



**ETINS**  
Electrical Installations



**exxer** Skills for  
the Future

# THE UNION OF EXPERTISE AND SKILLS A NEW LEVEL OF EXCELLENCE IN EDUCATION!

EXXER was born from the merger of two companies passionate **about technology, innovation, and education.**

With the purpose of offering more and more excellence tools to assist in technological education, we believe the union of practical and theoretical learning is what makes the difference in accelerating human and world development!




TECHNOLOGY ● INNOVATION ● EDUCATION



# ETINS

## Electrical Installations

 The ETINS series is the complete solution for teaching industrial and building electrical installations. Developed with a focus on usability and safety, this product family explores electricity and electrotechnics topics ranging from fundamentals to advanced topics.


The products in this series cover the following topics:

- Command panel assembly;
- Industrial installations;
- Building installations;
- Electric motors;
- Safety devices (NR-12).


Modular system based on Technik+ benches, allowing different assembly configurations with the most modern and used devices on the market; User safety and electrical protection devices and safety banana plugs and terminals.

Also, because it is a modular system, it allows later inclusion of new modules to address new topics, thus optimizing investment and space and enabling a future-proof solution. Modules are easily stored in special optionally supplied cabinets.

**Software and applications complement the learning solution, ensuring greater effectiveness through more dynamic and modern learning**

 All kits in this series have a comprehensive courseware, focused on teaching by skills and easy to use by teachers.

We have complete solutions for training and updating teachers, ensuring the best use of the kit's resources.

 **Ask our experts for more information and the detailed technical features of each equipment in the series.**

# MAIN SKILLS AND COMPETENCIES

## COMMAND PANEL ASSEMBLY

- Understand and learn how to use control, signaling and protection devices;
- Interpret and use electrical schematics;

## INDUSTRIAL INSTALLATIONS

- Understand and learn how to use control, signaling and protection devices;
- Interpret and use electrical schematics;
- Use triggering devices and logics;
- Understand and learn how to use protection devices;
- Start different types of electric motors;
- Program programmable relay;
- Work with the basic functions of a frequency inverter and a Soft Starter;
- Connect three-phase motors to the inverter and soft starter;
- Use electrical measuring equipment;

## BUILDING INSTALLATIONS

- Use devices of building electrical installations;
- Interpret electrical diagrams and symbols;

## SAFETY DEVICES (NR-12)

- Design safety systems according to the protection degree;
- Implement protections with safety devices.





## TECHNOLOGY HIGHLIGHTS

Our partnership with leading device providers ensures that students are in touch with the most modern and most used technologies on the market. For this series, you can choose devices (primarily) from WEG or Schneider brands (Schneider or Omron for the industrial safety bench)

Data acquisition and control devices integrate this series of products. The Three-Phase Analyzer allows the reading of various electrical measurements, as well as viewing voltage and current waveforms. With the Remote IO module, it is possible to control inputs and outputs for interaction with the assemblies. These modules are available for computers and cell phones.

The kits use the Technik+ modular platform, which guarantees safety and ergonomics for assemblies, with protected and easy-to-fit modules, without using tools. In addition, the modules and workbench have terminals and safety cables, increasing the protection and safety for users.

Cabinets are optionally provided for storing the kits with appropriate fixing in the same pattern as the bench, facilitating storage and protection, increasing the useful life of the modules..

The products in this series are equipped with command panel simulation software (QCSIM), industrial safety (SEGSIM) and building installations (PREDSIM). These simulators allow optimizing the use of benches, giving students a first contact with this technology and more practice time, and are suitable for e-learning or blended courses.



 The usability and learning process of each student are extremely important, so we developed learning solutions to provide benefits and differentials for users.

## KEY BENEFITS

- Modular configuration;
- High-quality industrial devices;
- Safety banana plugs and cables;
- Easy movement, handling and storage of modules;
- Courseware included.

## KEY DIFFERENTIALS

- Safety: NR-12 compliance, bench and user protections;
- Workbench with ergonomic certification;
- Easy-to-clamp modules without using tools;
- QCSim, SEGSIM and PREDSIM simulator;
- Data acquisition system (three-phase analyzer);
- Includes NR-12 safety report.

