

FLUSARC 36 kV - 630 A - 25 kA

Medium Voltage Distribution

Operation and Maintenance Instructions

NHA8934901 Rev.05

10/2017



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Safety Symbols and Message

Notice

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

 **DANGER**

DANGER indicates a hazardous situation which, if not avoided, **will result** in death or serious injury.

 **WARNING**

WARNING indicates a hazardous situation which, if not avoided, **could result** in death or serious injury.

 **CAUTION**

CAUTION indicates a hazardous situation which, if not avoided, **could result** in minor or moderate injury.

NOTICE

***NOTICE** is used to address practices not related to physical injury. The safety alert symbol shall not be used with this signal word.*

 **INFORMATION-ADVICE**

We draw your attention on this particular point.

Important Remarks

Electrical equipment should be installed, operated, serviced, and maintained only by **qualified personnel**, that:

- has **skills and knowledge** upon construction, installation, and operation of electrical equipment;
- has received **safety training** to recognize and avoid the involved hazards.

Only undertake the work after having read and understood all the explanations given in this document. If you have any difficulty complying with these rules, please contact Schneider Electric. **No responsibility is assumed** by Schneider Electric for any consequences arising out of the use of this material.

Diffusion Rules

CAUTION

The total or partial reproduction of this manual is prohibited and only the Schneider Electric agents have an exclusive right to use.

Safety Rules

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH.

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E or CSA Z462.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplying this equipment before working on or inside equipment.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors and covers before turning on power to this equipment.
- Beware of potential hazards, and carefully inspect the work area for tools and objects that may have been left inside the equipment.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Cleaning Instructions



SOLVENTS AND ALCOHOL FORBIDDEN



HIGH-PRESSURE CLEANER FORBIDDEN

Disposal of the Equipment at End-of-Life



WARNING

This equipment contains SF₆, a powerful greenhouse gas that is harmful to the environment. Prior to disposal of equipment at end-of-life, the SF₆ gas must be recovered in order for it to be recycled, reclaimed or destroyed.

- **DO NOT** carry out any dismantling operations unless authorized.
- **DO NOT** handle SF₆ gas unless certified.
- **DO NOT** release SF₆ gas to the atmosphere.

Penalties may apply according to local regulations and rules (Regulation (EU) N°517/2014 for all European countries).

Schneider Electric offers a complete end-of-life service to dismantle and recycle Medium Voltage equipment and safely manage SF₆ gas. This service is compliant with IEC 62271-4 and conforms to local regulations. Please contact Schneider Electric for details.

SF₆ is a powerful greenhouse gas having a Global Warming Potential of 22 800 compared to CO₂ (in accordance with the 4th IPCC assessment report).

Further info

Our devices are quality controlled and tested at the factory in accordance with the standards and the regulations currently in force.

Apparatus efficiency depends on the compliance with the installation, commissioning and operation instructions described in this user manual.

The interventions described are carried out on **de-energized equipment** (in course of being installed) or locked out (non operational).

All manipulations must be completed once started.

The durations (for completing the operations mentioned) given in the maintenance tables are purely an indication and depend on on-site conditions

Operations and maintenance may only be carried out by personnel who have received suitable authorisation for the operations and manœuvres they are responsible for performing.

If this is not the case, please refer to our Service Unit or Training Centre.

All locking-out operations must be performed according to the safety regulations currently being in force.

Our Service Unit: our specialists, and suitably adapted services



- Guarantee extension contracts in relation to the selling of new equipment,
- Supervision of HVA switchgear installations,
- Technical advice, diagnoses of the facilities, expertise,
- Maintenance contracts adapted to operational constraints,
- Systematic or conditional preventive maintenance,
- Corrective maintenance in case of partial or complete failure,
- Supply of spare parts.

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Responsibilities (reminder)

Our devices are quality controlled and tested at the factory in accordance with the standards and the regulations currently in force.

Apparatus efficiency depends on the compliance with the installation, commissioning and operation instructions described in this user manual. Non respect of these instructions is likely to invalidate any guarantee.

Local requirements especially about safety and which are in accordance with the indications given in this document, must be observed.

Schneider Electric declines any responsibility for the consequences:

- due to the non respect of the recommendations in this manual which make reference to the international regulations in force.
- due to the non respect of the instructions by the suppliers of cables and connection accessories during installation and fitting operations,
- of any possible aggressive climatic conditions (humidity, pollution, etc.) acting in the immediate environment of the materials that are neither suitably adapted nor protected for these effects.

This user manual does not list the locking-out procedures that must be applied. The interventions described are carried out on de-energized equipment (in the course of being installed) or locked out (non operational).

Particular instructions for operations and interventions on energized equipment

When commissioning and operating the equipment under normal conditions, the General safety instructions for electrical applications must be respected, (protective gloves, insulating stool, etc.), in addition to standard operating instructions.

All manipulations must be completed once started.

The durations (for completing the operations mentioned) given in the maintenance tables are purely an indication and depend on on-site conditions.

Functional mechanical interlocks

The FLUSARC switchgear is equipped with internal mechanical interlocks, called "functional", intended to avoid any kind of operating error.

