



RK ROSE+KRIEGER

A Phoenix Mecano Company

MultiControl II duo accu / DC

The solution for mobile adjustment
applications





VIDEO
How it works
Cabinet installation

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The compact all-rounder



Advantages for you:

Adaptable – We implement special applications for you with Premium Customized

Efficient – Standby times of up to 15 days

Straightforward – Intuitive operation using hand switch with graphics-capable display

Ready for use – No fixed pause times thanks to dynamic duty cycle calculation

Upgradable – Synchronous movement of up to 16 drives

Flexible – Rechargeable battery solution for location-independent ergonomics

Compatible – Fully compatible with the BLOCAN® product portfolio

Compliant – With existing rechargeable battery systems

High-performance – Up to 150 double strokes with a single battery charge

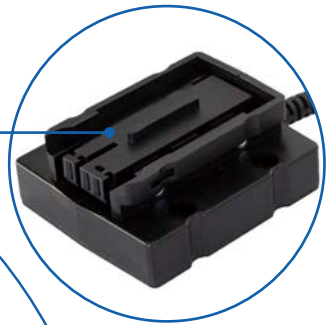
Reliable – Duty cycle, overcurrent and temperature monitoring for overload protection as standard



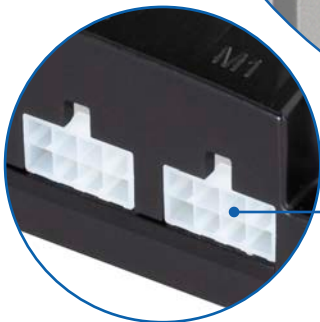
- LED for visual status indication



- Plug connection for variable and ergonomic positioning of the controller and the rechargeable batteries



- Standardised adaptation of commercially available rechargeable batteries



- Synchronous control of up to 2 drives
- Up to 8 controllers, and thus 16 drives possible, using BUS cable networking



- Straightforward connection to master control system
- Straightforward integration of external sensor equipment (e.g. safety edges, etc.)



VIDEO
How it works
MultiControl II duo accu/DC

MultiControl II duo accu – The compact all-rounder for mobile applications

The successful product range of MultiControl II synchronous controllers has now been expanded to include the MultiControl II duo accu and duo DC.

These compact versions facilitate a power supply using 24 or 28 V. The voltage can be provided either using a cable with an open cable end or a rechargeable battery adapter created in-house for commercially available rechargeable battery packages. As a result, applications in control cabinets or adjusting movements in automotive engineering can also be implemented as well as the applications in mobile systems.

As per usual, these controllers can also be upgraded to form larger systems with up to 8 controllers, and thus 16 drives.

That way, even complex systems or high-performance requirements can be implemented.

An additional benefit:

The MultiControl II duo accu / DC still has the same full range of functions as the other variants as well as the separation into Basic and Premium.



MultiControl II duo accu



MultiControl II duo



MultiControl II quadro

MultiControl II duo DC



Thanks to the direct 24 V power supply and its small dimensions, the MultiControl II duo DC is ideally suitable for applications in industry or automotive engineering.

Both the actual hand switches and an I/O interface can be connected as the operating interface. The I/O interface provides 16 digital inputs and outputs for control.

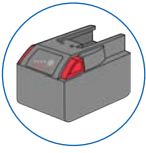
Status messages, memory positions and encoder emulation can be implemented using the standard functions in just a few simple steps.

That way, a broad range of requirements can be catered for with just the standard components, in particular in combination with the lifting columns and electric cylinders.



Applications of the DC version for applications with 24 V.

MultiControl II duo accu



The MultiControl II duo accu features a rechargeable battery adapter designed in-house for standardised and commercially available rechargeable battery packages. This allows the controller and drives to be fully integrated into your existing loading infrastructure.

In ideal circumstances, you can use rechargeable systems from your existing equipment. If you do not have any suitable rechargeable batteries, we will be happy to check whether we can develop an adapter for the rechargeable batteries you are using.

Thanks to the 1.5 m long cable between the adapter and the controller, the rechargeable battery can be fitted and replaced in an ergonomic position which is ideal for you. At the same time, the charge status/battery display can also be viewed using the six-button hand switch with graphics-capable display screen.

The master control system can also be used to view the battery displays of the slave controllers (up to seven). As a result, you see which rechargeable battery has to be charged at the push of a button.

The adapted drilling patterns of the controller and adapter are a further advantage. They are designed to suit the groove geometry of the Blocan® profiles, meaning that RK Rose+Krieger can provide a full modular range for the implementation of your application.

Alongside the obvious advantages for the implementation of mobile/location-independent applications (e.g. in fixture construction, workpiece inspection or in mobile lifting and adjusting systems), the MultiControl II duo accu can also be used in the process of manufacturing optimisation and reduction of waste.



Applications of mobile systems

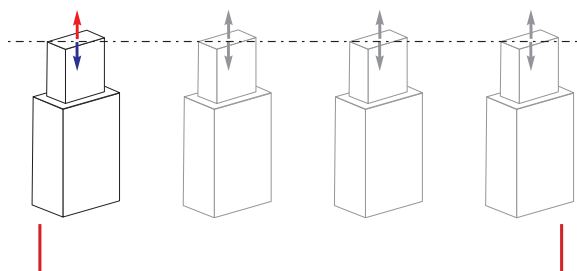


Applications for mobile applications using MC II accu

Technical data

General information / Operating conditions

Type	MultiControl II duo accu / DC
Compatible	Multilift, Slimlift, Slimlift EM, Multilift II, Multilift II telescope, Powerlift M, Alpha Colonne, Lambda Colonne, LZ 60, Lambda, LZ drive unit
Input voltage	24 – 28 V DC
Output voltage	24 – 28 V DC
Current output	Max. 10 A
Power	280 W
Standby power	≤0.5 W
Ambient temperature in operation	+5 °C to +40 °C
Air humidity (for storage)	30% to 75%
Protection rating (safety extra-low voltage (SELV))	III
Protection rating	IP 20
Dimensions (L, W, H) [mm]	121 mm x 105 mm x 44 mm
Weight	220 g
Duty cycle (operating mode S3)	At nominal load, 20% (4 mins operating time, 16 mins rest time)



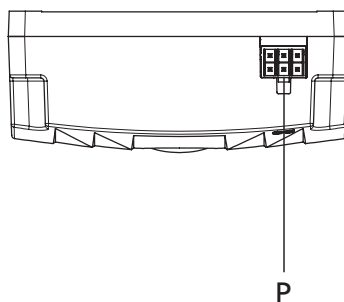
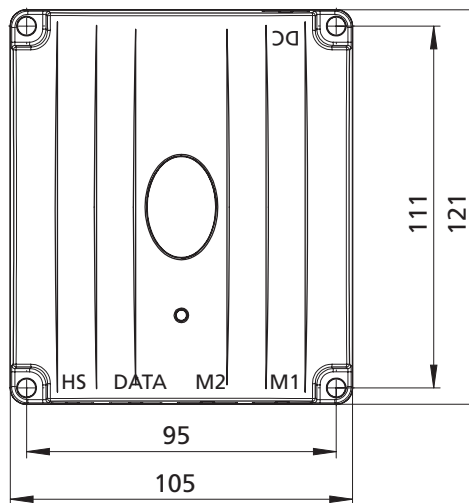
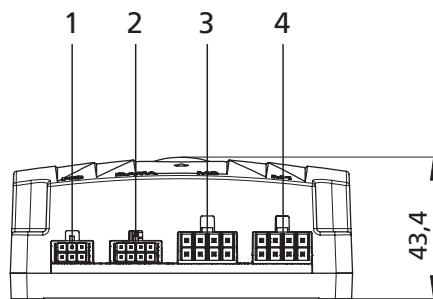
Supports configuration of systems with up to 16 drives



