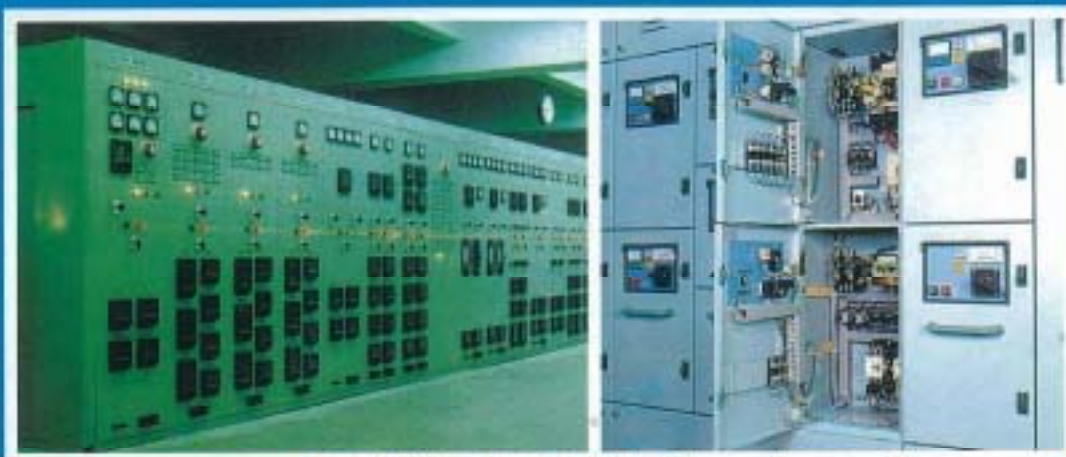


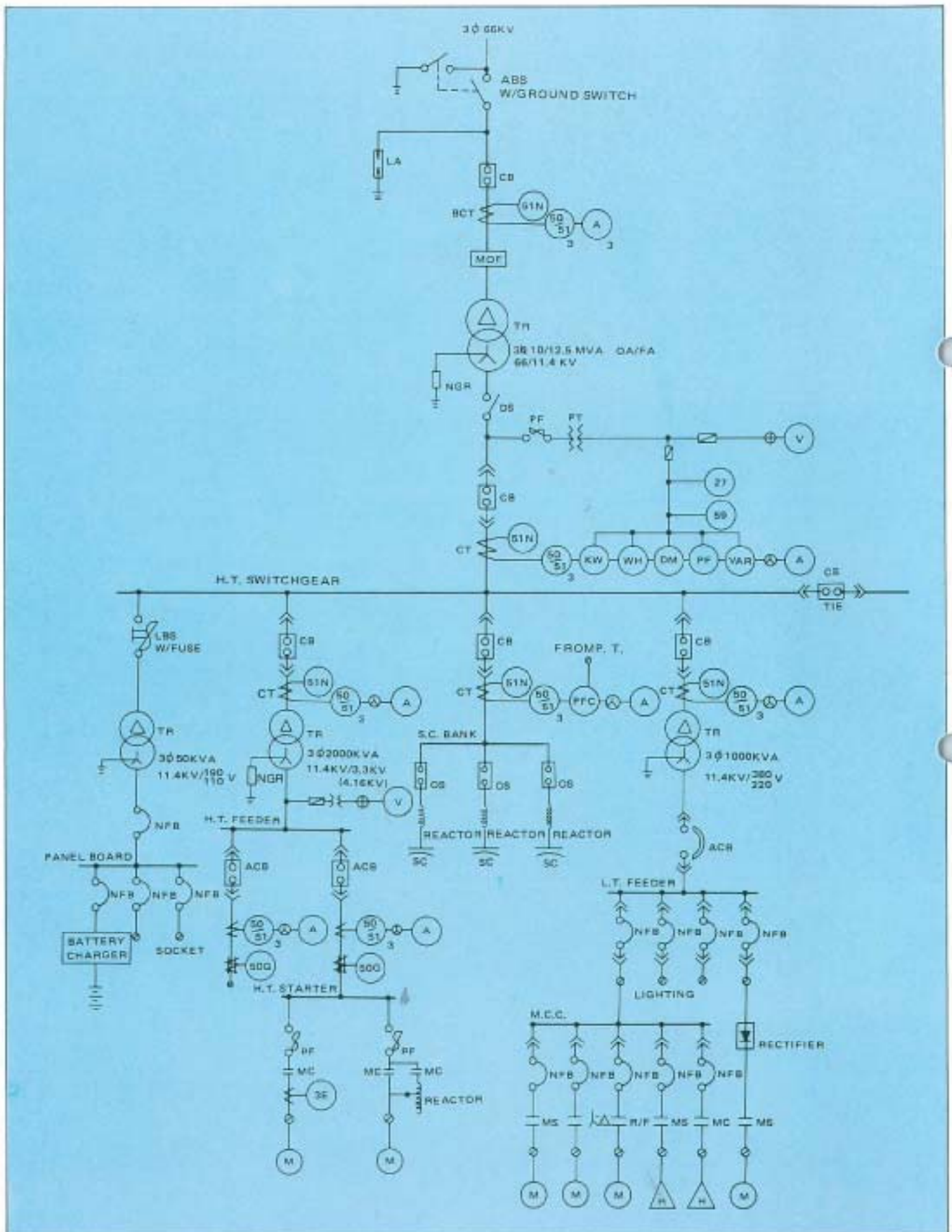
ALLIS

METAL-ENCLOSED
METAL-CLAD

SWITCHGEAR



ALLIS ELECTRIC CO., LTD.





Due to the increasingly fast development and improvement of industrial technics, it is essential that switchboards for energy generation and distribution can adequately control, supervise and protect the system.

Speedy progress in the data processing field along with changing industrial requirements has led to switchboard manufacturing geared toward automation, job simplification and standardization. Furthermore, switchboard manufacturing is not just limited to energy receiving or distribution systems, but is also involved in building complete process control center systems.

