

As experienced experts, we support our customers and partners around the world with products, solutions and services in the industrial environment of power, signals and data. We are at home in their industries and markets and know the technological challenges of tomorrow. We are therefore continuously developing innovative, sustainable and value-creating solutions for their individual needs. Together, we set standards in Industrial Connectivity.

Intelligent machine networking with u-mation  
Scalable automation and digitalisation solutions  
Let's connect.

Automation and digitalisation

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## u-mation. More than Automation. Digital Solutions.

The factory of the future will be able to control itself through intelligent networking and have the flexibility to adapt to new requirements. Thanks to u-mation, this vision is a reality, as u-mation paves your way towards the IoT (Internet of Things) and beyond. The perfectly coordinated portfolio combines modular automation hardware as well as innovative engineering and visualisation tools with well thought-out digitalisation solutions. Thus, it enables the intelligent connection of all process levels – from sensor to cloud. From control applications to data-based, predictive maintenance through Industrial Analytics, with u-mation you create a future-proof basis for more efficient production concepts. Individually scalable depending on the complexity of your system.

### AUTOMATION

Powerful and easy-to-use hardware is the basis of each automation solution. Our flexible controller u-control, modular I/O system u-remote and intuitive multi-touch panels u-view form the core of the u-mation hardware portfolio. These components offer you maximum flexibility to create individual solutions for your needs.

### ENGINEERING LANDSCAPE

Our engineering tools breathe life into your applications. With web-based software you gain location-independent access to your machines, while IoT technology enables your communication to the cloud. Implement complex control tasks using software based on your familiar engineering environment. Whatever the task, Weidmüller offers the ideal software for your needs, with the flexibility to expand in line with your application requirements.

### DIGITALISATION

We offer new ways of optimising production and service performance by using intelligent networking of automation and digitalisation technologies from the sensor to the cloud. For example, our web-based software enables you to access your machines from any location and device, helping you manage your goals at any time.

### MACHINE LEARNING

Knowing about possible issues before an error occurs is important to keep processes running smoothly. Our analytics modules learn from your machine and production data and can indicate when abnormal activity is observed by the system. With this information, you can plan your maintenance activities in a targeted manner and effectively minimise the need for any downtime.

Examples of the perfect interaction between the u-mation automation hardware and the engineering landscape can be found on pages 14 – 15 (stand-alone machines) and 16 – 17 (decentralised production).

An example of how u-mation can smooth the journey towards IoT and how you can derive added value from your machine data is available on pages 22 – 23.



## Automated. Digitalised. Intelligent.

u-mation allows you to communicate from the sensor to the future.

### Automation

In order to meet the requirements of the Internet of Things (IoT), automation technology needs to improve on its performance and reactivity all the time. u-mation offers you a tailored hardware portfolio with which you can perfectly prepare your machines and systems for future functions. The central element of our automation hardware is u-control 2000, one of the most state-of-the-art and compact controllers on the market. u-control 2000 is compatible with our u-remote system and forms the hardware platform for our engineering solutions u-create web, u-create studio and u-create IoT. Our range is rounded off by the high-performance u-view multitouch panels, which meet all the requirements of state-of-the-art visualisation, control and IoT applications. In combination with the platform-independent visualisation software u-create visu, the u-view multitouch panels allow you to create a dynamic, scalable visualisation of your automation functions.

### Engineering Landscape

Future-proof automation solutions should adapt flexibly to new requirements. In order for this to happen, the production-related software needs to guarantee this adaptability. u-mation offers extensive engineering tools which have an open software architecture to give you maximum flexibility for individual applications. For example, you can use u-create studio with its open Linux architecture and established CODESYS development environment for the implementation of complex control functions. Or you could opt for u-create web, which is a web-based engineering software for platform-independent configuration, system parametrisation and programming from anywhere. The u-create IoT software, which is also web-based, smooths the journey towards the IoT by allowing you to prepare sensor information and send it to the cloud. The optimum interface between human and machine is provided by u-create visu. The dynamic visualisation software implements tailored solutions for a wide range of automation functions.

### Digitalisation (IoT)

Digitalisation is about the intelligent networking of machines and processes. In the industrial Internet of Things, all the components in a production environment are connected to one another via a digital infrastructure, making them stakeholders in the process. With u-mation, Weidmüller combines innovative automation technologies with smart digitalisation solutions, thus achieving a future-proof connection of all process levels, from the sensor to the cloud. Communication-capable components, such as the ACT20C signal converter and the PROtop power supply with CANopen communication module, form the basis for consistent digital networking and provide continuous information on device status, signals and data. In combination with web-based software u-create IoT, our u-control 2000 controller provides the option of preparing sensor information from u-remote I/O modules and forwarding it directly to the cloud. Thanks to the Node-RED implementation, various IoT applications can be implemented within a short space of time based on a modular principle.

### Machine Learning

The key to increased efficiency and cost control in the life cycle of your systems is the profitable use of machine and process data. Thanks to state-of-the-art sensor systems and digital networking, u-mation enables you to extract the data which are relevant to you and use them in intelligent analytics processes. Our machine learning service is all about innovative analytics solutions which allow you to initiate targeted maintenance measures and thus minimise unnecessary downtimes. Make the most of predictive maintenance in order to plan future service intervals based on your requirements. Seamless monitoring of your sensor, status and process data also provides you with reliable information about the quality of your products (predictive quality). The analytics modules learn from your machine data and thus become more accurate over time. The machine learning models provide a future-proof foundation for more efficient production strategies.

You can find out more about the automation portfolio and the engineering landscape on pages 8 – 13.

You can read more about our digitalisation and machine learning solutions on pages 18 – 21.



