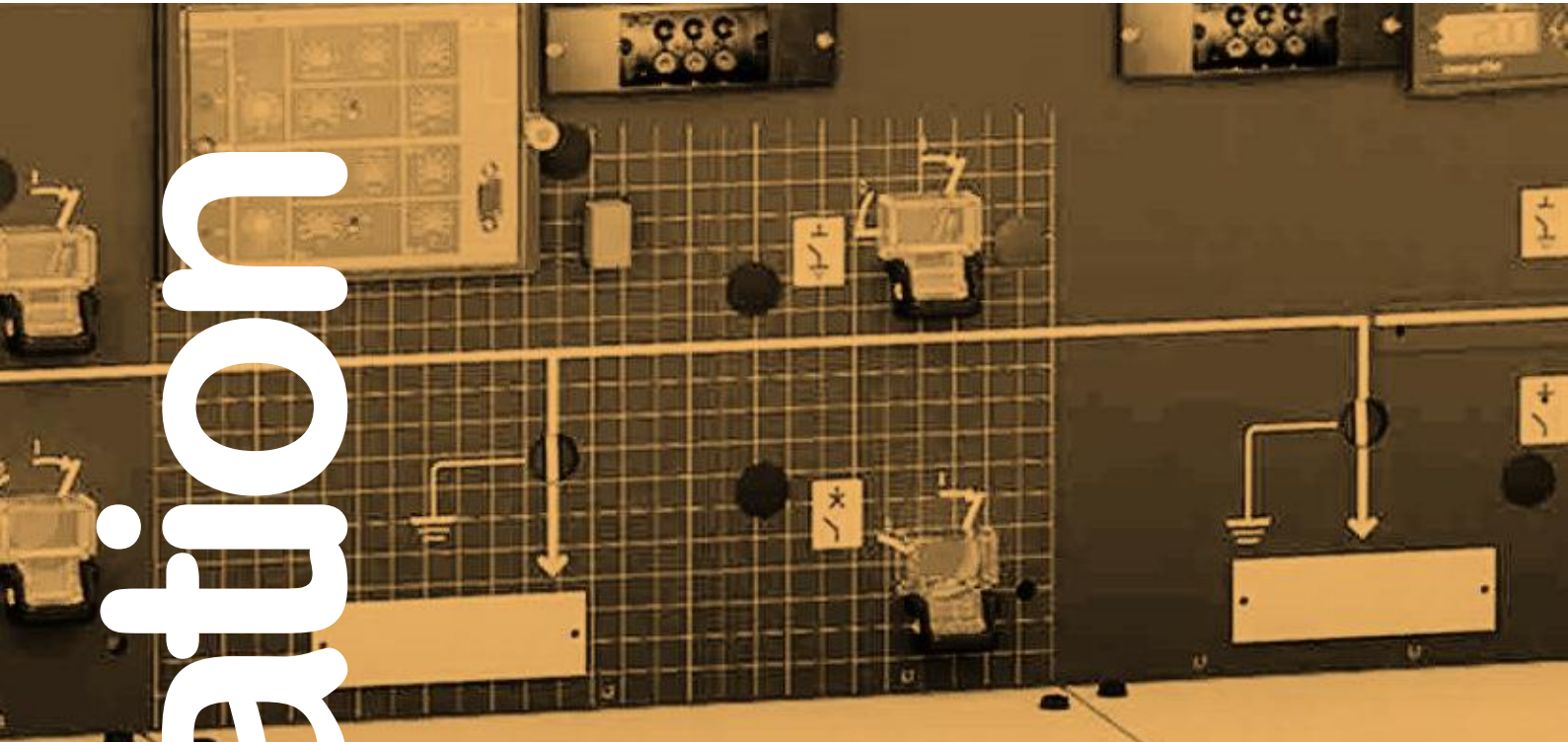
(1) SIBA type fuses at 160 A/12 kV reference 30-020-13.
(2) In the case of an external trip system (e.g.: overcurrent relay)
A calculation must be carried out to guarantee coordination of fuse-switches – Please consult us.
For any values not included in the table, please consult us.
In the case of an overload beyond 40°C, please consult us.

