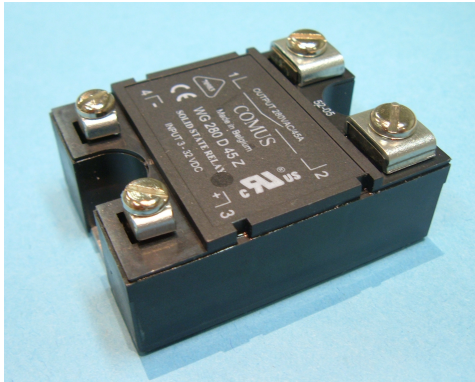


# Solid State Relays

## Datasheet WG 280 D xxxx

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### Features

<b>Switching</b>	Zero cross
<b>Output</b>	Back-to-back SCR with internal snubber
<b>Input</b>	DC with constant current control
<b>Applications</b>	resistive and inductive loads with $\cos\phi > 0,85$ (Z-Type) inductive load with $\cos\phi > 0,65$ (R-Type)

### Technical data

WG 280D...	10 Z	10 R	25 Z	25 R	45 Z	45 R
<b>Input circuit</b>						
Control voltage range	3...32 VDC					
Control current max.	10 mA					
Turn-off voltage min.	1 VDC					
Input resistance	Constant current					
<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	
Surge current 1 half wave	110 A <sub>peak</sub>		230 A <sub>peak</sub>		500 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	
On-state voltage	1,6 V <sub>peak</sub>					
Off-state (static) dv/dt	1000 V/μs					
Snubber	47 Ω / 47nF		47 Ω / 100nF			
<b>General data</b>						
Turn-on time max.	11 ms	0,1 ms	11 ms	0,1 ms	11 ms	0,1 ms
Turn-off time max.	11 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	cULus, VDE					

Technical data						
WG 280Dxxxx-LD	50 Z	50 R	75 Z	75 R	90 Z	90 R
<b>Input circuit</b>						
Control voltage range	3...32 VDC					
Control current max.	10 mA					
Turn-off voltage min.	1 VDC					
Input resistance	Constant current					
<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...50 A		0,4...75 A		0,4...90 A	
Surge current 1 half wave	570 A <sub>peak</sub>		910 A <sub>peak</sub>		1090 A <sub>peak</sub>	
I <sup>2</sup> t for fusing	1620 A <sup>2</sup> s		4150 A <sup>2</sup> s		5980 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 / 100 nF					
<b>General data</b>						
Turn-on time max.	11 ms	0,1 ms	11 ms	0,1 ms	11 ms	0,1 ms
Turn-off time max.	11 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	cULus, VDE					

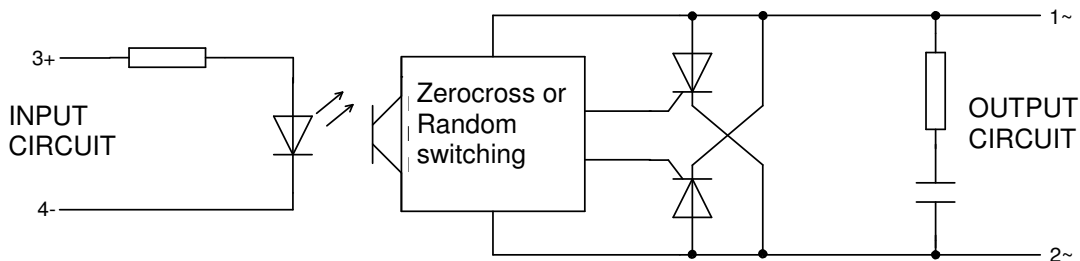
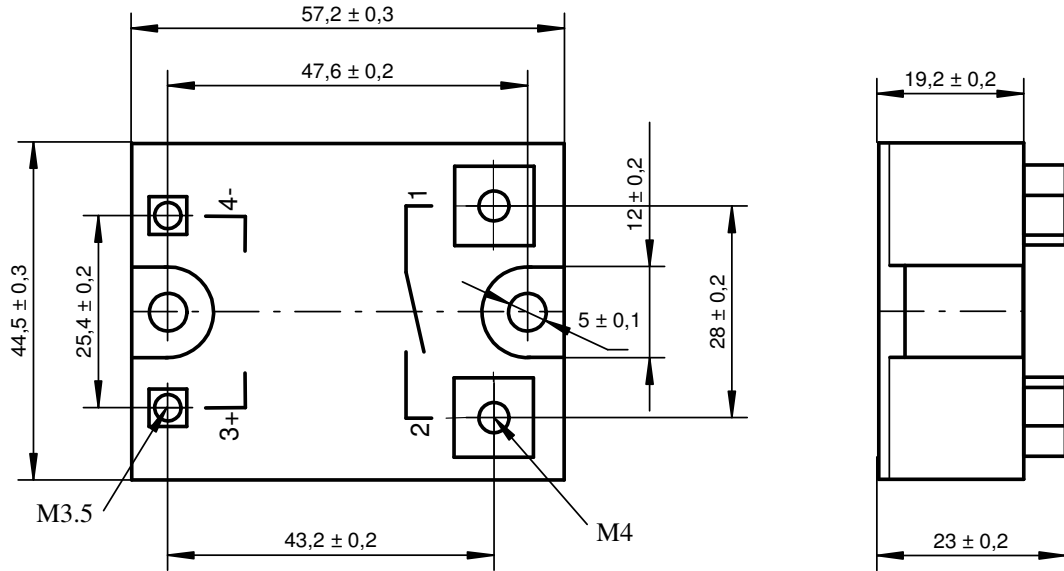
### Technical data

