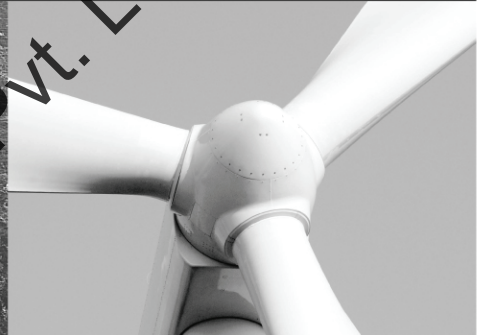
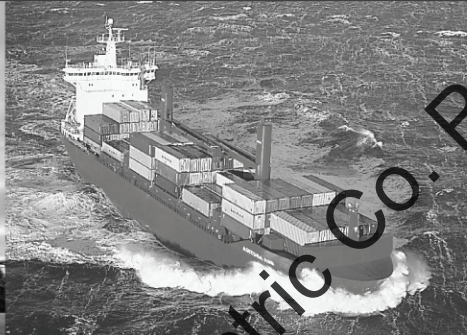




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sales@plcpanel.com, www.plcpanel.com



Synchrosopes



Control Electric Co. Pvt. Ltd.

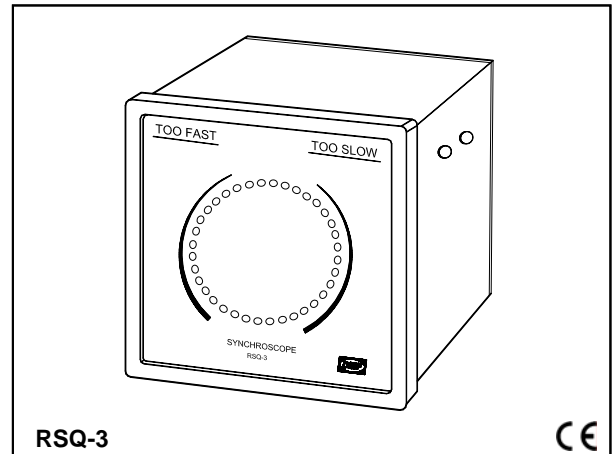
Control Electric Co. Pvt. Ltd.
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Read Synchroscope

Type RSQ-3

4921240265D

- **Precision LED synchroscope**
- **High immunity to harmonic distortion**



Application

The RSQ-3 is a microprocessor-based synchronising unit, providing visual indication of relevant values for synchronising a generator to a net (busbar). It can be used in any kind of installation where manual synchronising is required.

Measuring principle

The unit measures the busbar (U_{BUSBAR}) and generator (U_{GEN}) voltages and frequencies and compares these, plus compares the phase angle relationship.

Operation

The rotation of the red LED circle indicates the frequency difference. The faster the rotation, the larger the frequency difference. One rotation per second equals 1Hz difference.

The position of the lit red LED indicates the phase difference between U_{GEN} and U_{BUSBAR} . The circle represents a degree scale from 0-360 degrees with zero degree at the 12 o'clock position. With 36 LEDs the resolution on the reading is 10 degrees.

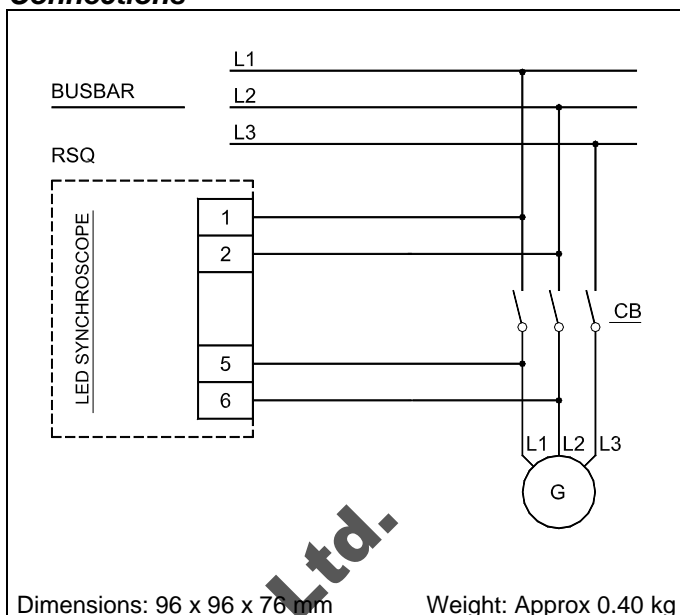
If the frequency difference between U_{GEN} and U_{BUSBAR} is higher than 3Hz, the rotation of the LED circle stops. If it stops with a lit red LED at 'TOO SLOW', the frequency of the U_{GEN} is lower than U_{BUSBAR} . If it stops with a lit red LED at 'TOO FAST', the frequency of the U_{GEN} is higher than U_{BUSBAR} .

Type RSQ-3

Technical specifications

Accuracy:	±2 electrical degrees
Resolution:	10 electrical degrees
Max. freq. difference:	No limit
Frequency range:	40...70Hz (supply)
Temperature:	-25...70°C (operating)
Temperature drift:	Set points: Max. ±0.2% of full scale per 10°C
Shock test:	15g – 6 times – 3 directions 50g/6ms 22g/20ms
Galvanic separation:	Between inputs and ground: 3750V - 50Hz - 1 min.
Input range (U_N):	100...127V AC (115V AC) ±20% 220...240V AC (230V AC) ±20% 380...415V AC (415V AC) ±20% 440...480V AC (450V AC) ±20% (Above 450V AC: +10% only)
Busbar input:	Load: 2kΩ/V
Generator input:	(Max. 3.0VA at nominal voltage) Supply for the unit
Max. input voltage:	1.2 x U _N , continuously Above 450V: 1.1 x U _N , continuously 2 x U _N , for 10 sec.
Climate:	HSE, to DIN 40040
EMC:	CE marked according to EN 60081-1/2, EN 50082-1/2 and IEC 255-3
Safety:	To EN 61010-1. Installation cat. III, 600V. Pollution degree 2
Connections:	Max. 2.5 mm ² (single-stranded) Max. 1.5 mm ² (multi-stranded)
Materials:	All plastic parts are self-extinguishing to UL94 (V0)
Protection:	Front: IP52. Terminals: IP20, to IEC 529 and EN 60529
Type approval:	For current approvals see www.deif.com or contact DEIF A/S
UL listing:	On request, the instrument can be delivered according to UL listing: UL508, E230690

Connections



Order specifications

Type - Input voltage
 Example: RSQ-3 - 230V AC
 RSQ-3 - 230V AC UL listed

Indication

LEDs	Light
TOO FAST	Red LED stopped. Frequency difference too high. GEN too high
TOO SLOW	Red LED stopped. Frequency difference too high. GEN too low