MultiControl II duo accu / DC



- 1 HS = Hand switch plug connector
- 2 DATA = Interface for sensors
(e.g. safety edge and synchronisation bus)
- 3 M2 = Motor connector 2
- 4 M1 = Motor connector 1
(must always be assigned)
- P = Connection socket for power supply



Versions

MultiControl II duo Basic/Premium

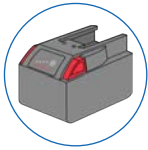
The MultiControl II duo accu and MultiControl II duo DC controllers are available in a Basic and a Premium version.

The Premium version includes three additional software functions compared to the Basic version. These are described on the following pages.

Code No.	Basic	Premium
Low standby consumption	•	•
Dynamic duty cycle calculation	•	•
Temperature monitoring	•	•
Visual status indication	•	•
Networking of multiple controls*	•	•
Stroke limitation*	•	•
Memory positions*	•	•
Change/set stroke display/base height*	•	•
View error history*	•	•
View current consumption of drives*	•	•
Transfer parameter settings to other systems*	•	•
Serial interface (RS-485)	•	•
Standardised bus protocol (Modbus RTU)	•	•
I/O interface compatibility	•	•
Connection of external sensor equipment (e.g. safety edge)	•	•
Battery status indicator* (also for slave controllers)	•	•
Integrated collision detection (SPP)		•
Absolute positioning*		•
Relative positioning*		•
Key lock*		•

***Note:** Hand switch with 6 function keys required for functionality.

MultiControl II duo accu and MultiControl II duo DC controllers



Code No. (accu)	Code No. (DC)*	Software version	for drive
QST11G12AH000	QST11D12AA000	Basic	Multilift II, Multilift II ESD, Multilift II safety, Multilift II clean
QST11G12AH022	QST11D12AA022	Premium	
QST12G12AH000	QST12D12AA000	Basic	Multilift II telescope, Multilift II telescope ESD
QST12G12AH022	QST12D12AA022	Premium	
QST13G12AH000	QST13D12AA000	Basic	Multilift II impact
QST13G12AH022	QST13D12AA022	Premium	
QST44G12AH000	QST44D12AA000	Basic	Powerlift M
QST44G12AH022	QST44D12AA022	Premium	
QST10G12AH000	QST10D12AA000	Basic	Multilift
QST20G12AH000	QST20D12AA000	Basic	RK Slimlift
QST20G12AH022	QST20D12AA022	Premium	
QST21G12AH000	QST21D12AA000	Basic	RK Slimlift EM
QST21G12AH022	QST21D12AA022	Premium	
QST30G12AH000	QST30D12AA000	Basic	Electric cylinder LZ 60
QST30G12AH022	QST30D12AA022	Premium	
QST61G12AH000	QST61D12AA000	Basic	Alpha Colonne
QST61G12AH022	QST61D12AA022	Premium	
QST81G12AH000	QST81D12AA000	Basic	Lambda Colonne
QST81G12AH022	QST81D12AA022	Premium	
QST81G12AH000	QST81D12AA000	Basic	Lambda electric cylinder
QST81G12AH022	QST81D12AA022	Premium	
QST35G12AH000	QST35D12AA000	Basic	LZ drive unit
QST35G12AH022	QST35D12AA022	Premium	

***Note:** A connecting cable with open cable end (1.5 m) is included in the scope of delivery of the DC version.

Power supply



Code No.	Rechargeable battery mount	Manufacturer	Interface	Fig.
QZD070754	Rechargeable battery mount 28 V rechargeable battery – 1.5 m	Würth, Milwaukee	Power supply	1

Other rechargeable battery mounts are available on request. Contact us for further details!

Functional description

The MultiControl II duo accu or MultiControl II duo DC can be used to implement a wide range of mobile systems and applications.

Alongside workshop trolleys and height-adjustable workbenches in the context of island production, workpieces in series production can also be conveyed ergonomically between the individual processing stations.

To cater for the various processing steps and the different body sizes of employees, the rechargeable battery controller also supports height adjustment in conjunction with the lifting columns.

The high-performance MultiControl II duo accu provides additional mobility, flexibility and convenience without compromising the numerous functions and features.



Even larger systems can be implemented using the MultiControl II duo accu or MultiControl II duo DC.

Using the synchronisation interface, up to 8 controllers, and thus 16 drives, can be operated synchronously with each other. This allows you to design more complex systems and high-performance mobile lifting mechanisms.

In the process, the battery status is monitored continuously by the master control system. That way, flat rechargeable batteries can be assigned directly to the corresponding controller, thus avoiding cumbersome searching and trying out.



Functional description

SPP – Smart Product Protection (integrated collision detection)

The Premium version of the MultiControl II control unit includes RK Rose+Krieger GmbH's own SPP technology which is developed in-house.

This technology considerably reduces the risk of product damage in the customer's application. Protection is provided not just for the connected drives, but also for the adjoining set-up as a whole.

When adjusting the height of tables or machine frames, for instance, there is a latent risk of collisions as a result of the raising and lowering of a load. If such collisions occur, they can cause damage to drives (reduced service life and the possibility of complete failure) but also the adjoining set-up, or may cause obstructions.

SPP is a software-based solution for collision detection. A major benefit is that the technology is fully integrated into the control system,

which means that the customer application does not need to be equipped with any additional external sensors.

A further special feature is that the customer is able to adjust the sensitivity of the system (actuation force when a collision is detected) to suit the specific application.

The key advantages of integrated collision detection are summarised below.