Fuses dimensions

Fusarc CF



Ur (kV)	Ir (A)	L (mm)	Ø (mm)	Mass (kg)
12	10 to 25	292	50.5	1.2
	31.5 to 40	292	55	1,8
	50 to 100	292	76	3.2
	125	442	86	5
24	10 to 25	442	50.5	1.7
	31.5 to 40	442	55	2.6
	50 to 80	442	76	4.5
	100	442	86	5.7



installation

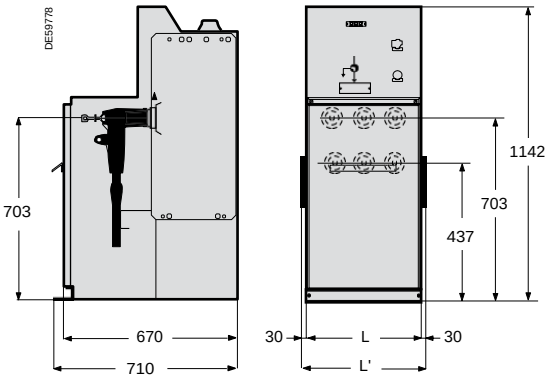
installation

Dimensions and installation conditions, civil works...

Dimensions and installation

1 function modules

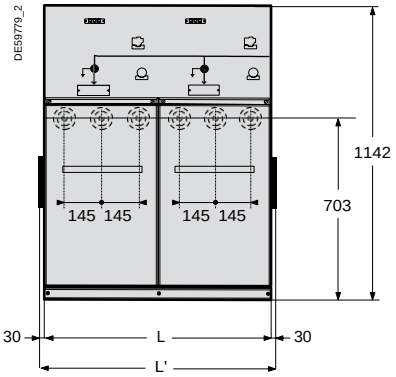
	Function	Weight (kg)	Length (mm)
Regular RM6			
NE	I	135	L = 572
	D		L = 572
	B		L = 572
DE	I	135	L' = 472 + 30 + 30 = 532
	D		L' = 572 + 30 + 30 = 632
	B		L' = 572 + 30 + 30 = 632
	Q	185	L' = 472 + 30 + 30 = 532
RE	O	135	L' = 472 + 30 = 502
LE			L' = 472 + 30 = 502
DE			L' = 472 + 30 + 30 = 532
DE	Ic	145	L' = 572 + 30 + 30 = 632
	Bc		L' = 572 + 30 + 30 = 632



2 functions modules

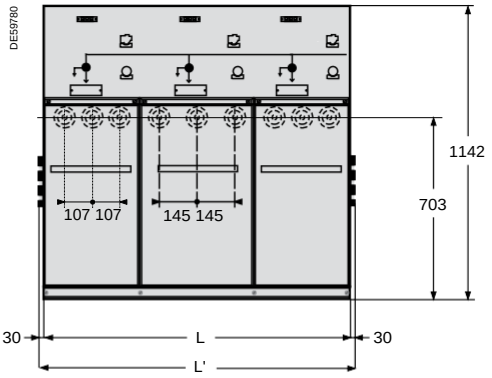
	Function	Weight (kg)	Length (mm)*
Regular RM6			
NE	Q I	180	L = 829
	D I, B I		L = 829
	I I	155	L = 829
RE	I I	155	L' = 829 + 30 = 859
RM6 Free Combination			
NE			L = 1052
LE			L' = 1052 + 30 = 1082
RE			L' = 1052 + 30 = 1082
DE			L' = 1052 + 30 + 30 = 1112

** Dimensions only for RM6 Free combination*



3 functions modules

	Function	Weight (kg)	Length (mm)
Regular RM6			
NE	I Q I	275	L = 1186
	I I I	240	L = 1186
	I D I		L = 1186
	I B I	250	L = 1186
RE	I Q I	275	L' = 1186 + 30 = 1216
	I I I	240	L' = 1186 + 30 = 1216
	I D I		L' = 1186 + 30 = 1216
	I B I	250	L' = 1186 + 30 = 1216
DE	I Q I	275	L' = 1186 + 30 + 30 = 1246
	I I I	240	L' = 1186 + 30 + 30 = 1246
	I D I		L' = 1186 + 30 + 30 = 1246
	I B I	250	L' = 1186 + 30 + 30 = 1246
RM6 Free Combination			
NE			L = 1532
LE			L' = 1532 + 30 = 1562
RE			L' = 1532 + 30 = 1562
DE			L' = 1532 + 30 + 30 = 1592
RM6 Free Combination with bus coupler			
RE			L' = 1532 + 30 = 1562
DE			L' = 1532 + 30 + 30 = 1592



