

## Characteristics

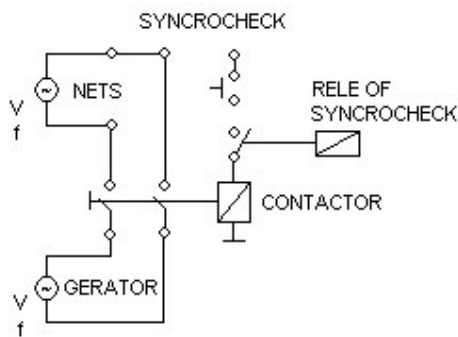
- Micro-processed instrument.
- The same instrument can be used for 50 Hz and 60 Hz.
- Indication by 20 red LEDs for phase comparison and 3 green LEDs for sliding (frequency difference).
- Used in single-phase or three-phase nets.
- Input signals with optical isolation.
- Frontal dimensions 144x144mm

## Application

Synchronism indicator for installation in synchronism columns of power generators, main electrical panel on ships, etc.

## Functioning

Occurring frequency difference, the 20 red LEDs will light on in a speed, which is proportional to this difference and one of the green side LEDs will indicate which generator has the major frequency. The red LED indicates the phase angle between both nets and the central green LED will light on when both generators are in phase synchronism and the sliding is less than  $\leq 0,5\text{Hz}$  and the angle discrepancy between the same is the zero equal, in this moment the rele will to close.



## Technical Data

### Input

Working Frequency: 45...65Hz  
Working voltage: 110,220,380 and 440VAC  $\pm 20\%$   
The instrument has a terminal for each voltage input.

Voltage variation: 20%  
Wave form: Senusoidal  
Consumption: 4VA

### Output

LED deflection: 360°  
Relé of sincrocheck 2A/250V

### Electrical test

Test voltage: 2kV – 60Hz 1 min.

### Construction and Mounting

Norms: NBR 5180  
Housing: Hammered gray painted steel plate.  
Frontal bezel: Gray Plastic.  
Front window: Glass.  
Protection class: IP 50 in housing.  
IP 00 at the connection terminals.

Working position: Any.  
Fastening: Threaded studs.  
Connection: Terminals with lock and screws.

### Climatic conditions:

Ambient temperature: 0...60 °C  
Transport and storage temperature: -40...+80°C  
Relative humidity:  $\leq 75\%$ , of annual average without condensation

### Mechanical test:

Impact - acceleration 30g during 11ms  
Vibration - acceleration 2g frequency 5..150Hz.

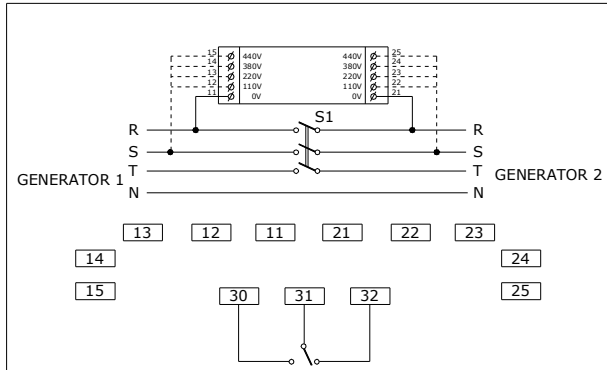
# SD 144

Digital Synchronoscope

DATA SHEET - N00144

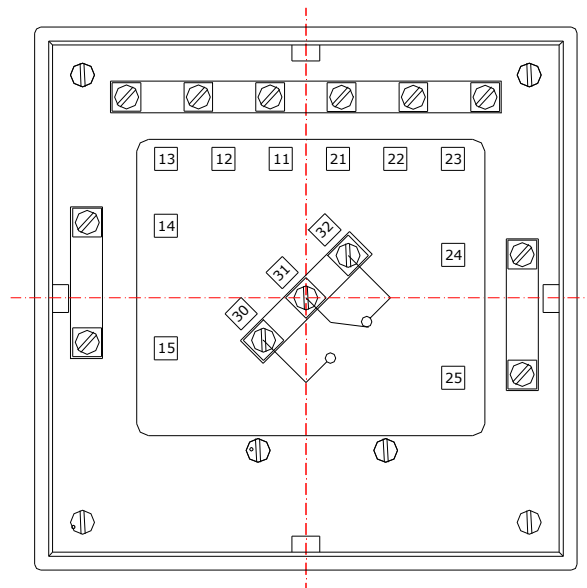
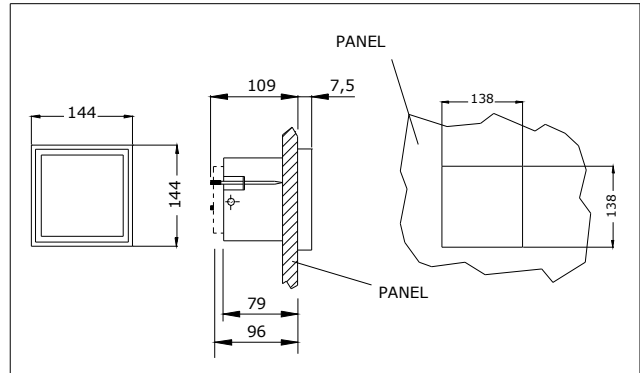
Page 2/2  
August 2003

## Electrical Diagram



## Dimensional drawing

Dimensions in mm



### MICRO-PROCESSED SYNCHRONOSCOPE SD-144

Working frequency: 45...65Hz  
Working voltage: 110/220/380/440VCA  
Rele to verification of synchronism

### Catalog number

N 0 0 1 4 4 3 7 H 1

Hartmann & Braun

ABB Ltda - ATLV/IE Instrumentation Eletrica  
Avenue. Dos Autonomistas, 1496 - 06020-902 - Osasco - SP  
Phone: +55 11 3688-8320 / 8323 / 8347 - Fax: +55 11 3688-8322  
instrumentacao@br.abb.com

**ABB**