

### Features

**Switching** Zero cross

**Output** Back to back SCR with internal snubber

**Input** AC (Input Resistance of 30KΩ)

### Applications

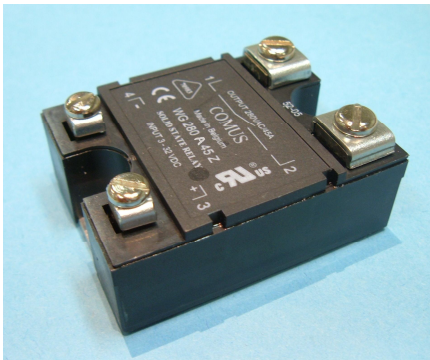
Resistive and inductive loads with  $\cos\phi > 0.85$

### Technical data

| WG 280 A...                               | 10 Z                  | 25 Z                  | 45 Z                  | 50 Z                  |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| <b>Input circuit</b>                      |                       |                       |                       |                       |
| Control voltage range                     | 90...280 VAC          |                       |                       |                       |
| Control current max.                      | 10 mA                 |                       |                       |                       |
| Turn-off voltage min.                     | 10 VDC                |                       |                       |                       |
| Input resistance                          | 30KΩ                  |                       |                       |                       |
| <b>Output circuit</b>                     |                       |                       |                       |                       |
| Load voltage range                        | 24...280 VAC          |                       |                       |                       |
| Peak-off state voltage                    | 600 V <sub>drm</sub>  |                       |                       |                       |
| Off-state leakage current                 | 6 mA eff.             |                       | 12 mA eff.            |                       |
| Load current range                        | 0,1...10 A            | 0,2...25 A            | 0,4...45 A            | 0,4...50 A            |
| Surge current 1 half wave                 | 110 A <sub>peak</sub> | 230 A <sub>peak</sub> | 500 A <sub>peak</sub> | 570 A <sub>peak</sub> |
| I <sup>2</sup> t for fusing               | 60 A <sup>2</sup> s   | 260 A <sup>2</sup> s  | 1250 A <sup>2</sup> s | 1620 A <sup>2</sup> s |
| On-state voltage                          | 1,6 V <sub>peak</sub> |                       |                       |                       |
| Off-state (static) dV/dt                  | 1000 V/μs             |                       |                       |                       |
| Snubber                                   | 47 Ω / 47 nF          |                       | 47 Ω / 100 nF         |                       |
| <b>General data</b>                       |                       |                       |                       |                       |
| Turn-on time max.                         | 33 ms                 |                       |                       |                       |
| Turn-off time max.                        | 33 ms                 |                       |                       |                       |
| Line frequency range                      | 47...63 Hz            |                       |                       |                       |
| Isolation volt. between input/output      | 4.000 V               |                       |                       |                       |
| Isolation volt. between input-output/base | 2.500 V               |                       |                       |                       |
| Isolation resistance                      | 50 MΩ                 |                       |                       |                       |
| Operation temperature                     | -20...+80 °C          |                       |                       |                       |
| Recommended varistor                      | SIOV-S20 K230         |                       |                       |                       |
| Approvals                                 | UL, VDE               |                       |                       |                       |

