









Wireman Control Panel Electronics

QP Code: ELE/Q7302

Version: 4.0

NSQF Level: 3

Electronics Sector Skills Council of India || 155, 2nd Floor, ESC House Okhla Industrial Area-Phase 3 New Delhi- 110020 || email:anu@essc-india.org









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ELE/Q7302: Wireman Control Panel Electronics

Brief Job Description

The individual at work is responsible for wiring all components present within the panel as per specifications provided by the design engineering team.

Personal Attributes

The individual must have strength to lift heavy parts and modules, work in high-decibel noise environment and in a standing position for long hours.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

- 1. ELE/N6321: Planning and Preparation for Control Panel Wiring
- 2. ELE/N6322: Execution and Completion of Control Panel Wiring
- 3. DGT/VSQ/N0101: Employability Skills (30 Hours)

Qualification Pack (QP) Parameters

Sector	Electronics
Sub-Sector	Industrial Automation
Occupation	Integration-I&A
Country	India
NSQF Level	3
Credits	14
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7411.0301









Minimum Educational Qualification & Experience	10th grade pass (10th grade or equivalent) with NA of experience OR 8th grade pass (8th grade) with 3 Years of experience Relevant Experience in Electrical & Electronics OR Previous relevant Qualification of NSQF Level 2.5 with 1.5 years of experience Relevant Experience in Electrical & Electronics
Minimum Level of Education for Training in School	8th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	16 Years
Last Reviewed On	NA
Next Review Date	07/10/2028
NSQC Approval Date	07/10/2025
Version	4.0
Reference code on NQR	QG-03-EH-04474-2025-V2-ESSCI
NQR Version	2

Remarks:

NA









ELE/N6321: Planning and Preparation for Control Panel Wiring

Description

This NOS is plan and prepare for control panel wiring by reviewing diagrams, selecting tools and materials, and ensuring readiness for safe and accurate installation

Scope

The scope covers the following:

• Identifying Work Requirements from the Supervisor

Elements and Performance Criteria

Identifying Work Requirements from the Supervisor

To be competent, the user/individual on the job must be able to:

- **PC1.** Describe the role and responsibilities of a Wireman Control Panel (Electronics); explain the scope of the control panel wiring industry, basic components used (such as relays, contactors, MCBs, terminal blocks, PLC interfaces), and potential employment opportunities in industrial automation and electrical assembly sectors.
- **PC2.** Review and prepare materials and tools using digital BOMs and use smart inventory systems the production schedule and job specifications as per the supervisor's instructions and Interpret wiring diagrams, schematics, job instructions, and work manuals to understand the task requirements.
- **PC3.** Identify the required tools, equipment, and consumables needed for the day's wiring activities.
- **PC4.** Verify the availability of wires, cables, connectors, screws, and other necessary materials.
- **PC5.** Organize and arrange the work area to ensure efficient workflow and safety compliance.
- **PC6.** Conduct a preliminary check of the control panel enclosure for any damages or defects.
- **PC7.** Ensure proper grounding and insulation checks before starting the wiring process.
- **PC8.** Coordinate with the quality team or supervisor to clarify any uncertainties in the work instructions.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- **KU1.** Understand the role, responsibilities, and scope of a Wireman Control Panel in the electronics and industrial automation sector.
- **KU2.** Know the functions of key electrical components like relays, MCBs, PLCs, and terminal blocks used in control panels.
- **KU3.** Understand wiring diagrams, schematics, and job specifications for accurate execution.
- **KU4.** Be familiar with digital BOMs, smart inventory systems, and standard safety practices.
- **KU5.** Understand grounding, insulation, and quality assurance procedures before initiating wiring work.









Generic Skills (GS)

User/individual on the job needs to know how to:

- **GS1.** Interpret technical drawings, manuals, and wiring schematics accurately.
- **GS2.** Plan, organize, and prepare tools, materials, and the workspace efficiently.
- **GS3.** Communicate effectively with supervisors and quality teams for clarification and task coordination.
- **GS4.** Conduct pre-work inspections to identify defects or risks and ensure safety compliance.
- **GS5.** Demonstrate responsibility, accuracy, and adherence to workflow and production schedules.









Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Identifying Work Requirements from the Supervisor	40	60	-	-
PC1. Describe the role and responsibilities of a Wireman – Control Panel (Electronics); explain the scope of the control panel wiring industry, basic components used (such as relays, contactors, MCBs, terminal blocks, PLC interfaces), and potential employment opportunities in industrial automation and electrical assembly sectors.	-	-	-	-
PC2. Review and prepare materials and tools using digital BOMs and use smart inventory systems the production schedule and job specifications as per the supervisor's instructions and Interpret wiring diagrams, schematics, job instructions, and work manuals to understand the task requirements.	-	-	-	-
PC3. Identify the required tools, equipment, and consumables needed for the day's wiring activities.	-	-	-	-
PC4. Verify the availability of wires, cables, connectors, screws, and other necessary materials.	-	-	-	-
PC5. Organize and arrange the work area to ensure efficient workflow and safety compliance.	-	-	-	-
PC6. Conduct a preliminary check of the control panel enclosure for any damages or defects.	-	-	-	-
PC7. Ensure proper grounding and insulation checks before starting the wiring process.	-	-	-	-
PC8. Coordinate with the quality team or supervisor to clarify any uncertainties in the work instructions.	-	-	-	-
NOS Total	40	60	-	-









National Occupational Standards (NOS) Parameters

NOS Code	ELE/N6321
NOS Name	Planning and Preparation for Control Panel Wiring
Sector	Electronics
Sub-Sector	
Occupation	Integration-I&A
NSQF Level	3
Credits	6
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2028
NSQC Clearance Date	07/10/2025









ELE/N6322: Execution and Completion of Control Panel Wiring

Description

This NOS is execute and complete control panel wiring as per circuit diagrams and standards, ensuring proper connections, functionality, and safety compliance.

Scope

The scope covers the following:

- Wiring the Control Panel
- Reporting and Troubleshooting
- Workplace Ethics, Safety, and Environmental Responsibility

Elements and Performance Criteria

Wiring the Control Panel

To be competent, the user/individual on the job must be able to:

- **PC1.** Select and cut the appropriate length of wires or cables as per the wiring diagram.
- PC2. Route and position the feeder pipes securely before pulling feeder wires into the panel
- **PC3.** Strip the outer insulation of cables carefully to expose conductors without damaging them.
- **PC4.** Connect the neutral wires to the designated neutral bus bar as per the circuit layout.
- **PC5.** Follow standard wiring practices to install branch circuit wires in an organized manner
- **PC6.** Securely fasten wires using cable ties, clamps, or conduits to maintain a neat and structured layout.
- **PC7.** Properly crimp and terminate wires to ensure reliable electrical connections
- **PC8.** Ensure proper segregation of power and control wiring to prevent electrical interference
- **PC9.** Label all wires and terminals appropriately for easy identification and future maintenance.
- **PC10.** Conduct basic continuity and insulation resistance tests to verify proper connections
- **PC11.** Adhere to local electrical codes, industry standards, and safety protocols throughout the wiring process.
- **PC12.** Dispose of wire scraps, insulation cuttings, and unused materials in designated waste bins.
- **PC13.** Return all tools, equipment, and unused consumables to the storage area at the end of the work shift.

Reporting and Troubleshooting

To be competent, the user/individual on the job must be able to:

- **PC14.** Identify and rectify errors or miswiring in the previous assembly steps
- **PC15.** Report any discrepancies in materials, such as shortages of connectors, screws, or fasteners.
- **PC16.** Notify the supervisor about any equipment malfunctions or panel defects observed during wiring.
- **PC17.** Document any challenges faced during installation and suggest process improvements for efficiency.









PC18. Seek feedback from the quality inspection team and implement corrective actions as required.