Highlights / Features:

- Higher product safety – SPP detects obstacles, both during upward and downward movement
- No external obstructing contour – the technology is fully integrated into the control system and works with all compatible drives
- High process reliability – SPP functions regardless of the load or other ambient parameters (e.g. ambient temperature)
- Plug & Play – no further installation steps are required for the collision protection thanks to integration into the control system
- Flexibility – sensitivity can be adjusted using the hand switch with 6 function keys

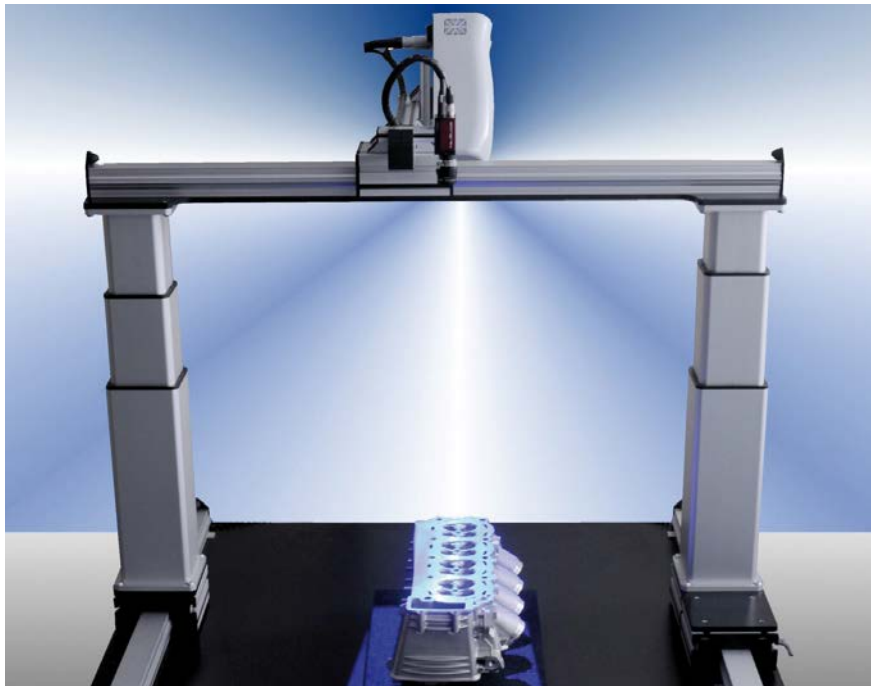
Relative and absolute positioning

Alongside the integrated collision detection (SPP), the Premium version has two further functions which relate to the type of drive positioning.

In addition to moving to previously stored memory positions, it is also possible to carry out relative or absolute positioning. The first of these enables positioning relative to the current position of the lifting column.

The operator control can thus be used to set a defined value (e.g. 30% or 30 mm) by which the drive further retracts or extends.

Absolute positioning, on the other hand, refers to the complete scale of the adjustment range. So the operator control can also be used to move the drive precisely to a predefined position. This function can be very important for applications in which components are measured, for example.

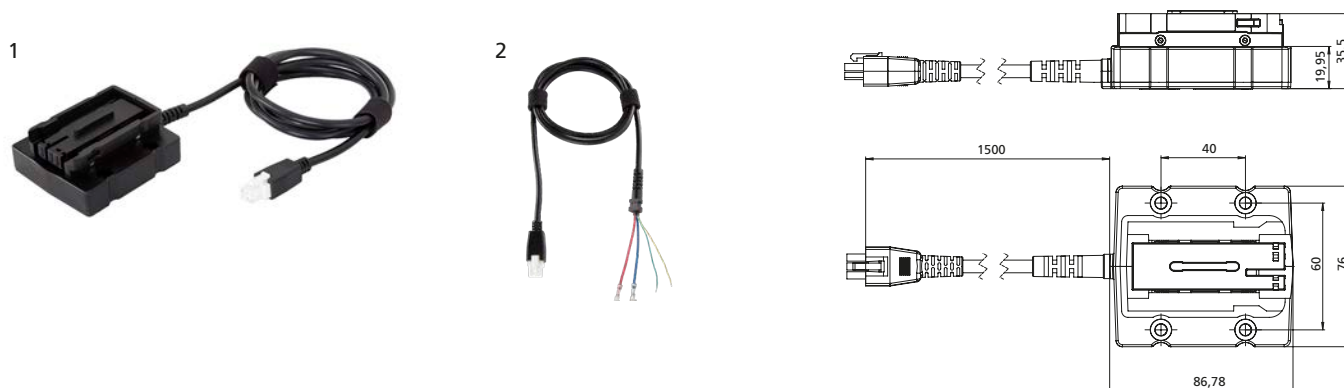


Highlights / Features:

- Absolute positioning – precise positioning to a defined position in relation to the complete adjustment range of the drive
- Relative positioning – gradual positioning in relation to the current position of the drive
- Positioning accuracy – both software functions allow positioning to predefined positions which is accurate to the millimetre

Accessories

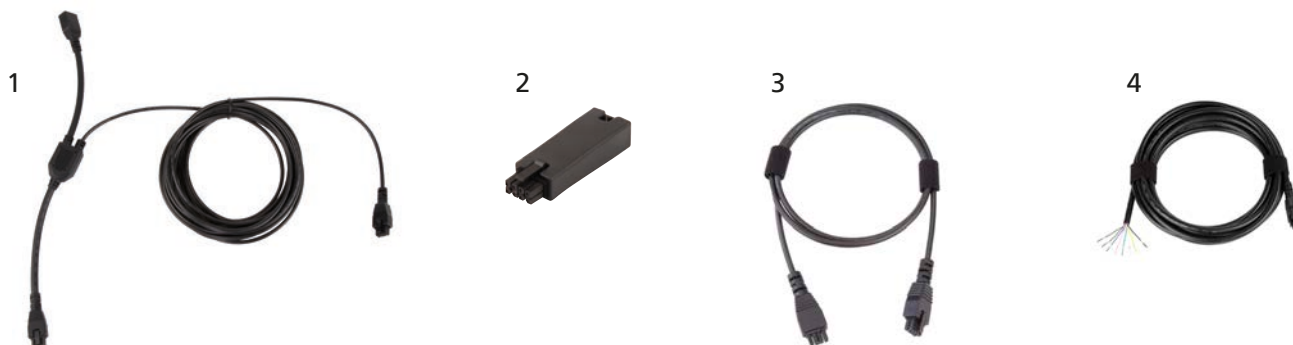
Power supply



Code No.	Power supply to MultiControl II*	Manufacturer	Interface	Fig.
QZD070754	Rechargeable battery adapter 28 –V rechargeable battery – 1.5 m	Würth, Milwaukee	Power supply	1
QZD070753	Open cable end 24 V – 1.5 m	24 V DC	Power supply	2

***Note:** A connecting cable with open cable end (1.5 m) is included in the scope of delivery of the DC version.

Networking



Code No.	Accessories	Interface	Fig.
QZD070731	6 m BUS cable for the networking of up to 8 synchronous controls	DATA	1
QZD070694	Terminating resistor (only necessary when more than 2 synchronous controls are connected)*	BUS cable 6 m	2
QZD070730	1 m BUS cable for networking 2 synchronous controls	DATA	3
QZD070718	BUS cable with open cable end – 4 m straight	DATA	4

***Note:** If there are more than two connected controllers, the overall system always requires two terminating resistors at the beginning and end of the BUS system.

