

# OCCUPATIONAL QUALIFICATION STANDARD

## Automatician, EstQF Level 4

An occupational qualification standard is a document which describes the set of skills, knowledge and attitudes, i.e. competence requirements, needed to successfully accomplish duties. Occupational qualification standards are used for compiling curricula and awarding qualifications.

Occupational title	Level of Estonian Qualifications Framework (EstQF)
Automatician, EstQF Level 4	4

Possible specialisation and titles on occupational certificate	
Specialisation	Title on occupational qualification certificate
Production automation	Automatician, EstQF Level 4 Production automation
Building automation	Automatician, EstQF Level 4 Building automation

## Part A DESCRIPTION OF WORK

<p><b>A.1 Description of work</b></p> <p>Automatician, Level 4 works in companies (e.g. manufacturing and construction) engaged in the automation of technological processes, of manufacturing equipment and systems and of technical building systems, in which they perform installation and maintenance of components and equipment of automation systems using information and communication technology (ICT) solutions.</p> <p>Automatician, Level 4 performs their duties independently or as part of a team.</p> <p>Work in the fields of automation, information technology (IT), electricity and low voltage requires basic knowledge of IT, electrical engineering and electronics.</p> <p>Automatician, Level 4 specialises in production or building automation.</p> <p>An automatician specialising in production automation installs and maintains industrial control system components and equipment (standalone automation equipment, production lines and complexes), understanding the nature of production processes.</p> <p>Depending on the field and the size of the company, their duties may partially overlap with those of mechatronic and maintenance mechanics.</p> <p>An automatician specialising in building automation installs and maintains the automation of technical building systems (ventilation, cooling, heating and fire safety systems).</p> <p>They may perform installation and maintenance work to an extent that does not infringe the requirements provided for in occupational legislation and in the standards of the field.</p> <p>Highest level of profession: Automation Technician, Level 5.</p>
<p><b>A.2 Tasks</b></p> <p><b>A.2.1 Organisation of work</b></p> <ol style="list-style-type: none"> <li>1. Finding the necessary information from technical documentation.</li> <li>2. Planning their activities.</li> <li>3. Finding and preparing materials and work equipment.</li> </ol> <p><b>A.2.2 Conformity with safety requirements</b></p>

1. Conformity with safety requirements.
2. Organising a safe workplace.
3. Using safety and personal protective equipment.

#### A.2.3 Installation and connection of automation equipment and system components

1. Cabling.
2. Installation of equipment and components.
3. Connecting devices.
4. Verification and documentation of performance.

#### A.2.4 Inspection and maintenance

1. Conducting inspections and maintenance.
2. Elimination of faults.
3. Conducting periodic maintenance work.
4. Documentation of results.

### Specialised areas of work

#### A.2.5 Production automation

1. Installation work based on production technology.
2. Maintenance of equipment and systems.

#### A.2.6 Building automation

1. Installation of the control automation of technical systems.
2. Maintenance of the control automation of technical systems.

### A.3 Work environment and specific nature of work

Work may take place outdoors, at heights, in dangerous work environments or under specific conditions (e.g. of elevated hygiene and sterility). Potential hazards include the risk of explosion and fire and exposure to chemicals. Personal protective equipment and special clothing are required. The work may require physical and mental effort and the fast pace of the work must be taken into account.

### A.4 Tools

ICT computing hardware and software.  
Hand-held, electrical and specialised tools, measuring equipment and accessories.

### A.5 Personal qualities required for work: abilities and characteristics

The job requires logical thinking, consistency, dexterity and tolerance of routine. Good analytical skills, the ability to concentrate, coordination and adaptability are also important. Working with small parts requires good eyesight and colour differentiation.

### A.6 Professional preparation

Professional skills are acquired at an educational institution or in the course of professional work and training.

### A.7 Most common occupational titles

Automatician/installer, automatician/operator, machine tool automatician, etc.

### A.8 Regulations governing profession

It is mandatory to complete electrical safety, first aid and work safety training.  
Working in hazardous environments requires compliance with the Occupational Health and Safety Act.

## Part B COMPETENCY REQUIREMENTS

### B.1 Structure of occupation

Competences B.2.1-B.2.4, recurring competence B.2.7 and one competence connected to the specialisation from options B.2.5 and B.2.6 must be certified when applying for the qualification of Automatician, Level 4.

## B.2 Competences

### MANDATORY COMPETENCES

<b>B.2.1 Organisation of work</b>	<b>EstQF Level 4</b>
Performance indicators: 1. Finds the information needed to solve a task from a project, location plan, arrangement and automation diagrams and figures related to automation systems. 2. Compiles a personal work plan based on source data, determines the order of work operations and the boundaries of the work place. 3. Chooses and prepares the materials necessary for the task. 4. Assembles the tools relevant for the task and ensures their conformity with requirements.	
<b>B.2.2 Conformity with safety requirements</b>	<b>EstQF Level 4</b>
Performance indicators: 1. Follows work safety requirements at every stage to prevent occupational accidents. 2. Prepares a safe workplace, checks its safety in the course of work and keeps the workplace in good order. 3. Follows work environment safety rules and collects waste following procedural and supervisory rules. 4. Correctly uses safety and personal protective equipment. 5. Regularly checks the functionality of safety and personal protective equipment.	
<b>B.2.3 Installation and connection of automation equipment and system components</b>	<b>EstQF Level 4</b>
Performance indicators: 1. Installs low-voltage and signal cables based on the task and in compliance with the requirements of the cable manufacturer and the given project. 2. Replaces a cable damaged due to a short circuit, interruption etc. based on the task and the location of the detected fault (e.g. switching the cable from device to device). 3. Installs control devices, actuators, sensors and measuring devices (excluding specific systems) following the installation arrangement diagram and using appropriate tools and techniques. 4. Connects the control and signal circuits based on the connection diagram using appropriate tools and techniques. 5. Visually assesses the conformity of the installation indicators to the project and norms. 6. Compiles inspection protocols for the installation work they have carried out and documents the changes in accordance with the forms provided.	
<b>B.2.4 Inspection and maintenance</b>	<b>EstQF Level 4</b>
Performance indicators: 1. Visually and using measuring tools, checks the conformity of the device to the rated values based on gauges or other indicators. 2. Checks the connections between devices using an appropriate measuring method, identifying possible deviations, disturbances and faults. 3. Records the results in accordance with established procedures. 4. Identifies the cause of the error and informs the responsible worker. 5. Eliminates faults according to the given instructions. 6. Performs periodic maintenance according to maintenance instructions. 7. Prepares control protocols for maintenance work and documents the changes made to a digital system using software.	