It is necessary to know these interlocks in order to operate the switchgear correctly.

Interlocks for functions C and T1

Position		Switch disconnector	Earthing switch	Access to fuses or cables compartment
Switch disconnector	Closed	–	Locked open	Not allowed Dependant on the position of the earthing switch
	Open	–	Free	
Earthing switch	Closed	Locked open	–	Free Locked closed
	Open	Free	–	
Access to fuses	Open	Locked open	Locked closed	–
Access to cables compartment	Open	Locked open	Free for C function Locked / closed for T1 function	–

Interlocks for function CB

Position		Circuit breaker	Disconnector	Earthing switch	Access cover to cables compartment
Circuit breaker	Closed	–	Locked (in closed position)	Locked open	Not allowed
	Open	–	Free	Dependant on the position of the disconnector	Dependant on the position of the earthing switch
Disconnector	Closed	Free	–	Locked open	Not allowed
	Open	Open	–	Free	Dependant on the position of the earthing switch
Earthing switch	Closed	Open	Locked open	–	Free
	Open	Dependant on the position of the disconnector	Free	–	Not allowed
Access panel to the cable compartment	Open	Open	Locked open	Free	–

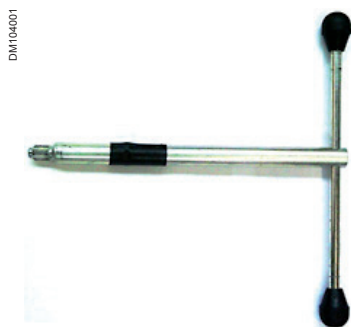
Reminder for Manual Operations

All movements of the lever must be frank and complete.

Circuit breaker closing spring loading lever (CB unit)

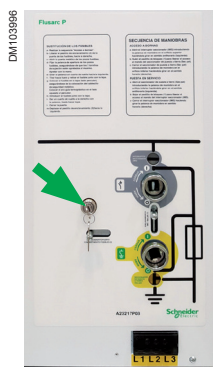


Operating lever



Key locks (optional)

They are used, in order to prevent any possible wrong operations with other cubicles or external devices.



Closed earth free key
(transformer
protection unit)



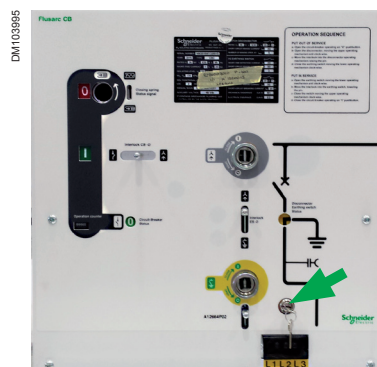
Open earth free key
(line unit and
transformer
protection unit)



Open line free key
(line unit and
transformer
protection unit)



Closed earth free key
(line unit)



Closed earth free key
(CB unit)



The procedures here following described refer to a line switchgear with manual closing and opening controls. Should those controls be electric and remotely controlled, it will be necessary to shift the interlock on the disconnecter control operation, in order to insert the lever, and, if the remote control is present, it will be necessary to act on the relevant selector, in order to enable the operation on place.

- Disconnecter control operation interlock device.



When switch is motorized, inserting lever will switch off the motorgear.



Opening the earthing switch



- Insert the operating lever into the earthing switch control.



- Grasp the lever with both hands.
- Turn the lever counter clockwise, up to reach the end of stroke. The mimic diagram indicator will turn from the closed earth position  to the open earth position .
- Extract the operating lever.

Closing the earthing switch



Before closing the earthing switch, ensure there is no voltage across the voltage presence signal lamp.

- Act on the interlock, by shifting it upwards.

SPL9411



- Insert the operating lever into the earthing switch control.

SPL9412



- Turn the lever clockwise, up to reach the end of stroke. The mimic diagram indicator will turn from the open earth position  to the closed earth position .
- Extract the operating lever.

Closing the switch disconnecter

SPL9405



- Act on the interlock, by shifting it downwards.

SPL9406

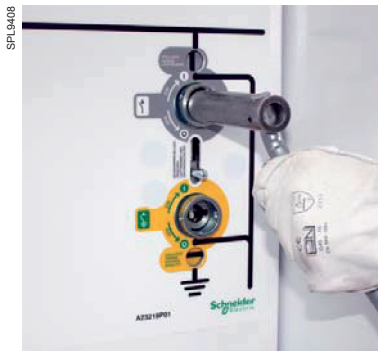


- Insert the operating lever into the switch disconnecter control.

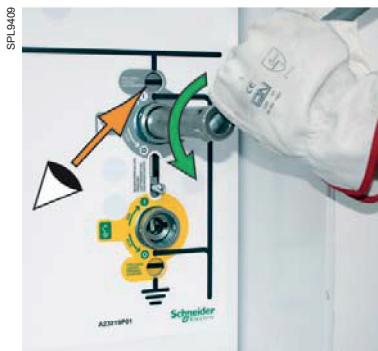


- Turn the lever clockwise, up to reach the end of stroke. The mimic diagram indicator will turn from the open line position  to the closed line position .
- Extract the operating lever.