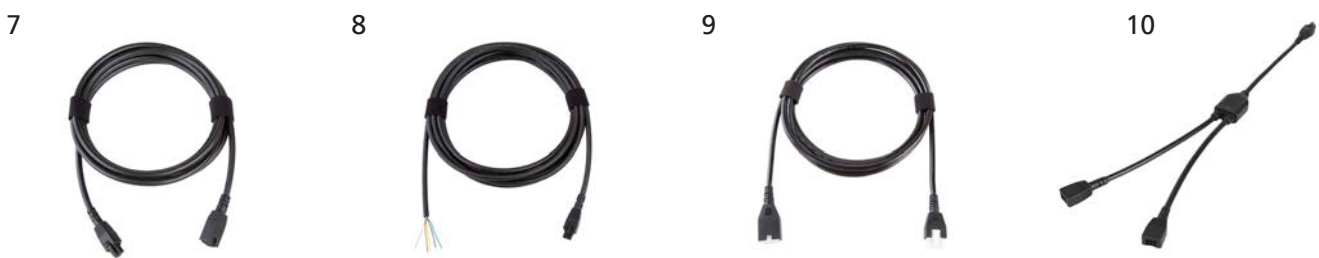
Connecting cable for Multilift I to MultiControl II family



Code No.	Multilift I to MultiControl II*	Interface	Fig.
QZD020711	Connecting cable with locking mechanism, Multilift I to MultiControl II – 2.5 m	Motor connector	5
QZD020722	Adapter cable, Multilift I to MultiControl II – 0.2 m	Motor connector	6

***Note:** For the compatibility of the Multilift I lifting column, you require one of the following adapter cables.

Accessories

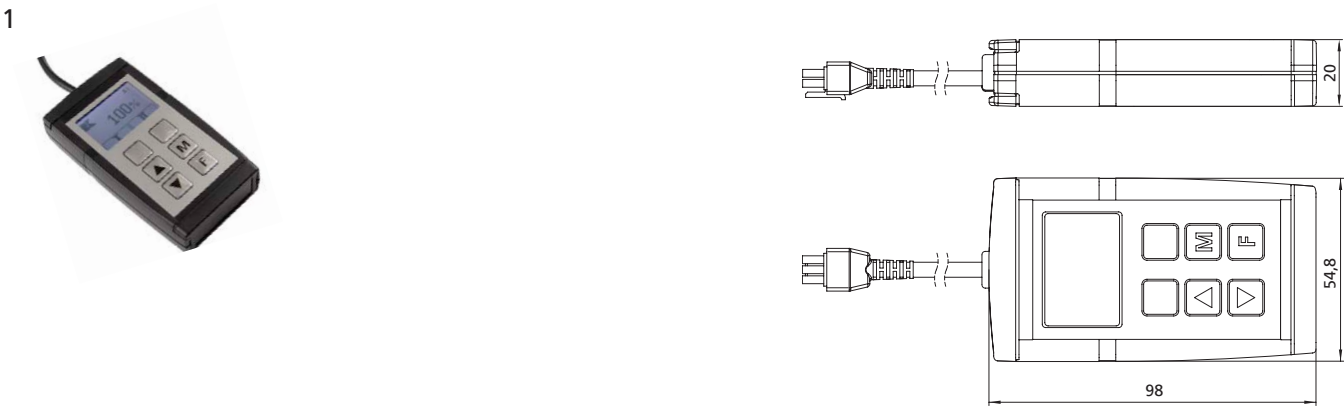


Code No.	Accessories	Interface	Fig.
QZD070700	Hand switch extension cable – 2.5 m straight	HS	7
QZD070710	Hand switch cable with open cable end – 4 m straight	HS	8
QZD070749	Extension cable for drives to Multilift II – 3 m straight	Motor connector	9
QZD070751	Y cable for connection of two operating controls – 0.4 m	HS	10

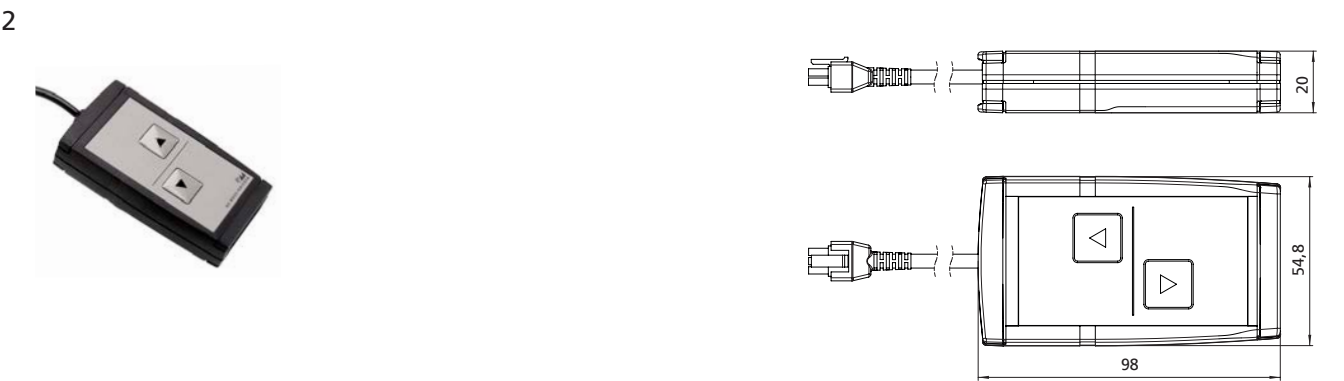
***Note:** When using the 3 m extension cable for drives (QZD070749), lag error E11/E12 may occur due to the increased line resistance. In this case, it is necessary to reduce the travel speed, for which you require the hand switch with 6 function keys and display.

