

# ED SERIES | DC OUTPUT

## PLUG-IN SOLID STATE RELAYS

Sensata | Crydom ED Series DC Output Plug-in Solid State Relays are designed to replace industry standard 12 x 29 mm plug-in Electromechanical Relays, offering substantial performance advantages over traditional EMR switching solutions in many applications.

Available in SPST N.O. configuration, the ED Series offer output ratings of 5 or 10 Amps at 1 to 100 VDC, and they are UL 508 recognized, IEC rated and CE compliant.



### Features

- DC output Solid State Relay in an Industry standard EMR plug in package
- Ratings of 5 & 10 Amps
- Load voltage range of 1-48, 1-80 and 1-100 VDC
- Fits standard DIN rail & PCB mountable sockets
- LED input status indicator
- AC or DC control
- cUL Recognized, IEC Rated, CE & RoHS Compliant
- Motor Controller Rated

### Applications

- Battery Management Systems
- Backup Power Supplies
- Valves
- Vending Equipment
- Lighting control
- Medical Equipment
- Test Equipment



## PRODUCT SELECTION

Control Voltage	5 A	5 A	10 A
5-15 VDC Control	ED06D5	ED10D5	ED10D10
18-32 VDC Control	ED06C5	ED10C5	ED10C10
48-72 VDC Control	ED06F5	ED10F5	
18-36 VAC Control	ED06E5	ED10E5	
90-140 VAC Control	ED06B5	ED10B5	

DC Output <sup>(1)</sup>

Description	5 A	5 A	10 A
Operating Voltage [VDC]	1-48	1-80	1-100
Maximum Load Current @ 40°C [ADC] <sup>(2)</sup>	5	5	10
Maximum Load Current UL 508 Motor Controller [FLA] <sup>(3)</sup>	2.0	2.0	N/A
Minimum Load Current [mAdc]	2.5	2.5	2.5
Maximum Off-State Leakage Current @ Rated Voltage [ $\mu$ A]	20	20	20
Maximum On-State Voltage Drop @ Rated Current and 40°C [Vdc]	0.3	0.3	0.25
Maximum Surge Current (10ms) [Adc]	60	60	80
Maximum PWM [Hz] <sup>(4)</sup>	500	500	25

Input <sup>(1)</sup>

Description	EDxxD5	ED10D10	EDxxC5	ED10C10	EDxxF5	EDxxE5	EDxxB5
Control Voltage Range	5-15 VDC	5-15 VDC	18-32 VDC	18-32 VDC	48-72 VDC	18-36 VAC	90-140 VAC
Minimum Turn-On Voltage	5 VDC	5 VDC	18 VDC	18 VDC	48 VDC	18 VAC	90 VAC
Minimum Turn-Off Voltage	1.3 VDC	1.3 VDC	2 VDC	2 VDC	4 VDC	4 VAC	11 VAC
Maximum Reverse Voltage	3 VDC	3 VDC	3 VDC	3 VDC	3 VDC	N/A	N/A
Minimum Input Current [mA]	11	12	10.7	8	10.8	12	7.3
Maximum Input Current [mA]	42.8	44	19.7	13	16.3	25.3	10.9
Nominal Input Impedance [ohms]	350	350	1.6K	3K	4.4K	1.5K	12.5K
Maximum Turn-On Time [msec] <sup>(4)</sup>	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Maximum Turn-Off Time [msec]	0.3	0.2	0.3	0.2	0.3	0.3	0.3

