FGECO ELECTRIC

SF6 RMU
Air insulated
Data sheet

fgeco.co

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SF6 RMU -Air insulated

A. Overview

The FGECO -12/24 switchgear is a modular, metal enclosed SF6 air insulated switchgear up to 24kV distribution network. It adopts standardized devices such as load switches, disconnector switches, Vacuum circuit breaker earthing switches, transformers and secondary element. Through the combination of these standardized components to achieve and meet the requirements of different customers, so that it can be widely used in different situations.

B. Structures

Low-pressure chamber
Busbar chamber
Cable chamber
The switch equipment room with operating mechanism

C. key benefits

Completely sealed system
Safe and reliable operation
Smart grid enabled
Compact design with small footprint and low physical weight

D. Normal service condition

FGECO switching equipment is used under the normal indoor conditions specified
If the operating conditions are not consistent with the regulations, it is required to negotiate with the manufacturer.

Ambient air temperature

Maximum temperature: +45°C (+50°C as option)
Average temperature of maximum 24 hours: +45°C (+50°C as option)
Minimum temperature: -25°C

Altitude

Maximum value:1000m
Humidity conditions
Mean value of relative humidity within 24 hours:≤95%
Average monthly relative humidity:<90%

Altitude

Maximum value:1000m
Humidity conditions
Mean value of relative humidity within 24 hours:≤ 95%
Average monthly relative humidity:<90%

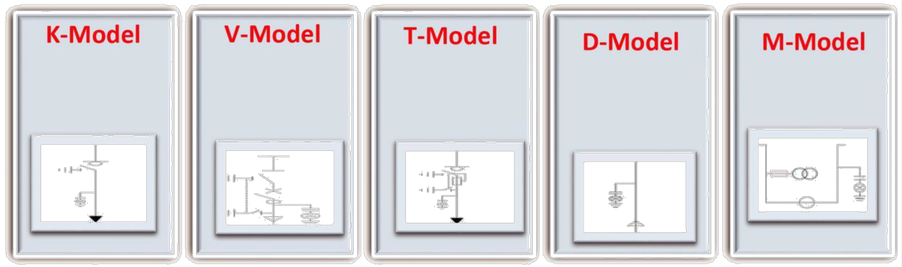
Pollution

The ambient air is not obviously contaminated by dust, smoke, corrosiveness and / or combustible gases or salt fog.

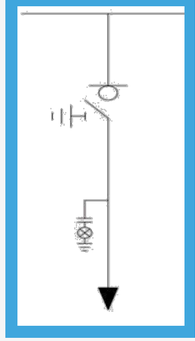
Technical Parameters

TECHNICAL DATA			
Type designation		CE8-12	CE8-24
Standart		IEC62271-200	
Internal Arc Classification		AFLR Up to 25KA/1 sec	
Rated voltage (KV)		12KV	24KV
Operating voltage (KV)		11KV	22KV
Rated lighting impulse withstand voltage (BIL) Up (KV)	Phase to phase / Phase to earth	125	
	Across the isolating distance	145	
Rated power-frequency withstand voltage (1min) Up (KV)	Phase to phase / Phase to earth	50	
	Across the isolating distance	65	
Rated frequency Fr.(HZ)		50	
Rated current Ir.(A)	Main bus-bar	630	
Rated short-time withstand current (KA)	Main circuit	25	
	Earthing circuit	25	
Rated duration of short-circuit (Sec.)		4	
		62.5	
Level of protection		IP4X	
Accessories		Motorized Module & Manometer Auxiliary Contact & Short circuit and Earthing Fault Indicator	

