SOLID STATE RELAYS

THREE-PHASE SOLID STATE RELAYS

INPUT SPECIFICATIONS: (1)

Model Number	GA312D10R GA312D10Z GA312D25R	GA312D25Z GA312D45R GA312D45Z	GA312A25R GA312A25Z GA312A45R GA312A45Z
Parameter			
Voltage Range	4.0 to 32.0 VDC		90-280 VAC
Drop Out Voltage	1.0 VDC		10 VAC
Control Current (2)	20 mA		10 mA

OUTPUT SPECIFICATIONS: (1)

Model Number	GA312D10R GA312D10Z	GA312A25R GA312A25Z GA312D25R GA312D25Z	GA312A45R GA312A45Z GA312D45R GA312D45Z	
Parameter				**Units**
Line Voltage Range	24 to 660	24 to 660	24 to 660	VAC
SSR Maximum Peak Off-State Voltage (3)	1200	1200	1200	Vpeak
Rated Current (4)	10	25	45	Arms
Minimum Current	0.2	0.2	0.2	Arms
Maximum Off-State Leakage (5)	10.0	10.0	10.0	mArms
One Cycle Surge Current (6)	160	270	450	Apeak
I^2t Fusing Current	128	365	1000	A^2 Seconds
Maximum On-State Voltage Drop (7)	1.6	1.6	1.6	Volts
Off-State dv/dt (8)	500	500	500	V/μSec

GENERAL SPECIFICATIONS: (1)

	GA312D10R GA312D25R GA312D45R	GA312D10Z GA312D25Z GA312D45Z	GA312A25R GA312A25Z GA312A45R GA312A45Z	
Parameter				**UNITS**
Operating Temperature Range	-30 to 80°C	-30 to 80°C	-30 to 80°C	°C
Storage Temperature Range	-40 to 100°C	-40 to 100°C	-40 to 100°C	°C
Maximum Turn-on Time (9)	.20	8.33	20	mSec
Maximum Turn-off Time (10)	8.33	8.33	30	mSec
Input/Output Isolation (11)	4000	4000	4000	VAC
Input/Output to Base Isolation (11)	4000	4000	4000	VAC
Input/Output Capacitance (typical)	8	8	8	pF
Line Frequency Range	47 to 63	47 to 63	47-63	Hz
Weight	450	450	450	g

GA3 SERIES 3 PHASE SOLID STATE RELAY PART NUMBER SELECTION GUIDE

OUTPUT RATING	10A	25A	45A
FUNCTION	GA312D10R	GA312A25R	GA312A45R
Random Turn-on		GA312D25R	GA312D45R
Zero Voltage Turn-on	GA312D10Z	GA312A25Z	GA312A45Z
		GA312D25Z	GA312D45Z

Notes:

(1) Specifications apply to each phase at an ambient temperature of -20 to 80°C unless otherwise noted.
(2) Input is regulated and current limited.
(3) 1000 V peak with Transorb® protection. Applying 1000V or greater will increase the off-state leakage and may result in relay failure if applied for longer than 1 second.
(4) See thermal dissipation/derating chart for heat sinking requirements. Catalog number HS-7 heat sink available separately for mounting GA3 series SSR's.
(5) At 480 VAC line voltage, 25°C.
(6) One AC cycle maximum duration, non-repetitive, 25°C.
(7) At rated output current, 25°C.
(8) Minimum dv/dt per EIA/NARM RS443, method RS397, 25°C.
(9) At minimum input voltage, maximum line voltage, rated output ourrent, 25°C.
(10) At maximum input voltage, maximum line voltage, rated output current, 25°C.
(11) At 25°C for 1 second maximum duration.

