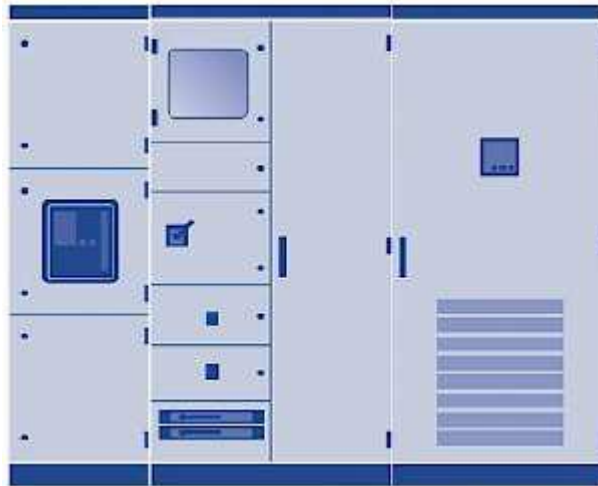




ENERSYS PANEL PVT LTD.

INTEGRATED PANELS & ENCLOSURE SOLUTIONS

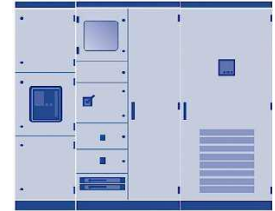


*REACH BEYOND THE **CONVENTIONAL...***





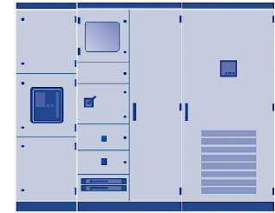
We are ?



- **ENERSYS PANEL PVT LTD** is the professionally managed company that is carrying out business primarily into fields of Electrical Power Distribution Systems & Components. We are manufacturer of custom built LT Switchboards & Control panels. And we are System integrator for BCH Electric Ltd. For Bolted panels. ENERSYS is amongst the leading suppliers of electrical equipment's and its value additions that cater to a large and vivid market spectrum, which includes processing, manufacturing, infrastructure, service providers, hospitality, telecom, banking, information technology, entertainment & amusement parks and government establishments.
- ENERSYS is an established company that strongly believes in evolution, whose objective is to design and produce high quality enclosure solutions, combining innovation with the experience gained over 19 years of activity.



Why We are ?



We manufacture and supply technologically advanced products, which are widely acclaimed in almost all industries. With our excellent designing and engineering capabilities, we are able to offer a wide variety of electrical control & Power distribution Switchboards. The modern offices, factory, stores and other facilities are located in same spacious premises. Our employees' strength at present is approximately 15 including Marketing engineers, administrative staff and technicians. The plant is equipped with comprehensive production machinery and test equipment's, like in-house facility as Fabrication Manufacturing, Testing of Panels. These are subjected to stringent tests such as Megger Test, H.V. Test and others to ensure their optimum functionality.

Following are some of the distinguishing factors that make us the most preferred choice of a large customer base:

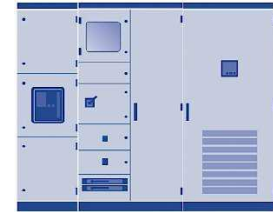
- CUSTOMER FOCUSED APPROACH
- CUSTOMIZED PRODUCTION FACILITY
- TIMELY DELIVERY OF GOODS
- COMPETITIVE PRICING POLICY
- STRICT QUALITY CONTROL MEASURES
- INTERNATIONAL QUALITY STANDARDS
- WELL-EQUIPPED MANUFACTURING FACILITY
- DEXTEROUS TEAM OF PROFESSIONALS
- POWER SAVING CONCEPT FOR HUGE INDUSTRIES
- LATEST EQUIPMENT'S FOR DESIGNING & WORKING



Our Expertise

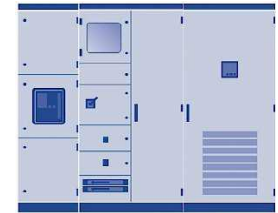
We are expert in Manufacturing -

- Welded Structured Panels
- Fully Bolted Structured Panels
- Thermoplastic Modular Enclosure Panels





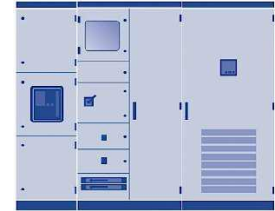
Our Mission & Values



- ***Our Mission*** is to build top-class Electrical Switchboard solutions that meet the requirements of our customers and deliver superior value through quality, reliability, safety and technical leadership.
- ***Our Shared Values-***
 - ✓ **Teamwork**—Working together to achieve Operational excellence
 - ✓ **Commitment**—Pledging dedication to business goal
 - ✓ **Quality**— Provide Product & Services to meet or exceed customer expectations.
 - ✓ **Integrity**— Always Practice & maintain the highest ethical standards



Business Verticals



- Manufacturer of LV Switchboards

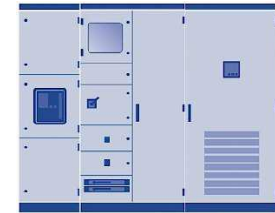


– Trading of Electrical Enclosures





What we Manufactured ?



