



PRODUCT CATALOGUE ►

DC SSR  
02 ~ 40 Amps

INPUT : DC Control,  
OUTPUT : Darlingon/MOSFET

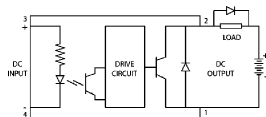
**FUJI**  
**ELECTRIC**



Series : 001 K

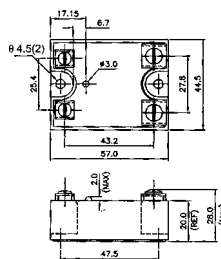


Schematic

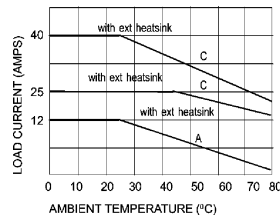


3 Input (+) & 4 Input (-)  
1 & 2 Output

Mechanical Drawing



Derating Curve



A = 3.2°C/W  
C = 0.5°C/W

For Heatsink details refer to "Recommended Heatsink" chart

**Salient Features**

- Opto Isolation 2500 VAC
- Input Compatible to TTL logic
- MOSFET OUTPUT
- Reverse Polarity Protection. Chassis Mountable / DIN Rail Mountable with Integral heatsink.

Electrical Specification @ TA = 25°C

| ELECTRICAL SPECIFICATIONS                 |                      |          | PRODUCT PART NUMBERS |                   |                   |                   |
|---|----------------------|----------|----------------------|-------------------|-------------------|-------------------|
| Parameter                                 | Symbol               | Unit     | 001 KDD 060500       | 001 KDD 201200    | 001 KDD 202500    | 001 KDD 204000    |
| Control Volt Range                        |                      | Vdc      | 3.5-32               | 3.5-32            | 3.5-32            | 3.5-32            |
| Control Curr Range                        |                      | mA       | 3.5                  | 3.5               | 3.5               | 3.5               |
| Pick-Up Voltage                           |                      | Vdc      | 3.5                  | 3.5               | 3.5               | 3.5               |
| Drop-Out Voltage                          |                      | Vdc      | 1.0                  | 1.0               | 1.0               | 1.0               |
| Input Resistance                          |                      |          | Current Regulator    | Current Regulator | Current Regulator | Current Regulator |
| <b>Load Current</b>                       | <b>I<sub>T</sub></b> | <b>A</b> | <b>2 ~ 5</b>         | <b>12</b>         | <b>25</b>         | <b>40</b>         |
| Load Voltage                              |                      | Vdc      | 60                   | 200               | 200               | 200               |
| Surge Curr (1 cycle Surge)                |                      |          | 15                   | 27                | 50                | 90                |
| On state Voltage Drop                     | V <sub>TM</sub>      | Vdc      | 2                    | 2.83              | 2.83              | 2.83              |
| Off state leakage Current @ rated Voltage |                      | mA       | 1                    | 1                 | 1                 | 1                 |
| Turn-On                                   | T-On                 | μs       | 500                  | 600               | 600               | 600               |
| Turn-Off                                  | T-Off                | μs       | 800                  | 2600              | 2600              | 2600              |
| Operating Temp                            | T Oper               | °C       | - 30 to + 80         | - 30 to + 80      | - 30 to + 80      | - 30 to + 80      |

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Din Ready SSR (240/660 VAC)  
10 ~ 40 Amps

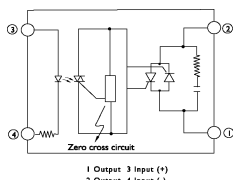
INPUT : DC Control,  
OUTPUT : Back - to - Back SCR

**FUJI  
ELECTRIC**

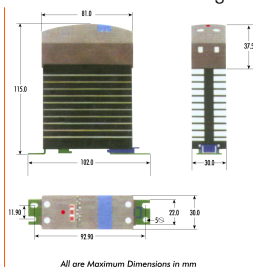
Series : DIN READY



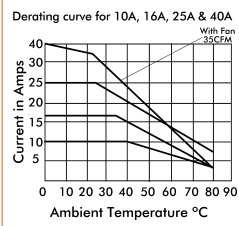
Schematic



Mechanical Drawing



Derating Curve



**FEATURES**

- Input: DC Control (TTL or CMOS Compatible)
- Output: Back-to-Back SCR (No configuration)
- Opto Isolation 2500VAC (4000 V optional)
- Zero voltage turn-on or Random turn-on
- Builtin safety cover
- Reverse voltage protection for DC/AC Relays
- Built in snubber for high DV/DT
- DIN mount or back plate mounting
- LED indicator showing relay 'ON' status

