



CD3000M-1 PH UNIVERSAL 1 PHASE THYRISTOR UNIT

GENERAL DESCRIPTION



- **CD3000M IS A DIGITAL AND UNIVERSAL THYRISTOR UNIT, CONFIGURABLE VIA SERIAL COMMUNICATION PORT**
- **RS485 COMM MODBUS PROTOCOL IS INCLUDED AS STANDARD**
- **SINGLE PHASE THYRISTOR UNIT UP TO 700A**
- **SUITABLE TO DRIVE RESISTIVE LOADS WITH ZERO CROSSING FIRING AND ONE PHASE TRANSFORMER WITH DELAYED TRIGGERING** MICROPROCESSOR BASED ELECTRONIC CIRCUIT FULLY ISOLATED FROM POWER
- **UNIVERSAL INPUT SIGNAL**
- **UNIVERSAL FIRING, CUSTOMER CONFIGURABLE VIA SERIAL PORT ZERO CROSSING, SINGLE CYCLE, BURST FIRING, DELAYED TRIGGERING AND PHASE ANGLE**
- **SOFT START CAN BE USED WITH BURST FIRING HEATER BREAK CIRCUIT MICROPROCESSOR BASED TO DIAGNOSE LOAD FAILURE AND SHORT CIRCUIT ON THYRISTORS IS AN OPTION.**
- **POSSIBILITY TO READ AND WRITE THE PARAMETERS VIA AN EXTERNAL KEY PAD: CD-KP**
- **EXTERNAL FUSE HOLDER AND FUSES UP TO 110A, EXTERNAL FUSES OVER 110A**
- **COMPLY WITH EMC  AND **
- **IP20 PROTECTION**

TECHNICAL SPECIFICATION

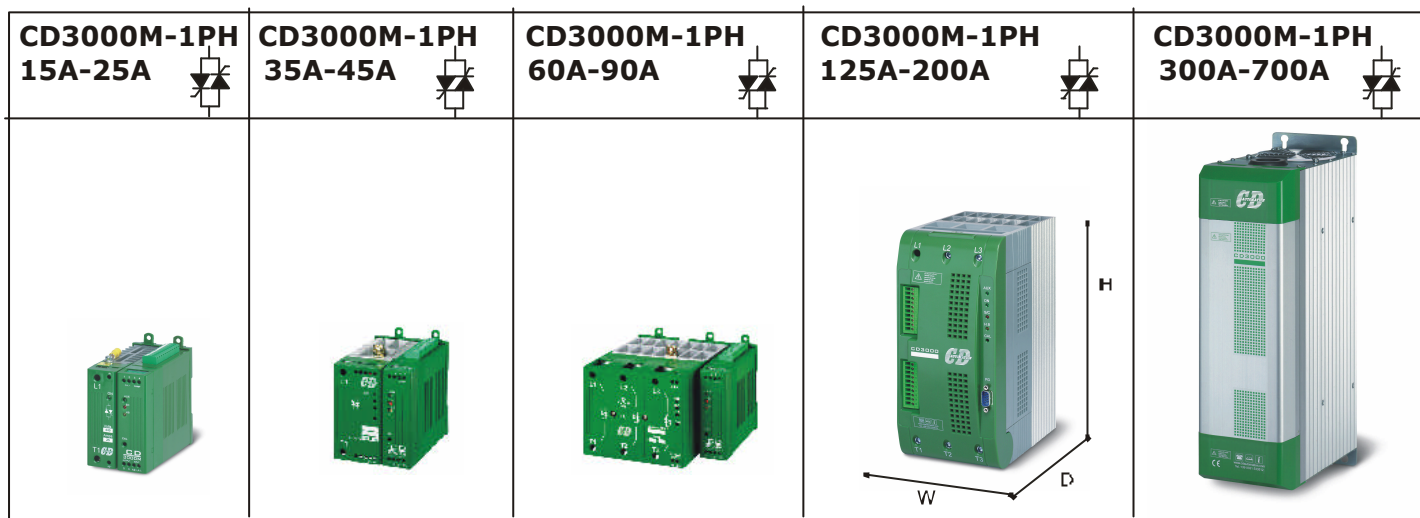
| | |
|--------------------------|---|
| Operating temperature | 0÷40°C up to 110A. For higher temperature see derating curve |
| Voltage power supply | 24V minimum, 480V max and 600V on request |
| Universal Input signal | SSR, 4÷20mA, 0÷10V, 10K pot., customer configurable with automatic zero/span calibration |
| Universal Firing | One of these firing modes can be configured on line via serial port: Zero Crossing ZC; |
| Burst | Firing BF; Single Cycle SC; Soft Start + Burst Firing S+BF; Delayed Triggering + BF DT; Phase Angle PA. |
| Auxiliary voltage supply | 230V to 460V; 10VA power consumption |
| Fan voltage supply | 230V ±15% |
| Heater break alarm | Discrimination better than 20%. Circuit microprocessor based to diagnose partial or total load failure and short circuit on Thyristors. Latching alarm plus reset. Relay output |
| 1A at 230V | |
| Line Drop Voltage | Automatic compensation ±15% of supply voltage with analog input |
| Mounting | Din rail mounting up to 110A, bulk head over 110A, IP20 protection. |

