



KeMobile



Mobile automation
from the technology expert

KEBA[®]

Automation by innovation.

KeMobile at a glance

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The standard in mobile automation

KeMobile from KEBA is the world's leading turn-key system solution for mobile operation and mobile teach-in. The functional scope, interfaces and software of the KeTop handheld terminals can be adapted conveniently to match individual requirements. Specific corporate design colors and styles are likewise easy to implement.

Single source strength

Customer service at KEBA means far more than just supplying the devices. Besides initial consultation and developing modified hardware and software, KeMobile's extensive range of professional services also includes training, after-sales service and support. Thanks to the all-inclusive care package offered by KEBA, clients can concentrate fully on their own core competencies.





Advanced premium products

More than two decades of practical experience and a wealth of expertise in the fields of automation, mechanical engineering and robotics enable product developments that are in line with market requirements. This results in worldwide leading premium products for mobile automation with unique features:

- Industry-compliant robustness for use in extreme conditions
- Best possible ergonomics to ensure long, fatigue-free work
- Outstanding flexibility thanks to mobile operation directly on site, where things happen
- Advanced technology prevents malfunctions
- High degree of safety thanks to approvals in conformance with established standards governing robotics and automation
- User-friendly, intuitive user interface saves time and money for training
- Lasting availability thanks to the use of proven components

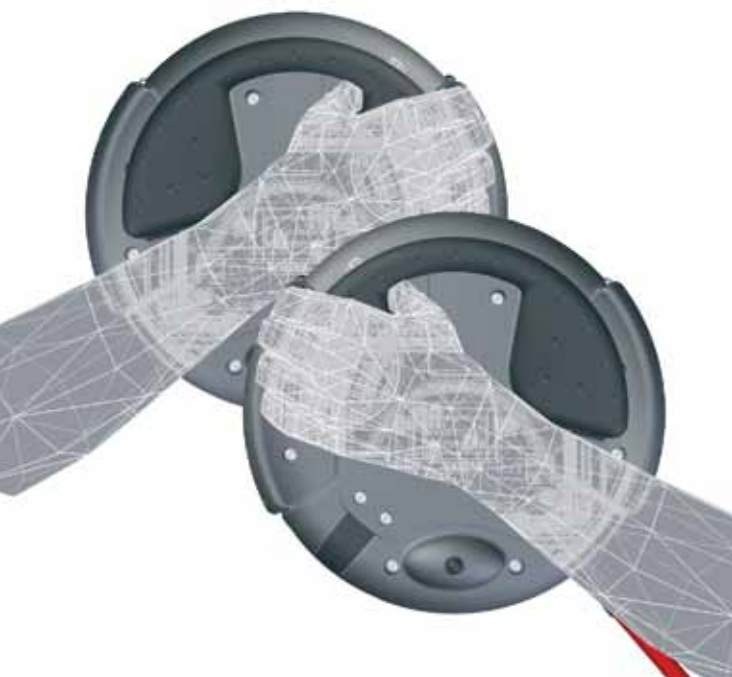


Ergonomic design Innovative technologies

KEBA's mobile operating terminals always offer the maximum in terms of ergonomics and enable fatigue-free and quick work over longer periods. This means that users can concentrate fully on their own tasks and the respective process.

Adaptable for any user

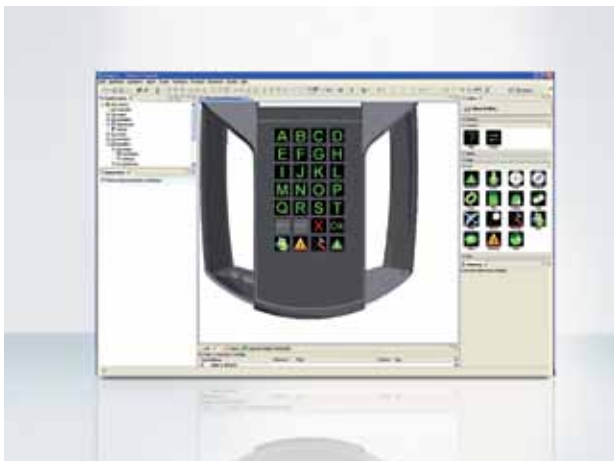
The multifunction grip of the round KeTop standard design is suitable for both left-handed and right-handed users and is also ideal for tabletop use. As there are numerous ways of gripping and holding the device, it always feels comfortable when you have it in your hand. The adjustable straps of the KeTop T20 series mean they can be adapted for the comfort of the respective user and the device can also be held in your right or your left hand.