## DEVICE SETTINGS

Partnumber	Description	Options	Applications
ETINS2000-Lxx-001	Control Panel Assembly Bench	WEG	QCSim, PREDSim e Exxer App
ETINS2000-Lxx-002	Control Panel Assembly Bench	Schneider	QCSim, PREDSim e Exxer App

## FEATURES

With modular configuration, safety with NR-12, development software included, protection of main components and courseware included.

### ETINS2000

Command Panel  
Assembly Workbench



### Settings

- Safe chassis and mounting panel operations, power-up and circuit testing;
- Acquisition of skills and competencies in handling tools used in electrical panel assembly;
- Design and assembly of electrical power and command circuits for operating three-phase motors;
- Contact with the main electrical components used in the industry, supplied with the workbench;
- Mounting area on both sides, allows mounting on the front and back of the bench.

#### DIMENSIONS

Height	1710mm
Width	1300mm
Depth	700mm
Weight	200kg

#### ELECTRICAL FEATURES

Energy	Three-phase 220V – 50/60Hz Three-phase 380V – 50/60Hz
Connections	Via cable and eyelet terminals directly on components



## DEVICE SETTINGS

Partnumber	Description	Options	Applications
ETINS3000-Lxx-001	Basic Electrotechnical Bench	WEG	QCSim, PREDSim e Exxer App
ETINS3000-Lxx-002	Basic Electrotechnical Bench	Schneider	QCSim, PREDSim e Exxer App
ETINS3000-Lxx-003	Intermediate Electrotechnical Bench	WEG	QCSim, PREDSim e Exxer App
ETINS3000-Lxx-004	Intermediate Electrotechnical bench	Schneider	QCSim, PREDSim e Exxer App
ETINS3000-Lxx-005	Complete Electrical Workbench	WEG	QCSim, PREDSim e Exxer App
ETINS3000-Lxx-006	Complete Electrical Workbench	Schneider	QCSim, PREDSim e Exxer App

## CONFIGURACIONES DE LOS DISPOSITIVOS

Subjects	Settings		
	ETINS3000-Lxx-001 ETINS3000-Lxx-002	ETINS3000-Lxx-003 ETINS3000-Lxx-004	ETINS3000-Lxx-005 ETINS3000-Lxx-006
	Basic	Intermediate	Complete
Electrical controls and measurements	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Electrical Protections	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Engine starts*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Residential facilities	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Programmable relay	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Drivers (inverter and softstarter)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
on-grid solar	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional/accessory: cable holder			

## FEATURES

With modular configuration, safety with NR-12, development software included, protection of main components and courseware included.

### ETINS3000

Electrical Workbench



### Settings

- Modules protected with electrical devices;
- Assembly via safety banana plug;
- Protection against short circuit / electrical shock, and emergency button;
- Workbench lighting;
- Includes ETINS4000 engine bank

### DIMENSIONS

Height	2000mm
Width	1410mm
Depth	840mm
Weight	260Kg

### ELECTRICAL FEATURES

Energy	Three-phase 220V – 50/60Hz Three-phase 380V – 50/60Hz
Connections	Via cable and eyelet terminals directly on components

## ⚙️ DEVICE SETTINGS

Part number	Description	Options
ETINS4000-Lxx-001	Motor Workbench	–



## FEATURES

With modular configuration, safety with NR-12, development software included, protection of main components and courseware included.

### ETINS4000

Motor Workbench



#### Settings

- Carbon steel structure with electrostatic coating;
- Composed by.
  - Single-phase induction motor;
  - Three-phase induction motor;
  - Three-phase induction motor with brake;
  - Three-phase induction motor with 12 terminals;
  - Start autotransformer.

#### DIMENSIONS

Height	1000mm
Width	500mm
Depth	600mm
Weight	130Kg

#### ELECTRICAL FEATURES

Energy	Three-phase 220V – 50/60Hz Three-phase 380V – 50/60Hz
Connections	Via cable and eyelet terminals directly on components

## DEVICE SETTINGS

Partnumber	Description	Options	Applications
ETINS5000-L3-001	NR12 Industrial Safety Bench	Schneider	SEGSim, SimMaq3D e Exxer App
ETINS5000-L3-002	NR12 Industrial Safety Bench	Omron	SEGSim, SimMaq3D e Exxer App
Optional/accessory: cabinet and cable holder			

## FEATURES

With modular configuration, safety with NR-12, development software included, protection of main components and courseware included.

