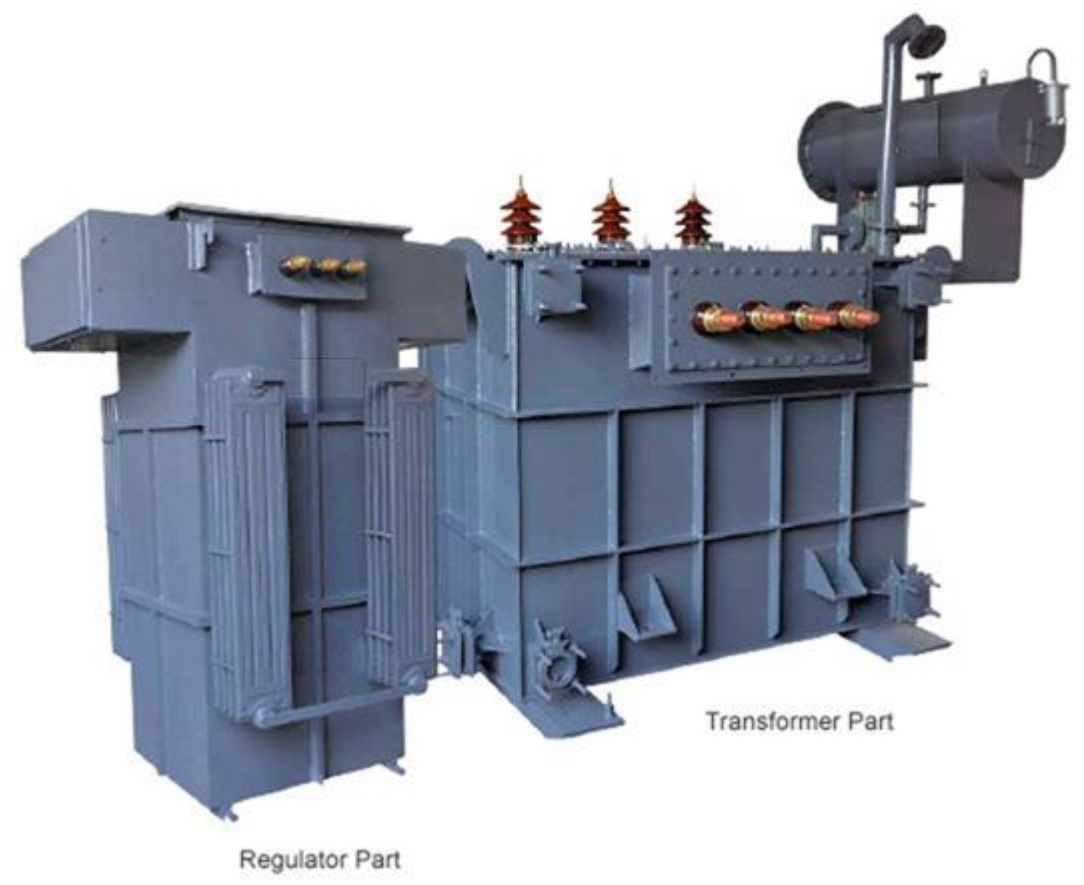
# Proton Corporation

www.protoncorpo.com

## H.T. Transformer with Built-in Automatic Voltage Stabilizer (Combo)

**RANGE:** Up to 15 MVA 11 & 33 kV Class




Voltage fluctuations on the LT side remain a persistent challenge, even after the installation of standard off-circuit distribution transformers. This issue arises due to the limited range of voltage correction provided by traditional transformers, which are unable to regulate voltage effectively under "on load" conditions. To address this problem, it is recommended to incorporate a Servo Controlled Automatic Voltage Controller on either the LT or HT side.

**PROTON'S** make Transformers with built-in rolling contact type AVR suitable for indoor/outdoor installation, copper wound HT Two-in-one 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 side persists, resulting in improper operation of the electrical equipment, 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.

The Fluctuating voltage from grid is initially controlled by the 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 efficiency make the distribution transformer to utilize up to 100% capacity.