(j: Zero voltage turn-on; K:Random turn-on)

DC Control

| ELECTRICAL SPECIFICATIONS |        |      | PRODUCT PART NUMBERS |                   |                   |                   |
|---------------------------|--------|------|----------------------|-------------------|-------------------|-------------------|
| Parameter                 | Symbol | Unit | DIN 30D 241000       | DIN 30D 241600    | DIN 30D 242500    | DIN 30D 244000    |
| Control voltage range     |        | Vdc  | 3 - 32               | 3 - 32            | 3 - 32            | 3 - 32            |
| Control current range     |        | mA   | 8 - 30               | 8 - 30            | 8 - 30            | 8 - 30            |
| Pick-up voltage           |        | Vdc  | 3.0                  | 3.0               | 3.0               | 3.0               |
| Drop-out voltage          |        | Vdc  | 1.0                  | 1.0               | 1.0               | 1.0               |
| Input resistance          |        |      | Current regulator    | Current regulator | Current regulator | Current regulator |

Output

| RMS on-state current                       | $I_T$     | A                | 10            | 16            | 25            | 40            |
|--|-----------|------------------|---------------|---------------|---------------|---------------|
| Mains control volt                         | Vrms      | Vac              | 24 - 240      | 24 - 240      | 24 - 240      | 24 - 240      |
| Repetitive peak off state voltage          | Vdrm      | Vpk              | 600           | 600           | 600           | 600           |
| Zero turn-on voltage                       |           | Vac              | 35            | 35            | 35            | 35            |
| On-state voltage drop                      | Vtm       | Vac              | 1 . 6         | 1 . 6         | 1 . 8         | 1 . 8         |
| Off-state leakage current @ rated voltage  | Idrm      | mA               | 5             | 5             | 5             | 5             |
| Peak one cycle surge Current (Non-Rrep)    | $I_{TSM}$ | A                | 100           | 250           | 800           | 800           |
| Holding current                            | $I_H$     | mA               | 75            | 120           | 250           | 250           |
| Critical rate of rise of off state voltage | dv/dt     | V/ $\mu$ S       | 200           | 250           | 500           | 500           |
| Thermal resistance (junction to case)      | Rthjc     | $^{\circ}$ C/W   | 1.5           | 1.3           | 0.43          | 0.43          |
| Frequency range                            | f         | Hz               | 47 ~ 63       | 47 ~ 63       | 47 ~ 63       | 47 ~ 63       |
| Storage temperature                        | Ts        | $^{\circ}$ C     | - 30 to + 100 | - 30 to + 100 | - 30 to + 100 | - 30 to + 100 |
| Operating temperature                      | To        | $^{\circ}$ C     | - 30 to + 80  | - 30 to + 80  | - 30 to + 80  | - 30 to + 80  |
| Turn-on time                               | T-on      | ms               | 10            | 10            | 10            | 10            |
| Turn -off time                             | T- off    | ms               | 10            | 10            | 10            | 10            |
| Fusing current                             | $I_T^2$   | A <sup>2</sup> S | 72            | 128           | 3700          | 3700          |

All electrical parameters measured @ = 25 Deg C

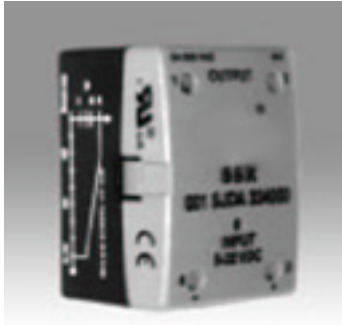
Single Phase SSR (240VAC)  
10 ~ 40 Amps