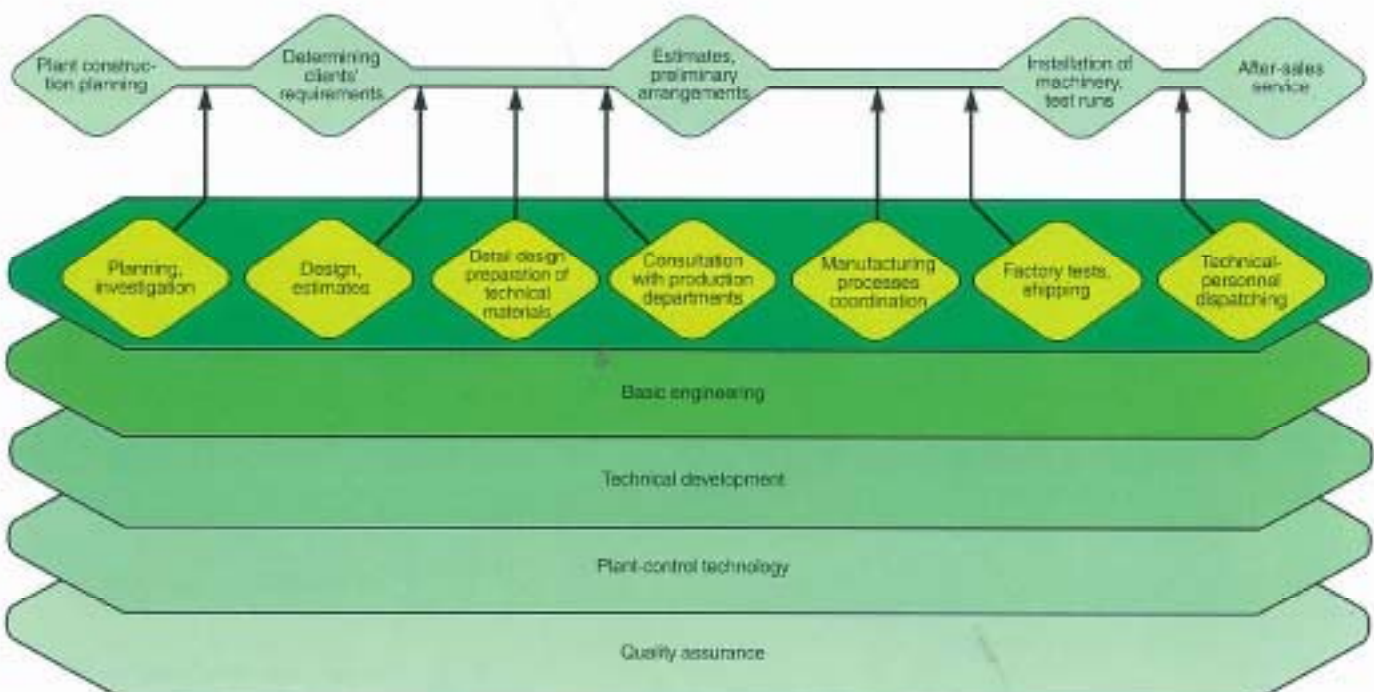
Allis metal enclosed switchboards are designed for general environments at altitudes lower than 1000 meters above sea level, maximum ambient temperature of 40°C, minimum indoor of -5°C, and minimum outdoor of -20°C. These specifications comply with the latest standards of CNS, ANSI, JEN BS, or IEC as specified by customers. Switchboards are fabricated in our integrated plant, moving from the steel casing shop to the chemical priming stage, to the enamel baring stage, then on to the assembly line for installation and wiring. All switchboards must continually pass inspection, from production stages to the final quality assurance testing, packaging and shipping.

