

**crydom**

**DIN Rail Mount**  
DataSheet

## ED Series

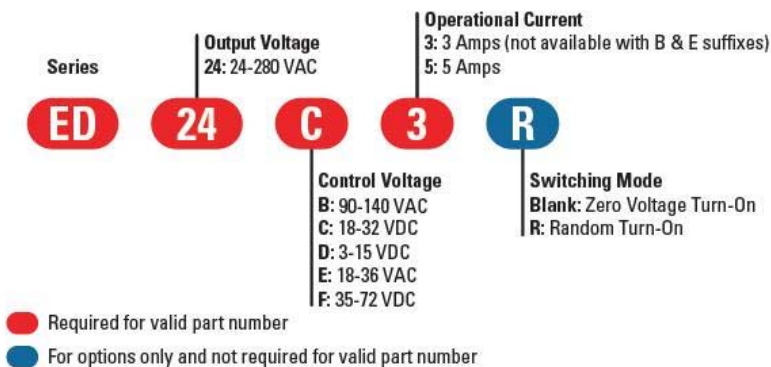


- AC output Solid State Relay in an Industry standard EMR plug in package
- Ratings of 3 & 5 Amps
- Load voltage range of 24-280VAC
- Fits standard DIN rail & PCB mountable sockets
- LED input status indicator
- AC or DC control
- cUL Recognized, IEC Rated, CE & RoHS Compliant
- Horsepower Rated, Pilot Duty Rated

## PRODUCT SELECTION

Description	3 A	5 A
3-15 VDC Control	ED24D3	ED24D5
18-32 VDC Control	ED24C3	ED24C5
48-72 VDC Control	ED24F3	ED24F5
18-36 VAC Control		ED24E5
90-140 VAC Control		ED24B5

## AVAILABLE OPTIONS



## OUTPUT SPECIFICATIONS AC Output (1)

Description	3 A	5 A
Operating Voltage (47-63Hz) [Vrms]	24-280	24-280
Transient Overvoltage [Vpk]	600	600
Maximum Resistive Load Current UL 508/ IEC 62314 LC-A [Arms, FLA] (2)	3	5
Minimum Load Current [Arms]	0.15	0.15
Maximum Off-State Leakage Current @ Rated Voltage [mArms]	0.1	0.1
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec] (3)	500	500
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.1	1.1
Maximum Surge Current (50/60 Hz, 1 cycle) [Apk]	240/250	600/625
Maximum I <sup>2</sup> t for Fusing (50/60 Hz, 1/2 cycle) [A <sup>2</sup> sec]	285/260	1780/1620
UL 508 HP/IEC 62314 LC-B Rating @ 240V, 40°C [HP/KW]	0.25 / 0.37	0.5 / 0.55
Minimum Power Factor (with Maximum Load)	0.5	0.5



# DATA SHEET

## DIN Rail Mount

### INPUT SPECIFICATIONS (1)

Description	ED24Dx	ED24Cx	ED24Fx	ED24Ex	ED24Bx
Control Voltage Range	3-15 VDC	18-32 VDC	48-72 VDC	18-36 VAC	90-140 VAC
Minimum Turn-On Voltage	3 VDC	18 VDC	48 VDC	18 VAC	90 VAC
Minimum Turn-Off Voltage	1.9 VDC	10.5 VDC	24 VDC	10 VAC	48 VAC
Maximum Reverse Voltage	6 VDC	6 VDC	6 VDC	N/A	N/A
Minimum Input Current [mA]	3.8	3.8	3.8	3.8	3.2
Maximum Input Current [mA]	33.8	6.9	5.8	8.5	4.9
Nominal Input Impedance [ohms]	500	4.8K	12.5K	4.5K	28K
Maximum Turn-On Time [msec] (4)	8.33	8.33	8.33	20	20
Maximum Turn-Off Time [msec]	8.33	8.33	8.33	30	30

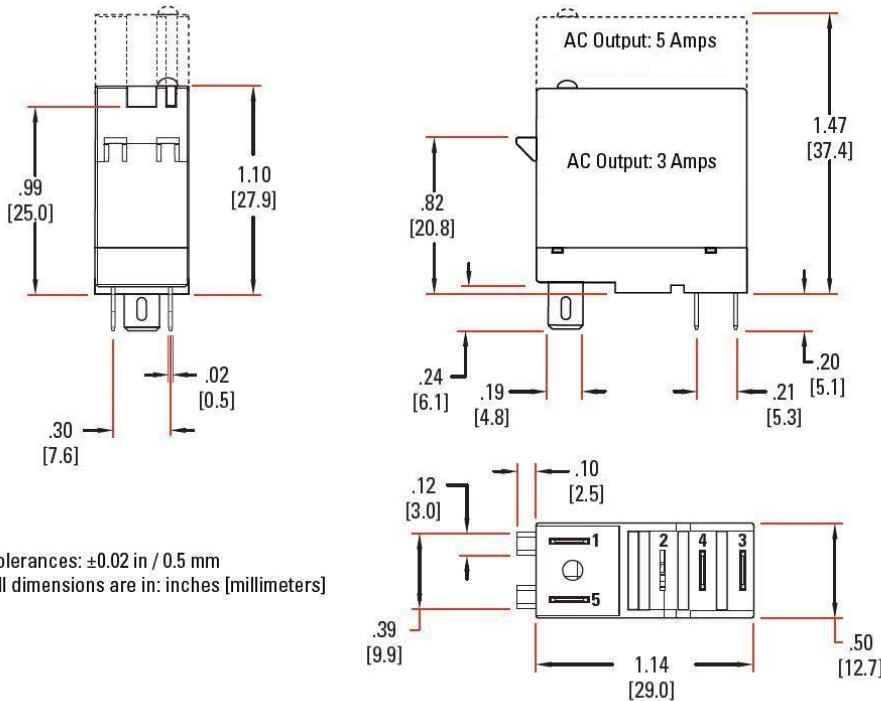
### GENERAL SPECIFICATIONS (1)

