

Tech Specs

Model	E03-Pro	E05-Pro	E05L-Pro	E10-Pro	E10L-Pro	E12-Pro	E15-Pro
Weight	18kg	25kg	26kg	43kg	45kg	70kg	60kg
Payload	4kg	7kg	5kg	12kg	10kg	12kg	18kg
Reach	590mm	800mm	950mm	1000mm	1300mm	1800mm	1300mm
Power Consumption	100W Typical Application	180W Typical Application	180W Typical Application	350W Typical Application	350W Typical Application	600W Typical Application	600W Typical Application
Joint Range	J1、J4、J6: ±360° J2: ±135° J3: ±150° J5: ±147°	J1、J4、J6: ±360° J2: ±135° J3: ±153° J5: ±180°	J1、J4、J6: ±360° J2: ±135° J3: ±153° J5: ±180°	J1、J4、J6: ±360° J2: ±135° J3: ±153° J5: ±180°	J1、J4、J6: ±360° J2: ±135° J3: ±153° J5: ±180°	J1、J4、J6: ±360° J2: ±135° J3: ±155° J5: ±180°	J1、J4、J6: ±360° J2: ±135° J3: ±153° J5: ±180°
Joint Speed	J1-J4: 180°/S J5-J6: 200°/S	J1-J4: 180°/S J5-J6: 200°/S	J1-J4: 180°/S J5-J6: 200°/S	J1-J2: 100°/S J3-J4: 150°/S J5-J6: 180°/S	J1-J2: 100°/S J3-J4: 150°/S J5-J6: 180°/S	J1-J2: 80°/S J3-J4: 120°/S J5-J6: 150°/S	J1-J2: 80°/S J3-J4: 120°/S J5-J6: 150°/S
Tool Speed (Effective payload status)	2m/s	3m/s	3m/s	2m/s	2.5m/s	2.5m/s	2m/s
Repeatability (Effective payload, rated speed status)	±0.02mm	±0.02mm	±0.02mm	±0.03mm	±0.03mm	±0.05mm	±0.05mm
Degree of Freedom	6						
End I/O port	Digital input: 3, digital output: 3, analog input: 2						
Control box I/O port	Digital input: 16, digital output: 16, analog input: 2, analog output: 2						
I/O Source	24V 2A						
Communication	TCP/IP , ModbusTCP , Profinet (Optional) , Ethernet/IP (Optional)						
Programming	Graphical programming, remote call interface						
Collaborative	10 advanced security configuration functions						
Main material	Aluminum alloy						
Working Temperature	0-50°C						
Power input	100-240V AC, 50-60Hz						
Cable	Cable to control box: 5m, cable to teach pendant: 5m						

Force Control Parameters (Optional)		Visual Parameters (Optional)	
	Payload >10KG		Payload ≤10KG
Range	Fx=Fy=500N,Fz=900N, Mx=My=Mz=48Nm		Fx=Fy=Fz=200N, Mx=My=Mz=10Nm
Accuracy	Fx=Fy=±3N, Fz=±4.5N, Mx=My=Mz=±0.24Nm		Fx=Fy=Fz=±3N, Mx=My=Mz=±0.10Nm
Precision	Fx=Fy=±1.5N, Fz=±2.25N, Mx=My=Mz=±0.12Nm		Fx=Fy=Fz=±1N, Mx=My=Mz=±0.05Nm

Configuration Details >>>

Configuration Instructions	Robot	Control Box	Teach Pendant	IP Classification
Integrated End Force Control		Standard control box	Standard teach pendant	IP54 or IP66
AI Vision integration		Standard control box External WiFi For Wireless Commissioning (Optional)	Standard teach pendant	IP54