Opening the switch disconnecter



- Insert the operating lever into the switch disconnecter control.



- Grasp the lever with both hands.
- Turn the lever counter clockwise, up to reach the end of stroke. The mimic diagram indicator will turn from the closed line position  to the open line position .
- Extract the operating lever.



The procedures here following reported refer to a line switchgear with manual closing and opening controls. Should those controls be electric and remotely controlled, it will be necessary to act on the relevant selector, in order to enable the operation on place.

Opening the earthing switch



- Insert the operating lever into the earthing switch control.



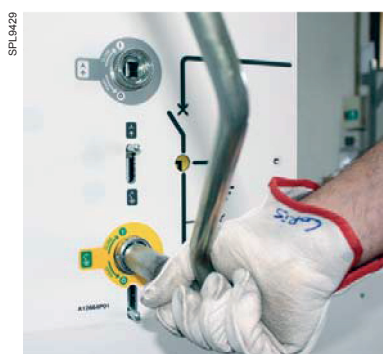
- Grasp the lever with both hands.
- Turn the lever counter clockwise, up to reach the end of stroke. The mimic diagram indicator will turn from the closed earth position  to the earth and line open position .
- Extract the operating lever.

Closing the earthing switch

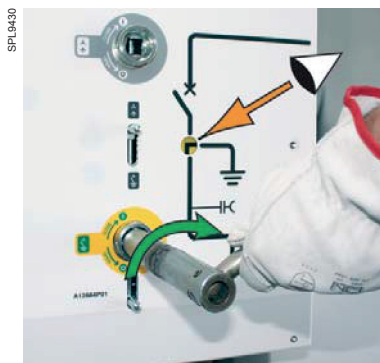


Before closing the earthing switch, ensure there is no voltage across the voltage presence signal lamp.

- Act on the interlock, by shifting it upwards.

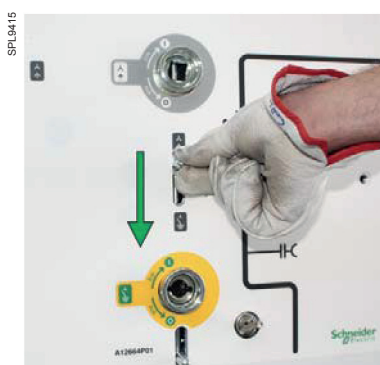


- Insert the operating lever into the earthing switch control.



- Grasp the lever with both hands.
- Turn the lever clockwise, up to reach the end of stroke. The mimic diagram indicator will turn from the earth and line open position  to the closed earth position .
- Extract the operating lever.

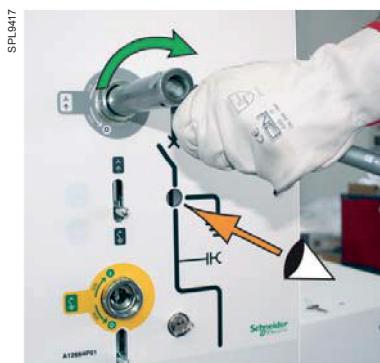
Closing the disconnect



- Act on the interlock, by shifting it downwards.



- Insert the operating lever into the disconnect control.

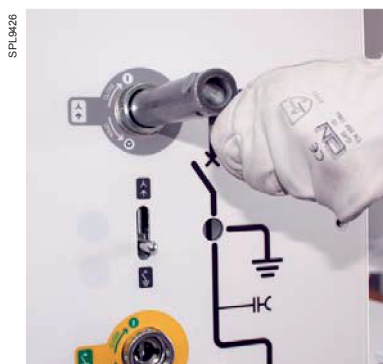


- Grasp the lever with both hands.
- Turn the lever clockwise, up to reach the end of stroke. The mimic diagram indicator will turn from the earth and line open position  to the closed line position .
- Extract the operating lever.

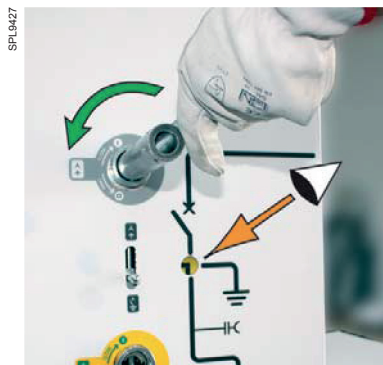
Opening the disconnect



- Act on the interlock, by shifting it leftwards.



- Insert the operating lever into the disconnect control.



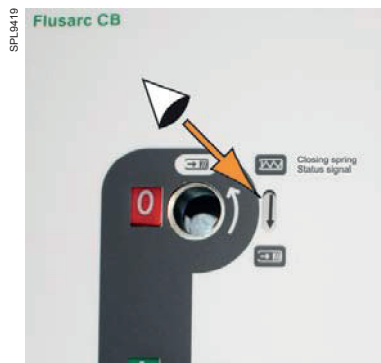
- Grasp the lever with both hands.
- Turn the lever counter clockwise, up to reach the end of stroke. The mimic diagram indicator will turn from the closed line position  to the earth and line open position .
- Extract the operating lever.