Description	Parameters
Dielectric Strength, Input/Output (50/60Hz)	3750 Vrms
Minimum Insulation Resistance (@ 500 V DC)	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)	1.06 oz. (30 g)
Maximum Humidity	85% non-condensing
Housing Material	Polyamide Class V0 (UL94)
Terminals Material	Copper w/Sulfamet Nickel finish

### GENERAL NOTES

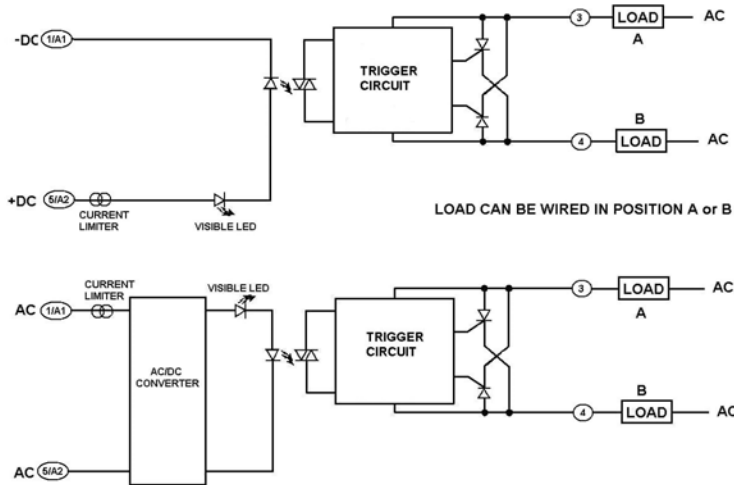
- 1) All parameters at 25°C unless otherwise specified.
- 2) Based on 17mm (5A model) and 13mm (3A model) spacing minimum between parts.
- 3) Off-State dv/dt test method per EIA/NARM standard RS-443, paragraph 13.11.1
- 4) Turn-On time for Random turn-on versions is 0.1ms for DC control and 5ms for AC control.

### MECHANICAL SPECIFICATIONS



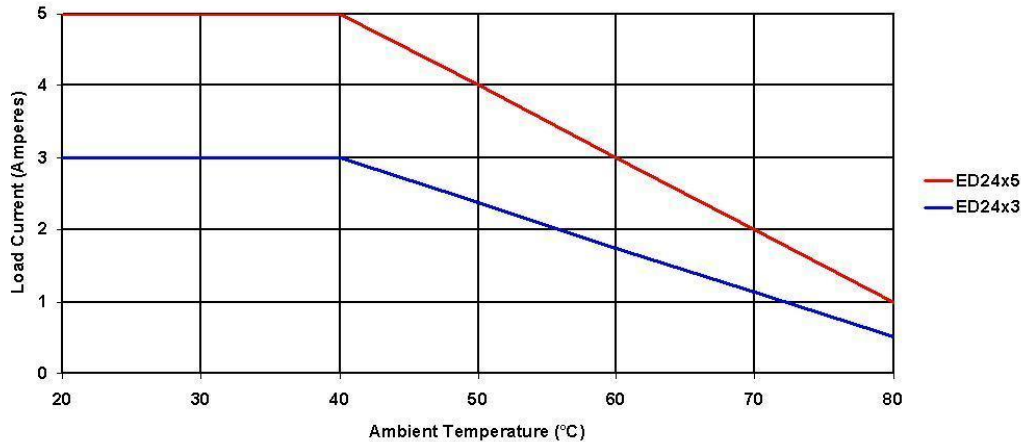
Tolerances: ±0.02 in / 0.5 mm  
All dimensions are in: inches [millimeters]

**WIRING DIAGRAM**



**THERMAL DERATE INFORMATION**

**AMBIENT TEMPERATURE DERATING CURVE**



Above curve is based on a minimum spacing between parts of 17mm for ED24x5 and 13mm for ED24x3. Maximum current @ 0mm spacing is 2.7A for ED24x5 and 2.3A for ED24x3 @ 40°C.

Derating Value: ED24x5 = 0.135A per mm  
ED24x3 = 0.054A per mm

Derating based on Relay air gap:

Example: 10mm spacing with a ED24D5 SSR

1. Subtract spacing from the minimum required spacing of the part (17mm) to get the correction value.  
 $17 - 10 = 7$
2. Multiply air gap derating value found above with correction value.  
 $0.135 \times 7 = 0.945A$

Now using this final number we can figure out what the maximum current the relay can carry with 10mm spacing @ 60°C Ambient.

3. Using the Ambient Derating Curve above find the current for the 5A model @ 60°C. In this case that value is 3A.
4. Subtract the value above (0.945A) from 3A.  
 $3 - 0.945 = 2.055A$

The maximum current you can switch with the ED24D5 with a 10mm air gap between relays @ 60°C ambient is 2.055A

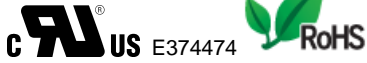
**crydom**

**DIN Rail Mount**  
Datasheet

## AGENCY APPROVALS

Designed in accordance with the requirements of IEC 62314

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



Rev 111011

## 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