



AIRPAX® | SAR/SAS Series

Hydraulic Magnetic Circuit Protectors

INTRODUCTION


The Airpax™ SAR and SAS circuit protectors provide protection from over-current conditions in an ultra-compact package. The SAR and SAS are the standard products, the SUR and SUS have both RŮ and CSA approvals, and the SER and SES carry RŮ, CSA and TÜV approvals.

Typical applications include tight spaces in radio signal amplifiers for base transceiver stations, uninterruptible power supplies, thin-type power supplies, office equipment, and entertainment equipment.

FEATURES

- Ultra-compact and ultralight circuit protectors with reinforced insulation and an electromagnetic safety system
- Smallest hydraulic 20A rating circuit protector (SAR) and 15A rating circuit protector (SAS) in the world
- Trip-free function, smooth handle action
- Conforms to IEC950

SPECIFICATIONS

Maximum Rated Current / Voltage	20A (125 VAC), 15A (250VAC, 32VDC), 30A (50VDC)
Number of Poles	SAR(M), SUR(M), SER(M) = 1 to 2 poles SAS(M), SUS(M), SES(M) = 1 pole
Operating Temperature	-25°C to 65°C
Operating Humidity	up to 85%
Breaking Capacity	500 amps (in accordance with UL 1077 & EN60934)
Insulation Resistance	At least 100M with 500VDC megger
Dielectric Strength	VAC 50/60 Hz 1500VAC for 1 minute (RŮ/CSA/general products), VAC 50/60 Hz 3000VAC for 1 minute (TÜV products) leakage current 1mA or less. Auxiliary switch: VAC 50/60 Hz 500VAC for 1 minute
Vibration Resistance	Approximately 98m/s ² (10G) (Mil-STD-202 Method 201A @ I _n)
Shock Resistance	490m/s ² (50G) (Mil-STD-202 Method 213 test condition A @ I _n)
Operational Life	At least 10,000 times (6 times per minute, ON-OFF 6,000 times @ I _n , 4,000 times under no-load condition)
Approvals	

*Agency approvals: Pending

RATINGS

Circuit Breaker	Maximum Rated Current / Voltage				Breaking Capacity
	32VDC	50VDC	125VAC	250VAC	
SAR, SUR, SER	20 amps	—	20 amps	15 amps	500 amps
SARM, SURM, SERM	15 amps, 30 amps*	15 amps, 30 amps*	—	—	300 amps
SAS, SUS, SES	15 amps	—	15 amps	15 amps	500 amps
SASM, SUSM, SESM	15 amps	15 amps	—	—	300 amps

SAS

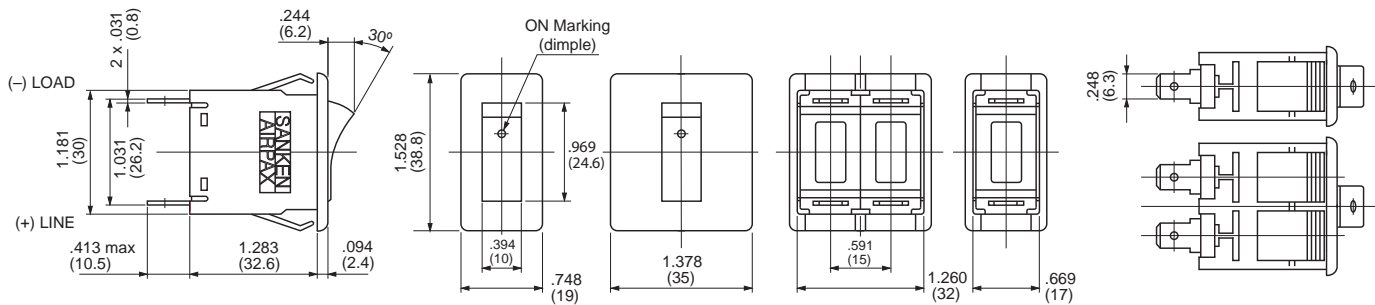


SAR

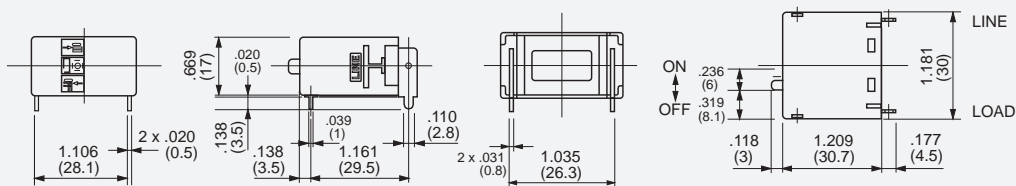


DIMENSIONAL DRAWINGS

SAR, SUR, SER, SARM, SURM, SERM *Outline drawings show quick connect specifications. Dimensions = in (mm)



