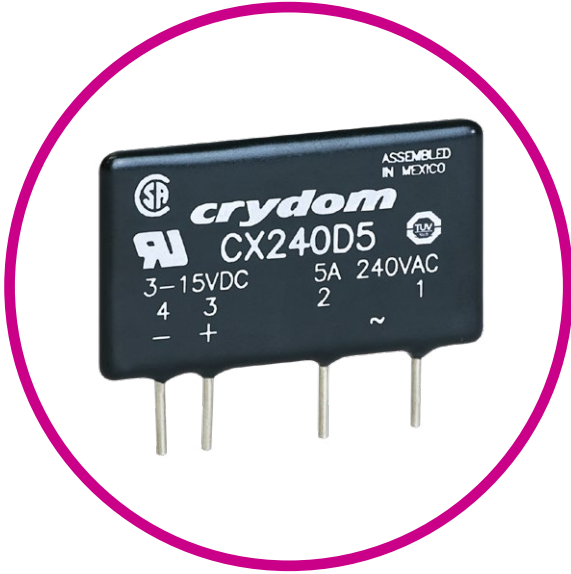




## CX SERIES

PCB MOUNT SOLID STATE RELAYS



### Features

- SIP SSR
- Ratings of 5 A @ 660 VAC
- SCR output for heavy industrial loads
- AC or DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output
- CE Compliant to EN60950-1

### PRODUCT SELECTION

Control Voltage	5 A	5 A	5 A
3-15 VDC	CX240D5		
4-15 VDC		CX380D5	CX480D5
15-32 VDC	CXE240D5	CXE380D5	CXE480D5
18-36 VAC	CXE240A5		
90-140 VAC	CX240A5		

## SPECIFICATIONS

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

Description	CX240x5	CX380x5	CX480x5
Operating Voltage (47-63Hz) [Vrms]	12-280	48-530	48-660
Transient Overvoltage [Vpk]	600	1200	1200
Maximum Off-State Leakage Current @ Rated Voltage [ $\text{mA}_{\text{rms}}$ ]	0.1	0.1	0.1
Minimum Off-State dv/dt @ Maximum Rated Voltage [ $\text{V}/\mu\text{sec}$ ] <sup>2</sup>	500	500	500
Maximum Load Current [ $\text{A}_{\text{rms}}$ ]	5	5	5
Minimum Load Current [ $\text{A}_{\text{rms}}$ ]	0.06	0.06	0.06
Maximum Surge Current (16.6msec) [A <sub>pk</sub> ]	250	250	250
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.4	1.4	1.4
Maximum I <sup>2</sup> t for Fusing (8.3msec) [A <sup>2</sup> sec]	260	260	260
Minimum Power Factor (at Maximum load)	0.5	0.5	0.5
HP rating UL 508/IEC60947[HP/KW]: 240VAC	0.25/0.18	0.25/0.18	0.25/0.18
HP rating UL 508/IEC60947[HP/KW]: 380VAC	NA	0.33/0.25	0.33/0.25
HP rating UL 508/IEC60947[HP/KW]: 480VAC	NA	NA	0.5/0.37