Closing the circuit breaker

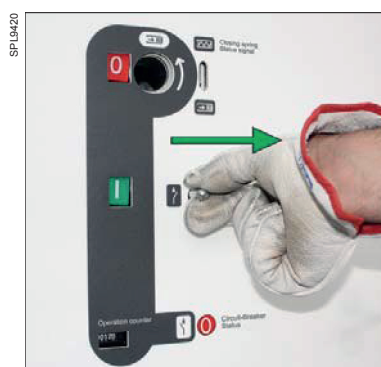


i The step here following described, relevant to the loading of the closing spring, must be carried out only if the CB switchgear isn't provided with a geared motor for loading the springs.

- Load the closing spring, by inserting the lever into the relevant seat and by turning it counter clockwise, up to hear an acoustic click sound.



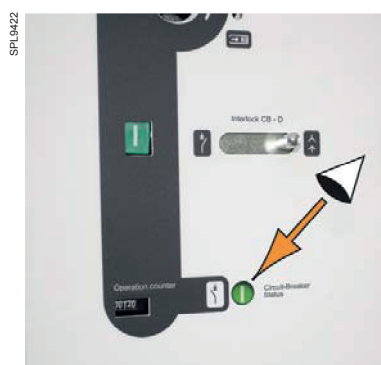
- The charge/discharge spring indicator will get positioned with the arrow looking downwards.
- Extract the operating lever.



- Act the interlock, by shifting it rightwards.



- Close the circuit breaker, by acting on the closing pushbutton.

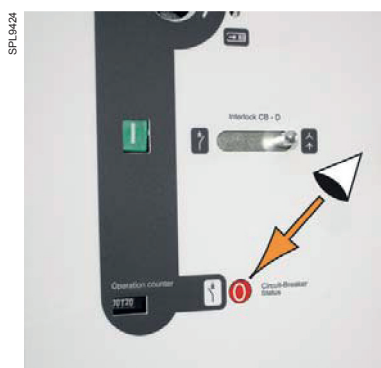


- The "0" (open) position indicator will change to "I" (closed).

Open the circuit breaker



- Open the circuit breaker, by acting on the opening pushbutton.



- The indicator will change from position "I" (closed) to position "0" (open).

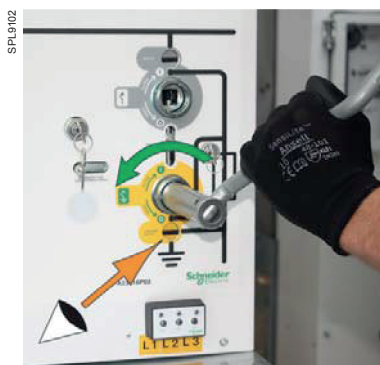
Opening the earthing switch



- Act on the door interlock, by shifting it leftwards.



- Insert the operating lever into the earthing switch control.
- Grasp the lever with both hands.



- Turn the lever counter clockwise, up to reach the end of stroke. The mimic diagram indicator will turn from the closed earth position  to the open earth position .
- Extract the operating lever.

Closing the earthing switch



-  Before closing the earthing switch, ensure there is no voltage across the voltage presence signal lamp.
- Act on the interlock, by shifting it upwards.

SPL9109



- Insert the operating lever into the earthing switch control.

SPL9110



- Grasp the lever with both hands.
- Turn the lever clockwise, up to reach the end of stroke. The mimic diagram indicator will turn from the open earth position  to the closed earth position .
- Extract the operating lever.

Closing the switch disconnecter

SPL9103



- Act on the interlock, by shifting it downwards.

SPL9104



- Insert the operating lever into the switch disconnecter control.

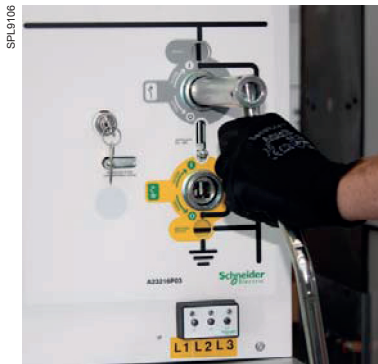
CAUTION

In case the mechanism has opened by using coil or after fuse tripping intervention, an anticlockwise rotation must be done before closing the switch.



- Grasp the lever with both hands.
- Turn the lever clockwise, up to reach the end of stroke. The mimic diagram indicator will turn from the open line position  to the closed line position .
- Extract the operating lever.

Opening the switch disconnecter



- Insert the operating lever into the switch disconnecter control.



- Grasp the lever with both hands.
- Turn the lever counter clockwise, up to reach the end of stroke. The mimic diagram indicator will turn from the closed line position  to the open line position .
- Extract the operating lever.

Levels of maintenance

Maintenance level (who can carry out the corrective maintenance operation)

Level 1 / 2: Customer	Level 4: Schneider Service Center (advanced)
Level 3: Local LAU / =S=service center (basic)	Level 5: Factory return

Preventive maintenance

The following table shows the operations to be performed in case of normal conditions.