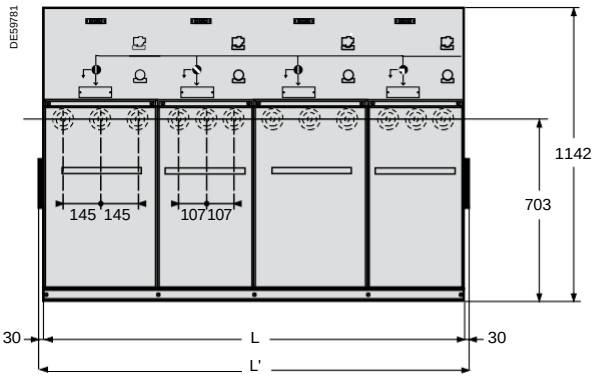
Type of tank

NE: non-extensible
RE: extensible to the right
LE: extensible to the left
DE: extensible module to the right or left (one function)

Dimensions and installationconditions

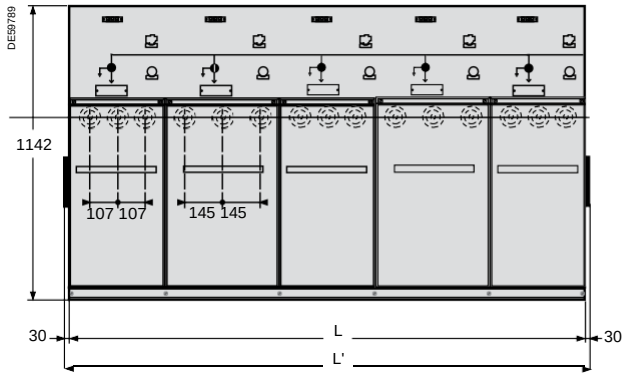
4 functions modules

	Function	Weight (kg)	Length (mm)
Regular RM6			
NE	I I Q I	355	L = 1619
	I I I I	320	L = 1619
	I I D I	330	L = 1619
	I I B I	330	L = 1619
	Q I Q I	390	L = 1619
	B I B I	340	L = 1619
RE	I I Q I	355	L' = 1619 + 30 = 1649
	I I I I	320	L' = 1619 + 30 = 1649
	I I D I	330	L' = 1619 + 30 = 1649
	I I B I	330	L' = 1619 + 30 = 1649
	Q I Q I	390	L' = 1619 + 30 = 1649
	D I D I	340	L' = 1619 + 30 = 1649
DE	I I Q I	355	L' = 1619 + 30 + 30 = 1679
	I I I I	320	L' = 1619 + 30 + 30 = 1679
	I I D I	330	L' = 1619 + 30 + 30 = 1679
	I I B I	330	L' = 1619 + 30 + 30 = 1679



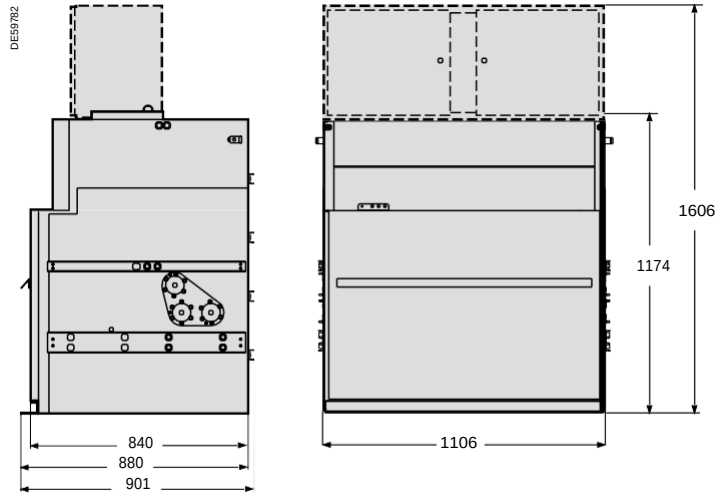
5 functions modules

	Function	Weight (kg)	Length (mm)
Regular RM6			
NE	IDIDI	470	L = 2000
	IQIQI	520	L = 2000
	IBIQI	495	L = 2000
RE	IDIDI	475	L' = 2000 + 30 = 2030
	IIIII	455	L' = 2000 + 30 = 2030
DE	IDIDI	480	L' = 2000 + 30 + 30 = 2060
	IIIQI	495	L' = 2000 + 30 + 30 = 2060

