



# GENERAL PRODUCT CATALOG





**YOUR NEW ENERGY IN MV SWITCHGEAR EQUIPMENT!**





## Product and Production

Owned by ARMİN Elektrik A.Ş., a subsidiary of Kolin Holding, our company commenced its production operations on 01.01.2018.

The Company sets its objectives as high technology and rapid growth with respect to new, innovative, and Dynamic Medium Voltage Switching Equipment products, and production thereof.

The annual production capacity of the company allows production of 12.000 Metal Enclosed Modular Switchgears, 4.000 Metal Clads and 5.000 Concrete Kiosks, 6000 Low Voltage Panels per year.

## The Employees and the Stakeholders

Deliver services based on institutional quality objectives set pursuant to use of state-of-the-art technology, dedicated human resources, and the knowledge by implementing an investment policy shaped on the basis of the principles on acting as a pioneer and creating difference.

Recognize the fact that profitability in the long term is derived from the quality; create added value for our country, our group, our employees and our stakeholders through the advanced technological products we produce.

Contribute to Turkey's employment volume by employing 500 laborers; the objective in this respect is set as 1.000 laborers.

## Our Vision

Maintain our steady pace of ascension on the path to become a notable, reliable and preferred brand by always maintain highest international quality standards with respect to products and services, and prioritizing the customer centricity.

Carry forward the accomplishments on the national level to the international arena, and become one of the prominent actors in business domains that exhibit potential for growth.





## Quality Policy

As we believe that quality is a whole, in every work we do, in every decision and action we take, in all processes we apply, namely in Sales, Marketing and Projecting activities, Planning, Production, Research and Development, Purchasing, our Human Resources, we question the quality at every point of our IT activities and financial management, and aim to improve customer satisfaction.

We do not only control the quality, but we also plan, control, develop, make it a living system. We accept quality as a journey and undertake to increase the performance of all our management systems and improve them on continuous basis.

By adopting the principle of zero accidents, including near misses, we are committed to eliminating the dangers for our employees to maintain their lives in a healthy way, and minimize the risks of dangerous situations and dangerous behaviors on people and the environment by predetermining the necessary precautions, continuous training and preventive approaches.

With our respect and love for the environment, we undertake to prevent pollution by adopting the zero waste principle, reduce it when we cannot prevent it, and protect our environment in any case. In this context, our understanding of social responsibility is very natural and sincere.

In order to ensure the security of corporate information and information assets making up the Information Security Management System, and manage all kinds of risks to continuity of our business and our information assets, we aim to improve all our processes in line with the principles of confidentiality, information integrity and accessibility.

We undertake to fulfill the legal requirements and other applicable conditions in all our business processes, and make the necessary arrangements to ensure that our stakeholders act in accordance with these conditions. By this way, Quality is not only reflected in our products, it is reflected in our behavior, our communication, our problem-solving techniques, our works and our stakeholders.

We believe that as long as we adopt the Total Quality philosophy approach and reflect it on our work, improving ourselves, institutionalizing our company, following the technological developments closely and reflecting them on our R&D studies will continuously increase the trust and satisfaction of all our stakeholders. As a natural result of all these, our Total Quality philosophy and approach is the most fundamental cornerstone for our company to be a strong company in every field, together with its employees and all its stakeholders.

**ARMTEK ELEKTRİK SAN. ve TİC. A.Ş.**  
**CEMAL SADIĞI**  
**General Manager**



A long-established history that date back for 40 years. Kolin Holding. Playing an active role in development of our country through services rendered in several distinct sectors and the colossal projects accomplished with success. The signature proudly affixed under every investment undertaken, aware of the fact that it is actually Turkey and Turkish Nation being represented. A global giant distinguished with the works executed on distinct geographical regions of the world. Kolin Holding! The foundations of Kolin Holding, the “Flagship” of Kolin conglomerate that played the most vital role for the conglomerate to attain its current position, have been laid at Elaziğ in 1977 by the engineer members of Koloğlu family.



Armin Elektrik has been incorporated in 2000 for the purpose of undertaking contracting works as required for the electrical wiring and equipment and associated disciplines for any and all kinds of buildings and industrial plants both in the country and abroad, and execution of the works so undertaken. The company continues to develop and grow constantly by virtue of the quality of its works and the sense of trust it nurtured in both natural persons and corporate bodies that had business with the company since the day of its incorporation. The company successfully completed numerous turnkey projects in the fields of electromechanical, energy transmission and generation, highway lighting, energy distribution and telecommunications throughout the entire lifetime of the project from drafting until commissioning and subsequent maintenance.









## Saray Plant

The plant is constructed with an indoor area of 6000 m<sup>2</sup>. The plant comprises of the warehouse, epoxy casting, transformer production, silver plating, component production pre-production, paint shop, assembly line and routine testing units.

## Temelli Plant

The plant is constructed with an indoor area of 14 000 m<sup>2</sup>. The plant produces concrete at its intrinsic concrete plant and uses the concrete so produced to fabricate concrete kiosks using 3 dedicated kiosk formworks. Moreover, assembly works of the switchgear into the kiosks are also carried out in this plant. Concrete Kiosks, Metal Clad, Metal Enclosed Modular Switchgears, Low Voltage Panel production in this plant.

## Sincan Plant

The plant is constructed with an indoor area of 6 000 m<sup>2</sup>. Metal Clad Switchgears and Low Voltage Panel manufacturing lines are located in this factory.



## Production Capacities (pieces)



### Metal Enclosed Switchgear

12.000 pcs per year



### Metal Clad Switchgear

4.000 pcs per year



### Low Voltage Panels

6.000 pcs per year



### Concrete Kiosk

5.000 pcs per year



### Metal Sheet Kiosk

2.000 pcs per year

# AIR INSULATED METAL ENCLOSED MODULAR SWITCHGEAR

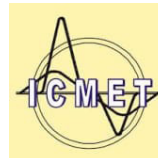
## ARME SERIES

7,2-36kV / 630-1250A / 16kA-20kA-25kA



**KEMA** Laboratories

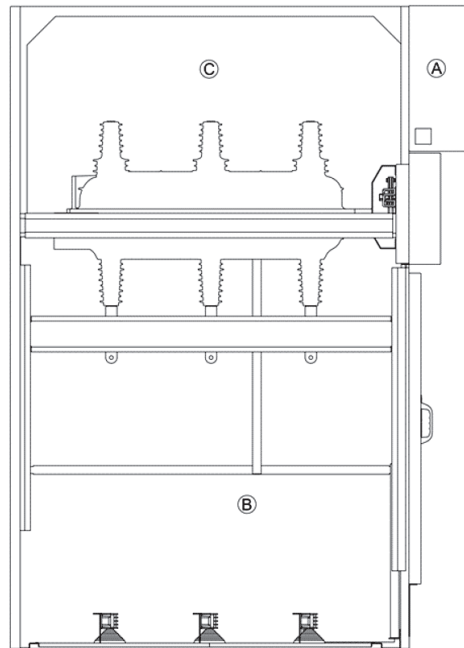
**CESI**





# COMPARTMENTS OF THE AIR INSULATED METAL ENCLOSED MODULAR SWITCHGEAR

The types of Air Insulated Modular Switchgear comprise of 3 main compartments. These compartments are secured by switching and mechanical interlocks.



## A – Low Voltage Compartment

This compartment contains all secondary circuits for control (measurement, protection, monitoring, communication and other associated systems).

## Circuit Breaker and Cabling Compartment

The equipment set forth hereunder is installed in the circuit breaker compartment:

- SF6 Gas / Vakum Circuit Breaker
- SF6 Gas Switch Disconnector
- Voltage Transformer
- Current Transformer
- Medium Voltage Fuse
- Capacitive Voltage Divider
- Cable glands and connectors

## C – Busbar Compartment

The busbar compartment contains the electrolytic copper, the isolators and gate isolators chosen according to the rated current. Access to this compartment requires special instructions and safety precautions.

