

H Panel Electrical Solution



Simplify Transformer Testing

About the Company



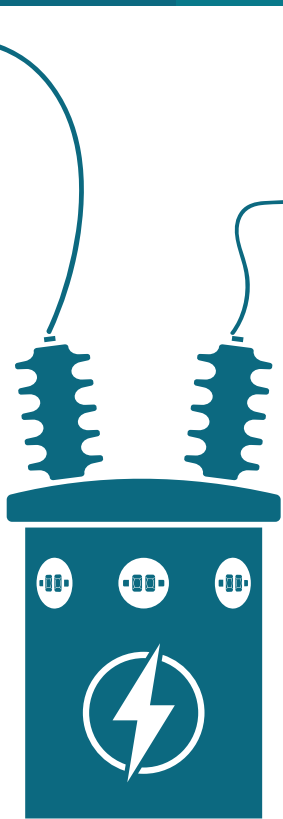
H Panel Electrical Solution (HPES) is one of the leading premier transformer testing panel manufacturers in India, located in Vadodara, Gujarat.

We've supplied testing panels to all major NABL accredited Transformer Testing Laboratories in India, including CPRI, ERDA, ERTD, Delhi Test House, etc.

HPES was founded to reduce the cost and improve the quality of the panels. The state-of-art infrastructure with advanced facilities and an expert technical team promises to offer a qualitative range of products.

The company is led by Mr Hiren B. Patel, who is deep-rooted in the transformer testing industry with technical experience since 2005. His professional commitment is to offer excellent quality products to all our clients.

Established in 2016, HPES has grown to manufacture world-class testing panels. Clients have recognized our products for electrical property, safety, serviceability, and customer-specific approach.



Our Vision, Mission & Core Values



Vision without execution is a delusion.

"Our vision is to create a better everyday life for numerous transformer testing."



"To become a leading transformer testing solution provider globally."

Our mission is to sincerely recognize the needs of Transformer Manufacturer Industries, Utilities and NABL Accredited Laboratories, constantly searching for more reliable transformer testing systems.

We continuously strive to develop our knowledge and expertise and apply them to our products. We use our vast experience to create new, efficient software testing tools that enable our clients to strengthen their business opportunities through our highest quality products.



Quality:

We provide premium quality services that always deliver more than expected.

Innovation:

We keep evolving our systems for better and quicker solutions.

Flexibility:

We work with open minds welcoming ideas and feedback while responding positively to changes.

People:

Our team is our greatest asset. We are united in our goals to achieve extraordinary results beyond our individual capabilities.

Integrity:

We take pride in following an honourable, trustworthy, and credible line of work.

HPES Milestone

INITIAL STAGE



In 2017, HPES formally established its roots with three team members on a foundation by **Mr. Hiren Patel**, over a vast period of 13+ years in the transformer testing.

Our initial manufacturing capacity was **10KVA to 500KVA, 11KV Class.**

2017



GROWTH STAGE

During this time, we developed an automatic test setup for transformer testing to replace the conventional manual testing setup.

We upgraded our manufacturing capacity from **10kVA to 2500 KVA (up to 66 kV Class)** from 2018 to 2019.

2018-19

DEVELOPMENT STAGE



During this time, we developed an automatic core loss and an automatic temperature rise test set up.

We increased our manufacturing capacity from **10 kVA to 10 MVA, up to 66 kV Class.**

2020



INNOVATION PERIOD

Our manufacturing capacity again increased from **10 kVA to 31 MVA, up to 132 kV Class.**

We exported 10 MVA semi-automatic transformer test set up to Africa, Tanzania.