# Automation and digitalisation solutions

## Scalable and perfectly matched

As an expert in Industrial Connectivity, Weidmüller can offer u-mation, an integrated service for the automation and digitalisation of your machines and systems. You can benefit from the perfect interaction between all components and optimum integration into your systems. Combine hardware and software as required to produce future-proof automation and digitalisation solutions. u-mation allows you to tap into future-proof application opportunities and increase your competitiveness.

### Machine Learning

- Data recording and selection
- Visualisation
- Machine learning
- Anomaly detection
- Predictive maintenance



**Industrial Analytics:**  
Development of tailored analytics modules to effectively reduce downtimes. Analytics solutions from Weidmüller make it possible to generate added value from machine and process data, e.g. through predictive quality or predictive maintenance.

### Digitalisation (IoT)

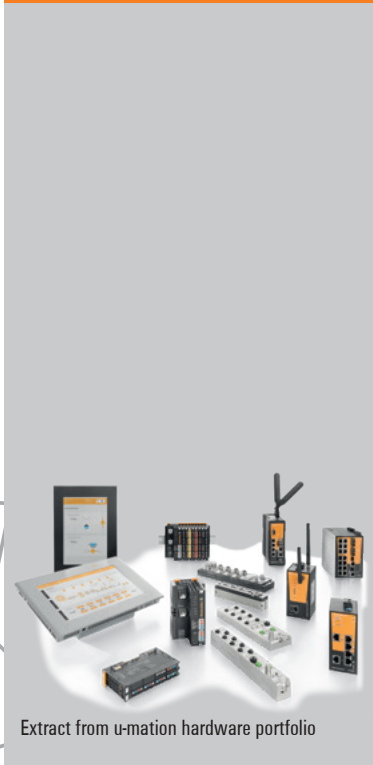


Extract from u-mation IoT portfolio



**u-control 2000 with u-create IoT:**  
As safe controls, modern systems need to be able to send machine data to a cloud. In combination with u-create IoT, u-control 2000 provides the option of pre-processing sensor information from u-remote I/O modules and sending it to the cloud via MQTT or AMQP.

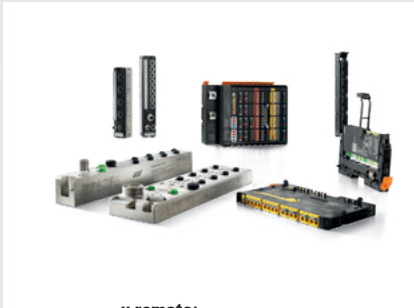
### Automation



Extract from u-mation hardware portfolio



**u-control 2000:**  
High-performance, flexible controller hardware. Picks up on the modular approach of the u-remote hardware and is compatible with all u-create software applications.

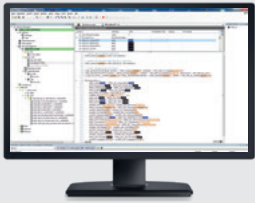


**u-remote:**  
State-of-the-art, most compact electromechanical I/O system on the market. Available as an IP20 version for panel systems or IP67 for use in the field.



**u-view:**  
High-resolution multitouch panels for intuitive visualisation and operation of HMI applications. Ideal for web-based visualisation solutions in an industrial environment, such as u-create visu.

### Engineering Landscape



**u-create studio:**  
Full-fledged, flexible CODESYS-based engineering tool. With C/C++ environment and open Linux architecture for individual extensions. User-friendly configuration and diagnostic tools speed up commissioning and service.



**u-create web:**  
Web-based engineering software for platform-independent configuration, system parametrisation and programming of small and medium-sized control applications from anywhere in accordance with IEC 61131-3. The web browser becomes an engineering platform.



**u-create IoT:**  
Web-based u-create IoT is a device and platform-independent solution which enables quick and uncomplicated implementation of IoT applications by means of Node-RED. Compatible with Cloud providers such as Microsoft Azure\*, IBM Cloud and Amazon aws.



**u-create visu:**  
web-based visualisation solution for modern HMI strategies. Sophisticated communication drivers enable flexible integration into existing and new machines and systems.

\*The u-create IoT solution is certified for the Microsoft Azure cloud.



# Mastering increasing complexity systematically

## With modular, flexible automation hardware

Driven by global competition and shortening innovation cycles, the demands faced by machinery and plant engineering are becoming increasingly complex. As well as centralised automation technology, there is increasing need for decentralised, intelligent control systems in order to give production environments the flexibility they require.

Our response to increasing complexity is a modular hardware portfolio which can be flexibly combined and extended. This applies to a traditional panel application as well as a decentralised controller. With the u-remote I/O system and the u-control 2000 controller based on it, u-mation offers you flexible hardware solutions that stand out due to their perfect compatibility and needs-based scalability.



### u-remote modular I/O system

The most state-of-the-art and compact system on the market is suitable for all conventional applications in machinery and plant engineering. With the simple-to-use u-remote modules, you can connect signal systems in the panel, in mixed IP20 and IP67 applications or directly in the field. The modular construction allows simple system design and quick, error-free installation. u-remote offers ultra-high performance within a confined space and makes your systems not only more affordable, but also more efficient.

### Your special advantages

- Modular I/O system for streamlined planning, simple installation and fast commissioning
- Over 100 modules available for IP20 and IP67 applications
- Built-in web server with diagnostics functions for simple commissioning and accelerated maintenance work
- Two electrically isolated 10 A current paths for maximum space saving and flexibility in terms of planning

### u-control 2000 controller

Taking our modular hardware further, intelligently: the high-performance u-control 2000 controller is based on the compact design of the u-remote fieldbus coupler and can replace it on a one-to-one basis, enabling even greater space saving and maximum flexibility when it comes to the implementation of individual automation solutions. The controller is compatible with the whole u-remote range and allows I/O modules to be connected directly. It can be combined with our versatile u-create studio, u-create web and u-create IoT engineering tools for a full range of applications.