PROTON's innovative transformers, integrated with a built-in rolling contact type HT Automatic Voltage Regulator (AVR), represent a significant advancement in voltage regulation and stabilization technology. These two-in-one systems, designed for indoor or outdoor installation, combine a copper-wound HT distribution transformer with an HT AVR to offer seamless voltage regulation. The built-in HT AVR regulates fluctuating input voltage from the grid, ensuring precise voltage control and a stabilized LT output with an accuracy of +/- 1%. This ensures optimal operation of electrical equipment, mitigating risks such as premature failure, improper performance, and production losses.

The robust design of this system further enhances efficiency, with minimized energy losses enabling the transformer to operate at full capacity. As a result, it delivers reliable performance, reduces electricity costs, and optimizes industrial operations, making it an ideal choice for industries requiring stable power supply and consistent voltage regulation.

# H.T. Transformer with Built-in Automatic Voltage Stabilizer (Combo)


The **H.T. Transformer with built-in Automatic Voltage Stabilizer (3000 kVA)** is a highly efficient and compact solution for voltage regulation and stabilization in high-tension applications. Here's a detailed description:

**Unit Components**

1. **Step Down Double Wound in Copper Construction**:
    - A transformer designed to reduce high input voltage to a lower, manageable level.
    - Double-wound copper construction ensures electrical isolation and high conductivity for efficient performance.
2. **On-Load Stepless Rolling Contact Type Voltage Regulator**:
    - Provides continuous voltage regulation without interrupting the load.
    - Rolling contacts move along the winding to adjust voltage precisely.
    - Operates automatically, motorized, or manually for versatile control.
3. **Buck/Boost Transformers**:
    - Adjust voltage levels by either increasing (boosting) or decreasing (bucking) the voltage.
    - Ensures stable output voltage under varying input conditions.

**Advantages of Built-in AVR**

1. **Space Saving**:
    - Combines the transformer and voltage stabilizer into a single unit, reducing the footprint required for installation.

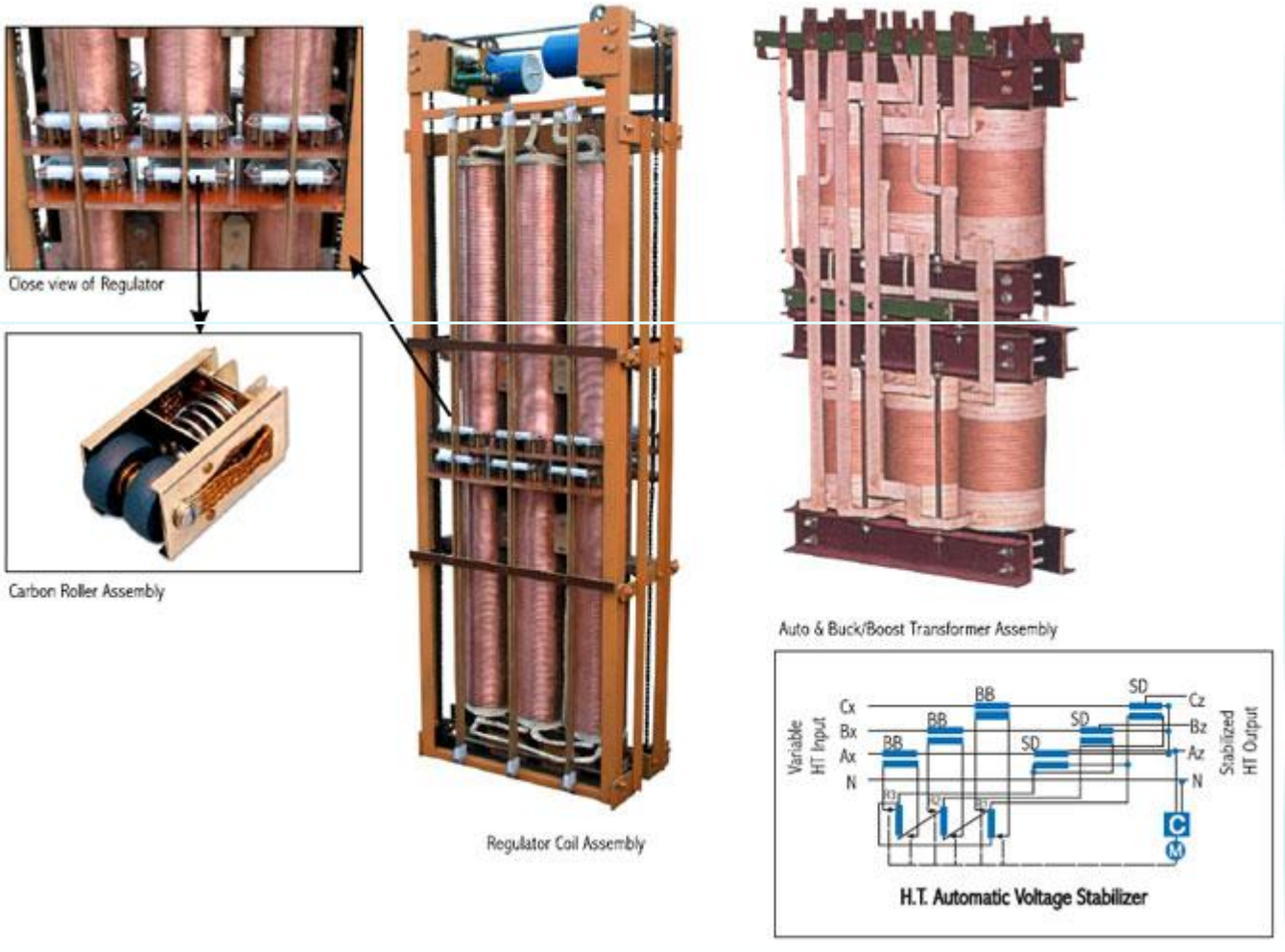
# H.T. Transformer with Built-in Automatic Voltage Stabilizer (Combo)

