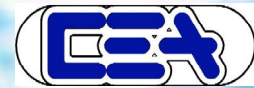
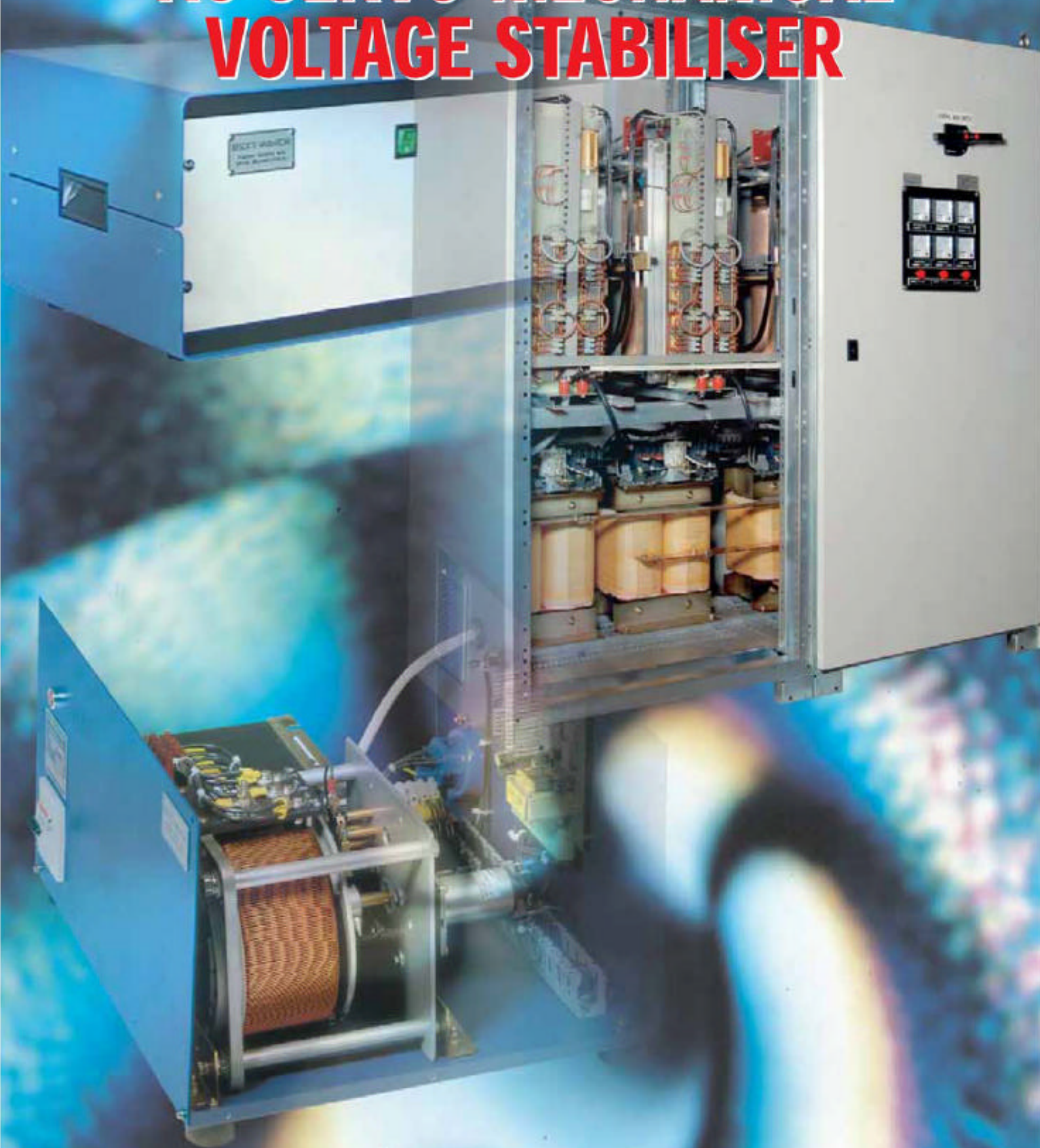


SERIES  
**BST**



# **AC SERVO-MECHANICAL VOLTAGE STABILISER**



# SERVO-MECHANICAL VOLTAGE STABILISERS WITH ELECTRONIC CONTROL



The correct operation of electrical and electronic equipment need a constant value of voltage supply in order to work correctly; on the other hand, mains voltage value is considerably subjected to fluctuations that drives to the necessity to have machines able to delivery a constant output voltage in spite of any line voltage variations:

Electro-mechanical voltage stabilisers (Single and three-phase).