WG 280Dxxxx-LD	110 Z	110 R	125 Z	125 R
<b>Input circuit</b>				
Control voltage range	3...32 VDC			
Control current max.	10 mA			
Turn-off voltage min.	1 VDC			
Input resistance	Constant current			
<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...110 A		0,4...125 A	
Surge current 1 half wave	1350 A <sub>peak</sub>		1590 A <sub>peak</sub>	
I <sup>2</sup> t for fusing	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/μs			
Snubber	47 Ω / 100 nF			
<b>General data</b>				
Turn-on time max.	11 ms	0,1 ms	11 ms	0,1 ms
Turn-off time max.	11 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	cULus, VDE			

### Housing specification

Weight	Approx. 80 gr unpotted , 100 gr potted (optional)
Housing material	Glass filled polyester
Potting compound (optional)	UL recognized Epoxy
Base plate	10 ... 45 A : Aluminium 50 ... 125A : Aluminium , nickel plated
Terminals	Input : M4-screws Output : M3,5-screws

### Dimensions in mm



### Ordering Information

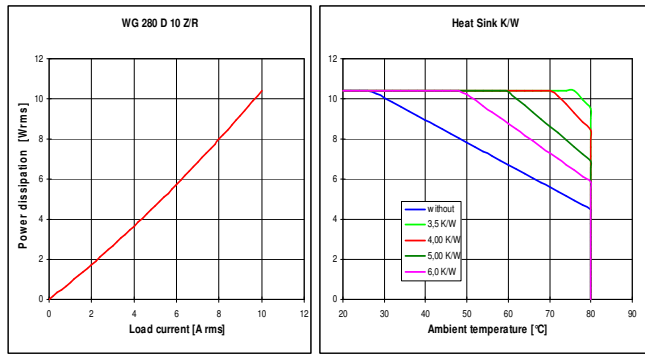
WG 280 D 10 Z

CURRENT  
 10 : 10A  
 25 : 25A  
 45 : 45A  
 50 : 50A  
 75 : 75A  
 90 : 90A  
 110 : 110A  
 125 : 125A

SWITCHING  
 R : Random  
 Z : Zero cross

Options: Suffix - **P**, 100% potted

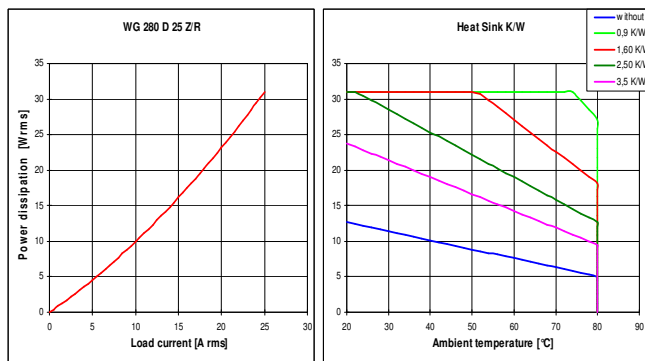
### Derating diagrams



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

Heat sink	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		

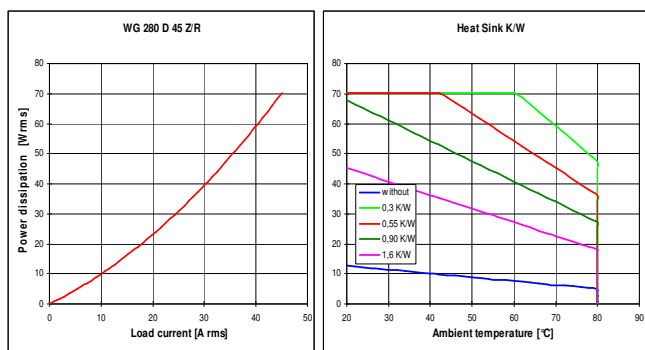
Values for 40 °C enclosure-temperature and mounted with conducting paste between the SSR and the heat sink



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

Heat sink	1 SSR	2 SSR	3 SSR
WG K1/100	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 conducting paste between the SSR and the heat sink

