

# EUROPASS CERTIFICATE SUPPLEMENT

## TITLE OF THE DIPLOMA (ES)

*Técnico en Instalaciones de Telecomunicaciones*

## TRANSLATED TITLE OF THE DIPLOMA (EN)<sup>(1)</sup>

*Technician in Telecommunications Installations*

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(1) This translation has no legal status.

## DIPLOMA DESCRIPTION

**The holder of this diploma will have acquired the General Competence with regard to:**

Fitting and maintaining telecommunications and audiovisual installations, radiocommunications installations and home automation installations, applying current legislation, quality, safety and labour risk protocols, guaranteeing their functionality and respect for the environment.

**Within this framework, the PROFESSIONAL MODULES and their respective LEARNING OUTCOMES acquired by the holder are listed below:**

### “Common Telecommunications Infrastructures Within Houses and Buildings”

The holder:

- Identifies elements of common telecommunications infrastructures within houses and buildings, analysing their constituting systems.
- Configures installations in common telecommunications infrastructures within houses and buildings, determining their constituting elements and selecting components and equipment.
- Fits installations in common telecommunications infrastructures within houses and buildings, interpreting technical documentation and applying fitting techniques.
- Verifies and adjusts the constituting elements of installations in common telecommunications infrastructures measuring significant parameters and interpreting their results.
- Finds breakdowns and malfunctions in equipment and installations in common telecommunications infrastructures applying detection techniques and relating malfunctions with their causes.
- Repairs installations in common telecommunications infrastructures applying corrective techniques and, in case of malfunctioning, techniques for the replacement of components taking into account the manufacturers’ recommendations.
- Complies with the rules on labour risk prevention and environmental protection, identifying associated risks and measures and equipment to prevent them.

### “Home Automation Installations”

The holder:

- Identifies automatic areas and systems that constitute automated installations in houses, analysing how they work, characteristics and applicable rules.
- Configures technical systems, justifying why they are chosen and recognising how they work.
- Fits small home automated installations in houses, describing their constituting elements.
- Fits control areas of home automated installations following the established procedures.
- Maintains home automated installations in accordance with the specifications of the system.
- Diagnoses breakdowns and malfunctions in home automation equipment and installations, applying measuring techniques and relating them with the causes that produce them.
- Complies with the rules on labour risk prevention and environmental protection, identifying associated risks and measures and equipment to prevent them.

### “Applied Electronics”

The holder:

- Makes calculations in direct current circuits, applying basic principles and concepts.
- Recognises the basic principles of electromagnetism, describing the interactions among magnetic fields and electrical currents.
- Makes calculations in alternating current (AC) single-phase and third-phase circuits, applying basic principles and concepts.
- Fits analogical circuits, determining their characteristics and applications.

- Determines the characteristics and applications of power supplies identifying their functional blocks and measuring or visualizing common signals.
- Fits circuits with operational amplifiers, determining their characteristics and applications.
- Fits digital logic circuits, determining their characteristics and applications.
- Recognises micro-programmable circuits, determining their characteristics and applications.

### **“Microcomputer Equipment”**

The holder:

- Assembles microcomputer equipment, selecting components and applying assembling techniques.
- Installs operating systems, relating their characteristics with the hardware equipment and application software.
- Carries out elementary tasks for the configuration and management of operating systems, interpreting requirements and optimising the system for its use.
- Installs peripherals, interpreting the documentation of the equipment manufacturers.
- Prepares documents using computer applications.
- Maintains computer equipment relating malfunctions with their causes.
- Complies with the rules on labour risk prevention and environmental protection, identifying associated risks and measures and equipment to prevent them.

