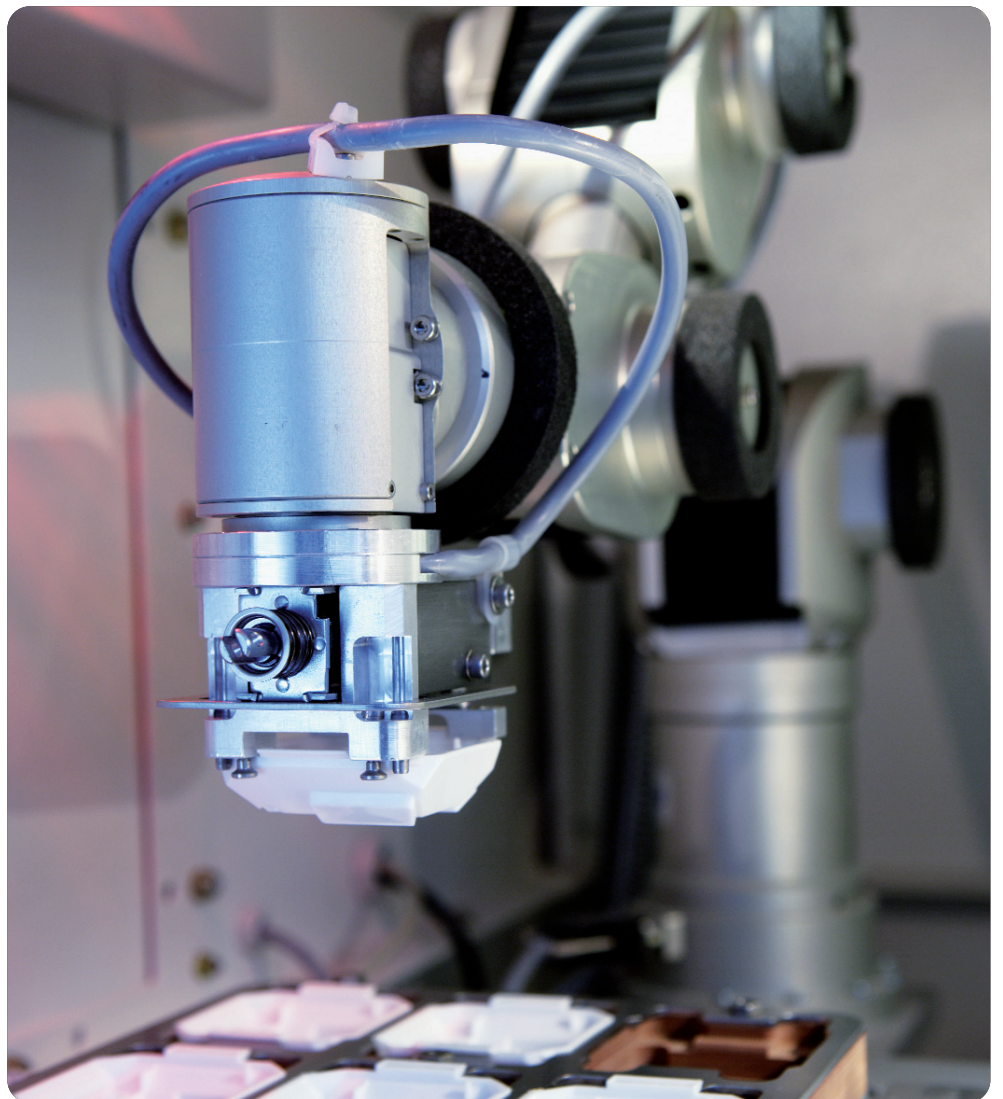


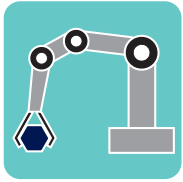
intelligent & personal



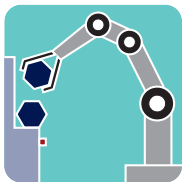
Katana –
Automation made easy



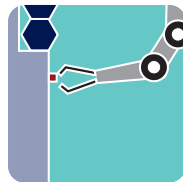
Pick & Place...



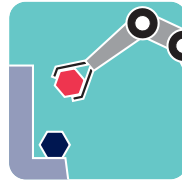
Pick an object



Position an object



Initiate an action



Remove an object



Place an object

...and much more

... pays for itself with Katana

Monotonous, repetitive tasks are rarely profitable when undertaken by humans over extended periods of time. What's more, labour costs are high and personnel cannot guarantee 100% accuracy every time, meaning that the efficiency and quality of the working process can potentially be compromised. Even today, there are countless millions of jobs in the industrialised world in which these «Pick & Place» functions are carried out according to the basic scheme shown above.