### Technical data

| WG 280 A...                               | 75 Z                   | 90 Z                   | 110 Z                  | 125 Z                  |
|---|------------------------|------------------------|------------------------|------------------------|
| <b>Input circuit</b>                      |                        |                        |                        |                        |
| Control voltage range                     | 90...280 VAC           |                        |                        |                        |
| Control current max.                      | 10 mA                  |                        |                        |                        |
| Turn-off voltage min.                     | 10 VDC                 |                        |                        |                        |
| Input resistance                          | 30K $\Omega$           |                        |                        |                        |
| <b>Output circuit</b>                     |                        |                        |                        |                        |
| Load voltage range                        | 24...280 VAC           |                        |                        |                        |
| Peak-off state voltage                    | 600 V <sub>drm</sub>   |                        |                        |                        |
| Off-state leakage current                 | 12 mA eff.             |                        |                        |                        |
| Load current range                        | 0,4...75 A             | 0,4...90 A             | 0,4...110 A            | 0,4...125 A            |
| Surge current 1 half wave                 | 910 A <sub>peak</sub>  | 1090 A <sub>peak</sub> | 1350 A <sub>peak</sub> | 1590 A <sub>peak</sub> |
| I <sup>2</sup> t for fusing               | 4150 A <sup>2</sup> s  | 5980 A <sup>2</sup> s  | 9100 A <sup>2</sup> s  | 12650 A <sup>2</sup> s |
| On-state voltage                          | 1,6 V <sub>peak</sub>  |                        |                        |                        |
| Off-state (static) dV/dt                  | 1000 V/ $\mu$ s        |                        |                        |                        |
| Snubber                                   | 47 $\Omega$ / 100 nF   |                        |                        |                        |
| <b>General data</b>                       |                        |                        |                        |                        |
| Turn-on time max.                         | 33 ms                  |                        |                        |                        |
| Turn-off time max.                        | 33 ms                  |                        |                        |                        |
| Line frequency range                      | 47...63 Hz             |                        |                        |                        |
| Isolation volt. between input/output      | 4.000 V                |                        |                        |                        |
| Isolation volt. between input-output/base | 2.500 V                |                        |                        |                        |
| Isolation resistance                      | 50 M $\Omega$          |                        |                        |                        |
| Operation temperature                     | -20...+80 $^{\circ}$ C |                        |                        |                        |
| Recommended varistor                      | SIOV-S20 K230          |                        |                        |                        |
| Approvals                                 | UL, VDE                |                        |                        |                        |



### Features

|                     |  |
|---------------------|--|
| <b>Switching</b>    | Random                                 |
| <b>Output</b>       | Back to back SCR with internal snubber |
| <b>Input</b>        | AC (Input Resistance of 30K $\Omega$ ) |
| <b>Applications</b> | Inductive loads                        |

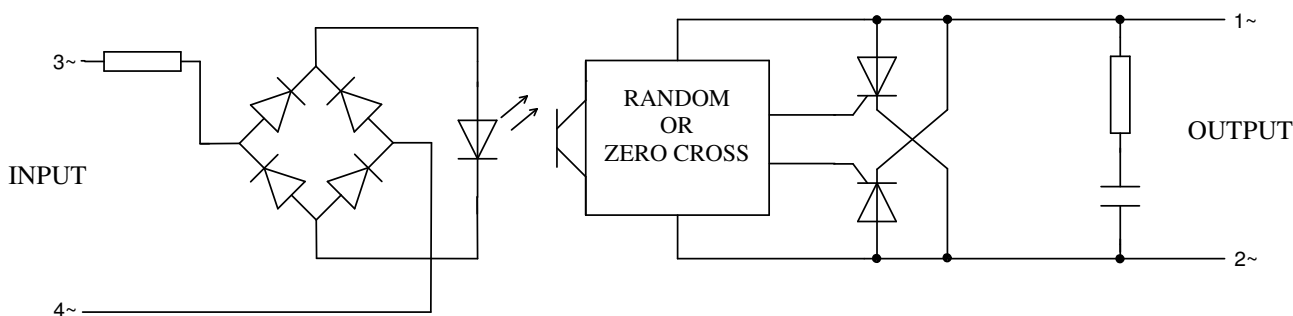
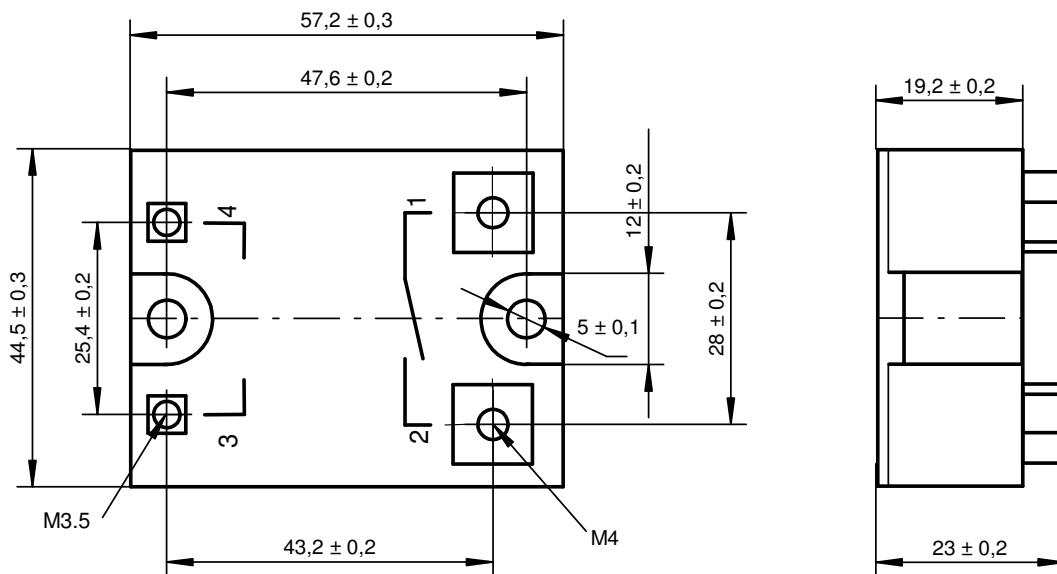
### Technical data

