



Company Catalogue



Sigma Power Pvt Ltd.

**Transformer Capacity From
10KVA to 5000 KVA**



Introduction

Sigma Power Pvt LTD Company has emerged as a world class Distribution Transformer unit located in Lahore, Pakistan. Sigma Power an ISO 9001: 2015 ISO 14001:2015 OHSAS 18001:2007 certified company from CAI and registered Manufacturer from WAPDA and also registered from PEC Pakistan Engineering Council. Our transformer testing laboratory is also ISO/IEC 17025:2017 certified from Pakistan National Accreditation Council (PNAC).

Sigma Power Pvt LTD manufactures custom built and special purpose Pole & Pad Mounted Transformers ranging from 10 KVA ~ 5000 KVA. Our finished product goes under rigorous testing to ensure longer life of transformer. We believe in technological advancement and continuous improvement in product and process through Research & Development to make best use of available resources. Our Engineering Team provides best support to clients in order to achieve maximum customer satisfaction.

Quality is more than our name. It's our heritage!

Sigma Power Pvt LTD has international presences and leadership position in the market for manufacturing electrical distribution transformers of 1, low voltage products, and other application and services.

At **Sigma Power Pvt LTD** we proud of our team & committed to offer our customers the confidence of highly experienced experts in design, manufacture, test and service support.

Sigma Power Pvt LTD have used the experience of Swat Industry Pvt LTD which is operating in the Copper manufacturing sector for over **25** years of Experience.

The company wide focus is clear applying our technological experience to contribute to society and enhance quality of life around the global.

Sigma Power Pvt LTD aims to disseminate and apply the guiding principles of the lean manufacturing model by continuous improvement, adding value to processes & using lean tools and techniques.

The quality of the products it supplies, the protection of the health of workers and the community, risk prevention and environmental protection are strategic, priority equal objectives. we believe that Power to Life is always a solution represent superior value through our world class capabilities, relationships, specialist knowledge, proven reliabilities and comply with all applicable regulation and standards, Here our customers can be assured the Quality Solution.

Proudly **Sigma Power Pvt LTD Company** is Pakistan Local Manufacturer Company.



SIGMA POWER PVT LTD PROMISE

Sigma Power products are designed and manufactured to meet your needs, with clever **innovation delivering quality solutions.**

Sigma Power products comply with international standards and the company is committed to a consistent quality approach. With the ISO 9001:2015 14001:2015 45001:2018 standard, it guarantees our clients a product and service that meets their needs as well as applicable legal and regulatory requirements.



SIGMA POWER PVT LTD PEOPLE

Sigma Power Company proud of our team whose combined technical and operational knowledge to provide our customers the confidence of Sigma Power offered solution in every aspect of design manufacturing ,testing , logistic and in field services .

Sigma Power team developed over many years of experience in daily challenges and accumulate vast experience in depth understanding to build a unique solution & allow our customers enjoying partnership experience .

Sigma Power committed to provide an excellent and challenging work environments, supporting and training our people to led industry-leading staff retention.

Our core values towards our employees are the same that we apply to our customers: providing all the elements to succeed and build a greener future of Energy cooperating with our partners, customers and employees