### COMPETENCES RELATED TO SPECIALISATION

One competence connected to the specialisation from options B.2.5 and B.2.6 must be certified when applying for the qualification of Automatician, Level 4.

#### Production automation

<b>B.2.5 Production automation</b>	<b>EstQF Level 4</b>
<p>Performance indicators:</p> <ol style="list-style-type: none"> <li>1. Finds the information needed to perform the task from the functional and control diagrams of production automation. Installs manufacturing devices and robots related to the manufacturing process (e.g. electricity, water treatment, district heating, wood, chemical, food and mechanical industries) using their know-how related to the manufacturing process.</li> <li>2. Performs inspections of electro-, pneumo- and hydro-automation devices and systems in accordance with maintenance instructions. Restores system performance by replacing components. Detects mechanical faults in electromechanical devices and contributes to the maintenance team by collaborating with specialists in the relevant area.</li> </ol>	

<b>Building automation</b>	
<b>B.2.6 Building automation</b>	<b>EstQF Level 4</b>
<p>Performance indicators:</p> <ol style="list-style-type: none"> <li>1. Installs the building's technical systems (ventilation, cooling, heating and fire safety automation) and their control automation following the requirements and project documentation. Installs the sensors, actuators and other automation equipment and cables (technological equipment) used in automation systems taking into consideration the technical specifications and installation requirements of the automation devices or tools.</li> <li>2. Performs inspections of the control systems of the building's technical systems (ventilation, cooling, heating and fire safety automation) according to the maintenance instructions and current legislation and standards. Restores system performance by replacing components in accordance with the instructions they are given.</li> </ol>	

## RECURRING COMPETENCES

<b>B.2.7 Recurring competences of Automatician, Level 4</b>	<b>EstQF Level 4</b>
<p>Performance indicators:</p> <ol style="list-style-type: none"> <li>1. Reads and understands technical documentation including digital figures and uses professional terminology.</li> <li>2. Is goal-oriented and responsible, adhering to the legal requirements of the occupation.</li> <li>3. Participates in team work, shares all necessary and useful information with others and works to achieve the best joint result.</li> <li>4. Communicates with colleagues, clients and specialists from connected fields in a polite and proper manner and presents information in a clear and comprehensible way.</li> <li>5. Makes use of opportunities for self-improvement and keeps informed of developments in professional technology.</li> <li>6. Uses professional ICT hardware and application software, observing data protection requirements and the rules of the enterprise.</li> <li>7. Uses basic digital skills: at the Basic level for safety and content creation and at the Independent user level for problem-solving, information-processing and communication (see Annex 1 – Scale of self-assessment in digital competence).</li> <li>8. In their work, uses English at least at the B1 level to obtain specialised information, to work with materials and for professional communication (see Annex 2 – Language skills level descriptions).</li> </ol> <p>Assessment method(s):</p> <p>Recurring competences are evaluated as part of the assessment of the other competences listed in the occupational qualification standard.</p>	

## Part C GENERAL INFORMATION AND ANNEXES

<b>C.1 Information concerning compilation and certification of occupational qualification standard and reference to classification of occupations</b>	
1. ID of occupational qualification standard in register of occupational qualifications	07-08102019-1.3/8k

2. Occupational qualification standard compiled by:	Eerik Laid, Ecomatic AS Leho Kuusk, ABB AS Ülo Kala, Walde AS Dmitri Sabunov, G4S Tõnu Kutsar, Telealarm OÜ Ellen Mihklepp, Tallinna Vesi AS Urmas Leitmäe, Eesti Elektritööde Ettevõtjate Liit Vadim Veeremaa, Tallinna Polütehnikum Andre Lilleleht, Eesti Turvaettevõtete Liit
3. Occupational qualification standard approved by:	Energy, Mining and Chemical Industry
4. No. of decision of Sectoral Council	14
5. Date of decision of Sectoral Council	08.10.2019
6. Occupational qualification standard valid until	02.10.2024
7. Occupational qualification standard version no.	8
8. Reference to International Standard Classification of Occupations (ISCO 08)	7412 Electrical Mechanics and Fitters
9. Reference to European Qualifications Framework (EQF)	4
<b>C.2 Occupational title in foreign language</b>	
English:	Automatician, EstQF Level 4
<b>C.3 Annexes</b>	
Lisa 1 <a href="#">Scale of self-assessment in digital competence</a>	
Lisa 2 <a href="#">Language skills level descriptions</a>	