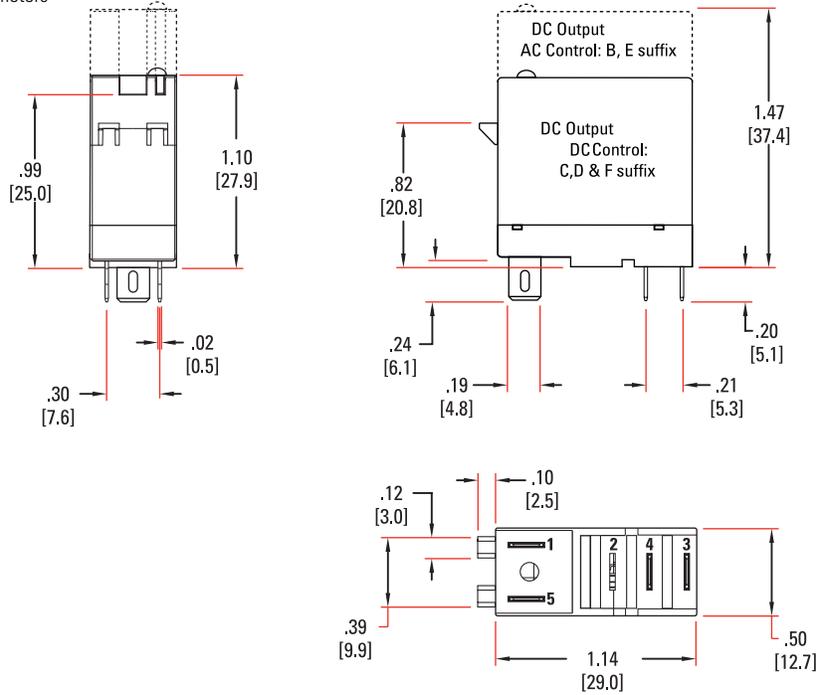
General <sup>(1)</sup>

Description	Parameters
Dielectric Strength, Input/Output (50/60Hz)	2500 Vrms
Minimum Insulation Resistance (@ 500 VDC)	10 <sup>9</sup> Ohms
Maximum Capacitance, Input/Output	10 pF
Ambient Operating Temperature Range	-30°C to 80°C
Ambient Storage Temperature Range	-40°C to 125°C
Weight (typical)	0.71 oz. (30 g)
Maximum Humidity	95% non-condensing
Housing Material	PBT 30% GF, UL94 V-0
Terminals Material	Copper w/Sulfamate Nickel finish

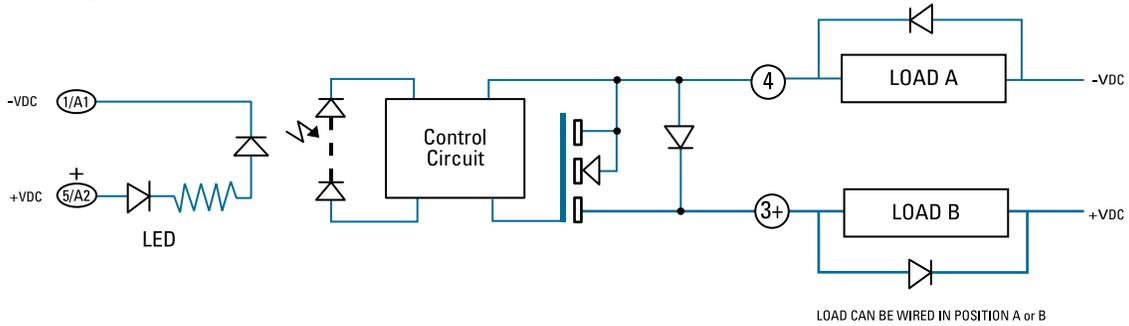


# MECHANICAL SPECIFICATIONS

Tolerance:  $\pm 0.02$  in / 0.5 mm  
All dimensions are in millimeters  
[inches]

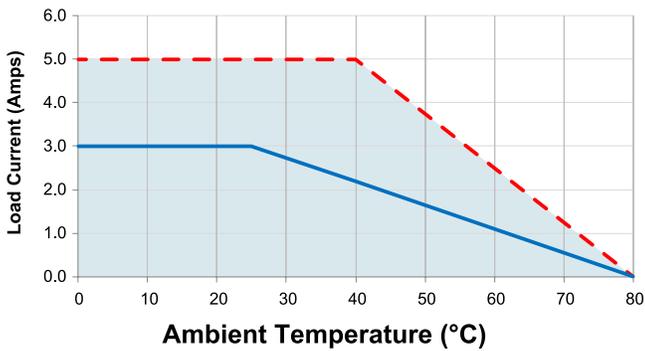


# WIRING DIAGRAM

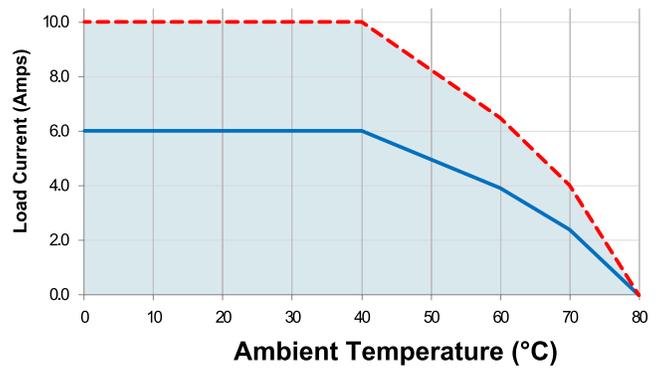


# THERMAL DERATE INFORMATION

### EDxxx5



### ED10x10



- - - Single unit, distance to adjacent components  $\geq 16$  mm
- Multiple units, no minimum spacing between components



## ACCESSORIES

### ED Series Accessories

#### DRSED



#### **DIN Rail Mountable Socket**

Part no.: DRSED  
Fingersafe IP10 DIN rail mountable socket to mount ED series relays onto standard 35 mm DIN rail. Rated at 250 V AC/DC, 12 Amps. The DRSED includes M3 Combo screws.

