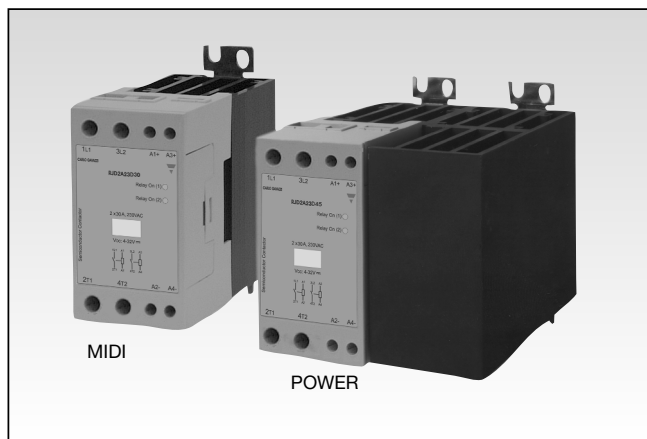


# Solid State Relays 2 Independently Switched Poles Integrated Heatsink Type RJD2A - Duo



- 2 in 1 semiconductor contactor
- Two control inputs - two independently switched poles
- Direct copper bonding (DCB) technology
- LED-indication for each pole
- Housing free of moulding mass
- Cage clamp output terminals
- Input range: 4-32 VDC
- Operational ratings: up to 2x45 AAC and 600 VAC
- Blocking voltage: up to 1200 Vp
- Opto-isolation > 4000 VACrms

## Product Description

This product is designed in such a way as to replace electro-mechanical contactors in industrial heating and motor applications, especially when switching is frequent. This product is ready to mount on DIN-rail or chassis and comes with integral heatsink. Cage clamp terminals are used to ensure secure load connection with cable up to 25mm<sup>2</sup>.

The RJD2A series consists of two switching poles which are independently controlled. Green LEDs indicate the status of each control input. The relay will switch on when the sinusoidal curve crosses zero and switches off when the current crosses zero.

## Ordering Key

|                           | RJ | D | 2 | A | 60 | D | 30 | E |
|---------------------------|----|---|---|---|----|---|----|---|
| Solid State Relay         |    |   |   |   |    |   |    |   |
| Two-in-one(Duo)           |    |   |   |   |    |   |    |   |
| Number of switching poles |    |   |   |   |    |   |    |   |
| Switching mode            |    |   |   |   |    |   |    |   |
| Rated operational voltage |    |   |   |   |    |   |    |   |
| Control voltage           |    |   |   |   |    |   |    |   |
| Rated operational current |    |   |   |   |    |   |    |   |
| Terminal layout           |    |   |   |   |    |   |    |   |

## Type Selection

| Switching mode    | Rated operational voltage        | Control voltage | Rated operational current                         |
|-------------------|----------------------------------|-----------------|---|
| A: Zero switching | 23: 230 VACrms<br>60: 600 VACrms | D: 4-32VDC      | 30: 2x30 AACrms (Midi)<br>45: 2x45 AACrms (Power) |

## Selection Guide

| Rated operational voltage | Control voltage | Rated operational current<br>2x30A (Midi) | 2x45A (Power) |
|---------------------------|-----------------|---|---------------|
| 230VACrms                 | 4-32VDC         | RJD2A23D30E                               | RJD2A23D45E   |
| 600VACrms                 | 4-32VDC         | RJD2A60D30E                               | RJD2A60D45E   |

## General Specifications

|                             | RJD2A23...         | RJD2A60...          |
|-----------------------------|--------------------|---------------------|
| Operational voltage range   | 24 to 280 VAC      | 42 to 660 VAC       |
| Blocking voltage            | 650 V <sub>p</sub> | 1200 V <sub>p</sub> |
| Operational frequency range | 45 to 65 Hz        | 45 to 65 Hz         |
| Power factor                | ≥ 0.5 @ 230 VACrms | ≥ 0.5 @ 600 VACrms  |
| Approvals                   | UL, cUL            | UL, cUL             |
| CE-marking                  | Yes                | Yes                 |
| Pollution degree            | 2                  | 2                   |