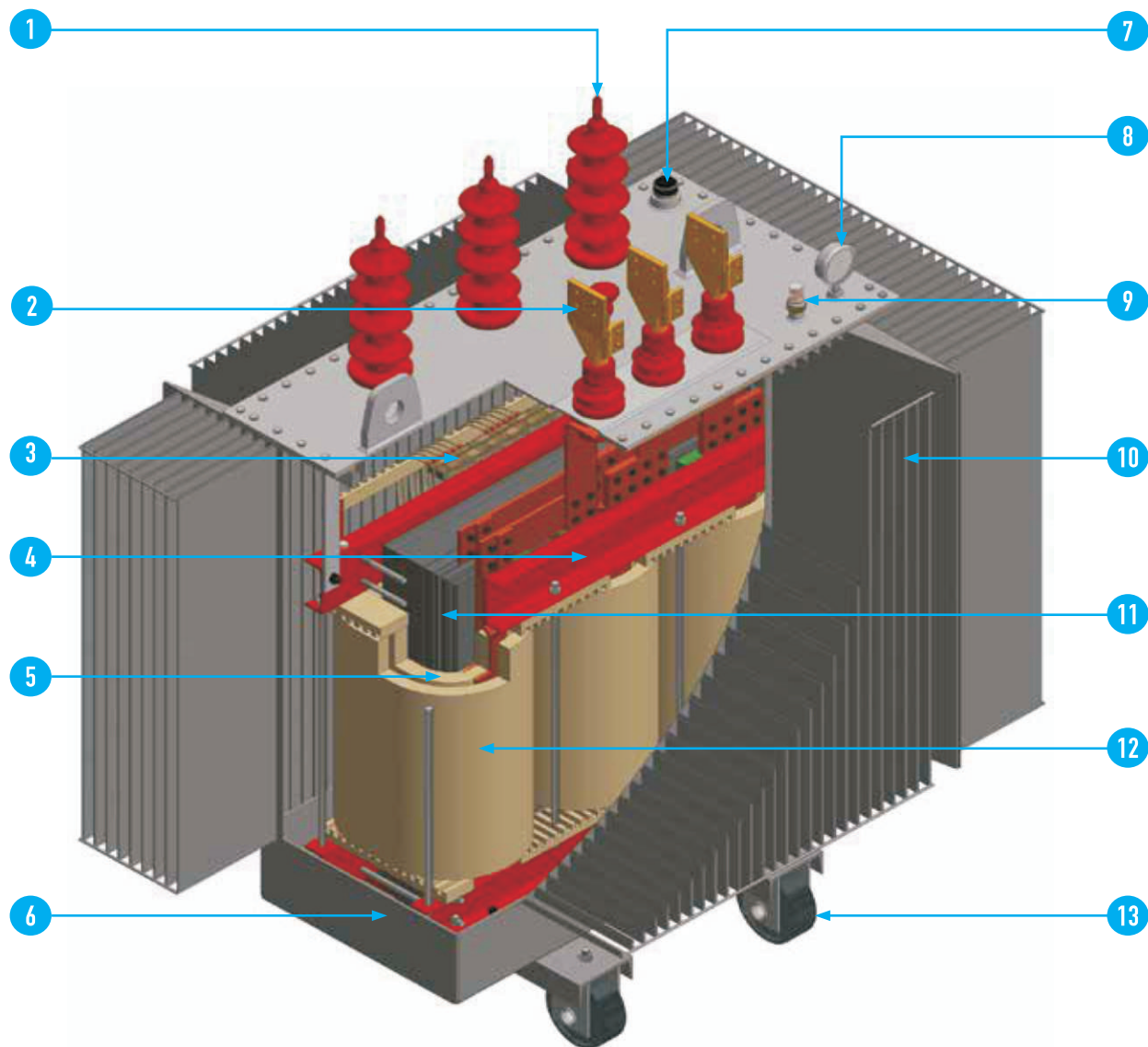
Industry Standards:

Sigma Power Pvt LTD transformers and their parts comply with the most widely applied International industry standards IEC & DDS in most countries where local electric authorities have either adopted one of these standards or created one that suits the needs, laws and regulations of their country.

Sigma Power Pvt LTD transformers meet the following industry standards
IEC Sigma Power Transformers comply the IEC standards 60076 & DDS 84:2020



Product Breakdown



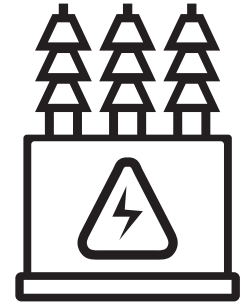
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|-------------------------|-----------------------|
| 1 HV Bushing | 8 Top Oil Thermometer |
| 2 LV Bushing | 9 Oil Level Indicator |
| 3 No Load Tap Changer | 10 Corrugated Fins |
| 4 Core Clamps | 11 Core |
| 5 LV Coil | 12 HV Coil |
| 6 Transformer Tank | 13 Roller |
| 7 Pressure Relief Valve | |

Transformer Constructions:

Natural Cooling for oil immersed Transformers as follow:

ONAN Oil Natural Air Natural, ON AF Oil Natural Air Forced.

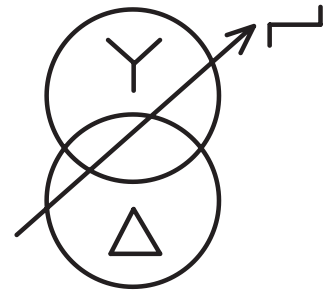
The ONAN transformers can be operated with normal rating and ONAF with an increased rating of Approximately 25%.



Windings Conductor

The HV & LV winding is made of CU material according to customer requirement. Different types of windings are produced as per design (Wire windings, Layer windings) etc.

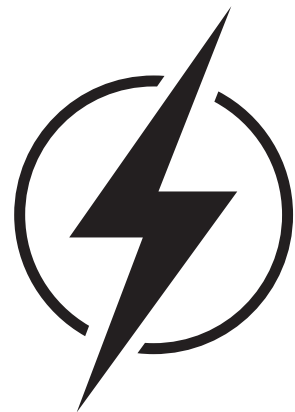
The Vector Group determines the phase displacement between the primary and the secondary winding, A vector group Dyn11 is delta on primary, star on secondary, with neutral brought out and 330-degree phase displacement. More configurations like YND11, YNAO, Zigzag, Loop feed, etc. can be provided upon Client requirement and specification.



Electrical characteristics:

Frequency 50-60 Hz.