| WG 280 A...                               | 10 R                   | 25 R                  | 40 R                  | 50 R                  |
|---|------------------------|-----------------------|-----------------------|-----------------------|
| <b>Input circuit</b>                      |                        |                       |                       |                       |
| Control voltage range                     | 90...280 VAC           |                       |                       |                       |
| Control current max.                      | 10 mA                  |                       |                       |                       |
| Turn-off voltage min.                     | 10 VDC                 |                       |                       |                       |
| Input resistance                          | 30K $\Omega$           |                       |                       |                       |
| <b>Output circuit</b>                     |                        |                       |                       |                       |
| Load voltage range                        | 24...280 VAC           |                       |                       |                       |
| Peak-off state voltage                    | 600 V <sub>drm</sub>   |                       |                       |                       |
| Off-state leakage current                 | 6 mA eff.              | 12 mA eff             |                       |                       |
| Load current range                        | 0,1...10 A             | 0,2...25 A            | 0,4...40 A            | 0,4...50 A            |
| Surge current 1 half wave                 | 110 A <sub>peak</sub>  | 230 A <sub>peak</sub> | 500 A <sub>peak</sub> | 570 A <sub>peak</sub> |
| I <sup>2</sup> t for fusing               | 60 A <sup>2</sup> s    | 260 A <sup>2</sup> s  | 1250 A <sup>2</sup> s | 1620 A <sup>2</sup> s |
| On-state voltage                          | 1,6 V <sub>peak</sub>  |                       |                       |                       |
| Off-state (static) dV/dt                  | 1000 V/ $\mu$ s        |                       |                       |                       |
| Snubber                                   | 47 $\Omega$ / 47 nF    | 47 $\Omega$ / 100 nF  |                       |                       |
| <b>General data</b>                       |                        |                       |                       |                       |
| Turn-on time max.                         | 0,1 ms                 |                       |                       |                       |
| Turn-off time max.                        | 33 ms                  |                       |                       |                       |
| Line frequency range                      | 47...63 Hz             |                       |                       |                       |
| Isolation volt. between input/output      | 4.000 V                |                       |                       |                       |
| Isolation volt. between input-output/base | 2.500 V                |                       |                       |                       |
| Isolation resistance                      | 50 M $\Omega$          |                       |                       |                       |
| Operation temperature                     | -20...+80 $^{\circ}$ C |                       |                       |                       |
| Recommended varistor                      | SIOV-S20 K230          |                       |                       |                       |
| Approvals                                 | UL, VDE                |                       |                       |                       |