Our testing facilities include:

- material and parts checking manually and electrically
- construction checking
- performance testing
- sequence check
- voltage withstand test
- insulation testing
- relay setting and performance testing
- meter calibration

In some circumstances, temperature rise, momentary current test impulse withstand voltage tests are also available to insure quality production.

THE CENTER'S FUNCTION AND ROLE





GENERAL

Allis metal-enclosed or metal-clad switchgear with vertical lift, horizontal draw-out circuit breakers provide centralized circuit control for medium voltage systems (from 3.3 through 24KV). A complete line of functional units is available for control and protection of motors, transformers, generators, distribution lines, rectifiers, M-G sets, and similar power equipment. Each standard self-contained unit utilizes basic world reliable manufacture components, including vacuum circuit breakers, magnetic blast breaker, instruments, relays, meters, instrument transformers, and control devices.

Typical installations are found in electric utility plants, chemical and petroleum installations, underground and strip mining areas, foundries and similar dusty and contaminated atmospheric areas.

Interrupting Capacity:
25 MVA Through 1000 MVA

Continuous Current Rating:
600 to 2000 Amperes

Voltage:
3.3KV Through 24 KV

BIL:
60KV Through 150KV

Service:
Indoor and Outdoor

Operating Reliability:
Production inspection and testing of each assembly before shipment insures proper functioning of all components and on-the-job reliability.

Inspection and Maintenance:
Convenient access to all components and use of vertical lift horizontal draw-out breakers make inspection and maintenance an easy job.

Personnel Safety:
High voltage equipment and connections are enclosed in grounded metal compartments. Steel barriers isolate control wiring and secondary connection compartments from high voltage circuits, permitting operator to enter these compartments while the unit is in service.



**12KV metal-enclosed
switchgear**



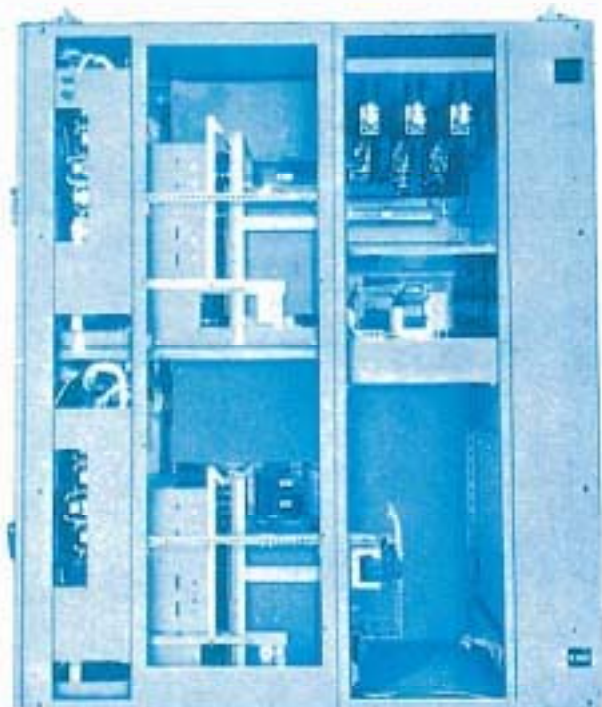
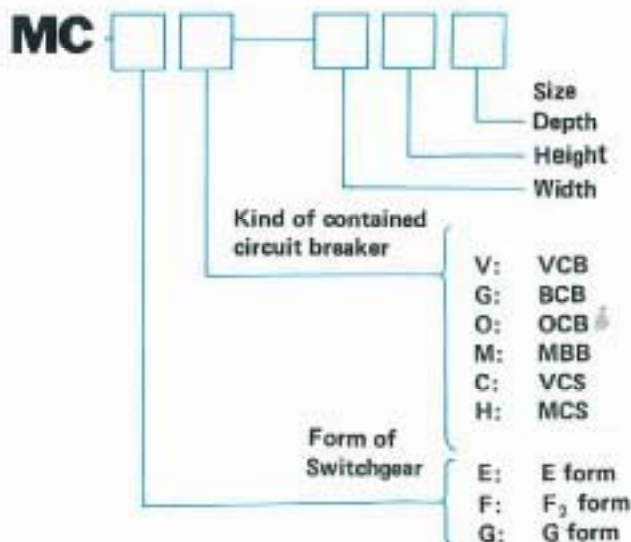
**High voltage metal-
enclosed switchgear**