INPUT : DC Control,  
OUTPUT : Back - to - Back SCR

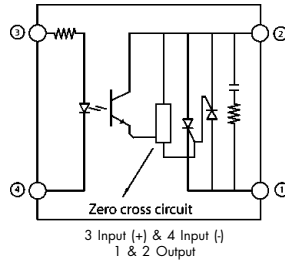
**FUJI**  
**ELECTRIC**



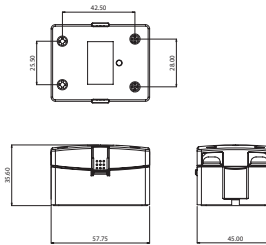
Series : 001 SJ/K



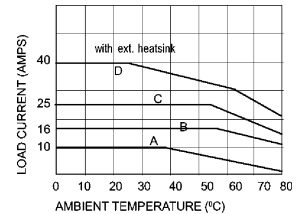
Schematic



Mechanical Drawing



Derating Curve



A = 3.2°C/W B = 1.0°C/W  
C & D = 0.5°C/W

For Heatsink details refer to  
"Recommended Heatsink" chart

**Salient Features**

- Opto Isolation 2500 VAC • Zero Voltage Turn On/Random Turn On • Reverse Voltage Protection; TTL/CMOS Compatible (Sink mode) • Output : NO/NC Configuration • Suitable for inductive loads
- Built-In Snubber • Safety cover provision • Chassis Mountable / DIN Mountable with Integral heatsink.

Electrical Specification @ TA = 25°C

Note: For Random T - On SSR, add letter 'K' in place of 'J'.

| ELECTRICAL SPECIFICATIONS                  |                             |                  | PRODUCT PART NUMBERS |                   |                   |                   |
|--|-----------------------------|------------------|----------------------|-------------------|-------------------|-------------------|
| Parameter                                  | Symbol                      | Unit             | 001 SJDA 331000      | 001 SJDA 331600   | 001 SJDA 332500   | 001 SJDA 334000   |
| Control Volt Range                         |                             | Vdc              | 3-32                 | 3-32              | 3-32              | 3-32              |
| Control Curr Range                         |                             | m A              | 1-25                 | 1-25              | 1-25              | 1-25              |
| Pick-Up Voltage                            |                             | Vdc              | 3.0                  | 3.0               | 3.0               | 3.0               |
| Drop-Out Voltage                           |                             | Vdc              | 1.0                  | 1.0               | 1.0               | 1.0               |
| Input Resistance                           |                             |                  | Current Regulator    | Current Regulator | Current Regulator | Current Regulator |
| <b>Rms On State Current</b>                | <b>I<sub>T</sub></b>        | <b>A</b>         | <b>10</b>            | <b>16</b>         | <b>25</b>         | <b>40</b>         |
| Mains Control Volt                         | Vrms                        | Vac              | 24-330               | 24-330            | 24-330            | 24-330            |
| Peak Off State Voltage                     | Vdr <sub>m</sub>            | Vpk              | 600                  | 600               | 600               | 600               |
| Off State Leakage Curr                     | I <sub>dr<sub>m</sub></sub> | mA               | 10                   | 10                | 10                | 10                |
| Zero T-On Voltage                          |                             | Vpk              | 20                   | 20                | 20                | 20                |
| On state Voltage Drop                      | V <sub>TM</sub>             | Vac              | 1.6                  | 1.6               | 1.6               | 1.6               |
| Peak one Cycle Surge Curr(Non Rep)         | I <sub>TSM</sub>            | A                | 100                  | 160               | 250               | 400               |
| Holding Current                            | I <sub>H</sub>              | m A              | 50                   | 70                | 120               | 250               |
| Critical Rate of Rise of Off State Voltage | dv/dt                       | V/μs             | 200                  | 500               | 500               | 500               |
| Thermal Resistance                         | R <sub>TH</sub>             | °C/W             | 2.0                  | 1.6               | 1.0               | 0.88              |
| Frequency Range                            | f                           | Hz               | 47 ~ 63              | 47 ~ 63           | 47 ~ 63           | 47 ~ 63           |
| Turn-On                                    | T-On                        | ms               | 10                   | 10                | 10                | 10                |
| Turn -Off                                  | T- Off                      | ms               | 10                   | 10                | 10                | 10                |
| Operating Temp                             | T Oper                      | °C               | -30 to +80           | -30 to +80        | -30 to +80        | -30 to +80        |
| Fusing Current                             | I <sub>T</sub> <sup>2</sup> | A <sup>2</sup> S | 50                   | 128               | 220               | 560               |