2021

TAKE OFF PERIOD

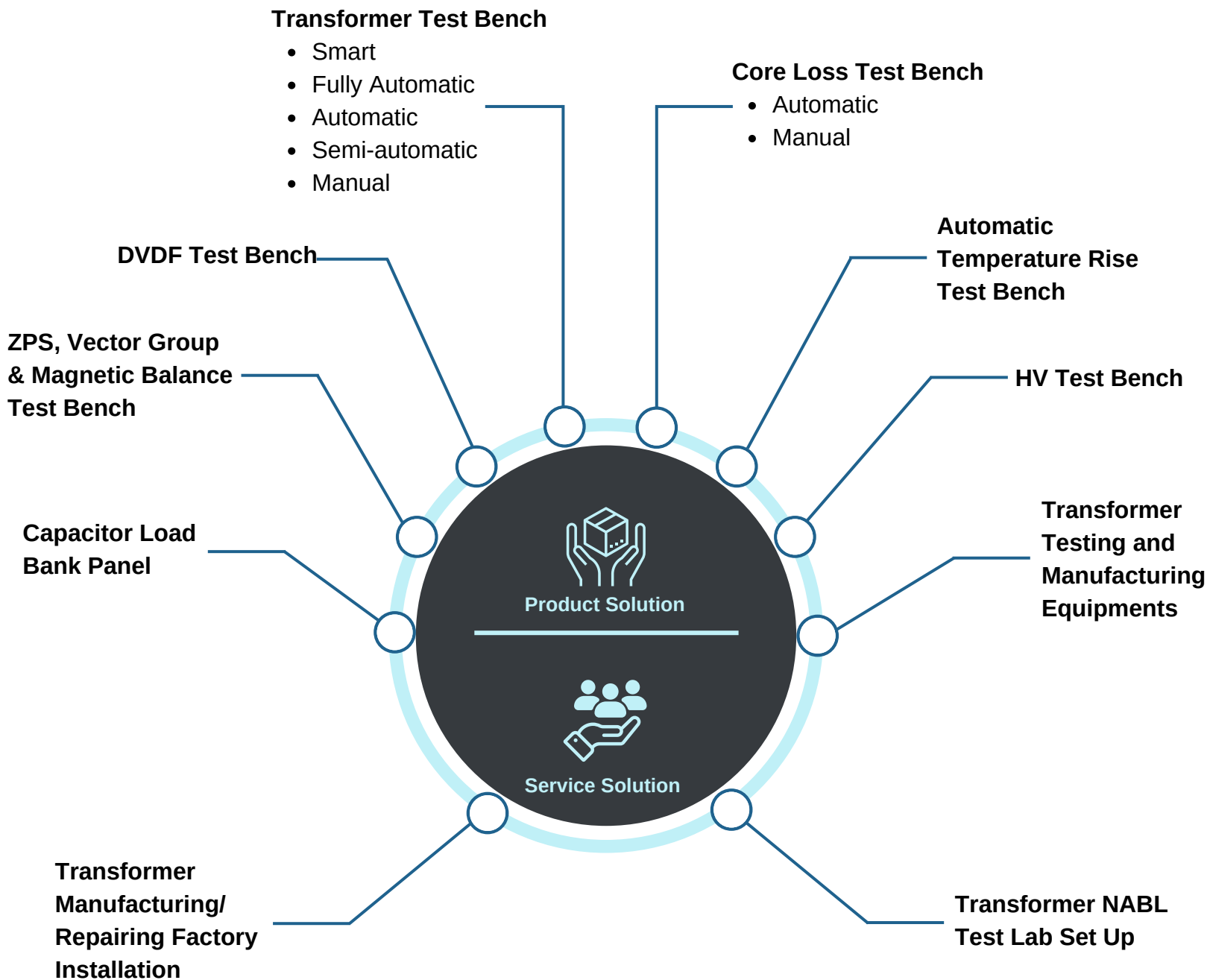


We also developed our first fully automatic transformer test set up with features like voice control, barcode sticker facility, and remote test report tracking.

We increased our manufacturing capacity yet again from **10 kVA to 100 MVA, up to 220 kV Class.**

2022

Our Offering





Transformer Test Bench

Fully Automatic Transformer Test Bench

Test bench functionality is vastly improved with the latest technologies Like Voice Command operation and an intelligent transformer Testing Software having a report generation & Barcode Sticker facility. Test Bench consists of fully interfaced test instruments, controlling switchgears, indication lamps, industrial PC, indicating lamps and various measuring meters.

FAT Test bench is devised for testing of transformers, acquiring on-line data from test instruments, and printing reports that are compliant with all national and international standards such as IS-2026, IEC-60076, IS 1180 and CBIP.