## Applicable Standards

<b>IEC 62271</b>	High-Voltage Switchgear and Controlgear - Common Features
<b>IEC 62271-200</b>	High-Voltage Switchgear and Controlgear (AC up to and including 52 kV)
<b>IEC 62271-100</b>	Alternating Current Circuit Breakers
<b>IEC 62271-102</b>	Alternating current disconnectors and earthing switches
<b>IEC 62271-105</b>	Alternating current switch-fuse combinations
<b>IEC 61869-2</b>	Current Transformers
<b>IEC 61869-3</b>	Voltage Transformers
<b>IEC 60273</b>	Post Insulators
<b>IEC 60051</b>	Electrical Measuring Instruments
<b>IEC 60255</b>	Secondary Protection Relays
<b>IEC 61243-1</b>	Live Working - Voltage Detectors

# Technical Specifications

## ARMTEK Component -Arme Series Metal Enclosed Moduler Switchgear

	ARME 12	ARME 17,5	ARME 24	ARME 36
Rated Voltage	12kV	17.5kV	24kV	36kV
Rated Current	630-1250 A	630-1250 A	630-1250 A	630-1250 A
Rated Frequency	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz
Rated Short Circuit withstand Current (1-3sn)	16-21kA	16-21kA	16-21kA	16-21kA
Rated Frequency withstand Voltage	28kV	38kV	50kV	70kV
Rated Lightning Impulse withstand Voltage 1.2/50us	75kV	95kV	125kV	175kV
Internal Arc Class	IAC-AFL	IAC-AFL	IAC-AFL	IAC-AFL
Protection Class	IP3X	IP3X	IP3X	IP3X

SWITCHGEAR TYPE 36kV	Height (mm)	Width(mm)	Depth (mm)
ARME-YGC- Incoming/Outgoing Switchgear with SF6 Gas Load Break Switch	2250	750	1400
ARME-YST - Transformer Protection Switchgear with SF6 Gas Load Break Switch+Fuse Kit	2250	750	1400
ARME-YAG-Current and Voltage Metering Switchgear with SF6 Gas Load Break Switch	2250	1000	1400
ARME-KGC- Incoming/Outgoing Switchgear with SF6 Gas Circuit Breaker	2250	1000	1400
ARME-KTK- Transformer Protection Switchgear with SF6 Gas Circuit Breaker	2250	1000	1400
ARME-KBB- Bus Coupling Switchgear with SF6 Gas Circuit Breaker Disconnecter Switch	2250	1500	1400
ARME-GAG- Current and Voltage Measurement Switchgear with Disconnecter	2250	1000	1400
ARME-GGO- Voltage Metering Switchgear with Disconnecter	2250	750	1400
ARME-OTOP-Incoming/Outgoing Switchgear with Circuit Breaker-Voltage Transformer	2250	1500	1400

SWITCHGEAR TYPE 12-24kV	Height (mm)	Width(mm)	Depth (mm)
ARME-YGC- Incoming/Outgoing Switchgear with SF6 Gas Load Break Switch	1800-1900	375-500	1000-1200
ARME-YST - Transformer Protection Switchgear with SF6 Gas Load Break Switch+Fuse Kit	1800-1900	375-500	1000-1200
ARME-YAG-Current and Voltage Metering Switchgear with SF6 Gas Load Break Switch	1800-1900	750	1000-1200
ARME-KGC- Incoming/Outgoing Switchgear with SF6 Gas Circuit Breaker	1800-1900	750	1000-1200
ARME-KTK- Transformer Protection Switchgear with SF6 Gas Circuit Breaker	1800-1900	750	1000-1200
ARME-KBB- Bus Coupling Switchgear with SF6 Gas Circuit Breaker Disconnecter Switch	1800-1900	750-1000	1000-1200
ARME-GAG- Current and Voltage Measurement Switchgear with Disconnecter	1800-1900	750	1000-1200
ARME-GGO- Voltage Metering Switchgear with Disconnecter	1800-1900	375-500	1000-1200
ARME-OTOP-Incoming/Outgoing Switchgear with Circuit Breaker-Voltage Transformer	1800-1900	1000	1000-1200



# Technical Specifications

## Schneider Component - ARME Series Metal Enclosed Modular Switchgear

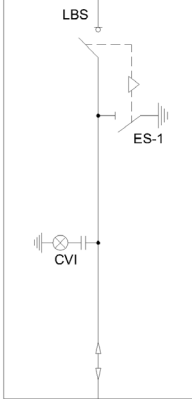
	ARME 12	ARME 17,5	ARME 24	ARME 36
Rated Voltage	12kV	17.5kV	24kV	36kV
Rated Current	630-1250 A	630-1250 A	630-1250 A	630-1250 A
Rated Frequency	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz
Rated Short Circuit withstand Current (1-3sn)	16-20-25kA	16-20-25kA	16-20-25kA	16-20-25kA
Rated Frequency Withstand Voltage	28kV	38kV	50kV	70kV
Rated Lightning Impulse Withstand Voltage 1.2/50us	75kV	95kV	125kV	175kV
Internal Arc Rating	IAC-AFL	IAC-AFL	IAC-AFL	IAC-AFL
Protection Class	IP3X	IP3X	IP3X	IP3X

SWITCHGEAR TYPE 36kV	Height (mm)	Width (mm)	Depth (mm)
ARME-YGC- Incoming/Outgoing Switchgear with SF6 Gas Load Break Switch	2250	750	1400
ARME-YST - Transformer Protection Switchgear with SF6 Gas Load Break Switch+Fuse Kit	2250	750	1400
ARME-YAG-Current and Voltage Metering Switchgear with SF6 Gas Load Break Switch	2250	1000	1400
ARME-KGC- Incoming/Outgoing Switchgear with SF6 Gas Circuit Breaker	2250	1000	1400
ARME-KTK- Transformer Protection Switchgear with SF6 Gas Circuit Breaker	2250	1000	1400
ARME-KBB- Bus Coupling Switchgear with SF6 Gas Circuit Breaker Disconnect Switch	2250	1500	1400
ARME-GAG- Current and Voltage Measurement Switchgear with Disconnect	2250	1000	1400
ARME-GGO- Voltage Metering Switchgear with Disconnect	2250	750	1400
ARME-OTOP-Incoming/Outgoing Switchgear with Circuit Breaker-Voltage Transformer	2250	1500	1400

SWITCHGEAR TYPE 12-24kV	Height (mm)	Width (mm)	Depth (mm)
ARME-YGC- Incoming/Outgoing Switchgear with SF6 Gas Load Break Switch	1800-1900	375-500	1000-1200
ARME-YST - Transformer Protection Switchgear with SF6 Gas Load Break Switch+Fuse Kit	1800-1900	375-500	1000-1200
ARME-YAG-Current and Voltage Metering Switchgear with SF6 Gas Load Break Switch	1800-1900	750	1000-1200
ARME-KGC- Incoming/Outgoing Switchgear with SF6 Gas Circuit Breaker	1800-1900	750	1000-1200
ARME-KTK- Transformer Protection Switchgear with SF6 Gas Circuit Breaker	1800-1900	750	1000-1200
ARME-KBB- Bus Coupling Switchgear with SF6 Gas Circuit Breaker Disconnect Switch	1800-1900	750-1000	1000-1200
ARME-GAG- Current and Voltage Measurement Switchgear with Disconnect	1800-1900	750	1000-1200
ARME-GGO- Voltage Metering Switchgear with Disconnect	1800-1900	375-500	1000-1200
ARME-OTOP-Incoming/Outgoing Switchgear with Circuit Breaker-Voltage Transformer	1800-1900	1000	1000-1200