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Input

Output

Din Ready SSR (660 VAC)  
10 ~ 40 Amps

INPUT : DC Control,  
OUTPUT : Back - to - Back SCR

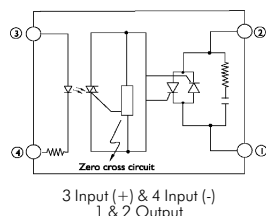
**FUJI**  
**ELECTRIC**



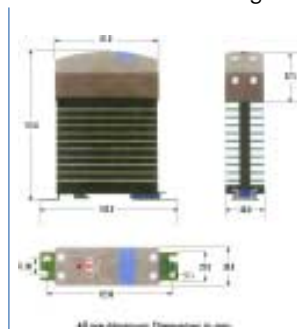
Series : DIN 30D



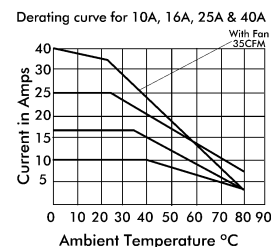
Schematic



Mechanical Drawing



Derating Curve



### Highlights

- Input: DC Control (TTL or CMOS Compatible) • Output: Back-to-Back SCR (No configuration) • Opto Isolation 2500VAC (4000 V optional) • Zero voltage turn-on or Random turn-on • Built-in safety cover • Input reverse voltage protection • Built in snubber for high DV/DT • DIN mount or back plate mounting • LED indicator showing relay 'ON' status

Electrical Specification @ TA = 25°C

Note: For Random T - On SSR, add letter 'KD' in place of 'D'.

| ELECTRICAL SPECIFICATIONS                  |                             |                  | PRODUCT PART NUMBERS |                   |                   |                   |
|--|-----------------------------|------------------|----------------------|-------------------|-------------------|-------------------|
| Parameter                                  | Symbol                      | Unit             | DIN 30D 661000       | DIN 30D 661600    | DIN 30D 662500    | DIN 30D 66400     |
| Control Voltage Range                      |                             | Vdc              | 3-32                 | 3-32              | 3-32              | 3-32              |
| Control current range                      |                             | mA               | 8-30                 | 8-30              | 8-30              | 8-30              |
| Pick-up voltage                            |                             | Vdc              | 3.0                  | 3.0               | 3.0               | 3.0               |
| Drop-out voltage                           |                             | Vdc              | 1.0                  | 1.0               | 1.0               | 1.0               |
| Input resistance                           |                             |                  | Current regulator    | Current regulator | Current regulator | Current regulator |
| <b>RMS on-state current</b>                | <b>I<sub>T</sub></b>        | <b>A</b>         | <b>10</b>            | <b>16</b>         | <b>25</b>         | <b>40</b>         |
| Mains control volt                         |                             | Vac              | 48-660               | 48-660            | 48-660            | 48-660            |
| Repetitive peak off state voltage          | V <sub>drm</sub>            | V <sub>pk</sub>  | 1200                 | 1200              | 1200              | 1200              |
| Zero turn-on voltage                       |                             | Vac              | 35                   | 35                | 35                | 35                |
| On-state voltage drop                      | V <sub>TM</sub>             | Vac              | 1.6                  | 1.6               | 1.8               | 1.8               |
| Off state leakage current @ rated voltage  | I <sub>drm</sub>            | mA               | 5                    | 5                 | 5                 | 5                 |
| Peak one cycle surge Current (Non-Rep)     | I <sub>TSM</sub>            | A                | 100                  | 250               | 1000              | 1000              |
| Holding Current                            | I <sub>H</sub>              | mA               | 75                   | 120               | 250               | 250               |
| Critical rate of rise of off-state voltage | dv/dt                       | V/μs             | 200                  | 200               | 700               | 700               |
| Thermal resistance (junction to case)      | R <sub>thjc</sub>           | °C/W             | 1.8                  | 1.3               | 0.43              | 0.43              |
| Frequency range                            | f                           | Hz               | 47 ~ 63              | 47 ~ 63           | 47 ~ 63           | 47 ~ 63           |
| Storage temperature                        | T <sub>s</sub>              | °C               | - 30 to + 100        | - 30 to + 100     | - 30 to + 100     | - 30 to + 10      |
| Operating temperature                      | T <sub>o</sub>              | °C               | - 30 to + 80         | - 30 to + 80      | - 30 to + 80      | - 30 to + 8       |
| Turn-on time                               | T-on                        | ms               | 10                   | 10                | 10                | 10                |
| Turn-off time                              | T-off                       | ms               | 10                   | 10                | 10                | 10                |
| Fusing current                             | I <sub>f</sub> <sup>2</sup> | A <sup>2</sup> S | 72                   | 128               | 3700              | 5000              |

