



**AUBOT**  
Robotics



**exxer** Skills for  
the Future

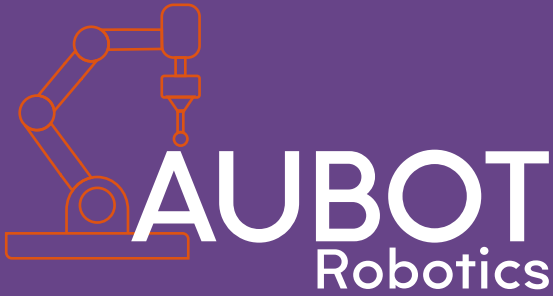
# THE UNION OF EXPERTISE AND SKILLS A NEW LEVEL OF EXCELLENCE IN EDUCATION!


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



 Robotics is a technology that has attracted increasing attention. In addition to traditional industrial robots becoming increasingly popular and cheap, collaborative robotics applications are also increasingly common today, that is, robots able to safely perform tasks with humans. Collaborative tooling and gripper technologies and computer vision systems combine to create a new era of robotics in the industry.


The AUBOT series meets this demand from professionals on the market, with a variety of kits that allow working with traditional robots (high performance) and with collaborative robots. This series brings different scenarios for robotic application and robots from the world's leading manufacturers.

The kits are complete, providing not only the robots but also tools, sensors and actuators for a more complete application and safety and protection systems.


High-performance industrial robots are safely packaged, using safety devices typical for this type of application, which are part of the study of this technology.

Collaborative robots are also provided with collaborative tools and vision systems, in addition to sensors and actuators to create work scenarios closer to real industry applications.

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 instructors.

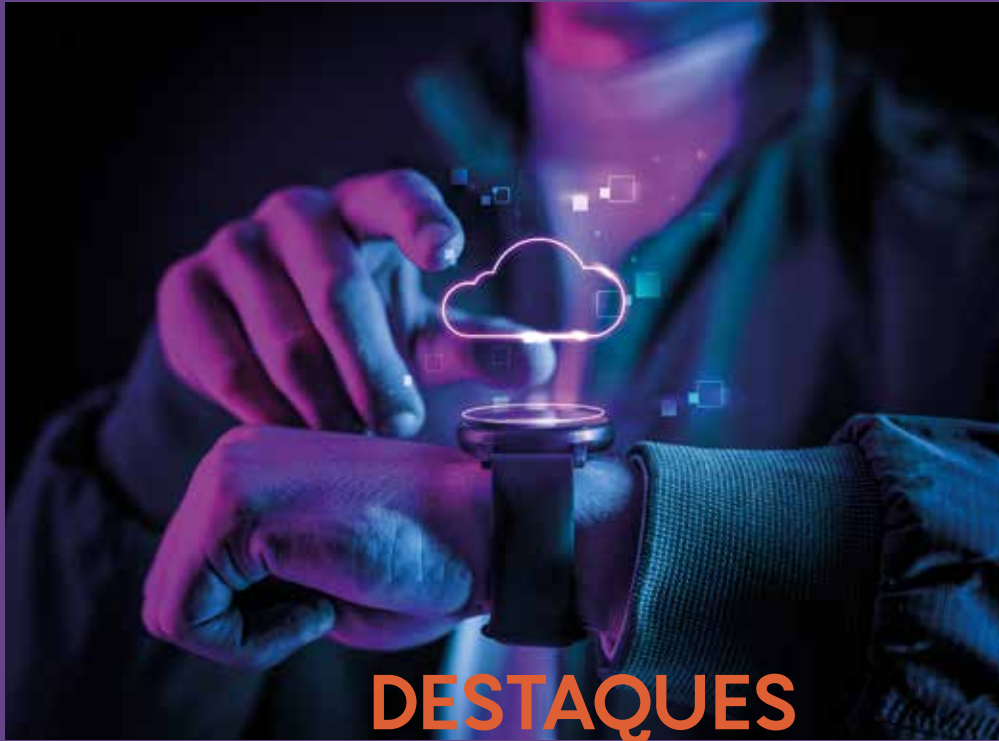
We have complete solutions for training and updating teachers, ensuring the best use of the kit's resources.

