



Metal-clad switchgear, type AHA



Latest Amendment No. 532 681, Edition 02/05
to the Operating Instructions No. 531 681, Edition 04/00

Replacing fuses at the voltage transformer within the cable compartment

The IEC Publication 60282-1 recommends to replace all the three fuses even if only one of them has operated in a three-phase system.



**Replacing of fuses must
only be done in dead
state.**

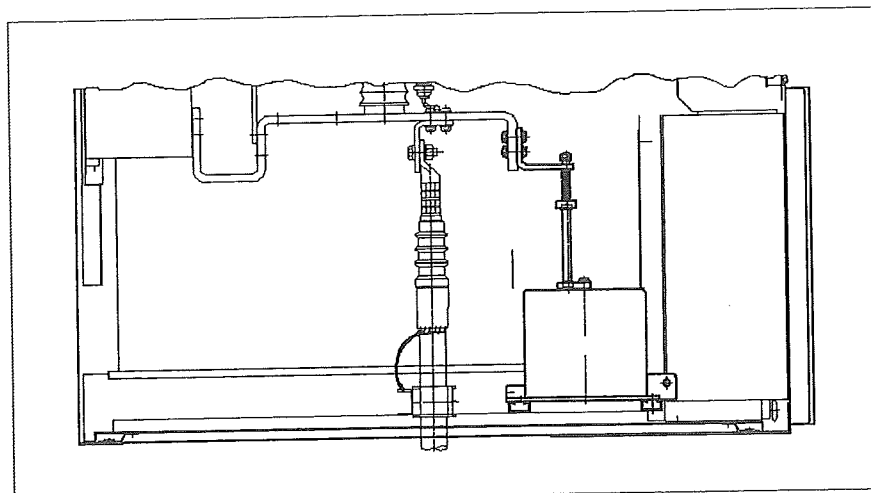
Establish the dead state before commencing any work and make it sure for the work place over the duration of the works according to the five safety rules:

- Isolating from the supply;
- Locking against remaking;
- Checking the dead state;
- Earthing and short-circuiting
- Covering or blocking adjoining live parts.



**Fuses may be hot. Risk of
burns.**

- Lift the movable spring plate.
- Remove the fuses using fuse tongs.
- Grease the contact surfaces of the brand-new fuses with contact lubricant KL.
- Insert the new fuses using fuse tongs.



- 1 Movable spring plate
- 2 Fuse
- 3 Voltage transformer

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Routine Test Report

Date: 28.09.05



Customer:		RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice		type designation	AHA 12-50-09
Equipment:		Number of this standard	IEC 62271-200 / 2003
		Number of this standard	IEC 60298 / 1994
Customer no. =L01 Production no. TC436619-1 Type designation AHA 12-50-09 Year of production 2005		voltage - kV	12
		withst. impulse volt. - kV	75
Purchase order:		withst.power frequency volt.kV	28
		frequency - Hz	50
US Steel Kosice Purchase order no. 9781 Customer ref. 3234-4500066080		operating current outgoing - A	4000
		short-time withstand c. - kA	50
		short circuit duration - sec.	3
		Internal arc classification	IEC 60298
		operating current busbar - A	4000
		operating/installation instr.	531681/531686
		-	=L01
		Purchase order no.	009781

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:	RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice	type designation	AHA 12-50-09
Equipment:	Number of this standard	IEC 62271-200 / 2003
	Number of this standard	IEC 60298 / 1994
Customer no. =L02 Production no. TC436636-1 Type designation AHA 12-50-09 Year of production 2005	voltage - kV	12
	withst. impulse volt. - kV	75
Purchase order:	withst.power frequency volt.kV	28
	frequency - Hz	50
US Steel Kosice Purchase order no. 9781 Customer ref. 3234-4500066080	operating current outgoing - A	1250
	short-time withstand c. - kA	50
	short circuit duration - sec.	3
	Internal arc classification	IEC 60298
	operating current busbar - A	4000
	operating/installation instr.	531681/531686
	-	=L02
	Purchase order no.	009781

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:		RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice		type designation	AHA 12-50-09
Equipment:		Number of this standard	IEC 62271-200 / 2003
		Number of this standard	IEC 60298 / 1994
Customer no. =L03 Production no. TC436670-1 Type designation AHA 12-50-09 Year of production 2005		voltage - kV	12
		withst. impulse volt. - kV	75
		withst. power frequency volt. kV	28
		frequency - Hz	50
		operating current outgoing - A	1250
		short-time withstand c. - kA	50
		short circuit duration - sec.	3
		Internal arc classification	IEC 60298
		operating current busbar - A	4000
		operating/installation instr.	531681/531686
Purchase order:		-	=L03
		Purchase order no.	009781
US Steel Kosice Purchase order no. 9781 Customer ref. 3234-4500066080			

