



GIS-L3-ELK14_300&ELK3_420-Training Agenda

Level 3 Field Service Engineer Training

TRAINING CENTER SWITZERLAND – COURSE DESCRIPTION

PREPARED BY	STATUS	SECURITY LEVEL		
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APPROVED BY	APPROVAL DATE			
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OWNER	DOCUMENT KIND			
Head of Training Center	Agenda			
TITLE				
GIS-L3-ELK14_300&ELK3_420-Training Agenda				
OWNING ORGANIZATION	DOCUMENT ID	REV.	LANG.	PAGE
CH-Zurich-2657-Field Service	2GHE004272	B	en	1/6
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Course goal:

The course conveys profound knowledge on the assembly of GIS type ELK-14 / 300 and ELK-3 / 420

Main learning objectives:

- Understand the functions of all GIS components of ELK-14 / 300 and ELK-3 / 420
- Known about all relevant documents (drawings, instructions, protocols) to perform an installation
- Perform a complete GIS Bay ELK-14 / 300 assembly

Prerequisites:

- SF₆-Gas-handling course with certificate
- Heavy load course with certificate
- Good English skills (written and spoken)
- Ability to read wiring diagrams is required
- On-site experience on GIS Installation and/or Commissioning
- Attended the local required Health & Safety Training
- First aid course with certificate

Topics:

- Circuit-breaker and breaker operating mechanism
- Disconnecter, earthing switch, fast acting earthing switch
- Statically components like connecting elements, busbars
- Lateral dismantling elements, compensators
- SF₆-to-air bushing
- Surge arrester
- Site assembly instructions

Assembly steps and procedures

- Overview and detailed drawings of assembly units, packing list and layouts
- Positioning and alignment of CB
- Coupling and alignment of assembly units, busbars, compensators and exit bus
- Coupling and adjustment of transmission shafts of disconnecter, earthing switch, fast acting earthing switch
- Corrosion protection and flange greasing
- Steel structures
- Earthing connections
- Protocols and Reports

This is a theoretical and practical training course.**Certification:**

A confirmation will be issued after successful participation in this course, as part of the certification process.

Within a 12 months period, an on-site assessment must be carried out along with a final review to complete certification.

Duration:

20 days

Enrolments:

Send your request to

GIS-GCB_Training@hitachienergy.com

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Approved	Internal	2GHE004272	B	en	2/6

Day	Subject	Location
1	Welcome / Introduction to Hitachi Power Grids Switzerland	Classroom
	<ul style="list-style-type: none"> • Training Introduction / Presentation • Safety Induction • Certification Process • ENERGY GIS-Product Portfolio 	
2	GIS component ELK-14/300 and ELK-3/420	Classroom
	<ul style="list-style-type: none"> • Circuit breaker SP14 and SP3 / HMB drive • Disconnecter/ earthing switch TK and BAC drive • Fast acting earthing switch BAE • Connecting elements and components • Interfaces HK, HT, HB/HD 	
3	GIS component ELK-14/300 and ELK-3/420 Continuation	Classroom
	<ul style="list-style-type: none"> • Continuation components • Manual operation and locking device for disconnectors, earthing switches and fast acting earthing switches • Gas monitoring system • Density Monitor 	
4	GIS component ELK-14/300 and ELK-3/420 Continuation	Classroom
	<ul style="list-style-type: none"> • Continuation components • Manual operation and locking device for disconnectors, earthing switches and fast acting earthing switches • Gas monitoring system • Density Monitor • Factory tour to respective assembly line 	
5	Preparation and Unpacking of Assembly-Units	Classroom Training field
	Preparation of installation	
5	Place and level the CB	Training field
	<ul style="list-style-type: none"> • How to set up a construction site (site office and GIS building) • First needed documents to start the installation • Packing list • GIS drawings • GIS layouts 	
5	Measuring of the ground floor	Training field
	<ul style="list-style-type: none"> • Marking of 'X' and 'Y' axes • Setting and adjusting of CB-pole frame • Alignment of the CB at determined 'X' and 'Y' axes 	

