



# Data Sheet

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## Synchroscope



Measure



Control



Record



Analyze



**RISH SYNC** displays actual difference of voltage, frequency & phase angle between the BUS (Reference) voltage & generator (Incoming) voltage. When two alternators or sources are to be parallel it is necessary that their frequency & amplitude should be equal and phase difference be near to zero. When all these 3 parameters are within the required limits ST SYNC indicates that the two sources can be paralleled.

## Application Areas

- Synchronizing two different BUS inputs.
- Synchronizing two different Generator inputs.
- Synchronizing Generator & BUS inputs

## Product Features

### Touch Screen Graphics display

RISH SYNC has touch sensible color graphics LCD display with resolution of 320 x 240.

### Casing Material

Thick Steel Sheet EDD grade CR material

### Graphical Analysis

Graphical representation of Synchronization status.  
BUS & Generator Voltage Status, Frequency difference, Phase difference.

### Measured Parameters

- Measurement of Frequency difference (BUS & Gen.)  $\Delta f$ .
- Measurement of Phase difference (BUS & Gen.)  $\phi$ .
- Measurement of Voltage amplitude difference (BUS & Gen.)  $\Delta V$ .
- BUS Voltage & BUS Frequency.
- Generator Voltage & Generator Frequency.



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**Potential free relay contact**  
Potential free Relay contact for indicating sync status.

**Programmable PT Primary and PT Secondary**  
Programmable PT Primary and PT Secondary is used to scale voltage values in terms of PT Primary.

## Technical Specifications:

### Network Supported

Single phase / Three phase

### Accuracy

Phase Angle difference( $\theta$ )

$\pm 2^\circ$

Voltage Difference( $\Delta V$ )

$\pm 1\%$  of Nominal value

Frequency Difference( $\Delta F$ )

$\pm 0.15$  Hz

### Reference Conditions for accuracy

Ambient Temperature

$23^\circ\text{C} \pm 2^\circ\text{C}$

Input Voltage

Rated Voltage  $\pm 2\%$

### Input Voltage

Nominal input voltage range

100 - 500 V

Max continuous input voltage

600 V

Overload Withstand

2x times of Nominal voltage for 1 second,  
repeated 10 times at 10 second intervals

Frequency Measuring Range

45Hz to 66Hz

Nominal input voltage burden

< 0.8 VA approx.

### Auxiliary Supply

Auxiliary Voltage & Burden

100-500 V AC/ DC, 45-65 Hz , 9.1VA

### Display update rate

Response time to step input

1 sec approx.

### Applicable Standards

EMC immunity

IEC 61326-1:2012, Table 2.

Safety

IEC 61010-1-2010, Permanently connected use

IP for water & dust

(IP 54 for Front) IEC 60529

Pollution degree:

2

Installation category:

CAT III 300V

Isolation between running  
& incoming circuits

2.2kV RMS for 1 minute



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### Technical Specifications:

#### Environmental Conditions

##### Other information

Operating temperature

-10 to +55°C

Storage temperature

-20 to +65°C

Relative humidity

0... 95% non condensing

Warm up time

Minimum 3 minute

Shock

15g in 3 planes

Vibration

10... 150.... 10 Hz, 0.075mm amplitude

Temperature Coefficient

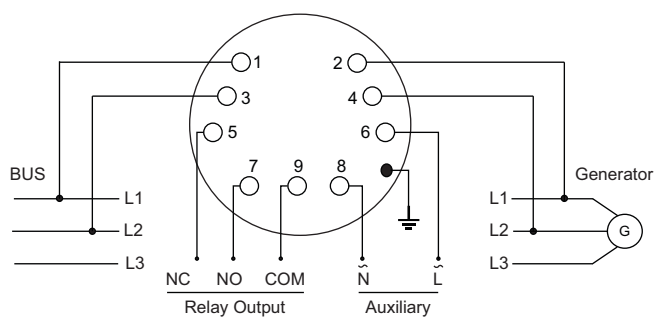
0.05%/°C

#### Relay Contact (For Sync Status)

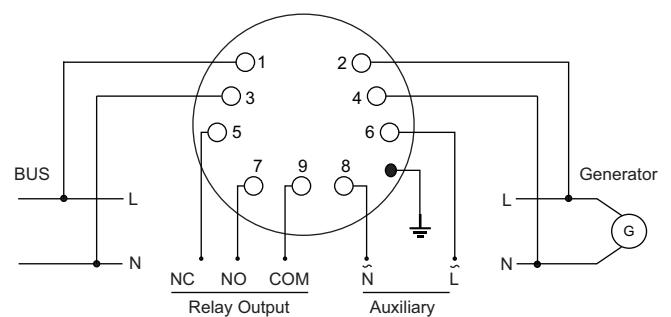
Contact Rating

240 V A C, 5 A

### Electrical Connections



Three Phase System



Single Phase System



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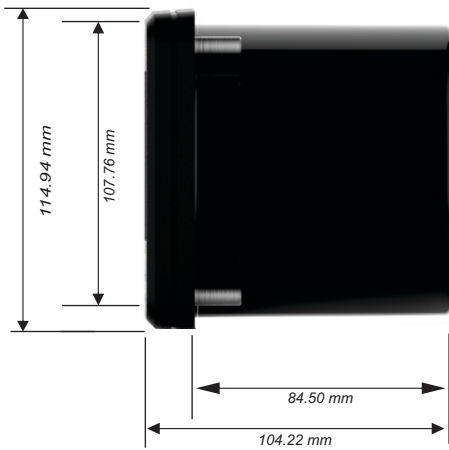


Record

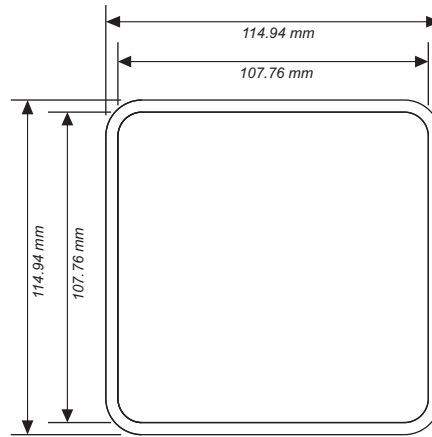


Analyze

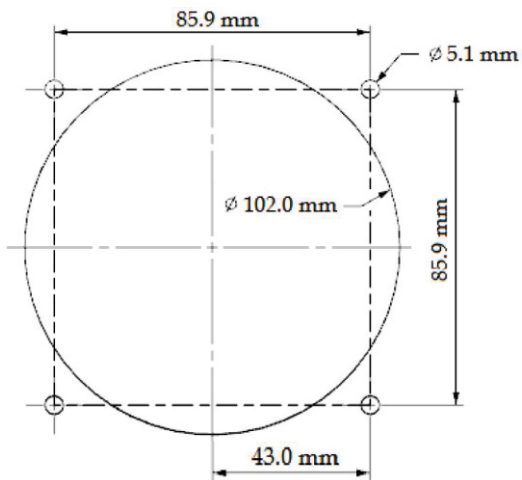
Dimensional Details



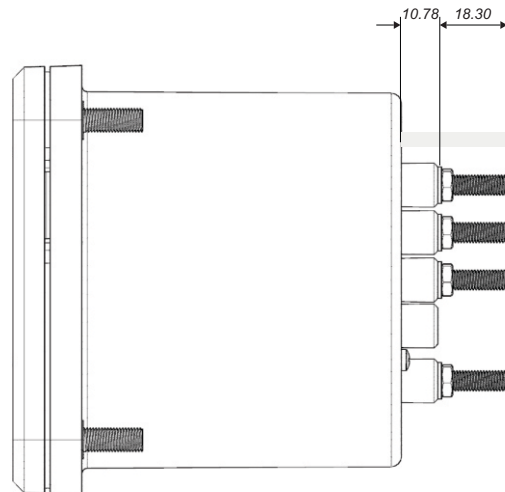
Side View



Front View



Panel Cutout



Order Code

SQT1-10000000000RI :

SYNCHROSCOPE 100-500V



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RISHABH



Measure



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