High voltage metal-enclosed switchgear

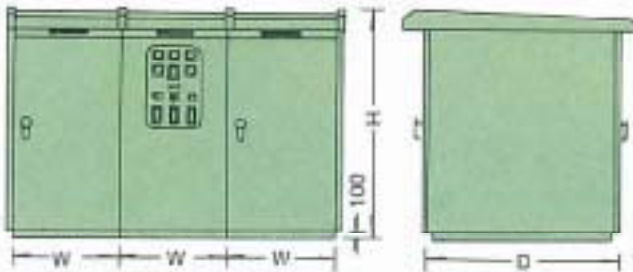
TYPE OF METAL – CLAD SWITCHGEAR

	E FORM	F₂ FORM	G FORM
Sectional Views			
Circuit Breaker	<ul style="list-style-type: none"> • Primary circuit . . . automatically disconnecting • Control circuit . . . manually disconnecting 	<ul style="list-style-type: none"> • Primary circuit . . . automatically disconnecting • Control circuit . . . manually disconnecting 	<ul style="list-style-type: none"> • Primary circuit . . . automatically disconnecting • Control circuit . . . manually disconnecting
Partition Wall	<ul style="list-style-type: none"> • To provide partition wall between primary circuit and control circuit 	<ul style="list-style-type: none"> • To provide partition wall between primary circuit and control circuit and between major parts of the primary circuit including bus bars • To provide automatic shutter covering the stationary live contacts in the breaker compartment 	<ul style="list-style-type: none"> • To provide partition wall between primary circuit and control circuit and between major parts of the primary circuit including bus bars • To provide automatic shutter covering the stationary live contacts in the breaker compartment
Insulation of conductor	<ul style="list-style-type: none"> • Conductors of primary circuit . . . bare 	<ul style="list-style-type: none"> • Conductors of primary circuit . . . bare 	<ul style="list-style-type: none"> • Conductors of primary circuit . . . bare

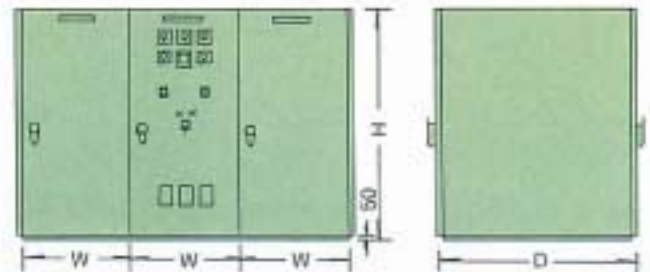

MC-EV TYPE METAL-CLAD SWITCHGEAR



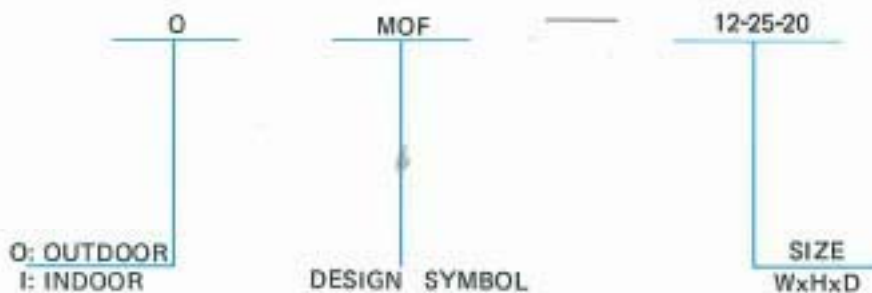
OUTDOOR TYPE



INDOOR TYPE



ITEM	DESIGN	TYPE	SIZE m/m W x H x D	MAIN COMPONENTS
1	HIGH VOLTAGE METERING OUT-FIT PANEL	OMOF-12-25-20	1200 x 2550 x 2000	PT, CT, KWH, KVAR
		IMOF-12-23-18	1200 x 2350 x 1800	
2	OUTDOOR HIGH VOLTAGE RECEIVING SWITCHGEAR	OHR-10-25-20	1000 x 2550 x 2000	METERS, RELAY, PF, PT, CT, VCB, COM BUS
3	OUTDOOR HIGH VOLTAGE DISTRIBUTION SWITCHGEAR	OHD-10-25-16	1000 x 2550 x 1600	METERS, RELAY CT, VCB
4	INDOOR HIGH VOLTAGE RECEIVING SWITCHGEAR	IHR-09-23-18	900 x 2350 x 1800	METERS, RELAY, PF, PT, CT, VCB, COM BUS
5	INDOOR HIGH VOLTAGE DISTRIBUTION SWITCHGEAR	IHD-09-23-14	900 x 2350 x 1400	METERS, RELAY CT, VCB





GENERAL APPLICATION

Allis standard Low voltage metal enclosed switchgear is designed for the control and protection of power circuits for fans, pumps, lighting and machines at 220, 240, 380, 480 or 600 volts a-c... especially adapted for power centers, such as for central stations auxiliary power circuits for fans, blowers, compressors, pumps, lighting circuits industrial plants power and lighting networks, power feeders, lighting feeders power generation and auxiliary power drives for machine tools and material-handling equipment.

