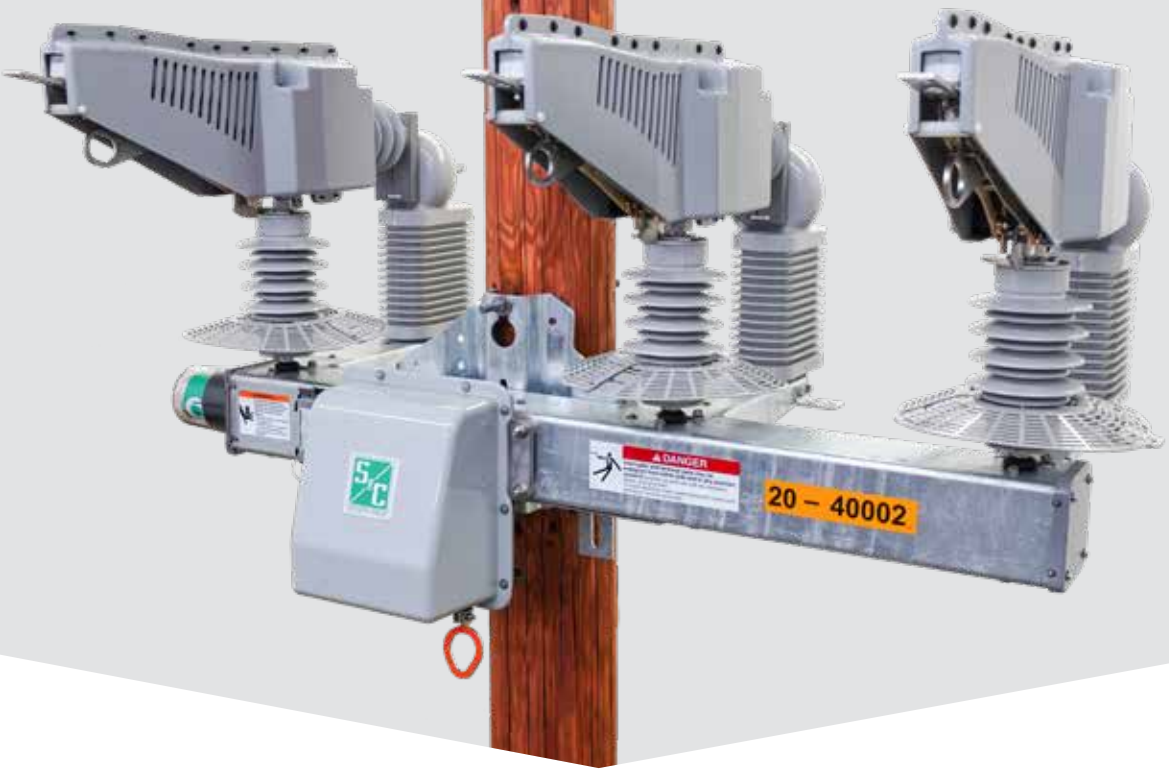
Scada-Mate® SD Switching System



Introducing the Compact… Expandable…Scada-Mate SD Switching System

As distribution automation needs change and grow with increased load, capacity, and demands for more reliable service, the Scada-Mate SD Switching System is ideally suited to meet these challenges. It is a three-pole, group-operated interrupter switch specifically designed for automating overhead distribution systems.

Scada-Mate SD Switches are rated 900 amperes continuous and interrupting and are offered in voltage ratings of 14.4 kV and 25 kV. They feature a five-time duty-cycle fault-closing rating of 12,500 amperes RMS symmetrical. Circuit-making and circuit-breaking are accomplished within sealed interrupters in a controlled solid dielectric vacuum bottle. The interrupter position is clearly indicated by the OPEN/CLOSED indicator on the switch.

Scada-Mate SD Switches are factory-assembled on a one-piece base and include an integral stored-energy operating mechanism. In addition to electrically operating the interrupters, the operating mechanism provides non-electrical mechanical opening and closing of the interrupters by means of a manual-operation pull-ring. The switch can be locked open to prevent electrical or manual closing.

Scada-Mate SD Switches are available in upright, upright with extra mounting-pole clearance, upright compact (alley arm), and tiered-outboard models. All feature S&C Cypoxy™ Insulators.

Sealed interrupters, a sealed OPEN/CLOSED indicator, and a fully enclosed base. Scada-Mate SD Switches feature the same hermetically sealed interrupters, indicator, and operating mechanism as S&C's flagship switch: the Scada-Mate® Switching System. Scada-Mate SD Switches are ideal for installation in areas prone to icing, polluted and coastal environments, and remote locales.

Expandable to meet your distribution-automation (DA) needs. With Scada-Mate SD Switches, you only need to purchase the features required today… you can easily upgrade tomorrow. Switches can be furnished with factory-installed three-phase S&C Current Sensors or three-phase S&C Current/Voltage Sensors on one or both sides of the switch. Alternately, S&C sensors or sensors of other manufacture can be added later. Likewise, an S&C control unit or a control unit from another manufacturer can be added at any time.