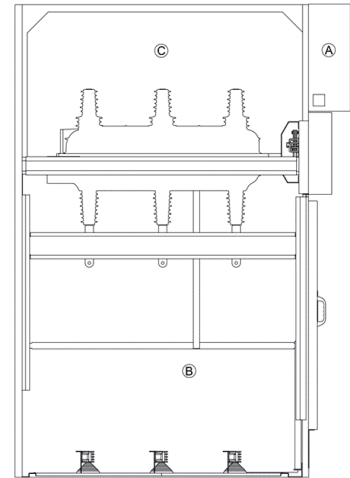
# ARME Series Range of Products

## ARME AIS SERIES YGC

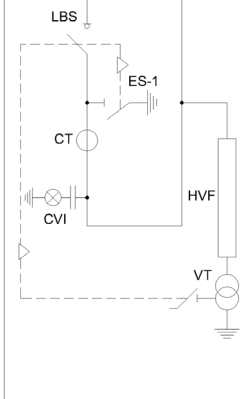


## YGC

Incoming/Outgoing  
Switchgear with SF6 Gas  
Load Break Switch

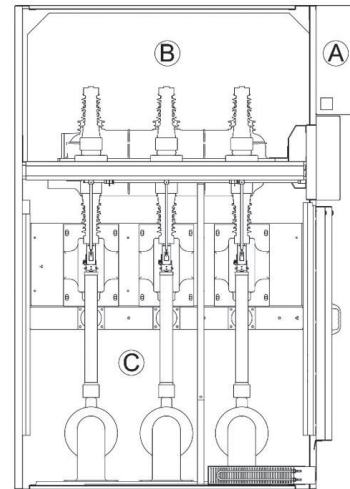


## ARME AIS SERIES YAG-L

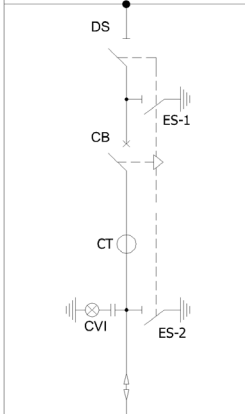


## YAG

Current and Voltage  
Metering Switchgear with  
SF 6 Gas Load Break Switch

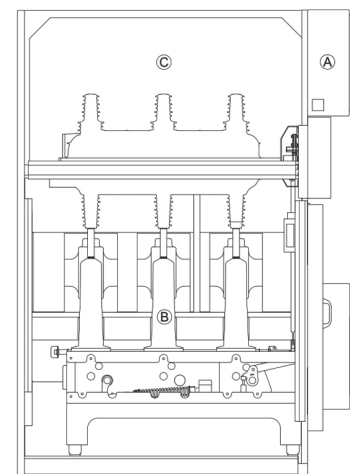


## ARME AIS SERIES KGC



## KGC

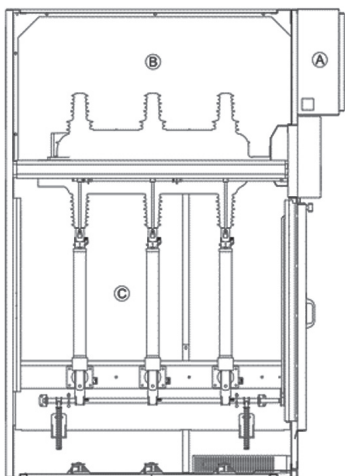
Incoming / Outgoing  
Switchgear with SF6 Gas  
Circuit Breaker





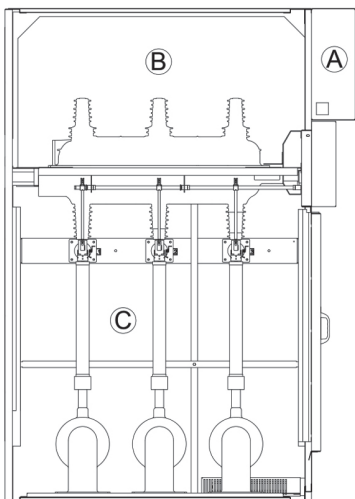
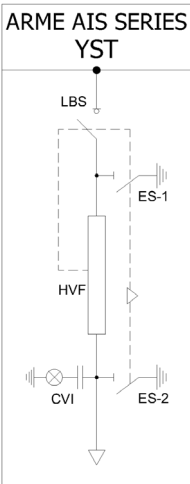


# ARME Series Range of Products



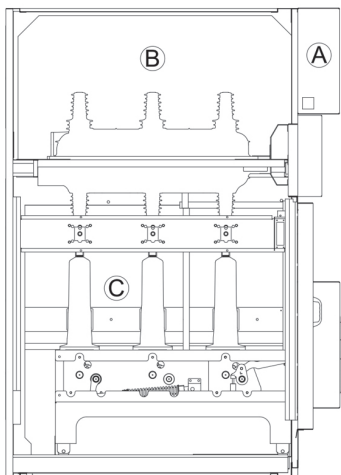
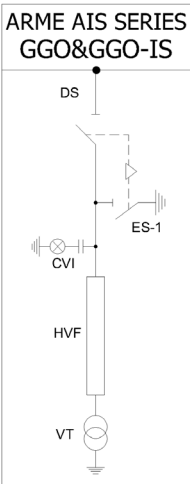
## YST

Transformer Protection  
Switchgear with SF6 Gas Load  
Break Switch+Fuse Kit



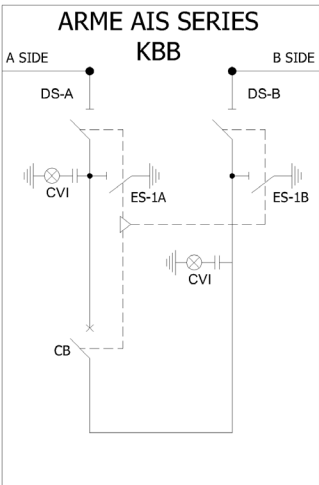
## GGO-GI

Voltage Metering Switchgear



## KBB

Bus Coupling Switchgear  
with SF 6 Gas Circuit Breaker  
Disconnecter Switch



# AIR INSULATED METAL CLAD MODULAR SWITCHGEAR

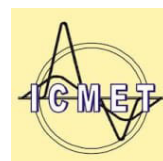
## ARMC SERIES

7,2-40,5kV / 630-3150A / 25kA-31,5kA



**KEMA** Laboratories

**CESI**





# COMPARTMENTS OF THE AIR INSULATED METAL CLAD MODULAR SWITCHGEARS

Metal Clad switchgear types comprise of 5 main compartments. These compartments are subdivided using metal partitions.

## A - Low Voltage Compartment

This contains all secondary circuits for control (measurement, protection, monitoring, communication and other associated systems).

## B - Circuit Breaker Compartment

The equipment set forth hereunder is installed in the circuit breaker compartment:

- Vacuum Circuit Breaker
- SF6 Circuit Breaker
- Vacuum Contactor
- Voltage Transformer with Fuse
- Mechanisms and Locks
- Mobile Partition

## C – Busbar Compartment

The busbar compartment contains the electrolytic copper, the isolators and gate isolated from each other.