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Input

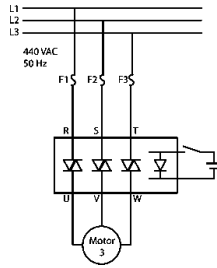
Output

Three Phase SSR (480VAC)  
10 ~ 40 Amps

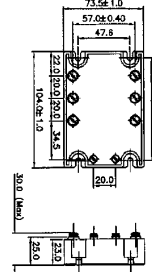
INPUT : DC Control,  
OUTPUT : Triac



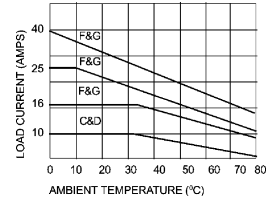
Schematic



Mechanical Drawing



Derating Curve



C & D = 0.5°C/W  
F & G = 0.14°C/W

For Heatsink details refer to "Recommended Heatsink" chart

### Salient Features

- Opto Isolation 2500 VAC • Voltage Range 50 to 480 Vac
- Load Current 3x10A/16A/25A/40A • Reverse Polarity Protection

Electrical Specification @ TA = 25°C

Note: For Random T - On SSR, add letter 'K' in place of 'J'.

| ELECTRICAL SPECIFICATIONS                  |                             |                  | PRODUCT PART NUMBERS |                   |                   |                   |
|--|-----------------------------|------------------|----------------------|-------------------|-------------------|-------------------|
| Parameter                                  | Symbol                      | Unit             | 012 JDA 481000       | 012 JDA 481600    | 012 JDA 482500    | 012 JDA 484000    |
| Control Volt Range                         |                             | Vdc              | 3-32                 | 3-32              | 3-32              | 3-32              |
| Control Curr Range                         |                             | m A              | 80                   | 80                | 80                | 80                |
| Pick-Up Voltage                            |                             | Vdc              | 3.0                  | 3.0               | 3.0               | 3.0               |
| Drop-Out Voltage                           |                             | Vdc              | 1.0                  | 1.0               | 1.0               | 1.0               |
| Input Resistance                           |                             |                  | Current Regulator    | Current Regulator | Current Regulator | Current Regulator |
| <b>Rms On State Current</b>                | <b>I<sub>T</sub></b>        | <b>A</b>         | <b>10</b>            | <b>16</b>         | <b>25</b>         | <b>40</b>         |
| Mains Control Volt                         | V <sub>rms</sub>            | Vac              | 50-480               | 50-480            | 50-480            | 50-480            |
| Peak Off State Voltage                     | V <sub>drm</sub>            | Vpk              | 800 ~ 1200           | 800 ~ 1200        | 800 ~ 1200        | 800 ~ 1200        |
| Off State Leakage Curr                     | I <sub>drm</sub>            | mA               | 10                   | 10                | 10                | 10                |
| Zero T-On Voltage                          |                             | Vpk              | 20                   | 20                | 20                | 20                |
| On state Voltage Drop                      | V <sub>TM</sub>             | Vac              | 1.6                  | 1.6               | 1.85              | 1.85              |
| Peak one Cycle Surge Curr(Non Rep)         | I <sub>TSM</sub>            | A                | 100                  | 160               | 250               | 350               |
| Holding Current                            | I <sub>H</sub>              | mA               | 150                  | 150               | 250               | 250               |
| Critical Rate of Rise of Off State Voltage | dv/dt                       | V/μs             | 200                  | 200               | 250               | 250               |
| Thermal Resistance                         | R <sub>TH</sub>             | °C/W             | 3.5                  | 2.5               | 1.5               | 1.0               |
| Frequency Range                            | f                           | Hz               | 47 ~ 63              | 47 ~ 63           | 47 ~ 63           | 47 ~ 63           |
| Turn-On                                    | T-On                        | ms               | 10                   | 10                | 10                | 10                |
| Turn-Off                                   | T-Off                       | ms               | 10                   | 10                | 10                | 10                |
| Operating Temp                             | T Oper                      | °C               | - 30 to + 80         | - 30 to + 80      | - 30 to + 80      | - 30 to + 80      |
| Fusing Current                             | I <sub>T</sub> <sup>2</sup> | A <sup>2</sup> S | 50                   | 120               | 260               | 610               |