In case of specific service operations and/or storages conditions of the switchgear beyond the normal conditions as per the norm IEC62271-1 (such as but not limited to severe environmental conditions) a higher maintenance program need to be implemented during the switchgear life span, depending on the environmental conditions (such as but not limited to dust, sand, humidity, temperature, chemical substances, mechanical, coast proximity). In such case, Schneider Technical Service must be consulted and document no. PHA2279701 shall be applicable.

Preventive maintenance	Corrective operation	Level	Normal operating conditions					
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
■ Check that the LV connections aren't loose and that they don't show any traces of rust or oxidation	■ Re-tighten connectors if needed.	Ivl 1/2		■		■		■
	■ Clean the connections if needed with a clean and dry cloth	Ivl 3/4						
	■ Change the damaged parts							
■ Verify that on the cables' terminals there aren't any piles of dust, dirt, flaws, traces of flashovers or damages	■ Clean the terminals if needed with a clean cloth	Ivl 1/2		■		■		■
	■ In case of damage, contact SE							
■ Make sure that the apparatus doesn't show any deformations, piles of dust, dirt, or damages	■ If damages are detected on the tank, check the SF6 pressure	Ivl 1/2		■		■		■
	■ Clean the external components with a clean and dry cloth							
■ Check mechanical operations indicated in the instructions manual "installation - operation - maintenance". Check the positioning of the status indicators (Open/Closed),	■ If grease is missing or corroded ► degrease and grease the mobile parts of the operating mechanism.	Ivl 4/5						
	■ If red rust is detected on mobile parts of the operating mechanism:							
	□ 1 - find & treat the origin of the corrosion			■		■		■
	□ 2 - follow up the damage							
	□ 3 - contact SE if the problem increases							
	■ If operating coils are damaged or stuck by rust, it has to be changed (see spare part policy)							
	■ If broken or damaged parts are detected, contact Schneider Electric.							
■ Verify that the geared motor of the CB unit (if present) automatically loads the spring.	■ Check the chain. If needed, degrease and grease it	Ivl 3/4						
	■ Operate the mechanism manually (1 or 2 operations) and test again the controlled geared motorization	Ivl 1/2		■		■		■
	■ Check that the microswitches move in accordance of the main switch position.							
	■ If there is red rust on the motor, it has to be changed (see spare parts policy)							
■ Check that the line control geared motor (if present) automatically provides to open and to close the disconnecter.	■ Check the chain. If needed, degrease and grease it	Ivl 3/4						
	■ Operate the mechanism manually (1 or 2 operations) and test again the controlled geared motorization	Ivl 1/2		■		■		■
	■ Check that the microswitches move in accordance of the main switch position.							
	■ If there is red rust on the motor, it has to be changed (see spare parts policy)							
■ Voltage indicator checking	■ Check that the Voltage indicator's LED are in the same state.	Ivl 1/2		■		■		■
	■ Check the integrity of the wires connected to the bushings	Ivl 3/4						

Preventive maintenance	Corrective operation	Level	Normal operating conditions					
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
■ Check the SF6 pressure (manometer, pressure switch)	■ [0,3 bar ; P (SF6) ; 0,2 bars] (at 20°C R.T & sea level) : Normal pressure ■ [0,2 bar ; P (SF6) ; 0,1 bars] (at 20°C R.T & sea level) : Open the circuit breaker, disconnectors and earthing lines and contact SE for intervention ■ [0,1 bar ; P (SF6) ; 0 bars] (at 20°C R.T & sea level) : Do not operate the RMU. Open the upstream and downstream lines and contact SE for intervention	lvl 1/2		■		■		■
■ Check the interlocks' correct operation, by executing a putting into service operation and a putting out of service operation	■ If damaged/missing components, see spare part policy	lvl 3/4						■
■ Check that the operating times of the opening and closing controls of the CB unit circuit-breaker are comprehended within the correct values	■ Check the fault detection relay settings ■ Operate the op. mechanism manually (1 or 2 times) and control once again the opening and closing times. ■ If grease is missing or corroded, degrease and grease the mobile parts of the operating mechanism ■ If parts are damaged, need SE intervention	lvl 3/4						■
■ Check that the caps are installed properly in the upper bushings on extensible compact version (if they are needed)	■ Re-tighten connectors if needed	lvl 1/2		■		■		■
	■ Clean the connections if needed with a clean and dry cloth	lvl 3/4						
	■ Change the damaged parts	lvl 1/2		■		■		■
	■ Clean the terminals if needed with a clean cloth							
	■ In case of damage, contact SE							

Phase concordance verification



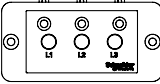
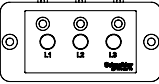
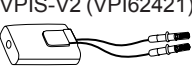
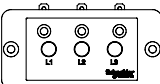
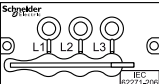
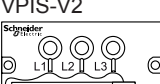
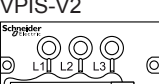
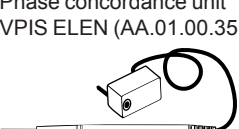
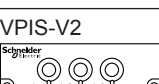
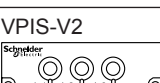
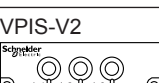
CAUTION

Operation performed undervoltage.