## D – Voltage Transformer Compartment

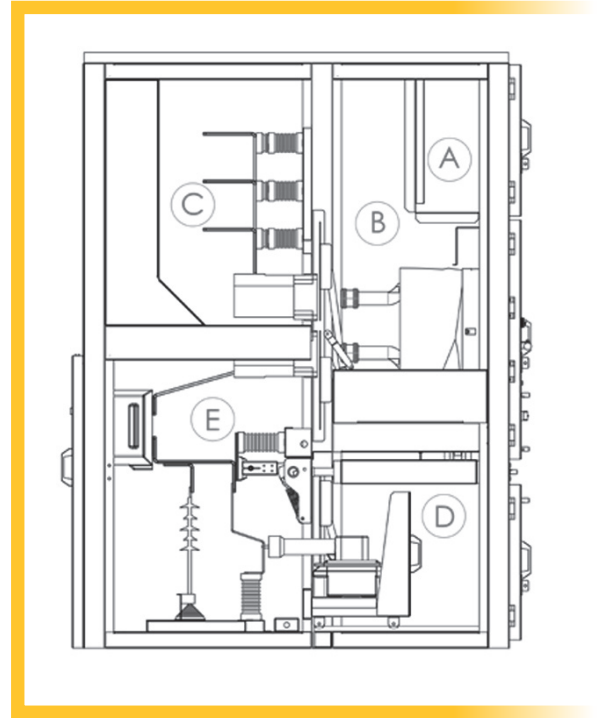
This compartment contains combination of fuse + voltage transformer.

Safety is ensured by the mechanical locks and partition mechanism.

## E – Cable Compartment

The equipment set forth hereunder is installed in this compartment:

- Current transformer
- Voltage transformer
- Surge Protection Device
- Earthing Switch
- Capacitive voltage divider
- Cable glands and connectors



## Applicable Standards

IEC 62271	High-Voltage Switchgear and Controlgear - Common Features
IEC 62271-200	High-Voltage Switchgear and Controlgear (AC up to and including 52 kV)
IEC 62271-100	Alternating Current Circuit Breakers
IEC 62271-102	Alternating current disconnectors and earthing switches
IEC 62271-105	Alternating current switch-fuse combinations
IEC 61869-2	Current Transformers
IEC 61869-3	Voltage Transformers
IEC 60273	Post Insulators
IEC 60051	Electrical Measuring Instruments
IEC 60255	Secondary Protection Relays
IEC 61243-1	Live Working - Voltage Detectors

## Technical Specifications

SWITCHGEAR TYPE	ARMC12	ARMC17,5	ARMC24
Rated Voltage	12kV	17,5kV	24kV
Rated Grid Frequency withstand Voltage	28kV	38kV	50kV
Lightning Grid Frequency withstand (kV[1.2x50µs])	75	95	125
Short Term Rated Voltage withstand (kA/s)	25kA-1-3sn	25kA/1-3sn	25kA/1-3sn
Degree of Protection	IP4X	IP4X	IP4X
Internal Arc Current (kA/s)	25kA-1sn	25kA-1sn	25kA-1sn
Internal Arc Class	AFLR	AFLR	AFLR
Standard	IEC 62271-200, TS EN 62271-200	IEC 62271-200, TS EN 62271-200	IEC 62271-200, TS EN 62271-200
Component Options	Schneider, ABB, Siemens, Armtek	Schneider, ABB, Siemens, Armtek	Schneider, ABB, Siemens, Armtek

SWITCHGEAR TYPE	ARMC36	ARMC40,5
Rated Voltage	36kV	40,5kV
Rated Frequency withstand Voltage	70kV	38kV
Rated Lightning Impulse withstand Voltage 1.2/50us	170	95
Rated Short Circuit withstand Current (kA/s)	25kA-1-3sn	25kA/1-3sn
Protection Class	IP4X	IP4X
Internal Arc Current (kA/s)	25kA-1sn	25kA-1sn
Internal Arc Class	AFLR	AFLR
Standard	IEC 62271-200, TS EN 62271-200	IEC 62271-200, TS EN 62271-200
Component Options	Schneider, ABB, Siemens, Armtek	Schneider, ABB, Siemens, Armtek

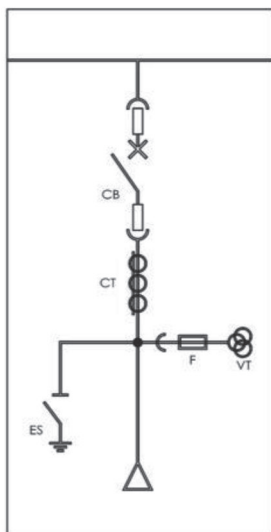
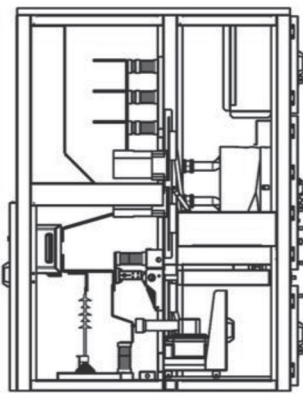




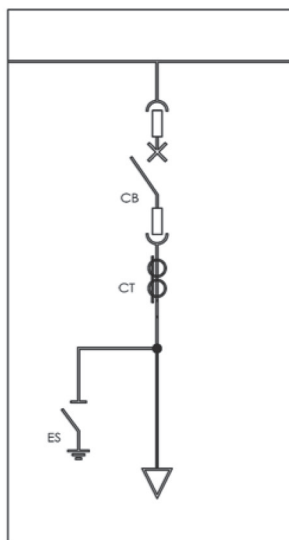
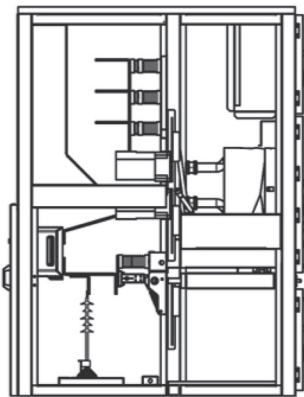
## ARMC Series Range of Products

ARMC Series Metal Clad switchgear types comprise of 5 main compartments. These compartments are subdivided using metal partitions, and moving partitions and insulated bushing elements are used at passageways where it is necessary to ensure continuity.

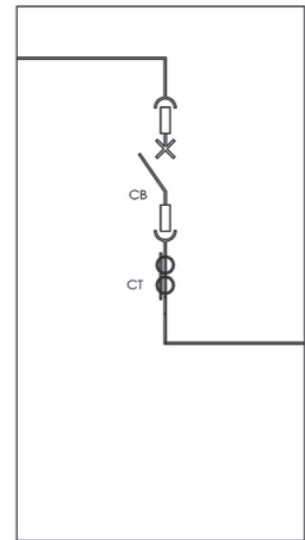
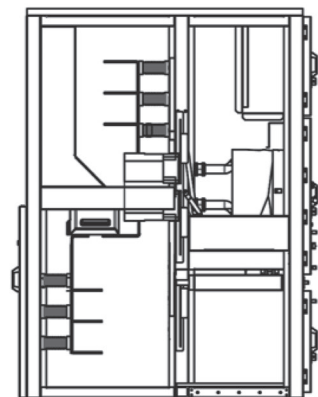
**Incoming-Outgoing  
Feeder with Fused  
Voltage Transformer**



**Line Feeder**

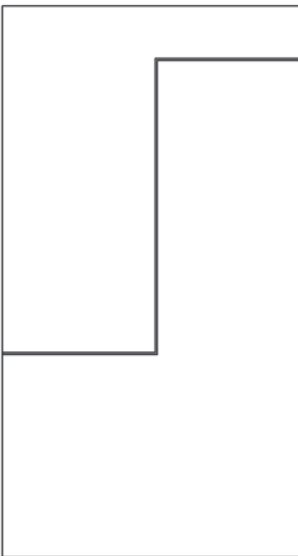
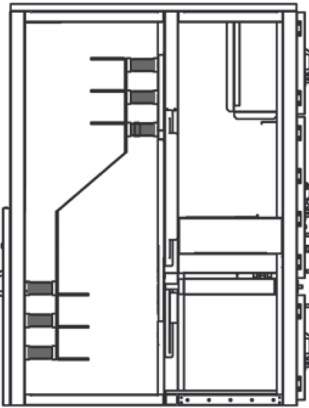