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Series : 012 J/K

Input

Output

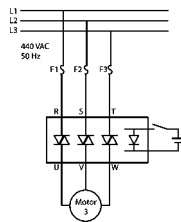
Three Phase SSR (480VAC)  
10 ~ 40 Amps

INPUT : AC Control,  
OUTPUT : Triac

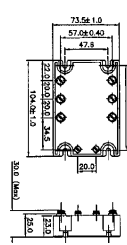
Series : 012 J/K



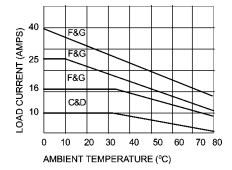
Schematic



Mechanical Drawing



Derating Curve



C & D = 0.5°C/W  
F & G = 0.14°C/W

For Heatsink details refer to "Recommended Heatsink" chart

### Salient Features

- Opto Isolation 2500 VAC • Voltage Range 50 to 440 Vac • Load Current 3x10A/16A/25A/40A

Note: For Random T - On SSR, add letter 'K' in place of 'J'.

AC Control

| ELECTRICAL SPECIFICATIONS |        |      | PRODUCT PART NUMBERS |                   |                   |                   |
|---------------------------|--------|------|----------------------|-------------------|-------------------|-------------------|
| Parameter                 | Symbol | Unit | 012 JAA 481028       | 012 JAA 481628    | 012 JAA 482528    | 012 JAA 484028    |
| Control Volt Range        | Vac    |      | 90-280               | 90-280            | 90-280            | 90-280            |
| Control Curr Range        | m A    |      | 8-80                 | 8-80              | 8-80              | 8-80              |
| Pick-Up Voltage           | Vac    |      | 90                   | 90                | 90                | 90                |
| Drop-Out Voltage          | Vac    |      | 40                   | 40                | 40                | 40                |
| Input Resistance          |        |      | Current Regulator    | Current Regulator | Current Regulator | Current Regulator |

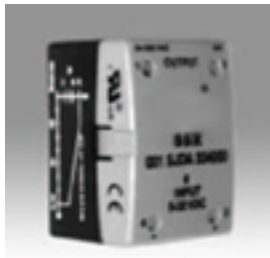
Output

| Rms On State Current                       | $I_T$                       | A                | 10           | 16           | 25           | 40           |
|--|-----------------------------|------------------|--------------|--------------|--------------|--------------|
| Mains Control Volt                         | Vrms                        | Vac              | 100-480      | 100-480      | 100-480      | 100-480      |
| Peak Off State Voltage                     | Vd <sub>rm</sub>            | Vpk              | 800 ~ 1200   | 800 ~ 1200   | 800 ~ 1200   | 800 ~ 1200   |
| Off State Leakage Curr                     | I <sub>d<sub>rm</sub></sub> | mA               | 10           | 10           | 10           | 10           |
| Zero T-On Voltage                          |                             |                  | 20           | 20           | 20           | 20           |
| On state Voltage Drop                      | V <sub>TM</sub>             | Vac              | 1.6          | 1.6          | 1.85         | 1.85         |
| Peak one Cycle Surge Curr(Non Rep)         | I <sub>TSM</sub>            | A                | 100          | 160          | 250          | 350          |
| Holding Current                            | I <sub>H</sub>              | mA               | 250          | 250          | 200          | 200          |
| Critical Rate of Rise of Off State Voltage | dv/dt                       | V/μs             | 200          | 200          | 250          | 250          |
| Thermal Resistance                         | R <sub>TH</sub>             | °C/W             | 3.5          | 2.5          | 1.5          | 1.0          |
| Frequency Range                            | f                           | Hz               | 47 ~ 63      | 47 ~ 63      | 47 ~ 63      | 47 ~ 63      |
| Turn-On                                    | T-On                        | ms               | 40           | 40           | 40           | 40           |
| Turn-Off                                   | T-Off                       | ms               | 80           | 80           | 80           | 80           |
| Operating Temp                             | T Oper                      | °C               | - 30 to + 80 | - 30 to + 80 | - 30 to + 80 | - 30 to + 80 |
| Fusing Current                             | I <sub>T</sub> <sup>2</sup> | A <sup>2</sup> S | 50           | 120          | 260          | 610          |

