CW48 Series

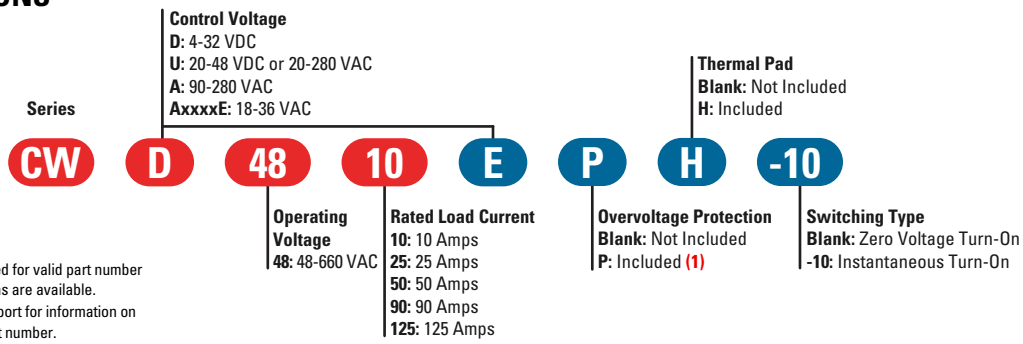
- Ratings from 10 A to 125 A @ 48-660 VAC
- SCR Output for heavy industrial loads
- LED Status Indicator
- UL/CSA/TUV Approved, CE Compliant to EN60950-1
- Improved SEMS screw and washer
- Redesigned housing with anti-rotation barriers
- AC or DC control and Universal AC/DC control
- EMC Compliant to Level 3
- Epoxy Free Design
- Removable IP20 touch-safe cover
- DBC substrate for superior thermal performance

For **Generation 3** datasheet click here

PRODUCT SELECTION

Control Voltage	10 A	25 A	50 A	90 A	125 A
4-32 VDC	CWD4810	CWD4825	CWD4850	CWD4890	CWD48125
90-280 VAC	CWA4810	CWA4825	CWA4850	CWA4890	CWA48125
18-36 VAC	CWA4810E	CWA4825E	CWA4850E	CWA4890E	CWA48125E
20-48 VDC/20-280 VAC	CWU4810	CWU4825	CWU4850	CWU4890	CWU48125

AVAILABLE OPTIONS



- Required for valid part number
- For options only and not required for valid part number
- * Not all part number conbinations are available. Contact Crydom Technical Support for information on the availability of a specific part number.

OUTPUT SPECIFICATIONS (2)

Description	10 A	25 A	50 A	90 A	125 A
Operating Voltage (47-440Hz) [Vrms]	48-660	48-660	48-660	48-660	48-660
Transient Overvoltage [Vpk] (1)	1200	1200	1200	1200	1200
Maximum Off-State Leakage Current @ Rated Voltage [mArms]	1	1	1	1	1
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/µsec]	500	500	500	500	500
Maximum Load Current [Arms] (3)	10	25	50	90	125
Minimum Load Current [mArms]	150	150	150	250	250
Maximum 1 Cycle Surge Current (50/60Hz) [Apk]	380/400	570/600	810/850	1290/1350	1900/2000
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.3	1.3	1.3	1.3	1.25
Thermal Resistance Junction to Case (Rjc) [°C/W]	0.35	0.3	0.2	0.16	0.11
Maximum 1/2 Cycle I^2t for Fusing (50/60Hz) [A^2 sec]	720/660	1620/1500	3280/3000	8320/7560	18000/16600
Minimum Power Factor (at Maximum load) (1)	0.5	0.5	0.5	0.5	0.5
HP Rating UL 508/IEC60947 [-10 Option][HP (KW)]: 120 VAC	0.5 (0.37)	1 (0.74)	2 (1.5)	3 (2.24)	5 (3.37)
HP Rating UL 508/IEC60947 [-10 Option][[HP (KW)]: 240 VAC	1.5 (1.1)	3 (2.2)	5 (3.73)	7.5 (5.6)	10 (7.5)
HP Rating UL 508/IEC60947 [-10 Option][[HP (KW)]: 480 VAC	3 (2.24)	5 (3.7)	7.5 (5.6)	10 (7.4)	15 (11.2)
HP Rating UL 508/IEC60947 [HP (KW)]: 120 VAC	0.5 (0.37)	0.75 (0.56)	1 (0.74)	2 (1.5)	3 (2.2)
HP Rating UL 508/IEC60947 [HP (KW)]: 240 VAC	1.5 (1.1)	2 (1.5)	3 (2.2)	5 (3.73)	7.5 (5.6)
HP Rating UL 508/IEC60947 [HP (KW)]: 480 VAC	3 (2.24)	5 (3.7)	7.5 (5.6)	10 (7.4)	15 (11.2)