POWER PANELS -

- Power Control Centre Panel
- Motor Control Centre Panel
- Auto Mains Failure Panel
- Auto P. F. Control Panel
- Power/ Lighting Distribution Boards
- Extension Distribution Boards
- Feeder Pillar Panels
- Bus Duct & Bus Trunking

CONTROL/AUTOMATION Panels-

- Metering Panels
- MIMIC Panels
- Annunciator Panel
- Control Relay Panel
- Control Desk Panel
- Fire hydrant Pump Panel
- PLC Automation Panels
- Variable Frequency Drive Panel

SUB Distribution Components-

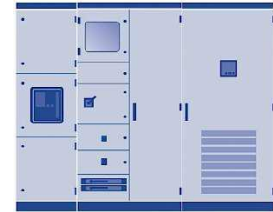
- Plugs Socket Outlet Boards
- Capacitor Bank Panels
- Local Control Stations
- Push Button Stations
- Busbar Junction Box
- MCCB / SFU Enclosures
- Portable Extension Boards
- SOLAR AC/DC DBs /Combiner Boxes





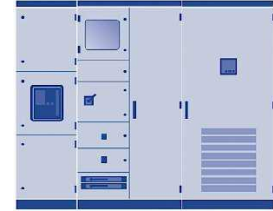
Products What we Trade

- > MS Welded Wall mounting Enclosures
- > Floor Standing Cubical
- > Thermoplastic ABS/ PC Enclosures
- > GFRP / FRP Enclosures
- > Custom Design Enclosures





Panel Design



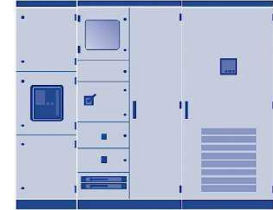
We normally take care while designing a Switchboards



- Safety of life
- Safety of Equipment
- Reliability
- Maintainability
- Flexibility
- Simplicity of operation



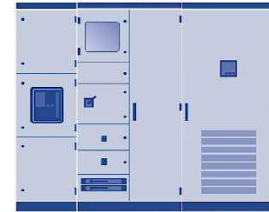
Panel Construction



- Structure
 - Welded
 - Welded Structure Only With All covers & Doors are openable
 - Fully welded body
 - [Conventional Fabricated type]
 - Fully bolted modular type
- Feeder arrangement
 - Compartmentalized
 - Draw out / Fix type
 - Non Compartmentalized
- Form of separation
- Degree of protection [IP]



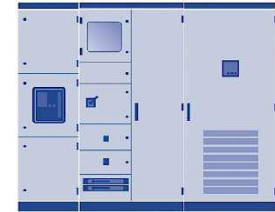
Form of separation



SYMBOL	Main Criteria	Sub - Criteria	FORM -3a		
	<ul style="list-style-type: none"> Outer Enclosure Inner Separation Inner Separation Functional Component 	<ul style="list-style-type: none"> Main Busbar Tapping Busbar ⊗ O/G Terminals 		<p>Separation of busbars from functional units Separation of functional units from one another</p>	<p>Separation of terminals from functional units <i>Terminals not separated from Busbars</i></p>
FORM-1	NO SEPERATION		FORM-3b	<p>Separation of busbars from functional units Separation of functional units from one another</p>	<p>Separation of terminals from functional units <i>Terminals separated from Busbars</i></p>
FORM-2a	Separation of busbars from functional units	<i>Terminals not separated from Busbars</i>	FORM-4a	<p>Separation of busbars from functional units and terminals Separation of functional units from one another</p>	<p>Separation of term's from functional unit and those of other functional units <i>Terminals in same compartment</i></p>
FORM-2b	Terminals not separated from Busbars	<i>Terminals separated from Busbars</i>	FORM-4b	<p>Separation of busbars from functional units and terminals Separation of functional units from one another Sep of term's from funct.</p>	<p>Sep of term's from funct. unit and those of other funct. Units. <i>Terminals not in same compartment as associated functional unit</i></p>



Degree of protection



Degrees of Protection provided by enclosures (IP Rating)

The degree of protection provided by any assembly against contact with live parts, ingress of solid foreign bodies and liquid is indicated by the designation IP, according to IEC 60529 (IEC 60439-1 Paragraph 7.2.1.1).

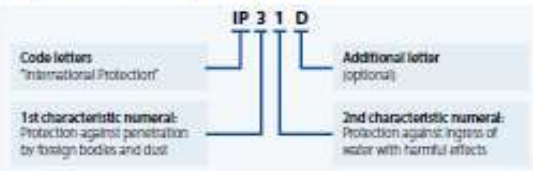
The degree of protection is also a criteria for type tests (IEC 60439-1 paragraph 8.2.7). It is subject to agreement between the manufacturer and user (IEC 60439-1 Annex E).

Definitions

Degrees of protection provided by enclosures of electrical equipment in accordance with IEC 60529:

1. Protection of persons against access to hazardous parts inside the enclosure;
2. Protection of the equipment inside the enclosure against ingress of solid foreign objects;
3. Protection of the equipment inside the enclosure against harmful effects due to the ingress of water.

Designations for the degrees of protection



Remark

Where a characteristic numeral is not required to be specified, it shall be replaced by the letter 'X' ('XX' if both numerals are omitted).

MNS – Available standard degrees of protection

As MNS is designed for indoor applications, no IP degrees covering water jetting and total water immersion are foreseen.