### Technical data

| WG 280 A...                               | 75 R                   | 90 R                   | 110 R                  | 125 R                  |
|---|------------------------|------------------------|------------------------|------------------------|
| <b>Input circuit</b>                      |                        |                        |                        |                        |
| Control voltage range                     | 90...280 VAC           |                        |                        |                        |
| Control current max.                      | 10 mA                  |                        |                        |                        |
| Turn-off voltage min.                     | 10 VDC                 |                        |                        |                        |
| Input resistance                          | 30K $\Omega$           |                        |                        |                        |
| <b>Output circuit</b>                     |                        |                        |                        |                        |
| Load voltage range                        | 24...280 VAC           |                        |                        |                        |
| Peak-off state voltage                    | 600 V <sub>drm</sub>   |                        |                        |                        |
| Off-state leakage current                 | 12 mA eff.             |                        |                        |                        |
| Load current range                        | 0,4...75 A             | 0,4...90 A             | 0,4...110 A            | 0,4...125 A            |
| Surge current 1 half wave                 | 910 A <sub>peak</sub>  | 1090 A <sub>peak</sub> | 1350 A <sub>peak</sub> | 1590 A <sub>peak</sub> |
| I <sup>2</sup> t for fusing               | 4150 A <sup>2</sup> s  | 5980 A <sup>2</sup> s  | 9100 A <sup>2</sup> s  | 12650 A <sup>2</sup> s |
| On-state voltage                          | 1,6 V <sub>peak</sub>  |                        |                        |                        |
| Off-state (static) dV/dt                  | 1000 V/ $\mu$ s        |                        |                        |                        |
| Snubber                                   | 47 $\Omega$ / 100 nF   |                        |                        |                        |
| <b>General data</b>                       |                        |                        |                        |                        |
| Turn-on time max.                         | 0,1 ms                 |                        |                        |                        |
| Turn-off time max.                        | 33 ms                  |                        |                        |                        |
| Line frequency range                      | 47...63 Hz             |                        |                        |                        |
| Isolation volt. between input/output      | 4.000 V                |                        |                        |                        |
| Isolation volt. between input-output/base | 2.500 V                |                        |                        |                        |
| Isolation resistance                      | 50 M $\Omega$          |                        |                        |                        |
| Operation temperature                     | -20...+80 $^{\circ}$ C |                        |                        |                        |
| Recommended varistor                      | SIOV-S20 K230          |                        |                        |                        |
| Approvals                                 | UL, VDE                |                        |                        |                        |

### Dimensions in mm & circuit diagram



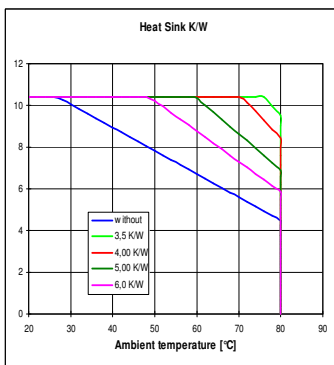
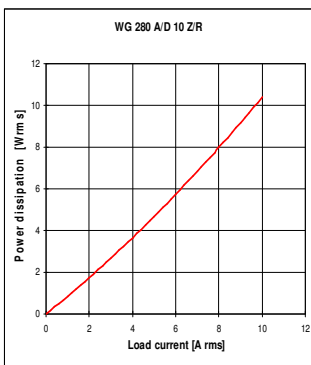
### Housing specification

|                  |  |
|------------------|--|
| Weight           | Approx. 100 gr )   |
| Housing material | Glass filled polyester   |
| Potting compound | UL recognized Epoxy  |
| Base plate       | 10 ... 45 A : Aluminium<br>50 ... 125A : Aluminium , nickel plated |
| Terminals        | Input : M4-screws<br>Output : M3,5-screws                          |