## CONSTRUCTION

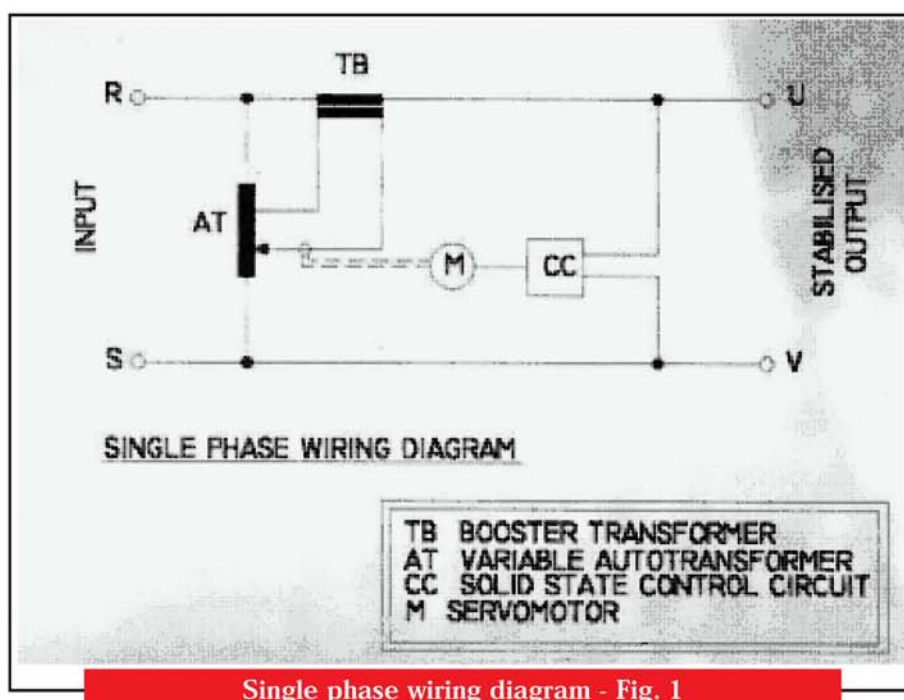
The BST stabiliser technically consists of a **motor driven variable autotransformer**, feeding the primary winding of a “**buck-boost**” transformer, the secondary of which is connected in series between the supply and the load; adding, or subtracting a correcting voltage to the input. A **static control circuit** monitors the output voltage and works on the variac's motor, by which the voltage correction is given, restoring the nominal voltage value (see fig. 1).

## FEATURES

- Large Input voltage variations
- High Accuracy of Output voltage stability  $\pm 1\%$
- Fast speed response time
- No harmonic distortion
- No affection by load or power factor variations
- High efficiency: approx 98% at full load
- Voltage stability guaranteed also in presence of frequency variations of  $\pm 5\%$ .

## APPLICATIONS

- Data processing equipment
- Transmissions, telecommunications and radar stations
- Test control and measuring systems
- Photocopying and tool machines
- Safety, alarm and lighting plants
- Any electronic or electric equipment sensitive to voltage variations.



Single phase wiring diagram - Fig. 1

# SINGLE-PHASE Type BST-M



## RATINGS

- Input Voltage: 230V (others upon request)
- Input regulation:  $\pm 15\%$  ( $\pm 20\%$  and others upon request)
- Frequency: 48-63 Hz
- Full-load efficiency: 97-98%
- Output Voltage: 230V  $\pm 1\%$  (others voltages upon request)
- Response time: 40V/sec
- Service: continuous, with 40°C max ambient temperature.