#### PCBSED



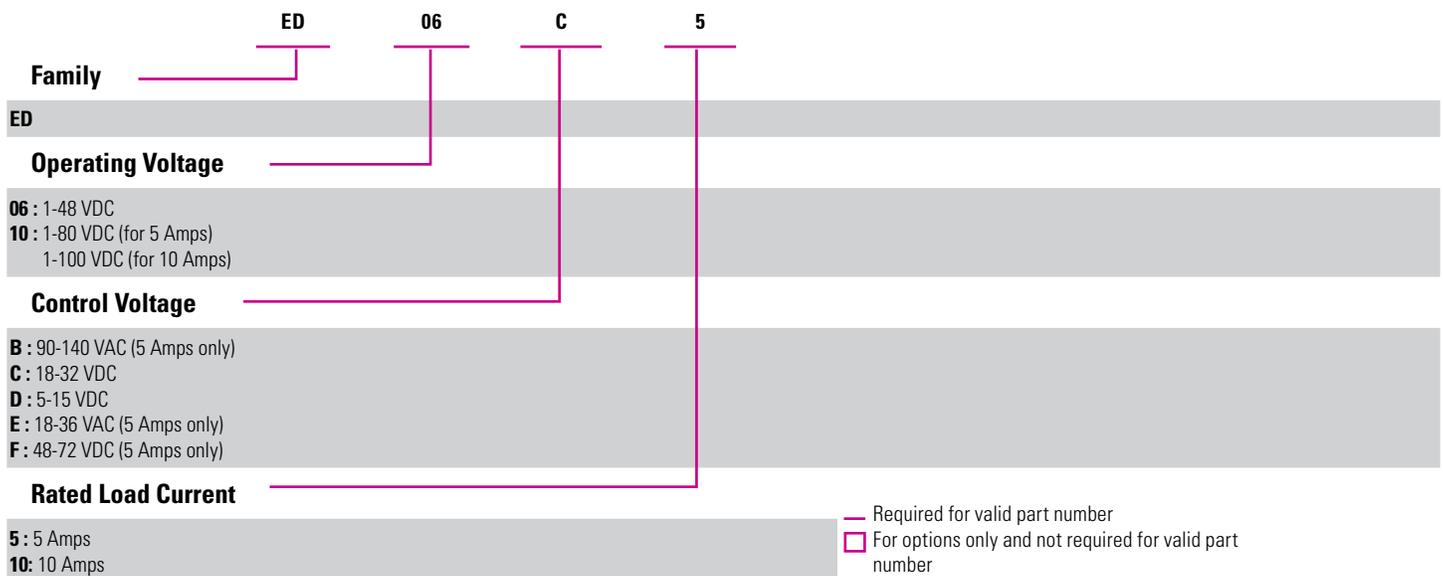
#### **PC Board Mountable Socket**

Part no.: PCBSED  
PC Board mountable socket for ED series relays. Rated at 250 V AC/DC, 12 Amps. Suggested Pin-out hole diameter: 1.0 mm



## ORDERING OPTIONS

Example : ED06C5



## GENERAL NOTES

- (1) All parameters at 25°C unless otherwise specified.
- (2) See derating curves
- (3) Maximum Motor Controller current is 1.5 FLA for EDxxB5 and EDxxE5
- (4) PWM does not apply to EDxxB5 and EDxxE5

## AGENCY APPROVALS & CERTIFICATIONS



Pilot Duty Rated C300  
IEC 61000-4-2 : Electrostatic Discharge Level 3 – Criteria A  
IEC 61000-4-4 : Electrically Fast Transients Level 3 – Criteria B  
IEC 61000-4-5 : Electrical Surges Level 3 – Criteria A

## WARNINGS



### RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

**Failure to follow these instructions can result in serious injury, or equipment damage.**



### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

**Failure to follow these instructions will result in death or serious injury.**

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