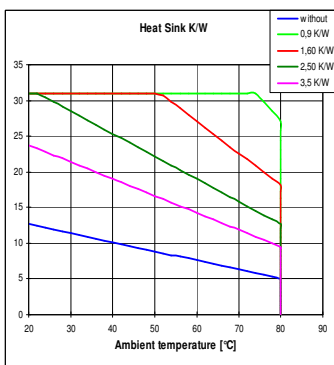
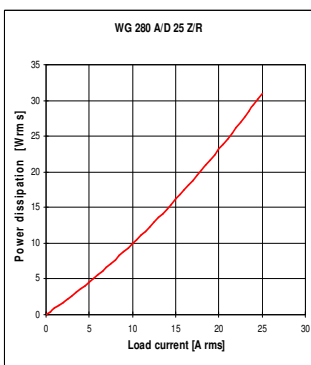
### Derating-diagrams

UL recognised components: suitable for a max. surrounding air temperature of 40°C.  
 For use at other ambient temperatures, check the derating diagrams.



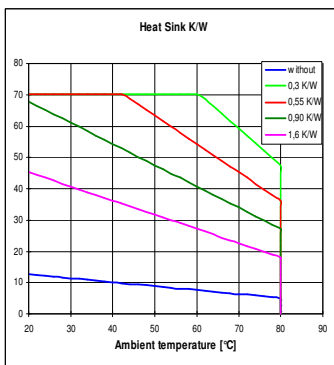
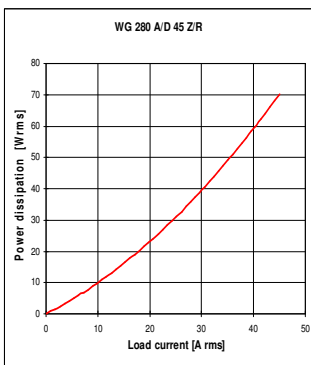
| Heat sink  | Number of SSR per heatsink/<br>load current per SSR |       |       |
|------------|---|-------|-------|
|            | 1 SSR   | 2 SSR | 3 SSR |
| WG K1/100  | 10 A  | 10 A  |       |
| WG K2/100  | 10 A  | 10 A  |       |
| WG K3/160  | 10 A  | 10 A  | 10 A  |
| WG K4/160L | 10 A  | 10 A  | 10 A  |
| WG K5/80   | 10 A  |       |       |

Values for 40°C enclosure-temperature and mounted with conduction paste between the SSR and the heat sink



| Heat sink  | Number of SSR per heatsink/<br>load current per SSR |       |       |
|------------|---|-------|-------|
|            | 1 SSR   | 2 SSR | 3 SSR |
| WG K1/100  | 18 A  | 12 A  |       |
| WG K2/100  | 23 A  | 17 A  |       |
| WG K3/160  | 25 A  | 25 A  | 23 A  |
| WG K4/160L | 25 A  | 25 A  | 25 A  |
| WG K5/80   | 25 A  |       |       |

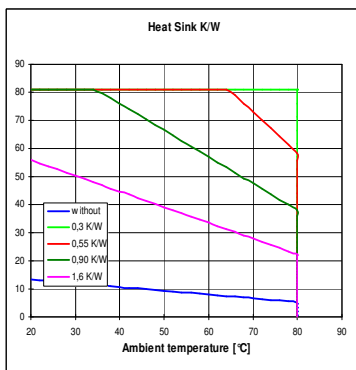
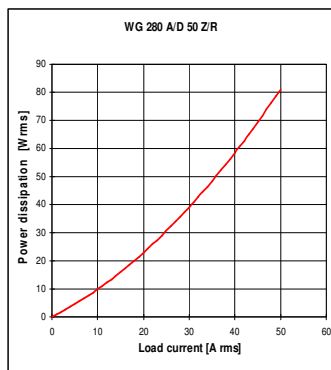
Values for 40°C enclosure-temperature and mounted with conduction paste between the SSR and the heat sink



| Heat sink  | Number of SSR per heatsink/<br>load current per SSR |       |       |
|------------|---|-------|-------|
|            | 1 SSR   | 2 SSR | 3 SSR |
| WG K1/100  | 18 A  | 12 A  |       |
| WG K2/100  | 23 A  | 17 A  |       |
| WG K3/160  | 40 A  | 29 A  | 23 A  |
| WG K4/160L | 45 A  | 45 A  | 41 A  |
| WG K5/80   | 34 A  |       |       |