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:		RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice		type designation	AHA 12-50-09
Equipment:		Number of this standard	IEC 62271-200 / 2003
		Number of this standard	IEC 60298 / 1994
Customer no. =L04 Production no. TC436653-1 Type designation AHA 12-50-09 Year of production 2005		voltage - kV	12
		withst. impulse volt. - kV	75
Purchase order:		withst. power frequency volt. kV	28
		frequency - Hz	50
US Steel Kosice Purchase order no. 9781 Customer ref. 3234-4500066080		operating current outgoing - A	1250
		short-time withstand c. - kA	50
		short circuit duration - sec.	3
		Internal arc classification	IEC 60298
		operating current busbar - A	4000
		operating/installation instr.	531681/531686
		-	=L04
		Purchase order no.	009781

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:	RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice	type designation	AHA 12-50-09
Equipment:	Number of this standard	IEC 62271-200 / 2003
	Number of this standard	IEC 60298 / 1994
Customer no. =L05 Production no. TC436687-1 Type designation AHA 12-50-09 Year of production 2005	voltage - kV	12
	withst. impulse volt. - kV	75
Purchase order:	withst. power frequency volt. kV	28
	frequency - Hz	50
US Steel Kosice Purchase order no. 9781 Customer ref. 3234-4500066080	operating current outgoing - A	1250
	short-time withstand c. - kA	50
		short circuit duration - sec. 3
		Internal arc classification IEC 60298
		operating current busbar - A 4000
		operating/installation instr. 531681/531686
		- =L05
		Purchase order no. 009781

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:		RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice		type designation	AHA 12-50-09
Equipment:		Number of this standard	IEC 62271-200 / 2003
		Number of this standard	IEC 60298 / 1994
Customer no. =L06 Production no. TC436704-1 Type designation AHA 12-50-09 Year of production 2005		voltage - kV	12
		withst. impulse volt. - kV	75
Purchase order:		withst.power frequency volt.kV	28
		frequency - Hz	50
US Steel Kosice Purchase order no. 9781 Customer ref. 3234-4500066080		operating current outgoing - A	2500
		short-time withstand c. - kA	50
		short circuit duration - sec.	3
		Internal arc classification	IEC 60298
		operating current busbar - A	4000
		operating/installation instr.	531681/531686
		-	=L06
		Purchase order no.	009781

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:		RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice		type designation	AHA12-50-09
		Number of this standard	IEC 62271-200 / 2003
		Number of this standard	IEC 60298 / 1994
		voltage - kV	12
		withst. impulse volt. - kV	75
		withst. power frequency volt. kV	28
		frequency - Hz	50
		operating current outgoing - A	1250
		short-time withstand c. - kA	50
		short circuit duration - sec.	3
		Internal arc classification	IEC 60298
		operating current busbar - A	4000
		operating/installation instr.	531681/531686
		-	=L07
		Purchase order no.	009781
Equipment:			
Customer no.	=L07		
Production no.	TC436721-1		
Type designation	AHA12-50-09		
Year of production	2005		
Purchase order:			
US Steel Kosice			
Purchase order no. 9781			
Customer ref. 3234-4500066080			

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:		RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice		type designation	AHA 12-50-09
Equipment:		Number of this standard	IEC 62271-200 / 2003
		Number of this standard	IEC 60298 / 1994
Customer no. =L08 Production no. TC436738-1 Type designation AHA 12-50-09 Year of production 2005		voltage - kV	12
		withst. impulse volt. - kV	75
Purchase order:		withst.power frequency volt.kV	28
		frequency - Hz	50
US Steel Kosice Purchase order no. 9781 Customer ref. 3234-4500066080		operating current outgoing - A	4000
		short-time withstand c. - kA	50
		short circuit duration - sec.	3
		Internal arc classification	IEC 60298
		operating current busbar - A	4000
		operating/installation instr.	531681/531686
		-	=L08
		Purchase order no.	009781

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:		RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice		type designation	AHA 12-50-09
		Number of this standard	IEC 62271-200 / 2003
		Number of this standard	IEC 60298 / 1994
		voltage - kV	12
		withst. impulse volt. - kV	75
		withst.power frequency volt.kV	28
		frequency - Hz	50
		operating current outgoing - A	4000
		short-time withstand c. - kA	50
		short circuit duration - sec.	3
		Internal arc classification	IEC 60298
		operating current busbar - A	4000
		operating/installation instr.	531681/531686
		-	=L09
		Purchase order no.	009781
Equipment:			
Customer no.	=L09		
Production no.	TC436755-1		
Type designation	AHA 12-50-09		
Year of production	2005		
Purchase order:			
US Steel Kosice			
Purchase order no. 9781			
Customer ref. 3234-4500066080			

