FGECO ELECTRIC

MC Compact Substation -Kiosk-

Data sheet

fgeco.co

2025

MV Compact Substation -Kiosk-

A. Overview

Series of medium voltage/low voltage pre-fabricated substation is a product designed by our company to meet the needs of urban construction, with the advantages of structure,strong complete set,safe and reliable, easy mainte-nance and beautiful appearance.

Technical Data

Description	12 KV	24 KV
IEC standard	IEC 62271-202	
Internal Arc Classification	20KA / 1 Sec	
Type designation	CE9-12	CE9-24
Rated voltage	12 KV	24 KV
Rated frequency	11 KV	22 KV
operating voltage	50 HZ / 60 HZ	
Electrical Steel Type	Cold rolled, Galvanized	
KVA sizes available	UP TO 2000 KVA	
painting (option stone painted)	Grey RAL (7035), Electrostatic painting (option stone painted)	
THICKNESS	2.5 mm	
The platform of the Tr. compartment should be of sheet steel	4 mm thickness at least.	
Protection degree	IP 54 LV/MV compartment & IP 23 Transformers Compartment.	
1-RMU COMPARTMENT		
RMU Air type type CE6 & RMU SF6 type CE8 or SF6 Complete GIS	(2+1) or (3+1) up to 630A	
2- TRANSFORMER COMPARTMENT		
Rated power of Oil Transformer & Dry type transformer	up to 2000KVA	
3- LV COMPARTMENT		
Rated voltage of LV panels	Up to 1000 VAC	
Rated Current of LV panels	Up to 4000A	
Rated short circuit of main busbar& incoming C.B	Up to 100 KA	

Design Standards

In addition to the requirements of this specification, the offered kiosk, and their components should comply with the latest applicable standards issued by the:

IEC 62271-1
Common specification. for AC Switchgear, and control gear
IEC 62271-200
AC metal-enclosed for switchgear, and control gear for rated voltages above 1kV, and up to, and including 52kV
IEC 62271-202
High-voltage/Low-voltage prefabricated substation
IEC 61439-1
Low voltage Switchgear, and control gear assemblies
IEC-60529
Classification of degree of protection provided by Enclosures

Product Introduction

Environment Conditions

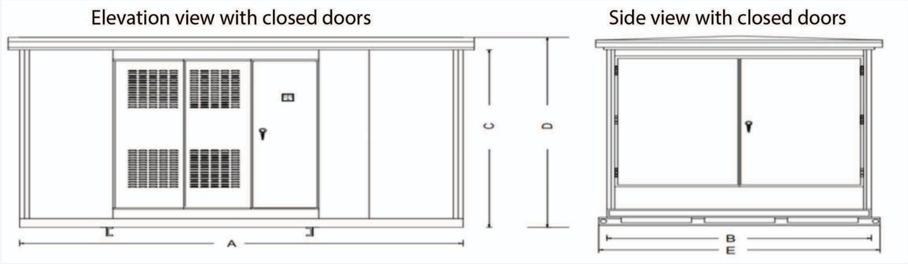
Any KIOSK substation should be designed to ensure internal connections protection from extreme environmental conditions, Like:

I. High temperatures,
II. Rainfall,
III. Dust and
IV. Wind.
FGECO testing and graphic modelling ensures proper ventilation, protection against incoming water, sealed connections and secure locked doors.

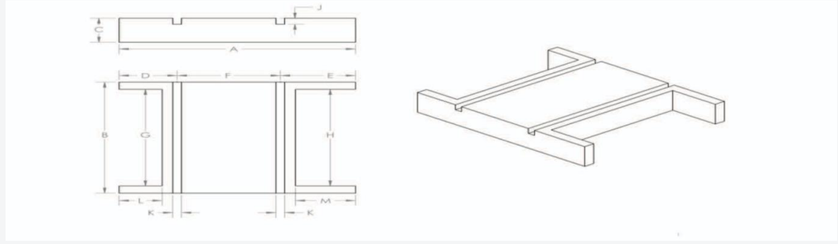
The FGECO KIOSK design not only protects against the environment, it also helps to protect the environment. All our KIOSK substations incorporate the option of full transformer oil containment. If the transformer leaks oil, there is no risk to the environment, as the oil is contained inside the kiosk. This feature is extremely important for applications close to water catchment areas to avoid possible pollution.
At the end of the FGECO life cycle our service offer makes sure that all materials are handled with respect of environment.

Minimum ambient temperature	-5°c
Maximum ambient temperature	45°c (50°c as option)
Maximum relative humidity	90%
Maximum altitude	1000 m

CE9 Design Standards Dimensions for kiosk 12 KV

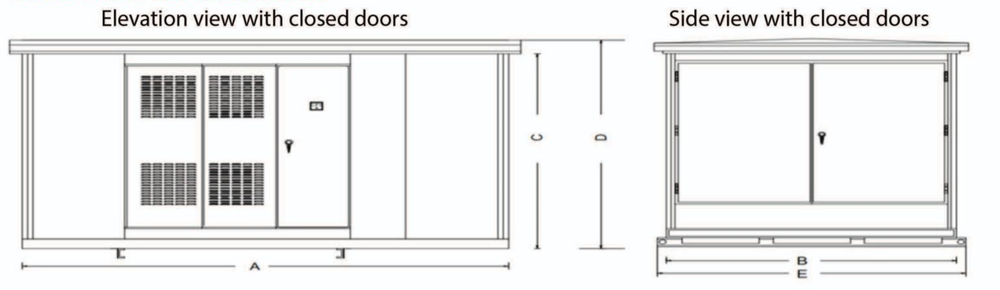


Rated Voltage	12 KV					
Transformer Rating (KVA)	100	200 Up to 300	500	800 Up to 1000	1500	2000
A in mm	2750	3100	3200	3380	3480	3600
B in mm	2100	2100	2100	2400	2700	2900
C in mm	2065	2065	2065	2315	2465	2600
D in mm	2340	2340	2340	2600	2770	2900
E in mm	2300	2300	2300	2600	2900	2900