Standard Control Box		Mini Control Box (Optional)		Teach Pendant	
Compatible Models	E05-Pro,E05-Pro,E05L-Pro,E10-Pro,E10L-Pro(1KW) E12-Pro,E15-Pro (2KW)	Dimensions	348×221.5×76.5(mm)	Dimensions	290×234×108(mm)
Dimensions (L*W*H)	445.2mm x 237mm x (330+90)mm	Power Input	DC30~60V	Weight	2.5kg
Stand Height	90mm	I/O Source	DC24V	Display	11"
Weight	18KG (1KW) /18KG (2KW)	I/O Port	Inputs 8, Outputs 8	Resolution	1920x1200
Power Output	48V DC	IP Classification	IP20	E-Stop Button	1
Working Temperature	0~50°C	Communication	TCP / IP Modbus		
Working Humidity	90% Relative Humidity (non-condensing)				
IP Classification	IP20				
Communication frequency	1000Hz				

Elfin-Pro

Collaborative Robots



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Industries

Automotive, Consumer Goods, New Energy, Medical Experiment, Physiotherapy, Precision Machining

Applications

Welding, Massage, Polishing, Grinding, Assembly, Screen Detection



Overview

The Elfin-Pro series collaborative robots are developed based on the Elfin series, inheriting the advantages of a complete range of product models, convenient deployment, high precision, high flexibility, dual-joint module design, and modular design. At the same time, the product capabilities have been completely upgraded, integrating cutting-edge AI technology to achieve integrated end-effect or force control and integrated AI vision. With a new surface treatment process, it combines aesthetics and practicality, resulting in more stable and reliable performance, safer human-robot collaboration, and broader application scenarios.



Force Control Exploration Intelligent Assembly

Empowers flexible production of small batches
and multiple varieties



Self-developed Software And Hardware Platform

Easy to operate, quick programming, strong
interactivity, and high scalability



Integrated End Force Control

Accuracy reaches **2N, 0.1Nm**
Reaches industry-leading levels



Higher Protection Wider Application

Achieves **IP66** protection level, suitable for more
production environments



Integrated AI Vision

Visual positioning accuracy can reach up to **±0.1mm**
Supports **10+** visual positioning modes
Only **10** images are needed to complete rapid
AI learning for specific scenarios
Supports automatic focusing and multiple light sources

Industry Applications



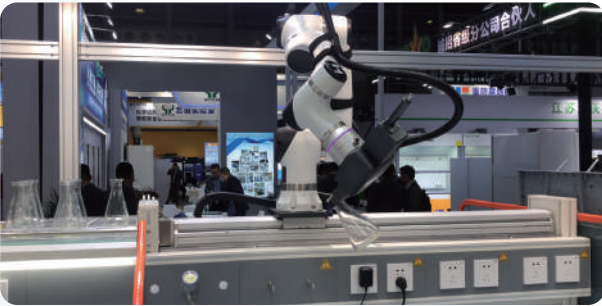
E10-Pro

Advanced Materials Industry

Automated Carbon Fiber
Lamination Molding

Flexible production Enhances the flexible production capacity of small and medium-sized factories to meet the demand for diverse varieties and small batches of production.
High-precision tactile feedback Real-time detection of the contact force on the workpiece surface to ensure a smooth laminating process.

In Romania, E10-Pro helps a company engaged in the production of carbon fiber products enhance its flexible production capacity. During the carbon fiber lamination process, it faces the challenge of diverse specifications, shapes, and materials of the workpieces to be processed. E10-Pro deeply integrates with 3D vision equipment and intelligent sensors, and after collecting information about the carbon fiber workpiece molds, it can quickly formulate the optimal working path and efficiently complete the carbon fiber lamination and molding operations.



E05-Pro

Education Industry

Laboratory Construction

Equipped with integrated AI vision capabilities, covering 80% of visual application scenarios.

The cleanliness of the robotic arm reaches ISO 5, meeting the stringent requirements of laboratories.

Based on high-performance vibration suppression algorithms, force control algorithms, and high-precision motion control algorithms, providing an extremely precise operating experience.

High-end laboratories are an important application area for the Elfin-Pro series collaborative robots. The unmanned laboratory application solution based on the Huayan E05-Pro collaborative robot (linked to the seventh axis) allows the robotic arm to replace manual labor, automatically completing procedures such as liquid transfer, weighing, dripping, and testing, and performing outstandingly in automated experiments, precision operations, and high-throughput screening.



