



## Metal Case Solenoid Switches

### **Standard Unit Selection Guide** **Type SAW, SAS, and SBD Metal Case Solenoids**

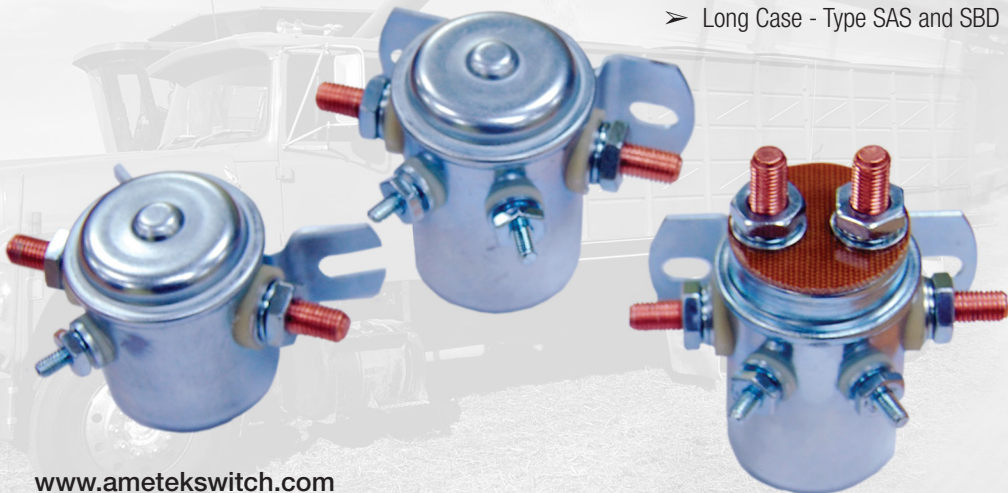
*SAW, SAS, and SBD Solenoids Switches are well known for solid design and performance and are designed to switch inductive loads in DC circuits up to 36 volts. These metal-enclosed switches employ a moving contact disk for high performance and are especially resistant to damage from road debris, making them suitable for controlling a wide variety of loads.*

#### **Applications**

- Engine Starting Motors and Shift Solenoids
- Hydraulic Pump Motors
- Winch Motors
- Traction Motors
- Auxiliary Power Circuits
- Many Others

#### **Construction/Performance**

- Zinc-Plated Steel Case
- 6 to 36 VDC Inductive Loads
- Moving Disk Contacts
- Up to 200 Amps Continuous
- Copper or Silver Alloy Contacts
- Continuous and Intermittent Duty Coils
- SPST-NO Contacts - Type SAW and SAS
- SPDT Contacts - Type SBD
- Short Case - Type SAW
- Long Case - Type SAS and SBD



# AMETEK Metal Case Solenoid Switches

AMETEK Switch offers a wide range of standard designs and will also custom design solenoids to meet specific customer requirements. Additional standard designs are available if you don't see what you need below. For application assistance and detailed technical specifications please contact AMETEK Switch or visit our website.

## Standard Features

- Isolation or Case Grounded
- 50,000 Cycle Electrical Life
- Terminal Hardware Available
- Metal Case Construction