VENTILATED		NON-VENTILATED
Ventilation grids in doors, covers and roof plate		Sealed, no ventilation openings
IP 30	IP 40	
IP 31	IP 41	
IP 32	IP 42	
Maximum heat dissipation (by air convection)		IP 54 Low heat dissipation (heat emission via enclosure only)

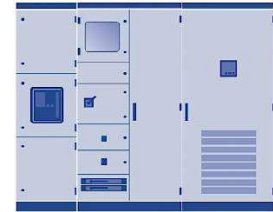
FIRST NUMERAL

IP	Requirement	Example	Meaning protection of persons against access to hazardous parts with:
0	no protection		no protection provided
1	full penetration of 50.0mm diameter sphere not allowed and shall have adequate clearance from hazardous parts. Contact with hazardous parts not permitted		back of hand
2	full penetration of 12.5mm diameter sphere not allowed; the jointed test finger shall have adequate clearance from hazardous parts		finger
3	the access probe of 2.5mm diameter shall not penetrate		tool
4	the access probe of 1.0mm diameter shall not penetrate		wire
5	limited ingress of dust permitted (no harmful deposit, refer to standards)		wire
6	totally protected against ingress of dust		wire

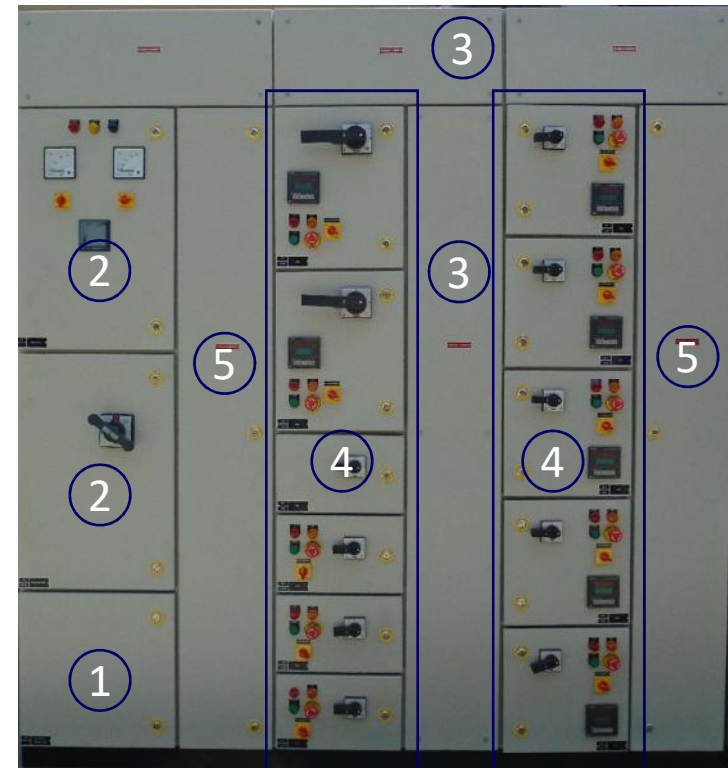
SECOND NUMERAL

IP	Requirement	Example	Meaning for protection from ingress of water:
0	no protection		no protection provided
1	protected against vertically falling drops of water		vertically dripping
2	protected against vertically falling drops of water with enclosure tilted 15° from the vertical		Enclosure tilted 15° from the vertical
3	protected against sprays to 60° from the vertical		Limited spraying
4	protected against water splashed from all directions		splashing from all directions
5	protected against low pressure jets of water from all directions		Hosing jets from all directions
6	protected against strong jets of water		Strong-hosing jets from all directions
7	protected against the effects of immersion between 15.0cm and 1.0m		Temporary immersion
8	protected against longer periods of immersion under pressure		immersion

Basic Zones of switchboards

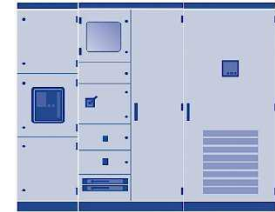


1. Incoming Cable Zone
2. Incomer & Metering Zone
3. Busbar Zone
 - Horizontals & Verticals
4. Functional Units [Feeders]
5. Outgoing Cable Zone





