

SOLID STATE RELAYS

3-phase for AC loads and chassis mounting

SSR type	-	WG A3 12D 10 Z	WG A3 12D 10 R	WG A3 12D 25 Z	WG A3 12D 25 R	WG A3 12D 45 Z	WG A3 12D 45 R
Switching type	-	zero cross	random	zero cross	random	zero cross	random
Approvals	-	none	none	none	none	none	none
Circuit diagrams dimensions	-	page 41 + 42	page 41 + 42	page 41 + 42	page 41 + 42	page 41 + 42	page 41 + 42
Output	-	thyristor	thyristor	thyristor	thyristor	thyristor	thyristor
Application fields	-	resistive loads	inductive loads	resistive loads	inductive loads	resistive loads	inductive loads
-	-	inductive loads	-	inductive loads	-	inductive loads	-
-	-	with cos > 0,85	-	with cos > 0,85	-	with cos > 0,85	-
Input circuit							
Control voltage range	[V]	3 - 32 DC	3 - 32 DC	3 - 32 DC	3 - 32 DC	3 - 32 DC	7 3-32 DC ^
Control current max	[mA]	25	25	25	25	25	25
Turn off voltage mm	[VDC]	1	1	1	1	1	1
Input resistance	[Ohm]	constant current	constant current	constant current	constant current	constant current	constant current
Output circuit							
Load voltage range	[V rms]	24 - 530 AC	48 - 530 AC	24 - 530 AC	48 - 530 AC	24 - 530 AC	48 - 530 AC
Peak-off-state voltage	[V drms]	1200 (1000)	1200 (1000)	1200 (1000)	1200 (1000)	1200 (1000)	1200 (1000)
Off-state leakage current	[mAeff] max	10	10	10	10	10	10
Load current range	[A rms]	0,1-10	0,1-10	0,2-25	0,2-25	0,4-45	0,4-45
Surge curr. 1 half wave	[A peak]	110	110	230	230	500	500
I ² t for fusing	[A ² s]	60	60	260	260	1250	1250
On-state voltage	[V peak]	1,6	1,6	1,6	1,6	1,6	1,6
Off-state (static) dv/dt	[V/μs]	200	200	200	200	200	200
Snubber	[Ohm; nF]	47; 10	47; 10	47; 10	47; 10	47; 10	47; 10
General data	* integrated overvoltage protection effective above 1000 V; SSR's with 1600 V peak-off-state voltage also available.						

Turn-on time max	[ms]	11	0,1	11	0,1	11	0,1
Turn-off time max	[ms]	11	11	11	11	11	11
Line frequency range	[Hz]	47-63	47-63	47-63	47-63	47-63	47-63
Isolation volt between		-					
- input/output	[V rms]	4000	4000	4000	4000	4000	4000
- input-output/base	[V rms]	2500	2500	2500	2500	2500	2500
Isolation resistance	[MOhm]	50	50	50	50	50	50
Operating temperature	[°C]	-20...+80	-20...+80	-20...+80	-20...+80	-20...+80	-20...+80
Recommended vanstor	Siemens	SIOV-S20 K420	SIOV-S20 K420	SIOV-S20 K420	SIOV-S20 K420	SIOV-S20 K420	SIOV-S20 K420

SOLID STATE RELAYS

Solid State Reversing Relay for AC loads and chassis mounting

SSR type	-	WGA012D10	WGA012D25	WGA012D45	-	-	-
Switching type	-	random	random	random	-	-	-
Approvals	-	none	none	none	-	-	-
Circuit diagrams, dimension	-	page 41 + 42	page 41 + 42	page 41 + 42	-	-	-
Output	-	thyristor	thyristor	thyristor	-	-	-
Application fields	-	motor reversing	motor reversing	motor reversing	-	-	-
Input circuit							
Control voltage range	[V]	3 - 32 DC	3 - 32 DC	3 - 32 DC	-	-	-
Control current max	[mA]	30	30	30	-	-	-
Turn-off voltage mm	[VDC]	1	1	1	-	-	-
Input resistance	[Ohm]	constant current	constant current	constant current	-	-	-
Output circuit							
Load voltage range	[V rms]	48 - 480 AC	48 - 480 AC	48 - 480 AC	-	-	-
Peak-off-state voltage	[Vdm]	1200 *	1200 *	1200 *	-	-	-
Off-state leakage current	[mAeff] max	10	10	10	-	-	-
Load current range	[A rms]	0,1-10	0,2 - 25	0,4 - 45	-	-	-