## Selection Guide

Standard Designs - Type SAW and SAS - SPST N.O. Contacts													
Carry Amps	Contact Material	Coil Volts	Wiring Diag	Coil Duty	Mounting Bracket	Mounting Provisions	Mounting Centers	Coil Ohms	Pickup Volts	Optional Features	Load Terminals	Coil Terminals	Part Number
100	C	6	1	I	C	0.22 Slots	56 Deg	1.05	4		5/16-24	(1)10-32	SAW-4601
100	C	7	1	C	F	0.28 Slots	2.32 In	6.1	5		5/16-18	(1)10-32	SAS-4609
100	C	12	1	C	F	0.28 Slots	2.32 In	14.5	9		5/16-24	(1)10-32	SAS-4208
100	C	12	2	C	F	0.28 Slots	2.32 In	14.5	8		5/16-24	(2)10-32	SAS-4201
100	C	12	2	C	F	0.28 Slots	2.32 In	14.5	9	R	5/16-24	(2)10-32	SAS-4214
100	C	12	2	C	F	0.28 Slots	2.32 In	14.5	9	U	5/16-24	(2)10-32	SAS-5203A
100	C	12	1	HDI	C	0.28 slots	56 Deg	4.2	8	U	5/16-24	(2)10-32	SAS-5202E
100	C	12	2	HDI	C	0.22 Slots	56 Deg	4.2	8	U	5/16-24	(2)10-32	SAS-5202B
100	C	12	2	HDI	C	0.28 Slots	56 Deg	4.2	8	U	5/16-24	(2)10-32	SAS-5202C
100	C	12	2	HDI	C	0.28 Slots	56 Deg	4.2	8	U	5/16-24	(2)10-32	SAS-5202D
100	C	12	2	HDI	F	0.22 slots	2.32 In	4.2	8	U	5/16-24	(2)10-32	SAS-5202F
100	C	12	4	HDI	C	0.22 slots	56 Deg	4.2	8		5/16-24	(2)10-32	SAS-4211Y
100	C	12	4	HDI	C	0.22 slots	56 Deg	4.35			5/16-24	(2)10-32	SAS-4215
100	C	12	1	I	C	0.22 Slots	56 Deg	4	8		5/16-24	(1)10-32	SAW-4201
100	C	12	1	I	C	0.22 slots	56 Deg	4	8		5/16-24	(1)10-32	SAW-4210Y
100	C	12	1	I	C	0.22 Slots	56 Deg	4	8	R	5/16-24	(1)10-32	SAW-4214
100	C	12	1	I	C	0.28 Slots	56 Deg	4	8		5/16-24	(1)10-32	SAW-4227
100	C	12	1	I	C	0.28 slots	56 Deg	4	8		5/16-24	(1)10-32	SAW-4227A
100	C	12	1	I	C	0.28 Slots	56 Deg	4	8	R	5/16-24	(1)10-32	SAW-4228
100	C	12	1	I	C	0.28 Slots	56 Deg	4	8		5/16-24	(1)10-32	SAW-4230
100	C	12	1	I	F	0.22 Slots	2.16 In	4	8		5/16-24	(1)10-32	SAW-4204
100	C	12	1	I	F	0.28 slots	2.56 In	4	8		5/16-24	(1)10-32	SAW-4207
100	C	12	1	I	F	0.28 Slots	2.16 In	4	8		5/16-24	(1)10-32	SAW-4216
100	C	12	2	I	C	0.22 Slots	56 Deg	4	8		5/16-24	(2)10-32	SAW-4203
100	C	12	2	I	C	0.28 Slots	56 Deg	4	8		5/16-24	(2)10-32	SAW-4225
100	C	12	2	I	C	0.22 Slots	56 Deg	4	8	U	5/16-24	(2)10-32	SAW-5203
100	C	12	2	I	C	0.28 Slots	56 Deg	4	8	U	5/16-24	(2)10-32	SAW-5229
100	C	12	2	I	F	0.22 Slots	2.16 In	4	8		5/16-24	(2)10-32	SAW-4206
100	C	12	2	I	F	0.22 slots	2.16 In	4.2	8		5/16-24	(2)10-32	SAW-4206M
100	C	12	3	I	*	0.28 slots	1.25 In	4	8		5/16-24	(1)10-32	SAW-4223
100	C	12	3	I	C	0.28 Slots	56 Deg	4	8		5/16-24	(1)10-32	SAW-4211
100	C	12	3	I	C	0.22 Slots	56 Deg	4	8		5/16-24	(1)10-32	SAW-4218
100	C	12	3	I	F	0.22 Slots	2.16 In	4	8		5/16-24	(1)10-32	SAW-4205
100	C	12	3	I	F	0.22 Slots	3.12 In	4	8		5/16-24	(1)10-32	SAW-4209
100	C	12	1	I	F	0.28 Slots	2.16 In	4	8		5/16-24	(1)10-32	SAW-4215
100	C	24	1	C	F	0.28 Slots	2.32 In	54	18	R	5/16-24	(1)10-32	SAS-4414
100	C	24	1	C	F	0.28 Slots	2.32 In	54	15		5/16-24	(1)10-32	SAS-4415
100	C	24	1	C	F	0.28 slots	2.32 In	54	15		5/16-24	(1)10-32	SAS-4415S
100	C	24	2	C	C	0.28 slots	56 Deg	54	18	U	5/16-24	(2)10-32	SAS-5403C