The edge through innovative LCD keyboard

The tactile KeTop T20 techno LCD keyboard which can be configured conveniently and flexibly using software enables numerous applications with a single device. A wide range of languages, digits, special characters and symbols can be stored and it is simple to switch between the different keyboard layouts during the process. User convenience is enhanced by the device showing only those keys that are required for the current process. Keys that are not required are hidden, thus adding to intuitiveness. This is also an effective way of preventing operating errors and less training is required.



Efficient and error-free operation

All mobile KeTop series teach panels come with an ergonomic, low-weight housing that rests comfortably on the lower arm, close to the elbow. This means that the device levers only slightly and can be held for longer periods effortlessly and without fatigue. This enables maximum operating efficiency and minimizes tiredness and the risk of operating errors.





The proven reliability of KeTop operating devices for uncompromising use in tough industrial environments is guaranteed through high robustness, safety and quality. Complete functionality is assured, even after collisions with hard objects, being dropped from a height of up to 1.5m and contact with oily liquids.

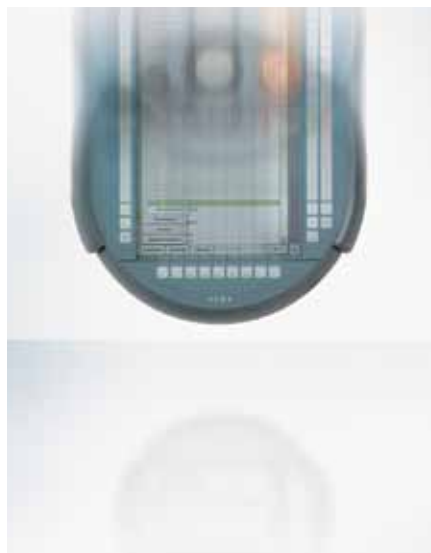
Shockproof and fail-safe

Thanks to their robust, twin-walled housing and shockproof display design, KeTop teach panels even survive unharmed when dropped from a considerable height. Plant and machine operation is secured and costly periods of downtime are avoided in an effective manner.

Safe shell design



Shockproof from heights up to 1.5m



Dirt-resistant



Tough in the taking, safe in the making

Resistant against dust and liquids

Dust, splash water, weld spatter and high temperatures – sure signs of a tough industrial environment but no threat to the mobile KeTop operating panels. They also stand up to oils, greases and cleaning agents.



Safety through the series

All KeTop operating panels feature a three-position enabling switch which is easy to operate. This switch recognizes immediately if the operator has any cramps or panic reactions and puts the machines into a safe state reliably and without delay. Additionally, all relevant safety circuits of the KeTop devices are designed with dual circuits, thus ensuring the high standard of single failure protection.

Certified and outstanding quality

Professional quality control ensures at all times that all KeTop operating panels are supplied in perfect working order and without any error. Besides this they also fulfill all relevant standards and safety certifications worldwide when they leave KEBA. This enables quick start-up procedures without any additional financial expense or delays.

Customizing Flexible in hard- and software

The versatility of the operating elements and the visualization plus the integration of client-specific corporate identity enable a maximum degree of customizing. Operating efficiency is optimized while the manufacturer's trademark is emphasized.



Application-optimized designs

A modular system with a wide range of operating elements such as joysticks, hand wheels, keyswitches and pushbuttons is available. The display masks of the user-friendly touchscreens are likewise customizable. The accent is on precise, quick and simple operation.

An individual KeTop for every customer

All KeTop operating devices can be adapted in line with the corporate identity of the respective client. The company logo appears on both the robust housing and in the graphical user interface. The corporate colors influence the graphic design of the membrane keypad and human-machine interface. This maximum degree of customizing enables the mobile operating devices to be fully integrated in the machine environment of the respective customer.



Individual keyboards

Both the membrane keyboards on all KeTop devices and the tactile LCD keyboard of the KeTop T20 techno can be adapted to the respective requirements. Adjustments in terms of color and text make operation easier. In addition to this, the keys can also vary in respect of number, size and arrangement and user-defined symbols can be added.

