

SAM40 UL Series

Module Style



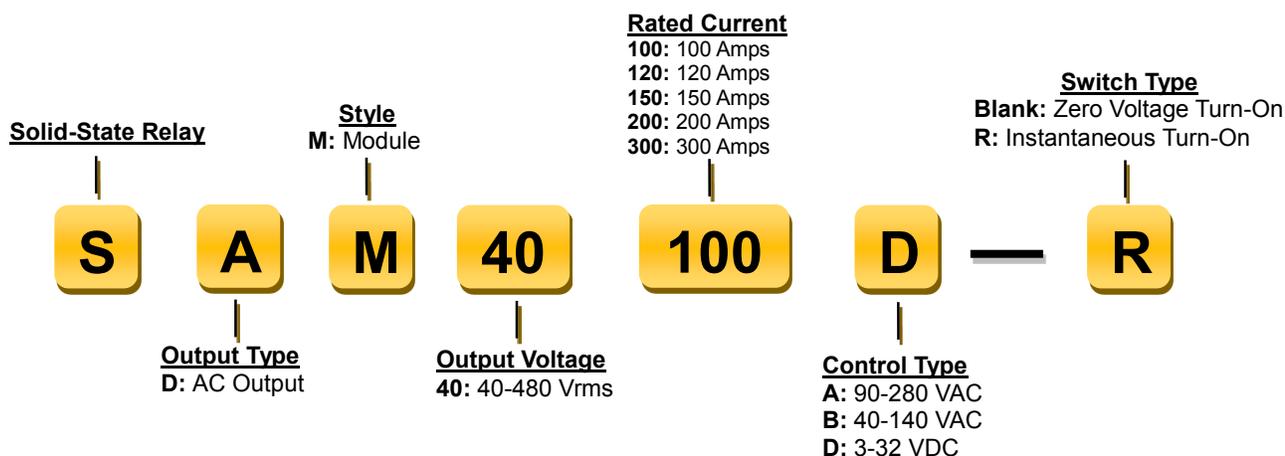
Picture is SAM40100D

- Ratings from 100A to 300A @ 40-480 VAC
- 1200 Volts transient overvoltage
- Removable IP 20 touch-safe cover
- LED input status indicator
- UL/CE approved, RoHS/EMC compliant.
- Strengthened current design for heavy industrial loads
- Designed in according with the requirements of IEC 62314
- Zero-crossing (resistive loads) or instantaneous (inductive loads) output

PRODUCT SELECTION

Control Voltage	100A	120A	150A	200A	300A
90-280 VAC	SAM40100A	SAM40120A	SAM40150A	SAM40200A	SAM40300A
40-140 VAC	SAM40100B	SAM40120B	SAM40150B	SAM40200B	SAM40300B
4-32 VDC	SAM40100D	SAM40120D	SAM40150D	SAM40200D	SAM40300D

MODEL NAME DEFINITIONS



OUTPUT SPECIFICATIONS (1)

Description	100A	120A	150A	200A	300A
Operating Voltage (47-63Hz) [Vrms]	40-480	40-480	40-480	40-480	40-480
Transient Overvoltage [Vpk]	1200	1200	1200	1200	1200
Maximum Off-State Leakage Current @ Rated Voltage [mArms]	8	8	8	8	8
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec]	500	500	500	500	500
Maximum Load Current ⁽²⁾ [Arms]	100	120	150	200	300
Minimum Load Current [Arms]	0.15	0.15	0.15	0.15	0.15
Maximum 1 Cycle Surge Current (50/60Hz) [A _{pk}]	1050/1100	1260/1320	1528/1600	2100/2200	3056/3200
Maximum On-State Voltage Drop @ Rated Current [Vrms]	1.30	1.30	1.30	1.30	1.30
Thermal Resistance Junction to Case (R _{jc}) [°C/W]	0.43	0.42	0.40	0.39	0.36
Maximum 1/2 Cycle I ² t for Fusing (50/60 Hz) [A ² sec]	3751/3410	4501/4092	5626/5115	7502/6820	10230/11253
Minimum Power Factor (with Maximum Load)	0.5	0.5	0.5	0.5	0.5
Weight (typical) [Gram]	142	142	232	232	232