The principle of the phase concordance unit is that it allows a check of the phase concordance between 2 energized functional input units on the same substation. Phase concordance testing must be carried out each time a cable is connected to a functional unit. It is a way of making sure that all three cables are each connected to the corresponding phase of the substation.

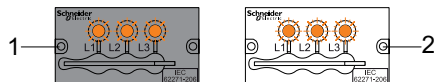
Ø2 mm test probe made of stainless steel. Minimum length: 10 mm. Ø4 mm rigid socket accepting spring-loaded Ø4 mm with rigid insulating sleeve (banana plug).

Choice of phase concordance unit

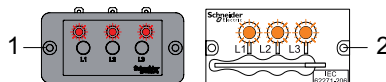
Functional unit 1	Functional unit 2	Phase concordance unit	Compatibility result	Corrective actions
VPIS ELEN 	VPIS ELEN 	Phase concordance unit VPIS-V2 (VPI62421) 	NOT OK	Use a phase concordance unit VPIS ELEN.
VPIS ELEN 	VPIS-V2 		NOT OK	Use the adaptator kit + voltmeter.
VPIS-V2 	VPIS-V2 		OK	
VPIS ELEN 	VPIS ELEN 	Phase concordance unit VPIS ELEN (AA.01.00.35) 	OK	
VPIS ELEN 	VPIS-V2 		NOT OK	Use the adaptator kit + voltmeter.
VPIS-V2 	VPIS-V2 		NOT OK	Use a phase concordance unit V2.
VPIS ELEN 	VPIS-V2 	Adaptator kit + voltmeter (EM558437) 	OK	

Check before phase concordance test

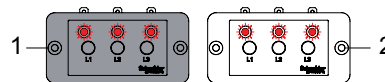
Case n° 1



Case n° 2



Case n° 3



Test	Result	Actions
Checking of the VPIS units of functional unit 1 and 2.	The 3 indicator lights of each VPIS are on.	The 2 functional units are energised, the VPIS units are operating and the check can continue.
	The 3 indicator lights of the VPIS are off.	The functional unit is not energised or the VPIS is defective.
	1 or 2 indicator lights unlit.	1 or 2 phases are not energised or the VPIS is defective.
Checking of the phase concordance units		You can test.

Rules of choosing phase concordance unit



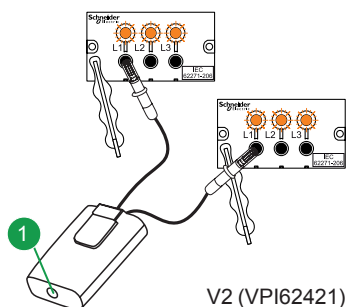
CAUTION

Voltmeter is not supplied by Schneider Electric.

Balanced phases: the phase concordance unit light (1) is unlit. (Except **Case 3**: refer to «Setting the voltmeter and connecting to the voltage presence boxes»)

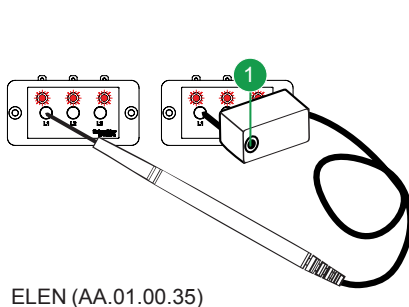
Unbalanced phases: the phase concordance unit light (1) is lit. (Except **Case 3**: refer to «Setting the voltmeter and connecting to the voltage presence boxes»)

Case n° 1



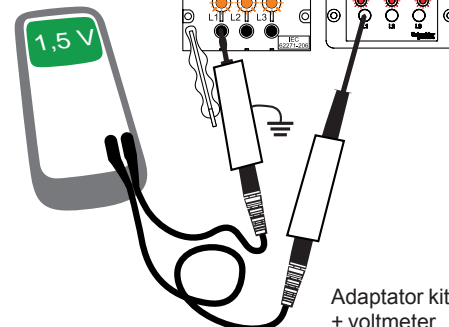
V2 (VPI62421)

Case n° 2



ELEN (AA.01.00.35)

Case n° 3



Adaptator kit
+ voltmeter

Phase concordance unit test (with V2 and ELEN)

The 3 indicator lights of the 2 VPIS are lit and the phase concordance unit is correct, meaning that phase concordance test can be performed.

 *glossary*

 *phase concordance unit LED lit (unbalanced phases)*

 *LED unlit*

Functional unit n°1																		
			L3	L2	L1	L3	L2	L1	L3	L2	L1	L3	L2	L1	L3	L2	L1	L3
Functional unit n°2	L1																	
	L2																	
	L3																	
Conclusion regarding phase concordance		Connection is satisfactory.			Change the position of each MV cable on one of the 2 functional units.			Change the position of each MV cable on one of the 2 functional units.			Reverse the MV cables connected to L1 and L3 on one of the 2 functional units.			Reverse the MV cables connected to L2 and L3 on one of the 2 functional units.			Reverse the MV cables connected to L1 and L2 on one of the 2 functional units.	