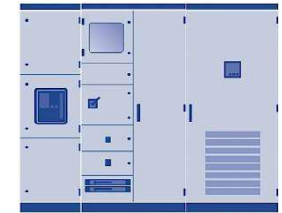
Basic Components of switchboards



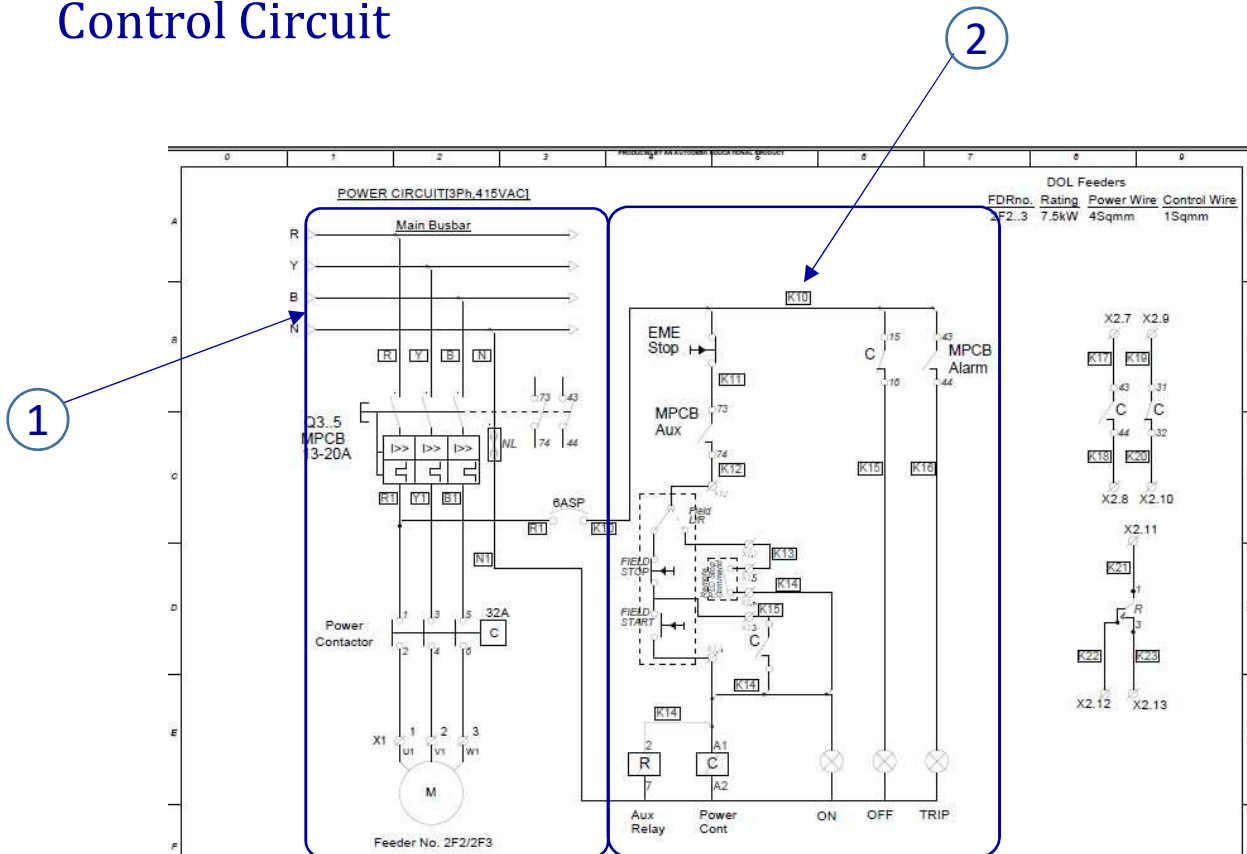
- Busbar & Its supports
- Circuit Breakers
- Switch Fuse Unit
- MCCB /MCB
- MCPB
- Contactors
- Over Load Relays
- Push Buttons & indicators
- Terminals
- CTs
- Measuring Instruments



Basic Electrical Design of Switchboards

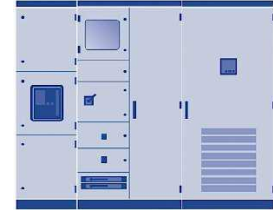


- Three Main Circuits are there
 1. Main Power Circuit
 2. Control Circuit





IEC 61439

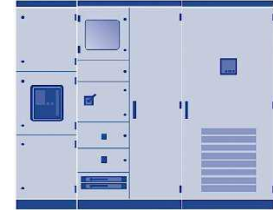


• There are two types of test as per IEC

- Verification Test [Type Test]
 - Test made on as Sample of an Assembly of Switchgear & Control Assembly to verify that the design meets requirement of the relevant Assembly Standards
- Routine Verification [Routine Tests]
 - Verification of each assembly during / after manufacturer to confirm whether complies to requirement of the relevant Assembly Standards. It made on each assembly.



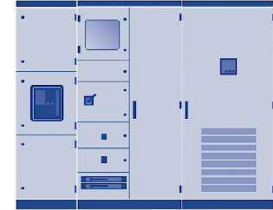
Type Tests are per IEC 61439



- Strength of Material & Parts
- Deg. Of Protection of Enclosure [IP]
- Clearance & Creepage Distance
- Protective Circuits Function
- Incorporation of devices, Internal Circuits & Terminals
- Dielectric Properties
- Temperature-Rise Limit
- Short Circuit Withstand Capacity
- Electro Magnetic Compatibility [EMC]
- Mechanical Operation



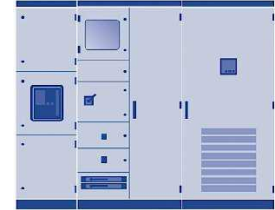
Routine Tests at our works



- Physical Verification
 - Dimension Check
 - General Arrangements of Feeders / Components
 - Paint Shade & finish and overall appearance
 - Bill Of Material [BOM] Verification
 - Wiring Connection Tightness
 - Wiring Continuity Test
- IR Value test with 1000M Ω Magger
- HV Test with HV Testing Kit – 2.5KV for 1Min.
- Functional Test of Feeders



We follows



We used EC grade busbar only

All Busbar supports are ERDA/CPRI certified

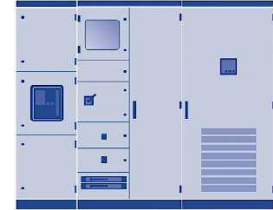
All Busbar supports material – smc / dmc / polyamide

All hardware will be white passivated type

All Joints tighten by the recommended torque with torque ranch

Busbar size selection is depending of current density with the width of the switchgear also.