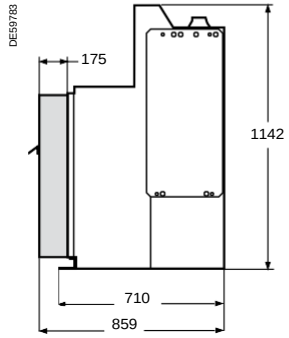


Metering cubicle

	Function	Weight (kg)	Length (mm)
RM6 metering cubicle with LV compartment			
DE	DE-Mt	420	L = 1106
RM6 metering cubicle without LV compartment			
DE	DE-Mt	400	L = 1106



Arrester option

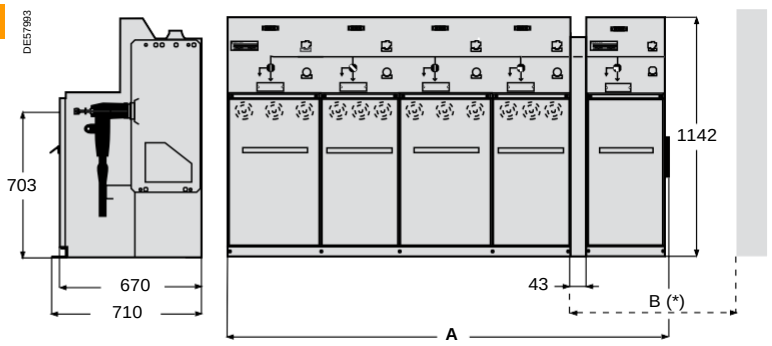


Dimensions and installationconditions

Dimensions of RM6 REs with an extension module

Nb of RE Units	DE signal Unit type A	Length (mm)
RM6 standard functional units		
2 units	Type 1	1374
	Type 2	1474
3 units	Type 1	1731
	Type 2	1831
4 units	Type 1	2164
	Type 2	2264
RM6 Free Combination functional units		
2 units	Type 1	1597
	Type 2	1697
3 units	Type 1	2077
	Type 2	2177

Type 1: DE-I, DE-Q, DE-O
Type 2: DE-B, DE-D, DE-IC, DE-BC



(*) B = 900 for 1 DE function
B = 1600 for 3 DE functions
B = 2000 for 4 DE functions
These dimensions can be reduced under special conditions, consult us.

For reminder see the only one restriction of installation on standard range (see page A-5). For standard range, as a rule,the installation is made from left to right by leaving of the heaviest station.

Layout

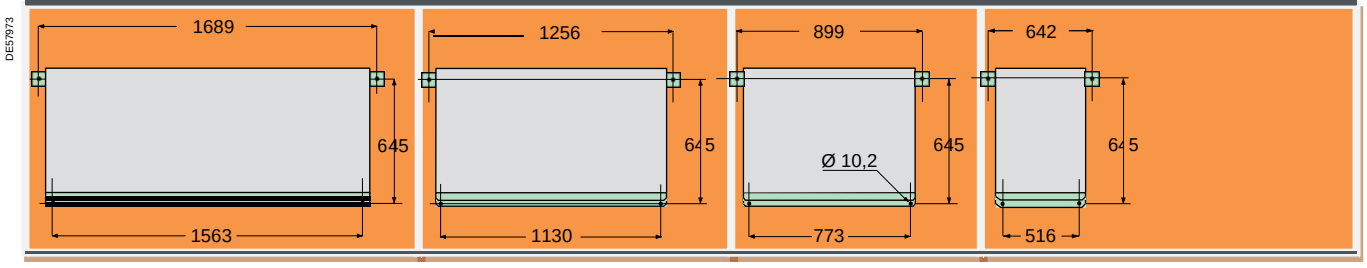
Floor mounting

The RM6 is supported by 2 metal feet with holes for mounting:
b on a flat floor fitted with trenches, passages or ducts
b on concrete footing
b on studs
b on metal rails etc.