The switch-gear is factory-assembled from standardized units, wired and tested to meet the specific requirements for any desired installation. It is widely used in industrial plants and electric utility stations. Breakers can be set for selective tripping to give maximum service continuity, or set in cascade to provide adequate interrupting ability at a minimum cost.

ADVANTAGES

Modern design and construction: Completely metal-enclosed, self-supporting metal structure.. modern in appearance and construction throughout... inherently dead-front... with drawout breaker design.

Maximum protection and continuity of service: The air circuit breakers provide superior power circuit protection, operating and maintenance features.

The Standardized design throughout eliminates special design and engineering costs... yet "custom-assembled" to meet all normal application requirements.

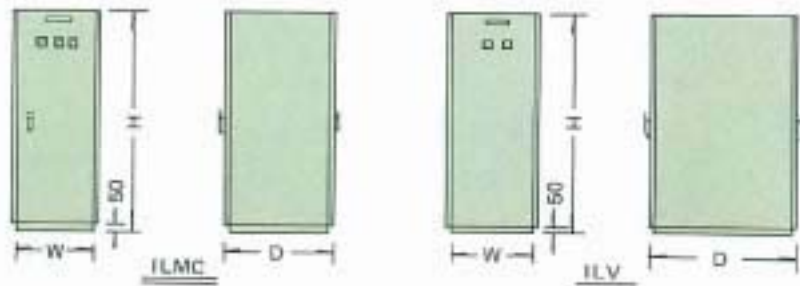
Standardized units are grouped in the size assembly best handled at the installation site... ready to be placed on the foundation and connected easily to the primary and secondary control circuits. Safe in operation and maintenance, Low-voltage metal-enclosed switchgear is inherently dead-front. All breakers may be closed or tripped without opening doors or otherwise exposing live parts. Each breaker is enclosed in an individual metal compartment. Bare buses, cable connections and instrument transformers are placed in full height rear rear compartments and separated from breaker compartments. Interlocks and positioning devices assure safe removal or replacement of breakers.



Low voltage metal-enclosed switchgear



Low voltage metal-enclosed switchgear



Item	Design	Type	Size m/m W x H x D	Main Components
1	Indoor Low Voltage Switchgear	ILV-08-23-14	800 x 2350 x 1400	Meters NFB ACB
		ILV-08-23-10	800 x 2350 x 1000	
		ILV-08-23-08	800 x 2350 x 800	
2	Combination Low Voltage Control Panel	ILMC-08-18-04	800 x 1800 x 450	Meters NFB MS
		ILMC-08-21-06	800 x 2100 x 800	





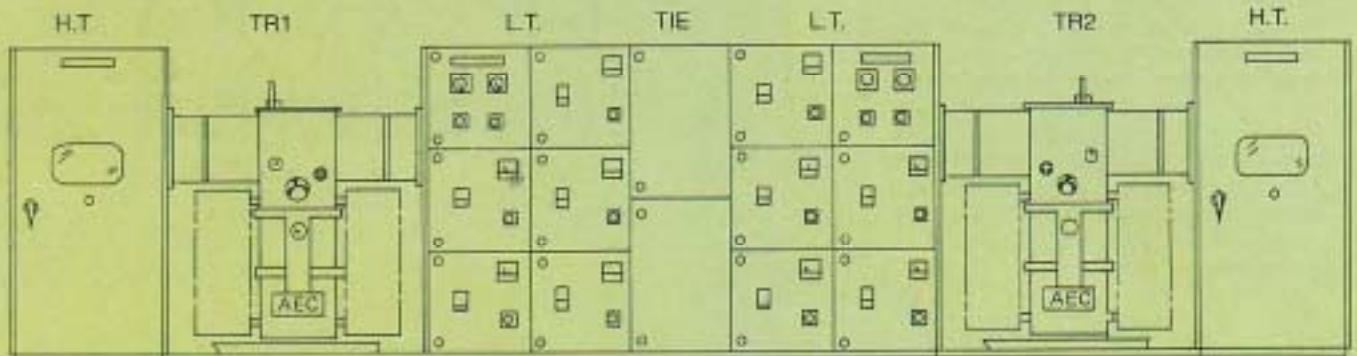
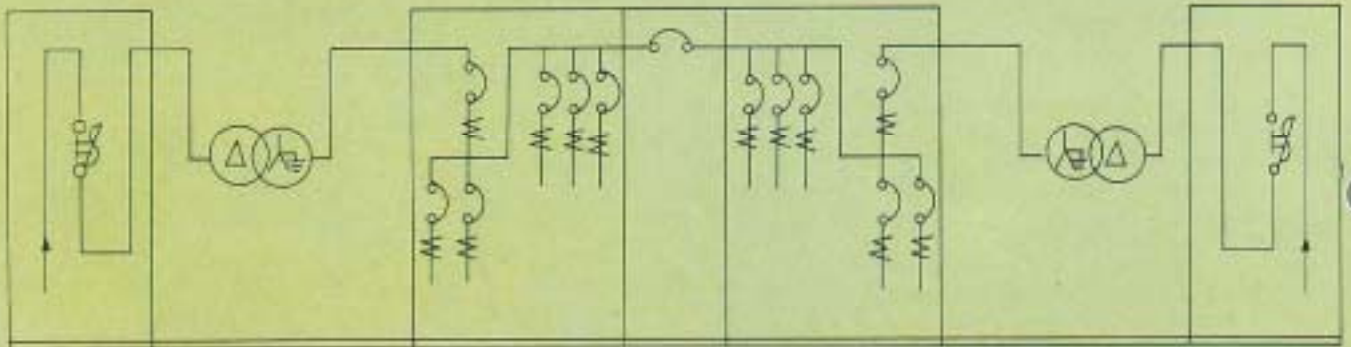
12 KV unit substation