Busbar with heat shrinkable sleeves as per R / Y/ B / Black colors



All wire size selection as per rating given by the manufacturers

All wires will be copper flexible, fr / frls, 1.1kv grade

All wire lugs will be end seal type up to 6sqmm reputed make only

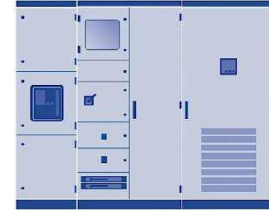
Control Wiring- 1Sqmm / 1.5Sqmm – on request / grey colour

CT wiring- 2.5Sqmm / r/y/b/blk colour

Power wiring – up to 6sqmm – r/y/b/blk color on above it will be only grey / black color

All terminals will be screw / Busbar type / other types will be on request

PVC wire duct will be reputed make in grey colour



Busbar Selection Chart				
Material	COPPER		Aluminum	
Rating	For Ph	For N	For Ph	For N
80A	20 X 3 X 1	20 X 3 X 1	20 X 5 X 1	20 X 5 X 1
100A/125A	25 X 3 X 1	20 X 3 X 1	20 X 10 X 1	20 X 5 X 1
200A	20 X 5 X 1	20 X 6 X 1	25 X 10 X 1	25 X 6 X 1
250A	25 X 6 X 1	25 X 3 X 1	30 X 10 X 1	30 X 5 X 1
300A	25 X 10 X 1	25 X 6 X 1	40 X 10 X 1	40 X 5 X 1
400A	30 X 10 X 1	30 X 5 X 1	50 X 10 X 1	50 X 5 X 1
			25 X 10 X 2	25 X 10 X 1
600A	40 X 10 X 1	40 X 5 X 1	70 X 10 X 1	70 X 5 X 1
			40 X 10 X 2	40 X 10 X 1
800A	50 X 10 X 1	50 X 5 X 1	50 X 10 X 2	50 X 10 X 1
			100 X 10 X 1	100 X 5 X 1
1000A	30 X 10 X 2	30 X 10 X 1	70 X 10 X 2	70 X 10 X 1
	60 X 10 X 1	60 X 6 X 1		
1200A	40 X 10 X 2	40 X 10 X 1	80 X 10 X 2	80 X 10 X 1
	70 X 10 X 1	70 X 6 X 1		
1600A	50 X 10 X 2	50 X 10 X 1	100 X 10 X 2	100 X 10 X 1
	100 X 10 X 1	100 X 5 X 1		
2000A	60 X 10 X 2	60 X 10 X 1	80 X 10 X 3	80 X 10 X 2
	100 X 12 X 1	100 X 5 X 1		

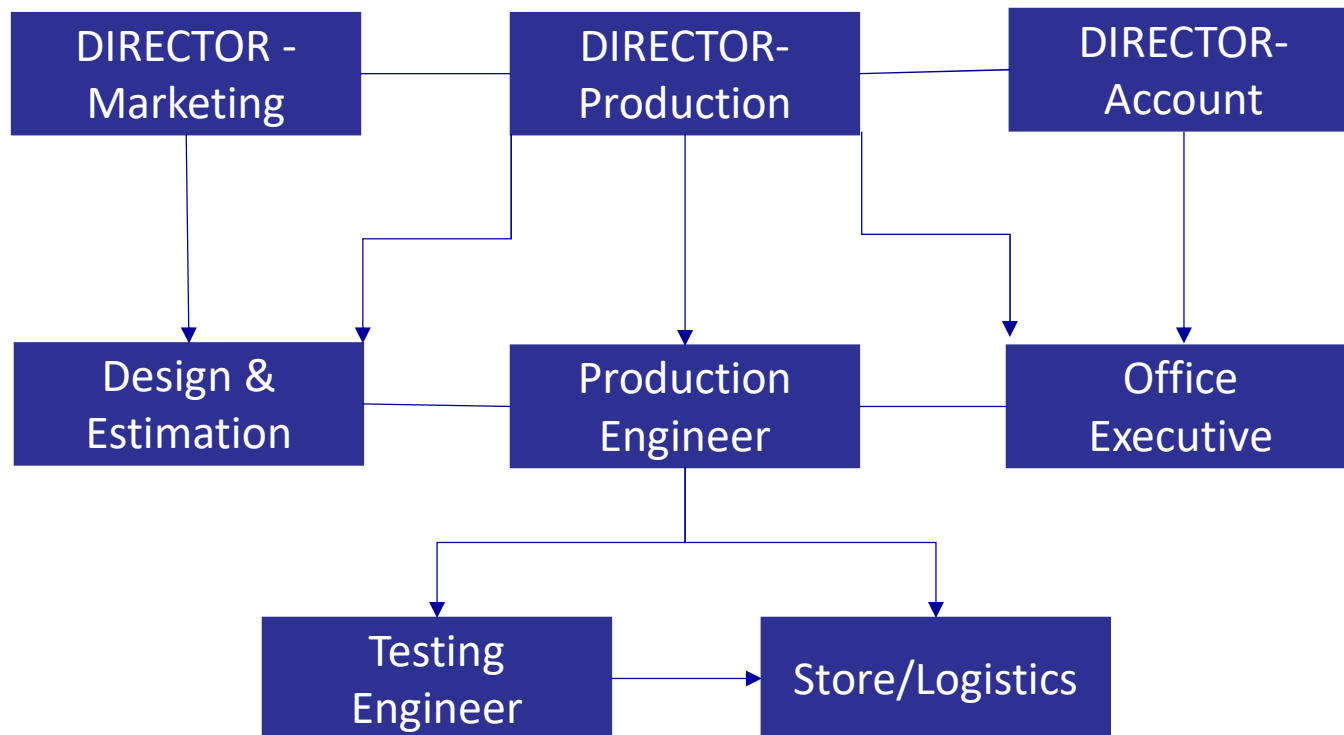
Wire Selection Chart	
Rating	Sqmm
Conrol	1Sqmm
CT	2.5Sqmm
32A	6Sqmm
40A	10Sqmm
50A	16Sqmm
63A	16Sqmm
80A	25Sqmm
100A	25Sqmm
DOL-upt 3HP	2.5Sqmm
DOL-upt 10HP	4Sqmm
S/D-12.5 HP to 20 HP	4Sqmm
S/D-25	6Sqmm
S/d- 30 & 40	10Sqmm
S/D-50 HP	16Sqmm
S/D-60 & 75	25Sqmm