There are three main reasons why these processes have not yet been automated.

Traditional, conventional automation solutions ...

1. ... are too inflexible
2. ... are too expensive (investment/implementation and changeover costs)
3. ... have not evolved in line with the task at hand

Thanks to its simple, flexible, reliable and intelligent design, the unique Katana robotic arm now delivers a contemporary, automated solution to fully address these very issues.

Flexibility

Six axes, user-friendly programming, manual teach-in, compact and mobile

Cost-efficiency

No guarding, low integration and training costs, minimal changeover times

Complex tasks

Integrated sensors and on-board learning capability, learn by example, camera systems, network-ready

Wide range of applications

Industry

Handling, pick & place, assembly and testing tasks

Service Robotics

Manipulators on mobile platforms and for service tasks

Research

Ideal research tool for robotics, artificial intelligence and neural networks

Training

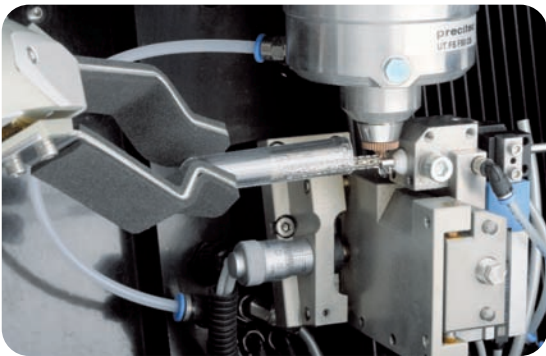
Ideal training tool for automation, mechatronics and robotics

e.g.

«Thanks to Katana the workplace is made to fit the man,
not man to fit the workplace.»

Werner Fuchs, Inficon, Balzers

Multitalented



Extremely compact and lightweight

Weighing a mere 4 kg with a payload of 0.5 kg, fully integrated power and control electronics and a powerful on-board processor for programming and communication with its environment – mobile and space-saving – robotics doesn't get much better than this.

Interacts with man and its environment

Katana is the world's only industrial robot capable to interact directly with humans, without the need for safety precautions. With integral sensors and a control system based on distributed intelligence, Katana can observe its environment and respond contextually.

Simple yet intelligent

Whether for implementation, programming, maintenance or everyday use: Katana solutions are designed so that they can be learnt, understood and effectively used by anyone – quickly and with no previous knowledge. Integrated intelligence also gives Katana the ability to learn from «experience» and to continuously refine the working process in hand.



Technical Data

Drive	DC motors with position encoders
Repeat accuracy	± 0.1 mm
Degrees of freedom	4 to 6
Working radius	up to 60 cm
Mechanical design	high-strength aluminium, anodized
Net weight	~ 4.3 kg
Payload	500 g
Max. power	96 W (24 V/4 A)
Speed	90°/sec. – all articulations simultaneously
Test/Standard	CE-compliant, EN 12100, EN 61010
Standard interfaces	Digital I/O, sensors/actuators, Ethernet, Modbus TCP/IP (additional I/O and SPS-connection), USB, LAN, Soft Stop, UPS, C++ interface, support for Python (scripting language)

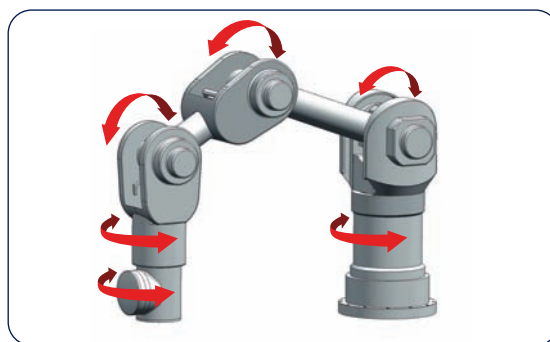
Control board

The Katana control board represents state-of-the-art control and communication technology and guarantees stand-alone, real-time operation of the robotic arm and peripheral components. Based on an embedded Linux operating system and supplied complete with every current standard interface, it offers:

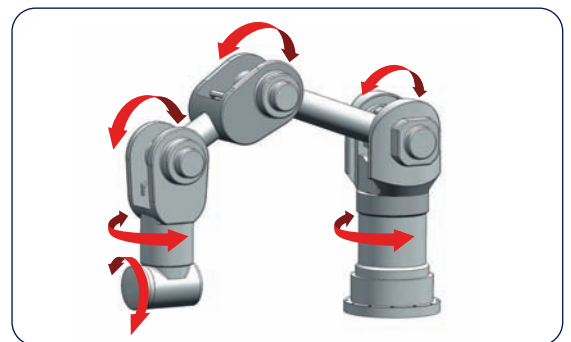
- simple communication with actuators, sensors, PLC controllers or other high-level systems
- TCP/IP support for LAN and web applications
- Converter for ProfiNet, EtherCAT or other fieldbus systems
- USB connection for input devices (joystick, etc.) and storage systems (Memory Stick)

Configurations

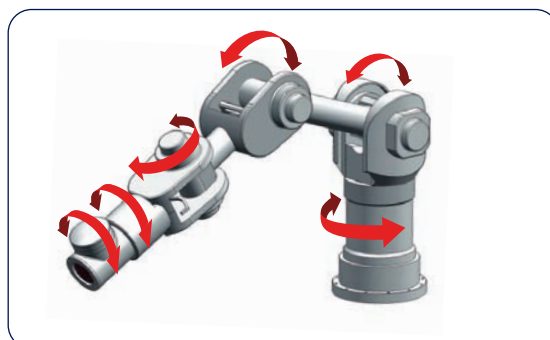
To best prepare the Katana for its task and to safely and efficiently cover the required working spaces and sequences, Katana is available in two standard and two special configurations, ensuring compatability with a wide range of tasks and safe and efficient coverage of working spaces and routines. 3D CAD models and corresponding simulation programs will help the user quickly evaluate which is the ideal configuration.



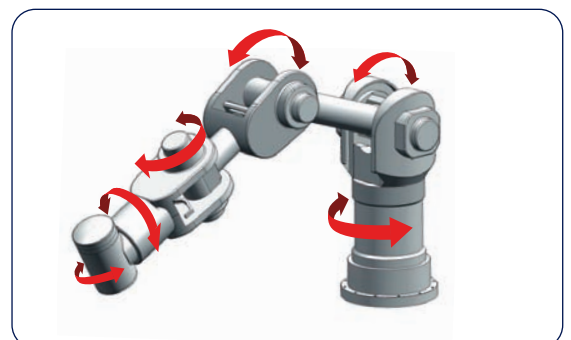
180° – Standard



90° – Standard



90/180° – Special



90/90° – Special

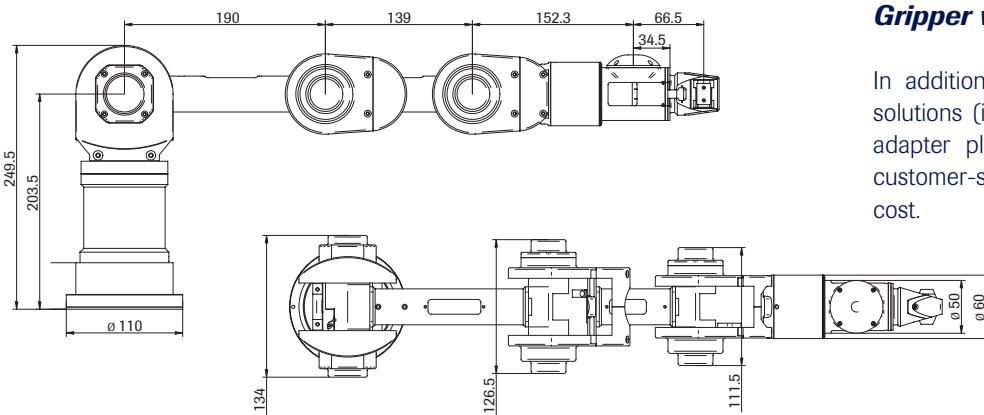
Mobile & flexible

Katana 400s_i
with integrated
control box

Katana 400s_s
with separate
control box

Katana 400s_o
with separate
control board





Gripper variants

In addition to the wide range of standard gripper solutions (integrated or external), Katana features an adapter plate to easily accommodate virtually any customer-specific gripper configuration at minimum cost.