### Your special advantages

- Fitted with a fieldbus and TCP/IP interface, plus an optional CAN interface
- Dual Core Arm A9 processor
- Compatible with u-create software applications and u-remote I/O modules
- Enables saving of projects, has USB service interface and allows data exchange
- Battery-buffered realtime clock and slot for Micro SD cards up to 32 GB



Technical data for u-control 2000

Type	Description	Processor	Memory (flash)	Realtime clock	max. no. of I/O modules	Interface	Order no.:	VPE
UC20-WL2000-HOT	HOT Controller incl. Node-RED	Dual Core ARM Cortex A9, 624 MHz, 512MByte RAM	32 GB via microSD	Battery buffered	64	2x Ethernet TCP/IP, 1x Micro USB	1334990000	1
UC20-WL2000-AC	Automation Controller incl. u-create web	Dual Core ARM Cortex A9, 624 MHz, 512MByte RAM	32 GB via microSD	Battery buffered	64	2x Ethernet TCP/IP, 1x Micro USB	1334950000	1
UC20-SL2000-OLC-EC	Open Linux Controller for u-create studio	Dual Core ARM Cortex A9, 624 MHz, 512MByte RAM	32 GB via microSD	Battery buffered	64	1x EtherCAT, 1x Ethernet TCP/IP, 1x Micro USB	2638910000	1
UC20-SL2000-AC-EC	Automation Controller for u-create studio	Dual Core ARM Cortex A9, 624 MHz, 512MByte RAM	32 GB via microSD	Battery buffered	64	1x EtherCAT, 1x Ethernet TCP/IP, 1x Micro USB	2637930000	1
UC20-SL2000-OLAC-EC	Open Linux Automation Controller for u-create studio	Dual Core ARM Cortex A9, 624 MHz, 512MByte RAM	32 GB via microSD	Battery buffered	64	1x EtherCAT, 1x Ethernet TCP/IP, 1x Micro USB	2638920000	1





# Flexible automation of applications

## u-control 2000 hardware with u-create software

In order to keep pace with the rapid developments in machinery and plant engineering, you need automation solutions which are not only extremely efficient but also incredibly flexible. The u-control 2000 modular controller fulfils these requirements. In combination with our u-create software range, you are fully prepared for a wide range of potential applications and the implementation of small, large and networked control solutions.

In u-create studio, web and IoT, we can offer you three high-performance software solutions which will allow you to realise a range of different automation applications. The u-create range is a safe bet because every one of our engineering tools is based on the "Security by Design" concept. As a result of continuous tests and the consideration of exacting standards, you can benefit from top-notch security in the application. The u-control 2000 with u-create IoT solution is certified for the Microsoft Azure cloud.



Whether it is local or in the cloud: your security is our top priority. This is why we develop our software based on the "Security by Design" concept and collaborate with Microsoft to accelerate Internet of Things solutions.



### u-create studio

u-create studio is a full-fledged engineering tool, developed using the proven CODESYS system. It offers a C/C++ environment for the flexible, object-oriented programming of applications. Its open Linux structure enables the installation of individual software modules and simple configuration, diagnostics and simulation. A high-performance debugging and tracing tool makes fault analysis easier. An OPS UA server for M2M communication, EtherCAT and CANopen fieldbus master and a Modbus TCP slave round off the system, which is compatible with the u-control 2000 and u-remote hardware solutions.

### u-create web

The web-based engineering software u-create web enables platform and device-neutral programming, configuration and system parametrisation in accordance with IEC 61131-3. The application is simply accessed from your web browser. u-create web can be extended with additional software apps and used on all standard operating systems which support HTML5, CSS and JavaScript. In combination with u-control and u-remote, the application offers the optimum programming environment for flexible engineering.

### u-create IoT

The u-create IoT software, which is also web-based, provides the option of pre-processing sensor information from I/O modules if used in conjunction with u-control 2000 and u-remote. These can then simply be forwarded to the cloud via MQTT or AMQP. The data are transferred directly based on Node-RED. Cloud providers Microsoft Azure (certified), IBM Cloud and Amazon aws are supported. You can access u-create IoT via your web browser and the application can thus be used on any platform or device. The intuitive, flexible user interface of u-create IoT makes it possible to abstract a wide range of different technologies.

### Your special advantages

- CODESYS V3.5 development environment in accordance with IEC 61131-3 with C/C++ programming
- Simulation and high-performance debugging
- Integrated fieldbus master (EtherCAT and CANopen) and slave (Modbus TCP)

### Your special advantages

- Web-based, licence-free engineering software
- Platform and device-neutral programming via web browser
- Programming standard in accordance with IEC 61131-3
- Use of standardised web technologies such as HTML5

### Your special advantages

- Web-based, licence-free software
- Platform and device-neutral programming via web browser
- Future-proof thanks to the use of standardised web technologies such as HTML5
- Intuitive implementation of IoT applications using Node-RED



# Optimum visualisation and operation

## u-view multitouch panels with u-create visu software

Industry 4.0 and the Internet of Things are revolutionising how we work with machines. Not only are process workflows changing, but so are the demands in terms of analysis, maintenance and operation options. With the u-view multitouch panels and the web-based, scalable software u-create visu, you have the whole process chain at your fingertips.

u-create visu simplifies the implementation of flexible, scalable visualisation concepts. The client/server architecture enables rapid integration or replacement of terminal devices without having to configure local software. As it is platform-independent and web-based, u-create visu guarantees access to all the relevant information from wherever you are. This reduces response times and efficiently optimises your production processes. The user interfaces are based

on JavaScript and HTML5, so they can easily be displayed on the browser of your terminal device. You can adjust the client-side visualisation to your requirements based on style guides and predefined project libraries.

u-view multitouch panels combine high-performance hardware with a high-resolution display. Modern touch technology makes them just as intuitive to use as mobile devices. In combination with u-create visu, you can plan and monitor your processes, control machines and implement flexible, versatile IoT applications.