Voltmeter adapter kit



Description:
The voltmeter adapter kit is used to test phase matching between VPIS V2 and VPIS ELEN. This kit is only used to check phase matching: it is therefore not used to measure or deduce the voltage present on the medium-voltage network.

Connecting the adapters:

- The two test clips have to be connected to the earth of each cubicle to be tested.
- Connect the two adapters to the two main plugs on the voltmeter.



Setting the voltmeter and connecting to the voltage presence boxes:

PM104654



- Choose V AC (or V ~ according to the devices)
- Connect each of the adapters to output L1 on the two voltage presence indicators to be tested.
- **IMPORTANT:** this phase matching check can only be performed:
 - If the medium-voltage network supply is on.
 - If the voltage presence indicator lights are on.
- The mismatch threshold is 3 V AC:
 - Measured voltage less than 3 V AC ► match
 - Measured voltage greater than 3 V AC ► mismatch
- **IMPORTANT:** all the combinations shown in the matrix below must be tested to as certain whether the adapters and the voltmeter are operating correctly.

		VPISA		
		L1	L2	L3
VPISA	L1	< 3 VAC	> 3 VAC	> 3 VAC
	L2	> 3 VAC	< 3 VAC	> 3 VAC
	L3	> 3 VAC	> 3 VAC	< 3 VAC

P1000502



PM104653



Replacement of the three fuses

Intervention	Busbar	Cables	Load Break Switch	Earthing switch
Normal	de-energized	de-energized	open	closed
Possible	energized	de-energized	open	closed

Locking out the Functional Unit

All locking out operations must be performed according to the particular rules for the network concerned.

Tools required:

- leather gloves
- compartment key
- small, flatheaded screwdriver
- fuse holder cover lever.

Parts required:

- 3 fuses with the same reference (verify values in accordance with the transformer power)



DANGER

Before proceeding to carry out the operations for removing/installing the parts composing the FLUSARC switchgear, be sure that the voltage was cut out to the primary circuit and to the auxiliary one.



See the corresponding chapter in the Installation Manual for the characteristics of the fuses.

Replacement of a fuse

NOTICE

For an apparently single phase fault, it is imperative that all 3 fuses be replaced.

CAUTION

The body of a fuse can become very hot following a short circuit. Take standard precautions (leather gloves) before starting work.

NOTICE

Whenever changing or fitting a fuse, close the compartment immediately afterwards to avoid letting dust and humidity enter.

Transformer protection operating mechanism restore

- Insert the operating lever into the switch disconnecter control.

- Turn the lever counter clockwise, up to reach the end of stroke. The mimic diagram indicator **will remain in the open line position** .

- Act on the interlock, by shifting it upwards.



SPL9109



- Insert the operating lever into the earthing switch control.

SPL9110



- Grasp the lever with both hands.
- Turn the lever clockwise, up to reach the end of stroke.
- The mimic diagram indicator **will turn from the open earth position**  **to the closed earth position** .
- Extract the operating lever.

SPL9200



- As the function's earthing switch is closed, act on the interlock of the door, by shifting it rightwards.

PM104639



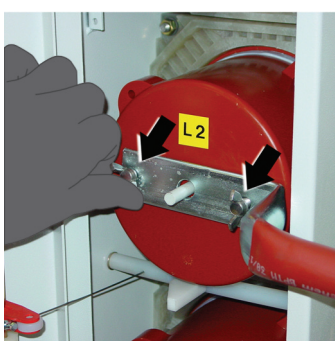
- Open the fuse compartment door by unscrewing the 3 hexagonal screws and by rotating counterclockwise the big black key.

SPL9202



- Fully open the fuses compartment door, in order to restore the correct position of the rod placed on the fuses compartment door.

KJA74KK



- Apply the lever to the fuseholder cover and screw into the two holes predisposed on the cover the two finned screws.

KJA75KK



- Turn the lever counter clockwise for a fourth of a revolution.

KJA76KK



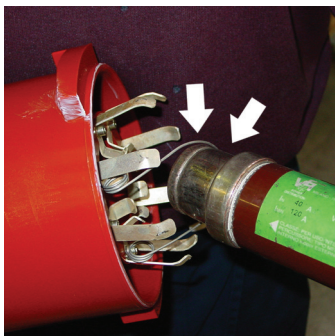
- Extract the cover with the fuse.

KJA7700



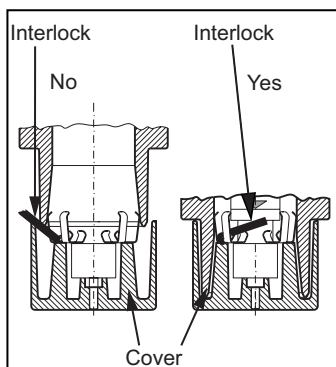
- Remove the fuse from the cover.