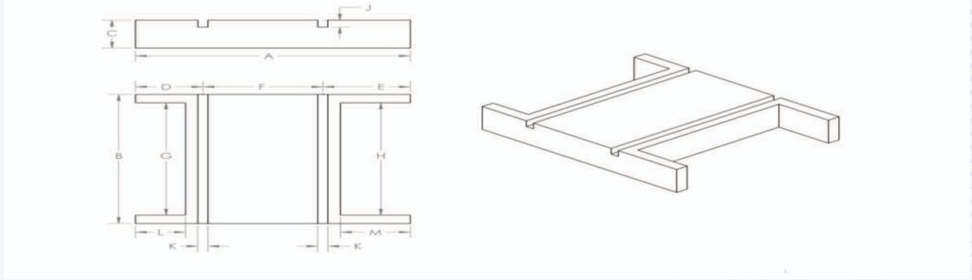


Concrete Foundation (12k) Dimensions												
Rate (KVA)	Dimensions (mm)											
	A	B	C	D	E	F	G	H	J	K	L	M
100	2750	2100	500	675	875	1200	1800	1800	125	100	500	700
200-300	3100	2100	500	675	875	1550	1800	1800	125	100	500	700
500	3200	2100	500	675	875	1650	1800	1800	125	100	500	700
800-1000	3380	2400	500	700	900	1780	2100	2100	125	140	500	700
1500	3480	2700	500	700	900	1880	2400	2400	125	140	500	700
2000	3580	2600	500	800	1000	1980	2500	2500	225	240	600	800

CE9 Design Standards Dimensions for kiosk 12 KV



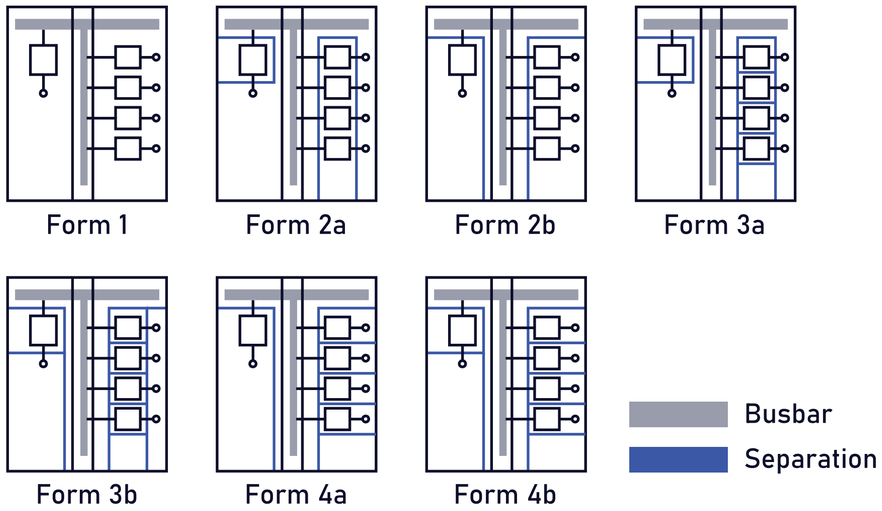
Rated Voltage	24 KV					
Transformer Rating (KVA)	100	200 Up to 300	500	800 Up to 1000	1500	2000
A in mm	3060	3400	3500	3690	3790	3950
B in mm	2200	2200	2200	2400	2700	2900
C in mm	2490	2065	2490	2490	2465	2490
D in mm	2874	2874	2874	2885	2900	2900
E in mm	2400	2400	2400	2600	2900	2900



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.

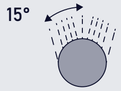
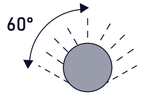
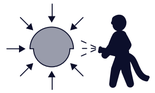
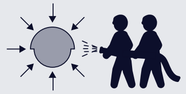
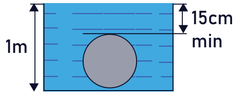
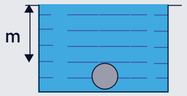
The IP code comprises 2 characteristic numerals and may include an additional letter when the actual protection of persons against direct contact with live parts is better than that indicated by the first numeral.

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

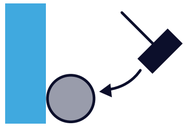
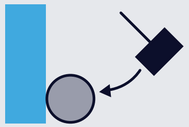
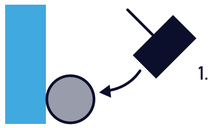
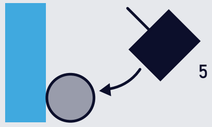
No.	Tests	Non-protected
1		Protected against vertical dripping water, (condensa- tion).
2		Protected against dripping water at an angle of up to 15°.
3		Protected against rain at an angle of up to 60°.
4		Protected against splashing water in all directions.
5		Protected against water jets in all directions.
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.