DIGITAL I/O MODULES

0.6 INCH INPUT MODULES

INPUT SPECIFICATIONS: (1)

Model Number	IAC5 IAC24	IAC5A IAC24A	IDC5 IDC24	IDC5F IDC24F	IDC5N IDC24N
Parameter					
Nominal Voltage	120 VAC	240 VAC	5-28 VDC	5-28 VDC	12-48 VDC
Maximum Voltage	140 VAC/VDC	280 VAC/VDC	32 VDC/VAC	32 VDC	48 VDC/VAC
Minimum Voltage	90 VAC/VDC	180 VAC/VDC	3.3 VDC/VAC	4.0 VDC	10 VDC/VAC
Resistance (2) (3)	28 kΩ	75 kΩ	1 kΩ	500 Ω	2.7 kΩ
Maximum Current (4)	6 mArms	5 mArms	34 mA	68 mA	34 mA
Drop-out Current (5)	2.0 mArms	1.5 mArms	1.0 mA	1.0 mA	1.0 mA
Allowable Current/	2.5 mArms	2.0 mArms	1.5 mA	1.5 mA	1.5 mA
Voltage for No Output (6)	50 VAC/VDC	50 VAC/VDC	2.0 VDC	2.0 VDC	4.0 VDC

OUTPUT SPECIFICATIONS: (1)

Model Number	IAC5 IAC5A IDC5 IDC5F IDC5N	IAC24 IAC24A IDC24 IDC24F IDC24N	
Parameter			**Units**
Nominal Logic Supply Voltage	5.0	24.0	VDC
Maximum Logic Supply Voltage	6.0	30.0	VDC
Minimum Logic Supply Voltage	3.0	20.0	VDC
Maximum Logic Supply Current (7)	16.0	16.0	mA
Maximum Logic Supply Leakage Current (8)	10.0	10.0	µA
Maximum Voltage (9)	30.0	30.0	VDC
Maximum Current (10)	50.0	50.0	mA
Maximum Leakage Current (11)	10.0	10.0	µA
Maximum Voltage Drop (12)	0.2	0.2	VDC

GENERAL SPECIFICATIONS: (1)

Model Number	IAC5, IAC5A, IAC24, IAC24A	IDC5 IDC24	IDC5F IDC24F	IDC5N IDC24N	
Parameter					**Units**
Operating Temperature Range	-30 to 80	-30 to 80	-30 to 80	-30 to 80	°C
Storage Temperature Range	-40 to 100	-40 to 100	-40 to 100	-40 to 100	°C
Maximum Turn-on Time (13)	20	1.0	0.05	8.0	mSec
Maximum Turn-off Time (13)	20	1.0	0.10	7.0	mSec
Input/Output Isolation Voltage (14)	4000	4000	4000	4000	VAC
Input/Output Capacitance (typical)	8	8	8	8	pF
Line Frequency Range	47 to 63	DC	DC	DC	Hertz
Weight	1.1 oz	1.1 oz	1.1 oz	1.1 oz	

TABLE OF MODEL NUMBER SUFFIXES IDENTIFYING OPTIONAL FEATURES

Suffix	Feature
A	High voltage versions (240 VAC for AC modules).
F	Fast-switching version of DC Modules.
N	Enhanced noise immunity version of DC modules.

Notes:

(1) Specifications apply to an ambient temperature of -30 to 80°C unless otherwise noted.
(2) Resistance values for IAC modules are effective impedance values at 25°C.
(3) Resistance values are +/-10% at 25°C.
(4) Measured at maximum specified input voltage, 25°C.
(5) Defined as the maximum current allowed through the module's input to guarantee that the output will switch from "on" to "off." Higher currents may result in the output remaining in the "on" state.
(6) Defined as the maximum current allowed through the module's input that will not switch the module's output state from "off" to "on."
(7) With external LED status indicator at maximum specified logic supply voltage and 25°C. 18 mA without external LED status indicator.
(8) At maximum specified logic voltage and 25°C.
(9) Maximum allowable applied voltage across open collector output transistor.
(10) Maximum allowable sinking current through open collector output transistor.
(11) At maximum output voltage and 25°C.
(12) At maximum allowable output current and 25°C.
(13) At nominal logic supply voltage, 25 mA output sinking current, nominal input voltage and 25°C.
(14) At 25°C for 1 second maximum duration.