Values for 40°C enclosure-temperature and mounted with conduction paste between the SSR and the heat sink

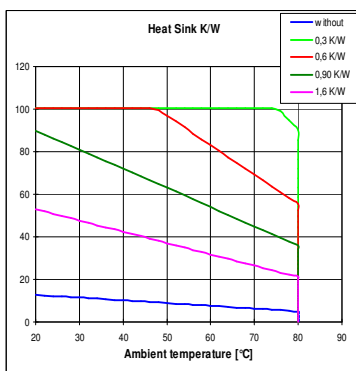
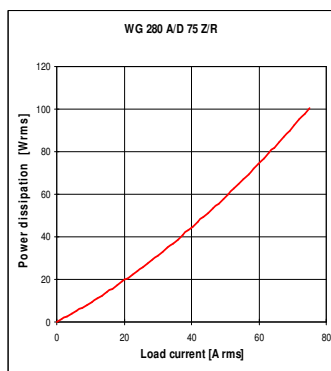
### Derating-diagrams



Number of SSR per heatsink/  
load current per SSR

| Heat sink  | 1 SSR | 2 SSR | 3 SSR |
|------------|-------|-------|-------|
| WG K1/100  | 20 A  | 13 A  |       |
| WG K2/100  | 26 A  | 18 A  |       |
| WG K3/160  | 50 A  | 34 A  | 26 A  |
| WG K4/160L | 50 A  | 50 A  | 50 A  |
| WG K5/80   | 41A   |       |       |

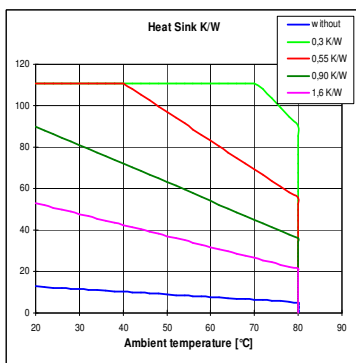
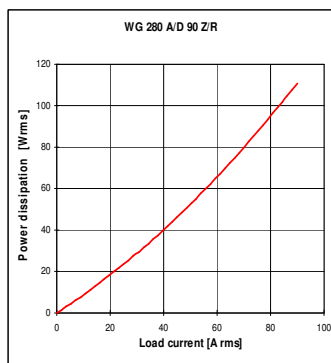
Values for 40°C enclosure-temperature and mounted with conduction paste between the SSR and the heat sink



Number of SSR per heatsink/  
load current per SSR

| Heat sink  | 1 SSR | 2 SSR | 3 SSR |
|------------|-------|-------|-------|
| WG K1/100  | 23 A  | 14 A  |       |
| WG K2/100  | 31 A  | 21 A  |       |
| WG K3/160  | 66 A  | 42 A  | 31 A  |
| WG K4/160L | 75 A  | 75 A  | 68 A  |
| WG K5/80   | 51 A  |       |       |

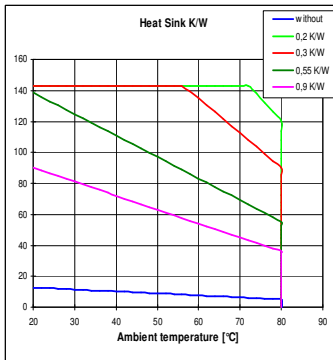
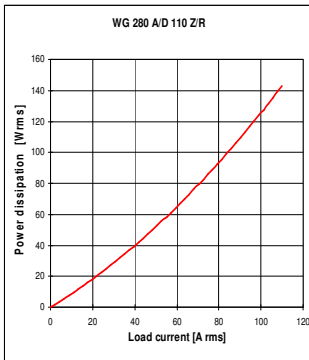
Values for 40°C enclosure-temperature and mounted with conduction paste between the SSR and the heat sink