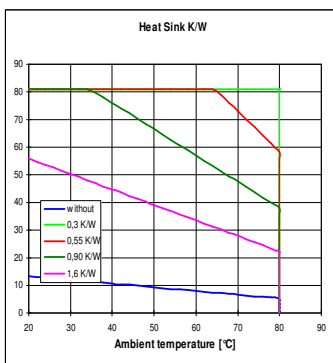
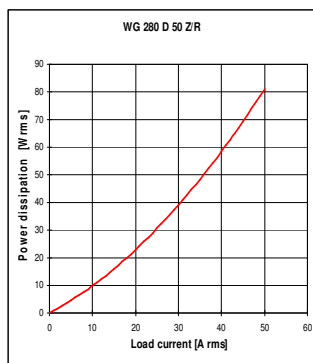


#### Number of SSR per Heatsink/ Load current per SSR

Heat sink	1 SSR	2 SSR	3 SSR
WG K1/100	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 conducting paste between the SSR and the heat sink

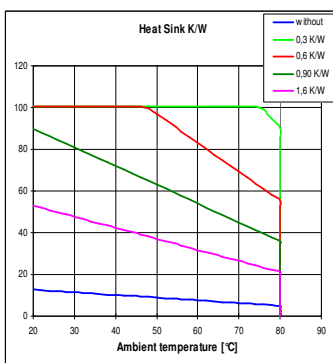
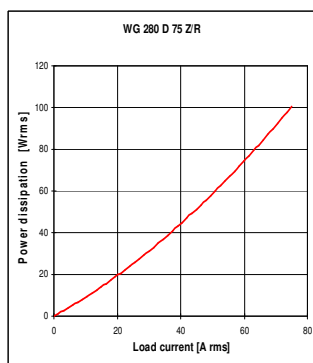
### Derating diagrams



#### 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	41 A		

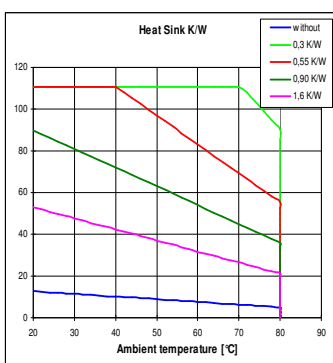
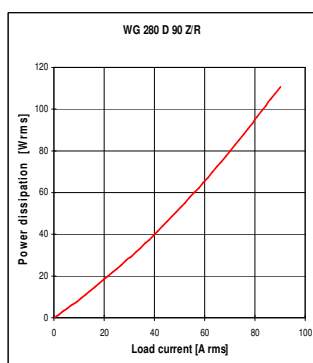
Values for 40°C enclosure-temperature and mounted with conducting paste between the SSR and the heat sink



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

Heat sink	1 SSR	2 SSR	3 SSR
WG K1/100	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 conducting paste between the SSR and the heat sink

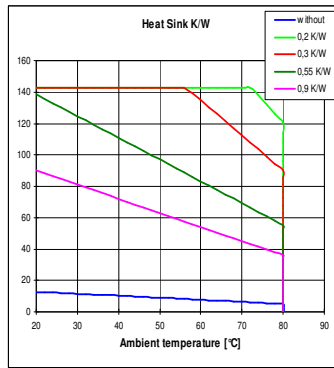
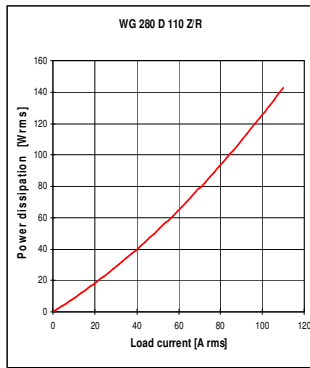


#### Number of SSR per Heatsink/ Load current per SSR

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	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 conducting paste between the SSR and the heat sink

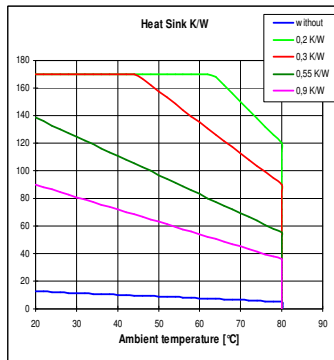
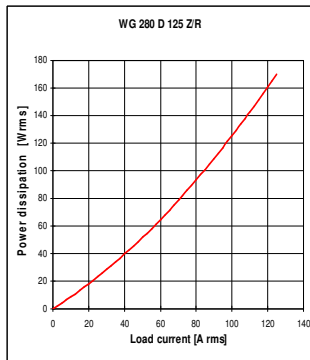
### Derating diagrams



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

Heat sink	1 SSR	2 SSR	3 SSR
WG K1/100	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	257 A		

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