Workplace Ethics, Safety, and Environmental Responsibility

To be competent, the user/individual on the job must be able to:

- **PC19.** Follow workplace discipline, punctuality, and ethical behavior while maintaining a cooperative attitude with team members and customers.
- **PC20.** Use appropriate personal protective equipment (PPE), insulated tools, and follow electrical safety procedures to prevent hazards and injuries.
- **PC21.** Identify and report unsafe conditions, electrical faults, or violations of safety norms responsibly and as per company guidelines.
- **PC22.** Practice sustainable work methods such as minimizing wire wastage, segregating scrap materials, and ensuring safe disposal of e-waste.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- **KU1.** Understand control panel wiring layouts, component placement, and standard wiring practices
- **KU2.** Know how to select, cut, strip, crimp, and terminate wires according to circuit and safety standards.
- **KU3.** Understand the segregation of power and control wiring to avoid electrical interference.
- **KU4.** Be familiar with electrical testing procedures like continuity and insulation resistance tests.
- **KU5.** Know relevant electrical codes, workplace safety standards, and environmental disposal practices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- **GS1.** Interpret and follow wiring diagrams, schematics, and circuit layouts accurately.
- **GS2.** Perform precise wiring, routing, labeling, and termination of cables neatly and efficiently.
- **GS3.** Identify and troubleshoot wiring errors, report discrepancies, and suggest improvements.
- **GS4.** Communicate effectively with supervisors and quality teams for problem resolution
- **GS5.** Demonstrate discipline, teamwork, safety awareness, and responsible resource usage at the workplace.









Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Wiring the Control Panel	24	34	-	-
PC1. Select and cut the appropriate length of wires or cables as per the wiring diagram.	-	-	-	-
PC2. Route and position the feeder pipes securely before pulling feeder wires into the panel	-	-	-	-
PC3. Strip the outer insulation of cables carefully to expose conductors without damaging them.	-	-	-	-
PC4. Connect the neutral wires to the designated neutral bus bar as per the circuit layout.	-	-	-	-
PC5. Follow standard wiring practices to install branch circuit wires in an organized manner	-	-	-	-
PC6. Securely fasten wires using cable ties, clamps, or conduits to maintain a neat and structured layout.	-	-	-	-
PC7. Properly crimp and terminate wires to ensure reliable electrical connections	-	-	-	-
PC8. Ensure proper segregation of power and control wiring to prevent electrical interference	-	-	-	-
PC9. Label all wires and terminals appropriately for easy identification and future maintenance.	-	-	-	-
PC10. Conduct basic continuity and insulation resistance tests to verify proper connections	-	-	-	-
PC11. Adhere to local electrical codes, industry standards, and safety protocols throughout the wiring process.	-	-	-	-
PC12. Dispose of wire scraps, insulation cuttings, and unused materials in designated waste bins.	-	-	-	-
PC13. Return all tools, equipment, and unused consumables to the storage area at the end of the work shift.	-	-	-	-
Reporting and Troubleshooting	12	20	-	-









Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. Identify and rectify errors or miswiring in the previous assembly steps	-	-	-	-
PC15. Report any discrepancies in materials, such as shortages of connectors, screws, or fasteners.	-	-	-	-
PC16. Notify the supervisor about any equipment malfunctions or panel defects observed during wiring.	-	-	-	-
PC17. Document any challenges faced during installation and suggest process improvements for efficiency.	-	-	-	-
PC18. Seek feedback from the quality inspection team and implement corrective actions as required.	-	-	-	-
Workplace Ethics, Safety, and Environmental Responsibility	4	6	-	-
PC19. Follow workplace discipline, punctuality, and ethical behavior while maintaining a cooperative attitude with team members and customers.	-	-	-	-
PC20. Use appropriate personal protective equipment (PPE), insulated tools, and follow electrical safety procedures to prevent hazards and injuries.	-	-	-	-
PC21. Identify and report unsafe conditions, electrical faults, or violations of safety norms responsibly and as per company guidelines.	-	-	-	-
PC22. Practice sustainable work methods such as minimizing wire wastage, segregating scrap materials, and ensuring safe disposal of e-waste.	-	-	-	-
NOS Total	40	60	-	-









National Occupational Standards (NOS) Parameters

NOS Code	ELE/N6322
NOS Name	Execution and Completion of Control Panel Wiring
Sector	Electronics
Sub-Sector	
Occupation	Integration-I&A
NSQF Level	3
Credits	7
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2028
NSQC Clearance Date	07/10/2025









DGT/VSQ/N0101: Employability Skills (30 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following:

- Introduction to Employability Skills
- Constitutional values Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

PC1. understand the significance of employability skills in meeting the job requirements

Constitutional values - Citizenship

To be competent, the user/individual on the job must be able to:

PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.