## PROTECTION CASE

The stabiliser is set in a IP21 case (see fig. 2). Heavy steel case with side panel and safety lock in the front door supplied for high power models (fig. 3).

| MODEL     | OUTPUT POWER KVA | INPUT VOLTAGE VARIATION | OUTPUT VOLTAGE | OUTPUT CURRENT AMPS | RESPONSE TIME |
|-----------|------------------|-------------------------|----------------|---------------------|---------------|
| BST-M 1   | 1                | 230V $\pm 15\%$         | 230V $\pm 1\%$ | 4,3                 | 40V/SEC.      |
| BST-M 3   | 3                | 230V $\pm 15\%$         |                | 13                  |               |
| BST-M 5   | 5                | 230V $\pm 15\%$         |                | 22                  |               |
| BST-M 7,5 | 7,5              | 230V $\pm 15\%$         |                | 32,5                |               |
| BST-M 10  | 10               | 230V $\pm 15\%$         |                | 43,5                |               |
| BST-M 20  | 20               | 230V $\pm 15\%$         |                | 87                  |               |
| BST-M 30  | 30               | 230V $\pm 15\%$         |                | 130                 |               |
| BST-M 40  | 40               | 230V $\pm 15\%$         |                | 174                 |               |
| BST-M 50  | 50               | 230V $\pm 15\%$         |                | 217                 |               |
| BST-M 75  | 75               | 230V $\pm 15\%$         |                | 326                 |               |
| BST-M 100 | 100              | 230V $\pm 15\%$         |                | 435                 |               |



BST-M5 - Single phase stabiliser - Fig. 2



BST-M50 - Single phase stabiliser - Fig. 3

# THREE PHASE STABILISERS

## Type BST-T, ...IR (Independent Regulation)



### RATINGS

- Input Voltage: 3x400V (others upon request)
- Input regulation:  $\pm 15\%$  ( $\pm 20\%$  and others upon request)
- Frequency: 48-63 Hz
- Output Voltage: 3x400V  $\pm 1\%$
- Response time: 70V/sec
- Full load efficiency: 97- 98%
- Services: continuous with 40°C max ambient temperature

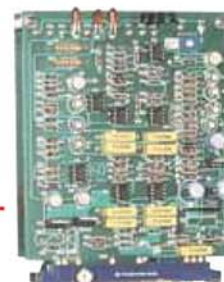
### PROTECTION CASE

The stabilisers is set in a IP21 case.  
Heavy steel case with side panel and safety lock on the front door.

| MODEL        | OUTPUT POWER KVA | INPUT VOLTAGE VARIATION | OUTPUT VOLTAGE    | OUTPUT CURRENT AMPS | RESPONSE TIME |
|--------------|------------------|-------------------------|-------------------|---------------------|---------------|
| BST-T 3 IR   | 3                | 3x400V $\pm 15\%$       | 3x 400V $\pm 1\%$ | 4.3                 | 70V/SEC.      |
| BST-T 5 IR   | 5                | 3x400V $\pm 15\%$       |                   | 7.2                 |               |
| BST-T 7,5 IR | 7,5              | 3x400V $\pm 15\%$       |                   | 10.8                |               |
| BST-T 10 IR  | 10               | 3x400V $\pm 15\%$       |                   | 14.5                |               |
| BST-T 20 IR  | 20               | 3x400V $\pm 15\%$       |                   | 29                  |               |
| BST-T 30 IR  | 30               | 3x400V $\pm 15\%$       |                   | 43.5                |               |
| BST-T 40 IR  | 40               | 3x400V $\pm 15\%$       |                   | 58                  |               |
| BST-T 50 IR  | 50               | 3x400V $\pm 15\%$       |                   | 72                  |               |
| BST-T 75 IR  | 75               | 3x400V $\pm 15\%$       |                   | 108                 |               |
| BST-T 100 IR | 100              | 3x400V $\pm 15\%$       |                   | 144                 |               |
| BST-T 250 IR | 250              | 3x400V $\pm 15\%$       |                   | 360                 |               |
| BST-T 300 IR | 300              | 3x400V $\pm 15\%$       |                   | 433                 |               |