Salient Features:

- FAT is suitable for testing of all types of transformers including Power Transformer, Distribution Transformer, Furnace Transformer, Dry type, Cast Resin type, Rectifier Transformer, Generator Transformer, and Locomotive Transformer.
- FAT increases testing productivity significantly by reducing test preparation time, testing process time and report generation time.
- FAT eliminates the subsequent cable connection time since cabling with instruments is being fixed.
- Automated data acquisition ensures error free data logging and assists in carrying out statistical/graphical analysis of Test results.
- Both Auto and Manual modes are available.
- Software has the facility of multiple user control, manual data entry, database backup facility, printing formulae sheet as per customer requirement.

Rating	: 10 kVA to 200 MVA
Voltage Range	: 11 kV to 330 kV
Curent Range	: 2500A
Impedance	: 4 to 15%
No. of Phases	: 1-phase/ 3- phase
Frequency	: 50/60 Hz
Installation	: Indoor
Compliance Standard	: IEC-60076/IS-2026/IS-1180 Etc.
Tests Performed	: Transformer Routine Tests & Transformer Temperature Rise Test





Automatic Transformer Test Bench

ATT bench is a fully integrated test suite for the Testing of transformers upto 200 MVA. It acquires on-line data from test instruments, prints report that are in full compliance with Indian as well as international standards. With ATT, the operator connects transformer leads to the test bench every tests. Then, operator clicks to start the sequentially. ATT signals completion of tests on the screen and through light indication.

Salient Features:

- Automated data acquisition ensures error free data logging and assists in carrying out statistical/graphical analysis of Test results.
- Software has the facility of multiple user control, manual data entry, database backup facility, printing formulae sheet as per customer requirement.
- Auto & Manual Both the modes are available as per customer requirement.

Semi-automatic Transformer Test Bench

SAT Testing Panel is a desk type panel. It houses test instruments, selector switches, PBs, indicators and meters. The test engineer can exercise control through the test bench and can monitor various parameters related to testing equipment such as HV Tester, MG Set, and many more.

Salient Features:

- Rotary Switches are provided for the Changeover of CT and PT ratios. The same is done through contactors for safety and for avoiding loose connections.
- Semi-Automatic Panel has separate contactors for every test, overload tripping relays, pushbuttons, indicators, and meters.

Manual Transformer Test Bench

MTT Panel is simple desk type panel. It consists various test instruments, rotary switches, PBs, indicators and meters. Connections between the Transformer & the panel and selection of CT & PT ratios needs to be done manually.

Salient Features:

- For the selection of tests, a single rotary switch is provided
- Simple design, compact and economical.



Core Loss Test Bench

Automatic Core Loss Test Bench

Transformer core testing is one of the most important tests for quality assurance in transformer/core industry. ATCL test bench is a fully integrated test suite for the core loss testing. It acquires on-line data from power analyser and print report that are in full compliance with Indian as well as international.

Salient Features:

- For distribution transformer, dimmer is inside the panel
- Panel is operated through the Industrial PC provided in the panel.
- Calculations will be performed automatically through the Testing Software.
- Auto & Manual both the modes are provided in the panel.
- Portable and easy to operate.
- Automated data acquisition ensures error free data logging and assists in carrying out statistical/graphical analysis of Test results.

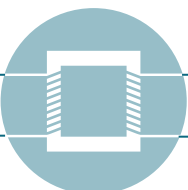
Manual Core Loss Test Bench

MTCL Test bench is simple desk type panel. It consists power analyser, various meters, indicating lamps and PBs.

Salient Features:

- Simple design, compact and economical.

Rating	: 10 kVA to 20 MVA
Voltage Range	: 11 kV Class
Curent Range	: 600A
No. of Phases	: 3- phase
Frequency	: 50/60 Hz
Installation	: Indoor
Compliance Standard	: IEC-60076/IS-2026/IS-1180 Etc.
Tests Performed	: Core Loss Test (No Load Test)



Automatic Temperature Rise Test Bench

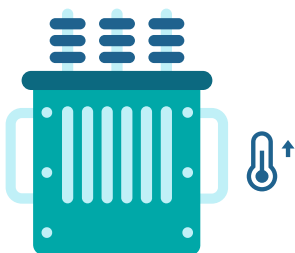


A temperature rise test of a transformer is used to make sure that a transformer does not get overheated during operation. ATRT Panel is vastly improved with automatic control of losses through an intelligent testing software. Tech bench consists of fully interfaced test instruments, controlling switchgears, indication lamps, industrial PC and dimmer.

