

LTB Installation & Pre-Commissioning Training

Level 3

LTB-L3-LTA & LTB E1/D1 with MSD1 & FSA 1 – Training Agenda

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OWNER Head of Training Function	DOCUMENT KIND Agenda			
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OWNING ORGANIZATION SE-Ludvika-2657-Field Service Hitachi Energy	DOCUMENT ID 2GHE009658	REV. A	LANG. en	PAGE 1/4
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Course goal:

The course aims at how to perform installation and commissioning, basic troubleshooting, basic analytics and basic repairs.

Main learning objectives:

- ❖ Comprehend the critical elements of erection commissioning, troubleshooting, operation and maintenance of HV circuit breakers.
- ❖ Understand design principles and critical elements.

Prerequisites:

- ❖ Basic knowledge of power systems

Topics:

- ❖ On-site health and safety practices
- ❖ Product description & functionality
- ❖ Installation & Gas handling
- ❖ Circuit diagram & Connection points
- ❖ Pre-commissioning & Basic troubleshooting
- ❖ Maintenance schedule
- ❖ Operating mechanism basic repairs
- ❖ Circuit breaker Installation
- ❖ Circuit breaker basic repairs and adjustments
- ❖ Pre-commissioning & Basic troubleshooting / Analytics

Assembly steps and procedures:

- ❖ Unpacking and inspection of material
- ❖ Installation of steel structure
- ❖ Installation of circuit breaker and operating mechanism
- ❖ Adjustments after installation
- ❖ Pressurizing Circuit breaker
- ❖ Basic troubleshooting
- ❖ Pre-commissioning test.

This is a theoretical and practical training course.

LTA & LTB E1/D1 with MSD1 & FSA1

Certification:

Follows the Hitachi Energy guidelines for certification according to respective certification policy.

Confirmation of attendance will be issued on training completion.

Duration:

5 (Five) days

Enrollments:

Send your request to

se-ltb-training@hitachienergy.com

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Day	Subject	Location
1	Welcome / Introduction to Hitachi Energy Sweden LTB Product Portfolio.	Classroom
	<ul style="list-style-type: none"> ❖ Training Introduction / Presentation (Presentation (Short introduction of the presenter, attendees, the curriculum, training and specific circuit breaker type). ❖ Safety Induction (The participant should be acquainted and understand local and site-specific rules & legislation and comply with them). ❖ Certification Process ❖ Hitachi Energy Sweden LTB Product Portfolio. 	
	Product overview and components	
2	<ul style="list-style-type: none"> ❖ Description of circuit breaker parts, puffer type and its function including auxiliary equipment, such as density monitors, corona rings or pre-insertion resistors ❖ Description of operating mechanism common parts and its function. ❖ SF6-Gas handling and the impact of the greenhouse effect. ❖ Maintenance intervals and procedures for maintenance category A & B. ❖ Circuit diagram fundamentals. 	Classroom
	Documentation	
	Unpacking and inspection of material	
3	<ul style="list-style-type: none"> ❖ How to transport CB's and operating mechanisms, for example transport pressure and uncharged springs. ❖ How to inspect the circuit breaker and operating mechanism after delivery to site and before installation ❖ Check that all parts (bolts, corona rings, etc.) are delivered as per order. ❖ Storage conditions for the Circuit breaker, operating mechanism and spare parts. 	Classroom
	Installation of steel structure	
	<ul style="list-style-type: none"> ❖ Checklist for installation ❖ How to install steel structure and tolerances. Tips and tricks of installation ❖ How to lift and install the circuit breaker on top of the steel structure and connect eventual rod system after lifting. ❖ How to install density switches and other equipment. 	
3	Adjustments after installation	Classroom
	<ul style="list-style-type: none"> ❖ How to adjust rod system, joint screw and to align the circuit breaker in contact position. ❖ How to adjust eventual rods in installation. 	

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Day	Subject	Location
4	Pressurizing Circuit Breaker	Training center
	<ul style="list-style-type: none"> ❖ How to connect filling equipment to pressurize circuit breaker and to correct pressure. ❖ Basic troubleshooting (Mechanical and electrical). 	
5	Pre-commissioning	Training center
	<ul style="list-style-type: none"> ❖ Inspection of installation according to product manual (Gas pressure, alignment etc.) ❖ Introduction to testing equipment for pre-commissioning test ❖ Pre-commissioning test according to product manual and standards. 	
	Week Review	
	Q and A session	

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