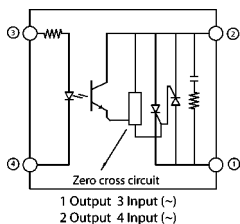
Single Phase SSR (440VAC)  
10 ~ 40 Amps

INPUT : AC Control,  
OUTPUT : Back-to-Back SCR

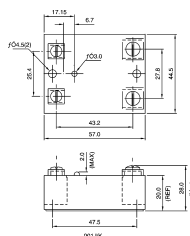
Series : 001 SJ/K



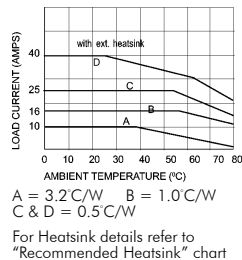
Schematic



Mechanical Drawing



Derating Curve



### Salient Features

- Opto Isolation 2500 VAC
- Zero Voltage Turn On/Random Turn On
- Output : NO/NC Configuration
- Suitable for inductive loads
- Built - In Snubber
- Safety cover provision
- Chassis Mountable / DIN Mountable with Integral heatsink.

Note: For Random T - On SSR, add letter 'K' in place of 'J'.

AC Control

Output

| ELECTRICAL SPECIFICATIONS                  |                             |                  | PRODUCT PART NUMBERS |                 |                 |                 |
|--|-----------------------------|------------------|----------------------|-----------------|-----------------|-----------------|
| Parameter                                  | Symbol                      | Unit             | 001 SJAA 481028      | 001 SJAA 481628 | 001 SJAA 482528 | 001 SJAA 484028 |
| Control Volt Range                         |                             | Vac              | 90-280               | 90-280          | 90-280          | 90-280          |
| Control Curr Range                         |                             | m A              | 9-18                 | 9-18            | 9-18            | 9-18            |
| Pick-Up Voltage                            |                             | Vac              | 90                   | 90              | 90              | 90              |
| Drop-Out Voltage                           |                             | Vac              | 45                   | 45              | 45              | 45              |
| Input Resistance                           |                             | k ohms           | 13(typ)              | 13(typ)         | 13(typ)         | 13(typ)         |
| <b>Rms On State Current</b>                | <b>I<sub>T</sub></b>        | <b>A</b>         | <b>10</b>            | <b>16</b>       | <b>25</b>       | <b>40</b>       |
| Mains Control Volt                         | V <sub>rms</sub>            | Vac              | 48-480               | 48-480          | 48-480          | 48-480          |
| Peak Off State Voltage                     | V <sub>drm</sub>            | Vpk              | 800                  | 800             | 800             | 800             |
| Off State Leakage Curr                     | I <sub>drm</sub>            | mA               | 10                   | 10              | 10              | 10              |
| Zero T-On Voltage                          |                             | Vpk              | 35                   | 35              | 35              | 35              |
| On state Voltage Drop                      | V <sub>TM</sub>             | Vac              | 1.6                  | 1.6             | 1.6             | 1.6             |
| Peak one Cycle Surge Curr(Non Rep)         | I <sub>TSM</sub>            | A                | 100                  | 160             | 500             | 500             |
| Holding Current                            | I <sub>H</sub>              | m A              | 50                   | 70              | 120             | 250             |
| Critical Rate of Rise of Off State Voltage | dv/dt                       | V/μs             | 200                  | 500             | 500             | 500             |
| Thermal Resistance                         | R <sub>TH</sub>             | °C/W             | 2.0                  | 1.6             | 1.0             | 0.88            |
| Frequency Range                            | f                           | Hz               | 47 ~ 63              | 47 ~ 63         | 47 ~ 63         | 47 ~ 63         |
| Turn-On                                    | T-On                        | ms               | 40                   | 40              | 40              | 40              |
| Turn-Off                                   | T-Off                       | ms               | 80                   | 80              | 80              | 80              |
| Operating Temp                             | T Oper                      | °C               | -30 to +80           | -30 to +80      | -30 to +80      | -30 to 80       |
| Fusing Current                             | I <sub>T</sub> <sup>2</sup> | A <sup>2</sup> S | 50                   | 128             | 220             | 560             |