- Medium voltage System voltage : 6.6,11,13.8,22 ,33,34.5 KV.
- Low voltage system voltage 231 ,380,400 ,415,433,480V.
- Any other voltage will be designed refer to client requirements.



Machines and Testing Capabilities

Sigma Power Transformer company have world class manufacturing facility, Sigma Power recently upgraded to increase production capacity and capability Using latest technologies in machines and testing systems.



Manufacturing facility is divided into more than 15 workstations using the latest fully automated machine technology major workstation to cover four major workshops of the electrical section operations, mechanical workstation section operations, the painting treatment operations, and the final assembly and testing operations complying with all international standards.

Electrical section

Cores: Transformer Core Cut-to- length Machine equipped with automatic lamination stacking transformers core step lap in different shapes and sizes with hole punching and V notching. Operated through PLC control to ensure full automation process for availing different angles, hole positions, cutting lengths and V notching position.

Winding: LV & HV winding machines incorporate with latest technology Of dynamic tension control and conductor flattening to achieve a high quality windings. Copper conductors are used with Different types of windings according to design & client requirement (Wire windings, Layer windings) etc.



Fabrication Workshop:

A wide range of computer controlled manufacturing machineries used for process steel for transformers, LV & MV enclosers and Substations which can process all kind of operations in metal sheets and steel frame type. , capabilities include metal sheet shearing, punch pressing, and iron frame cutting and forming.

Testing

Test: Testing is very important functions of the transformer manufacturing. To ensure the quality requirements and the working conditions of the Transformer.

Sigma Power has in house testing facilities which able to confirm the performance of our products which are subject to comprehensive routine tests and other tests to comply with customer requirement and relevant international standards as per company procedure.

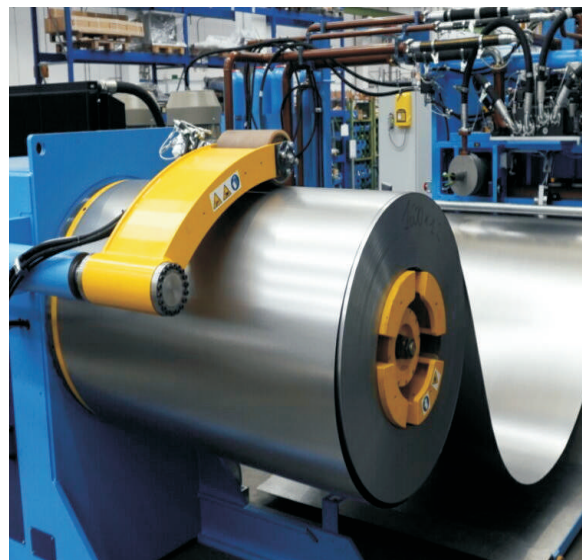
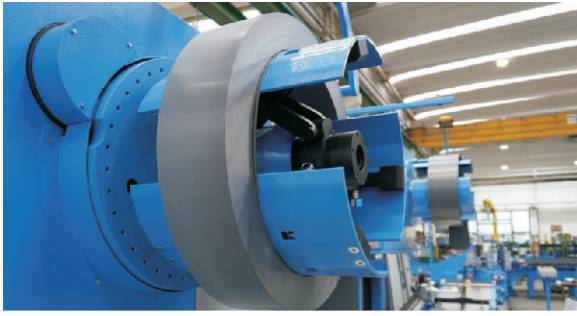
Periodic Calibration of Testing Equipment from Pakistan Council of Scientific & Industrial Research (PCSIR) laboratories & AL-MEEZAN INDUSTRIAL METROLOGY SERVICES (AIMS).

The following tests are carried out on all transformers ,

STANDARDS:

- 1- IEC 60060 High-voltage testing techniques.
- 2- IEC -60296 new Transformer oil.
- 3- IEC 60076 Power transformers
- 4-IEC 233-1974 for 11 KV bushing
- 5-IEC 233-2972 for LT Porcelain bushing
- 6-IEC 60317 General Requirement of Enamel round Wire
- 7-IEC 60641 Press board Sheet

Transformers Constructions



Standard Accessories

Bushing:

Transformer bushings connect the network cables to the primary and secondary windings through a metallic cover while electrically isolating them.



Oil Level Indicator:

Transformers can be equipped with an oil level indicator on the conservator, on the cover or on the side, depending on the design.



Thermometer:

The dial type thermometer indicates the maximum highest oil temperature reached during a certain period. Pressure



Pressure Relief Valve:

Hermetically sealed transformers can be equipped with a pressure relief device



Earthing Terminal on Tank:

Two Earthing points are integrated in each tank, stainless stud, stainless flag with 12mm hole and stainless threaded M10 terminal are the available Earthing point types.



Draining Valve:

The drain valve is used to drain or sample the transformer oil from the transformer tank.



Tap Changer:

The transformer by default comes with 5 position and steps $2x \pm 2.5$, other types of tap changers and number of position are available upon request.

