Objectives:	Participants gain skills in 1. Build an electrical two-way lighting circuit 2. Observation and application of measures for occupational health and safety and accident prevention regulations. 3. Observation and application of environmental protection and rational use of material resources and energy. 4. Planning and controlling structured work processes, controlling and evaluating work results 4.1 Preparing workstation with consideration of the work task 4.2 Planning and defining work steps and procedures 4.3 Arrange work tasks for teamwork 4.4 Arrange for division of work 4.5 Read and interpret written technical information related to the work task 4.6 Apply verbal and written practices of communication 4.7 Select and use appropriate equipment & tools 4.8 Demonstrate knowledge and skills for installation of an electrical two-way lighting circuit (board assembly) - Fix all components on a wooden board - Lay the YSLY cable - Wire the junction box, lamp and the switches - Connect the individual components by connecting the cables - Check the wiring (continuity tester) 4.9 Learn how to connect the system correctly to the power grid 4.10 Demonstrate knowledge and skills for commissioning and operation of the two-way lighting circuit 4.11 Demonstrate knowledge and skills for electrical circuit values measurement 4.12 Cleaning of installation site 5. Maintenance and servicing of tools & equipment 5.1 Cleaning, maintaining and preserving tools & equipment
Duration:	120 minutes
Material:	Whiteboard/Blackboard or handout of exercise description D_HO_PE2_Work description- Two-way lighting circuit D_HO_Last minute risk assessment D_HO_Safe electric isolation procedure D_HO_PE2_Two-way lighting circuit installation & wiring diagram D_HO_Two-pole voltage tester manual
Tools & equipment:	1. 8 x wooden boards 1000mm x 600mm; 2. 8 x Lamp socket, wet room, surface mounted 3. 16 x Terminal board 4. 8 x Junction box, wet room, surface mounted 5. 16 x Two-way light switches 6. 8 x Illuminant, LED 7 W 7. 8 x Fuse element, complete, wet room, surface mounted, 6 A 8. 8 x 5 m YSLY flexible PVC cable 4 x 1.5 mm², colour coded 9. 8 x Fastening materials 10. 8 x Box of cable cleats 11. 8 x Suitable plug for power connection

	12. 8 x Set of electrical installation tools 13. 8 x Continuity tester 14. 8 x Two-pole voltage tester
Workshop arrangements	Workshop is arranged for up to sixteen (16) participants. Provision of eight (8) wooden electrical boards, eight (8) complete sets of tools. Sufficient workshop space