Accessories

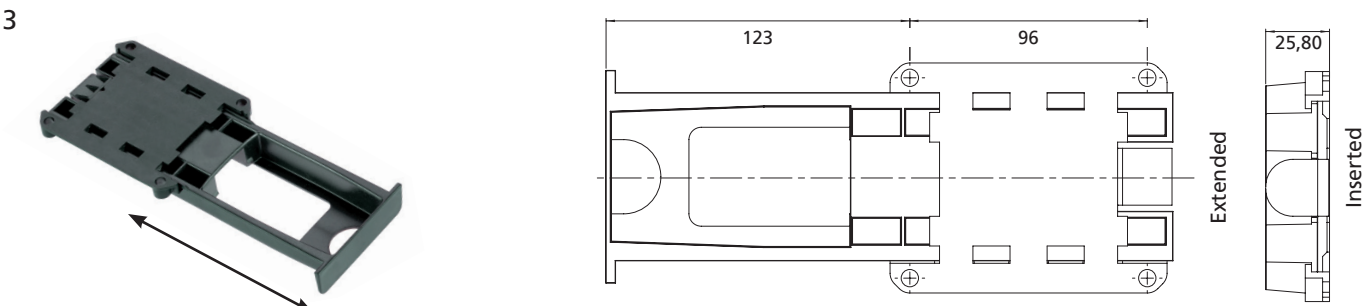
Hand switch with 6 function buttons



Hand switch with 2 function buttons

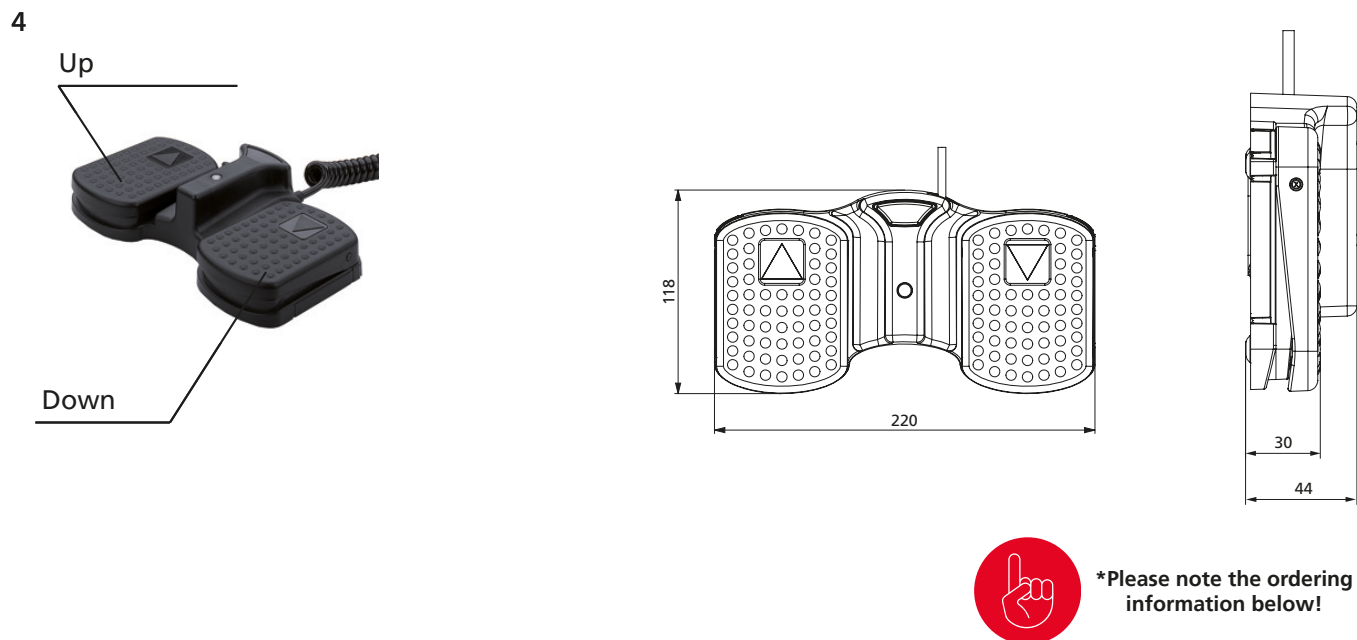


Hand switch drawer



Code No.	Version	Fig.
QZB11G07AV041	Hand switch with 6 function keys and display screen – 1 m spiral cable	1
QZB11G07AB041	Hand switch with 2 function keys – 1 m spiral cable	2
QZD000074	Hand switch drawer for hand switches with 6 and 2 function keys	3

Foot switch with 2 function keys



Adapter cable



Code No.	Version	Fig.
QZB02C01AE114	Foot switch – 2 function keys	4
QZD070699	Adapter cable DIN 7-pin to Molex 6-pin (Hand switch to MultiControl II) – 0.2 m	5

***Order information:** When using a foot switch with 2 function keys the adapter cable is essential.

Accessories

Top hat rail adapter

The top hat rail adapter is ideal for optimised fastening in the industrial context. It can be adapted using two fastening screws on the underside of the housing of the MultiControl II duo accu or MultiControl II duo DC.

That way, the synchronous controller for lifting columns and electric cylinders can be fastened directly to a top hat rail by pivoting in and thus makes for straightforward and time-saving installation (e.g. in a control cabinet).

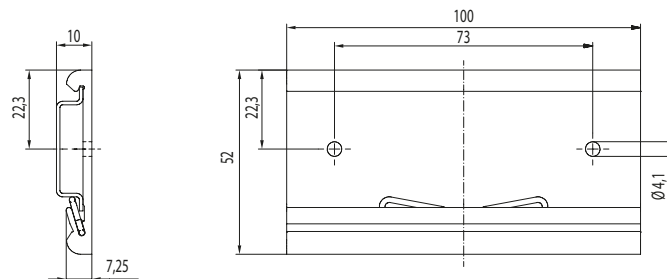
In combination with a 24 V switched power supply and the I/O interface (see page 24), signals from master control systems (e.g. PLC, etc.) can be received, processed and reported back.

The top hat rail can also be installed directly on the Blocan® profile. As a result, the controller can be fastened in any location.



Scope of delivery:

A metal top hat rail adapter, including fastening material, for connection to the controller.

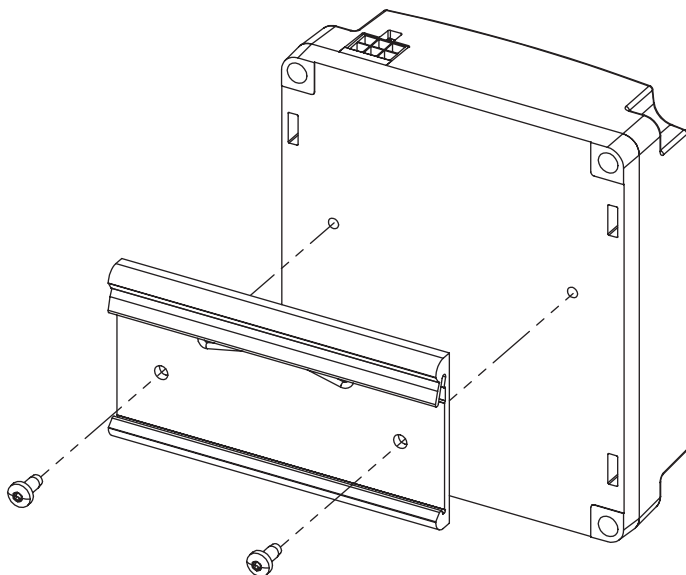


Code No.	Version
QZD070752	Metal top hat rail adapter for mounting rail DIN EN 60715 TH 35



Applications of the DC version for applications with 24 V.

