BERGHOF

PIONEERING AUTOMATION TECHNOLOGY

PRODUCT CATALOG
BERGHOF AUTOMATION AND CONTROL SOLUTIONS

- Control Systems / PLC
- Touch panel
- Motion
- Industrial PC
- Industry specific products
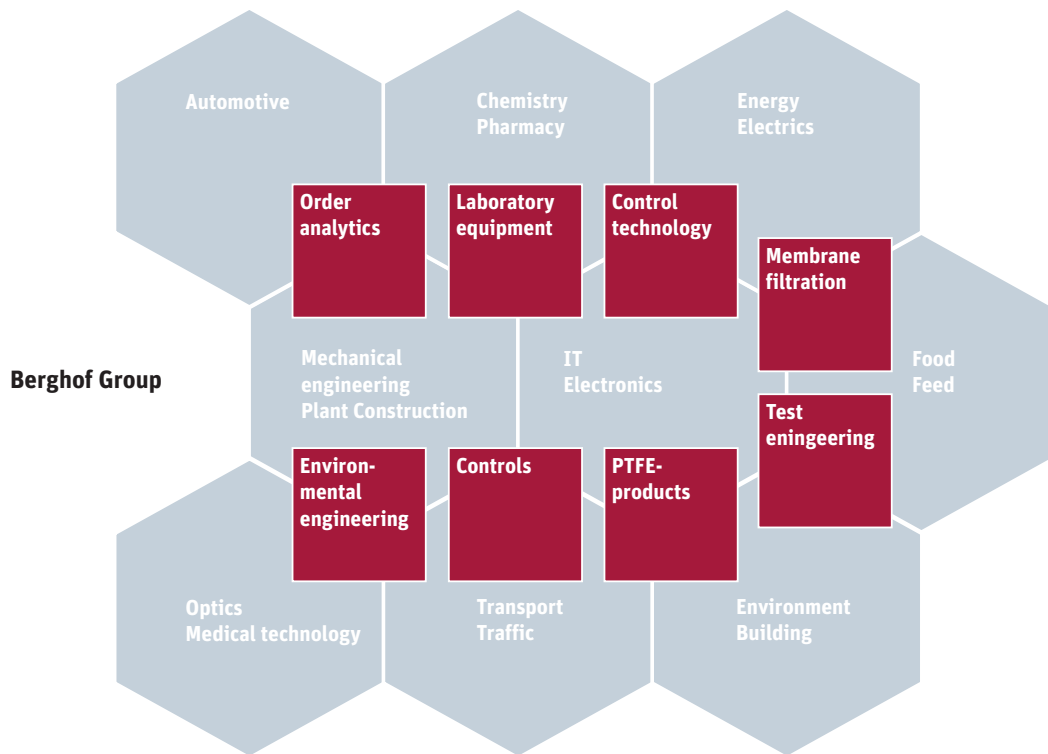- Customized products
- Applications

BERGHOF **GROUP**

AS A LEARNING, GROWING COMPANY AND
NETWORK OF STRONG PARTNERS, WE COMBINE
BERGHOF KNOWLEDGE, TECHNOLOGIES AND
RESOURCES IN FIRST-CLASS PERFORMANCE

4

BERGHOF **YOUR INNOVATION HUB**

Berghof Automation & Control Solutions is a continuously growing business unit of the Berghof Group, a family-owned company that has been developing and producing advanced technologies at the highest level in Germany for more than 50 years. In order to guarantee optimum quality at all times, we have not outsourced the entire process chain – from brainstorming and development to careful product testing and certification – but have brought it together at our headquarter in Eningen, Germany.

Founded in 1966 by Prof. Dr. Georg Zundel as a research institute, the Berghof company quickly made a name for itself as one of the most renowned physical-technical institutes in Germany. Following the successful transformation into a technology company, the Berghof Group now supplies the market with an extraordinary variety of technologies and products, all in keeping with the common leitmotif „Your Innovation Hub". The group comprises the business units Berghof Automation, Berghof Analytics + Environmental Engineering, Berghof Membrane Technology, Berghof Products & Instruments and Berghof Fluoroplastic Technology.

Mutual transfer of knowledge, the sensible use of synergies between the individual business areas, long-term cooperation and versatility – all these are the fertile ground for value-adding innovations. That's why Berghof cultivates a relationship based on partnership when dealing with each other and, above all, with its customers.

