Balaji Power Automation

"BPA- A Safe Place in Unsafe World"

(AN ISO 9001 : 2015 CERTIFIED CO.)

- Power & Distribution Transformers
- Automatic Voltage Stabilizers
- Electroplating Rectifiers
- H.T.AVR
- H.T. Two in One Combo
- Special Purpose Transformer
- Electrical Panels

Save Energy, Install BPA Products.....

AUTOMATIC VOLTAGE CONTROLLER

INTRODUCTION

Voltage fluctuation is a common phenomenon in the country. The industrial units which are running 24 hours. face the high and low Voltage problem. 85% of industrial load is of motors. Electric motors draw considerably high current at high and low Voltage This higher current affects the electrical motors in different ways.

Higher current produces higher losses in electrical motors. which causes premature failure of winding insulation. it Increases the losses of electric motors and other associated equipments.

This higher current of electric motor require higher setting of overload really to avoid frequent tripping of motors. Higher setting of overload relay have very little safety margin against single phasing & mechanical faults.

ROLLING CONTACT TYPE TECHNOLOGY

In regulator we are using heavy section of Electrolytic grade Rectangular copper strip instead of copper wire to minimize the losses. It increases efficiency of the equipment. We are also using self-lubricating Carbon roller assemblies instead of ordinary Carbon Brushes, which offers more reliability & trouble free performance of the equipment.

DOUBLE WOUND BUCK & BOOST TYPE SERIES TRANSFORMER

In Buck & boost transformer we are using CRGO lamination to minimize Iron losses. The core of Buck & boost transformer are wound with heavy section of electrolytic copper strip to minimize copper losses for getting better efficiency of equipment.

CORE

The core is build from low-losses cold rolled grain-oriented (CRGO) annealed steel sheet. Cores are fabricated with maximum numbers of steps so as to utilize maximum area of winding.

WINDING

Coils are wound with paper covered (MAKE: JAPANESE) electrolytic grade copper strip or synthetic enameled copper conductors Cooling ducts to keep the hot spot temperature as low as possible. Coils are dried in electric ovens. Rigid connection support and coil damping is provided to ensure high short circuit strength.

TANK & PAINT

The tank are made of MS. sheet with adequate bracing & stiffeners are the internal surface are give a coat of oil resistance zinc chromate primer & external surface are give a primer coat of apoxy primer & final coat of enamel/apoxy paint for best finishing & better life.

OIL

Oil tested for resistivity, dielectric & acidic characteristic conforming to IS:335:1993

ADVANTAGE

1. Power Saving (Reduction in Power Bills).
2. Suitable for 99% Duty Cycle.
3. Better Efficiency (Life is more then 15 years).
4. Improvement in P.F. & Reduction in MDI.

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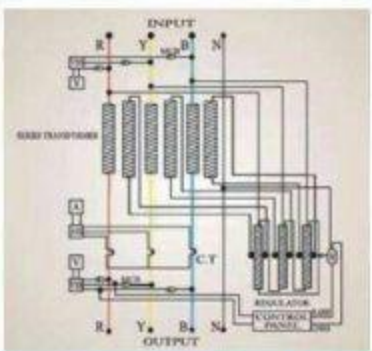
RANGE : 30 KVA TO 5000 KVA

INNER VIEW OF AUTOMATIC VOLTAGE CONTROLLER



SILICON POWER RECTIFIER

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Rectifier is a transformer that converts A.C. into D.C. Supply It is used in Electroplating, Anodising, Hydrogenation and all other Electroplating Processes. Theses are tailor made, covering a wide range from 10 amps. to 15000 amps. We can provide different output DC voltage as per requirement.

METHODS OF CONTROL:

A. **15 step control :** In this type of rectifier the output voltage can be adjusted from about 40% to 100% voltage provided with four way 2 rotary switches of suitable rating.

B. **Stepless Control :** In this Rectifier output voltage adjusted from 0% to 100%. This is done by employing linear type voltage regulator with motorized control.

RANGE : UPTO 10000 AMPS

CONSTRUCTION

Main Transformer:

The main transformer is a double wound over sized KVA transformer provided for BALAJI POWER AUTOMATION unit Electrolytic Copper Conductor is used in the Winding of Transformer and CRGO lamination are stacked to reduce no load & on load losses.

Inter Phase Transformer :

Connected between two star points of the secondary of the main transformer, the inter phase transformer improves teh commulation the by increasing the rating of BALAJI POWER AUTOMATION

Voltage Regulators:

The on load roller type voltage regulator used in BALAJI POWER AUTOMATION rectifiers manufactured by us and is 4/5 time efficient than the conventional once.

Meter Panel :

Best quality meters and stunts to measure the output voltage and current more accurately.