### **“Data Networks and Telephone Systems Infrastructures”**

The holder:

- Recognises the configuration of a local area network, identifying its characteristics and the function of its equipment and elements.
- Fits raceways and wiring systems interpreting technical documentation and applying fitting techniques.
- Installs infrastructures of wired local networks interpreting technical documentation and applying connection and fitting techniques.
- Installs wireless networks and VSAT, interpreting technical documentation and applying connection and fitting techniques.
- Recognises the functional parts of PBX telephone switchboards, relating their constituting parts with their function as a whole.
- Configures small telephone systems with PBX switching, selecting and justifying the chosen elements.
- Installs multiline switches and systems interpreting technical documentation and applying fitting and programming techniques.
- Maintains and repairs telephone systems and data networks relating malfunctions with their causes.
- Complies with the rules on labour risk prevention and environmental protection, identifying associated risks and measures and equipment to prevent them.

### **“Basic Wiring Systems”**

The holder:

- Fits basic electrical installations interpreting schemes and applying elementary fitting techniques.
- Fits protection electric boards interpreting schemes and applying elementary fitting techniques.
- Fits the electrical installation of a house with a basic degree of electrification applying the Spanish electrotechnical low voltage regulation (REBT).
- Fits the electrical installation of a small business, applying specific regulations and justifying each element within the group.
- Fits basic installations of electric motors interpreting specific regulations and the manufacturer’s specifications.
- Maintains installations, applying electrical measurement techniques and relating malfunctions with their causes.
- Complies with the rules on labour risk prevention and environmental protection, identifying associated risks and measures and equipment to prevent them.

### **“Public Address Systems and Sound Reinforcement Installations”**

The holder:

- Recognises elements and equipment of Public Address Systems and sound reinforcement installations (within buildings, open areas and vehicles), identifying their most relevant parts and characteristics.
- Configures small Public Address Systems/sound reinforcement installations, selecting equipment and elements and relating them with the type of installation.
- Reconsiders small Public Address Systems and sound reinforcement installations interpreting specifications and preparing schemes.
- Fits raceways and wiring of Public Address Systems and sound reinforcement installations, interpreting plans and schemes and applying fitting techniques
- Installs Public Address Systems and sound reinforcement equipment, interpreting specifications and preparing schemes.
- Repairs breakdowns and malfunctioning in Public Address Systems and sound reinforcement installations, applying detection techniques and relating malfunctioning with their causes.

- Complies with the rules on labour risk prevention and environmental protection, identifying associated risks and measures and equipment to prevent them.

### **“Closed Circuit Television and Electronic Safety”**

The holder:

- Recognises equipment and elements of Closed Circuit Television and electronic safety systems, identifying their most relevant parts and characteristics.
- Configures small Closed Circuit Television and electronic safety installations, preparing schemes and installations and selecting equipment and elements.
- Fits Closed Circuit Television installations interpreting layout plans and schemes and applying fitting techniques.
- Prepares equipment installing and configuring software visualization and control.
- Installs alarm management systems, transmission systems and auxiliary elements, interpreting layout plans and schemes and applying fitting techniques.
- Fits traceability and control equipment interpreting technical documentation.
- Maintains CCTV and safety installations describing interventions and relating malfunctions with their causes.
- Complies with the rules on labour risk prevention and environmental protection, identifying associated risks and measures and equipment to prevent them.

### **“Radio communications Installations”**

The holder:

- Identifies equipment and elements of radio communications systems of fixed and mobile telephone networks and their associated installations, describing their characteristics and applications.
- Installs equipment and auxiliary elements of fixed and mobile telephone networks, interpreting technical documentation and applying connection and fitting techniques.
- Configures radio communications equipment, relating parameters with the required functionality.
- Prepares radio communications equipment interpreting and performing test plans.
- Maintains radio communications equipment, applying updating and preventive maintenance plans.
- Repairs breakdowns and malfunctioning in the radio communications installations, analysing symptoms and identifying the causes that produce them.
- Complies with the rules on labour risk prevention and environmental protection, identifying associated risks and measures and equipment to prevent them.

