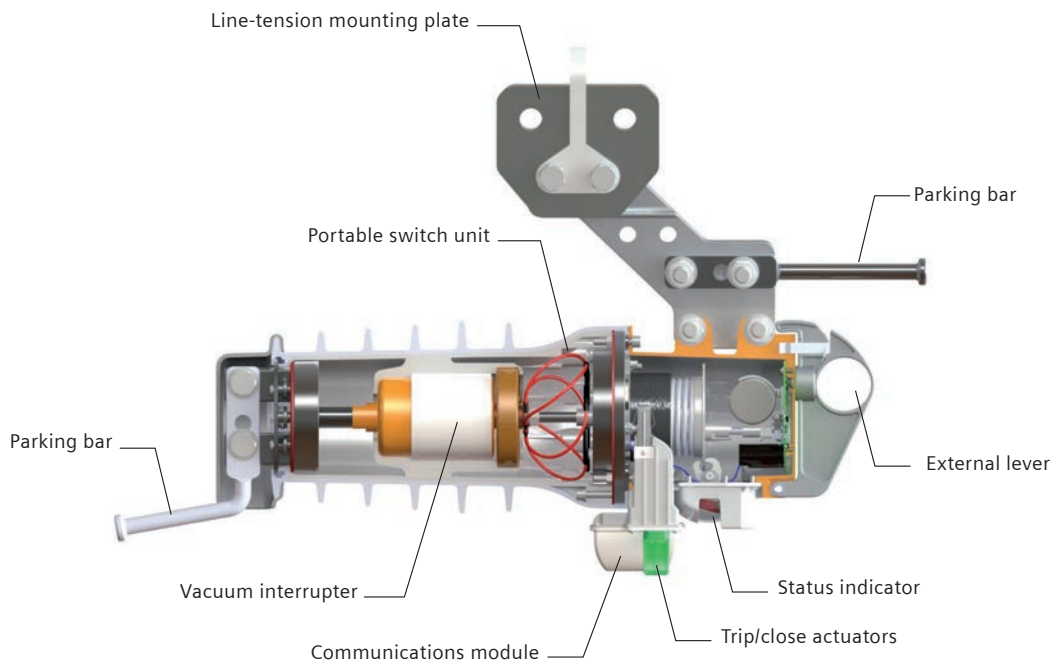


SIEMENS



Portable soft-ganged switch for temporary isolation applications

Utilizing Siemens Fusesaver™ technology
27 kV, 400 A, 4 kA switch unit



Introduction

Traditional in-line tension disconnects provide line crews with a way to temporarily isolate a line at non-designated switching locations, but the lack of a ganged switching capability creates operational issues due to:

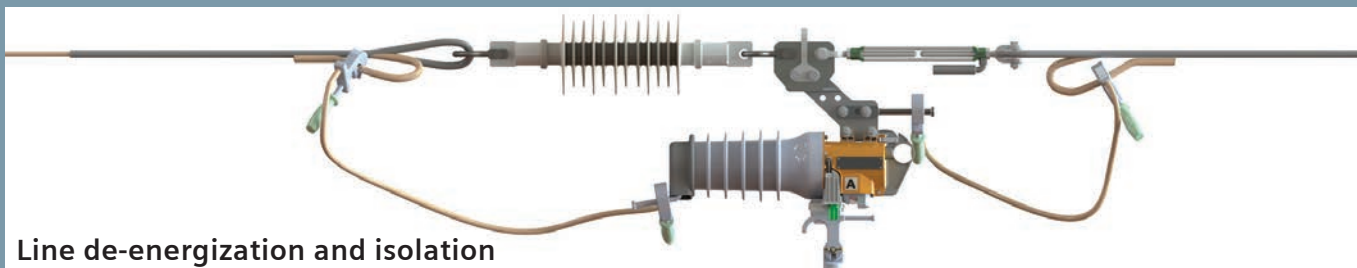
- Restrictions in load-breaking capability
- Restrictions in load pickup
- The risk of ferroresonance due to single-phase switching operations
- The additional time to isolate upstream devices prior to operating the in-line disconnect.

Therefore, it is common that a switching process plan may require an additional 20 or more steps to remove load or to provide isolation prior to removing jumpers or opening the in-line disconnect.

Siemens has addressed all these problems by adapting the switching unit of the proven Fusesaver™ circuit breaker into a pre-configured three-phase synchronous portable switch kit. The switch units are suitable for in-line tension mounting for simple installation and visible isolation.

Key User Benefits

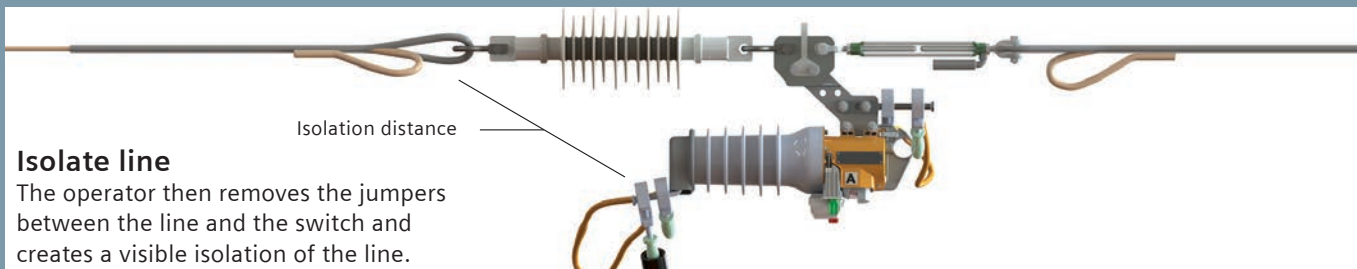
- Improved operator safety with a built-in delay for switching operations
- Simpler installation than conventional devices, such as temporary air-break switches
- Self-powered from on-board battery
- Three-phase soft ganging using radio connectivity for synchronous opening and closing switching operations
- No configuration required
- Reduce demand on scarce live-line resources by decreasing time spent at site
- Minimizes lost customer minutes by reducing isolation zones
- Reduced day-to-day operating cost as switching crews can operate from an elevated work platform or from ground level
- Reduced potential for operator error during switching procedures with simple one button operation
- Potential for ferroresonance is reduced to synchronous ganged switching
- No need to un-load transformers due to 400 A load-switching current rating
- Complete self contained carrying case
- Access live data from the line using the Siemens Connect PC application
- Light, compact and easy to install using live-line practices
- No external arc drawn during switching operations.