### ETINS5000

WorkBench Industrial Safety NR12



## Settings

- Explore industrial electrical assemblies, involving machine safety according to safety standard (NR-12 in Brazil);
- Electrical connections with dry-contact safety relay, zero speed, safety relay for bimanual, programmable safety controller and light curtain module;
- Use of different architectures to verify the different industrial safety categories;
- Assembly of circuits with safety category B, 1, 2, 3 and 4.

### DIMENSIONS

Height	2000mm
Width	1410mm
Depth	840mm
Weight	120Kg

### ELECTRICAL FEATURES



















Energy	Three-phase 220V – 50/60Hz Three-phase 380V – 50/60Hz
Conexiones	4Via cable and eyelet terminals directly on components

## DEVICE SETTINGS

Partnumber	Description	Options	Applications
ETINS6000-L3-001	Residential and Building Installation Bench	–	PredSim Exxer App
ETINS6000-L3-002	Property Security Installation Bench	–	PredSim Exxer App
ETINS6000-L3-003	Home Automation Installation Bench	–	PredSim Exxer App
Optional/accessory: cabinet and cable holder			



## DEVICE SETTINGS

Subjects	Settings		
	ETINS6000-L3-001	ETINS6000-L3-002	ETINS6000-L3-003
	Basic Residential and Building Installation	Property Security	Home Automation
Residential Facilities			
CFTV			
Property Alarm			
Intercom			
Access Control			
Home Automation			
Optional/accessory: cabinet and cable holder			

## FEATURES

With modular configuration, safety with NR-12, development software included, protection of main components and courseware included.

### ETINS6000

Residential and Building  
Installation Bench



### Settings

- Assembly and analysis of electrical installation projects in buildings;
- Use of single, double, parallel, intermediate and pushbutton switches, electronic staircase timer, time programmer, and presence and photoelectric sensors;
- Study of ways of connecting low voltage (LV) systems;
- Programmable relay configuration and programming;
- Control and measurement of energy consumption;

#### DIMENSIONS

Height	2000mm
Width	1410mm
Depth	840mm
Weight	100Kg

#### ELECTRICAL FEATURES

Energy	Single phase 110V – 50/60Hz Single phase 220V – 50/60Hz
Connections	Bornes 4mm de segurança

## MAIN DEVICES

The different models are equipped with the devices below, according to each configuration.

DRIVERS	PROGRAMMABLE RELAY	SAFETY DEVICES
<ul style="list-style-type: none"> <li>- For practices with current motor start techniques, the electrotechnical bench can be equipped with drivers (electronic drive devices)The different benches are equipped with the devices below, depending on each configuration, with programmable features and safety functions.</li> <li>- CFW300 series Frequency inverter (WEG) or ATV320 (Schneider);</li> <li>- SoftStarter (static starter) from SSW05 (WEG) or ATS22 (Schneider) series.</li> </ul>	<ul style="list-style-type: none"> <li>- To add flexibility and building technology to the installations, the electrotechnical benches can be supplied with programmable relays (micro-PLC), programming tools and instruction material addressing their languages.</li> <li>- Clic02 (WEG) or LOGO! (Siemens).</li> </ul>	<ul style="list-style-type: none"> <li>- Our exclusive workbench in this series meets a high demand of the industry today: the adequacy of machines and equipment to safety standards.</li> <li>- Safety devices such as certified sensors and special actuators, as well as command devices (safety relays) are provided for practical learning of this important topic.</li> <li>- The devices used are supplied by two top suppliers on the market, Omron or Schneider.</li> </ul>
<ul style="list-style-type: none"> <li>- The on-grid solar generation technology complements the most complete version of the electrotechnical workbench, addressing this important source of renewable energy that is increasingly present in companies and houses.</li> </ul>		

## DEVELOPMENT TOOLS

Our learning solutions are complemented with the development tools and professional software necessary for student training.