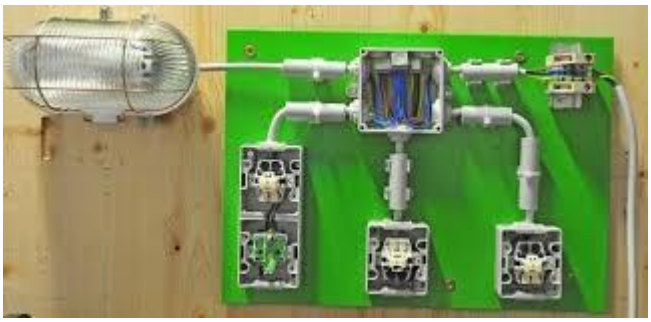

Figure 1: Example picture two-way lighting circuit

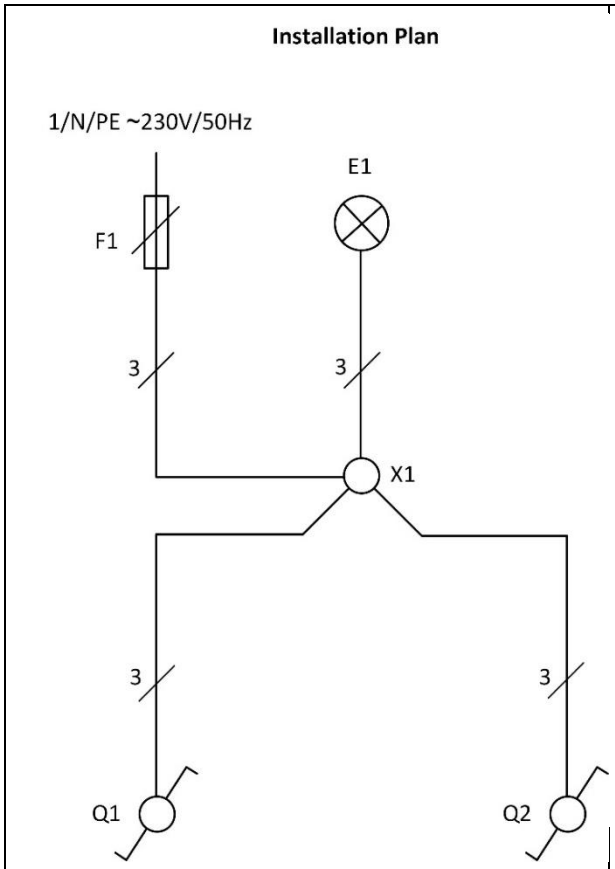

Figure 2. Two-way lighting circuit installation plan

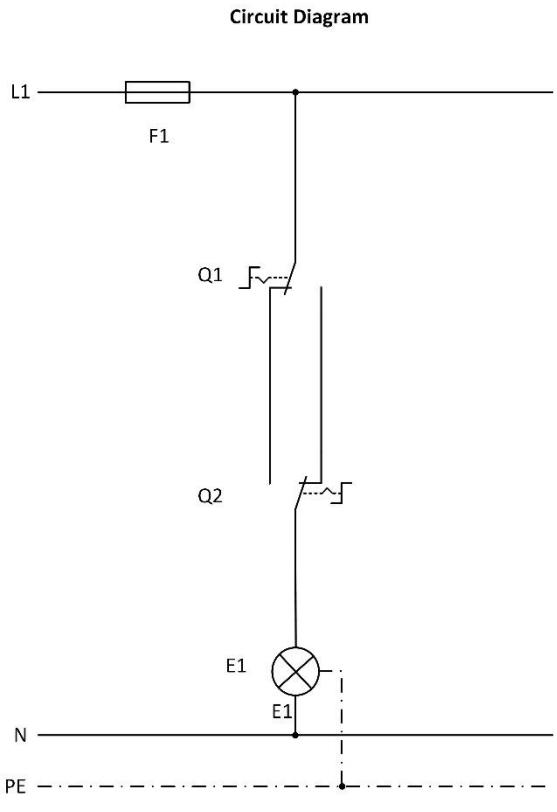

Figure 3: Two-way lighting circuit wiring diagram

Summary – Session Overview				
TIME	**CONTENT**	**OBJECTIVES**	**TRAINING MATERIAL**	**DESCRIPTION OF TRAINING SESSION AND TRAINER NOTES**
10'	1. Participants briefing 2. General safety briefing	Participants: • Understand the given work-task • Are familiar with the required safety arrangements • Are familiar with the local conditions	D_HO_PE2_Work description- Two-way lighting circuit D_HO_Last minute risk assessment D_HO_Safe electric isolation procedure D_HO_PE2_Two-way lighting circuit installation & wiring diagram D_HO_Two-pole voltage tester manual	<u>Plenary</u> • Trainer explains work task and executes safety briefing • Trainees build up team • Trainees arrange for division of works • Trainees obtain permit of work
110'	**Build an electrical circuit according to documentation provided** Filling of check-list while executing work-steps: • Obtain permit of work, execute risk assessment • Undertake worksite preparation, tools, equipment and PPE check (having risk assessment in mind) • Safeguard the workshop area and inform involved parties • Prepare cables as necessary • Installation of a two-way lighting circuit (board assembly) according to	Participants: • Learn how to install a simple electrical lighting circuit • Obtain knowledge on how to execute a risk assessment at installation site • Learn how to get familiar with using PPE • Learn to understand and apply the electrical installation principles. • Learn to understand and apply the documentation of used tools and equipment	Tools and equipment as specified above	Trainer observes work routine and gives instructions to participants if they have questions. Trainer grants permit of work. Trainer evaluates work according to outlined criteria with the help of an assessment sheet. <u>Group work of 2 participants at one workstation</u>: • All authorisation was obtained • Work area is safeguarded • Appropriate PPE is selected in line with the job requirements • Workplace arrangements are structured and in clean conditions. • All necessary tools are in safe conditions and well arranged • Work instructions technical plans/drawings are interpreted as per job requirements

Summary – Session Overview				
TIME	**CONTENT**	**OBJECTIVES**	**TRAINING MATERIAL**	**DESCRIPTION OF TRAINING SESSION AND TRAINER NOTES**
	provided installation plan and circuit wiring diagram • Install electrical cables and terminate wires • Test the electrical circuit (de-energised) using a continuity tester • Check electrical safety • Connect the installation to the power grid and put the two-way lighting circuit into operation • Test the electrical installation with power-supply voltage • Cleaning, maintaining and preserving of tools, practical exercise and work-place • Hand over the practical exercise to the trainer	• Obtain knowledge and skills to practically execute electrical cable installation and wire connections. • Obtain knowledge and skills on how to test the electrical circuit (de-energised and with power supply voltage) • Obtain knowledge and skills on how to put the electrical installation in operation.		• Installation requirements are verified in line with site conditions and the provided components • Cables are prepared consistent with the approved designs and specifications • Cables are installed correctly in a neat and tidy fashion • Correct cable entry glands (where necessary) are installed in accordance with gland manufacturer's specifications • Electrical materials are prepared consistent with job requirements and are checked for damage • Electrical system is laid-out and installed in accordance with the approved designs, specifications, working plans, drawings and applicable provisions of the manufactures installation and operation manuals • Use of two-pole voltage tester and multi- meters for measuring Volt/Ampere/Ohm/Continuity was demonstrated <u>Competency must be assessed through:</u> • Direct observation • Demonstration • Questions related to required knowledge • Competency may be assessed in the work place or in a simulated work place setting <u>Assessment requires evidence in form of:</u> • Conducted survey of site for installation of the circuit. • Conducted the relevant risk assessment

Summary – Session Overview				
TIME	**CONTENT**	**OBJECTIVES**	**TRAINING MATERIAL**	**DESCRIPTION OF TRAINING SESSION AND TRAINER NOTES**
				• Ensured continuous OHS measures • Installed electrical circuit according the provided documentation. • Prepared and installed cables and components correctly. • Installed electrical system correctly. • Tested the electrical circuit correctly • Ensured continuously organised and clean workplace condition
120 min	Total time			