### **“Professional Training and Guidance”**

The holder:

- Selects job opportunities, identifying the different possibilities of labour integration, and the alternatives of lifelong learning.
- Applies teamwork strategies, assessing their effectiveness and efficiency on the achievement of the company's goals.
- Exercises rights and complies with the duties derived from labour relationships, recognising them in the different job contracts.
- Determines the protective action of the Spanish Health Service in view of the different covered eventualities, identifying the different types of assistance.
- Assesses risks derived from his/her activity, analysing job conditions and risk factors present in his/her labour setting.
- Participates in the development of a risk prevention plan in a small enterprise, identifying the responsibilities of all agents involved.
- Applies protection and prevention measures, analysing risk situations in the labour setting of the Technician in Telecommunications Systems.

### **“Business and Entrepreneurial Initiative”**

The holder:

- Recognises skills related to entrepreneurial initiative, analysing the requirements derived from job positions and business activities.
- Defines the opportunity of creating a small enterprise, assessing the impact on the performance setting and incorporating ethic values.
- Carries out the activities for the setting-up and implementation of a company, choosing the legal structure and identifying the associated legal obligations.
- Carries out basic administration and financial management activities of an SME, identifying the main accounting and tax obligations and filling in documentation.

### **“On the Job Training”**

The holder:

- Identifies the company's structure and organization relating it to service provision.

- Applies labour and ethic habits in his/her professional activity according to the characteristics of the job position and the procedures established by the company.
- Participates in the tasks of configuration and assessment of installations and equipment, preparing schemes and filling in the necessary documentation.
- Fits installations (indoor electrical installations, sound reinforcement and closed circuit television, among others) and equipment applying current legislation, rules on safety and the company's quality system.
- Participates in the operations and stages of commissioning of installations and equipment following the established procedures.
- Carries out the preventive maintenance of the company's installations and equipment, applying the corresponding maintenance plans.
- Collaborates in the diagnosis and repair of breakdowns and malfunctioning in installations and equipment, applying corrective maintenance techniques and procedures.

### **RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE DIPLOMA**

The Technician in Telecommunications Installations works in microenterprises and small and medium enterprises, mostly private, in the areas of fitting and maintenance of telecommunications infrastructures, closed circuit television and electronic safety installations, telephone switches and data networks and telephone systems infrastructures, sound reinforcement and Public Address Systems, radio communications installations, home automation systems and computer systems, either as self-employed or as an employee.

The most relevant occupations or jobs are the following:

- Telecommunications fitter in home buildings
- Aerial fitter
- Security systems fitter
- Expert in local networks and telematics
- Expert in fitting-maintaining local networks
- Telephone fitter
- Telephone and telematics equipment fitter-assembler
- Expert in sound installations
- Public Address Systems fitter
- Home automation systems fitter-assembler
- Expert in fitting-maintaining computer equipment
- Expert in fitting-maintaining radio systems

### **AWARD, ACCREDITATION AND LEVEL OF THE DIPLOMA**

**Name of the body awarding the diploma on behalf of the King of Spain:** Spanish Ministry of Education or the different Autonomous Communities according to their areas of competence. The title has academic and professional validity throughout Spain.

**Official duration of the education/ training leading to the diploma:** 2000 hours.

**Level of the diploma (national or international)**

- NATIONAL: Post-Compulsory Secondary Education
- INTERNATIONAL:
  - Level 3 of the International Standard Classification of Education (ISCED3).
  - Level \_\_\_\_\_ of the European Qualifications Framework (EQF\_\_).

**Entry requirements:** Holding the Certificate in Compulsory Secondary Education or holding the corresponding access test.

**Access to next level of education/training:** This diploma may provide access to Higher Technical Cycles provided that an entrance exam is passed.

**Legal basis.** Basic regulation according to which the diploma is established:

- Minimum teaching requirements established by the State: Royal Decree 1632/2009, of 30 October, according to which the diploma of Technician in Telecommunications Systems and its corresponding minimum teaching requirements are established.

**Explanatory note:** This document is designed to provide additional information about the specified diploma and does not have any legal status in itself. An Annex 1 may be added and will be filled in by the corresponding Autonomous Community.

## INFORMATION ON THE EDUCATION SYSTEM