ENERSYS PANEL PVT LTD.

INTEGRATED PANELS & ENCLOSURE SOLUTIONS

ORGANISATION CHART

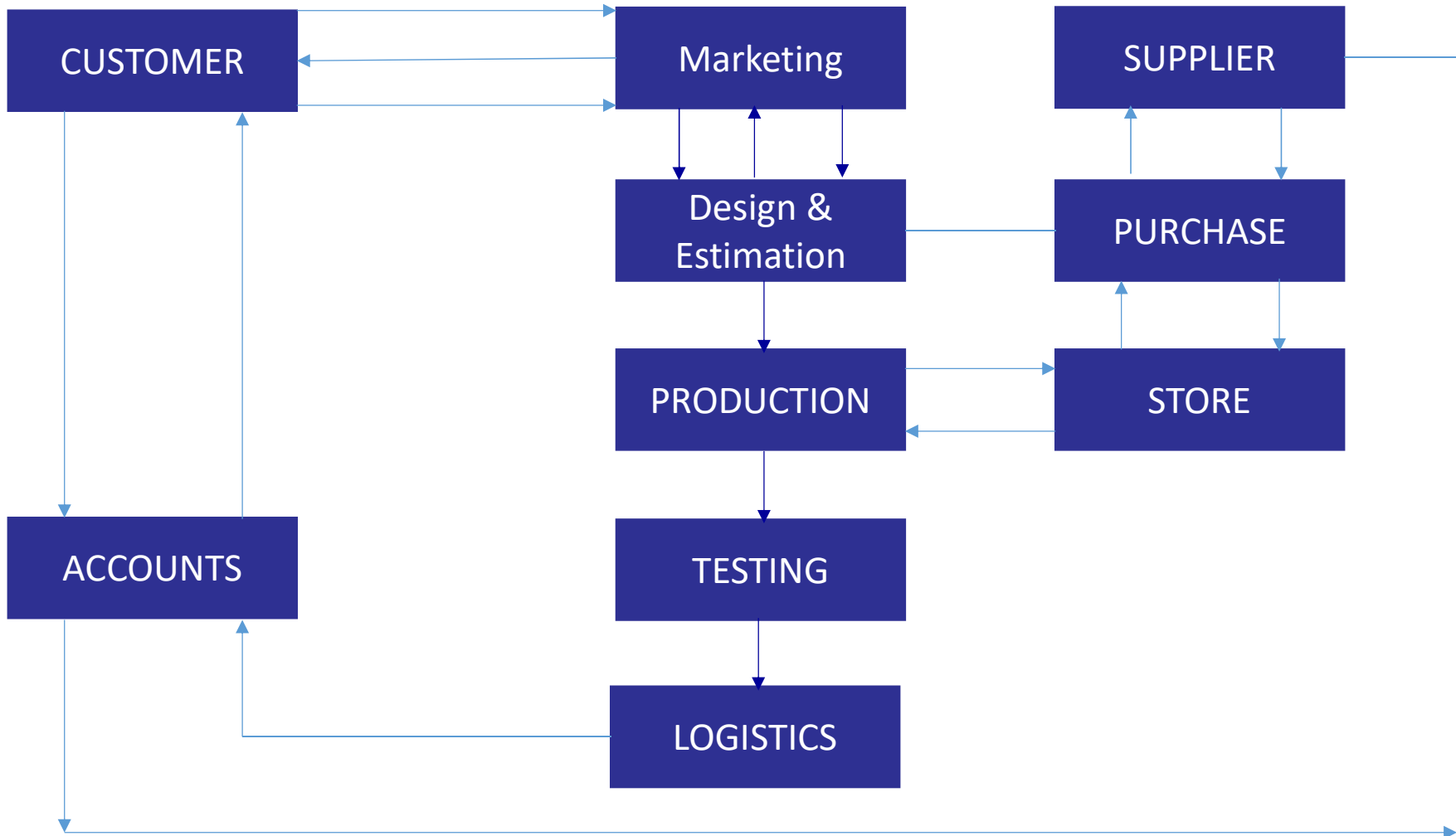




ENERSYS PANEL PVT LTD.