Line de-energization and isolation

Break load current

Once installed, an operator can open all three switches synchronously by pressing the button on any communications module to open the switch.



Isolate line

The operator then removes the jumpers between the line and the switch and creates a visible isolation of the line.

Installation

The three single-phase switch units are supplied in a rugged carrying case. Line crews will now be able to replace cumbersome and hard to store items such as load pick-up tools, temporary EDOs, in-line disconnects and temporary parking bays with one Siemens portable switch kit.

The portable switch unit is an electrically floating device so requires no ground connection. The kit provides a number of different mounting options. The simplest option is to hang it from the line at a cross-arm strain relief in a similar manner to a traditional Fusesaver™ circuit breaker installation and to use the adjacent fuses to isolate. A more typical mounting method is to cut the conductor and fit the portable switch mid-span using the line-tension mounting plate between an isolating tension insulator and turnbuckle to re-tension the conductor (insulator, jumpers, line clamps, turnbuckle and related items not included in kit)*.

Communications

Phase-to-phase communications are achieved via the built-in radio system in the communications module. These radios provide a high degree of time synchronization of operations between phases. This soft-gang of the devices delivers genuine three-phase synchronous opening and closing capability.

The communications module also contains a battery that provides energy to the switch unit to run the radio system and to open and close the contacts. Each kit has a spare set of communications modules.

While the units require no configuration, it is possible to use the Siemens Connect PC application to wirelessly monitor load currents flowing in each phase.

Operation

All operations can be done with an approved live-line stick. The operator presses just one of the green actuators. The switch has a built in safety delay between commanding the operation and when it occurs. This delayed operation feature ensures that the operator has 60 seconds to clear the danger zone before the three switches trip. The switching operation is safely handled by the vacuum interrupter in the switch unit. Once the switch is opened, the operator then can test for absence of voltage and open the jumpers with full confidence that they are not breaking load. Making load is just as simple, the operator visually checks the switch is in the open state, then connects the jumpers. Once the jumper is in the connected position, the operator presses one red actuator, clears the danger zone and waits 60 seconds for the switch to close and restore supply.

*Refer to portable switch instruction manual for more detail on installation methods.

Standards

The Siemens portable switch is based on the Fusesaver™ circuit breaker that has been type tested to the applicable requirements of IEC 62271-100.

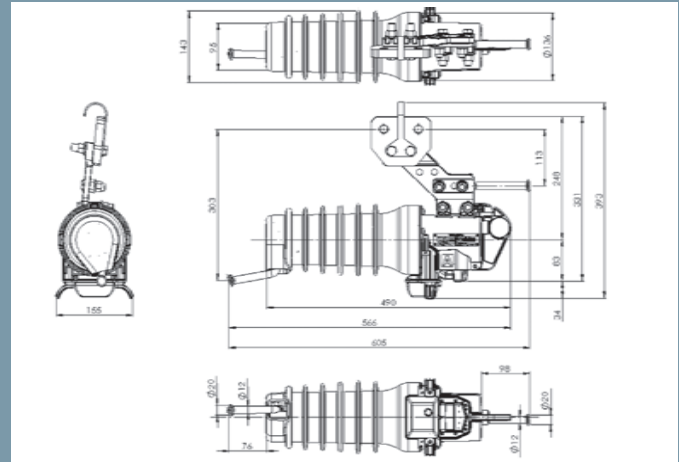
Ratings

Rated voltage – kV	27
Rated impulse-withstand voltage of portable switch unit – kV	125
Rated power-frequency withstand voltage dry – kV	60
Rated continuous current – A	400
Rated short-circuit breaking current – kA	4
Rated short-circuit making current – kA peak	10
Rated short-time current – kA	4
Rated short-time current duration – s	1
Rated mechanical operations	2,000
Working load limit (WLL) - lbs (kg)	3,525 (1,600)

Ambient Conditions

The portable switch kit is suitable for use in outdoor environments with ambient temperatures in the range of -22 °F to 122 °F (-30 °C to +50 °C) and relative humidity in the range of 0 percent to 100 percent.

Switch Unit Dimensions



Kit Details

Case dimensions	Value in (mm) or lbs (kg)
Width	31.4 (800)
Depth	25.6 (650)
Height	18.1 (460)
Weight	88.1 (40)

Item	Quantity
Portable switch unit	3
Communications module	6
Line-tension hanging assembly	3
Line-clamp assembly	3
PC antenna kit	1
Communications module attachment tool	1
Carrying case	1

The information provided in this document contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

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