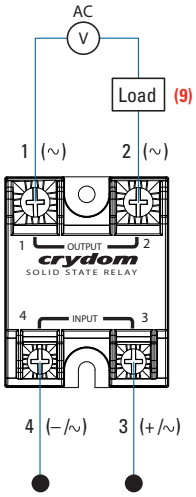
INPUT SPECIFICATIONS (1)

Description	CWD	CWA	CWAxxxxE	CWU
Control Voltage Range	4-32 VDC	90-280 VAC (4)	18-36 VAC	20-48 VDC/ 20-280 VAC
Maximum Reverse Voltage	-32 VDC	-	-	-
Minimum Turn-On Voltage	4 VDC (5)	90 VAC	18 VAC	19 VDC/VAC
Minimum Turn-Off Voltage	1 VDC	10 VAC	4 VAC	5 VDC/VAC
Minimum Input Current (for on-state)	10 mA	6 mA	13 mA	7/13 mA
Maximum Input Current	15 mA	10 mA	15 mA	11/9 mA
Nominal Input Impedance	Current Regulated	Current Regulated	Current Regulated	Current Regulated
Maximum Turn-On Time [msec]	1/2 Cycle (6)	20	20	20
Maximum Turn-Off Time [msec]	1/2 Cycle	30	30	30

GENERAL SPECIFICATIONS (1)

Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz)	4000 Vrms
Minimum Insulation Resistance (@ 500 VDC)	10^9 Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range (7)	-40 to 80 °C
Ambient Storage Temperature Range	-40 to 125 °C
Weight (typical)	2.88 oz (81.53 g)
Housing Material	UL94 V-0
Baseplate Material	Aluminum
Input Terminal Screw Torque Range (in-lbs/Nm)	13-15 /1.5-1.7
Load Terminal Screw Torque Range (in-lbs/Nm)	18-20 / 2-2.2
SSR Mounting Screw Torque Range (in-lbs/Nm)	18-20 / 2-2.2
Input/Output Terminal Screw Thread Size	#6-32 UNC / #8-32 UNC
Humidity per IEC60068-2-78	93% non-condensing
LED Input Status Indicator	Green
MTBF (Mean Time Between Failures) at 40°C ambient temperature (8)	11,641,553 hours (1,328 years)
MTBF (Mean Time Between Failures) at 60°C ambient temperature (8)	7,210,376 hours (823 years)

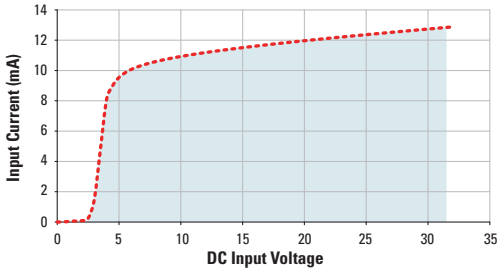
WIRING DIAGRAM



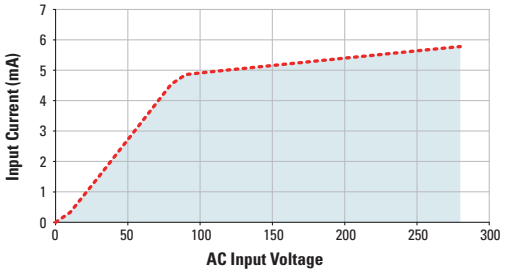
Recommended Wire Sizes

Terminals	Wire Size (Solid / Stranded)	Wire Pull-Out Strength (lbs)[N]
Input	24 AWG (0.2 mm²) / 0.2 [minimum]	10 [44.5]
	2 x 12 AWG (3.3 mm²) / 3.3 [maximum]	90 [400]
Output	20 AWG (0.5 mm²) / 0.518 [minimum]	30 [133]
	2 x 10 AWG (5.3 mm²) / 5.3	110 [490]
	2 x 8 AWG (8.4 mm²) / 8.4 [maximum]	90 [400]