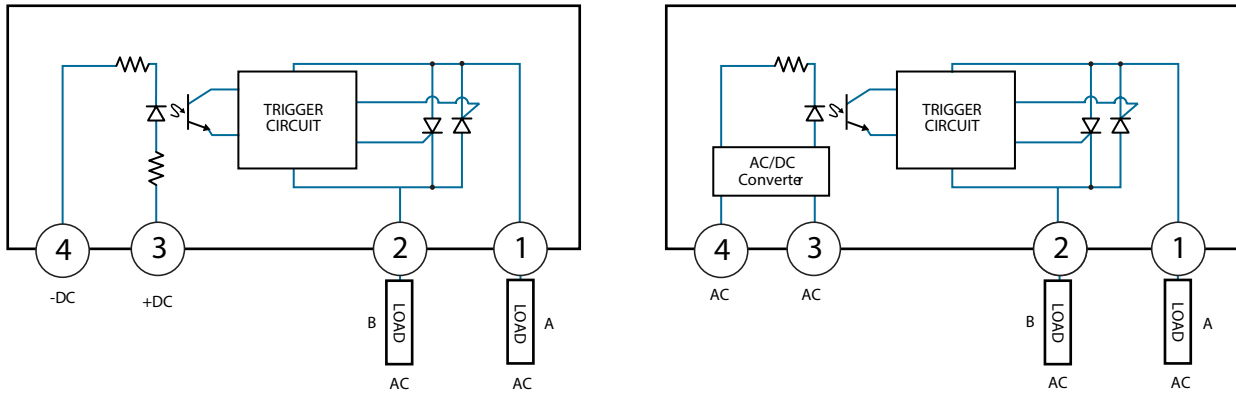
### Input <sup>(1)</sup>

Description	CX240Dx	CX380/480Dx	CXE <sub>xxx</sub> Dx	CX240A5	CXE240A5
Nominal Voltage	5 VDC	5 VDC	24 VDC	120 VAC	24 VAC
Control Voltage Range	3-15 VDC	4-15 VDC	15-32 VDC	90-140 VAC	18-36 VAC
Minimum Turn-On Voltage	3.0 VDC	4.0 VDC	15.0 VDC	90.0 Vrms	18.0 Vrms
Drop Out Voltage	1.0 VDC	1.0 VDC	1.0 VDC	10.0 Vrms	2.0 Vrms
Typical Input Current	15 mA <sub>dc</sub>	15 mA <sub>dc</sub>	15 mA <sub>dc</sub>	10mA <sub>rms</sub>	10mA <sub>rms</sub>
Nominal Input Impedance	300 Ohm	240 Ohm	1500 Ohm	14.1K Ohm	2.1K Ohm
Maximum Turn-On Time [msec] <sup>3</sup>	1/2 Cycle	1/2 Cycle	1/2 Cycle	10	10
Maximum Turn-Off Time [msec]	1/2 Cycle	1/2 Cycle	1/2 Cycle	40	40

### General <sup>(1)</sup>

Description	Parameters
Dielectric Strength, Input/Output (50/60Hz)	4000 Vrms
Minimum Insulation Resistance (@ 500 VDC)	10 <sup>9</sup> Ohm
Maximum Capacitance, Input/Output	10 pF
Ambient Operating Temperature Range	-10°C to 80°C
Ambient Storage Temperature Range	-10°C to 125°C
Weight (typical)	0.4 oz (11g)
Encapsulation	Thermally Conductive Epoxy
Enclosure and PCB	Meets the requirements of IEC60335-1

## WIRING DIAGRAMS

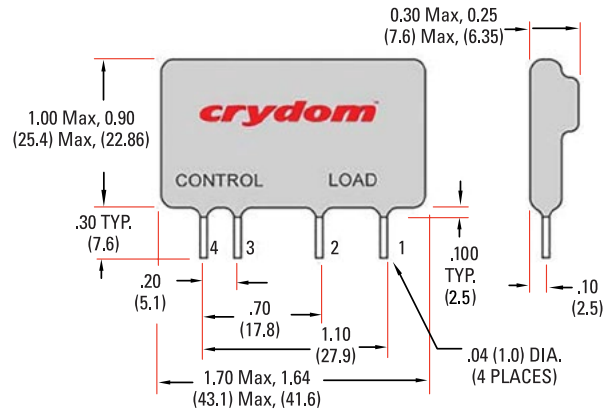


Load can be wired in location A or B

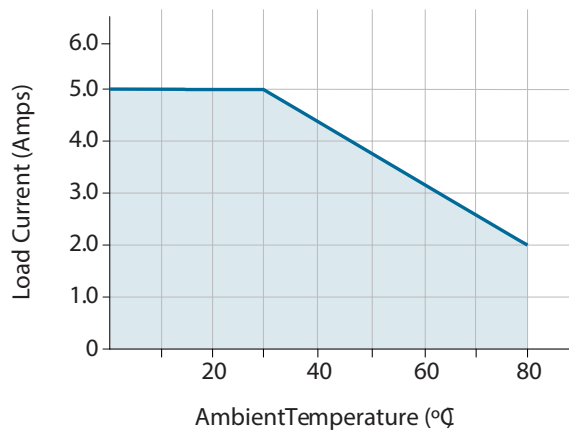
## MECHANICAL SPECIFICATIONS

Tolerances:  $\pm 0.02$  in / 0.5 mm

All dimensions are in: inches [millimeters]