Top hat rail adapter

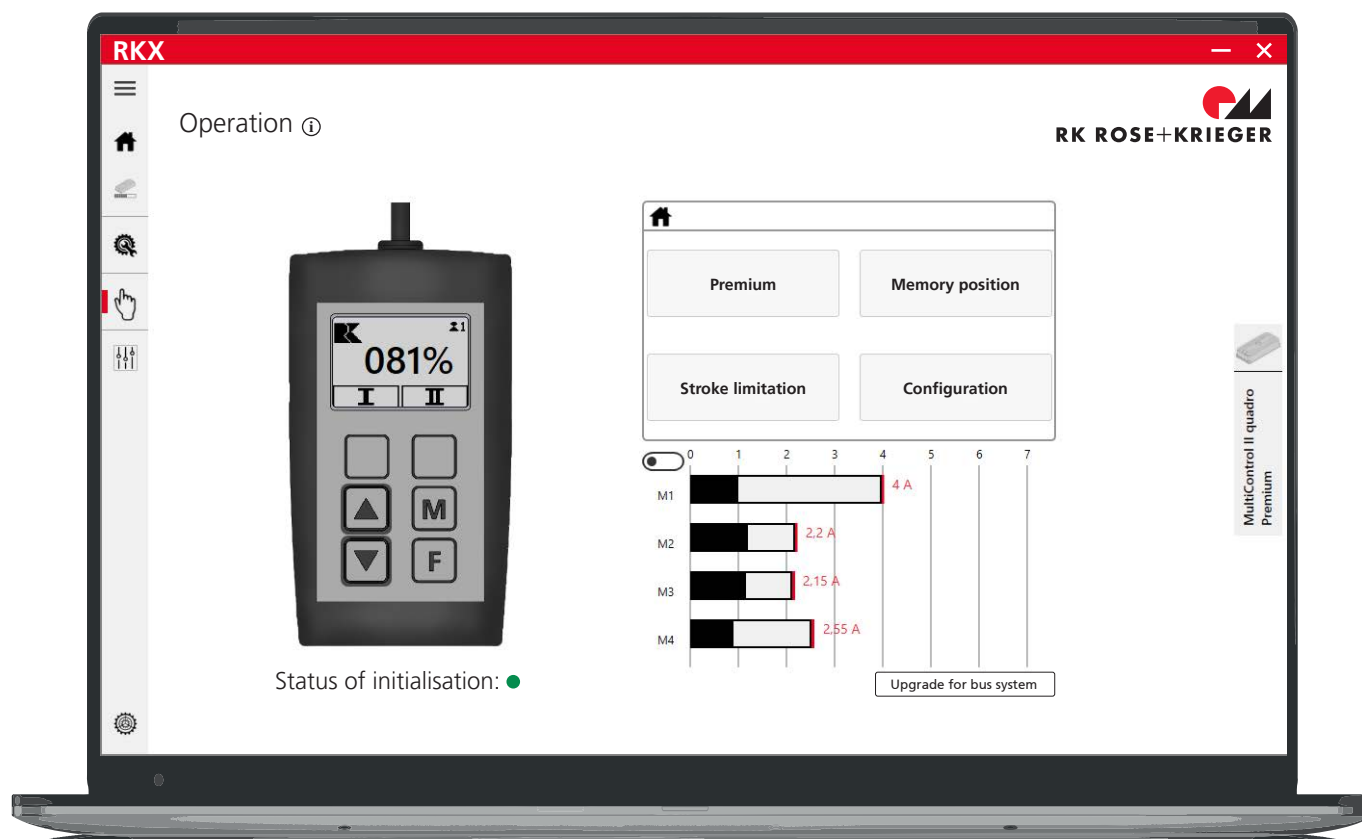


Accessories

One interface, countless possibilities

RKX

Update Service Operating Configuration



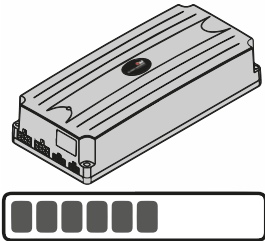
Highlights / Features:

- Easy detection of tension or an overloaded system
- Visualisation of motor current for up to 32 drives
- Storage of your requirements in configuration profiles
- Guided start-up of the system
- Software update
- System configuration
- System operation
- Read-out and export of fault history for detailed analysis

Code No.	Version
QZD070748	RKX interface – 2 m

The **RKX** (Windows software), in conjunction with the **RKX**-interface (Cable), provides you with numerous different options for interaction with your controller. Alongside the main functions explained in the following, you can also view the prior run time, the current temperature of the controller, the number of positioning movements completed and much more.

Update



Using the **RKX** you can update the Multi Control II controllers with a new software version and thus access new functions.

Also, in the event of a replacement delivery to your end customer you can restore the individual factory settings (e.g. preactivated functions, certain software version etc.) so that integration into your customer's overall system works smoothly.

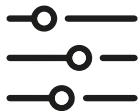
Software profiles which have been individually adapted to you or your customer by RK Rose+Krieger can also be transferred to the controller.

Service



The **RKX** also provides you with access to the fault history of your MultiControl II. This feature can be used to read out the most recent 20 reports from the controller. The entries can be used to draw conclusions relating to one-off or recurring faults, e.g. constructional distortions, faults in the voltage supply or overloaded drives. This data can be used to define further measures for optimisation of the service life and to reduce downtimes on your overall system.

Configuration



This menu item is used to configure various (pre) settings for the MultiControl II in accordance with your individual requirements. The start-up procedure for the entire system and the various premium functions can also be performed intuitively.

Moreover, the set options can be saved as (customer) profiles, allowing you to guarantee consistent functionality for your end customers

Operation



In order to check the settings made previously and determine the current motor current of your application, for instance, the drives can also be moved using the **RKX**. In addition to many further options, you can also set the premium functions (collision detection (SPP), drive group management, and relative and absolute positioning), memory positions and stroke limitation.

That way, nothing stands between you and problem-free set-up of your or your customer's application.

RKX software



More information

More information on our RK Rose+Krieger website.

Simply scan the QR code to find out more about our **RKX**-Software.

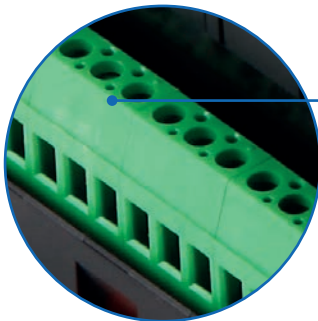
I/O interface



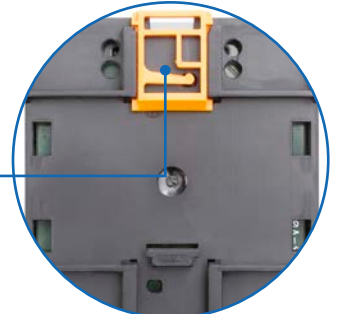
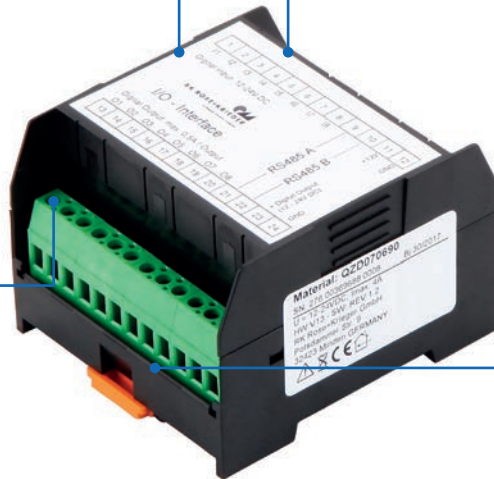
- Compatible with the MultiControl II product family



- Receives digital signals (e.g. from a PLC) as commands



- Forwards feedback from the controller to digital outputs



- Quick and easy installation in the control cabinet with mounting rail housing (TS35)

Highlights / Features:

- Connecting element from MultiControl II to higher control level
- Bidirectional communication between controller and master control system via 16 digital inputs and outputs
- Saving and moving to up to 7 memory positions
- Starting up the initialisation sequence
- Adjustable travel speed
- Enables acknowledgement of errors
- Feedback to higher control (e.g. movement active, position reached, error status, etc.)