Licenças  
incluídas

### LOGO!

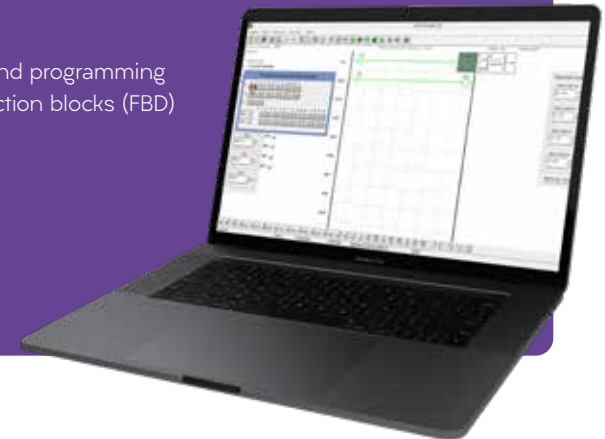
- LOGO! Soft Confort: development and programming tool for LOGO!t
- LOGO! Access Tool: MS Excel supplement to capture data sent by LOGO!
- LOGO! Web Editor: allows to create custom websites that are used to control and monitor LOGO!'s automated tasks.
  - Plataforma: Windows
  - License: freeware



Licenças  
incluídas

### Clic02


- Clic Edit: Clic development and programming tool, support Ladder (LD) and function blocks (FBD) languages
  - Plataforma: Windows
  - License: Freeware





# USE

## Guidelines on the recommended use of the Kit!

 We suggest this configuration for better use in class. Kits and activities are designed according to the team sizes listed on the side.

The minimum necessary infrastructure is a prerequisite to fully use all functionalities of the training kits.

We recommend the computing and connectivity requirements below for using the software and applications provided with the kit.

## INDUSTRIAL LABORATORY

Part number	Description	Team(student/kit)	Use
ETINS2000	conjunto de marco de mando	3 a 4	Eventual 1 Equipación para 3 equipos
ETINS3000	electrotécnico	2 a 3	Frecuente 1 equipación por equipo
ETINS4000	Motores	3 a 4	Frecuente 1 equipación por equipo
ETINS5000	Seguranza (Safety)	3 a 4	Eventual 1 Equipación para 3 equipos

### Infraestructure

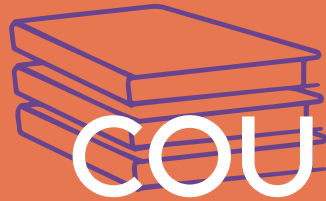
	ETINS2000	ETINS3000	ETINS4000	ETINS5000
Eléctrica	1 enchufe trifásico	1 enchufe trifásico	–	Three-phase socket

### Connectivity

Conexiones Ethernet por temporada trabajar	1 puerto Ethernet por kit
Rede WiFi	Necesario para conectar los kits
Acceso a Internet	Recomendado
Computadora	Recomendado, de acuerdo con los requisitos mínimos de software

## INDUSTRIAL LABORATORY

Part number	Description	Team(student/kit)	Use
ETINS6000	Bancada de Instalação Residencial e Predial	3 a 4	Frecuente 1 equipación por equipo
<b>Infrastructure</b>			
	ETINS6000		
Eléctrica	1 enchufe monofásico		
<b>Connectivity</b>			
Conexiones Ethernet por temporada trabajar	1 porta Ethernet por kit		
Red Wi Fi	Necesario para conectar los kits		
Acceso a Internet	Recomendado		
Computadora	Recomendado, de acuerdo con los requisitos mínimos de software		



# COURSEWARE

The training kits have a rich courseware with a practical focus, containing practical proposals aimed at training skills and competencies.

In addition to the **User Manual**, which contains information on operation and maintenance, the **Student Guide** is also provided, with proposals for practical activities to be carried out using the kit, and the **Facilitator Guide**, with answers to the proposed activities and guidelines to use the kit in a didactic way. In addition, **Video tutorials** are available to help you easily master the development tools and use the kit.

All of this content is available on our website at the **Facilitator Portal**.



## SKILLS AND COMPETENCIES

### Command panel assembly

- Understand and use command, signaling and protection devices;
- Analyze and define electrical protection needs for equipment and installations;
- Interpret and use electrical schematics;
- Use triggering devices and logics;
- Implement seal and interlock;
- Use timer and solid-state relay.

### Industrial Installations

#### Electrical Commands

- Understand and learn how to use control, signaling and protection devices;
- Analyze and define electrical protection needs for equipment and installations;
- Interpret and use electrical schematics;
- Use triggering devices and logics;
- Implement seal and interlock;
- Use timer and solid-state relay.

#### Electrical Measurements

- Use electrical measuring equipment;
- Understand the concept of transformers, diodes and resistors;
- Identify measures in the circuits.