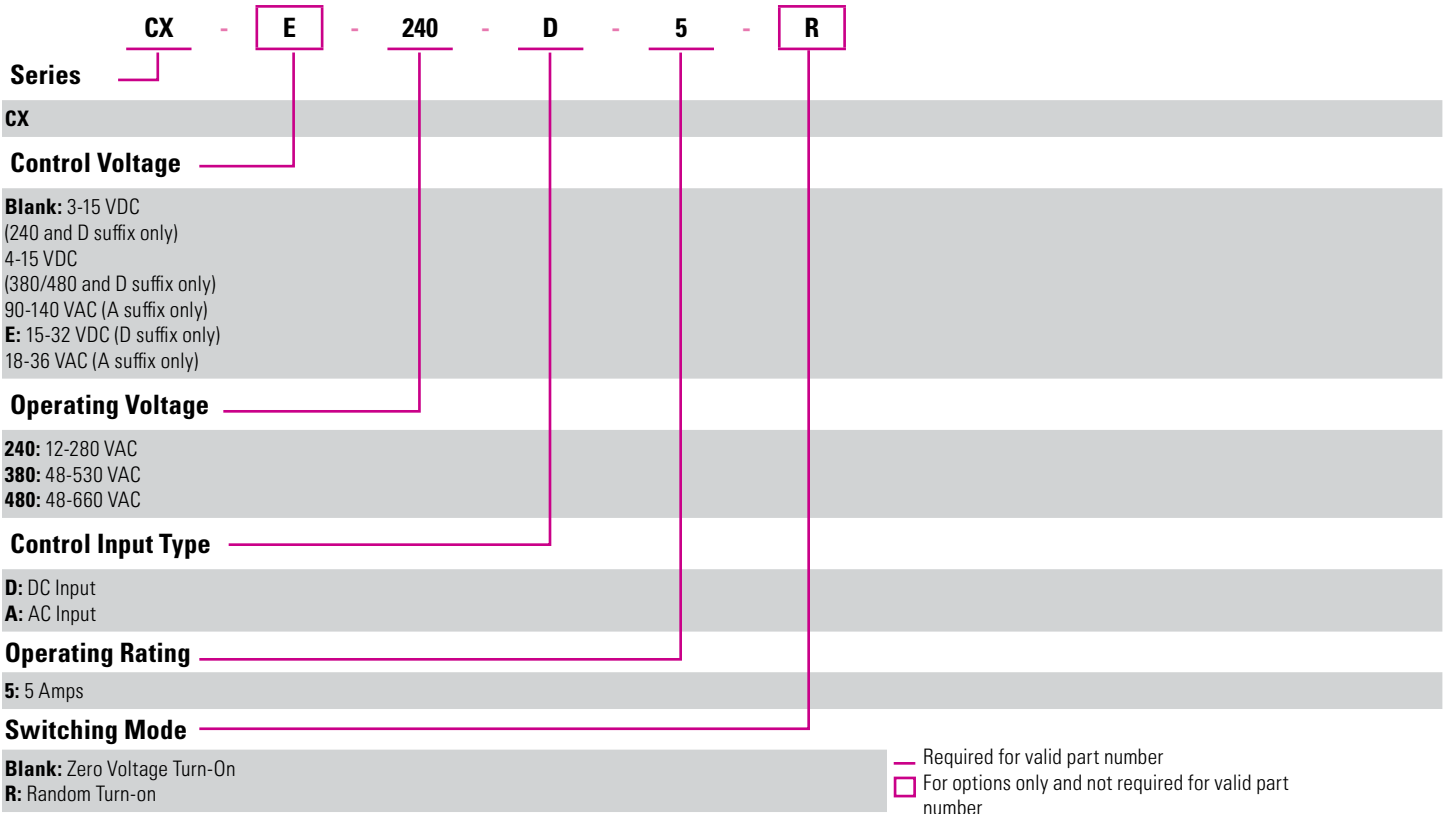


## THERMAL DERATE INFORMATION



## ORDERING OPTIONS

Example : CXE240D5R



## GENERAL NOTES

- (1) All parameters at 25°C unless otherwise specified
- (2) Off-State dv/dt test method per EIA/NARM standard RS-443, paragraph 13.11.1
- (3) Turn-On time for random turn-on versions is 0.01 msec (DC control Models)

## AGENCY APPROVALS & CERTIFICATIONS

Designed in accordance with the requirements of IEC 62314  
 CE EN60950 : Meets the requirements of sections 1.5: 1.7: 2.9: 2.10.5.3: 4.2: 4.5: 4.7  
 IEC60335-1: Resistance to heat and fire meets the requirements of section 30, evaluated by TUV SUD.  
 Glow Wire Test, per requirements of IEC/EN 60695-2-10 and IEC/EN 60695-2-11  
 Ball Pressure Test, per requirements of IEC/EN 60695-10-2



## 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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Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA

## CONTACT US

### Americas

+1 (877) 502 5500 – Option 2  
[sales.crydom@sensata.com](mailto:sales.crydom@sensata.com)

### Europe, Middle East & Africa

+44 (1202) 416170  
[ssr-info.eu@sensata.com](mailto:ssr-info.eu@sensata.com)