- Encoder simulation A/B delivers a signal which simulates a two-channel encoder and represents the position of motor 1.

Standard functions mean quick and simpler programming.

Standard functions of the digital inputs:

- Status message
- Initialisation complete
- Memory position reached
- Movement active
- Retracted status
- Encoder simulation

Option:

- Special functions available on request
- Quick and easy storage and moving to memory positions using hand switch with 6 function keys

I/O interface General information / Operating conditions..... 26

 Versions..... 28

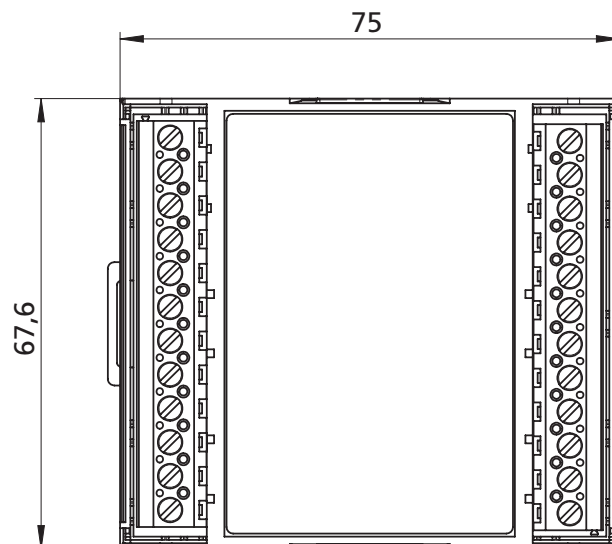
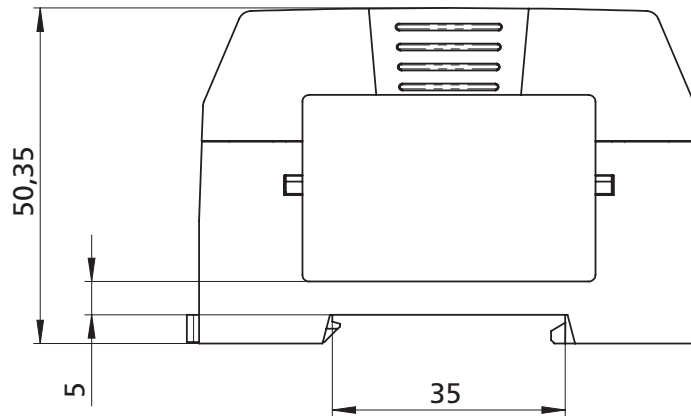
I/O interface

General information / Operating conditions

The voltage supply for the logic of the I/O module	is provided by connecting the MultiControl II control system
Power supply for the digital inputs	High level: 5 V DC – 30 V DC Low level: 0 V DC – 2 V DC
Power supply for the digital outputs	10 – 30 V DC, max. 4 A
Protection class	III
Ambient temperature	0 °C to +50 °C
Protection rating	IP20
Dimensions	W x H x L: 67 x 50 x 75 mm

Input	Standard function
Input voltage (input 1 - input 8)	High: 5 V DC – 30 V DC Low: 0 V DC – 2 V DC
Input impedance	10 kOhms
1	UP
2	DOWN
3	Action enabled from 3-bit mask (input 4–6)
4, 5, 6	3-bit mask for memory position
7	Speed (s/l)
8	Reset error

Output	Standard function	Logic level
Output voltage level O1 – O 8	High: as voltage on terminal 23 Low: GND	–
RS485 A/B	A/B	–
Power supply for the digital outputs	+ Digital output: 10 – 30 V DC, max. 4 A GND	–
1	Error status	High active
2	Initialised	High active
3	Position reached	High active
4	Movement active	High active
5	N/A	–
6	Zero position	Low active
7	Encoder simulation A	High/low
8	Encoder simulation B	High/low



I/O interface – versions

The RK Rose+Krieger lifting column range supports various workflows in a wide range of assembly and manufacturing processes.

A special data interface has now been developed to further optimise these workflows and increase the level of automation.

A lifting column for user-friendly setting up, for instance, can be operated using a hand switch. The rest of the production process is then controlled via a PLC.

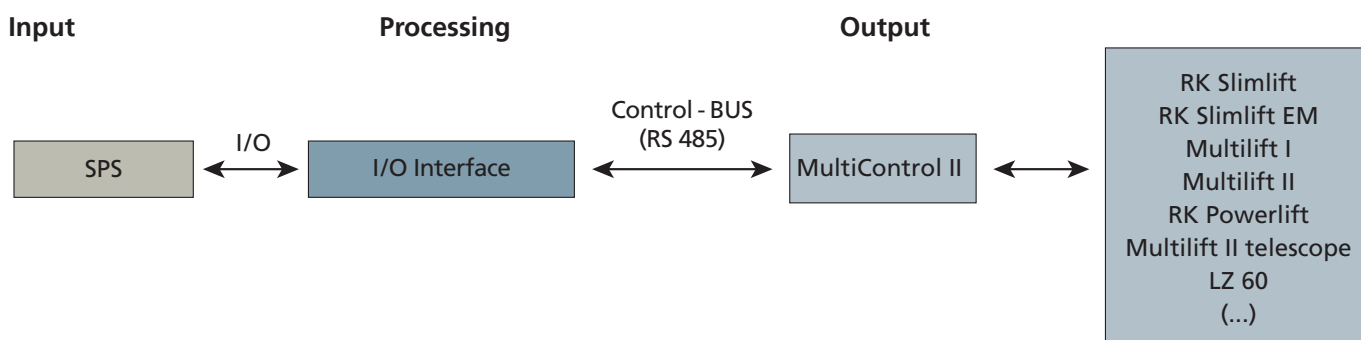


Scope of delivery:

Data interface with housing, connecting cable for controller (4 m), documentation



Code No.	Type	Version	Interface
QZD070690	I/O interface	for MultiControl II	HS



Connection of a PLC

The I/O interface is used to actuate the MultiControl II via digital inputs and outputs (e.g. of a PLC). The module does this by forwarding the digital inputs to the MultiControl II as commands.