About half of all employees of the Berghof Group are employees of the company Berghof Automation, distributed among the following business units Automation & Control Solutions, Process Management and Testing.

BERGHOF **AUTOMATION & CONTROL SOLUTIONS**
FOR CHALLENGING PROJECTS IN MACHINE AND PLANT CONSTRUCTION AND FOR WORLDWIDE INITIAL EQUIPPING

BERGHOF **AUTOMATION & CONTROL SOLUTIONS**

The strong partner at your side

Berghof Automation & Control Solutions is an independent business unit that implements customized individual solutions on the basis of a highly flexible standard portfolio by means of a highly specialized team. This generates maximum fulfilment of needs with maximum qualitative product safety.

And for customers this offers even more: all products benefit from every tailor-made solution through its integration into the standard, so that all customers – even when using the standard portfolio – benefit from the innovative ideas of the entire industry.

Berghof control solutions have proven themselves in a wide variety of industries across all sectors. Machine tools, special machines, the food industry, mining, oil & gas, crane systems or agriculture – the usability of Berghof controls and components is individually tested in each case.

For example, Berghof components withstand extreme weather and operating conditions in shipping, on offshore platforms and in underground mining. This special heavy-duty line demonstrates Berghof's indestructible control technology on a daily basis, which can be optimally operated even in exceptional temperatures and heavy soiling and guarantees perfect function.

But Berghof's portfolio is not only represented at extremes. The products demonstrate their 24/7 usability in intralogistics as well. Thanks to the flexible system, Berghof is able to ideally adapt the automation, networking and visualization of all material flows to logistics requirements.

Industry 4.0 is not just a buzzword for Berghof – it is a living reality. Numerous customers rely on the broad communication capabilities of our products and network these with superimposed systems or Smartphones to keep the process optimally in view at all times.

Berghof Automation & Control Solutions accomplishes this with highly qualified and optimally coordinated teams, sophisticated process flows, close coordination of all process flows with short decision-making paths and implementation times, and all this with in-house production.

The basis of all activities is the wealth of experience and expertise gained from countless projects with know-how in operational processes and product requirements in a wide range of industries in almost all fields of application.

In order to be able to guarantee such a high standard, Berghof places high demands on both itself and its suppliers in terms of quality, reliability and interpersonal cooperation. The goal: an all-round successful project – from the task definition to software migration or product integration, from commissioning to maintenance.

According to the motto:
Berghof will take care of it for you.

In use across the board

Repeatable and scalable solutions based on a proven product portfolio despite the diversity of requirements and applications in different industries – this calls for an equally flexible manufacturer.

With products from Berghof, you can rely on valuable experience from over 40 years in automation technology with special product solutions and almost all application areas. We focus on the well-being of our customers: **custom-made products** on the basis of a qualitatively mature, high-quality portfolio and know-how, which is constantly expanded via specially established knowledge databases.

The result: We already meet special market and application requirements in our product standard.

Harsh environmental conditions, integration into superimposed systems, guaranteed availability of spare parts according to specifications, special communication protocols, safe operation, protection of your implementation from unauthorised persons, predictive maintenance, remote access, easy service – our interest is always in the functioning system as a whole tailored to the respective individual requirements.

Longevity, reliability and a maximum MTBF are kept in mind as well as the possibility of expandability and renewal of the running system.

Your advantage: The Berghof portfolio continuously integrates the innovative, trend-setting accents from all applications into the standardized complete solutions.

The Berghof automation experts work with you in partnership to create a solution tailored to your process sequences and support your needs during integration, commissioning and maintenance. Reliable and competent support throughout the entire lifecycle is of course a matter for us, and can be provided at any time without break if required. In addition to our control technology, we also supply automation software tailored to your needs.

Shortening the time-to-market is becoming the most important competitive factor to survive in the industry environment. Our suitable system solutions help you to optimize your processes flexibly.

As diverse as the industries are, as diverse are the possible applications of Berghof products.

Made in Germany.

Flexible automation solutions for all industries:

01 Intralogistics, **02** Building Automation, **03** Oil & Gas, **04** Marine,
05 Machine tools, **06** Crane systems, **07** Agriculture, **08** Special machines

BERGHOF **INDUSTRIES & APPLICATIONS**

01

02

03

04

05

06

07

08

BERGHOF - PIONEERING AUTOMATION TECHNOLOGY

CODESYS **AN OPTIMAL BASIS**

CODESYS offers you as a user numerous advantages

The experts at Berghof know from many years of experience that compatibility and openness are particularly important criteria for customers. This is why Berghof Automation & Control Solutions has been consistently relying on the open automation software CODESYS for many years.

