

**Type:** Multifunction precision LED synchroscope and dead-bus functionality  
**CSQ-2**  
**CSQ-3 (UL Listed)**

## Technical specifications

* Accuracy:	± 2 electrical degrees
Resolution:	10 electrical degrees
* Frequency range:	40...70Hz (supply)
* Input range (U <sub>n</sub> ):	100...127V AC (115V AC) 220... 240 V AC (230V AC) 380...415V AC (400V AC) 440...480V AC (450V AC)
* Busbar input:	Load: 2kΩV
Generator input:	(max. 2VA)
* SYNC. Output	1 NO-contact
Contact rating:	250V-8A-2000VA (AC) 24V-8A-200W (DC) (200 x 10 <sup>3</sup> change-overs at resistive load) Max. 250V (AC). Max. 150V (DC)
* Optocoupler output:	System status off = failure
Temperature drift:	Set points: Max. ±0.2% of full scale per 10°C

## Type Test specifications

Tested according to:

Insulation	500V DC, >1000MΩ	DNV, GL and LR
Vibration:	2...13.2Hz: 2 mm <sub>pp</sub> 13.2...100Hz: 1.0 g	DNV, GL and LR Test 1.
Shock:	6 attempts with 15 g (in 3 directions) 50g/6ms 22g/20ms	IEC 60068-2-27
Climate:	97% RH	IEC 60098-2-30, test Db
Protection:	Front: IP52 Terminals: IP20	IEC/EN 60529
Temperature:	-25...70°C (operating)	DNV, GL and LR
* Galvanic separation:	2200V - 50Hz - 1mm Between all circuits mutually and to earth.	IEC/EN 61010-1
Materials:	All plastic parts are self-extinguishing to UL94 (V1)	
EMC:	Immunity/Emission	EN 61000-6-1/2/3/4 IEC 60255-26 IEC 60533 power distr. Zone IACS UR E10 power distr. zone

\*) Tested on all units according to specifications. Remaining specifications are tested regularly by test sampling



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Type Test Manager

Ref.: MSM

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