Expert support

As a reliable partner KEBA is always pleased to offer assistance on configuration issues and answer any other questions customers may have. Competent automation experts with many years of expertise provide fast and efficient troubleshooting in cases of service & support.



Easy and fast application integration

Thanks to common interfaces and powerful software tools, mobile KeTop operating devices can be integrated in virtually any industrial environment.

Versatile interfaces

The handheld operating devices in the KeTop series support the Ethernet interface for open communication and high data transfer rates to realize complex visualizations and the serial interfaces RS-232C and RS-422A. A connection box can be used to communicate with common bus systems such as CAN-open, DeviceNet, PROFIBUS etc.

High-performance visualization

The operating systems Windows CE, Linux and VxWorks, together with .NET Compact Framework and Java Framework, form the ideal basis for creating rich client applications. When developing MS Windows applications programmers can choose between Visual Studio (C++, C# and Visual Basic) and commercially available GUI builders. KeStudio view.basic (XML) or KeStudio view.standard are available for VxWorks and Linux visualizations. With these applications the graphical user interface of the KeTop devices can also easily be adapted in accordance with the respective corporate design.





API makes application programming easier

The mobile handheld operating devices come with an extensive Application Programming Interface which means that elaborate applications can be programmed efficiently and extremely quickly. Applications and their user interfaces are easily generated using proven project management and development tools.

Ideal for SCADA solutions

Thin client solutions can also be realized easily on all KeTop operating devices using MS Windows Console, KEBA Virtual Channel, VNC, RDP or browser applications. The visualization software runs completely on the associated control system in the process so it has practically no limitations and the speed of the rendering can once again be increased.

KeMobile software structure

KeStudio View Edit	Integrated Development Environment (IDE)	MS Visual Studio
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KeTop

Application

Application Programming Interface (API)



Runtime environment



Operation system



User-friendly software environment



KeView Standard is a user-friendly run-time system (framework) for KEMRO automation components. This means that visualizations and platform-independent applications can be generated quickly and easily for the KeTop devices.

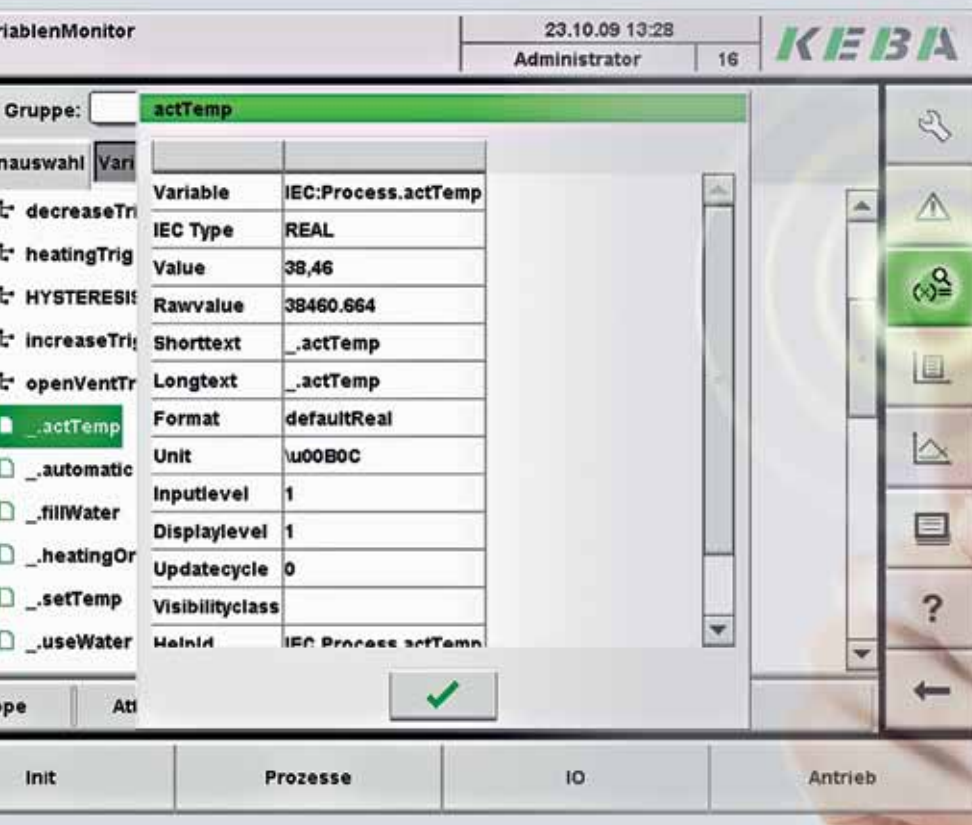
Standardized screen layout

KeView Standard contains numerous modules that allow you to switch between languages and units in run time and also offers an HTML-based help system. Pre-made widgets such as standard screens, diagnostics, I/O monitoring and even more are also available.