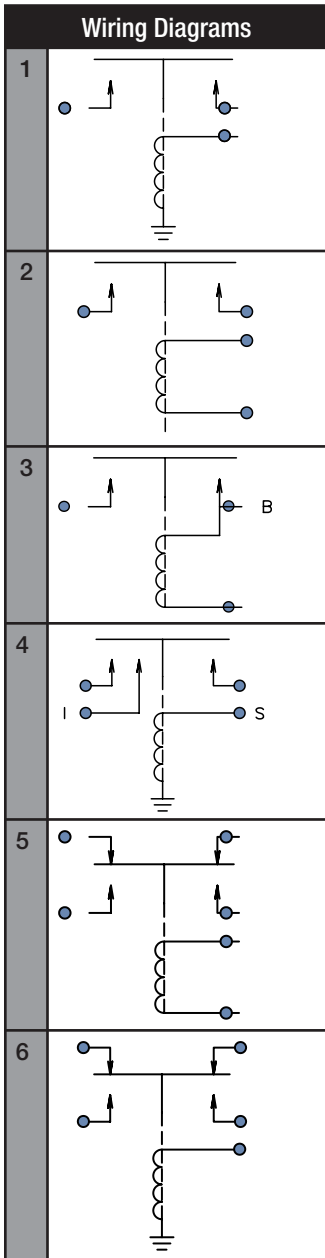
# AMETEK Metal Case Solenoid Switches

Standard Designs - Type SAW and SAS - SPST N.O. Contacts													
Carry Amps	Contact Material	Coil Volts	Wiring Diag	Coil Duty	Mounting Bracket	Mounting Provisions	Mounting Centers	Coil Ohms	Pickup Volts	Optional Features	Load Terminals	Coil Terminals	Part Number
100	C	24	2	C	F	0.28 Slots	2.32 In	54	16		5/16-24	(2)10-32	SAS-4410
100	C	24	2	C	F	0.28 Slots	2.06 In	54	16	R	5/16-24	(2)10-32	SAS-4416
100	C	24	2	C	FS	0.28 Slots	2.32 In	54	18	U	5/16-24	(2)10-32	SAS-5403A
100	C	24	2	C	FS	0.28 Slots	2.32 In	54	18	U	5/16-24	(2)10-32	SAS-5403B
100	C	24	2	HDI	C	0.28 Slots	56 Deg	16.8	16	U	5/16-24	(2)10-32	SAS-5402C
100	C	24	2	HDI	C	0.28 Slots	56 Deg	16.8	16	U	5/16-24	(2)10-32	SAS-5402D
100	C	24	2	HDI	C	0.28 Slots	56 Deg	16.8	16	U, R	5/16-24	(2)10-32	SAS-5402E
100	C	24	2	HDI	C	0.28 slots	56 Deg	16.8	16	U	5/16-24	(2)10-32	SAS-5402F
100	C	24	1	I	C	0.22 Slots	56 Deg	16.8	16		5/16-24	(1)10-32	SAW-4401
100	C	24	1	I	C	0.28 Slots	56 Deg	16.8	16		5/16-24	(1)10-32	SAW-4414
100	C	24	1	I	F	0.22 slots	2.16 In	16.8	16		5/16-24	(1)10-32	SAW-4404T
100	C	24	1	I	F	0.28 Slots	2.16 In	16.8	16		5/16-24	(1)10-32	SAW-4417
100	C	24	2	I	C	0.22 slots	56 Deg	16.8	16	U	5/16-24	(2)10-32	SAS-5402B
100	C	24	2	I	C	0.28 Slots	56 Deg	16.8	16	U	5/16-24	(2)10-32	SAW-5418
100	C	24	2	I	F	0.28 Slots	2.16 In	16.8	16		5/16-24	(2)10-32	SAW-4415
100	C	24	2	I	F	0.22 Slots	2.16 In	16.8	16	U	5/16-24	(2)10-32	SAW-5406
100	C	24	3	I	C	0.22 Slots	56 Deg	16.8	16		5/16-24	(1)10-32	SAW-4402
100	C	36	2	C	F	0.28 Slots	2.06 In	157	27		5/16-24	(2)10-32	SAS-4303
100	C	36	2	HDI	F	0.28 Slots	2.32 In	54	16		5/16-24	(2)10-32	SAS-4302
200	S	12	2	C	C	0.22 Slots	56 Deg	14.5	9	U	5/16-24	(2)10-32	SAS-5201B
200	S	12	2	C	C	0.28 Slots	56 Deg	14.5	9	U	5/16-24	(2)10-32	SAS-5201C