### Asia Pacific

[sales.isasia@list.sensata.com](mailto:sales.isasia@list.sensata.com)  
China +86 (21) 2306 1500  
Japan +81 (45) 277 7117  
Korea +82 (31) 601 2004  
India +91 (80) 67920890  
Rest of Asia +886 (2) 27602006  
ext 2808



**CMX SERIES**  
PCB MOUNT



**Features**

- SIP SSR
- Ratings to 20A @ 60 VDC, 10A @ 100 VDC, 10A @ 60 VDC and 3A @ 200 VDC
- MOSFET output
- DC control
- Low on-state impedance
- CE Compliant to EN60950-1

**PRODUCT SELECTION**

Control Voltage	3 A	5 A	6 A	10 A	10 A	20 A
3-10 VDC	CMX200D3	CMX60D5	CMX100D6	CMX60D10	CMX100D10	CMX60D20
20-28 VDC	CMXE200D3	CMXE60D5	CMX100D6	CMX60D10	CMX100D10	CMX60D20

**OUTPUT SPECIFICATIONS (1)(5)**

Description	3 A	5 A	6 A	10 A	10 A	20 A
Operating Voltage [VDC]	0-200	0-60	0-100	0-60	0-100	0-60
Maximum Off-State Leakage Current @ Rated Voltage [ $\mu$ Adc]	100	100	100	100 (6)	100	100
Maximum Load Current [Arms]	3	5	6	10	10	20
Minimum Load Current [mArms]	2	2	2	2	2	2
Maximum On-State Resistance [Ohm] (2)	0.20	.10	.040	.018	.010	.0033
Maximum Surge Current (10msec) [Apk]	30	60	100	100	100	200
Maximum On-State Voltage Drop @ Rated Current [VDC]	0.6	0.5	0.24	0.18	0.1	0.1