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



## MAIN SKILLS AND COMPETENCIE

- Recognize types and models of robots
- Identify the parts and peripherals of the robots
- Analyze robots data sheet
- Understand and fix robot singularity errors
- Understand safety risks related to robots
- Understand and apply means of risk control
- Understand (manual and automatic) operating modes
- Understand safety requirements regarding collaborative robots
- Understand accessories and safety precautions with high-performance robots
- Create and simulate projects
- Control robot movements
- Understand coordinate systems
- Carry out robot manual movements
- Use basic motion commands
- Create robot programs
- Understand and use grippers and suction cups
- Understand robot interaction with sensors and actuators
- Use robot IOs to create applications




## DESTAQUES TECNOLÓGICOS

Kuka's KR4 R600 and KR6 R900 robots (which make up the AUBOT2000 and AUBOT3000 series, respectively) are high-performance industrial robotic arms from one of the world's leading manufacturers. The KR4 R600 robot has a 4kg payload and a 600mm reach while the KR6 R900 bears up to 6kg and reaches up to 900mm, both with 6 degrees of freedom.

The UR3e model is a 6-axis collaborative robot arm from Universal Robot, with a 500mm reach and a 3kg payload. It is equipped with a collaborative technology gripper and vision system;

The TM5-700 model is a 6-axis collaborative robot arm from Omron, with a reach of 700mm and a load capacity of 6kg. It is equipped with a vision system integrated into the arm and a collaborative technology gripper.



 Thinking about the usability and learning process of each student, we developed learning solutions to provide benefits and differentials for users.

## KEY BENEFITS

- Industrial devices;
- Complete system;
- Multidisciplinary.

## KEY DIFFERENTIALS

- Safety;
- Simulator;
- Courseware.

## CONFIGURAÇÕES

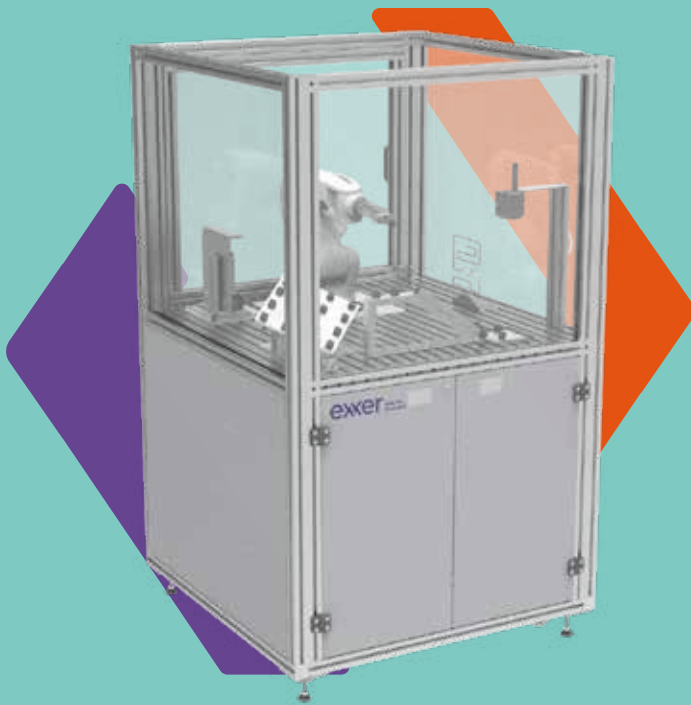
PRODUCT	DESCRIPTION	OPTIONS	DEVELOPMENT TOOLS	APPLICATIONS
AUBOT2000-L21-001	Célula Robotizada Educacional Training	n/a	KukaSim (15 licenças)	Exxer App
AUBOT3000-L21-001	Célula Robotizada Educacional Process	n/a	KukaSim (15 licenças)	Exxer App
AUBOT4000-L21-001	Célula com Robô Colaborativo Omrom	n/a	Polyscope	Exxer App
AUBOT5000-L21-001	Célula com Robô Colaborativo UR	n/a	TMFlow	Exxer App

## FEATURES

With modular configuration, Safety according to NR-12, development software, protection of main components and courseware included.

### AUBOT2000

Robotic Training Cell



#### Settings

- KR4 R600 Industrial robot from Kuka;
- 4kg payload, 600mm reach;
- Meets safety standards (NR-12).

#### DIMENSIONS

Height	1100mm
Width	2000mm
Depth	1100mm
Weight	200Kg

#### ELECTRICAL FEATURE

Energy Source	Single phase 220V 50/60Hz
Compressed air	6BAR (min.), 30 l/m



## FEATURES

With modular configuration, Safety according to NR-12, development software, protection of main components and courseware included.