Salient Feature:

- increases testing productivity significantly by reducing test process time and report generation time.
- Automated data acquisition ensures error free data logging and assists in carrying out statistical/graphical analysis of Test results.
- Software has the facility of multiple user control, manual data entry, database backup facility, printing formulae sheet as per customer requirement.

A temperature rise test of a transformer is used to make sure that a transformer does not get overheated during operation. ATRT Panel is vastly improved with automatic control of losses through an intelligent testing software. Tech bench consists of fully interfaced test instruments, controlling switchgears, indication lamps, industrial PC and dimmer.



Rating	: 10 kVA to 200 MVA
Voltage Range	: 11 kV to 330 kV Class
Current Range	: 2500A
Impedance	: 4 to 15%
No. of Phases	: 3- phase
Frequency	: 50/60 Hz
Installation	: Indoor
Compliance Standard	: IEC-60076/IS-2026/IS-1180 Etc.
Tests Performed	: Transformer Load Loss Test & Temperature Rise Test.

Transformer MB, VG and ZPS Impedance Test Bench



- **Rating:** 10 kVA to 10 MVA
- **Applied Voltage Range:** 400V
- **Current Range:** 3000A
- **No. Of Phases:** 1-phase
- **Frequency:** 50 Hz
- **Installation:** Indoor
- **Compliance Standard:** IEC-60076/IS-2026/1180

This Testing bench is used to confirm the vector group of Transformers, to detect the faults in the core, to verify the imbalance in the magnetic circuit and also to identify inter-turn faults in the transformer at the early stage of manufacturing work. It consists various test instruments, rotary switches, PBs, indicators and meters.

Salient Features:

- Panel is easy to operate, compact in size & portable.

Transformer DVDF Test Bench

Induced Over Voltage Test Set (DVDF) is used for testing the strength of insulation between turns and between other points of the transformers as stipulated by BIS or other standard specifications. This test bench is fully integrated with test instruments, rotary switches, PBs, indicators and meters.

Salient Features:

- Simple design, compact and economical.
- Manual output voltage control of Generator through DC excitation.

- **Rating:** 10 kVA to 200 MVA
- **Voltage Range:** 66kV Class
- **No. Of Phases:** 3- phase
- **Frequency:** 0-150 Hz/ 0-200 Hz
- **Installation:** Indoor
- **Compliance Standard:** IEC-60076/IS-2026/IS-1180



High Voltage Test Bench



- **Voltage Range:** 0-600kV
- **Current Range:** 0-1000mA
- **No. Of Phases:** 1-phase
- **Frequency:** 50Hz
- **Installation:** Indoor
- **Compliance Standard:** IEC-60076/IS-2026/IS-1180

High voltage test transformers are single-phase solution of transformers, which have to raise supply voltage to required value to make a dielectric withstand test of liquid or solid insulation. HVT panel is fully integrated with dimmer, indicating lamps, measuring instruments, timer and PBs.

Salient Features:

- Provision of auto dimmer zero with timer.
- mA tripping selection is provided.
- Portable and easy to operate.

Capacitor Load Bank



Transformer is an inductive load. During Short Circuit/Load loss test of specimen under test will consume reactive power from the supply/source. Partial reactive power will be drawn from the Capacitor bank.

We design Capacitor Bank as per customer requirement using Contactors/ Breakers/ Isolator switches for switching purpose.

Salient features:

- Motorised Operation for switching of HT capacitor load bank
- Switching of LT capacitor load bank through contactors.
- Compact design and easy to operate
- High Current Protection for each capacitors to avoid cascade failure.