CODESYS convinces by its unique flexibility and functionality and belongs rightly to one of the most frequently used programming tools worldwide. The IEC 61131-3 programming software „CODESYS Development System" forms the basis for this. This programming language improves the life cycle of the software and significantly facilitates requirements analysis, design, construction, testing, validation, installation, operation and maintenance. CODESYS allows the programming languages IL, LD, FBD, ST, AS and CFC. This makes it easy to implement applications with complex, distributed architectures.

As an internationally proven engineering tool, CODESYS has meanwhile established itself as a worldwide standard for a large number of manufacturers. But there are big differences in the application.

Berghof Automation & Control Solutions uses the **open standard of CODESYS**, which offers you numerous advantages as a user. Linux is used as the platform for our controllers, so that a wide variety of software modules can be easily combined.

Your advantages with the Berghof solution:

➜ No need for proprietary sotions – Use of 3S Standard-Solutions and Functions
➜ CODESYS is free of charge – one-time purchase of the company target license further standard updates of 3S are free of charge
➜ Simple up- and downgrading between the different CODESYS versions as required
➜ No restrictions for devices to be used
➜ No restrictions when using third-party libraries
➜ Very easy changeover from other standard V3 platforms to the Berghof system
➜ Unrestricted use of the software available in the CODESYS Store
➜ Compatibility with various plug-ins and extensions

Engineering **Fieldbus** **Motion + CNC** **Runtime**
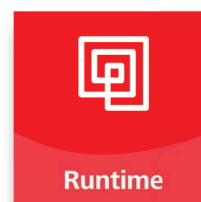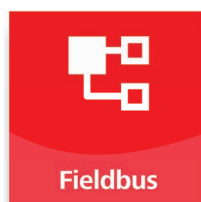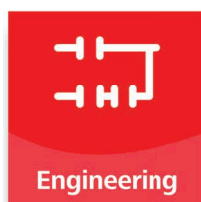
CODESYS **AN OPTIMAL BASIS**

The Berghof CODESYS standard offers a variety of free software options:

→ Unit-related analog inputs without necessary conversion
→ Application protection through binding to hardware
→ Configurable bootlogo, weblogo & operator buttons
→ Operating hours counter
→ CODESYS Security Manager for Encryption and Certificates
→ DHCP client for automatic IP configuration
→ HTTPS Webconfig
→ Internal diagnostic memory (diagnostic log for offline error analysis)
→ IP configuration via display menu
→ Configuration option 2nd IP address on Ethernet interfaces
→ Multi-Touch function
→ Screenshot function
→ Target visualization
→ Temperature sensor
→ Web-based configuration interface
→ Additional Fonts
→ Time zone support including summer / winter time
→ Certificate-based security
→ CODESYS Runtime License

Benefit from our extensive experience with CODESYS. We offer you numerous supports for the software.

→ Consulting and conception for automation requirements
→ Creation of the software application
→ Porting CODESYS versions to each other and migrating other PLC platforms to CODESYS
→ Optimization of realizations with CODESYS
→ Training courses / workshops on software in general or specially tailored to your needs, for example on system operation or service

Safety **Services** **Security** **Visualization**

BERGHOF **CERTIFIED PARTNER**

Professional support close to you

We're always close. Represented by qualified and certified Solution Partners, we offer optimal support for all tasks worldwide. Our partner companies are proven experts in special technologies and industries with excellent product and system know-how as well as many years of experience in the use of Berghof technology. They prove this knowledge not only through their daily work on complex projects and market presence, but also through close cooperation with our specialists at the head office.

In addition to the basic requirements regarding experience and further training as well as the fulfilment of our value claim regarding quality, reaction time or sustainability, we attach great importance to the quality of:

→ **Consulting –** development of the ideal solution using the know-how of Berghof and the partner network
→ **Offers –** prompt, detailed responding to your request and reliable
→ **Projects –** processing based on your specifications, in cooperation with our specialist departments
→ **Deliveries –** coordinated consultations for shorter delivery times
→ **Service** – a maximum of support

Starting with the project concept, through product selection, application creation, customizing support, to well-founded training programs or after-sales support, the Solution Partners offer the competent support and know-how of Berghof automation technology – and all of that at your place.