The metal-enclosed unit substation is built with high tension receiving equipment, power transformers and low tension switch-gears in one line of a totally enclosed switchboard; which forms a load center and is applicable to widely separated distribution systems and load variations.

Its advantages are:

1. Low installation cost
2. Less voltage regulation
3. Flexible to load variation
4. Easy to expand
5. Ring or tree system adaptable
6. Space saving

This unit an economical distribution system with simple and pleasant indoor or outdoor design, which can be widely applied to industrial and building equipment.



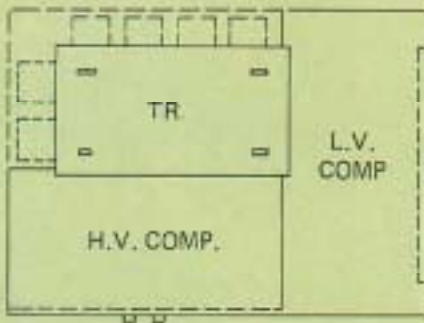
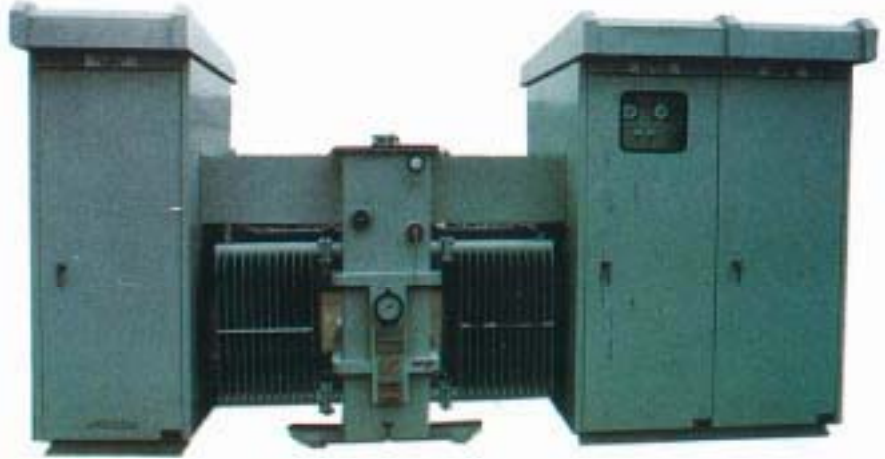
DOUBLE ENDED UNIT SUBSTATION