**Coupling Feeder**

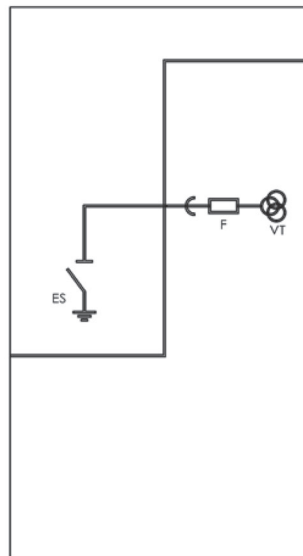
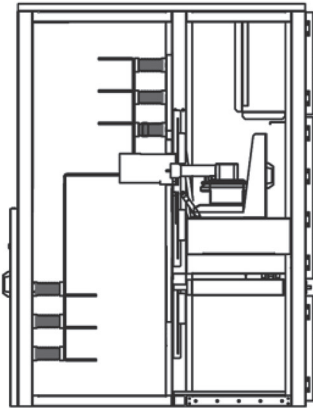


## ARMC Series Range of Products

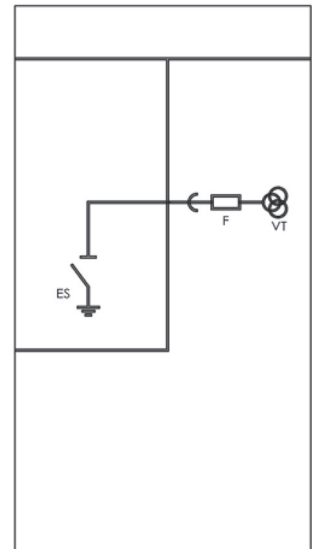
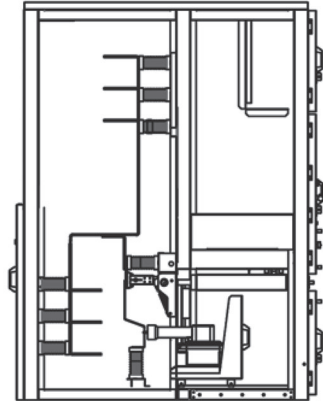
Bus Riser Feeder



Busbar  
Measurement Feeder



Aux. Service  
Transformer Feeder





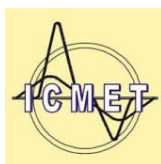
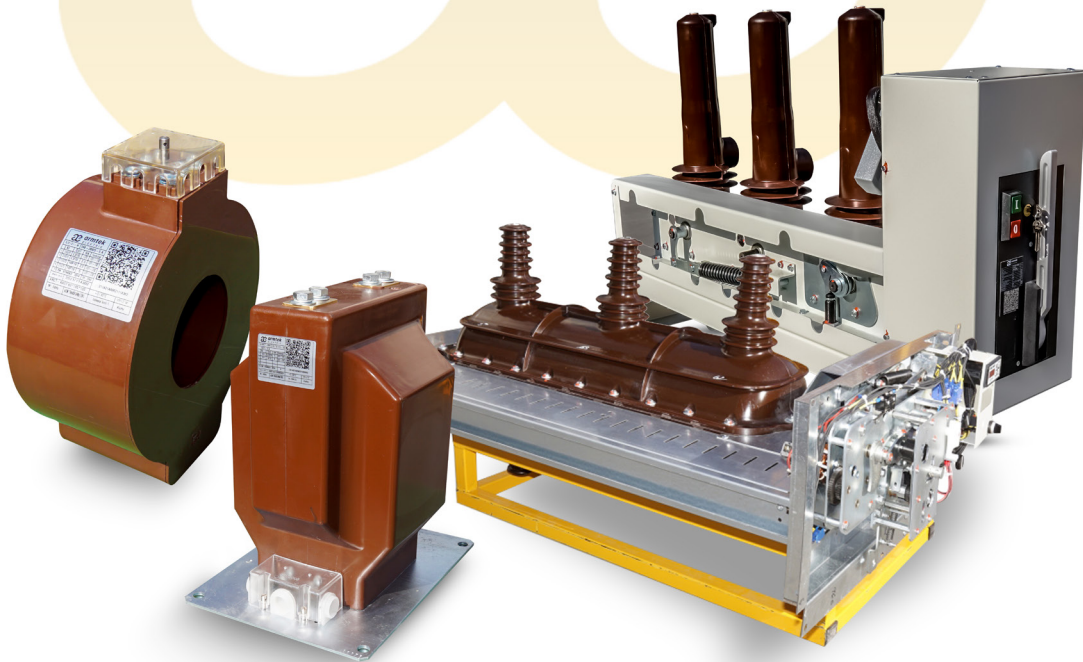
# MEDIUM VOLTAGE SWITCHGEAR COMPONENT

## • INSTRUMENT TRANSFORMERS

- Toroidal /Cable Type Current Transformers
- Block Type Current Transformers
- Block Type Voltage Transformers

## • SF6 GAS INSULATED DISCONNECTOR

## • SF6 GAS CIRCUIT BREAKERS



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# INSTRUMENT TRANSFORMERS

## Toroidal / Cable Type Current Transformers

### Technical Data

ARCT-KA07		
Rated Primary Current I <sub>pr</sub>	A	40.....8000A
Rated Secondary Current I <sub>s</sub>	A	1A,5A
Rated Frequency	Hz	50 /60
Class Rated Burden	VA	Acc. to customer requirement
Accuracy Class		Acc. to customer requirement
Insulation Level		0,72 / 3 / -kV
Rated Short Time Thermal Current	I <sub>th</sub>	min. 100*I <sub>ps</sub>
Insulation Class		E
Standard	IEC,VDE,ANSI,AS,CAN,GOST, etc.	



## Block Type Current Transformers

### Technical Data

TYPE		ARCT-B12	ARCT- B123
Rated Data			
Max. Operating Voltage	kV	Up to 17,5kV	
Max. Test Voltages	kV	38/95	
Rated Frequency	Hz	50 /60	
Max. Rated Primary Current	A	2500	
Secondary Rated Current	A	1 or 5	
Rated Short Time Thermal Current I <sub>th</sub> (1s)	kA	Max. 600 (1000 x I <sub>n</sub> )	
Rated Dynamic Current I <sub>dyn</sub>	kA	Max 120 (2,5 x I <sub>th</sub> )	
Weight (approx.)	Kg	20-22	30-35



### Technical Data

TYPE		ARCT-B24	ARCT- B243
Rated Data			
Max. Operating Voltage	kV	Up to 24kV	
Max. Test Voltages	kV	50/125	
Rated Frequency	Hz	50 /60	
Max. Rated Primary Current	A	4000 (I <sub>cont</sub> 1 x I <sub>n</sub> )	
Secondary Rated Current	A	1 or 5	
Rated Short Time Thermal Current I <sub>th</sub> (1s)	kA	Max. 600 (1000 x I <sub>n</sub> )	
Rated Dynamic Current I <sub>dyn</sub>	kA	Max 120 (2,5 x I <sub>th</sub> )	
Weight (approx.)	Kg	33-35	45-50





# INSTRUMENT TRANSFORMERS

## Technical Data

TYPE	ARCT-B36		ARCT- B36H
Rated Data			
Max. Operating Voltage	kV	Up to 36kV	
Max. Test Voltages	kV	70 / 170	
Rated Frequency	Hz	50 /60	
Max. Rated Primary Current	A	4000 (I <sub>cont</sub> 1 x I <sub>n</sub> )	
Secondary Rated Current	A	1 or 5	
Rated Short Time Thermal Current I <sub>th</sub> (1s)	kA	Max. 600 (1000 x I <sub>n</sub> )	
Rated Dynamic Current I <sub>dyn</sub>	kA	Max 120 (2,5 x I <sub>th</sub> )	
Weight (approx.)	kg	40-55	45-60