Basic English Skills

To be competent, the user/individual on the job must be able to:

PC4. speak with others using some basic English phrases or sentences

Communication Skills

To be competent, the user/individual on the job must be able to:

PC5. follow good manners while communicating with others

PC6. work with others in a team









Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

- **PC7.** communicate and behave appropriately with all genders and PwD
- **PC8.** report any issues related to sexual harassment

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

- **PC9.** use various financial products and services safely and securely
- **PC10.** calculate income, expenses, savings etc.
- **PC11.** approach the concerned authorities for any exploitation as per legal rights and laws

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

- PC12. operate digital devices and use its features and applications securely and safely
- **PC13.** use internet and social media platforms securely and safely

Entrepreneurship

To be competent, the user/individual on the job must be able to:

- PC14. identify and assess opportunities for potential business
- PC15. identify sources for arranging money and associated financial and legal challenges

Customer Service

To be competent, the user/individual on the job must be able to:

- **PC16.** identify different types of customers
- **PC17.** identify customer needs and address them appropriately
- **PC18.** follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

- PC19. create a basic biodata
- **PC20.** search for suitable jobs and apply
- PC21. identify and register apprenticeship opportunities as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- **KU1.** need for employability skills
- **KU2.** various constitutional and personal values
- **KU3.** different environmentally sustainable practices and their importance
- **KU4.** Twenty first (21st) century skills and their importance
- **KU5.** how to use basic spoken English language
- **KU6.** Do and dont of effective communication
- **KU7.** inclusivity and its importance
- KU8. different types of disabilities and appropriate communication and behaviour towards PwD
- **KU9.** different types of financial products and services









- **KU10.** how to compute income and expenses
- **KU11.** importance of maintaining safety and security in financial transactions
- **KU12.** different legal rights and laws
- **KU13.** how to operate digital devices and applications safely and securely
- KU14. ways to identify business opportunities
- KU15. types of customers and their needs
- **KU16.** how to apply for a job and prepare for an interview
- **KU17.** apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

- **GS1.** communicate effectively using appropriate language
- GS2. behave politely and appropriately with all
- **GS3.** perform basic calculations
- **GS4.** solve problems effectively
- **GS5.** be careful and attentive at work
- **GS6.** use time effectively
- **GS7.** maintain hygiene and sanitisation to avoid infection









Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	1	1	-	-
PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
Constitutional values – Citizenship	1	1	-	-
PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	1	3	-	-
PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
Basic English Skills	2	3	-	-
PC4. speak with others using some basic English phrases or sentences	-	-	-	-
Communication Skills	1	1	-	-
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team	-	-	-	-
Diversity & Inclusion	1	1	-	-
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
Financial and Legal Literacy	3	4	-	-
PC9. use various financial products and services safely and securely	-	-	-	-









Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. calculate income, expenses, savings etc.	-	-	-	-
PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
Essential Digital Skills	4	6	-	-
PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
PC13. use internet and social media platforms securely and safely	-	-	-	-
Entrepreneurship	3	5	-	-
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
Customer Service	2	2	-	-
PC16. identify different types of customers	-	-	-	-
PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	1	3	-	-
PC19. create a basic biodata	-	-	-	-
PC20. search for suitable jobs and apply	-	-	-	-
PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
NOS Total	20	30	-	-









National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0101
NOS Name	Employability Skills (30 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	2
Credits	1
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2028
NSQC Clearance Date	07/10/2025

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

- 1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
- 2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
- 3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
- 4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below).
- 5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on this criterion.
- 6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
- 7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.









Minimum Aggregate Passing % at QP Level: 50

(**Please note**: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
ELE/N6321.Planning and Preparation for Control Panel Wiring	40	60	-	-	100	40
ELE/N6322.Execution and Completion of Control Panel Wiring	40	60	-	-	100	40
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	20
Total	100	150	-	-	250	100









Acronyms

NOS	National Occupational Standard(s)	
NSQF	National Skills Qualifications Framework	
QP	Qualifications Pack	
TVET	Technical and Vocational Education and Training	









Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.









Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.