2. **Better Efficiency**:
    - Optimized design ensures minimal energy loss during voltage regulation, improving overall system efficiency.
3. **Protection of Motors and Equipment**:
    - Prevents damage to sensitive equipment caused by voltage fluctuations, extending their lifespan.
4. **Reduced Installation Cost**:
    - Integrated design eliminates the need for separate stabilizer and transformer units, reducing installation complexity and cost.
5. **Reduction in Electricity Bill**:
    - Maintains optimal voltage levels, reducing energy wastage and lowering operational costs.

This system is ideal for industrial and commercial applications where reliable and efficient voltage regulation is critical.

**Proton's H.T. Stabilizer components**

1. **Step Down Unit (Double Wound)**:
    - A transformer designed to reduce high input voltage to a lower, manageable level.
    - Double-wound construction ensures electrical isolation between primary and secondary windings for safety and efficiency.



# H.T. Transformer with Built-in Automatic Voltage Stabilizer (Combo)

1. **Buck/Boost Unit (Double Wound)**:
    - A transformer or autotransformer used to adjust voltage levels by either increasing (boosting) or decreasing (bucking) the voltage.
    - Double-wound design provides isolation and precise voltage regulation.
2. **Stabilizer Unit (Auto Wound Delta Connected)**:
    - An automatic voltage stabilizer with delta-connected windings.
    - Equipped with rolling contacts that move along the winding to regulate output voltage.
    - Mechanisms include:
        - **Automatic Regulation**: Ensures consistent voltage output without manual intervention.
        - **Motorized Regulation**: Uses a motor to adjust rolling contacts for precise control.
        - **Manual Regulation**: Allows manual adjustment for specific voltage requirements.
3. **Control Unit**:
    - The brain of the stabilizer, responsible for monitoring and controlling voltage regulation.
    - Includes sensors, relays, and microcontrollers for real-time adjustments and fault detection.
4. **This stabilizer is ideal for high-voltage applications requiring reliable and precise voltage control.**

*Office :*

- Proton Power Technlogy Inc : Office 110-115, Marble Arch Complex, race Course Circle , Vadodara. Gujarat State, India
- Proton Corporation : 10 Mariyam Building, Khalid been Walid Street, Bur Dubai, Dubai. United Arab Emirates

*Contact : UAE: +971 527576426, +971 5536215098*

*India : +91 7859984453, 6239658755*

*Email: mail@protoncorpo.com*