INTEGRATED PANELS & ENCLOSURE SOLUTIONS

HOW WE WORK





ENERSYS PANEL PVT LTD.

INTEGRATED PANELS & ENCLOSURE SOLUTIONS

PRODUCTS SHOW





MCC PANEL



MCC PANEL



PMCC PANEL



APFC PANEL



AMF PANEL



MCB Distribution Board



Power Distribution Board



Lighting Distribution Board



PMCC Panel



Power Distribution Board



Annunciator Panel



Power Distribution Board



Control Desk



Feeder Pillar Panel

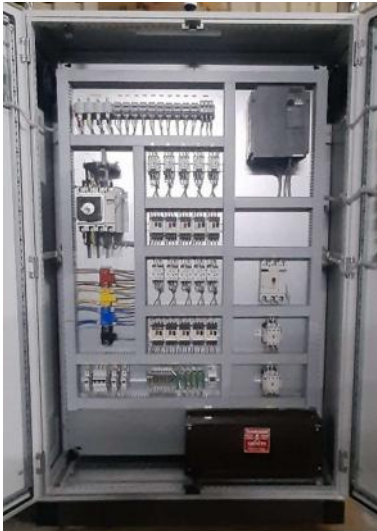


VFD Control Panel



Control Panel

VFD PANELS



PLC PANELS



Thermoplastic Panels & Solutions



Final Distribution Components



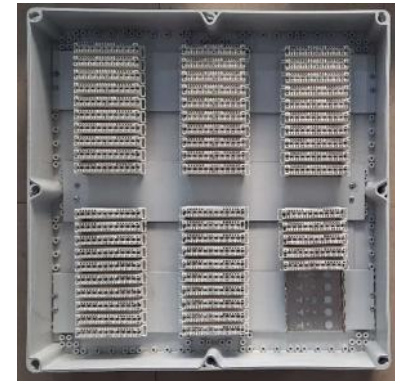
IP65 LCS



BUSBAR BOX



LOCAL CONTROL STATION



KRONE JB



IP55 LCS



IP55 SOCKET DB



IP65 SOCKET DB



IP65 SOCKET DB



ISOLATOR BOX



SOLENOID BOX



SOCKET OUTLET



CABLE DRUM

Final Distribution Components



AANOUNCIATOR
PANEL



FLP S/D , DOL
STARTERS



