

# CD3000S 1PH FROM 10A TO 90A



## General description

- CD3000S 1PH is a compact low cost family of solid state switches designed to replace contactors
- Single-phase thyristor units up to 90A.
- Applicable for resistive loads and infrared lamp.
- Zero crossing firing available with logic input signal (SSR)
- Constant current drain with SSR input
- Analog input 4÷20mA or 0÷10V with burst firing 4, 8 or 16 cycle at 50% power demand, is available as an option from 35A to 90A
- Heater break alarm (HB) to diagnostic partial or total load failure and short circuit on thyristor, is available as an option from 35A to 90A
- Side by side mounting
- Special design for heatsink with high dissipation
- IP20 protection
- Comply with EMC specification CE and cUL

## Technical Specification

### Voltage power supply Input Signal

24V min, 480V Max, 600V on request  
SSR (OFF state <1Vdc ON = 4÷30 Vdc) is standard up to 90A included.

### Firing Auxiliary Voltage Supply Fan Voltage Supply Heater Break Alarm

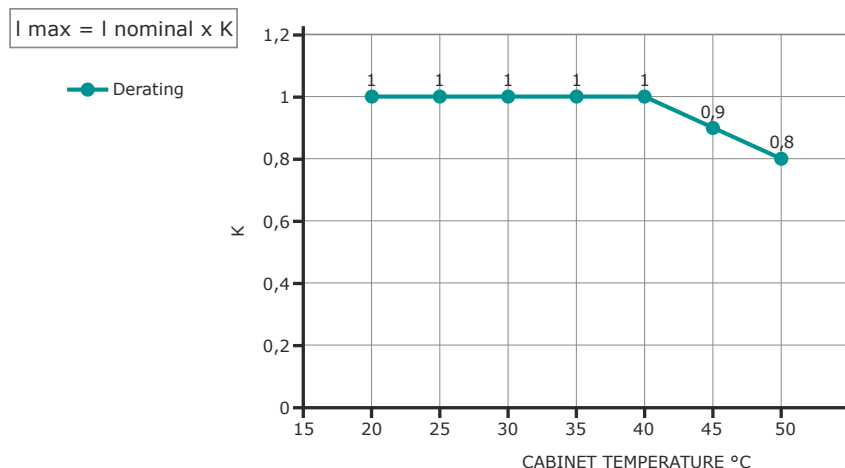
Analog input 4÷20mA and 0÷10V is available as an option on units from 35A÷90A included  
Zero crossing ZC; Burst Firing 4/8/16 with 4÷20mA or 0÷10V with 12÷24V aux. power supply  
See CD3000-1PH ordering code power consumption 10Va  
220V ± 15% standard for unit equal or over 90A (110V is available as an option)  
Discrimination better than 20%.  
Circuit microprocessor based to diagnose partial or total load failure and short circuit on Thyristor.  
Latching alarm plus reset.  
Relay output 1A at 230V.  
Automatic calibration of one or more unit at the same time using a dedicated digital input or using for each unit the calibration button.  
Comply with EMC; cULus available as an option on basic units  
Din rail mounting  
0÷40° up to 90A included (for higher temperature see the derating curve)

### Approvals

### Mounting

### Operating Temperature

## Current derating as function of cabinet temperature



# OPTIONS FEATURES AND SPECIAL DETAILS

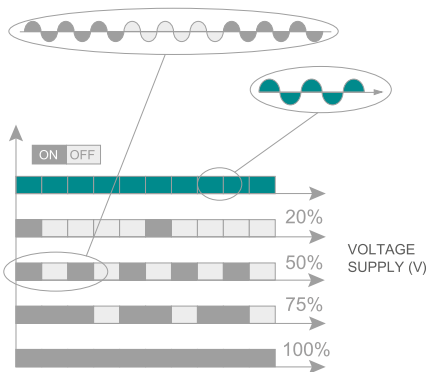
## Heater Break Alarm (HB)



Few second to set and calibrate all the units

- Microprocessor based circuit
- Self learning of current set, via external command or push button on front unit
- Load break diagnostic with alarm latch
- Thyristor short circuit diagnostic
- Alarm reset function and possibility to auto reset the alarm if the normal working condition is restored
- Alarm output with free voltage contact
- Available from 35A+90A incl.
- Full insulation between SSR output coming from controller/multi loop and power supply, no common zero in our unit
- Easy and fast substitution/calibrate of the unit (also not expert people can do it easy)

## Burst Firing (BF)



- This firing performed in digital mode in our unit gives a lot advantage because switch thyristor faster than normal ZC and at the same time without EMC interferences.
- Analog input is necessary for BF and can be decided how many complete cycles we want at 50% of power demand.
- On CD3000S this value can be 4, 8, 16.