Perfect interaction between hardware and software: u-view Advanced Line multitouch panels in combination with the u-create visu engineering environment and the u-control 2000 controller.

### The benefits of u-create visu software

- Dynamic user interface with adaptive design
- Communications driver for access to controllers from all standard providers
- Can be used in different languages thanks to Unicode standard
- Efficient engineering by means of object-oriented layout/container and class/instance concepts
- Detailed user and permissions management



Top-notch image quality and high-performance processors make working with u-view multitouch panels a real pleasure. The panels are very flat and have a robust IP66 aluminium casing.

### u-view Basic Line

- Resistive touch controls
- Elegant, flat aluminium front in IP66 degree of protection
- Ethernet interfaces: 1 x 100 Mbit
- Different display sizes and resolutions:
  - 4.3"- 480 x 272 pixels
  - 7"- 800 x 480 pixels
  - 10.1"- 1.280 x 800 pixels

### u-view Advanced Line

- Capacitive multitouch operation
- Smooth user interface for optimum cleaning in IP66 degree of protection
- Ethernet interfaces: 2 x 10/100/1.000 Mbit
- Different display sizes and resolutions:
  - 7"- 800 x 480 pixels
  - 10.1"- 1.280 x 800 pixels
  - 15.6"- 1.366 x 768 pixels

### u-view technical data

Type	Touch screen	Size	Processor	Memory (flash)	Order no.:	EAN	VPE
UC20-ADV-10-CAP-W	capacitive	10.1 "	ARM Cortex A9 1 GHz NXP® i.MX6 DualLite	4 MB	2555840000	4050118566208	1
UC20-ADV-15-CAP-W	capacitive	15.6 "	ARM Cortex A9 1 GHz NXP® i.MX6 DualLite	4 MB	2555850000	4050118566215	1
UC20-ADV-7-CAP-W	capacitive	7 "	ARM Cortex A9 1 GHz NXP® i.MX6 DualLite	4 MB	2555830000	4050118566192	1
UC20-BAS-10-RES-W	resistive	10.1 "	ARM Cortex A8 processor Freescale® i.MX535 1 GHz	4 MB	2555820000	4050118566185	1
UC20-BAS-4-RES-W	resistive	4.3 "	ARM Cortex A8 processor Freescale® i.MX535 1 GHz	4 MB	2555800000	4050118566161	1
UC20-BAS-7-RES-W	resistive	7 "	ARM Cortex A8 processor Freescale® i.MX535 1 GHz	4 MB	2555810000	4050118566178	1