INNER VIEW OF RECTIFIER

SALIENT FEATURES :

Designed for 99% continuous duty cycle
Compact design for space saving
Low power consumption
Ripple content less than 5%
The equipment can bear overload upto 25% for short period

TESTING

It is our standard practice to perform the following test.

1. Insulation Test.
2. No load test.
3. Load test under short circuit
4. Calculation of total load test.

H. T. TRANSFORMER WITH BUILT-IN AUTOMATIC VOLTAGE STABILIZER (COMBO)

Balaji Power Automation

Even after the Installation of standard off circuit distribution transformer, the voltage fluctuation on the LT side persists due to limited range of voltage correction of the transformer. To control the voltage fluctuations it is ideal to install Servo Controlled Automatic voltage Controller either on LT side or HT side.

Balaji Power Automation, make transformers with built-in rolling contact type AVR suitable for indoor/outdoor installation copper wound HT two-in-one system Type Is a revolutionary landmark In the industry when it comes to voltage regulation and stabilization. Even after the installation of standard distribution the Transformer problem of low/high voltage on the LT side persists, resulting in improper operation of the electrical equipments, premature failure & production loss of a plant. The standard off-circuit tapping of transformers can correct limited voltage variation and cannot regulate the voltage while in 'On Load' conditions.

We have developed state-of-the-art technology two-in-one system with Transformers having built-In HT Automatic voltage regulator that operates on load, sleeplessly & gives stabilized voltage on the LT side. The equipment is basically a combination of HT AVR with a standard distribution transformer.

RANGE : UPTO 5 MVA 11 & 33 KV CLASS

The fluctuating voltage from grid is initially controlled by HT AVR and then fed to the transformer resulting in the constant L.T. Output within +/-1% accuracy and the biggest advantage being its robust design : Lesser losses & more the distribution transformer to utilize up to 100% capacity.

H.T. AUTOMATIC VOLTAGE STABILIZER

Balaji Power Automation make copper wound, HT AVR suitable for indoor/outdoor installation, copper wound HT AVR system is a revolutionary landmark in the industry when it comes to voltage regulation and stabilization. Even after the Installation of standard distribution transformer the problem of low/high voltage on the LT loss of a plant. The standard off circuit tapping of transformers can correct limited voltage variation and cannot regulate the voltage while in 'on Load' conditions.

We have developed state of the art technology HT Automatic voltage regulator that operates on load, sleeplessy & gives stabilized voltage on the HT side. The fluctuating voltage from grid is initially controlled by the HT AVR and then fed to the transformer resulting in the constant H.T. Output within +/-1% accuracy and the biggest advantage being its robust design, Lesser & more efficiency make the distribution transformer to utilized up to 100% capacity.

RANGE : UPTO 5 MVA 11 & 33 KV CLASS

ADVANTAGES OF BUILT-IN AVR & H.T. AVR

- **Space saving**
- **Better Efficiency**
- **Production of motor etc.**
- **Reduced Installation Cost**
- **Reduction in electricity Bill**
- **Improvement in power factory (Only in case of high voltage)**
- **In Higher capacity it is technically advisable to install H.T. AVR Because current in L.T. AVR is very high.**
- **Losses of transformer will reduce after installation of H.T. AVR**

ELECTRICAL PANLES

Balaji Power Automation

Keeping in mind the specific requirements of the clients, and providing an array of Electrical Panels some of which are listed below. These panels are made of good quality materials in accordance with industrial quality standards. These find their application in commercial buildings, hospitals, Industries, dairies, telecommunications, research laboratories etc.

Synchronizing Panel :

Synchronizing Panel works between two or more different power sources like DG sets to manage power supply. Synchronization helps in making different DG sets behave as a virtual single unit and eliminates subdivision of total load. It helps in transferring load from one unit to another as during service period, so that the unit requiring service can be easily shut off. In this way the critical load need not be interrupted and there is no production loss. During low load we can run any single unit, and synchronize more units as the load increases. This can be manual or automatic.

LT Panel and HT Panel :

LT Panel is an electrical distribution board that receives power from generator or transformer and distributes the same to various electronic devices and distribution boards. Such panels are used in industries both for internal and external use and, therefore, they are quite rugged to withstand different climatic conditions. Our LT panels are designed to work with low electricity consumption that makes them cost effective.

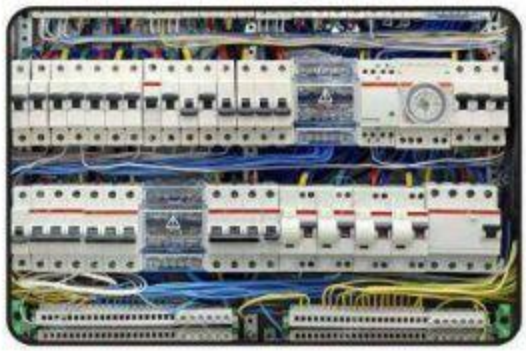
HT Panel is like LT Panel except that it is used for high tension cables.