Easy to use and limitless expansion possibilities

Individual visualization screens are easy to create from numerous pre-made elements using drag & drop. The automatic size adjustment of the visualization to the hardware in question allows universal use without needing any further adaptations. Limitless possibilities can be opened up by developing the applications with flexible Java-based extensions.





KeStudio ViewEdit is based on KeView Standard and is designed for user-friendly project management of individual visualization solutions for automation tasks.

Visualization made easy

Creating individual visualization applications easily on the PC is made possible with the software KeStudio ViewEdit which is optimized especially for this purpose. This way, even elaborate visualizations can be planned quickly and conveniently. Client-specific design elements and logos can be integrated with no trouble at all. In the case of highly complex applications the comprehensive development tool also allows completely free programming. Additionally, an innovative key editor is available for the KeTop T20 techno to customize the LCD keyboard.

Convenient mask generation with user-friendly software on the PC





KeMobile – Mobile automation with a system

KeMobile systems are suitable for a wide range of tasks: as operating devices for plants and machinery, as teach and program panels for robots and also for tests, maintenance and start-up tasks.

In the past, mobile operating devices have often been used as a mere add-on for stationary operating units. KeMobile systems, however, can now often replace them completely. The systems consist of the proven KeTop devices and practical accessories such as connection boxes, wall mounts and connection cables.

KeMobile because:

- Ergonomic and lightweight
- Innovative thanks to the very latest technologies
- Straightforward customizing of hardware and software
- Certified and safe
- Premium quality and robust





KeTop T20 – Making light work of mobile service

The extremely compact teach panels in the KeTop T20 series are the lightest mobile operating devices. The KeTop T20 eco with membrane keyboard weighs in at a mere 480g (1lb) with the T20 techno with tactile LCD keyboard weighing only slightly more. Both devices can also be used with a single hand and have been developed for price-sensitive mass market applications.

KeTop T20 because:

- Extremely light and handy
- Ergonomic housing for single-handed and two-handed operation
- Excellent 3.4" OLED touchscreen (480x272 pixels), finger and stylus compatible
- Customizing through client-specific logos and keyboard layouts
- Ideally adaptable to the respective application through versatile specific elements
- Lasting convenience in operation regardless of hand size thanks to adjustable straps
- Ideal for the price-sensitive mass market





KeTop T20 eco – The lightest handheld operating device

Never before in mobile operation and teach-in has so much performance been packed into such a compact housing with such low weight and such an attractive price/performance ratio. Extensive customizing opportunities for visualization, keyboard and controls enable the most versatile applications.

KeTop T20 eco because:

- Least expensive KeTop with great performance
- Weighing in at only 480g the lightest teach panel
- Robust membrane keyboard with up to 36 tactile keys
- Flexible and universal use
- Own CNC version with hand wheel
- Special robotics version available





KeTop T20 techno – Extremely flexible through LCD keyboard

Besides its low weight, the tactile, freely configurable LCD keyboard is the highlight of the KeTop T20 techno. This innovative technology allows a limitless number of keyboard layouts – irrespective of language or symbols. Unneeded keys are dynamically hidden for user guidance efficiency.

KeTop T20 Techno because:

- Freely configurable, tactile LCD keyboard with up to 28 freely programmable keys
- Unlimited user-defined keyboard layouts and configurations possible
- Straightforward user guidance by showing/hiding keys
- Convenient creation of keyboard layouts on PC using ViewEdit
- Extremely flexible
- Attractive price/performance ratio





KeTop T55 – the new standard in mobile automation

The KeTop T55 is the consistent further development of the advanced KeTop T50 which was already regarded as the standard in mobile automation. Even more power, an improved display and many technical innovations mean a further boost in performance that enables even more complex applications as a result.