HT Capacitor Load Bank

- **Rating:** 20 MVAR
- **Voltage Range:** 11kV
- **Current Range:** 2000A
- **No. Of Phases:** 1-phase
- **Frequency:** 50Hz
- **Installation:** Indoor
- **Compliance Standard:** IEC-60076/IS-2026/IS-1180
- **Application:** Load Losses Test & Temperature Rise Test

LT Capacitor Load Bank

- **Rating:** 2.5 MVAR
- **Voltage Range:** 440V
- **Current Range:** 2000A
- **No. Of Phases:** 3-phase
- **Frequency:** 50Hz
- **Installation:** Indoor
- **Compliance Standard:** IEC-60076/IS-2026/IS-1180
- **Application:** Load Losses Test & Temperature Rise Test



Transformer Testing and Manufacturing Equipments



Transformer Drying Oven

- Drying of transformer windings is important at all stages of transformer life cycle. This is due to the fact that moisture reduces the dielectric strength of the insulation and accelerates its aging. Moisture can enter the windings even during transformer assembly, making it necessary to dry the windings. The dielectric strength of a well dried oil-impregnated cardboard is 20-25 times higher than that of untreated cardboard.
- Contamination with water also occurs during operation of the transformer, again, demanding action. The drying process can be performed in drying oven. While it is not the only method of winding drying, it is still one of the most popular due to simplicity and the uniformity of moisture removal from the entire volume of the insulation.
- Capacity: up to 25 MVA

HV and LV Winding Machine

Medium to large capacity coil winding machines and its accessories. Hpanel winding machine are built to handle variety of coil and wire winding applications.

We have complete tailor made solution for your requirement Suitable for HV/LV coils, section coils, cross over coils of Distribution Transformers.



Transformer Oil Filtration Machine

- Transformer (Insulating) Oil act as a medium for insulation in the transformer, circuit breaker, high voltage instruments, etc. Transformer Oil is required to be filtered before use and even filtration is required after periodical time.
- Filtration helps in removal of Moisture content, Dissolved Gases, Acidity, Sludge, Corrosion and other unwanted impurities, thus it helps transformer oil to improve its dielectric strength and Moisture content removal in transformer oil.
- CAPACITY: 250 LPH to 24000 LPH

Transformer Factory Installation and NABL Test Lab Set up

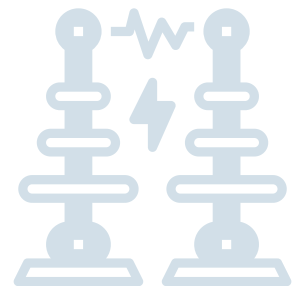
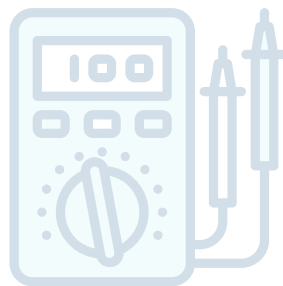
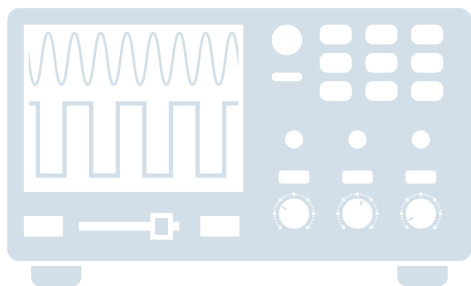
HPES is providing a turnkey based one stop solution to Set-up a new factory for Transformer manufacturing or repairing unit with engineering design, procurement and installation.

The concept of Laboratory Accreditation was developed to provide a means for third-party certification of the competence of laboratories to perform transformer Testing. Transformer testing lab with NABL Accreditation enhances end users' confidence in acceptance of test reports globally.

HPES will provides one stop solution for Transformer testing laboratories/transformer manufacturer or repairer seeking for the NABL Accreditation as per ISO 17025 from the supplying, installation and commissioning of test bench along with required various measuring instruments and equipment to the granting of accreditation.

Factory Set up includes below machineries/equipment along with test lab set up:

- HV & LV Winding Machine
- Air compressor
- Transformer Oven
- Spray Gun
- Piller Drilling Machine
- Oil Filter Machine
- Digital Vernier Caliper
- Digital Filter Machine
- Digital Micrometer
- Gas Cutting Set Trolley
- Welding Machine
- Circle Cutting Machine
- Weighing Machine
- Shearing Machine
- Fly Press for Cutting Block
- Pallet trolley
- Oxygen & LPG Trolley
- Flexible Shaft Grinder
- Load Distribution Panel



Our Patrons



H PANELTM Electrical Solution

Works & Regd. Office:

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