A global network of automation experts – not only on the level of standard products, but also in problem solving. For you as a customer this means bundled knowledge across borders, with faster implementation and project realization at a high level.

Berghof Automation & Control Solutions ensures this high level of quality through systematic training and development with constant information and workshops with exchange of information for all partner of the affiliate program.

Each of our partners must prove themselves to be excellent in their discipline by being accepted into our program. The guarantee for this level of reliability: the Partner Logo.

Benefit from:

➔ our partner network

➔ at your site

➔ an excellent consultation

➔ in the service of your tasks

➔ with a direct line to the specialist department

B **BERGHOF**

Automation
Certified Partner

RETROFIT
R

CODESYS

HQ PLC

4.0

24/7

FAQ

CODESYS V3.5

B-Primis ET-Touch Panels

B-Fortis CC-Compact Control System

B-Nimis MC-Modular Control System

B-Primis DC-Dialog Control System

B-Nimis SC-Safety Control System

B-Nimis BC-Pi Raspberry Box PC

Dualcore

B-Veris Motion

Router

Retrofit

Options

Industrial PC

Remote

Softwareengineering

Migration CODESYS V2-V3

Commissioning

Maintenance

Certification

24h Support

Training CODESYS & Berghof

Support

Express Delivery

Repair Service

Project Documentation

Frequently Asked Questions

BERGHOF **CUSTOMIZING**

Individuality is our standard

Do you want your control system branded with your logo? You need a keyboard? Do you have a specific design in mind? Do you want your control technologyto fit perfectly not only in terms of function but also in terms of dimensions?

No problem – we produce your control system according to your specified design or functionality. Through the use of standardized processes, we are able to realize individualized products in the shortest possible time. Berghof Automation and Control Solutions realizes your requirements with standardized components using a guided process, which we have developed specially for this purpose. This ensures a high quality standard with optimally implementation in terms of required costs and time. If mandatory, we will develop an individual special model, according to specific product requirements. This does not only apply to hardware, we also customize software, e.g. adding features or benefits to a completely different basis – just as you need it.

Off-the-shelf products are offered by many companies – the individuality is brought to you by Berghof. Numerous leading players in the industry rely on the experience of the Berghof customizing specialists.

Do not hesitate to contact us!

Ur advantages with Berghof customizing:

→ Use of assemblies with worldwide approvals and certifications

→ Distinct experience of the components and their quality

→ Optimal costs through existing images, no initial costs, flexible suppliers and much more

→ Best possible delivery times guaranteed by sophisticated standards

→ Comprehensive functional implementations using modular software structures and executable add-ons

→ Full access to all standard features on options

→ But most important: the broad experience!

At Berghof, customizing, i.e. customer-specific products, can basically be divided into three categories:

1. Customized Adaptions

2. Customized Extensions

3. Customized Developments

BERGHOF **CUSTOMIZING**

1. Customized Adaptions

Achieve added value through your own style. Give our standard products your individual touch and gain a competitive advantage. Whether colours or lettering, we set no limits: Logos on hardware and in software, nameplates / manufacturer details, frames, web interfaces and much more.

2. Customized Extensions

The configuration of our standard portfolio can be extended at will – just as it is best suited to your individual requirements. Whether the extension of interfaces, higher performance through co-processors, integration of control elements, further development environments or e.g. different front panels – individuality is no challenge for us.

3. Customized Developments

The premier class of customizing: Your requirements exceed the capabilities of standard products in the market or their extensions? Together we will develop a completely process and cost-optimized tailor-made solution at eye level.

Customized development – form factor of housing and display not based on standard portfolio.
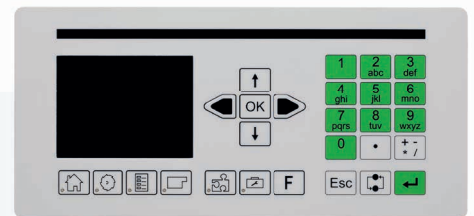
Berghof DC-Pro 7" Display Controller with second CAN bus interface

Berghof B-Primis DC-Pro 7" display controller with customer-specific front.

BERGHOF - PIONEERING AUTOMATION TECHNOLOGY

MORE POWER WITH BERGHOF **DUALCORE**

The strongest Berghof controllers of all time

The already above-average performing Berghof controls with even more power.