KeTop T55 vs. KeTop T50:

- Stronger processor with up to 3x more performance
- Even higher-contrast 6.5" touchscreen with LED backlight (640x480 pixel)
- USB 2.0 instead of USB 1.1
- Added performance and additional functions through Linux or Windows CE 6.0 (instead of VxWorks or Windows CE 5.0)
- PLe Safety specified





KeTop T55 because:

- Further development of proven KeTop T50
- The new standard for mobile operation and teach-in
- Balanced price/performance ration with enhanced visualization
- Membrane keyboard with up to 48 tactile keys
- Up to 3 individual add-ons possible (hand wheel, switch, pushbutton, keyswitch, emergency stop etc.)
- For standard applications / robotics / factory automation etc.
- Advanced and highly developed piece of equipment that requires no further developments by the customer





KeTop T41 – Ideal for price-sensitive applications

For mobile operation and teach-in applications in which the price and the presence of numerous operating keys play a role, the proven KeTop T41 is the ideal solution. The low weight and ergonomic construction enable fatigue-free working over longer periods.

KeTop T41 because:

- Ideal for price-sensitive applications with low visualization requirements
- 3.8" grayscale LCD display (320x240 pixels)
- Membrane keyboard with up to 51 tactile keys
- Rapid time to market thanks to advanced platform
- No additional development costs or product care costs as a result
- Up to 3 individual add-on elements possible (hand wheel, switch, pushbutton, keyswitch, emergency stop etc.)
- Special designs available for robots and tool machines







KeTop T100 – The mobile high-end operating panel

KeTop T100 was developed specially for complex mobile teach-in tasks and operation. The high processing power and large, high-resolution LCD screen enable convenient inputting and fast operation with applications that have maximum visualization requirements.




KeTop T100 because:

- Ideal for all applications with maximum visualization requirements
- High processing power
- High-resolution 8.4" touchscreen LCD display (800x600 pixels)
- Membrane keyboard with up to 23 tactile keys
- Up to 6 individual add-on elements (hand wheel, switch, pushbutton, keyswitch, emergency stop etc.)
- Versatile options including, for example, override potentiometer, electronic hand wheel, joystick and further special operating elements make it suitable for use with a wide variety of plant, machinery and robots
- Pleasant to work with thanks to large housing
- PC card slot for the archiving of data and fast program changes



KeMobile product overview	T20 eco	T20 techno
		
Dimensions		
Length/width/diameter	226 mm (8.9") / 82 resp. 162 mm (3.2 resp. 6.4") / -	
Total height (incl. grip)	55 mm (2.2")	
Weight	480 g (1 lb) (without hand wheel)	520 g (1.1 lb)
Display	OLED Display	
Kind / size / touchscreen	- / 3.4" / analogue-resistive (optional)	
Resolution / color mode	WQVGA 480x272 pixel / 65536 colors	
Membrane keyboard (T20 techno: LCD keyboard)	36 tactile keys hand wheel version: 20 keys	28 tactile LCD keys
Types	-	freely configurable, unlimited user-defined keyboards
Elements		
Control elements (unit-internal evaluation)	optional hand wheel in keyboard area: magnetic scanning, 100 pulses/rotation	-
Operational controls (unit-internal evaluation)	turning selector switch (4 or 16 positions) / key switch / push button	
Safety elements (wired externally)	1 accept button (3-level, dual circuit) emergency stop button (dual circuit)	
CPU	OMAP 3503	
Memory	128 MB Flash, 128 MB SDRAM	
Removable storage	MicroSD Card (optional)	MicroSD Card
Data transfer interfaces	USB 2.0 (optional)	USB 2.0
Communication interfaces	Ethernet 10/100 Mbit/s, RS-422A or RS-232C	
Supply voltage / current	24 V / 250 mA	
Operation temperature range	0...45°C (32...113°F)	
Shock resistance	up to 1.5 m (5 ft) drop height	
Protection class	IP 65	
Operation system	MS Windows Embedded CE® 6.0 Linux	MS Windows Embedded CE® 6.0

Connection boxes	
CB211	connection box to isolate the signal and hardware circuits
CB230	gateway box to connect a KeTop terminal to CAN or CANopen via RS-422A
CB233	gateway box to connect a KeTop terminal to DeviceNET via RS-422A