Input Current vs Input Voltage
Standard Regulated DC Input

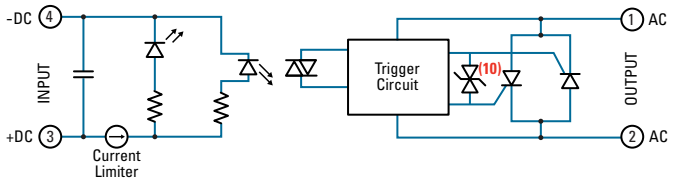


Input Current vs Input Voltage
Standar Regulated AC Input

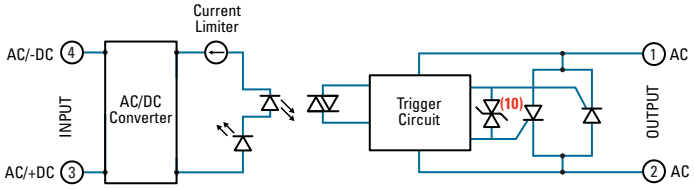


EQUIVALENT CIRCUIT BLOCK DIAGRAMS

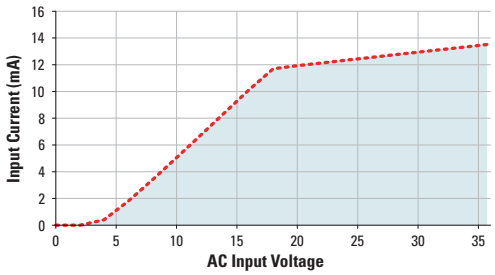
CWD Series DC Control



CWA/CWU Series AC Control



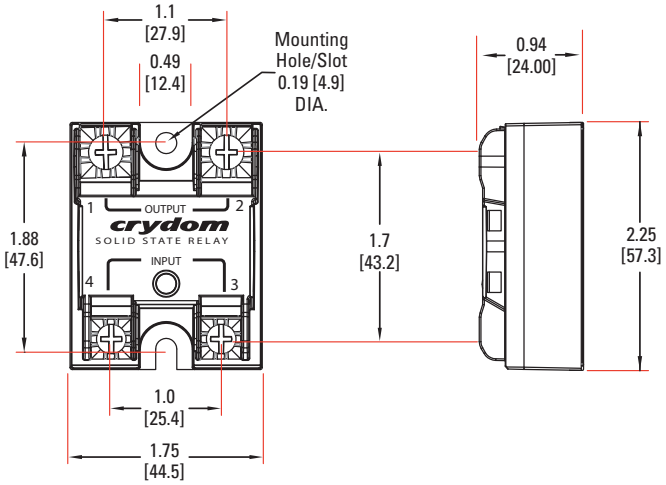
Input Current vs Input Voltage
Regulated AC Input Option "E"



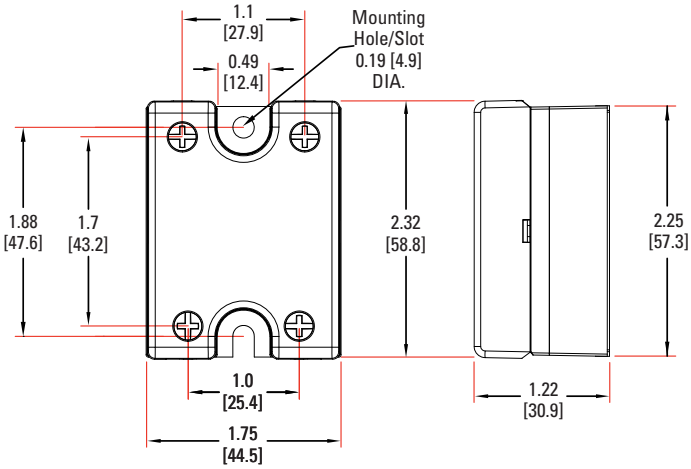
MECHANICAL SPECIFICATIONS (1)

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

Screw Termination



Screw Termination, IP20



GENERAL NOTES

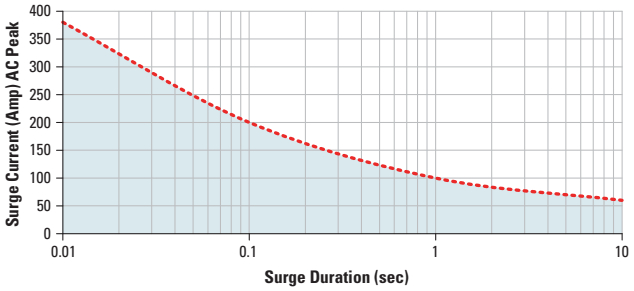
(1) "P" option output will self trigger between 900-1200 Vpk. Power factor 0.7 or higher, not suitable for capacitive loads.
(2) All parameters at 25°C unless otherwise specified.
(3) Heat sinking required, see derating curves
(4) For ambient temperature above 40°C the maximum control voltage must not exceed 250VAC.
(5) Increase minimum voltage by 1V for operations from -20 to -40°C.
(6) Turn-on time for Instantaneous turn-on versions is 0.1 msec and 7msec for CWU models.
(7) AC input models operating range is -20 to 80 °C.
(8) All parameters at 50% power rating and 100% duty cycle (contact Crydom tech support for detailed report).
(9) Load can be wired to either SSR output terminal 1 or 2.
(10) Select P option for overvoltage protection.
(11) For single surge pulse Tc=25°C; Tj=125°C. For AC Output SSRs, AC Rms value of surge current equals the peak value divided by $\sqrt{2}$ (1.414).

For additional information or specific questions, contact Crydom Technical Support.