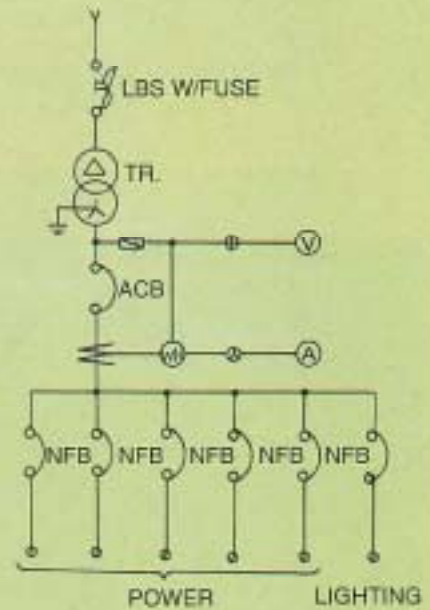
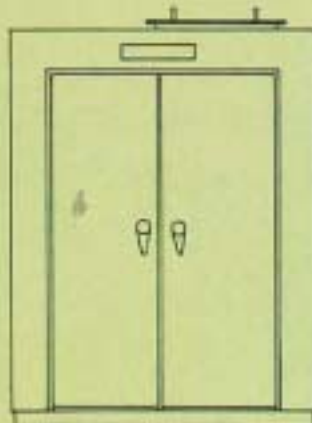
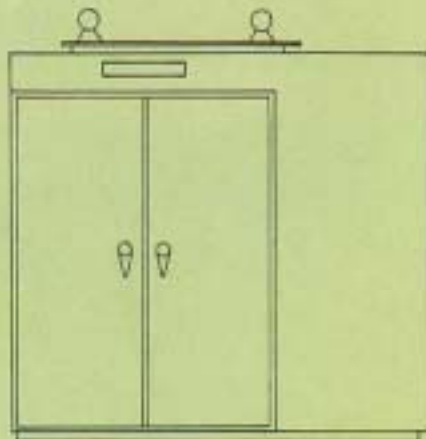
INDOOR TYPE



OUTDOOR TYPE



Compact unit-substation (pad-mounted transformer)
outline of compact type unit substation
HV: 3.3KV-24KV
LV: 220V-480V
Capacity: Up to 500 KVA

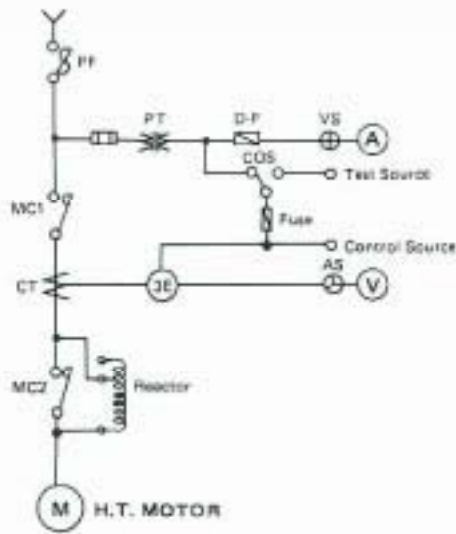




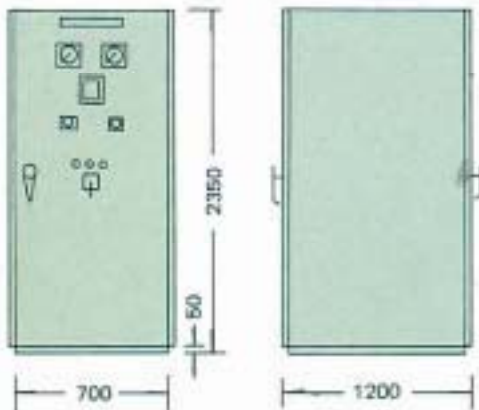
Motor control center (Indoor type)



**Motor control center
(Outdoor type)**



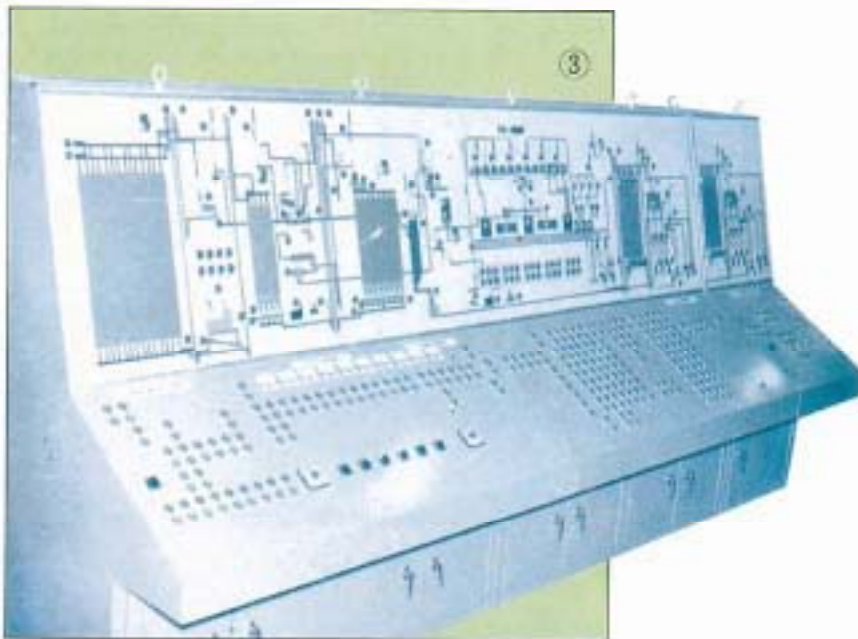
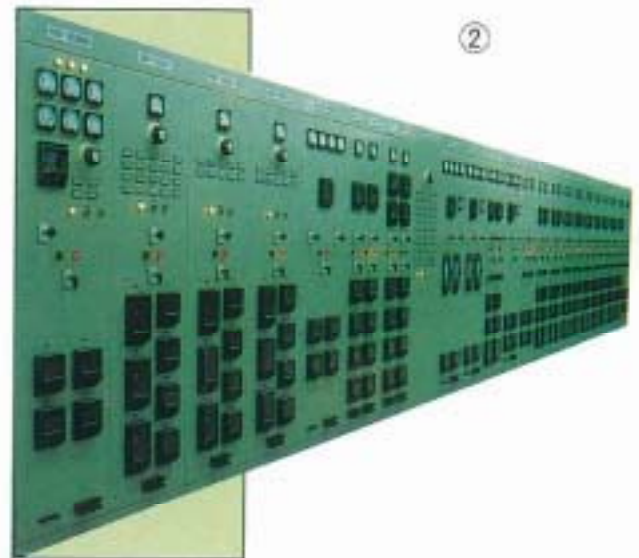
**3.3KV motor
Starting Panel**