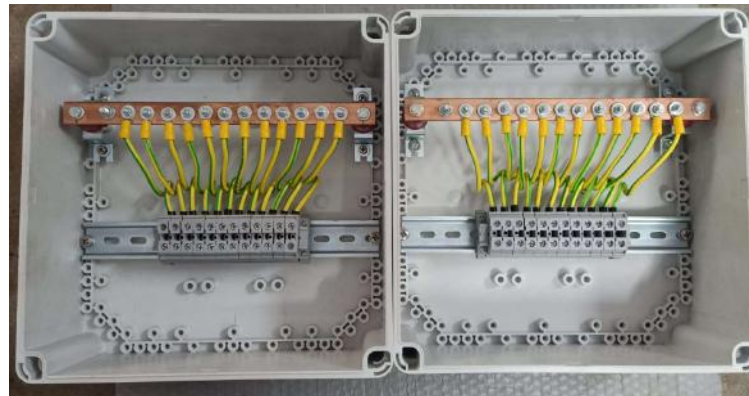
DG ENGINE
CONTROL PANEL



MOTOR END
CABLE JUN. BOX



OPERTION CONTROL
DESK



EARTHING BOX

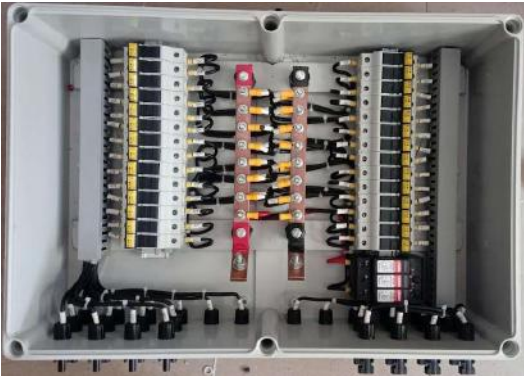


SPECIALIZED LOCAL
CONTROL STATION

SOLAR APPLICATIONS



DC FUSE BOX – 10WAY



DC COMBINER BOX



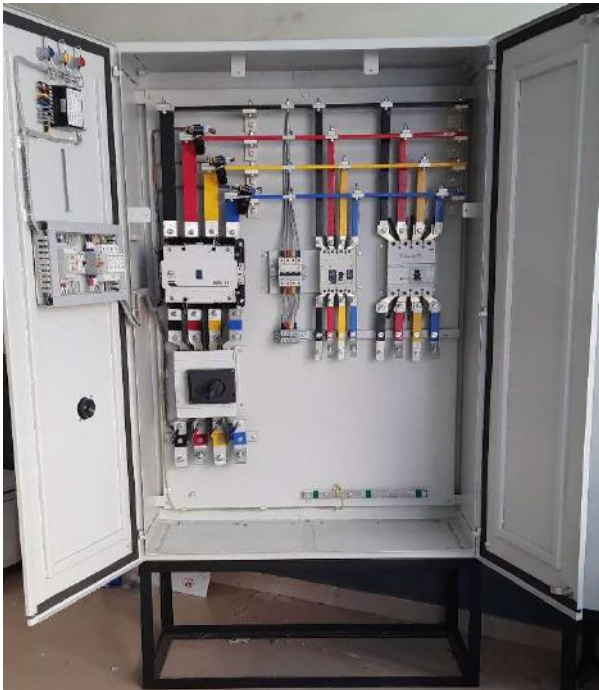
AC DB 1IN -10OUT



DC DB WITH SPD

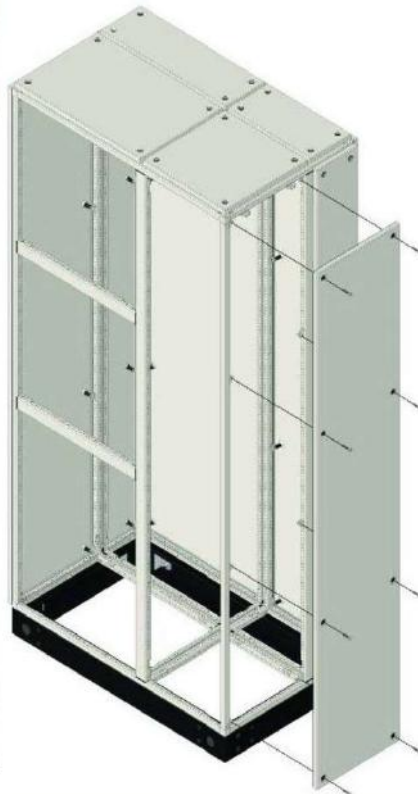


ENERGY METER BOX WITH BUSBARS



2IN -10OUT ACDB -630A WITH NVR

Bolted Panels



CUSTOMIZED ENCLOSURES



GC UNIT PANEL



MS PANEL ENCLOSURE



UPS / BATTER BOX



PC CONSOLE



WELDING MONTORING
BOX



CONTROLLE BOX



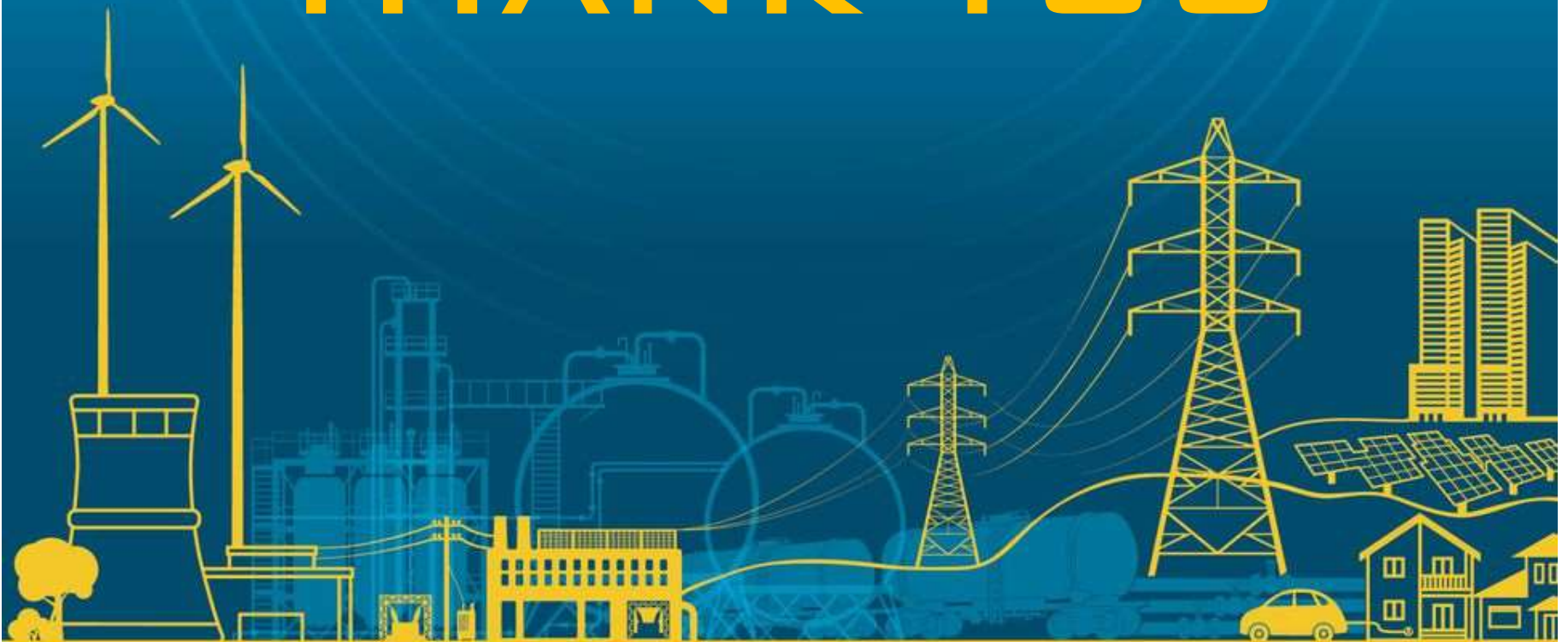
PC CONSOLE [TABLE TYPE]

OUR VALUED CUSTOMERS



THANK YOU

THANK YOU





ENERSYS PANEL PVT LTD

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Baroda -390010, GUJARAT, INDIA

Tel -09081810775 / M-09824065570

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