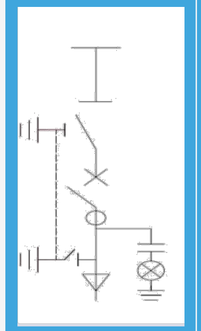
Basic Configuration



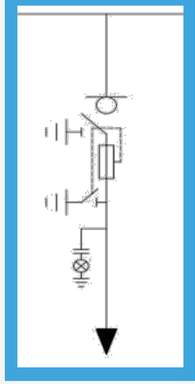
K Model

Plan	Function	Standard Configuration	Optionak Configuration
	Three-position load break switch,i.e., load break switch has three work stations of open-close-earthing, mainly applied to the connection, control and breanch of the cable incoming and outgoing of the rign network	• Busbar • Three-position load break switch • Manual operating mechanism • Capacitive voltage indicator • Interlocking device • Manometer • Earthing bar • Enclosure • Cable baseplate with cable support • Operating handle	• Motorized operating mechanism • Short-circuit and ear thing fault indicator • Charged blocking device for incoming ear thing • Current transformer • Voltage transformer (replacing cable connection) • Pressure releasing channel • Surge arrester • Sealing plates for left and right end faces

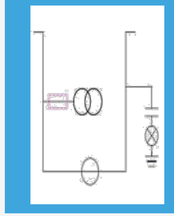
V Model

Plan	Function	Standard Configuration	Optionak Configuration
	Circuit breaker unit, i.e. the combination of three-position loead break switch, vacuum circuit breaker and earthing switch; reliable interlocking devices are fitted between vacuum circuit breaker and three-position load break switch, between three-position load break switch and earthing; circuit breaker unit has a current transforme and protective relay	• Busbar • Three-position load break switch • Manual operating mechanism • Earthing Switch • Circuit Breaker • Capacity voltage indicator • Relay protection • device • Interlocking device • Manometer • Earthing bar • Enclosure • Cable baseplate with cable support • Operating handle	• Motorized operating mechanism • Short-circuit and ear thing fault indicator • Pressure releasing channel • Surge arrester • Current transformer meter • Cover plates for left and right end faces

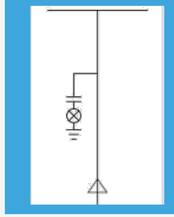
T Model

Plan	Function	Standard Configuration	Optionak Configuration
	Switch-fuse unit, i.e., load break switch and fuse, mainly applied to the control and protection of small and middle-sized transofrmers	• Busbar • Three-position load break switch • Manual operating mechanism • Earthing switch • Capacitive voltage indicator • Fuse trip with indicator • Fuse base • Interlocking device • Manometer • Earthing bar • Enclosure • Cable baseplate with cable support • Operating handle	• Short-circuit and earthing fault indicator • Voltage transformer (replacing cable • connection) Pressure releasing • channel • Surge arrester • Trip coil • Emergency trip device • Sealing plates for left and right end faces

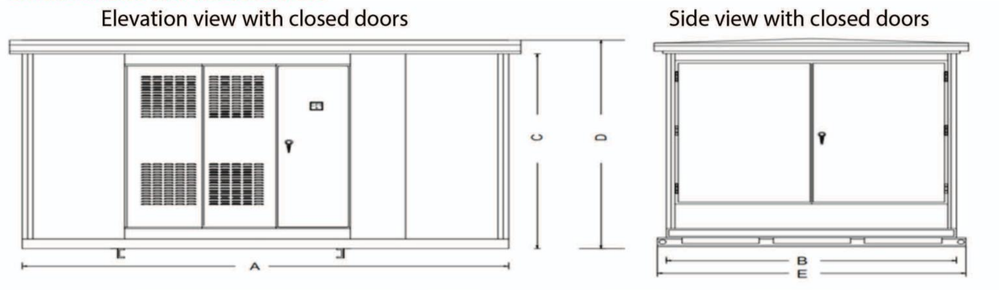
M Model

Plan	Function	Standard Configuration	Optionak Configuration
	The metering unit, current transformer of different ratios can be provided as required	• Busbar • Capacity voltage indicator • Current transformer • Volatage transformer • Earthing busbar • Cable baseplate with cable support • Operating handle	• Meter