KJAJ78KK



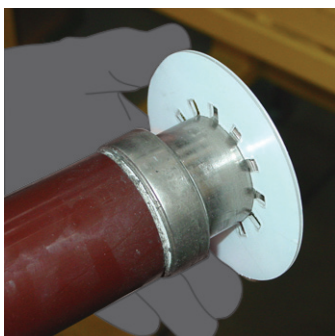
- Insert the new fuse from the striker side on the cover, by paying attention that the fuse base gets into the spring acting as an interlock.

KJAJ6000



- The figure shows the correct positioning of the cover interlock.

KJAJ7900



- From the fuse opposite side, insert the centering disc.

KJAJ75aKK



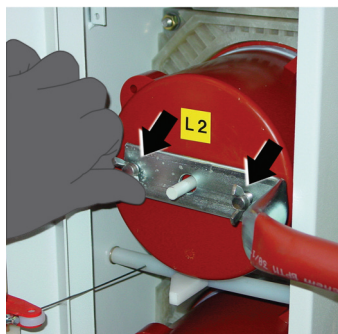
- Insert the cover with the fuse.

KJAJ75aKK



- Turn the lever clockwise and lock the cover.

KJA74KK



- Unscrew the wing screws and remove the lever from the cover.

PM104639



- Close the fuse compartment door by screwing the 3 hexagonal screws and by rotating counterclockwise the big black key.

**DANGER**

The operations indicated in this Paragraph must be exclusively carried out by specialist technicians, in full observance of all the rules in force about electrical safety.

- Before proceeding to execute any operation on the apparatus, make sure that the vacuum circuit breaker is open and that the opening and closing springs inside the CB unit are unloaded, that the switch disconnectors are open and that the earthing switch is positioned on "earth".
- Before intervening on the apparatus, bring into safety conditions the installation part on which it is necessary to work.

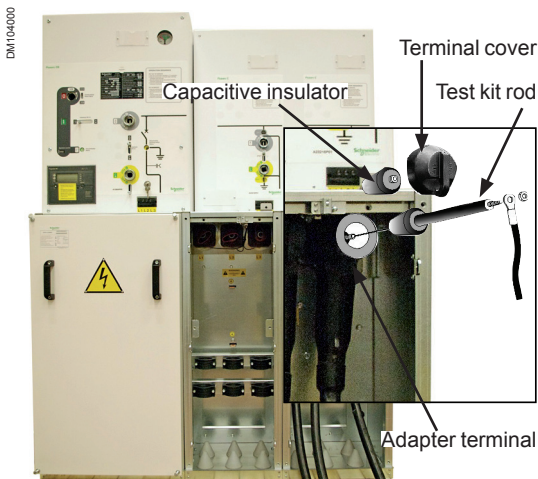


Implement lockout rules in accordance with the regulations specific to each network.

Cable testing with plugin "T1" piece connectors



- Remove the lower protective box.



- Remove the terminal cover from the adapter terminal.
- Unscrew the clamping screw of the capacitive insulator and remove it.
- Insert the kit rod for executing the test.
- Open the earthing switch and carry out the test by following the instructions given by the test kit supplier.
- Act in reverse sequence order for restoring the service.

General characteristics

Type of Insulating Gas:

Sulphur Hexafluoride (SF₆) – iaw IEC 60376.

Each switchgear comprises a tank, filled with SF₆ gas, designed as a pressurised, sealed unit system in accordance with the requirements of IEC 62271-1.

During the expected operating life and under normal operating conditions the gas should not need topping up.

The GWP (Global Warming Potential) of the SF₆ gas is 22 800.

⚠ WARNING

Never pierce the pressurised tank!

⚠ DANGER

Never attempt to open the tank.

⚠ DANGER

Never try to refill the tank

Filling pressure



At 20°C the filling relative pressure is 0.030 MPa.

It contains greenhouse fluorine gas controlled.

FLUSARC functions

The loadbreak switches can only be manoeuvred whilst the needle is in the green sector (to the right) corresponding to ambient temperatures.

Safety instructions



FLUSARC CB



WARNING

This equipment contains SF₆, a powerful greenhouse gas that is harmful to the environment. Prior to disposal of equipment at end-of-life, the SF₆ gas must be recovered in order for it to be recycled, reclaimed or destroyed.

- **DO NOT** carry out any dismantling operations unless authorized.
- **DO NOT** handle SF₆ gas unless certified.
- **DO NOT** release SF₆ gas to the atmosphere.

Penalties may apply according to local regulations and rules (Regulation (EU) N°517/2014 for all European countries).
Schneider Electric offers a complete end-of-life service to dismantle and recycle Medium Voltage equipment and safely manage SF₆ gas. This service is compliant with IEC 62271-4 and conforms to local regulations.
Please contact Schneider Electric for details.

SF₆ is a powerful greenhouse gas having a Global Warming Potential of 22 800 compared to CO₂ (in accordance with the 4th IPCC assessment report).

! DANGER

- Do not dismantle the mechanical control mechanism springs without releasing the device.
- Never attempt to open the sealed tank of a Functional Unit.

Dismantling of the equipment service

Consult Schneider Electric for all decommissioning services.

- Remove all electrical equipment (coils, motors, etc.).
- On disassembly, the materials must be sorted and sent on via the appropriate recycling channels.

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