Easy to install: Scada-Mate SD Switches are easy to install. Permanent lifting means are provided for convenient rigging and hoisting. With their integral sensors and disconnect and no vertical operating pipe, Scada-Mate SD Switches present a clean uncluttered look.

Figure 1. The 6801 Automatic Switch Control.

Control units that meet your requirements. Scada-Mate SD Switches are available with a wide range of controls to match your automation objectives.

For remote supervisory control applications, the 6800 Series Automatic Switch Control combines sophisticated automatic control schemes with remote terminal unit (RTU) functionality, data logging, and advance communication capabilities in a single package. It can manage switches and automatically sectionalize a feeder based on factors such as overcurrent, loss of voltage, and phase unbalance. One control can automate one or two switches, and multiple controls can be programmed to communicate with each other using the optional IntelliTeam® SG Automatic Restoration System.

Scada-Mate SD Switches can alternately be furnished with a custom-engineered communication and control unit that provides the interface between the switch and the master-station computer. The communication and control unit can accommodate a remote terminal device of any manufacture. It can either be powered by a customer-supplied source or S&C Current/Voltage Sensors on the Scada-Mate SD Switch.

And for source-transfer applications using two Scada-Mate SD Switches, a 6800 Series Automatic Switch Control can be furnished that provides transfer in as little as 90 cycles.

Visible-break disconnect. If your system practices require it, Scada-Mate SD Switches in upright mounting configurations can be furnished with an integral disconnect. See Figure 2. They're comprised of three single-phase hookstick-operated blades based on S&C's proven Loadbuster Disconnect® Switch design. The disconnect is interlocked to prevent opening when the interrupters are closed and closing the interrupters when the disconnect is open.

Other options are available. Arrester brackets come standard on one side of the switch and are optionally available for both sides of the switch. Wildlife protection is also available to guard against wildlife intrusion. Control cable is available in lengths from 25 to 100 feet (762 to 3,048 cm). A pole-band and J-bolt option also is available, as are provisions for dead-ending directly to the switch.

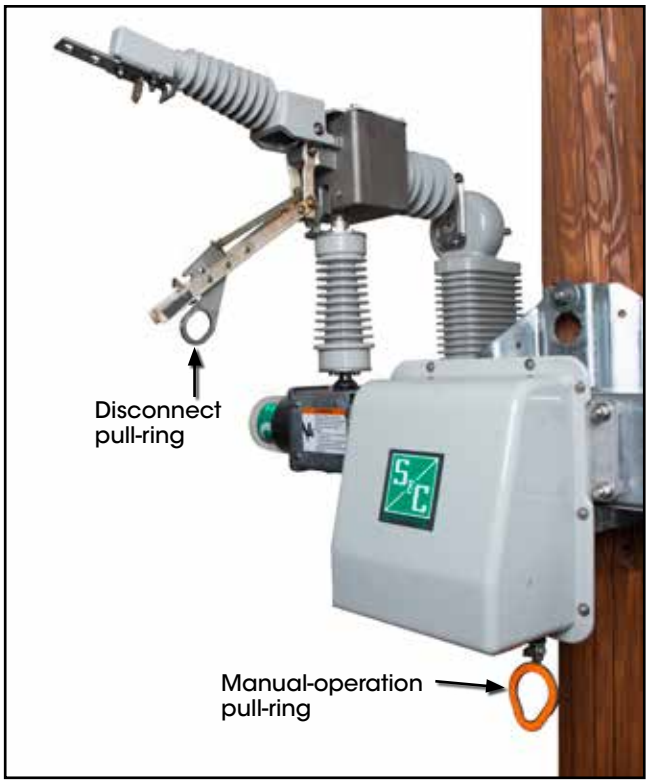
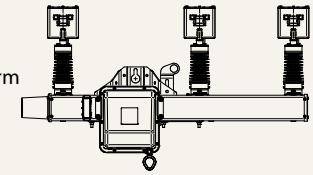
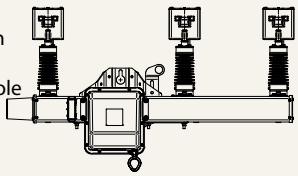
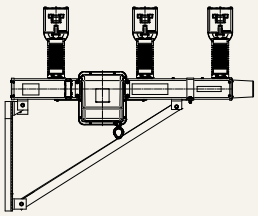
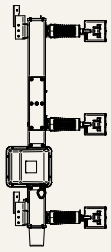


Figure 2. The optional visible-break disconnect.