**BST-T30-IR - Three phase stabiliser**  
Fig. 4



**Easy Replace control card**  
Fig. 6



**BST-T75-IR - Components view**  
Fig. 5



**Motorised variable autotransformers**  
Fig. 7

## HIGH POWER VOLTAGE STABILISER

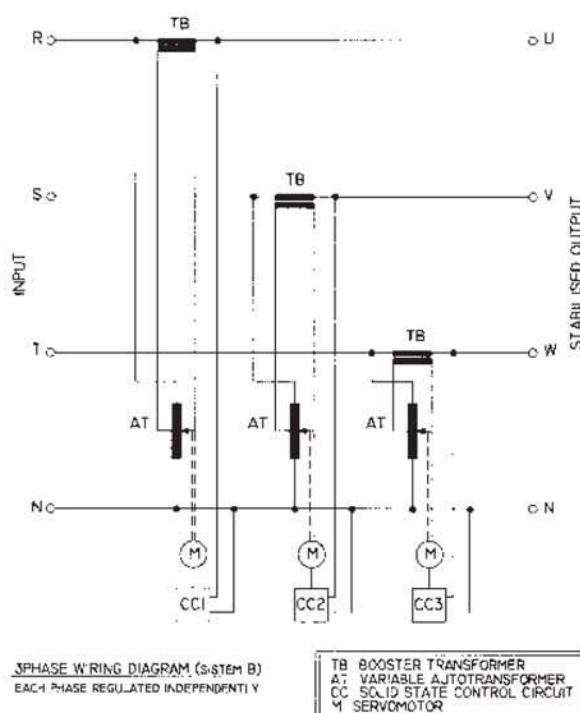
| MODEL         | OUTPUT POWER KVA | INPUT VOLTAGE VARIATION | OUTPUT VOLTAGE    | OUTPUT CURRENT AMPS | RESPONSE TIME |
|---------------|------------------|-------------------------|-------------------|---------------------|---------------|
| BST-T 400 IR  | 400              | 3x400V +/- 15%          | 3x 400V<br>+/- 1% | 578                 | 70V/SEC.      |
| BST-T 500 IR  | 500              | 3x400V +/- 15%          |                   | 722                 |               |
| BST-T 600 IR  | 600              | 3x400V +/- 15%          |                   | 867                 |               |
| BST-T 700 IR  | 700              | 3x400V +/- 15%          |                   | 1011                |               |
| BST-T 800 IR  | 800              | 3x400V +/- 15%          |                   | 1156                |               |
| BST-T 900 IR  | 900              | 3x400V +/- 15%          |                   | 1300                |               |
| BST-T 1000 IR | 1000             | 3x400V +/- 15%          |                   | 1445                |               |
| BST-T 1200 IR | 1200             | 3x400V +/- 15%          |                   | 1734                |               |
| BST-T 1300 IR | 1300             | 3x400V +/- 15%          |                   | 1878                |               |
| BST-T 1500 IR | 1500             | 3x400V +/- 15%          |                   | 2167                |               |

- The electrical characteristics are the same of standard series BST-T3÷300 but the regulation is obtained using the column type variable autotransformer (instead of toroidal one).



**BST-T900-IR - Three phase stabiliser**  
Fig. 8

**Three phase wiring diagram independent reg. Fig. 9**



**INDEPENDENT REGULATION**  
on each phase in the three phase Stabilisers BST-T ...IR

*This system guarantees the stabilisation of each phase also in presence of largely unbalanced loads.  
Is a combination of three single-phase units that are perfectly independent from one another; can be connected to a 4-wire system (with neutral) or 3-wire system.*

## OPTIONAL FEATURES - ACCESSORIES

On request is possible to supply the stabiliser with some accessories assembled in the same case:

- Surge Suppressor
- Metering instrumentation (A-V-)
- Monitoring relay under-over Voltage
- Soft Start
- Isolating Transformer (BST-...ISO)  
see picture Nr. 10
- High Protection of the case (until IP54)
- Outdoor Construction  
(Fiber-Glass Case or inox).



Three phase stabiliser with isolating transformer  
Fig. 10

### BST... - ISO STABILISER WITH ISOLATING TRANSFORMER