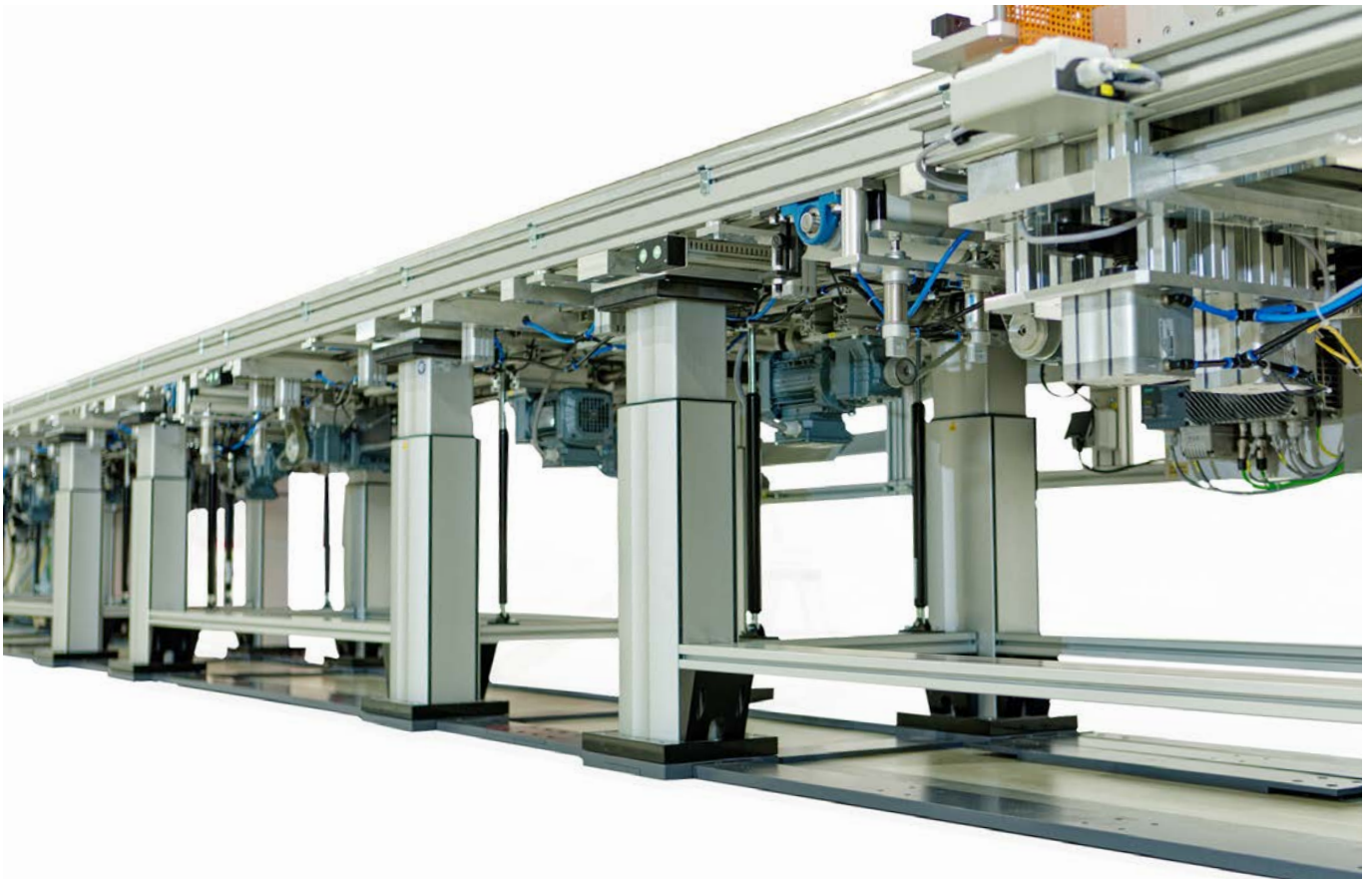
The feedback signals from the controller are in turn transferred via the digital outputs.

The I/O interface thus transmits the serial RS485 interface of the MultiControl II to the digital inputs and outputs bidirectionally.

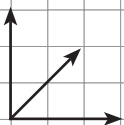
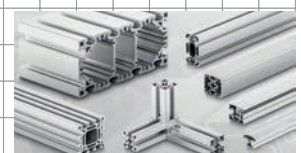
All the inputs and outputs of the module are configured with standard functions. Digital inputs 4, 5 and 6, for instance, are intended for saving memory positions of the lifting column.

It is important to mention that the hand switch with 6 function keys simplifies the saving of memory positions greatly. It can be used to both save and move to memory positions.

Please refer to the installation instructions of the MultiControl II for detailed information on the I/O interface.



Sketches / Notes



Our product ranges

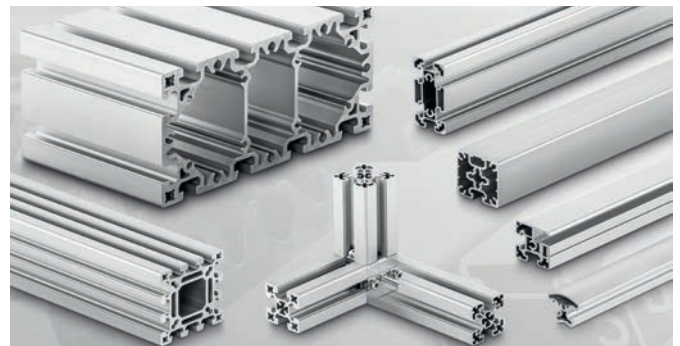
CONNECTING TECHNOLOGY

- Fittings for the secure clamp connection of round and square tubes
- Elements made of aluminium, stainless steel and plastic
- Sizes from 8 mm to 80 mm



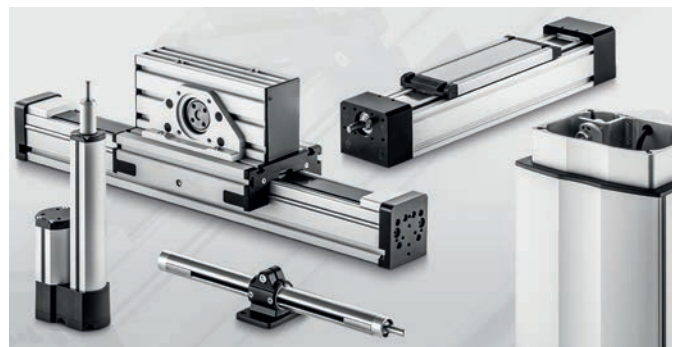
PROFILE TECHNOLOGY

- The tried-and-tested BLOCAN® aluminium assembly system
- Sections from 20 mm to 320 mm for all applications
- Connecting technology with an unsurpassed combination of flexibility and reliability



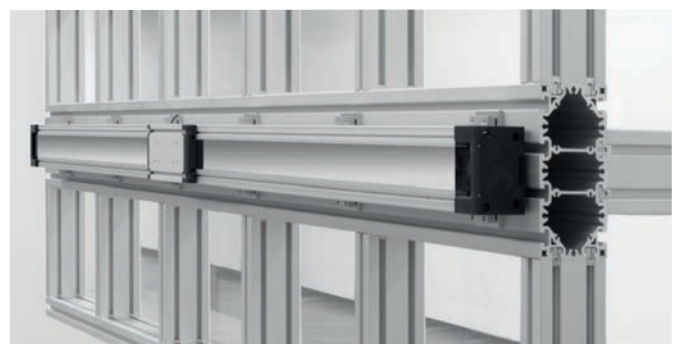
LINEAR TECHNOLOGY

- Manual adjustment units
- Electric cylinder
- Lifting columns
- Linear axes
- We can move loads for you of up to 3 t and 12 m dynamically, reliably and with great precision



MODULE TECHNOLOGY

- Machine frames
- Workstations
- Machine guards
- Multidimensional linear axis modules
- Complete drive solutions



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More information
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