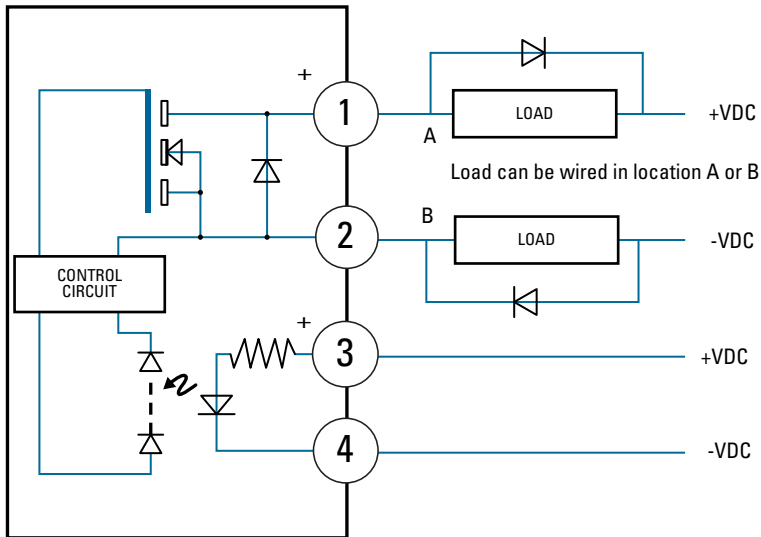
**INPUT SPECIFICATIONS (1)**

Description	CMX	CMXE
Control Voltage Range	3.0-10.0 VDC	20-28 VDC
Maximum Turn On Voltage	3.0 VDC	20 VDC
Minimum Turn-Off Voltage	1.0 VDC	1.0 VDC
Typical Input Current	15 mAdc @ 5 VDC	12 mAdc @ 24 VDC
Nominal Input Impedance	300 Ohm	780 Ohm
Maximum Turn-On Time [msec]	1.0	1.0
Maximum Turn-Off Time [ $\mu$ sec]	300	300

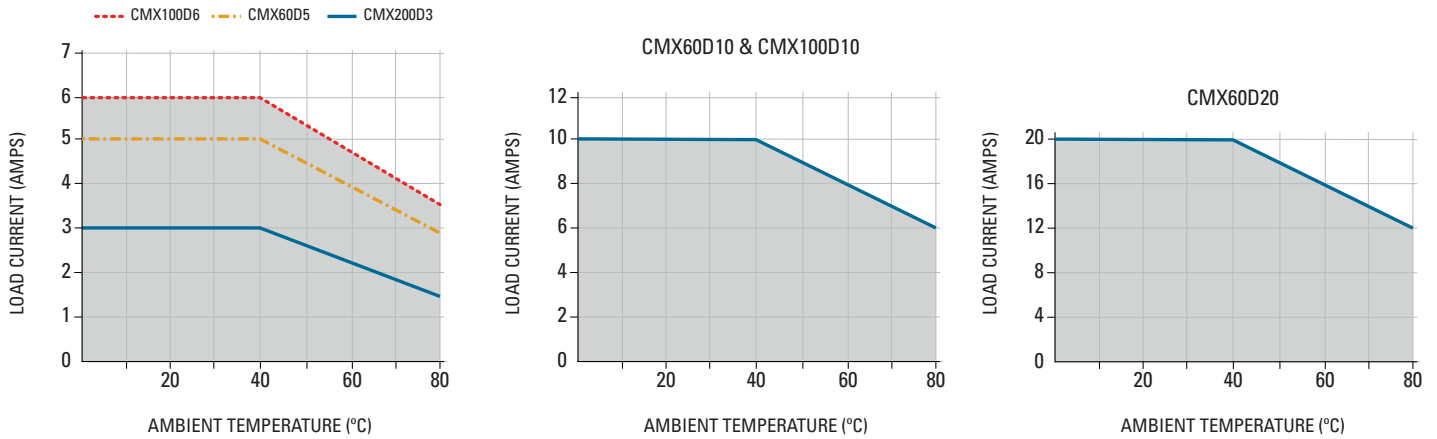
**GENERAL SPECIFICATIONS**

Description	Parameters
Dielectric Strength, Input/Output (50/60Hz) (3)	2500 Vrms
Minimum Insulation Resistance (@ 500 VDC) (3)	10 <sup>9</sup> Ohms
Maximum Capacitance, Input/Output	15 pF
Ambient Operating Temperature Range (4)	-30°C to 80°C
Ambient Storage Temperature Range (4)	-30°C to 125°C
Weight (typical)	0.4 oz. (11 g)
Encapsulation	Thermally Conductive Epoxy
Enclosure and PCB	Meet the requirements of IEC60335-1