INPUT SPECIFICATIONS ⁽¹⁾

Description	SAM40xxA	SAM40xxB	SAM40xxD
Control Voltage Range	90-280 Vrms	40-140 Vrms	3-32 VDC
Maximum Reverse Voltage	-	-	-32
Minimum Turn-On Voltage	90 Vrms	90 Vrms	3.0 VDC
Minimum Turn-Off Voltage	10 Vrms	10 Vrms	1.0 VDC
Minimum Input Current [mA]	5	5	7
Maximum Input Current [mA]	15	15	20
Nominal Input Impedance	Current Regulated	Current Regulated	Current Regulated
Maximum Turn-On Time ⁽³⁾ [msec]	20	20	1/2 cycle
Maximum Turn-Off Time [msec]	30	30	1/2 cycle

GENERAL SPECIFICATIONS

Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz)	4000 Vrms
Minimum Insulation Resistance (@ 500 V DC)	10 ⁹ Ohm
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range	-40 to 80°C
Ambient Storage Temperature Range	-40 to 125 °C
Housing Material	UL E211125: 94 V-0
Terminal Material	Gilded
Baseplate Material	Copper
Humidity	85% non-condensing
LED Input Status Indicator	Red

RECOMMENDED MODEL & HEATSINK

Choosing compatible current is critical in selecting a right model of solid state relay. Our engineers recommend SSR models according to actual applications and internal components of relay. For example, when solid state relay is used for electric heating, because of the cold resistance effect (the resistance value is 60% of heating wire value when it is in cold state), the SSR's current should be 1.67 times bigger than actual working current in order to prevent the over-current of solid state relay. The recommendations for the other types of application are provided in the similar reasons. Heatsink in the table are compatible (size and thermal parameters) with the corresponding SSRs.

Application to Electric Heating

Continuous Load Current	0.1A-60A	0.15A-110A	0.3A-190A
Recommended Model ⁽⁴⁾	SAM40100D	SAM40150D	SAM40300D
Recommended Heatsink	Panel	T110	T180
	Din Rail	CH120	Z170

Application to Single-Phase Motors

Continuous Load Current	0.1A-20A	0.15A-33A	0.3A-53A
Recommended Model ⁽⁴⁾	SAM40100D-R	SAM40150D-R	SAM40300D-R
Recommended Heatsink	Panel	G120	G120
	Din Rail	CH120	CH120

Application to Three-Phase Motors ⁽⁵⁾

Continuous Load Current	0.1A-15A	0.15A-25A	0.3A-40A
Recommended Model ⁽⁴⁾	SAM40100D-R	SAM40150D-R	SAM40300D-R
Recommended Panel Mount Heatsink ⁽⁵⁾	T150	T150	T230

Application to Transformer Loads

Continuous Load Current	0.1A-30A	0.15A-50A	0.3A-80A
Recommended Model ⁽⁴⁾	SAM40100D-R	SAM40150D-R	SAM40300D-R
Recommended Heatsink	Panel	G120	T130
	Din Rail	CH120	Z100

Application to Solenoid Valves

Continuous Load Current	0.1A-10.9A	0.15A-18.1A	0.3A-29A
Recommended Model ⁽⁴⁾	SAM40100D-R	SAM40150D-R	SAM40300D-R
Recommended Heatsink	Panel	G120	G120
	Din Rail	CH120	CH120

GENERAL NOTES

- (1) All parameters at 25°C and per section unless otherwise specified.
- (2) Heat sinking required, for derating curves see next page.
- (3) Turn-on time for random turn-on (-R) version is 0.1 msec.
- (4) It is DC control as a default in the recommendation table, but it can be changed to AC control according to demand.
- (5) Each Heatsink is suitable to assemble three solid state relays.

AGENCY APPROVALS

Designed in accordance with the requirements of IEC 62314