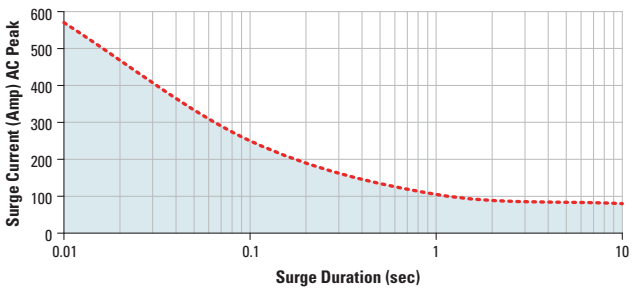
SURGE CURRENT INFORMATION

Single Pulse (11)

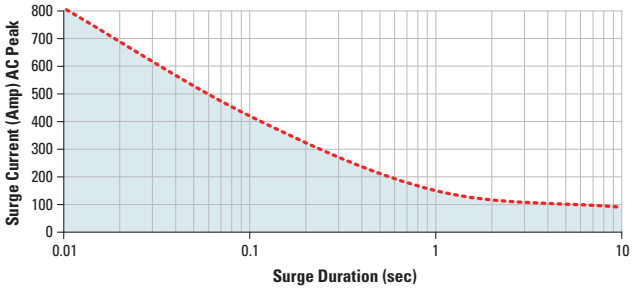
CWxxx10



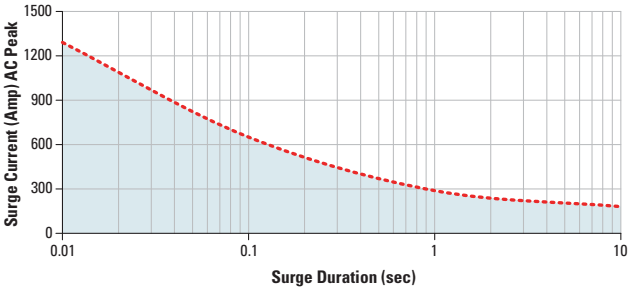
CWxxx25



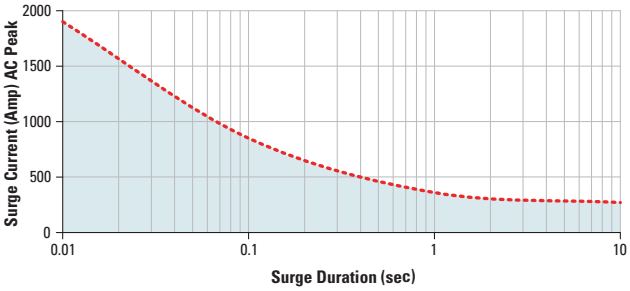
CWxxx50



CWxxx90



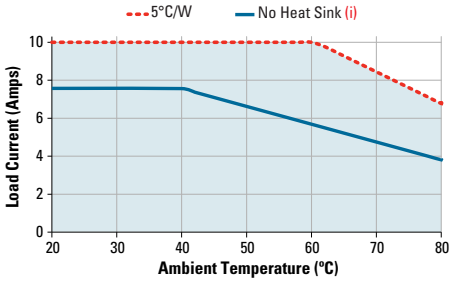
CWxxx125



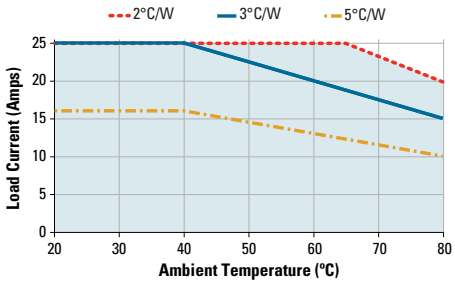
THERMAL DERATE INFORMATION

(i) SSR metal base plate acting as heat sink, it must be exposed to free ambient air.

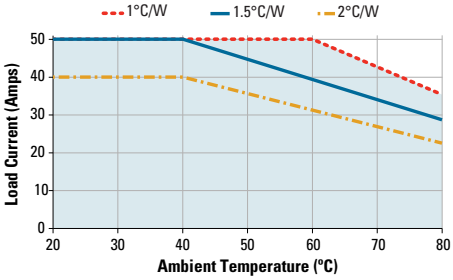
CWxxx10



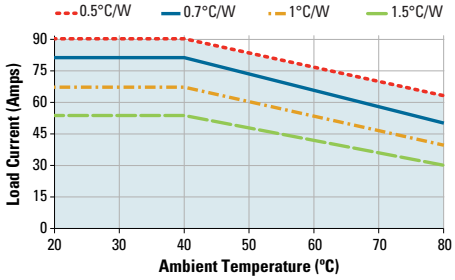
CWxxx25



CWxxx50



CWxxx90



CWxxx125