200	S	12	2	C	F	0.28 Slots	2.32 In	14.5	9		5/16-24	(2)10-32	SAS-4202
200	S	12	2	C	F	0.28 Slots	2.32 In	14.5	7		5/16-24	(2)10-32	SAS-4213
200	S	12	2	C	F	0.28 Slots	2.06 In	14.5	9		5/16-24	(2)10-32	SAS-4222
200	S	12	2	C	F	0.28 slots	2.32 In	14.5	7		5/16-24	(2)10-32	SAS-4223
200	S	12	2	C	F	0.28 Slots	2.32 In	14.5	9	U	5/16-24	(2)10-32	SAS-5201A
200	S	12	1	HDI	C	0.28 slots	56 Deg	4.2	8	R	5/16-24	(1)10-32	SAS-4221
200	S	24	2	C	C	0.22 Slots	56 Deg	54	18		5/16-24	(2)10-32	SAS-4408
200	S	24	2	C	C	0.28 Slots	56 Deg	54	18	U	5/16-24	(2)10-32	SAS-5401B
200	S	24	2	C	F	0.28 Slots	2.32 In	54	18		5/16-24	(2)10-32	SAS-4401
200	S	24	2	C	F	0.28 Slots	2.06 In	54	16	R	5/16-24	(2)10-32	SAS-4420
200	S	24	2	C	F	0.28 Slots	2.32 In	54	18	U	5/16-24	(2)10-32	SAS-5401A
200	S	24	2	HDI	C	0.28 slots	56 Deg	16.8	18	U	5/16-24	(2)10-32	SAS-5402H
200	S	24	2	HDI	F	0.28 slots	2.32 In	16.8	18	U	5/16-24	(2)10-32	SAS-5402G
200	S	24	3	HDI	F	0.28 Slots	2.32 In	16.8	16		5/16-24	(1)10-32	SAS-4405
200	S	36	2	C	F	0.28 Slots	2.32 In	157	27		5/16-24	(2)10-32	SAS-4301
200	C	72	2	C	FS	0.28 slots	2.32 In	475	54	U	5/16-24	(2)10-32	SAS-5701A
NO/NC	Standard Designs - Type SBD - SPDT Contacts												
100/100	C/C	12	5	C	F	0.28 Slots	2.32 In	15.5	9		5/16-24	(2)10-32	SBD-4201A
100/100	C/C	12	6	C	F	0.28 Slots	2.32 In	15.5	9		5/16-24	(1)10-32	SBD-4201
100/100	C/C	12	6	C	F	0.28 Slots	2.32 In	15.5	9		5/16-24	(1)10-32	SBD-4201D
100/100	C/C	12	6	C	F	0.28 slots	2.32 In	14.5	9		5/16-24	(1)10-32	SBD-4202D
100/100	C/S	12	6	HDI	F	0.28 Slots	2.06 In	7.9	9		5/16-24	(1)10-32	SBD-4201E
100/100	C/S	12	6	HDI	F	0.28 Slots	2.06 In	7.9	9		5/16-24	(1)10-32	SBD-4201H
100/100	C/C	24	5	C	F	0.28 Slots	2.32 In	54	16		5/16-24	(2)10-32	SBD-4401
100/100	C/C	24	6	C	F	0.28 slots	2.06 In	54	16		5/16-24	(1)10-32	SBD-4403
100/100	C/C	24	5	HDI	F	0.28 Slots	2.32 In	32	16		5/16-24	(2)10-32	SBD-4401B