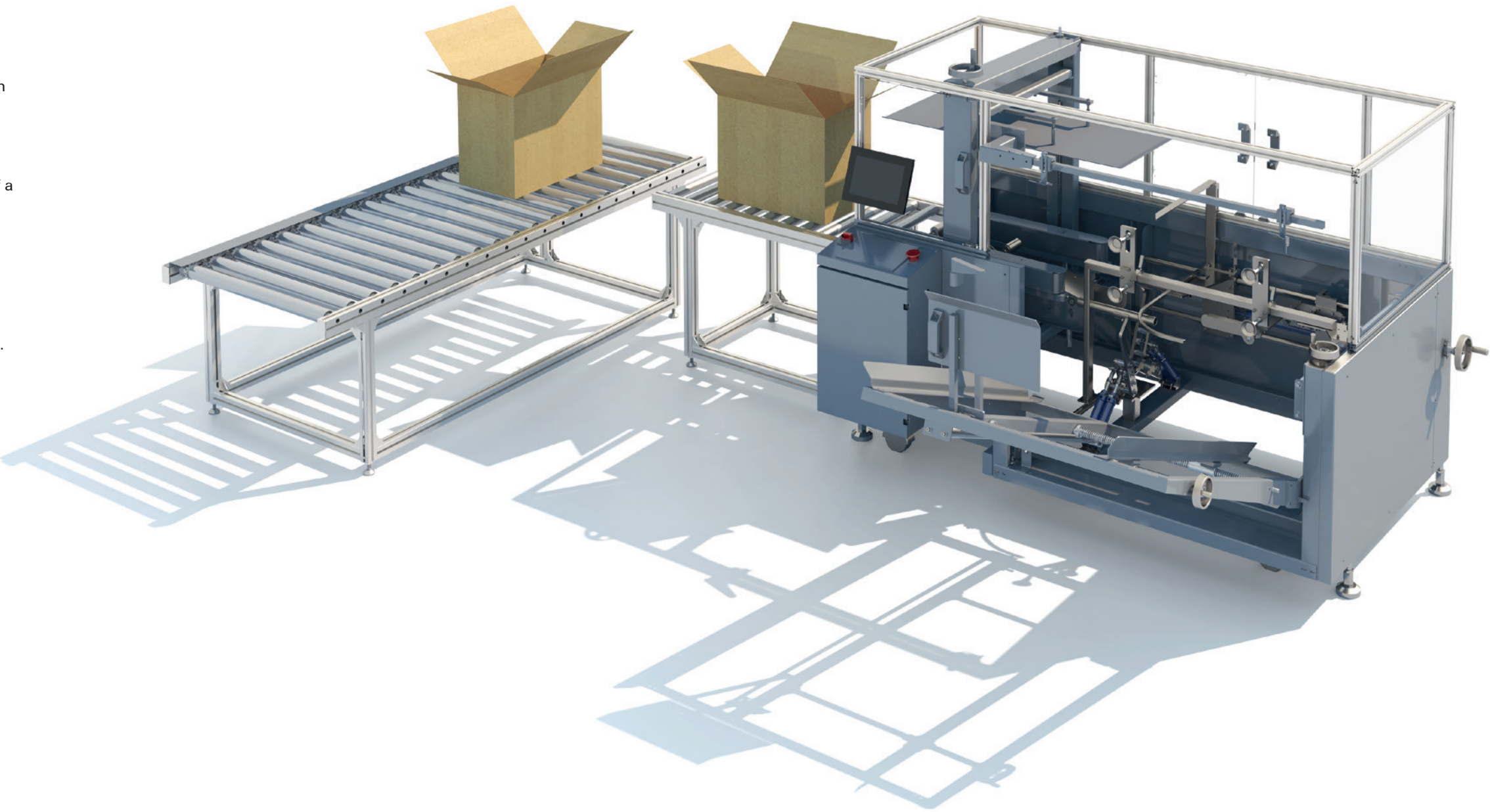


# Easy control of stand-alone machines

## u-control 2000 controller with u-create studio software

Stand-alone machines such as cardboard box erectors are able to carry out their functions independently without a connection to a higher-level system, which means they are very versatile to use. This requires decentralised automation solutions which enable autonomous machine control.

You can implement decentralised controller applications efficiently and easily with the modular hardware and software portfolio from u-mation. For the main controller of a stand-alone machine, simply replace the u-remote fieldbus coupler with our u-control 2000 controller. Then combine this with the u-create studio engineering software. Stand-alone machines and even complex systems can be configured and controlled in line with proven international standards with this CODESYS-based software. u-create studio thus provides a clear advantage when it comes to the flexible, modular programming of automation solutions. The open Linux architecture also allows the installation of individual software modules and simple diagnostics and simulation of your machines.



### Modular hardware

The u-control 2000 controller is based on the compact design of the fieldbus coupler in our u-remote range, and can replace it on a one-for-one basis. This saves space and gives you the maximum flexibility for your individual automation applications. u-control 2000 is compatible with a wide range of components in the u-mation range and thus allows u-remote I/O modules to be connected directly.



### Flexible software

The combination of the complete u-create studio engineering tool and the u-control 2000 controller provides a high-performance automation solution for user-friendly parametrisation and control of stand-alone machines. The CODESYS V3.5 environment in line with the IEC 61131-3 standard and the C++ programming enable flexible, object-oriented application in a familiar, standardised development environment.