APFC (Automatic Power Factor Control) Panels :

These panels are where there is fluctuation in voltage and power supply. The electrical load required by a unit depends upon the type of devices installed. There is always a possibility of damage equipments if power fluctuates. In case of fixed loads they can be safeguarded using capacitors, but in case of varied loads, a mechanism to switch in and switch out the capacitors is required which is basically handled using APFC panels.

PCC (Power Control Center) Panels :

Its basic function is to control power supply to various units and equipments as per their load requirement so that they can work in harmony.



MCC (Motor Control Centre) Panel :

These are effectively used with motors or submersible pumps to provide sufficient protection from overloads and short circuits. These are high on performance, require low maintenance and can withstand extreme temperature variations.

Why to Use Our Panels? :

1. Our panels are made of good quality materials in accordance with industrial quality standards and latest technology.
2. The panel casing is of strong weather-proof galvanized stainless steel and is durable, efficient and highly functional.
3. These ensure durability, high performance, trouble free operation, less maintenance and low power consumption.
4. We adhere strictly to stringent quality checks required by various industries like telecom, electrical and electronics industries.

DISTRIBUTION TRANSFORMERS

GENERAL

Transformers are designed by our expert,, engineers to meet specific technical requirement of our customers. Transformer rating Toping Voltage ratio, Impedance, Losses, Dimensions & Winding pattern and type of construction confirm to Indian and International Standards. Our transformers are designed to most stringent tests like Short Circuit to Indian and International lighting impulse Voltage test. Our and quality ensure sourcing of best quality raw materials. In adeptness to this we ensure in process check during different manufacturing stages.

CORE

Transformer core are assembled from prime grade cooled rolled grain oriented (CRGO) silicon in different grades of low loss material. The lamination are assembled with the help of special jigs and fixtures to maintain minimum air gap a compact assembly and minimum noise level on energistion. Mittered joint core is used to have better magnetic path, provide minimum reluctance. Core assembly. clamped properly with heavy steel structure to reduce noise level. The maximum flux density adopted is in line with customer requirement as per relevant standards BIS/IEC. Core is fabricated with maximum no. of steps so as to utilize the area in winding.

WINDING

All winding are made from electrolyte copper/Aluminum as per Requirement Of customer. The conductor is in the from of Triple or double paper covered insulated strips & wire. the insulating Craft paper is produced directly from Importers. Extreme care is taken in design, method of manufacturing, quality of insulation & in the drying process.

TANK & PAINT

The tank are made of M.S. sheet with adequate braching & stiffeners are the internal surface are give a coat of oil resistance zinc chromate primer & external surface are give a primer coat of apoxy primer & final coat of enamel/apoxy paint for best finishing & better life.

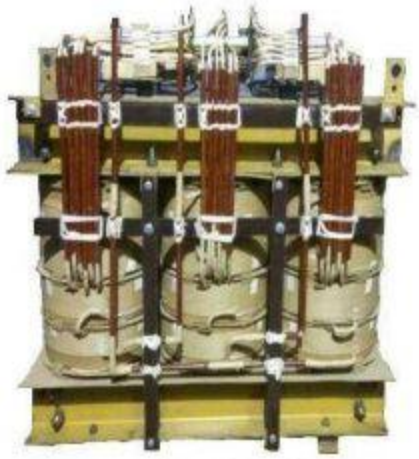
OIL

Oil tested for resistivity, dielectric & acidic characteristic conforming to IS: 335:1993

WARRANTY & CUSTOMER SUPPORT

Transformer is warranted against manufacturing defect and faulty workmanship **BALAJI POWER AUTOMATION** Products are designed for trouble free service for a long period of time however each and every transformer is supported by on excellent team of our technical staff/executives who are always eager to serve & support around the clock and are known for their prompt service.

RANGE : UPTO 5 MVA 11 & 33 KV CLASS



INNER VIEW

VECTOR GROUP

Transformers will be connected as per vector group reference Dyn 11. Other vector groups can be offered as per specific requirements.

Balaji Power Automation

Head Office : Plot No. H-38, C-3 IInd Floor, Sadarpur Road, Balaji Enclave, Govindpuram, Ghaziabad (U.P.) INDIA -201013
Works : Plot No-G-2, Phase-1, Masoori-Gulawti Road, UPSIDC Industrial Area, Near Oxford College, Ghaziabad (U.P.) INDIA - 201302
Mobile : 9888286233, 9756793133
E-mail : balajipower33@gmail.com, dharminder73@gmail.com
Website : www.balajipowerautomation.com

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