SAS, SUS, SES, SASM, SUSM, SESM *Outline drawings show PCB mount. Dimensions = in (mm)



DECISION TABLES

SAR - F - 1RE 1 - 51 - 10A - 52F - 5A - BWT - AC

(handle side, left) Pole 1
(handle side, right) Optional Pole 2 (*2)
(handle side, left) Pole 1
(handle side, right) Optional Pole 2 (*2, *3)

1 First Decision

Model

Code	Description
SAR	General Product
SUR	RU / CSA approved
SER	RU / CSA / TÜV approved
SARM	General Product with magnet
SURM	cRUus approved with magnet
SERM	cRUus / TÜV approved with magnet
SARM, SURM, SERM: note terminals have porlarity, LINE connect to (+)	
SAS	General Product
SUS	RU / CSA approved
SES	RU / CSA / TÜV approved
SASM	General Product with magnet
SUSM	RU / CSA approved with magnet
SESM	RU / CSA / TÜV approved with magnet
SASM, SUSM, SESM: note terminals have porlarity, LINE connect to (+)	

2 Second Decision

Terminal type

Code	Description
F	0.25" quick connect terminals (SAR, SUR, SER, SARM, SURM, SERM only)
P	PCB - PC board terminals

3 Third Decision

Circuit type

Code	Select 2 options****
0	Switch type
0RE	Switch type with auxiliary switch
1	Series type
1RE	Series type with auxiliary switch
1RS	Series type with alarm switch
3	Parallel type (SAR, SUR, SER, SARM, SURM, SERM only)
4	Relay type (SAR, SUR, SARM, SURM, only)

When the auxiliary switch or alarm switch is a gold contact, "G" is added to the symbol. For example "1REG"

4 Fourth Decision

Trip Delay

Code	Description
51	VDC medium speed
52	VDC low speed
61	VAC medium speed
62	VAC low speed
SP	Relay type for voltage trip (SAR, SUR, SARM, SURM, only)

If an inertial wheel is required, add "F" to the end of the code. Example: 62F

If any switch type was selected in the 3rd decision, do not choose a trip delay (4th decision)

5 Fifth Decision

Rated current*

Code
0.1A
0.5A
1.0A
2.0A
3.0A
5.0A
7.5A
10.0A
15.0A
20.0A
25.0A
30.0A

6 Sixth Decision

Handle marking (*1)

Code	Description
	No mark standard
Use the options below for: SAR, SUR, SER, SARM, SURM, SERM only	
BWT	Black handle <input type="checkbox"/> On <input type="checkbox"/> Off
RWT	Red handle <input type="checkbox"/> On <input type="checkbox"/> Off
BWY	Black handle <input type="checkbox"/> On <input type="checkbox"/> Off
RWY	Red handle <input type="checkbox"/> On <input type="checkbox"/> Off
BWO	Black handle <input type="checkbox"/> On <input type="checkbox"/> Off
WBO	White handle <input type="checkbox"/> On <input type="checkbox"/> Off
GUARD	Handle Guard

7 Seventh Decision

Remarks

Code	Description
AC	Switch type - service circuit AC
DC	Switch type - service circuit DC
A, B, D	PCB type Chose A, B, or D (SAR, SUR, SER, SARM, SURM, SERM only)

SAR, SUR, SER, SARM, SURM, SERM

*Rated current depends on the circuit type & circuit voltage

Circuit Voltage	Switch type with auxiliary switch	Series type with alarm switch	Parallel type	Relay type
125VAC	Main = 20A max	0.1 to 20A	0.1 to 20A	0.1 to 1A
250VAC	Main = 15A max	0.1 to 15A	0.1 to 15A	0.1 to 1A
32VDC	Main = 15A max	0.1 to 15A	0.1 to 15A	0.1 to 1A
50VDC	Main = 30A max (*4)	0.1 to 30A (*4)	----	----

SAS, SUS, SES, SASM, SUSM, SESM

Code	Description
0.1 to 15A	

*1.) This decision only applies to:
SAR, SUR, SER, SARM, SURM, SERM

Disregard sixth decision for:
SAS, SUS, SES, SASM, SUSM, SESM

*2.) 2-pole options are only available for:
SAR, SUR, SER, SARM, SURM, SERM

Disregard the pole 2 option for:
SAS, SUS, SES, SASM, SUSM, SESM

*3.) If the same specifications are required in the 4th and 5th decision for each pole in a 2-pole device (example, both poles require 51-10A), do not enter a Optional Pole 2 entry into the 4th and 5th decision.

Example: SAR-F-1RE 1 - 51 - 10A both poles need 51-10A

*4.) SARM - 50VDC, 30A max
SURM/SERM - 50VDC, 15A max