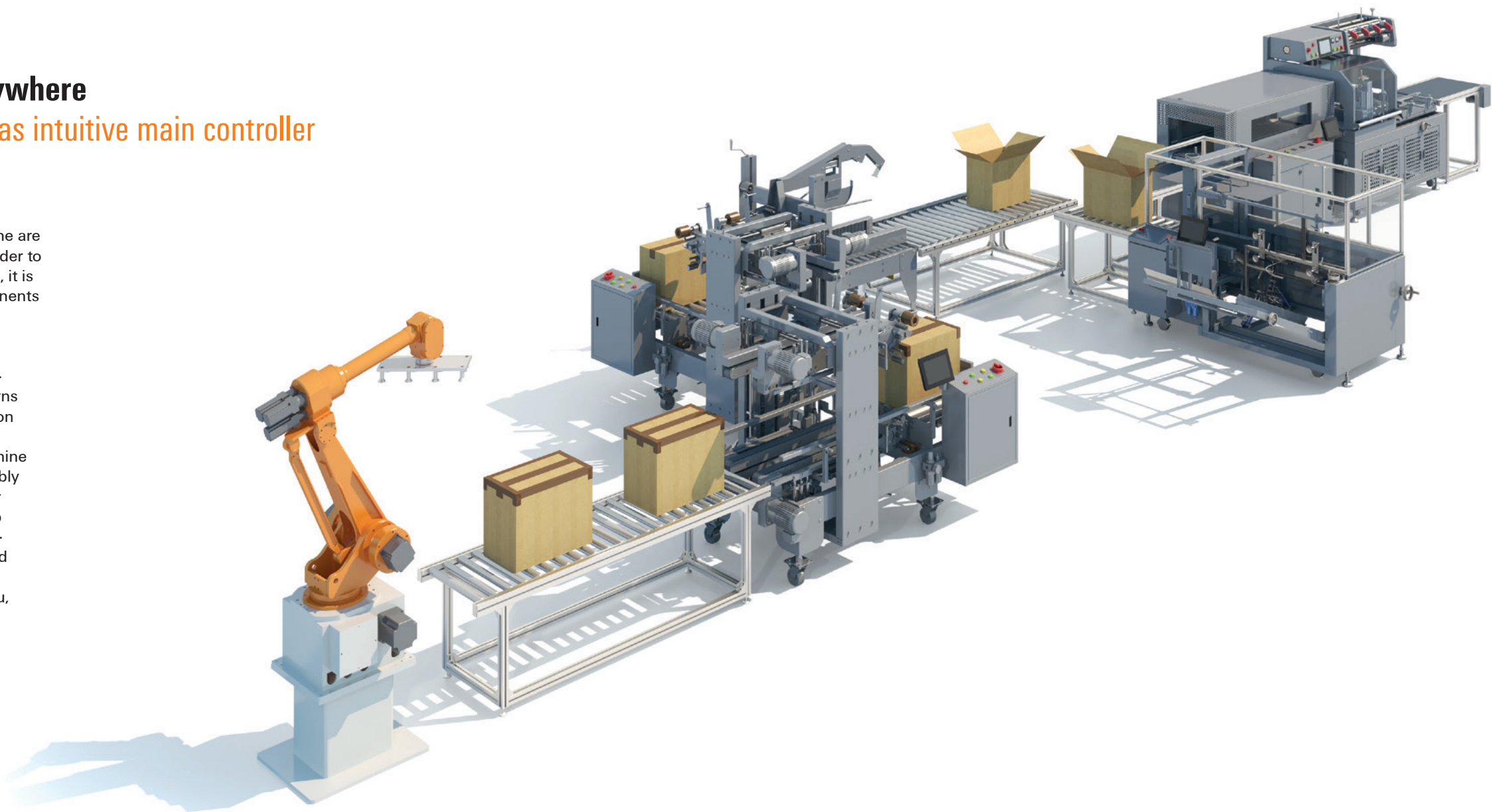


# Commission machines from anywhere

## u-control 2000 with u-create web as intuitive main controller

In machinery and plant engineering, the elements of a line are only seldom produced on the same production site. In order to prevent long installation times at the installation location, it is good practice to be able to commission machine components even before they are assembled.

u-mation offers you flexible solutions for decentralised automation applications which you can access from anywhere. The web-based control software u-create web turns your browser into an engineering platform. In combination with our u-control 2000 controller hardware, we enable intuitive commissioning of individual assemblies or machine components from anywhere. Implementation is remarkably straightforward: simply replace the u-remote bus coupler with u-control 2000, which already has the u-create web software installed on it. Using the browser, you can commission machine components from wherever you are and parametrise them even before the whole machine is assembled. Using our visualisation software u-create visu, an integrated operating and visualisation concept for the entire plant can then be realised.



Modular hardware

The design of the u-control 2000 controller is based on our established remote I/O system, u-remote. The modular construction means that u-control 2000 is compatible with a range of different automation components in the u-mation range and can be extended as required.



Web-based control

The web-based software u-create web turns u-control 2000 into a primary controller and enables machine components to be commissioned via a web browser from anywhere. This simplifies and accelerates the subsequent assembly of machines produced on a decentralised basis.



Intuitive operation

The visualisation software u-create visu enables user-friendly implementation of multitouch-compatible HMI solutions. The associated web server provides the user interface as Web Runtime by means of JavaScript and HTML5. This enables HMI panels to be calibrated from any terminal device. Our high resolution u-view multitouch panels allow optimum visualisation and operation.

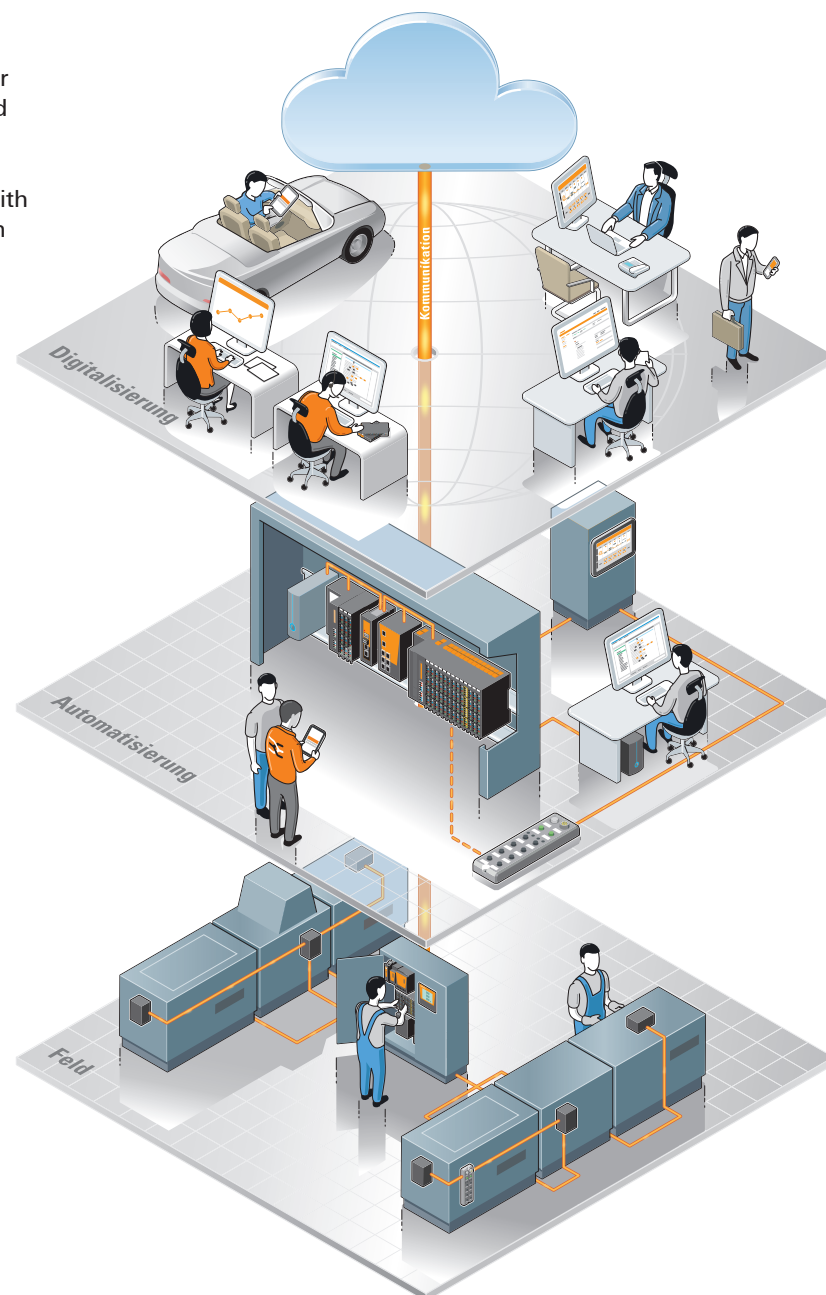


## Consistent communication from the sensor to the future

### Industrial digitalisation driven by Weidmüller

Digitalisation is in full flow across all sectors of industry. As a complete automation and digitalisation service provider, Weidmüller can support your digital transformation process with an integrated range of hardware, software, services and comprehensive application know-how. Based on the latest technologies, we are developing innovative automation and digitalisation solutions for your applications. A one-stop shop for a perfectly tailored service.

