

HIGH SPEED ALTERNATE CURRENT STATIC SWITCHES

CSM SERIES

Overview

Two lines alternate current static switches, with single output, in SCR technology. Particularly developed for industrial automation applications where are requested high reliability, working safety and the ability to rapidly switch-over critical loads from main line to the reserve line (double radial).

Electrical characteristics

The most important characteristics that distinguish this type of static-switch are:

Input voltage	115/230/400 Vac
Admitted tolerance	±20%
Input frequency	50/60 Hz
Admitted tolerance	±2%
Output voltage	115/230/400 Vac
Short-circuit current	10 In for 10 mS
Switching time	ab. 2mS with same phase (±15°); 5 mS out of phase
Admitted power factor	from 1 to 0,6 lag.
Single unit MTBF	ab. 100.000 hours

Power carrying

The product range includes the following models as a function of the carrying powers.

Model	Power carrying
CSM500	500 VA
CSM1000	1000 VA
CSM2000	2000 VA
CSM3000	3000 VA
CSM5000	5000 VA
CSM8000	8000 VA
CSM15000	15000 VA

Accessories

A wide range of accessories is available to equal the static-switches to the more complex applications and specifications.

The ones normally mounted are the following.

Input lines presence

Line selected

Concordant phase

The ones foreseen on request are the following.

Input magnetothermic breakers

Output magnetothermic breaker

Output instruments (V or I)

Trimmable anomalous output voltage relay

Trimmable anomalous input voltages relay

Bipolar power switching

Third emergency input line

Mechanical characteristics

The mechanical construction is 19 inches Rack type according to DIN41612 standard, with structure and anodized aluminium front side in natural color. The overall dimensions are the following.

Model	Units x width	Depth
CSM500-8000	3 x 84TE	330mm
CSM15000	3 x 84TE	420mm
Accessories	3 x 84TE	330mm

Ambient compatibility

The static-switches are submitted to typical or production tests to warrant the ambient compatibility. The fundamental tests are the following (* identifies typical tests).

*Vibrations	5 m.s ⁻² - 0,032m
*Storage temperature	from -25 to 70 °C
*Working temperature	from -10 to 55 °C
1,2/50 µs pulse withstand	2 kVp
Dielectric strenght	2 kV RMS
Insulation resistance	100 MΩ at 500 Vcc
Damped oscillatory waves	1 kVp at 1MHz
CE mark ref. standards	EN50081-2/50082-2

Product range

Model	Input voltages 50Hz A=115 B=230 C=400 Input voltages 60Hz D=115 E=208 F=440	Input breakers	Output breaker	Instruments	Anomalous output voltage rela	Anomalous input voltages rela	Bipolar Type	Third emergency line	Current carrying
CSM500	A/D	I2	I3	S1	R8	R9	B8	T8	5
CSM500	B/E	I2	I3	S1	R8	R9	B8	T8	3
CSM500	C/F	I2	I3	S1	R8	R9	B8	T8	2
CSM1000	A/D	I2	I3	S1	R8	R9	B8	T8	10
CSM1000	B/E	I2	I3	S1	R8	R9	B8	T8	5
CSM1000	C/F	I2	I3	S1	R8	R9	B8	T8	3
CSM2000	A/D	I2	I3	S1	R8	R9	B8	T8	20
CSM2000	B/E	I2	I3	S1	R8	R9	B8	T8	10
CSM2000	C/F	I2	I3	S1	R8	R9	B8	T8	5
CSM3000	A/D	I2	I3	S1	R8	R9	B8	T8	30
CSM3000	B/E	I2	I3	S1	R8	R9	B8	T8	15
CSM3000	C/F	I2	I3	S1	R8	R9	B8	T8	8
CSM5000	A/D	I2	I3	S1	R8	R9	B8	T8	50
CSM5000	B/E	I2	I3	S1	R8	R9	B8	T8	25
CSM5000	C/F	I2	I3	S1	R8	R9	B8	T8	15
CSM8000	A/D	I2	I3	S1	R8	R9	B8		80
CSM8000	B/E	I2	I3	S1	R8	R9	B8		40
CSM8000	C/F	I2	I3	S1	R8	R9	B8		25
CSM15000	B/E	I2	I3	S1	R8	R9	B8		63
CSM15000	C/F	I2	I3	S1	R8	R9	B8		38

Mechanical dimensions