Possibilities to add cubicle	1st position	2nd position	3rd position	Last position
Ø	RE-x	DE-x	DE-x	LE-x
RE-x*	DE-x	DE-x	LE-x	Ø

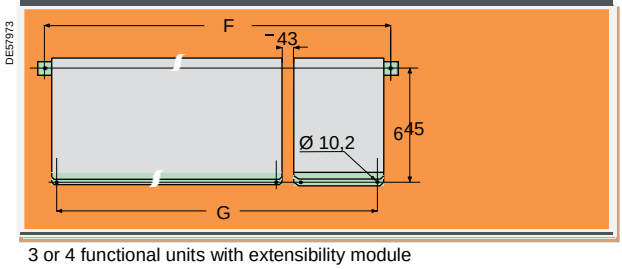
** It is not possible to add RE-x if switchboard with a station DE is in first position*

Standard non-extensible RM6 (top view)



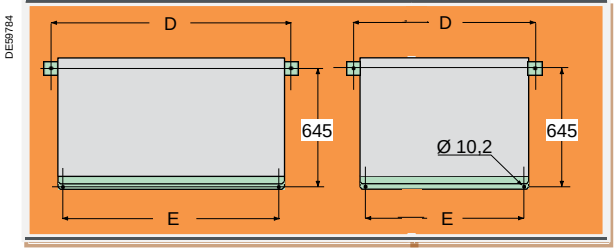
4 functional units | 3 functional units | 2 functional units | 1 functional unit

Extensible RM6 (top view)



3 or 4 functional units with extensibility module

RM6 Free Combination (top view)



3 functional units | 2 functional units

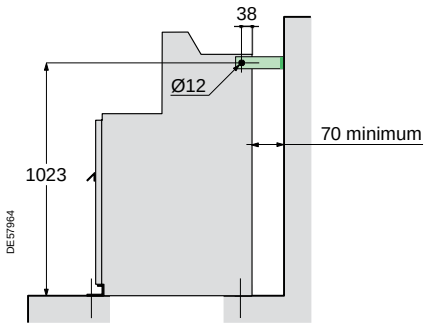
Nb of RE units	DE single unit type	Length (mm) F	G
RM6 standard functional units			
2 units	Type 1	1414	1288
	Type 2	1514	1388
3 units	Type 1	1771	1645
	Type 2	1871	1745
4 units	Type 1	2204	2078
	Type 2	2304	2178
RM6 Free Combination functional units			
2 units	Type 1	1637	1511
	Type 2	1737	1611
3 units	Type 1	2117	1991
	Type 2	2217	2091

Nb of units	Length (mm) D	E
RM6 Free Combination functional units		
2 units	1122	996
3 units	1602	1476

Civil works

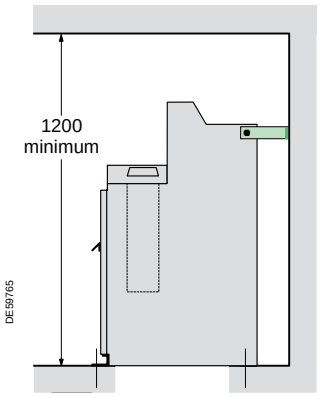
Wall mounting

There are two holes allowing the unit to be fixed on the wall as well as mounted on the floor.



Ceiling clearance

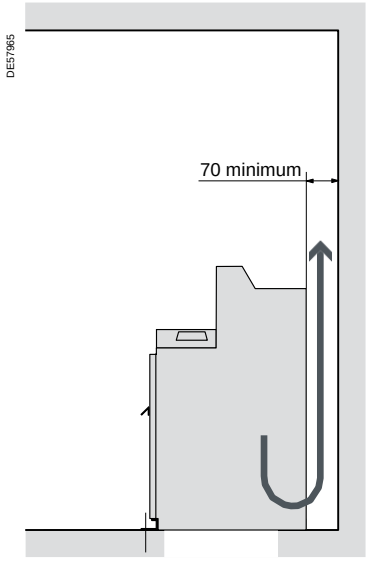
For substations with fuse-holders, provide a minimum ceiling clearance of 1200 mm.