## Technical Data

TYPE	ARCT-M36	
	Rated Data	
Max. Operating Voltage	kV	Up to 36kV
Max. Test Voltages	kV	70 / 170
Rated Frequency	Hz	50 /60
Max. Rated Primary Current	A	1500
Secondary Rated Current	A	1 or 5
Rated Short Time Thermal Current I <sub>th</sub> (1s)	kA	Max. 600 (1000 x I <sub>n</sub> )
Rated Dynamic Current I <sub>dyn</sub>	kA	Max 120 (2,5 x I <sub>th</sub> )
Weight (approx.)	kg	28-36



## Block Type Voltage Transformers

## Technical Data

TYPE	ARVT-M12	
Rated Data		
Highest Voltage For Equipment,Um(r.m.s)	kV	Up to 17,5kV
Max. Test Voltages	kV	38/98
Rated Frequency	Hz	50 /60
Rated Primary Voltages, Un(max)	kV	15 √3
Secondary Voltage	V	100 √3 or 110√3 or 120 √3
Rated Burden in Class 0.2-0.5-1.0	VA	5-10-15-20-30-40
Max. Rated Burden For Protection Purpose in Class	VA	100
Thermal Limiting Current For Earth Fault Detection Winding	A	6
Rated Voltage Factor (8h)		1,9 Un
Weight (approx.)	kg	25



# INSTRUMENT TRANSFORMERS

## Technical Data

TYPE	ARVT-M24	
Rated Data		
Highest Voltage For Equipment, Um (r.m.s)	kV	Up to 24kV
Max. Test Voltages	kV	50/150
Rated Frequency	Hz	50 /60
Rated Primary Voltages, Un (max)	kV	24 √3
Secondary Voltage	V	100 √3 or 110√3 or 120 √3
Rated Burden in Class 0.2-0.5-1.0	VA	5-10-15-20-30-40
Max. Rated Burden For Protection Purpose in Class	VA	100
Thermal Limiting Current For Earth Fault Detection Winding	A	6
Rated Voltage Factor (8h)		1,9 Un
Weight (approx.)	kg	34

## Technical Data

TYPE	ARVT-M36-1	
	Rated Data	
Highest Voltage For Equipment, Um (r.m.s)	kV	Up to 36kV
Max. Test Voltages	kV	70/170
Rated Frequency	Hz	50 /60
Rated Primary Voltages, Un (max)	kV	36 √3
Secondary Voltage	V	100 √3 or 110√3 or 120 √3
Rated Burden in Class 0.2-0.5-1.0	VA	5-10-15-20-30-40
Max. Rated Burden For Protection Purpose in Class	VA	100
Thermal Limiting Current For Earth Fault Detection Winding	A	6
Rated Voltage Factor (8h)		1,9 Un
Weight (approx.)	kg	42

## Technical Data

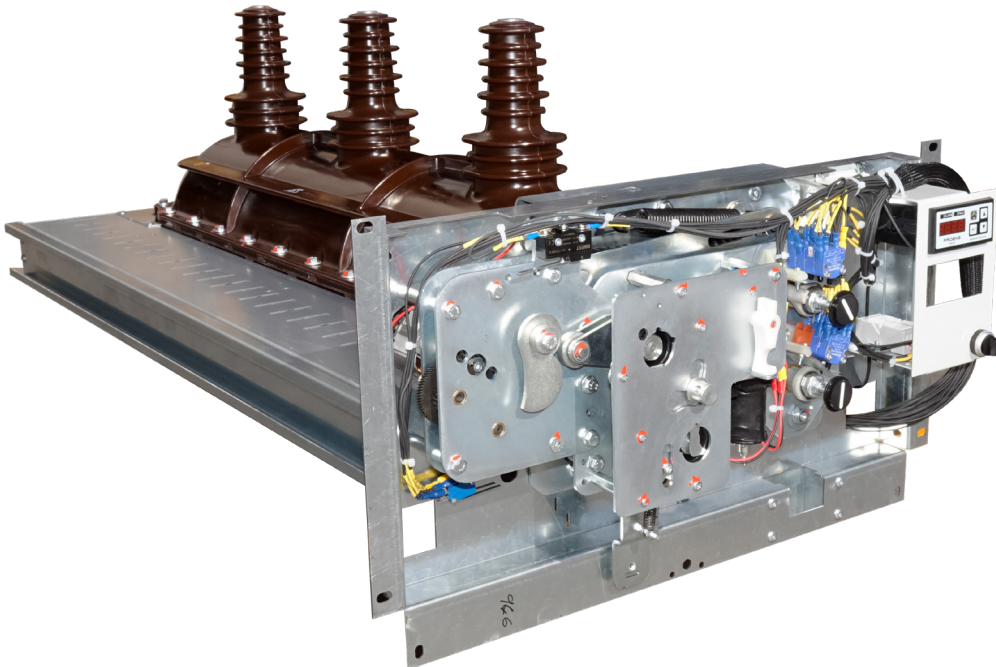
TYPE	ARVT-M36-2	
	Rated Data	
Highest Voltage For Equipment, Um (r.m.s)	kV	Up to 36kV
Max. Test Voltages	kV	70/170
Rated Frequency	Hz	50 /60
Rated Primary Voltages, Un (max)	kV	36 √3
Secondary Voltage	V	100 √3 or 110√3 or 120 √3
Rated Burden in Class 0.2-0.5-1.0	VA	5-10-15-20-30-40
Max. Rated Burden For Protection Purpose in Class	VA	100
Thermal Limiting Current For Earth Fault Detection Winding	A	6
Rated Voltage Factor (8h)		1,9 Un
Weight (approx.)	kg	48



# MEDIUM VOLTAGE SWITCHGEAR COMPONENT

## SF6 Gas Insulated Disconnectors

ARMTEK SF6 GAS INSULATED DISCONNECTORS	12-24kV	36kV
Rated Voltage	12/24 kV	36kV
Rated Lightning Impulse withstand Voltage	125 kV	170 kV
Between Isolating Distance (Open Position Between The Contacts)	145 kV	195 kV
Rated Frequency withstand Voltage (1min)	50 kV	70 kV
Rated Current	630-1250 A	630-1250 A
Rated Frequency	50-60 Hz	50-60 Hz
Rated Short Circuit withstand Current (1sec)	16-20kA	16-20kA
Protection Class	IP68	IP68