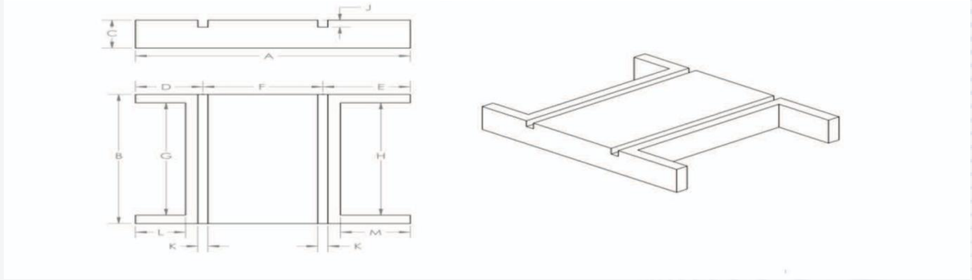
D Model

Plan	Function	Standard Configuration	Optionak Configuration
	Cable feed unit, without the switch, convenient to realize incoming/outgoing axtension or arrester connection. Used for bable and busbar connection, or connect busbar with load break switch fitted on top	• Busbar • Bushing • Capacitive voltage indicator • Earthing busbar • Enclosure • Cable baseplate with cable support	• Short Circuit and earthing fault indicator • Current transformer • Voltage transformer • Pressure relief channel • Surge arrester • Meter • Sealing plates for left and right end faces

CE9 Design Standards Dimensions for kiosk 12 KV



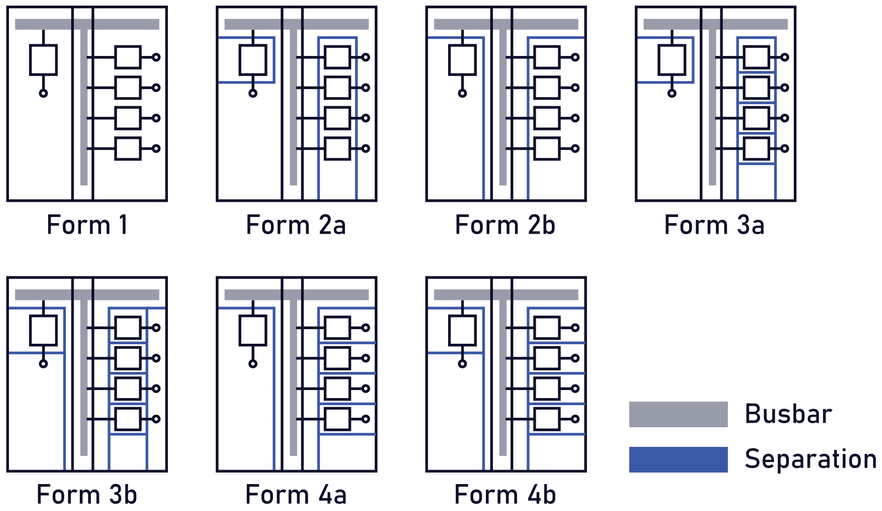
Rated Voltage	24 KV					
Transformer Rating (KVA)	100	200 Up to 300	500	800 Up to 1000	1500	2000
A in mm	3060	3400	3500	3690	3790	3950
B in mm	2200	2200	2200	2400	2700	2900
C in mm	2490	2065	2490	2490	2465	2490
D in mm	2874	2874	2874	2885	2900	2900
E in mm	2400	2400	2400	2600	2900	2900



Concrete Foundation (12k) Dimensions												
Rate (KVA)	Dimensions (mm)											
	A	B	C	D	E	F	G	H	J	K	L	M
100	3060	2200	500	675	1185	1200	1900	1900	125	100	500	1010
200-300	3400	2200	500	675	1185	1540	1900	1900	125	100	500	1010
500	3500	2200	500	675	1185	1640	1900	1900	125	100	500	1010
800-1000	3690	2400	500	700	1210	1780	2100	2100	125	140	500	1010
1500	3790	2700	500	700	1210	1880	2400	2400	125	140	500	1010
2000	3890	2600	600	800	1310	1980	2500	2500	225	240	600	600

Separation Forms

Technical Data



Form	IEC Standard Definition	Specific Recommendations
1	No Internal separation	Protection over busbar for customer safety
2a	Separation of busbars from the functional units	Terminals not separated from busbars
2b	Separation of busbars from the functional units	Terminals separated from busbars
3a	Separation of busbars from the functional units and of all functional units from each other	Terminals not separated from busbars
3b	Separation of busbars from the functional units and of all functional units from each other	Terminals separated from busbars
4a	Separation of busbars from the functional units and of all functional units from each other, also separation of terminals from any functional unit	Terminals in the same compartment as associated functional units
4b	Separation of busbars from the functional units and of all functional units from each other, also separation of terminals from any functional unit	Terminals are not in the same compartment as the associated functional units

Ingress Protection (IP)

Standard IEC 60529 (February 2001) indicates the degree of protection provided by electrical equipment enclosures against accidental direct contact with live parts and against the ingress of solid foreign objects or water.