A integrated mechanical angled gripper

B integrated sensor angled gripper

C integrated mechanical parallel gripper

D vacuum gripper (external supply)

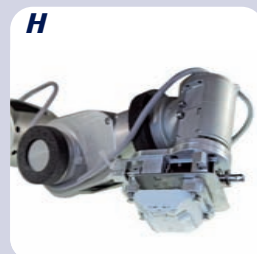
E rotating adapter plate

F electrical parallel gripper with vibrator*

G vacuum suction and angled gripper*

H magnetic parallel gripper*

* customer-specific

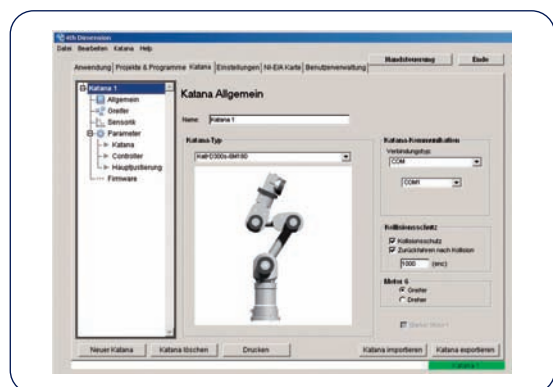


Programming and control software «Katana4D» and «KNI»

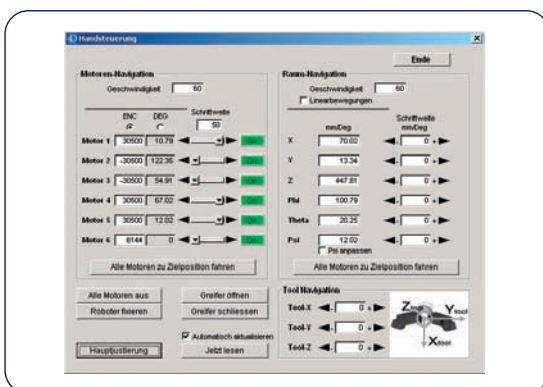
The «Katana4D» software designed for industrial applications allows easy programming of the robotic arm. Previous knowledge in other programming languages is not necessary. Whether beginner or expert, «Katana4D» offers the user an impressive range of features:

- Solution wizard – guides the user in a few steps through programming
- Manual control with direct addressing of all axes – individually, in the basic or tool coordinate system
- User-friendly functions for grids, points list, paths, linear and circular paths as well as trajectories
- Numerous standard interfaces and a variety of add-on modules

The free open source programming interface «KNI Katana Native Interface» is supplied with each Katana. Based on C++, this library allows advanced programming experts to address the robot directly.



Configuration



Manual control

Simple

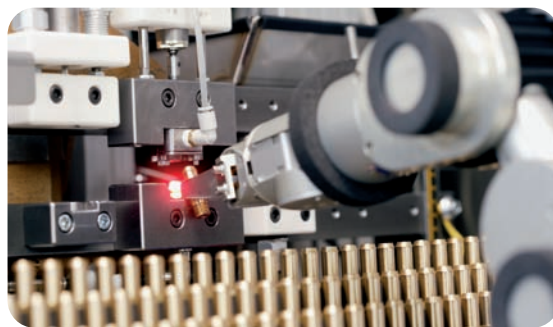


Assembly

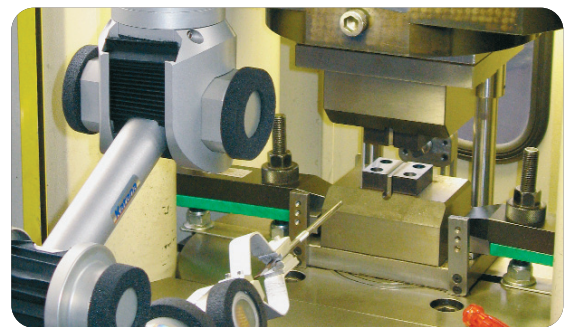
A new dimension in industrial automation

Wherever traditional industrial robots and automated systems are inappropriate for reasons of size, cost or hazard potential, and simple automation solutions based on linear units cannot be justified for the required task or deliver the necessary flexibility, Katana is a contemporary and cost-efficient solution for part or full automation.

From small businesses to multinational corporations, hundreds of satisfied customers are already benefiting from the unique advantages Katana technology delivers every day, in every aspect of their working processes.



Quality control



Production

Neuronics – intelligent & personal

Neuronics is the world's leading supplier of intelligent automation solutions that can operate directly with humans in industry, service robotics, research and teaching. Developed and produced in Switzerland, these intelligent & personal robots consistently impress with their compact design, flexibility, simple implementation and handling, as well as an incredibly rapid payback.

Your Neuronics agent

Katana – Automation made easy

- Working directly with humans in complete safety
- Capable of social and contextual interaction with man and the environment
- Ultra-compact and lightweight construction
- Superior autonomy and intelligence