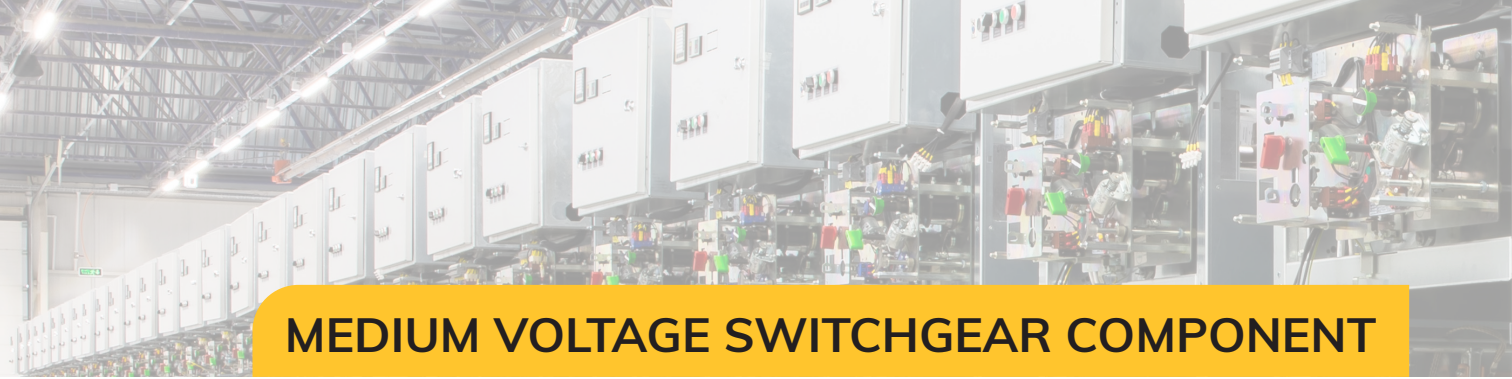
# MEDIUM VOLTAGE SWITCHGEAR COMPONENT

## SF6 Gas Circuit Breakers

ARMTEK LATERAL TYPE SF6 CIRCUIT BREAKERS	12-24 kV	36 kV
Rated Voltage	12/24 kV	36kV
Rated Lightning Impulse withstand Voltage	125 kV	170 kV
Rated Frequency withstand Voltage	50 kV	70 kV
Rated Current	630-1250 A	630-1250 A
Rated Frequency	50-60 Hz	50-60 Hz
Rated Short Circuit withstand Current (1sec)	16-20kA	16-20kA
Insulation	SF6	SF6
Rated Peak Short Circuit Current	40-50 kA	40-50 kA
Mechanical Endurance Class	M2	M2
Electrical Endurance Class	E2	E2
SF6 Gas Level	1.5-2.2 bar	1.5-2.2 bar







# MEDIUM VOLTAGE SWITCHGEAR COMPONENT

## Vacuum Circuit Breakers

ARMTEK VACUUM CIRCUIT BREAKERS	12 kV	24kV	36 kV
Rated Voltage	12kV	24kV	36kV
Rated Frequency withstand Voltage	28kV	50kV	70kV
Rated Lightning Impulse withstand Voltage	75kV	125kV	170kV
Rated Current	1250-2500A	1250-2500A	1250-2500A
Rated Frequency	50-60Hz	50-60Hz	50-60Hz
Rated Short Circuit withstand Current (kA/3sn)	31,5kA	31,5kA	25kA
Cutting Enviroment	Vacuum	Vacuum	Vacuum
Rated Peak Short Circuit Current	78,8	78,8	78,8
Mechanical Endurance Class	M2	M2	M2
Electrical Endurance Class	E2	E2	E2
Capacitive Class	C2	C2	C2

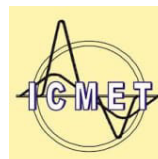


# LOW VOLTAGE DISTRIBUTION PANELS



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## Internal Type Low Voltage Distribution Panels

ARMTEK INTERNAL TYPE LOW VOLTAGE DISTRIBUTION PANELS	160kVA	250kVA	400kVA	630kVA	800kVA	1000kVA	1250kVA	1600kVA
Rated Voltage	400V	400V	400V	400V	400V	400V	400V	400V
Model	M-160-D-DSYA-S	M-250-D-DSYA-S	M-400-D-DSYA-S	M-630-D-DSYA-S	M-800-D-DSYA-S	M-1000-D-DSYA-S	M-1250-D-DSYA-S	M-1600-D-DSYA-S
Rated Grid Frequency withstand Voltage	1,89kV AC	1,89kV AC	1,89kV AC	1,89kV AC	1,89kV AC	1,89kV AC	1,89kV AC	1,89kV AC
Lightning Impulse Rated Voltage withstand (kV[1.2x50µs])	8kV	8kV	8kV	8kV	8kV	8kV	8kV	8kV
Short Term Rated Current withstand (Main Busbar, kA/h)	6kA / 1sn	9kA / 1sn	15kA / 1sn	23kA / 1sn	19kA / 1sn	24kA / 1sn	30kA / 1sn	38kA / 1sn
Short-Term Rated Current Strength(Neutral and Earthing Busbar, kA/s)	3,6kA /1sn	5,4kA /1sn	9kA / 1sn	13,8kA/1sn	11,4kA / 1sn	14,4kA / 1sn	18kA / 1sn	22,8kA / 1sn
Protection Degree	IP2X	IP2X	IP2X	IP2X	IP2X	IP2X	IP2X	IP2X
Standard	TS EN 61439-1 , TS EN 61439-5							
Dimensions (Width/Height/Depth) mm	1000/1760/500	1000/1760/500	1000/1760/500	1400/1660/500	1400/1660/500	1400/1660/500	1600/1660/500	1600/1660/500

## External Type Low Voltage Distribution Panels

ARMTEK EXTERNAL TYPE LOW VOLTAGE DISTRIBUTION PANELS	50kVA	100kVA	160kVA	250kVA	400kVA	80A Lighting Panels
Rated Voltage	400V	400V	400V	400V	400V	400V
Model						
Rated Grid Frequency withstand Voltage	1,89kV AC	1,89kV AC	1,89kV AC	1,89kV AC	1,89kV AC	1,89kV AC
Lightning Impulse Rated Voltage withstand (kV[1.2x50µs])	8kV	8kV	8kV	8kV	8kV	8kV
Short Term Rated Current withstand (Main Busbar, kA/h)	2kA / 1sn	4kA / 1sn	6kA / 1sn	9kA / 1sn	15kA / 1sn	38kA / 1sn
Short-Term Rated Current Strength(Neutral and Earthing Busbar, kA/s)	1,2kA /1sn	2,4kA /1sn	3,6kA / 1sn	5,4kA/1sn	9kA / 1sn	22,8kA / 1sn
Protection Degree	IP54	IP54	IP54	IP54	IP54	IP54
Standard	TS EN 61439-1 , TS EN 61439-5					
Dimensions (Width/Height/Depth) mm	950/1585/ 500	950/1585/ 500	1100/1685/ 500	1100/1685/ 500	1100/1685/ 500	550/1000/350





# Field Distrubution Panels



Field Distrubution Panels	Metal Sheet				Glass Fiber Reinforced Polyester			
	TYPE A	TYPE B	TYPE A	TYPE B	TYPE A	TYPE B	TYPE A	TYPE B
Rated Voltage	250A	250	400A	400A	250A	250	400A	400A
Model	400V	400V	400V	400V	400V	400V	400V	400V
Rated Grid Frequency withstand Voltage	SDKA-250-0001	SDKB-250-0001	SDKA-400-0001	SDKB-400-0001	SDKA-250-0101	SDKB-250-0101	SDKA-400-0101	SDKB-400-0101
Lightning Imulse Rated Voltage withstand (kV[1.2x50µs])	1,89kV AC	1,89kV AC	1,89kV AC	1,89kV AC	1,89kV AC	1,89kV AC	1,89kV AC	1,89kV AC
Short Term Rated Current withstand (Main Busbar, kA/h)	8kV	8kV	8kV	8kV	8kV	8kV	8kV	8kV
Short-Term Rated Current Strength(Neutral and Earthing Busbar, kA/s)	38kA / 1sn	38kA / 1sn	38kA / 1sn	38kA / 1sn	38kA / 1sn	38kA / 1sn	38kA / 1sn	38kA / 1sn
Protection Degree	IP44	IP44	IP44	IP44	IP44	IP44	IP44	IP44
Standard				TS EN 61439-1 , TS EN 61439-5				
Dimensions (Width/Height/Depth) mm	550/1000/350	750/1000/350	550/1000/350	750/1000/350	600/1770/325	800/1770/325	600/1770/325	800/1770/325





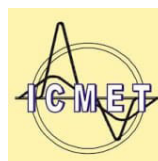
# COMPACT TRANSFORMER SUBSTATIONS

ARCK SERIES / ARSK SERIES/ ARPK SERIES



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## ARCK Series Concrete Kiosks

ARCK Series MV-LV Monoblock Concrete Transformer Substations and Distribution Substations are products designed for MV-LV electrical installations and manufactured according to applicable international standards and specifications.