## Output Specifications

|  | RJD2A...30 (Midi)        | RJD2A...45 (Power)       |
|--|--------------------------|--------------------------|
| Rated operational current<br>AC51 @Ta=25°C<br>AC53a @Ta=25°C | 2x30AACrms<br>2x30AACrms | 2x45AACrms<br>2x30AACrms |
| Min. operational current                                     | 500 mAACrms              | 500 mAACrms              |
| Rep. overload current t = 1s                                 | < 200 AACrms             | < 200 AACrms             |
| Non rep. surge current Tj(init.)<br>= 25°C and t = 10 ms     | 1900 Ap                  | 1900 Ap                  |
| Off-state leakage current @<br>rated voltage and frequency   | < 3 mArms                | < 3 mArms                |
| I <sup>2</sup> t for fusing t = 10 ms                        | 18000 A <sup>2</sup> s   | 18000 A <sup>2</sup> s   |
| On-state voltage drop @ rated current                        | 1.6 Vrms                 | 1.6 Vrms                 |
| Critical dv/dt commutating                                   | 500 V/μs                 | 500 V/μs                 |
| Critical dV/dt off-state                                     | 500 V/μs                 | 500 V/μs                 |

## Housing Specifications

|   |  |
|---|--|
| Weight                                    | Approx. 480g (MIDI)<br>Approx. 800g (Power)  |
| Housing material                          | PBT Flame Retardant  |
| Control terminal cable size<br>Min<br>Max | 1 x 0.5 mm <sup>2</sup> (1 x AWG 20)<br>1 x 4.0 mm <sup>2</sup> (1 x AWG 12) or<br>2 x 2.5 mm <sup>2</sup> (2 x AWG 14)<br>0.6 Nm with Posidrive 0 bit |
| Tightening torque max.                    | 0.6 Nm with Posidrive 0 bit  |
| Control terminal screw                    | M3   |
| Power terminal cable size<br>Min<br>Max   | 1 x 4 mm <sup>2</sup> (1 x AWG 12)<br>1 x 25 mm <sup>2</sup> (1 x AWG 3) or<br>2 x 10 mm <sup>2</sup> (2 x AWG 6)<br>2.5 Nm with Posidrive 2 bit       |
| Tightening torque max.                    | 2.5 Nm with Posidrive 2 bit  |
| Power terminal screw                      | M5   |

## Input Specifications

|                        |            |
|------------------------|------------|
| Control voltage range  | 4 - 32 VDC |
| Pick-up voltage        | 3.8 VDC    |
| Reverse voltage        | 32 VDC     |
| Drop-out voltage       | 1 VDC      |
| Maximum input current  | 15 mA      |
| Response time pick-up  | 1 cycle    |
| Response time drop-out | 1 cycle    |

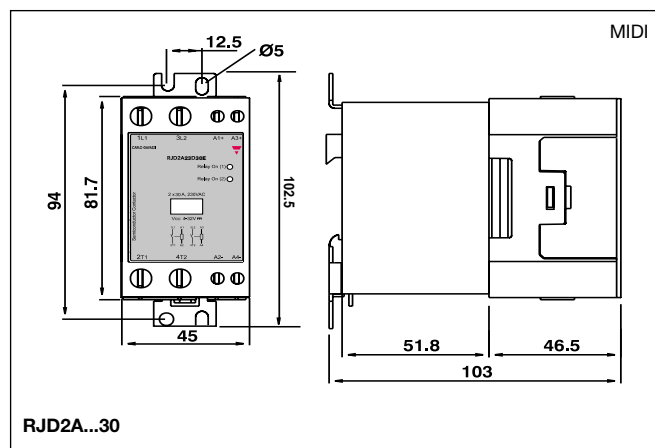
## Thermal Specifications

|                       |               |
|-----------------------|---------------|
| Operating temperature | -30 to +70°C  |
| Storage temperature   | -40 to +100°C |

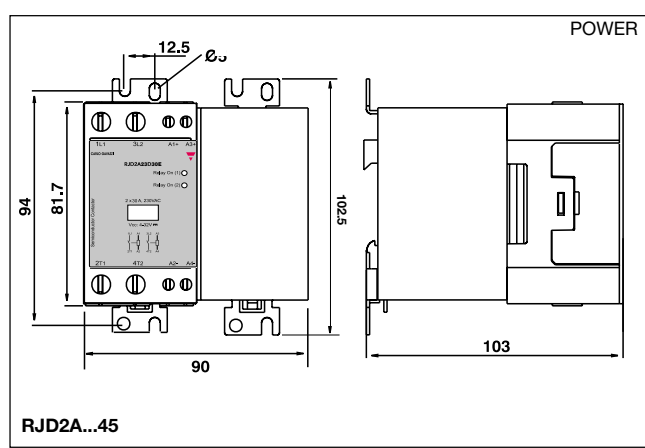
## Isolation

|  |               |
|--|---------------|
| Rated isolation voltage<br>Input to output | ≥ 4000 VACrms |
| Output to case                             | ≥ 4000 VACrms |