T41	T55	T100
		
- / - / 250 mm (9.8")	- / - / 250 mm (9.8")	- / - / 290 mm (11.4")
125 mm (4.9")	125 mm (4.9")	130 mm (5.1")
1045 g (2.3 lb)	1330 g (2.9 lb)	1925 g (4.2 lb)
graphical LCD	graphical LCD	graphical LCD
STN / 3.8" / -	TFT / 6.5" / analogue-resistive	TFT / 8.4" / analogue-resistive
320x340 pixel / 16 levels of grey	VGA 640x480 pixel / 65536 colors	SVGA 800x600 pixel / 65536 colors
51 tactile keys	48 tactile keys	23 tactile keys
-	-	- fully equipped (control elements, ...) - emergency stop button only
hand wheel	hand wheel / joystick (3 axes)	hand wheel / joystick (3 axes)
key switch I-0-I / push button	key switch I-0-I / push buttons / turning selector switch	key switch I-0-I / push buttons / potentiometer
2 accept buttons (3-level, dual circuit) emergency stop button (dual circuit)	2 accept buttons (3-level, dual circuit) emergency stop button (dual circuit)	2 accept buttons (3-level, dual circuit) emergency stop button (dual circuit)
PXA 270	OMAP 3503	StrongARM 1110
64 MB Flash, 64 MB SDRAM	WinCE: 128 MB Flash, 128 MB SDRAM Linux: 128 MB Flash, 256 MB SDRAM	64 MB Flash, 64 MB DRAM
-	-	-
USB 1.1 full speed 12 Mbit/s	USB 2.0, 480 Mbit/s	1 slot for cards type I, II, III
Ethernet 10/100 Mbit/s, RS-422A / RS-232C, RS-232C (debug)	Ethernet 10/100 Mbit/s, RS-422A / RS-232C, RS-232C (debug)	Ethernet 10/100 Mbit/s, RS-422A / RS-232C (debug)
24 V / 250 mA	24 V / 420 mA	24 V / 300 mA
0...50°C (32...122°F)	0...50°C (32...122°F)	0...50°C (32...122°F)
up to 1.5 m (5 ft) drop height	up to 1.5 m (5 ft) drop height	up to 1.5 m (5 ft) drop height
IP 65	IP 65	IP 65
MS Windows CE® .NET 5.0	MS Windows CE® .NET 6.0	MS Windows CE® .NET 4.2

Connection boxes

CB234	gateway box to connect a KeTop terminal to INTERBUS via RS-422A
CB235	gateway box to connect a KeTop terminal to PROFIBUS-DP via RS-422A
CB236	gateway box to connect a KeTop terminal to PROFIBUS-MPI via RS-422A



“A complete, one-stop shopping automation solution in just two simple steps!”