As an expert in connection technology, Weidmüller is the ideal contact when it comes to acquiring and forwarding sensor data on the machine. We are therefore able to implement all-in solutions which extend all the way from the sensor to the cloud. With communication-capable components, we establish the infrastructure for networked production which records comprehensive machine and process data and sends it to the cloud for further processing. Once analysed, your data offers a range of ways of securing a long-lasting competitive advantage, for example, by optimising your production processes and your power management systems.



#### u-create IoT – access to the Internet of Things

Programming, control and data transfer: the u-create IoT software enables sensor information from u-remote I/O modules to be pre-processed and forwarded to the cloud via MQTT or AMQP – for the simple implementation of IoT applications. Cloud providers Microsoft Azure (certified), IBM Cloud and Amazon AWS are supported. The platform-independent software is accessed via a web browser.



#### u-link – secure remote maintenance and cloud service

The u-link remote maintenance solution provides secure access to machines and systems from wherever you are. There is also an online platform on secure servers in Western Europe which ensures the conformity of different IT systems when it comes to remote maintenance. u-link can be extended with unlimited additional routers and users, thus enabling economical and secure setup of remote maintenance topologies as required.



#### PROtop – communication-capable power supply

Communication-capable components like PROtop form the basis for intelligent networking between machines and IT systems by providing the process data required. Existing PROtop power supplies can be upgraded by retrofitting them with a plug-in communication module. If embedded into the condition monitoring system, this enables comprehensive process optimisation. Through remote access, PROtop is perfect for systems with demanding hygiene requirements or offshore wind parks which are difficult to access.





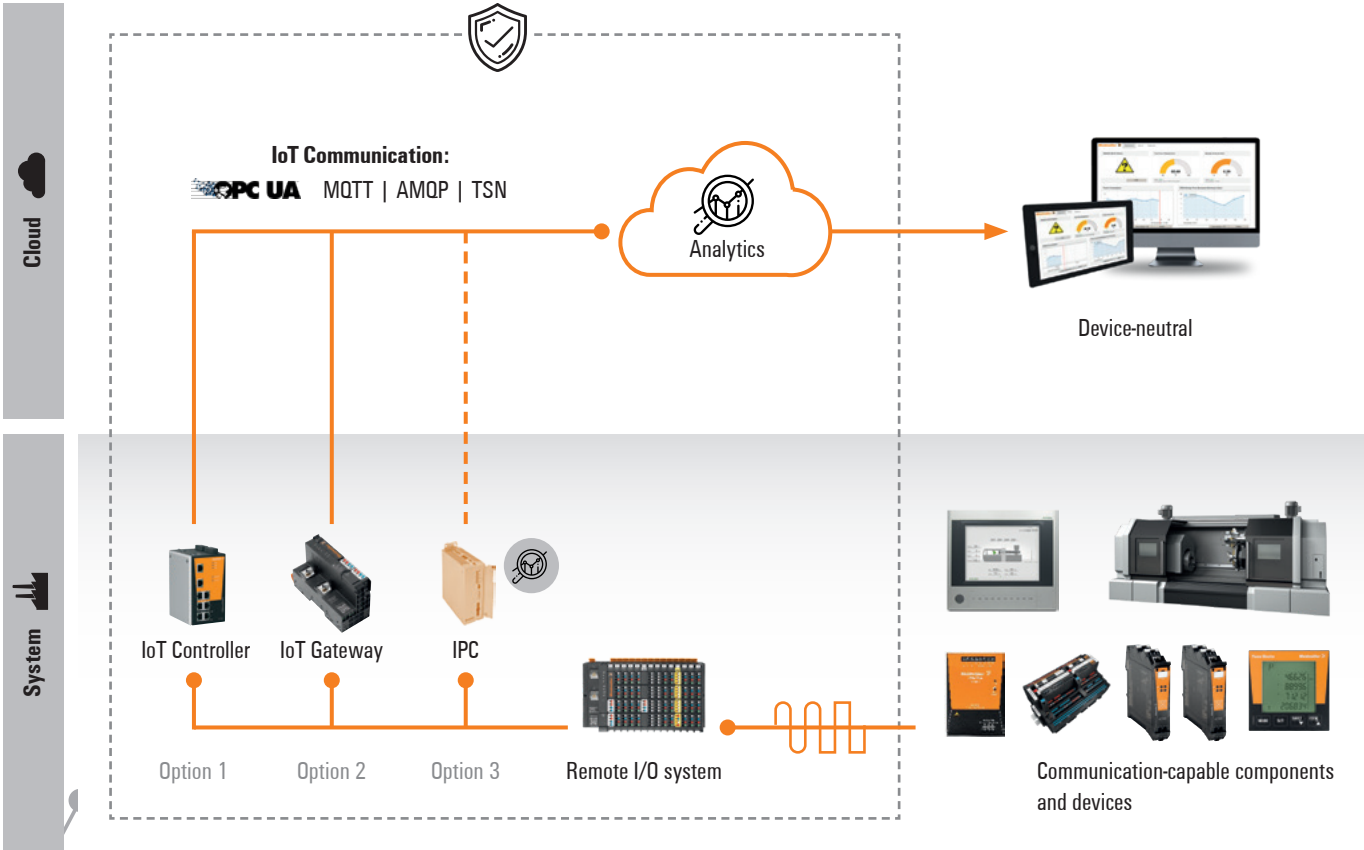
# Make your machines smart

## Analyse, display, predict – with Machine Learning

The advance of digitalisation in industry brings with it many advantages which could save you time and therefore money and even open up new business models for you. Smart analytics modules allow for a detailed evaluation of all relevant machine and process data and enable early detection of deviations and anomalies in ongoing processes.