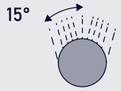
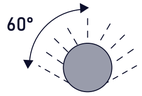
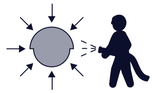
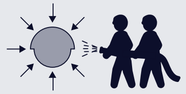
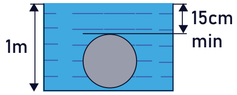
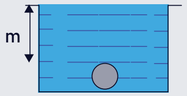
The IP code comprises 2 characteristic numerals and may include an additional letter when the actual protection of persons against direct contact with live parts is better than that indicated by the first numeral.

The first numeral characterizes the protection of the equipment against penetration of solid objects and the protection of people. The second numeral characterizes the protection of the equipment against penetration of water with harmful effects.

Protection Against Solid Bodies Data Table

Protection of Equipment			Protection of Persons
No.	Tests	Non-protected	Non-protected
1	Φ50mm 	Protected against the penetration of solid objects having a diameter greater than or equal to 50 mm	Protected against direct contact with the back of the hand (accidental contacts).
2	Φ12.5mm 	Protected against the penetration of solid objects having a diameter greater than or equal to 12.5 mm.	Protected against direct finger con- tact.
3	Φ2.5mm 	Protected against the penetration of solid objects having a diameter greater than or equal to 2.5 mm.	Protected against direct contact with a Ø 2.5 mm tool.
4	Φ1mm 	Protected against the penetration of solid objects having a diameter greater than or equal to 1 mm.	Protected against direct contact with a Ø 1 mm wire.
5		Dust protected (no harmful deposits).	Protected against direct contact with a Ø 1 mm wire.
6		Dust tight.	Protected against direct contact with a Ø 1 mm wire.

Protection Against Liquids Data Table

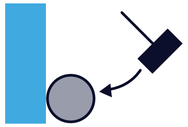
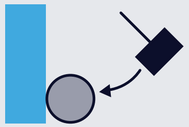
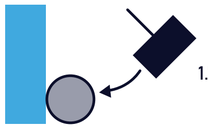
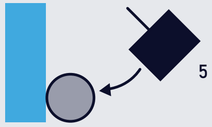
No.	Tests	Non-protected
1		Protected against vertical dripping water, (condensa- tion).
2		Protected against dripping water at an angle of up to 15°.
3		Protected against rain at an angle of up to 60°.
4		Protected against splashing water in all directions.
5		Protected against water jets in all directions.
6		Protected against powerful jets of water and waves.
7		Protected against the effects of temporary immersion.
8		Protected against the effects of prolonged immersion under specifi ed conditions.

Protected Against Access To Hazardous Parts With

Level	Tests
A	With the back of the hand.
B	With the finger.
B	With a ø 2.5 mm tool.
C	With a ø 1 mm tool.

IK Code
“Mechanical Impact Test”

The European standard EN 50102/IEC 62262 defines a coding system (IK code) for indicating the degree of protection provided by electrical equipment enclosures against external mechanical impact.

		Non-protected	
No.		H (cm)	Energy (J)
01		7.5	0.15
02		10	0.2
03		17.5	0.35
04		25	0.5
05		35	0.7
06		20	1
07		40	2
08		30	5
09		20	10
10		40	20

Standard NF C 15-100 (May 1991 edition), section 512, table 51 A, provides a cross-reference between the various degrees of protection and the environmental conditions classification, relating to the selection of equipment according to external factors.

Practical guide UTE C 15-103 contains tables showing the specifications required for electrical equipment (including minimum degrees of protection), according to the locations in which they are installed.