A modular system

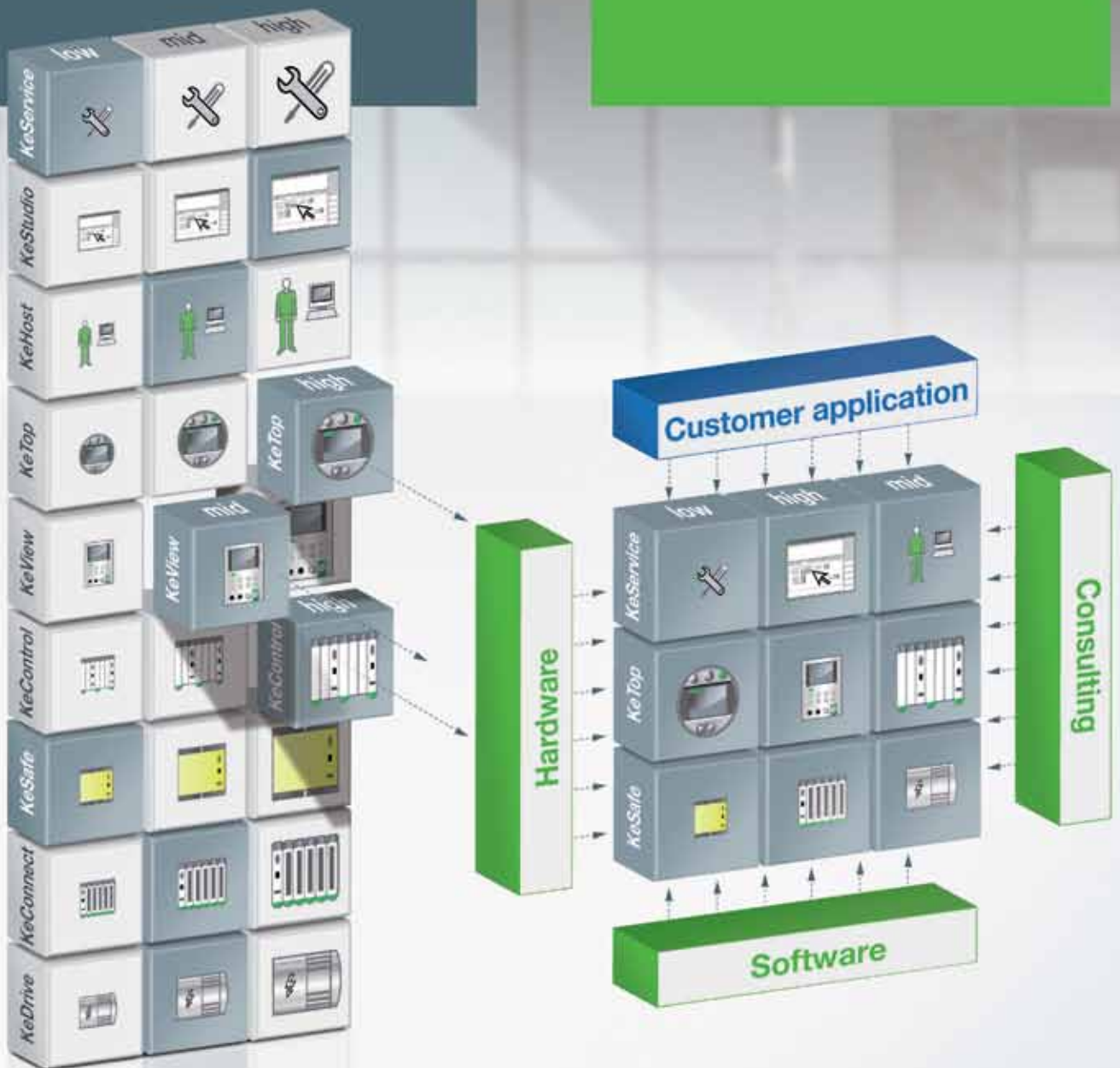
With our assistance, you first select the basic elements for your automation solution from a wide range of fully scalable, tried and tested standard components.

Specific branch fine tuning

In the next step, the components which are entirely, mutually compatible are upgraded through fine tuning with regard to:

- Hardware
- Software
- System-related services

On this platform, you can realize your own application.



Branch solutions

In this manner, individual, optimized overall solutions are available for the following branches:

- Injection molding
- Robotics and handling technology
- General mechanical engineering

KePlast is an optimized, complete and scalable control platform, specially designed for the plastics injection molding sector, which covers every performance segment.

KeMobile offers systems solutions with KeTop, the proven, mobile handheld terminal, as a nucleus. The operating device is characterized by special ergonomics, unusual robustness and top quality in an attractive design.

KeMotion provides the extensive functionality of a genuine robot control system in combination with the openness and flexibility of efficient PLCs.

KeSystems furnishes innovative automation solutions for the general mechanical engineering industry, from performance-intensive control processes, to complex motion tasks.



The technology experts for optimized branch solutions

KEBA AG is a successful international player in the electronics field, which in line with its credo, “Automation by innovation.”, develops and produces innovative, top quality automation solutions for the industrial, banking and service as well as the energy automation branches.

Leading international mechanical engineering groups, robot manufacturers and service suppliers all build on KEBA's automation solutions.

In the Industrial Automation business area, the technology experts for optimized branch solutions focus on the automation of robots and injection molding machines by means of the KeMotion and KePlast systems. In addition, KeSystems provides individual automation solutions for the general mechanical engineering sector, while robust, top quality KeTop handheld terminals cover the mobile automation sector.

With this extensive product range, KEBA offers complete, one-stop shopping solutions.



KeMobile

The standard in mobile automation

Mobile KeTop panels from the KeMobile system are ideal for teaching robots conveniently and for operating and automating systems with ease.

The benefits of KeMobile are clear to see:

- Ergonomic design
- Innovative technology
- Versatile customizing possibilities
- Industry-compliant quality
- Fulfillment of all relevant standards and safety certification requirements

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KEBA[®]
Automation by innovation.