Surge cur.r 1 half wave	[A peak]	110	230	500	-	-	-
I ² t for fusing	[A ² s]	60	260	1250	-	-	-
On-state voltage	[V peak]	1,6	1,6	1,6	-	-	-
Off-state (static) dv/dt	[V/μs]	500	500	500	-	-	-
Snubber	[Ohm ; nF]	47; 10	47; 10	47; 10	-	-	-
General data available				SSR's with 1600 V peak-off-state voltage also available			
Turn-on time max	[ms]	6	6	6	at 24 V DC control voltage		
Turn-off time max	[ms]	11	11	11	-	-	-
Interlocking time	[ms]	40-80	40-80	40-80	at 24 V DC control voltage		
Line frequency range	[Hz]	47-63	47-63	47-63	-	-	-
Isolation volt between							
- input/output	[V rms]	4000	4000	4000	-	-	-
- input-output/base	[V rms]	2500	2500	2500	-	-	-
Isolation resistance	[MΩ]	50	50	50	-	-	-
Operating temperature	[°C]	-20...+80	-20...+80	-20...+80	-	-	-
Recommended Varistor	GUNTHER	WG MOV 20-400	WG MOV 20-400	WG MOV 20-400	-	-	-

SOLID STATE RELAYS

1-phase for DC loads and PCB mounting

SSR type	-	WG F8 50 D 08	WGF8100D05	WG F8 200 D 03	WG F8 400 D 01	-	-
Switching type	-	random	random	random	random	-	-
Approvals	-	none	none	none	none	-	-
Circuit diagrams, dimension	-	page 41 + 42	page 41 + 42	page 41 + 42	page 41 + 42	-	-
Output	-	MOS-FET	MOS-FET	MOS-FET	MOS-FET	-	-
Application fields	-	resistive and	resistive and	resistive and	resistive and	-	-
-	-	inductive	inductive	inductive	inductive	-	-
-	-	DC loads	DC loads	DC loads	DC loads	-	-
Input circuit							

Control voltage range	[V]	3 - 32 DC	3 - 32 DC	3-32 DC	3 - 32 DC	-	-
Control current max	[mA]	25	25	25	25	-	-
Turn-off voltage mm	[VDC]	1	1	1	1	-	-
Input resistance	[Ohm]	constant current	constant current	constant current	constant current	-	-
Output circuit							
Load voltage range	[V]	1 - 50 DC	1-100 DC	1 - 200 DC	1 - 400 DC	-	-
Off-state leakage current	[mA]max	0,1	0,1	0,1	0,1	-	-
Load current range	[A]	0-8	0-5	0-3	0-1,5	-	-
Surge current 2 ms max	[A]	80	50	35	15	-	-
On-state resistance max	[mOhm]	36	150	360	1 100	at max. chip temperature	
General data							
Turn-on time max	[ms]	2	2	2	2	-	-
Turn-off time max	[ms]	0,1	0,1	0,1	0,1	-	-
PWM frequency max	[Hz]	250	250	250	250	-	-
Isolation volt between							
- input/output	[VDC]	1 500	1 500	1 500	1 500	-	-
- input-output/base	[VDC]	—	—	—	—	-	-
Isolation resistance	[mOhm]	50	50	50	50	-	-
Operating temperature	[°C]	-20...+80	-20...+80	-20... +80	-20...+80	-	-

We recommend external contact protection (diode RC-snubber) for inductive loads.

SOLID STATE RELAYS

1-phase for DC loads and chassis mounting

SSR type	-	WG F 50 D 30	WGF100D15	WGF200D10	WG F 400 D 05	-	-
Switching type	-	random	random	random	random	-	-
Approvals	-	none	none	none	none	-	-

Circuit diagrams dimension	-	page 41 + 42	page 41 + 42	page 41 + 42	page 41 + 42	-	-
Output	-	MOS-FET	MOS-FET	MOS-FET	MOS-FET	-	-
Application fields	-	resistive and	resistive and	resistive and	resistive and	-	-
-	-	inductive	inductive	inductive	inductive	-	-
-	-	DC loads	DC loads	DC loads	DC loads	-	-
Input circuit							
Control voltage range	[V]	3 - 32 DC	3 - 32 DC	3-32 DC	3 - 32 DC	-	-
Control current max	[mA]	25	25	25	25	-	-
Turn-off voltage mm	[VDC]	1	1	1	1	-	-
Input resistance	[Ohm]	constant current	constant current	constant current	constant current	-	-
Output circuit							
Load voltage range	[V]	1 - 50 DC	1 -100 DC	1 - 200 DC	1 - 400 DC	-	-
Off-state leakage current	[mA] max	0,1	0,1	0,1	0,1	-	-
Load current range	[A]	0-30	0-15	0-10	0-5	-	-
Surge current 2 ms max	[A]	80	50	35	15	-	-
On-state resistance max	[mOhm]	36	150	360	1 100	at max. chip temperature	
General data							
Turn-on time max	[ms]	2	2	2	2	-	-
Turn-off time max	[ms]	0,1	0,1	0,1	0,1	-	-
PWM frequency max	[Hz]	250	250	250	250	-	-
Isolation volt between							
- input/output	[VDC]	1500	1500	1500	1500	-	-
- input-output/base	[VDC]	2500	2500	2500	2500	-	-
Isolation resistance	[mOhm]	50	50	50	50	-	-
Operating temperature	[°C]	-20...+80	-20...+80	-20...+80	-20...+80	-	-

We recommend external contact protection (diode RC-snubber) for inductive loads.