Reduce downtimes and reject goods, optimise your performance – quickly and easily with the u-mation machine learning concept. Machine learning incorporates integrated Industrial Analytics services which make all this possible: from the analysis and optimisation of the existing infrastructure via the recording and collection of measured data to the development of smart analysis models and data-related services. With machine learning and Industrial Analytics, you can optimise your whole process chain while reducing overheads.

### Platform-independent



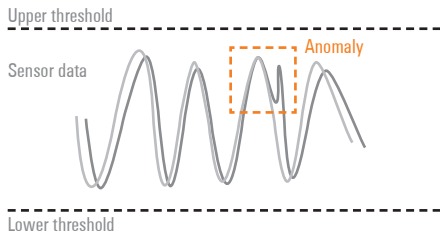
### Visualisation

How to have a handle on your data at all times: Our visualisation solutions can be individually customised with flexible, adaptable content. You can also use profiles to select which users get access to which information. This is a practical solution which allows you to make the relevant data available to every position in your company.



### Anomaly detection

Our analytics solutions detect deviations from measured values while the system is running. Through comparison with models which have been automatically learned using realtime data, anomalies are detected and classified early before they have an impact on your processes – rule-based systems do not normally detect these small deviations. You can react to potential problems before they affect the performance of your machines and systems.



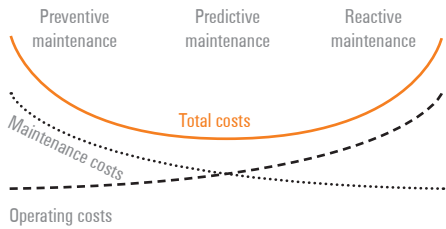
### Anomaly classification

With Industrial Analytics, deviations registered by the system are categorised as a function of their relevance (important and unimportant). The most relevant anomalies are assigned to their causes, doing away with time-consuming searches for error sources and significantly reducing downtimes. The result is optimised production performance and reduced costs.



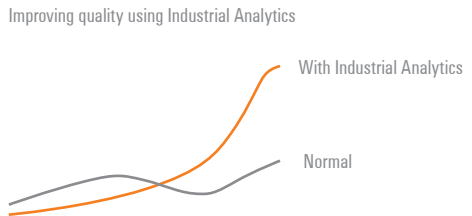
### Predictive maintenance

Our analysis models learn from your machine data and thus allow you, to a certain extent, to look into the future. With Industrial Analytics, you will always be able to schedule the maintenance of your systems as required. Maintenance based on unit numbers or running time becomes a thing of the past, as do reactive repairs, thus minimising maintenance and operating costs.



### Predictive quality

Rejects are an important cost factor in all production companies. Seamless monitoring of sensor, status and process data allows predictions of the anticipated quality of products, even beyond the current production phase. Adapting the production parameters accordingly significantly reduces reject numbers and gives you maximum yield from your processes.





# Maximum application diversity with u-mation

## Benefit from our comprehensive range

Modern processes and systems require automation solutions which extract the very best from every work stage. With u-mation, our integrated automation and digitalisation range, we can support you from fitting out the panels through data transfer to the cloud to optimisation of your production processes, whether they are assembly lines or stand-alone applications. The wide range of applications of u-mation means you can find the optimum solution for every requirement.



### Flexible controller

u-create studio is a complete engineering tool based on CODESYS. In combination with the u-control 2000 controller, the software is ideal for use as the primary controller of a system.



### Modular hardware

u-mation offers a modular hardware portfolio which will be continually optimised, extended and further developed. The best example of this is our u-control 2000 controller, which represents the next intelligent stage of the evolution of the u-remote fieldbus coupler.



### Versatile IoT applications

In combination with the u-control 2000 controller, the u-create IoT engineering software can be used to pre-process sensor information and send it to the cloud via Node-RED. This lays the foundation for data-based applications, such as u-link remote maintenance and machine learning. Data from multiple machines can be collected in the cloud. This means u-create IoT is suitable for stand-alone machines and whole lines.



### Industrial data transfer

Our controller has an EtherCAT interface to make it easy to connect routers and switches. This means there is nothing preventing communication from the field right to the cloud. The u-link remote maintenance module can also be used here. This provides secure access to machines and systems from anywhere via a VPN connection.

### Machine Learning

Our individual Industrial Analytics solutions learn from machine and process data. They enable the reliable detection and classification of anomalies in machine behaviour, right through to predictive maintenance.



### Intuitive visualisation and operation

Our HMI software u-create visu ensures simple implementation of the configuration of dynamic multitouch-capable visualisation solutions from anywhere. High-resolution u-view multitouch panels are available for visualisation and operation.



### Efficiency evaluation and optimisation

Energy management according to ISO 50001 requires continuous testing and optimisation of energy efficiency. u-create ResMa is the universal tool for recording and monitoring energy flows and process data. The web-based software solution is ideally suited for energy management. In addition, u-create ResMa also integrates into existing systems of automation technology, control technology and building automation.



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