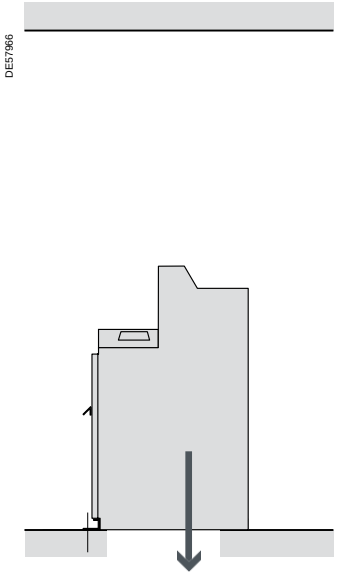
Installation of the substation for internal arc withstand

When there is a requirement for installations with protection against internal arc faults, refer to the following diagrams.

Gas removal to the rear



Gas removal to the bottom

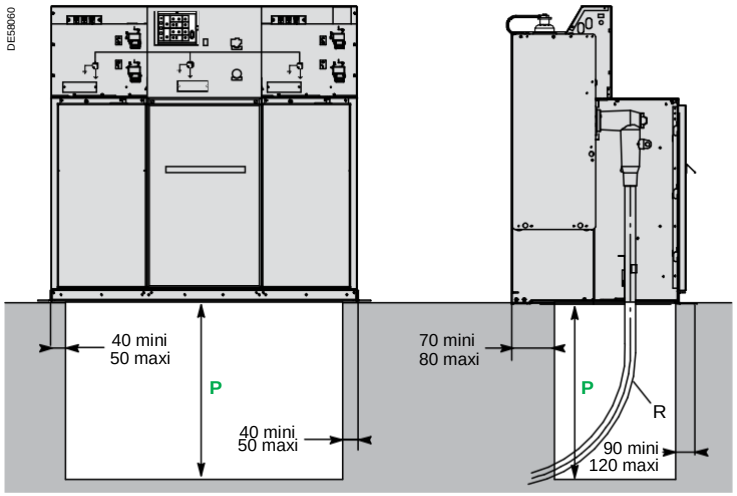


N.B.: *parts for guiding the gases to vent openings and cooling walls are not part of the switchgear supply. These must be adapted to each specific case.*

Civil works

For connection to “network” or “transformer” via circuit breaker

The “network” cables can be run either:
b through trenches, passages, ducts
b through the left or the right side.

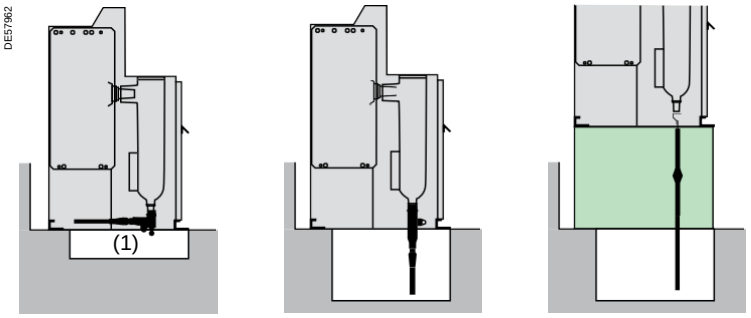


Trench depth P or RM6 without plinth
Note: trench depths can be reduced and sometimes eliminated by adding a plinth.

Dry insulation	Single	y 150	500	400		400	
		185 to 300	600	520		520	
	Three	y 150	550	660		660	
		185	650	770		770	
Paper impregnated non-draining type	Single	y 150	500		580		580
		185 to 300	675		800		800
	Three	y 95	635		750		750
		150 to 300	835		970		970

For “transformer” connection via fuse-switch

The cross-sections of “transformer” cables are generally smaller than those of the “network” cables. All the cables are then run through the same space. When straight MV connectors are used, the depth P indicated below can be greater than that of the “network” cables.



Cable insulation	Cable	Cross-section (mm²)	Bending radius	Plug-in Elbow connector	Plug-in Straight connector	Disconnectable (2) P
Dry insulation	Single	16 to 35	335	100	520	335
		50 to 70	400	100	520	440
		95 to 120	440	100	550	440
	Three	35	435		520	725
		50 to 70	500		520	800
		95	545		550	860

(1) Leave a clearance of 100 mm
(2) 520 mm plinth must be used

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As the standards, specifications and designs change from time to time, please ask for confirmation of the information given in this publication.

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