ORDERING CODE

| Model | Current (A) | Oper. Volt. (V) | Max. Volt. (V) | Aux Voltage (V) | Input | Firing mode | Options |
|---------|-------------|-----------------|----------------|-----------------|----------|--------------------------------|---|
| CD3000M | 15 | 24V min | 480 | 230 | SSR | ZC (Zero Crossing) | COMM (RS485 MODBUS) |
| | 25 | | 600 | 460 | 0÷10V | SC (Single Cycle) | CD-KP (External Key Pad) |
| | 35 | | | 600 | 4÷20mA | BF (Burst Firing) | EF (External Fuse+Fuse Holder) |
| | 45 | | | | 10K Pot. | DT (Delayed Trigg. + Burst F.) | NF (NO FUSE) |
| | 60 | | | | | S+BF(Soft Start + Burst F.) | IF (Internal Fuses are standard over 110A) |
| | 90 | | | | | PA (Phase Angle) | |
| | 110 | | | | | | HB (Heater Break Alarm) |
| | 125 | | | | | | 110V Fan (Fan at 110V) |
| | 150 | | | | | | UL (cUL us Listed) |
| | 200 | | | | | | Note: for Burst Firing specify the desired n° of cycles ON at |
| | 300 | | | | | | 50% of power demand |
| | 400 | | | | | | |
| | 500 | | | | | | |
| | 600 | | | | | | |
| 700 | | | | | | | |

EXAMPLE CODE

| | | | | | | | |
|--------------|-------|-------|-------|-------|---------|-----|----|
| CD3000M 1PH/ | 150A/ | 440V/ | 480V/ | 460V/ | 4-20mA/ | PA/ | HB |
|--------------|-------|-------|-------|-------|---------|-----|----|



DIMENSIONS

| | W | H | D | | W | H | D | | W | H | D | | W | H | D |
|-----|----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|
| 15A | 63 | 120 | 120 | 60A | 148 | 120 | 159 | 150A | 116 | 316 | 187 | 500A | 137 | 520 | 270 |
| 25A | 63 | 120 | 120 | 90A | 148 | 120 | 159 | 200A | 116 | 316 | 187 | 600A | 137 | 520 | 270 |
| 35A | 85 | 120 | 120 | 110A | 148 | 138 | 159 | 300A | 137 | 520 | 270 | 700A | 137 | 520 | 270 |
| 45A | 85 | 120 | 120 | 125A | 116 | 316 | 187 | 400A | 137 | 520 | 270 | | | | |

FUSES AND FUSEHOLDER

External Fuses + Fuseholder up to 110A, Internal Fuses from 125A to 700A

INPUT FEATURES

| Input signal | Maximum current drain | Input impedance | ON condition | Off condition |
|--------------|-----------------------------|-----------------|--------------|---------------|
| SSR | 5m A constant current drain | | ≥4V-max 30V | ≤1V |
| 0÷10V | | 8200Ω | | |
| 4÷20mA | | 100Ω | | |
| 10K Pot. | | 8200Ω | | |

Auxiliary Power Supply

230V (Range 200V to 260V Max) or 460V (Range 330V to 500V Max)

OUTPUT FEATURES

| Current | Voltage range (V) | Ripetitive peak reverse voltage (480V) | (600V) | Latching current (mAeff) | Max peak one cycle (10msec.) (A) | Leakage current (mAeff) | I2T value for fusing tp=10msec. | Frequency range (Hz) | Power loss I=Inom (W) | Isolation Voltage Vac |
|---------|-------------------|--|--------|--------------------------|----------------------------------|-------------------------|---------------------------------|----------------------|-----------------------|-----------------------|
| 15A | 24÷480 V | 1200 | NA | 150 | 230 | 15 | 610 | 47÷70 | 18 | 2500 |
| 25A | 24÷480 V | 1200 | NA | 150 | 230 | 15 | 610 | 47÷70 | 30 | 2500 |
| 35A | 24÷600 V | 1200 | 1600 | 250 | 400 | 15 | 780 | 47÷70 | 42 | 2500 |
| 45A | 24÷600 V | 1200 | 1600 | 250 | 600 | 15 | 1800 | 47÷70 | 54 | 2500 |
| 60A | 24÷600 V | 1200 | 1600 | 450 | 1000 | 15 | 4750 | 47÷70 | 72 | 2500 |
| 90A | 24÷600 V | 1200 | 1600 | 450 | 2000 | 15 | 19100 | 47÷70 | 108 | 2500 |
| 110A | 24÷600 V | 1200 | 1600 | 450 | 1540 | 15 | 11300 | 47÷70 | 137 | 2500 |
| 125A | 24÷600 V | 1200 | 1600 | 450 | 1540 | 15 | 11300 | 47÷70 | 146 | 2500 |
| 150A | 24÷600 V | 1200 | 1600 | 450 | 2000 | 15 | 19100 | 47÷70 | 162 | 2500 |
| 200A | 24÷600 V | 1200 | 1600 | 300 | 4800 | 15 | 108000 | 47÷70 | 204 | 2500 |
| 300A | 24÷600 V | 1200 | 1600 | 300 | 5250 | 15 | 128000 | 47÷70 | 320 | 2500 |
| 400A | 24÷600 V | 1200 | 1600 | 200 | 7800 | 15 | 300000 | 47÷70 | 397 | 2500 |
| 500A | 24÷600 V | 1200 | 1600 | 200 | 8000 | 15 | 306000 | 47÷70 | 530 | 2500 |
| 600A | 24÷600 V | 1200 | 1600 | 1000 | 17800 | 15 | 1027000 | 47÷70 | 589 | 2500 |
| 700A | 24÷600 V | 1200 | 1600 | 1000 | 17800 | 15 | 1027000 | 47÷70 | 712 | 2500 |

Note: for more deep information about derating curve, fuseholder dimensions and wiring see our web site: www.cdautomation.com