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:	RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice	type designation	AHA12-50-09
Equipment:	Number of this standard	IEC 62271-200 / 2003
	Number of this standard	IEC 60298 / 1994
Customer no. =L10 Production no. TC436772-1 Type designation AHA12-50-09 Year of production 2005	voltage - kV	12
	withst. impulse volt. - kV	75
Purchase order:	withst.power frequency volt.kV	28
	frequency - Hz	50
US Steel Kosice Purchase order no. 9781 Customer ref. 3234-4500066080	operating current outgoing - A	4000
	short-time withstand c. - kA	50
	short circuit duration - sec.	3
	Internal arc classification	IEC 60298
	operating current busbar - A	4000
	operating/installation instr.	531681/531686
	-	=L10
	Purchase order no.	009781

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:		RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice		type designation	AHA12-50-09
Equipment:		Number of this standard	IEC 62271-200 / 2003
		Number of this standard	IEC 60298 / 1994
Customer no. =L11 Production no. TC436789-1 Type designation AHA12-50-09 Year of production 2005		voltage - kV	12
		withst. impulse volt. - kV	75
Purchase order:		withst. power frequency volt. kV	28
		frequency - Hz	50
US Steel Kosice Purchase order no. 9781 Customer ref. 3234-4500066080		operating current outgoing - A	4000
		short-time withstand c. - kA	50
		short circuit duration - sec.	3
		Internal arc classification	IEC 60298
		operating current busbar - A	4000
		operating/installation instr.	531681/531686
		-	=L11
		Purchase order no.	009781

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:	RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice	type designation	AHA 12-50-09
Equipment:	Number of this standard	IEC 62271-200 / 2003
	Number of this standard	IEC 60298 / 1994
Customer no. =L12 Production no. TC436797-1 Type designation AHA 12-50-09 Year of production 2005	voltage - kV	12
	withst. impulse volt. - kV	75
Purchase order:	withst. power frequency volt. kV	28
	frequency - Hz	50
US Steel Kosice Purchase order no. 9781 Customer ref. 3234-4500066080	operating current outgoing - A	4000
	short-time withstand c. - kA	50
	short circuit duration - sec.	3
	Internal arc classification	IEC 60298
	operating current busbar - A	4000
	operating/installation instr.	531681/531686
	-	=L12
	Purchase order no.	009781

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:		RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice		type designation	AHA 12-50-09
Equipment:		Number of this standard	IEC 62271-200 / 2003
		Number of this standard	IEC 60298 / 1994
Customer no. =L13 Production no. TC436814-1 Type designation AHA 12-50-09 Year of production 2005		voltage - kV	12
		withst. impulse volt. - kV	75
Purchase order:		withst.power frequency volt.kV	28
		frequency - Hz	50
US Steel Kosice Purchase order no. 9781 Customer ref. 3234-4500066080		operating current outgoing - A	2500
		short-time withstand c. - kA	50
		short circuit duration - sec.	3
		Internal arc classification	IEC 60298
		operating current busbar - A	4000
		operating/installation instr.	531681/531686
		-	=L13
		Purchase order no.	009781

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:		RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice		type designation	AHA 12-50-09
Equipment:		Number of this standard	IEC 62271-200 / 2003
		Number of this standard	IEC 60298 / 1994
Customer no. =L14 Production no. TC436831-1 Type designation AHA 12-50-09 Year of production 2005		voltage - kV	12
		withst. impulse volt. - kV	75
Purchase order:		withst.power frequency volt.kV	28
		frequency - Hz	50
US Steel Kosice Purchase order no. 9781 Customer ref. 3234-4500066080		operating current outgoing - A	4000
		short-time withstand c. - kA	50
		short circuit duration - sec.	3
		Internal arc classification	IEC 60298
		operating current busbar - A	4000
		operating/installation instr.	531681/531686
		-	=L14
		Purchase order no.	009781

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)

Routine Test Report

Date: 28.09.05



Customer:		RATED VALUE:	
AIR LIQUIDE AGS GmbH Site manager Mr. Josef Gvora Job Site of AIR Separation Unit No. 9 SK-04454 Kosice		type designation	AHA12-50-09
Equipment:		Number of this standard	IEC 62271-200 / 2003
		Number of this standard	IEC 60298 / 1994
Customer no. =L15 Production no. TC436848-1 Type designation AHA12-50-09 Year of production 2005		voltage - kV	12
		withst. impulse volt. - kV	75
Purchase order:		withst.power frequency volt.kV	28
		frequency - Hz	50
US Steel Kosice Purchase order no. 9781 Customer ref. 3234-4500066080		operating current outgoing - A	1250
		short-time withstand c. - kA	50
		short circuit duration - sec.	3
		Internal arc classification	IEC 60298
		operating current busbar - A	4000
		operating/installation instr.	531681/531686
		-	=L15
		Purchase order no.	009781

Tests passed acc. to IEC:

Power frequency high voltage test on main circuit (IEC 60298/7.1)
Dielectric test on auxiliary and control circuits (IEC 60298/7.2)
Mechanical operation test. (IEC 60298/7.102))
Test of the auxiliary electrical devices. (IEC 60298/7.105)
Verification of correct wiring. (EN 60298/7.106)
Test of the capacitive voltage indication system (IEC 60243-5)