## Dimensions

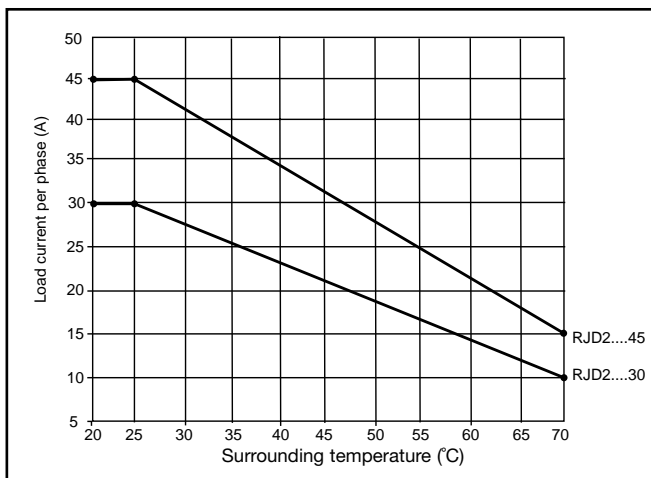


All dimensions in mm

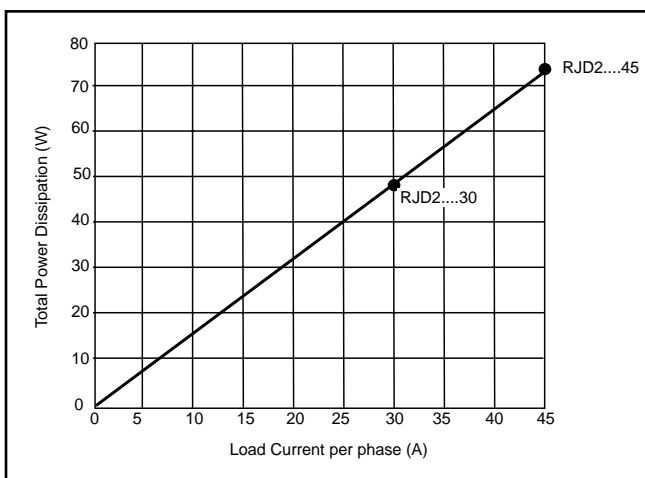


All dimensions in mm

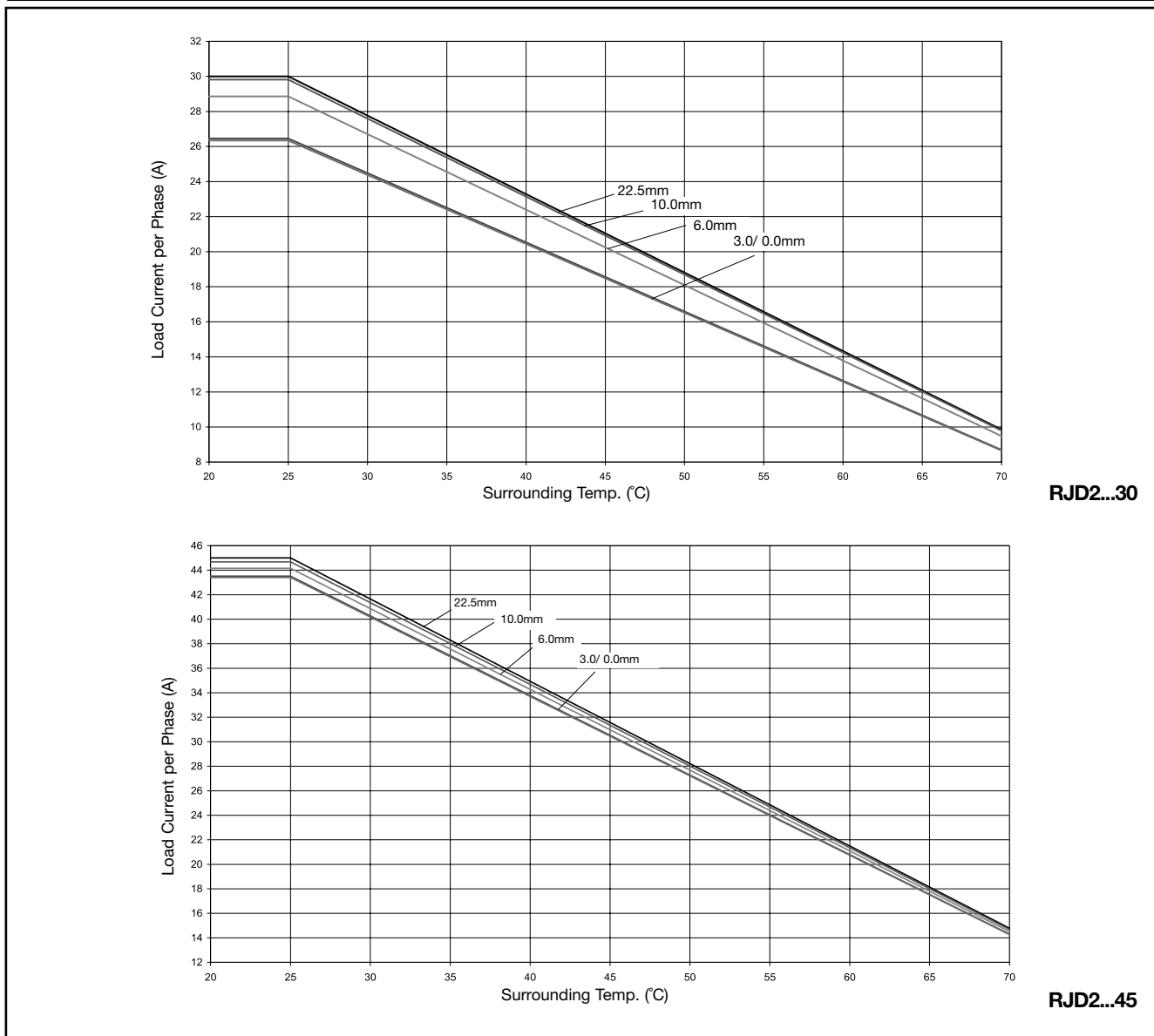