### AUBOT3000

Process Robotic Cell



#### Settings

- KR6 R900 Industrial robot from Kuka;
- 6kg payload, 900mm reach;
- Meets safety standards (NR-12)

#### DIMENSIONS

Height	1100mm
Width	2000mm
Depth	1100mm
Weight	200Kg

#### ELECTRICAL FEATURES

Energy Source	Monofásico 220V 50/60Hz
Compressed air	6BAR (mín.), 30 l/m

## FEATURES

With modular configuration, Safety according to NR-12, development software, protection of main components and courseware included.

### AUBOT4000

Cell with Omron Collaborative Robot



### Settings

- TM5-700 Collaborative Industrial Robot from Omron;
- 6kg payload, 700mm reach;
- Meets safety standards (NR-12).

### DIMENSIONS

Height	1100mm
Width	2000mm
Depth	1100mm
Weight	200Kg

### ELECTRICAL FEATURES

Energy Source	Monofásico 220V 50/60Hz
Compressed air	6BAR (mín.), 30 l/m

## FEATURES

With modular configuration, Safety according to NR-12, development software, protection of main components and courseware included.

### AUBOT5000

Cell with UR Collaborative Robot



### Settings

- UR3e Collaborative Industrial Robot from UR (Universal Robots);
- 3kg payload, 500mm reach;
- Meets safety standards (NR-12)

### DIMENSIONS

Height	1100mm
Width	2000mm
Depth	1100mm
Weight	200Kg

### ELECTRICAL FEATURES

Energy Source	Monofásico 220V 50/60Hz
Compressed air	6BAR (mín.), 30 l/m

 MAIN DEVICES

	KR4 R600	KR6 R900	UR3e	TM5-700
TIPO	Alto desempenho	Alto desempenho	Colaborativo	Colaborativo
EIXOS	6	6	6	6
ALCANCE	600mm	900mm	500mm	700mm
CAPACIDADE DE CARGA	4kg	6kg	3kg	6kg

## DEVELOPMENT TOOLS

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

### KR4 R600 e KR6 R900

- KukaSim off-line programming software
- 15 licenses



### UR3e

- PolyScope



### TM5-700

- TMFlow






# USE

## Guidelines on the recommended use of the Kit!

In “teams” define the optimal and maximum number of students per kit.

 Use can be “intense”, therefore, 1 kit per work team; or “occasional/shared”, that is, it is not used all the time and therefore there may be less kits than teams, which the optimal and maximum numbers must be indicated.

PART NUMBER	DESCRIPTION	TEAMS(STUDENTS/KIT)	USE
AUBOT2000 AUBOT3000	Process Robotic Cell	3 a 4	Eventual 1 Kit for 3 teams
AUBOT4000 AUBOT5000	Cell with Collaborative Robot	3 a 4	Eventual 1 Kit for 3 teams

INFRASTRUCTURE		
	AUBOT2000 / AUBOT3000	AUBOT4000 / AUBOT5000
Eléctrica	1 single phase socket	1 three-phase socket
Pneumática	1 point per kit, min pressure of 6BAR, min flow of 30 l/min	1 point per kit, min pressure of 6BAR, min flow of 30 l/min

CONNECTIVITY	
Ethernet connections per season work	2 Ethernet ports (1 for computer and 1 for kit)
Wifi network	–
Internet access	Recommended
Computer	Necessary; according to minimum software configuration



# COURSEWARE

The training kits have a wide 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

## Robot Characteristics

- Recognize types and models of robots
- Identify the parts and peripherals of the robots
- Analyze robots data sheet
- Understand and fix robot singularity errors

## Safe working with robots

- Understand safety risks related to robots
- Understand and apply means of risk control
- Understand (manual and automatic) operating modes
- Understand safety requirements regarding collaborative robots
- Understand accessories and safety precautions with high-performance robots

## Using the programming software

- Create projects
- Simulate projects
- Upload programs into the robot

## Control of robot movements

- Understand coordinate systems.
- Carry out robot manual movements
- Record points
- Use basic motion commands
- Create robot programs

## Tools and accessories

- Understand and know how to use the grippers
- Understand and know how to use the suction cups

## Final Project

- Understand robot interaction with sensors and actuators
- Use robot IOs to create applications
- Complete projects



## 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 this technology and identify their main characteristics.





# 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 Trainin

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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