## Analog Input and Burst Firing

- Analog input is available from 15A to 90A with CE mark only
- Burst Firing is selectable with link jumper between BF 4-8-16
- Heater break alarm is available as an option
- Possibility to choose between 4+20mA or 0+10V input
- Must be used for 1PH loads only
- Note: 15+25A version is not available with Analog Input or HB

## HB with external current transformer



- Possibility to turn around the wire on the current transformer if the nominal current is smaller compared the ones detectable by current transformer. Es: 3A with a CT of 50A
- Single CT (included on basic price of HB option)
- CT with metallic clips for horizontal DIN rail mounting (opt.)
- CT with plastic for vertical DIN rail mounting (opt.)

## CD3000S - 2x10A 240V



- CD3000S 2x10 has been designed to drive two loads with 10A current and 240V max line voltage
- The units provides two insulated independent SSR input circuit
- Zero crossing firing
- Very compact unit with high-density mounting side by side to reduce cabinet dimension and price
- High efficient heatsink with chimney effect
- Easy accessible control circuit board on front unit

# CD3000S 1PH SIZE AND DIMENSIONS



S0 H 120 x W 30 x D 120 - 0,33 kg



S3 H 120 x W 52 x D 120 - 0,55 kg



S7 H 120 x W 117 x D 159 - 1,65 kg

## Size and options

Current	Size	Cooling	IP20
2x10A	S0	Natural	Standard
15-25A	S0	Natural	Standard
35-45A	S3	Natural	Standard
60-90A	S7	Natural	Option

## Input features and Heater Break

Input Signal	Input Detail	On Condition	Off Condition	Heater Break (Option)
SSR	20mA constant current drain	$\geq 4V$ max 30V	$\leq 1V$	HB is available from 35-90A
4÷20mA	Impedance 100Ω			HB is available from 35-90A
0÷10V	Impedance 100Ω			HB is available from 35-90A

## Output features (Power device)

Current A	Voltage Range V	Ripetitive Peak Reverse Voltage		Latching current (mAeff)	Max Peak one cycle (10 msec)	Leckage current (mAeff)	I <sup>2</sup> T value for fusig tp=10msec	Frequency range Hz	SCR power loss * I=I <sub>nom</sub> W for each phase	Isolation voltage Vac
		480V	600V							
2x10A	24÷240V	1200	1200	150	230	15	610	47÷70	20	2500
15A	24÷480V	1200	1200	150	230	15	610	47÷70	18	2500
25A	24÷480V	1200	1200	150	230	15	610	47÷70	30	2500
35A	24÷600V	1200	1600	250	400	15	780	47÷70	42	2500
45A	24÷600V	1200	1600	250	600	15	1800	47÷70	54	2500
60A	24÷600V	1200	1600	450	1000	15	4750	47÷70	72	2500
90A	24÷600V	1200	1600	450	2000	15	19100	47÷70	108	2500

\* Power Loss Thyristor + Fuse

## Order code CD3000S 1PH 10-90A

	1	2	3	4	5	6		7	8	9	10	11	12	13	14	15	16
CD3000S 1PH	D	S	1	—	—	—	-	—	—	—	—	—	—	—	—	—	—

CURRENT (A)	4	5	6	
description	Code			Note
2x10A	2	X	X	
15A	0	1	5	
25A	0	2	5	
35A	0	3	5	
45A	0	4	5	
60A	0	6	0	
90A	0	9	0	

MAX LOAD VOLTAGE (V)	7	
description	Code	Note
240V	2	
480V	4	1
600V	6	1

AUXILIARY VOLTAGE (V)	8	
description	Code	Note
NO Auxiliary Voltage supply	0	
12÷24V with analog input / HB Alarm	4	2,3

INPUT	9	
description	Code	Note
SSR from 4 to 30Vdc	S	
Analog Input 0÷10V	V	3,5
Analog Input 4÷20mA	A	3,5

FIRING	10	
description	Code	Note
Zero Crossing with SSR Input	Z	
4 cycles on + 4 off with Analog Input	4	
8 cycles on + 8 off with Analog Input	8	
16 cycles on + 16 off with Analog Input	6	

CONTROL MODE	11	
description	Code	Note
Open loop	0	

FUSES & OPTION	12	
description	Code	Note
No Fuse / No Option	0	
No Fuse / HB Option	1	3,5
External Fuse & Fuse Holder / No Option	F	
External Fuse & Fuse Holder / HB Option	2	3,5

FAN VOLTAGE	13	
description	Code	Note
No Fan	0	

APPROVALS	14	
description	Code	Note
CE EMC for European Market	0	
CE EMC + cUL us listed	L	

MANUAL	15	
description	Code	Note
None	0	
Italian	1	
English	2	
German	3	
French	4	

IP PROTECTION	16	
description	Code	Note
Standard IP20 (all unit excluded 60A and 90A)	0	
External IP20 protection for size S7 (60-90A)	P	4

(1) 480V and 600V not available for 2x10A

(2) Necessary with 0÷10V - 4÷20mA and HB alarm

(3) Option available from 35 to 90A

(4) IP20 is standard on all units with exception of S7 size (60-90A).

To complain IP20 use "P" option at digit 16

(5) HB not available with UL approval