## WIRING DIAGRAM

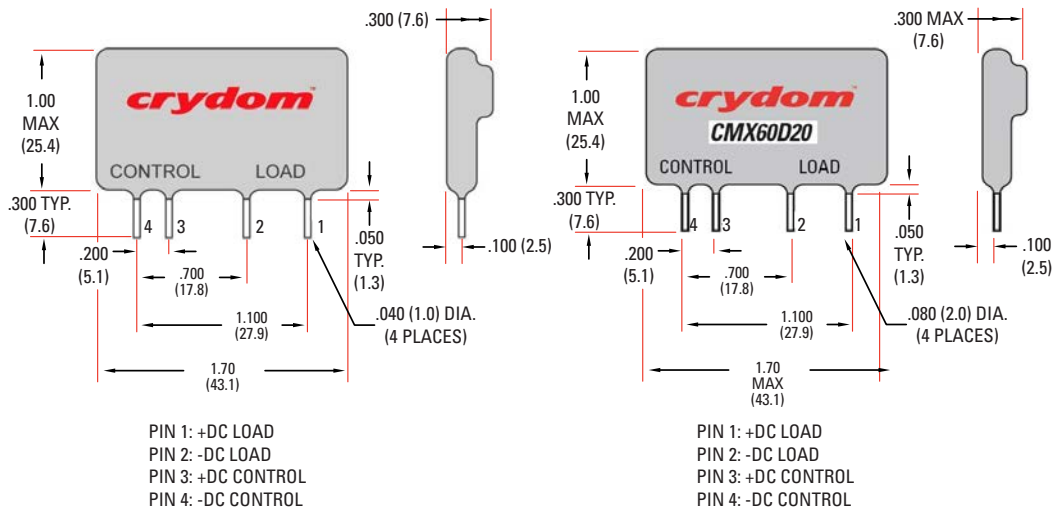


## THERMAL DERATE INFORMATION



## MECHANICAL SPECIFICATIONS

Tolerances:  $\pm 0.02$  in / 0.5 mm  
All dimensions are in: inches (millimeters)



## AGENCY APPROVALS & CERTIFICATIONS


Designed in accordance with the requirements of IEC 62314

EN60950 : Meets the requirements of sections 1.5: 1.7: 2.9: 2.10.5.3: 4.2: 4.5: 4.7:

IEC60335-1: Resistance to heat and fire meets the requirements of section 30, evaluated by TUV SUD.

Glow Wire Test, per requirements of IEC/EN 60695-2-10 and IEC/EN 60695-2-11

Ball Pressure Test, per requirements of IEC/EN 60695-10-2

 E116950 (3 Amps, 6 Amps and 10 Amps Models)



## GENERAL NOTES

- 1) All parameters at 25°C unless otherwise specified.
- 2) @ rated current (RDS-ON).
- 3) Dielectric and insulation resistance are measured between input and output.
- 4) Low temperature range is limited to -10°C in 20 Amps models.
- 5) Inductive loads should be diode suppressed.
- 6) At 55 VDC.

## 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 ARCH 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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Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

## CONTACT US

### Americas

+1 (877) 502 5500 – Option 2  
[sales.crydom@sensata.com](mailto:sales.crydom@sensata.com)

### Europe, Middle East & Africa

+44 (1202) 416170  
[ssr-info.eu@sensata.com](mailto:ssr-info.eu@sensata.com)

### Asia Pacific

[sales.isasia@list.sensata.com](mailto:sales.isasia@list.sensata.com)  
China +86 (21) 2306 1500  
Japan +81 (45) 277 7117  
Korea +82 (31) 601 2004  
India +91 (80) 67920890  
Rest of Asia +886 (2) 27602006  
ext 2808