Day	Subject	Location
Preparation and Unpacking of Assembly-Units		
6	Continuation of place and level the CB <ul style="list-style-type: none"> Measuring of the ground floor Marking of 'X' and 'Y' axes Setting and adjusting of CB-pole frame Alignment of the CB at determined 'X' and 'Y' axes 	Training field
7	<ul style="list-style-type: none"> Installation of Assembly-Units Basic steps for cleaning and installing the units Install of all three riser units Install of all three CT's (with regarding of CT polarity) Theoretical Part Installation Manual "Installation and Commissioning Procedure" 	Classroom Training field
Preparation and Unpacking of Assembly-Units		
Installation of Assembly-Units		
8	<ul style="list-style-type: none"> Basic steps for cleaning and installing the units Install of all three riser units Install of all three CT's (with regarding of CT polarity) 	Classroom Training field
Theoretical Part		
<ul style="list-style-type: none"> Installation Manual "Installation and Commissioning Procedure" 		
Installation of Assembly-Units		
9	<ul style="list-style-type: none"> Install of all three cable outgoing units, which contain a combined disconnect/earthing switch and fast acting earthing switch Align the units and assembling, incl. adjusting of the steel support 	Classroom Training field
Theoretical Part		
<ul style="list-style-type: none"> Installation Manual "Instructions" 		
Preparation and Unpacking of Assembly-Units		
Installation of Assembly-Units		
10	<ul style="list-style-type: none"> Install of BB units, incl. assembling and adjusting of the steel support 	Classroom Training field
Theoretical Part		
<ul style="list-style-type: none"> Installation Manual "Instructions" 		

Day	Subject	Location
11	Installation of Assembly-Units	Classroom Training field
	<ul style="list-style-type: none"> Install of BB units, incl. assembling and adjusting of the steel support 	
	Theoretical Part <ul style="list-style-type: none"> Installation Manual "Instructions" 	
12	Preparation and Unpacking of Assembly-Units	Classroom Training field
	Installation of Assembly-Units	
	<ul style="list-style-type: none"> Install of BB units, incl. assembling and adjusting of the steel support 	
13	Theoretical Part	Classroom Training field
	<ul style="list-style-type: none"> Installation Manual "Protocols" 	
	Preparation and Unpacking of Assembly-Units	
14	Installation of Assembly-Units	Classroom Training field
	<ul style="list-style-type: none"> Install of HK units, incl. assembling and adjusting of the steel support 	
	Theoretical Part <ul style="list-style-type: none"> Measurements (Gas-quality, primary resistance) Schematic Diagram, cable list, cable glands, cable tray arrangement 	
15	Installation of drive shafts / Hands on VQ	Classroom Training field
	<ul style="list-style-type: none"> Install of DV-equipment according to instruction Disassembly and assembly of the separable connector VQ 	
	Theoretical Part <ul style="list-style-type: none"> Reporting (Field service report, Daily site report, Manpower list) 	
15	Disassembly and packing of Assembly-Units	Classroom Training field
	<ul style="list-style-type: none"> Disassembly of HK units Disassembly of BB units 	
	Theoretical Part <ul style="list-style-type: none"> Red marks, VP, shares of supplies 	

Day	Subject	Location
16	Disassembly and packing of Assembly-Units	Classroom Training field
	<ul style="list-style-type: none"> Pack and upload of HK units Pack and upload of BB units Disassembly of BB units 	
	Theoretical Part <ul style="list-style-type: none"> Earthing details 	
17	Disassembly and packing of Assembly-Units	Classroom Training field
	<ul style="list-style-type: none"> Pack and upload of BB units Disassembly of BB units Disassembly of cable outgoing units 	
	Theoretical Part <ul style="list-style-type: none"> TA Update, new and updated Instructions 	
18	Disassembly and packing of Assembly-Units	Classroom Training field
	<ul style="list-style-type: none"> Pack and upload of cable outgoing units Disassembly of CT's Disassembly of riser units 	
	Theoretical Part <ul style="list-style-type: none"> Overview of handed out documents on the memory stick 	
19	Disassembly and packing of Assembly-Units	Training field
	<ul style="list-style-type: none"> Pack and upload of CT's Pack and upload of riser units Pack and upload of the steel supports 	
	Cleaning up the site	
20	Exam	Classroom
	Final Discussion	
	Farewell	