HV motor starting panel



CONTROL SWITCHBOARD AND CONTROL DESK



- ① Sequence control
Duplex benchboard
- ② Relay and control
Enclosed switchboard
- ③ Sequence control
Dual bench board
- ④ Relay and control
Duplex switchboard
- ⑤ Control benchboard





①



②



③



④



⑤



- ① Group starter panel
- ② Main switch board
- ③ Group starter panel
- ④ Battery charger panel
- ⑤ Control desk



**DC-48V/4000A Unit
Telecommunication
Rectifier**

DC Power Supply for telecommunication

Input: 3 phase, 220V \pm 10%, 50 ~ 60 \pm 3 Hz.

Rating: Voltage: 24V up to 60V DC

Current: 10A up to 10,000 A and end-cell system

Cooling: Natural cooling

Ripple Voltage: less than 200 mv p-p

Efficiency: over 90% typical at full load.
over 85% for TC rectifier.

**DC-48V/20A Type
SID Rectifier**

Silicon drooper type DC rectifier.

Input: 3 phase, 220V \pm 10%, 50 ~ 60 \pm 3 Hz.

Output Rating: Continuous rating up to 300A.

Cooling: Natural cooling

Ripple noise: less than 32DBrnc

Efficiency: over 75% typical at full load,





**DC 51V
15A converters in
Rack installation**

Static type DC to DC Converter
Input: DC-48V \pm 5V
Output Rating: Continuous rating up to 1Kw
Cooling: Natural cooling
Ripple noise: less than 32DBmc
Efficiency: over 80% typical at full load, 85% over 48V.



**DC24V/80A
Battery charger for marine use**

Marine type 24 Volts battery charging & discharging board
Input: 3 phase, 440V \pm 10%, 50 ~ 60 \pm 3 Hz
Rating: Continuous rating up to 120A
Cooling: Natural cooling
Ripple noise: less than 32DBmc
Efficiency: over 90% typical at full load

**200KW Reel motor
Thyristor control equipments.**

DC Thyristor Leonard power supply for DC motor
Input: 3 phase, 50 ~ 60 \pm 3 Hz, AC Source voltage up to 22KV
Rating: Voltage up to 1200V DC current up to 6000A
Cooling: Forced air or water cooling
Application: Reversing mill, tensions reel, and speed and/or torque control equipment etc.





ALLIS
ELECTRIC
COMPANY

HSIN CHUANG PLANT
YANG MEI PLANT



ORDERING INFORMATION

When placing orders, please supply the following information.

1. Single-line diagram of electrical systems.
2. Rated voltage, current and interrupting capacity of system.
3. Type rated voltage, rated current and interrupting capacity of breaker.
4. Type ratings, and quantity of meters, relays and control devices required.
5. Indoor or outdoor application.
6. Lead-in and lead-out arrangement. (cable or BUS duct).
7. Applicable standards.
8. Finish: Designate Allis standards colors if possible.
(Allis standards: #824 light-gray)
9. Load and its characteristics.
10. The requirements for physical arrangement or relationship to existing switchgear units.
11. Type and quantity for spare parts.
12. Specifications of supply.
13. Other special requirements.



ISO 9000 Certificated Manufacturer

ALLIS ELECTRIC CO., LTD.

Head Office:

12th Fl., No.19-11, San-Chung Road, Nan Kang District,
Taipei 115, Taiwan, R.O.C.

Tel:886-2-2655-3456

Fax:886-2-2655-2286-7

E-Mail : sales@allis.com.tw

<http://www.allis.com.tw>