Ratings

Mounting Configuration	60-Hz Rating (50-Hz Rating in Parentheses)						Catalog Number
	kV①			Amperes, RMS		Five-Time Duty-Cycle Fault-Closing, (RMS Sym) ⑤	
	Nom.	Max	BIL	Cont. and Interr.②③	Peak Withstand ④		
Compact-crossarm upright⑥ 	14.4 (10)● 25 (20)●	17.0 (15) 29 (24)	110 (110) 125■ (125)■	900 (900) 900 (900)	41 600 (41 600) 41 600 (41 600)	12 500 (12 500) 12 500 (12 500)	358112R1 358113R1
Compact-crossarm upright—extra mounting-pole clearance⑥ 	14.4 (10)● 25 (20)●	17.0 (15) 29 (24)	110 (110) 125■ (125)■	900 (900) 900 (900)	41 600 (41 600) 41 600 (41 600)	12 500 (12 500) 12 500 (12 500)	358212R1 358213R1
Compact-crossarm upright—compact (alley arm)⑥ 	14.4 (10)● 25 (20)●	17.0 (15) 29 (24)	110 (110) 125■ (125)■	900 (900) 900 (900)	41 600 (41 600) 41 600 (41 600)	12 500 (12 500) 12 500 (12 500)	358612R1 358613R1
Compact-crossarm Tiered outboard⑦ 	14.4 (10)● 25 (20)●	17.0 (15) 29 (24)	110 (110) 125■ (125)■	900 (900) 900 (900)	41 600 (41 600) 41 600 (41 600)	12 500 (12 500) 12 500 (12 500)	358412R1 358413R1

① System voltage restrictions apply when the associated control unit is powered by S&C Current/Voltage Sensors.

② For line or cable dropping, the following maximum conductor lengths apply: 50 miles (80.47 km) of line, 12 miles (19.31 km) of 1/0 cable, or 5 miles (8.05 km) of 1000 kc mil cable, or equivalent.

③ Switches can endure 3,500 operations of loop-current switching at 900 amperes.

④ The 1-second rating is 16,000 amperes, RMS, symmetrical.

⑤ The duty-cycle fault-closing rating defines the ability to close the switch the specified number of times against a three-phase fault with symmetrical current in at least one phase equal to the listed value, with the switch remaining operable and able to carry and interrupt rated continuous current.

⑥ Switches furnished with optional Visible-Break Disconnect, catalog number suffix "-D," can carry up to 900 amperes continuous in ambient temperatures to 39°C (102°F) or 900 amperes continuous in ambient temperatures to 40°C (104°F) with a minimum wind velocity of 2 feet (61 cm) per second. Maximum allowable conductor temperature is 90°C (194°F).

⑦ Switches in the tiered-outboard mounting configuration are not available with the optional disconnect "-D."

● Minimum voltage rating.

■ The phase-to-ground BIL rating for the 25-kV Scada-Mate SD Switch is 150 kV when the vacuum interrupter is closed.

Mechanical Operations

- Interrupting medium: Vacuum
- Mechanical duty: 3,500 Close/Open

Switch Models

- Manually operated
- Motor operated

Mounting Styles

To accommodate the most widely used overhead distribution configurations, the Scada-Mate SD Switch is available in four mounting styles:

- Standard crossarm phase spacing
- Extra mounting-pole clearance
- Alley-arm
- Tiered

Scada-Mate SD Switching System Features

- A stored-energy operating mechanism
- Voltage & current sensors: Three-phase current sensors, and three-phase voltage sensors on one or both sides of the switch
- A hookstick-operable three-pole disconnect for visible air-gap isolation of switched-open circuits
- Lockout/tagout
- Interlocked disconnects that prevent inadvertent load switching
- Provisions for mounting six surge arresters (three on each side of switch)
- Provisions for dead-ending
- A lifting means for convenient rigging and hoisting of the switch during installation
- Wildlife protection

Operating Environment

Temperature -40°C to +40°C (-40°F to +104°F)

Industry Design/Test Standards

- Interrupting: IEEE C37.30.3™ - 2018
- Dielectric: IEEE C37.30.3™ - 2018
- Radio Influence Voltage: IEEE C37.30.3™ - 2018
- Temperature rise: IEEE C37.30.3™ - 2018
- Short-time: IEEE C37.30.3™ - 2018
- Fault closing: IEEE C37.30.3™ - 2018
- Mechanical endurance: IEEE C37.30.3™ - 2018

6800 Automatic Switch Controls for Scada-Mate SD Switches

S&C's 6800 Series Automatic Switch Controls automate the control functionality of the Scada-Mate SD Switch and extend its control capabilities to a variety of applications, such as source transfer and distributed automation.

Control features include:

- Remote terminal unit (RTU) functionality
- Automatic sectionalizing
- Stand-alone or SCADA functionality
- Easy-to-use IntelliLink® Setup Software
- Data logging and event monitoring & alarms
- Advanced communication capabilities
- Compatible with the IntelliTeam® SG Automatic Restoration System

S&C Communication and Control Units for Control by Others

The Scada-Mate SD Switch can be integrated with controls from other manufacturers through S&C's Communication and Control Unit. These units can accommodate most user-specified remote terminal units and communication devices.