### Fields of Use

The products are used as

- MV/LV Substations
- MV Distribution center
- LV panel cabinet in electricity generation (WPP/HEPP), transmission and distribution plants.
- Generator Cabinet





## ARCK Series Concrete Kiosks

### Advantages

- Personnel safety through type-tested internal arc resistance and protection class,
- Internal earthing system installed and tested in the plant environment,
- Use of high quality electrical equipment,
- Durable and robust casing resistant to environmental conditions,
- Minimized installation area and construction works,
- Easy installation commissioning,
- Portability, and Aesthetic structure that blends in the environment through unlimited options for color and surface coating

### Internal Earthing and Lighting System

The earthing terminals of the steel reinforcement of the concrete casing, the door and electrical equipment and all other metal parts that must be earthed are connected to the equipotential busbar (copper) using the conductors specified in the standard and specifications..



## STRUCTURAL FEATURES

ARCK Series Monoblock Concrete Substation and Distribution Centers are comprise of the basic components set forth hereunder:

- MV-LV Switching Equipment
- Transformer
- MV-LV Internal Cable Connection
- AC/DC Auxiliary Voltage Source
- Operational Safety Materials

## STANDARDS

IEC 62271-202	TS EN 62271-202	High-voltage/ low-voltage prefabricated substation
IEC 62271-200	TS EN 62271-200	HV switchgear and controlgear
IEC 60529	TS 3033	Degrees of protection provided by enclosures
IEC 60787	TS IEC 60787	Application guide for the selection of high-voltage current- limiting fuse-links for transformer circuits
	TS 822	Galvanized Plain and Corrugated Steel Sheets (Hot-Dip Galvanized)
EN ISO 1461	TS 914 EN ISO 1461	Hot dip galvanized coatings on fabricated iron and steel articles - specification and test methods
EN ISO 1460	TS EN ISO 1460	Metallic Coatings-Hot Dip Galvanized Coatings on Ferrous Materials-Gravimetric Determination of the Mass Per Unit Area
EN ISO 2409	TS EN ISO 2409	Paints and varnishes - Cross-cut test
EN ISO 4628/3	TS EN ISO 4628-3	Paints and varnishes - Evaluation of degradation of coatings; Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 3: Assessment of degree of rusting
	TS EN 206-1	Concrete- Part 1: Specification, performance, production and conformity
EN 206-1	TS 3367	Low-voltage switchgear and controlgear assemblies - Part 1: Type-tested and partially type-tested assemblies
IEC 60439-1	TS 708	Steel Bars for Concrete
IEC 60068-2-11	TS 2093 EN 60068-2-11	Test Ka:Salt mist
IEC 60076-1	TS 267 EN 60076-1	Power Transformers
IEC61442	TSE EN 61442	Test methods for accessories for power cables with rated voltages from 6 kV ( $U_{m} = 7, 2 \text{ kV}$ ) up to 30 kV ( $U_{m} = 36 \text{ kV}$ )
IEC61442	TS HD 629.1 52	Overhead distribution cables of rated voltage $U_{o} / U_{m}$ : 0,6/1 (1,2) kV



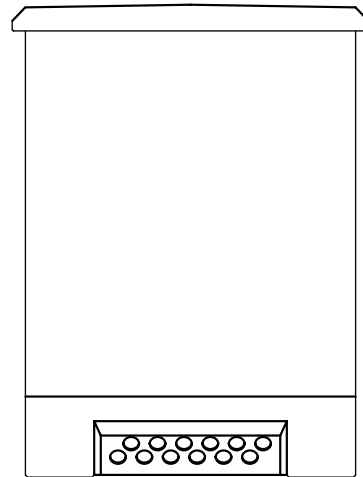
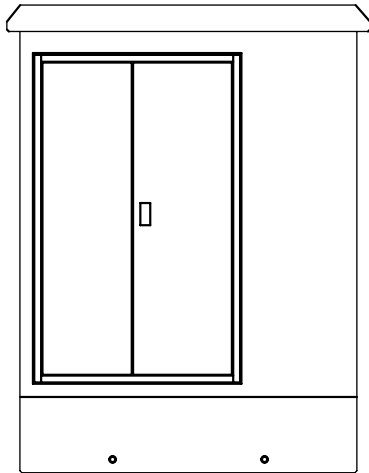
## ENVIRONMENTAL SPECIFICATIONS

Altitude	2000M
Ambient Temperature	-25...+50 °C
Ambient Pollution	3
Maximum Solar Irradiation	1000 W/M2
Relative Humidity (max%)	95
Earthquake Acceleration (Y/D)	0.5g/0.4g
System Earthing	Earthing through resistance or direct earthing

### Rated Values

Operating Voltage (max)	36 kV
Transformer Rated Power (max)	1600 kVA
Insulation Level	70/170kV
Short Circuit withstand Current	
Resistance (ML/LV)	16 kA/ 38kA
Internal Arc Class	AB
Frequency	50/60 Hz
Protection Class	IP23D
Casing Grade	10
Concrete Grade	C35/45

## PRODUCT RANGE



Product Range	Length (mm)		Width (mm)		Height (mm)		Weight (ton)
	Exterior	Interior	Exterior	Interior	Exterior	Interior	Empty
ARCK 2550	2550	2350	2500	2300	3550	3340	9
ARCK 3200	3200	3000	2500	2300	3550	3340	11
ARCK 4000	4000	3800	2500	2300	3550	3340	13
ARCK 4500	4500	4300	2500	2300	3550	3340	14
ARCK 5500	5500	5300	2500	2300	3550	3340	18
ARCK 6500	6500	6300	2500	2300	3550	3340	22
ARCK 7500	7500	7300	2500	2300	3550	3340	25

## ARSK SERIES SHEET KIOSKS

ARSK Series Metal sheet kiosks are substations that manufactured from galvanized and electrostatic powder-painted sheet metal at any desired dimension for all field application. Armtek Elektrik sheet kiosks are available for use under several all climatic conditions. ARSK Series sheet kiosks the medium voltage – low voltage (MV/LV) distribution center needs for electricity distribution companies and private projects.

### Technical Specifications

Rated Voltage	11-36 kV
Maximum Rated Nominal Power (kVA)	2500 kVA
Dimensions (meters)	2-40 m
Metal Sheet Thickness	2-3 mm
Protection Class	IP55
Paint	Electrostatic







## Mobile Substations Center



## ARPK Series Prefabricated Kiosks

ARPK Series MV-LV Prefabricated Concrete Transformer Substations and Distribution Centers are products designed for MV-LV electrical installations and manufactured according to applicable international standards and specifications.







## ARPK Series Prefabricated Kiosks

### Concrete Distribution Center

Width (mm)	Depth (mm)	Height (mm)
6600	3800	3800
8600	3800	3800
10600	3800	3800
12600	3800	3800
14600	3800	3800
16600	3800	3800
18600	3800	3800
20600	3800	3800
22600	3800	3800
24600	3800	3800
26600	3800	3800

Width (mm)	Depth (mm)	Height (mm)
9200	3800	3800
11200	3800	3800
13200	3800	3800
15200	3800	3800
17200	3800	3800
19200	3800	3800
21200	3800	3800
23200	3800	3800
25200	3800	3800
27200	3800	3800
29200	3800	3800

Width (mm)	Depth (mm)	Height (mm)
6600	5000	3800
8600	5000	3800
10600	5000	3800
12600	5000	3800
14600	5000	3800
16600	5000	3800
18600	5000	3800
20600	5000	3800
22600	5000	3800
24600	5000	3800





















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