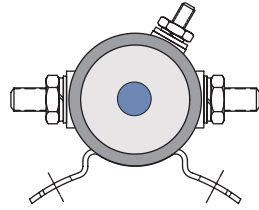


## Standard Designs - Type SBD and SPDT Contacts

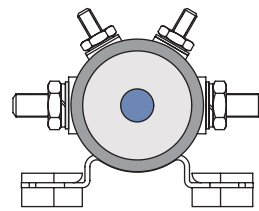
Carry Amps	Contact Material	Coil Volts	Wiring Diag	Coil Duty	Mounting Bracket	Mounting Provisions	Mounting Centers	Coil Ohms	Pickup Volts	Optional Features	Load Terminals	Coil Terminals	Part Number
100/100	C/C	36	4	C	F	0.28 Slots	2.32 In	91	22		5/16-24	(2)10-32	SBD-4301A
100/150	C/S	6	5	C	F	0.28 Slots	2.32 In	4.2	4.5		5/16-24	(2)10-32	SBD-4601
100/150	C/S	36	4	C	F	0.28 Slots	2.32 In	91	22		5/16-24	(2)10-32	SBD-4301
200/150	S/S	12	4	C	F	0.28 Slots	2.32 In	15.5	9	R	5/16-24	(2)10-32	SBD-4201G
200/150	S/S	12	5	HDI	F	0.28 Slots	2.06 In	7.9	9		5/16-24	(1)10-32	SBD-4201J
200/150	S/S	24	5	C	FS	0.28 Slots	2.32 In	54	16	U	5/16-24	(2)10-32	SBD-5401



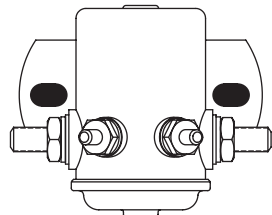
### Mounting Brackets



**C**  
CURVED 2.22" RADIUS



**FS**  
FLAT WITH STANDOFFS



**F**  
FLAT

### Current Ratings

		Contact			
Volts	Form	Material	Carry	Make	Break
12	N.O.	Copper	100	600	200
		Silver Alloy	200	900	300
	N.C.	Copper	100	300	100
		Silver Alloy	150	400	150
24	N.O.	Copper	100	600	150
		Silver Alloy	200	900	250
	N.C.	Copper	100	300	75
		Silver Alloy	150	400	125
36	N.O.	Copper	100	600	125
		Silver Alloy	200	900	200
	N.C.	Copper	100	300	50
		Silver Alloy	150	400	75

### Coil Duty

Code	Type	Duty Cycle	Max "On" Time
I	Intermittent	25%	2 Minutes
HDI	HD Intermittent	25%	10 Minutes
C	Continuous	100%	N/A

### Optional Features

H	Special HV Design
R	Splash Resistant
U	UL-Recognized

### Terminal Hardware

To receive terminal hardware, add one of following suffixes to <b>part number</b> :	
-1	Hardware on terminals
-2	Hardware bulk-packed

# AMETEK®

## SWITCH

U.S. Headquarters

255 North Union Street, Rochester, NY 14605 U.S.A.

Tel: 585-263-7700 • Fax: 585-454-7805

Toll-Free: 1-800-843-5169

[www.ametekswitch.com](http://www.ametekswitch.com)