E03-Pro

Metalworking Industry

Ship welding

Lightweight and efficient One ordinary welder can operate 4 welding robots simultaneously, and adults can easily lift them.
Enhances competitiveness Contributes to further improving the intelligence level of the welding workshop.

In the shipbuilding industry, there is a relatively high demand for medium and thick plate welding, and customers specifically request that "the welding robot should be lightweight and able to adapt to the complex shipyard environment." The E03-Pro collaborative robot has a body weight of 18KG, allowing a single person to carry it to any location in the welding workshop; it is easy to operate and can quickly complete automated welding setup through drag teaching (with integrated end-effector force control capability) and graphical programming, ensuring welding quality.



E05-Pro

Healthcare Industry

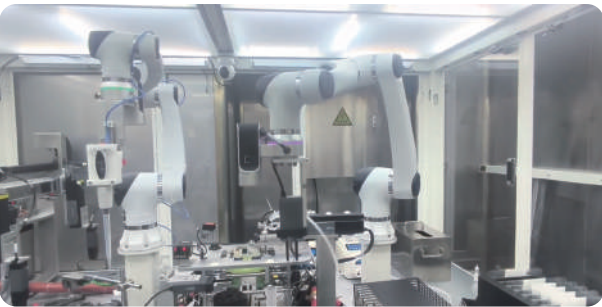
Massage Therapy

Easy Operation For the female-dominated massage & physiotherapy industry, the robot enables smooth lead-through with ≤3N drag force, and replicates therapists' techniques for consistent service.

Safe Collaboration Equipped with 10+ advanced safety configurations, it poses no human safety threat even in emergencies.

Easy Integration Precise positioning with customizable options; standardized design ensures worry-free overall delivery.

The application of collaborative robots in the massage and physiotherapy field has emerged as a new development in recent years. These robots help high-end wellness and care facilities improve service quality and alleviate the pressure of therapist shortages. A partner adopted Huayan robots equipped with end-effector massage attachments to perform massage actions including pressing, squeezing, pushing and kneading. A range of massage protocols can be programmed and integrated into the robot system, forming diversified massage packages for clients to choose from. This standardized massage robot system fills the gap in flexible massage functions in the current massage equipment market.



E10-Pro (Visual Version)

Food Industry

Laboratory Applications

Integrated AI Vision The E10-Pro Vision version supports visual correction, can autonomously determine operation points, and is more efficient.
ISO 5 Cleanliness The cleanliness of the robotic arm reaches ISO 5, meeting the stringent requirements of laboratories.
Simple and Flexible Supports drag-and-drop teaching, graphical programming, and quick replacement of test samples.

The client is a leading global company in plant extracts, supplying raw materials to numerous beverage customers both domestically and internationally, with a leading market share. In its product research and development laboratory, basic tasks such as sampling, liquid transfer, and instrument operation are highly repetitive and time-consuming (accounting for over 70%), with an error rate of 5%-10%. Two E10-Pro (vision version) collaborative robots are deployed to interconnect and interact with other laboratory testing instruments, automatically completing operations such as opening lids, sampling, transporting, and dispensing liquids.



E05-Pro

3C Industry

Precision Component Assembly

More precise The dynamic insertion accuracy of rigid components reaches the hundred-micron level, with a success rate of 99.99%.

More efficient Compared to manual operations, automatic operations can be completed in an average of only 7-8 seconds.

More intelligent Collaborating with Huawei, deeply integrating with Huawei Cloud AI capabilities.

The dynamic insertion application of rigid components is an AI technology application instance jointly created by Huayan Robotics and Huawei Cloud, mainly used in the insertion and assembly scenarios of precision components in the 3C product line. Through the combination of edge and cloud intelligence, models such as force perception and vision collaborate in real-time, offering advantages of greater precision, intelligence, and efficiency compared to manual assembly.