## Derating Curve



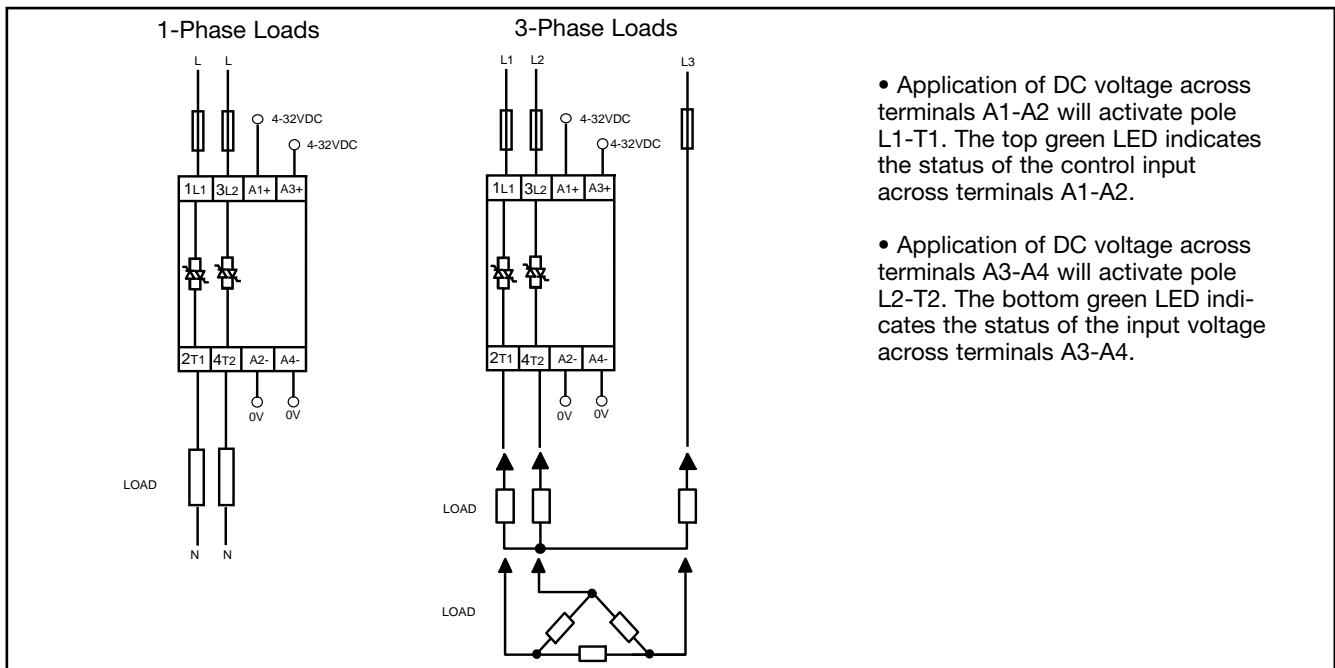
## Dissipation Curve



## Derating vs. Spacing Curves



## Connection example



## Terminal Layout