Number of SSR per heatsink/  
load current per SSR

| Heat sink  | 1 SSR | 2 SSR | 3 SSR |
|------------|-------|-------|-------|
| WG K1/100  | 25 A  | 15 A  |       |
| WG K2/100  | 33 A  | 22 A  |       |
| WG K3/160  | 73 A  | 45 A  | 33 A  |
| WG K4/160L | 90 A  | 90 A  | 76 A  |
| WG K5/80   | 56 A  |       |       |

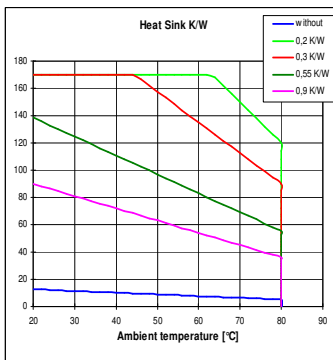
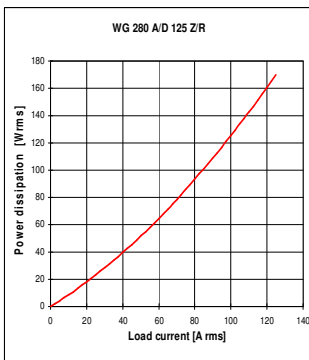
Values for 40°C enclosure-temperature and mounted with conduction paste between the SSR and the heat sink



### Number of SSR per Heatsink/ Load current per SSR

| Heat sink  | 1 SSR | 2 SSR | 3 SSR |
|------------|-------|-------|-------|
| WG K1/100  | 25 A  | 15 A  |       |
| WG K2/100  | 33 A  | 22 A  |       |
| WG K3/160  | 74 A  | 46 A  | 33 A  |
| WG K4/160L | 110 A | 103 A | 77 A  |
| WG K5/80   | 56 A  |       |       |

Values for 40°C enclosure-temperature and mounted with conducting paste between the SSR and the heat sink

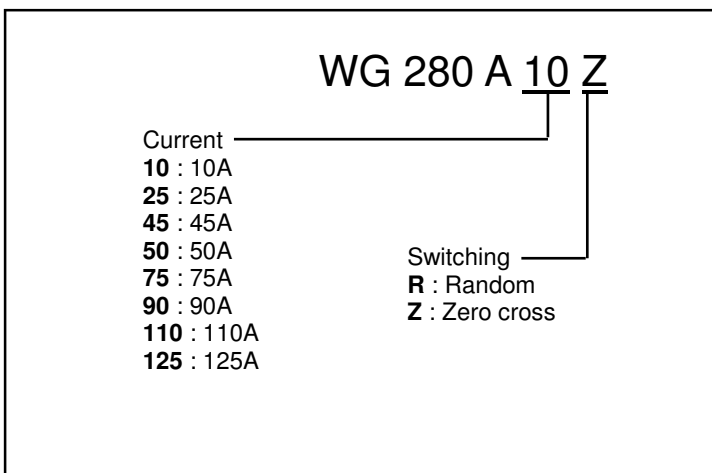


### Number of SSR per Heatsink/ Load current per SSR

| Heat sink  | 1 SSR | 2 SSR | 3 SSR |
|------------|-------|-------|-------|
| WG K1/100  | 25 A  | 15 A  |       |
| WG K2/100  | 33 A  | 22 A  |       |
| WG K3/160  | 74 A  | 46 A  | 33 A  |
| WG K4/160L | 125 A | 103 A | 77 A  |
| WG K5/80   | 257A  |       |       |

Values for 40°C enclosure-temperature and mounted with conducting paste between the SSR and the heat sink

## Ordering



| Description              | Part Number   |
|--------------------------|---------------|
| Protective case small    | 8440 5700 110 |
| Thermal Conducting paste | 8406 0180 020 |
| Heat sink WG K1/100      | 5981 5701 100 |
| Heat sink WG K2/100      | 5981 5701 110 |
| Heat sink WG K3/160      | 5981 5701 370 |
| Heat sink WG K4/160L     | 5981 5701 371 |
| Heat sink WG K5/80       | 5981 5701 372 |
| Mounting plate DIN rail  | 5981 5701 430 |