#### Motor Protection and Starting

- Understand and learn how to use protection devices;
- Learn how to start different types of electric motors;
- Identify and select information in manuals and technical sheets;
- Understand and create electrical schematics;
- Solve technical problems using instruction kits;
- Scale and budget projects;
- Connect and start three-phase motors (direct, reversing, manual and timed star-delta);
- Connect and start Dahlander motor;
- Connect and start single-phase motors;
- Make connections and compensated starts (auto-transformer).

#### Programmable Relay

- Know the programmable relay;
- Understand programming languages;
- Use different programming languages;
- Solve problems using programming logic;
- Implement motor starters with programmable relays.

#### Electronic Drives

- Identify a frequency inverter and a SoftStart;
- Work with the basic functions of a frequency inverter and a Soft Starter;
- Use manuals for Inverter parameterization and SoftStart;
- Connect three-phase motors to the inverter and SoftStarter.



## SKILLS AND COMPETENCIES

### Building Installations

- Use devices of building electrical installations;
- Interpret electrical diagrams and symbols;
- Identify failures and correct installation projects;
- Dimension and install protection devices.

### Safety Devices (NR-12)

- Recognize sensor, actuator and control devices for safety;
- Recognize and interpret industrial safety devices (safety);
- Install and configure safety devices in command circuits;
- Select and install devices according to the safety degree;



## MOBILE APPLICATIONS

A current learning solution is not complete without software and applications. Along with the kits of this series, exclusive licenses are provided for applications on computer and mobile devices that complement and enhance the use of the kits.

### Exxer App

#### AUGMENTED REALITY KITS

- The solutions can be visualized in 3D through augmented reality, allowing the student to have a first contact with such technology and identify their main characteristics.



### Exxer App

#### EDUCATIONAL ANIMATION

- Augmented reality animations that show the main devices in section, and their assembly/disassembly process.
- Display of operating principles.
- Animations that help to understand the physical processes involved and the application of technology.



## DESKTOP APPLICATIONS

A current learning solution is not complete without software and applications. Along with the kits of this series, exclusive licenses are provided for applications on computer and mobile devices that complement and enhance the use of the kits.

### QCSim

– QCSim is a learning software for simulating the assembly of industrial electrical circuits. QCSim virtually displays the training system in a command panel, where the user can assemble electrical circuits in a three-dimensional (3D) environment. The component library that comes with QCSIM presents the main components of industrial electrical circuits such as contactors, timers, buttons, lights and motors.

– Through the web licensing system, the user can use the software anywhere, making it perfect for blended and e-learning courses.



### SegSim

– Segsim is a learning software for simulating industrial electrical circuit assemblies involving machine safety. Segsim virtually represents the “Industrial Safety Test Bench NR-12”, where the user can assemble electrical circuits in a three-dimensional and interactive environment.

– Through the web licensing system, the user can use the software anywhere, making it perfect for blended and e-learning courses.



### PredSim

– Predsim is a learning software for simulating the assembly of building electrical installation circuits. Predsim virtually represents the Electrical Installations Test Bench, where the user can assemble electrical circuits in a three-dimensional and interactive environment.

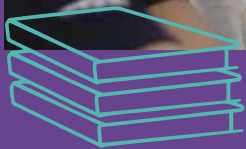
– Through the web licensing system, the user can use the software anywhere, making it perfect for blended and e-learning courses.



### SimMAQ

- Simulation faithful to the real kit, allows interaction and experiments and control by other software through communication protocols.
- Through the WEB licensing system, they can be used anywhere with internet access, making them ideal for hybrid and distance learning courses.





# TRAINING

As important as teaching resources and tools is teacher training. We have a complete package of solutions for your training and upgrading needs.

## Quick Start and Tutorials

Quick start is a quick video guide to learn, test and put the product into operation. Tutorials are videos that teach common procedures needed in classes using the kit.

## Technical Delivery

In the technical delivery, our experts present the product, its features, as well as maintenance and safety precautions, and put it into operation together with the customers.

## Operational Training

The purpose of operational training is to teach facilitators on how to use the kit. The kit courseware is presented and some proposed practices are carried out. It also includes all technical delivery activities.

## Technological Training

Technological training is a deeper learning of technology and applied concepts. These courses are not focused on kits but on topics and technical skills to update trainers.

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