### Selection Chart

| qSA   |           | Heat sink type No.             | Length           |
|-------|-----------|--------------------------------|------------------|
| A     | 3.2° C/W  | 60 NI<br>145 AG                | 110 MM<br>145 MM |
| B     | 1° C/W    | 202 MW<br>204 MWC              | 50 MM<br>50 MM   |
| C&D   | 0.5° C/W  | 202 MW<br>204 MWC              | 135 MM<br>100 MM |
| E     | 0.2° C/W  | 350 HT DOUBLE<br>SIDED COOLING | 225 MM           |
| F & G | 0.14° C/W | 350 HT<br>DSC                  | 400 MM           |

### Application Notes

#### Definition of Solid State Relays (SSR)

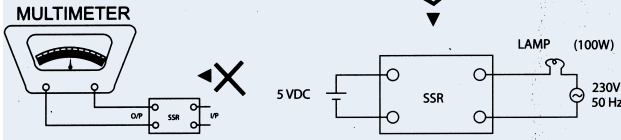
A relay with isolated Input & Output, whose functions are achieved by means of Electronic Components without the use of moving parts - NARM (USA)

#### Selecting The Proper SSR

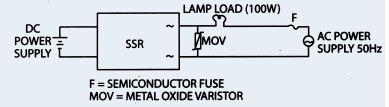
- Select a relay whose current exceeds the normal load current. Verify load current w.r.t ambient temperature (refer to derating curves). SSR should be provided with an external heatsink for  $I_L > 3A$ . Apply heatsink compound between SSR base & external heatsink. Ratings are based on single unit in free airflow. Ratings for closely packed units, careful consideration of the ambient temperature will be necessary. If  $I_L$  is lower than  $I_H$  ( $< 12 \times I_{DRM}$ ) it is required to take special protection to ensure proper operations.
- Protect the output device from high voltage transients by using MOVs. Use RC network to improve  $dv/dt$ . To protect SSR against short circuits, make use of semiconductor fuses. ( $I^2t$  rating of semiconductor fuse must be lower than that of SSR  $I^2t$ )

# Application notes

## HOW TO INSPECT SSR



## TYPICAL CONNECTION DIAGRAM



## Recommended Ratings For Motor Loads (ON/OFF)

1. Relays for motor loads are selected on the basis of starting current of the motor. The thumb rule is  $I_{start} = 5 \times I_{run}$ .  
To get the appropriate rating of the SSR, derate the SSR rating by 5 and use it as per derating curve.
2. Make use of 3 single phase SSRs if 001 series is selected.  
Otherwise, use a single 3 phase SSR if 012 series is selected.
3. For 240 vac 1f SSR (001 series), use MOV type RDN 275/14 one each across terminals 1 & 2.
4. For 440 vac 3 f SSR, use MOV type RDN 510/20 one each across terminals 1 & 2 (1 f SSR) or one each across terminals R&U, S&V, T&W (012 Series).

## Selection of protection resistors & fuses for 3 phase motor reversing ssrs

| Sl. No. | Current rating for SSR | Wire Wound Resistor Value | Wattage | (English Electric Fuse Rating & Type) |
|---------|------------------------|---------------------------|---------|---------------------------------------|
| 01      | 10A                    | 6 OHMS                    | 25W     | GSB 10                                |
| 02      | 16A                    | 4 OHMS                    | 50W     | GSB 15                                |
| 03      | 25A                    | 2.5 OHMS                  | 75W     | GSB 25                                |
| 04      | 40A                    | 1.75 OHMS                 | 125W    | GSB 45                                |