If the basic equipment of the high-performance Berghof controllers is not sufficient for your versatile automation tasks, you can now order these controllers as multicore devices.

You can expect twice the performance with 2x 800 MHZ processors of the IMX 6 series as well as new expansion variants with even more main memory (RAM) for a high-performance flow of the two cores.

You will benefit not only from a better performance, but also from all the advantages of the CODESYS Multi-Core Runtime and the Berghof operating system, which is designed for multicore.

Berghof therefore offers you a complete and genuine multicore system.

By allocating your application to different cores which take over dedicated tasks, a higher availability of the individual components and better real-time capabilities are guaranteed.

The system can optionally be upgraded to up to four cores (quadcore).

Your advantages at a glance:

→ Improved real-time performance via independent cores

→ Significant performance increase of the overall system

→ Higher availability of the components

→ Clearly improved visual performance

→ SoftMotion applications with more drives

→ Significantly more RAM

→ Perfectly integrated into the standard device series

→ Available for all Berghof display controllers of the B-Primis series

and all Berghof compact controllers of the B-Fortis series
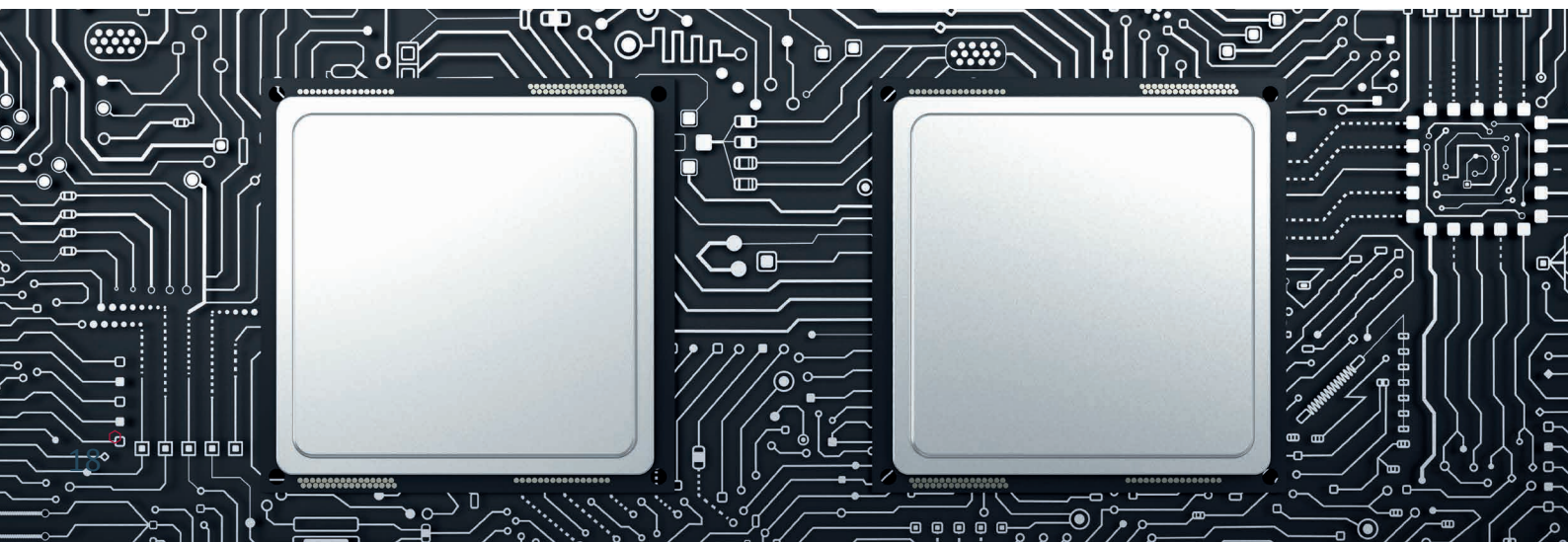
B-Primis DC-Pro Duo

Resisitive Display Controller with 2x 800 MHz Arm Cortex CPU and up to 2 GB Flash and 1 GB RAM
Interfaces: up to 4DI, 4DO, 4AI (U/PT), 2x CAN, 1x SD card, 1x USB, 1x RS232/485 combo, 1x Ethernet, 1x EtherCAT

B-Primis DC-Pro Duo		
Description	Features	Page
B-Primis DC-Pro 4 Duo	DualCore, 4,3 Zoll, 256MB Flash, 512MB RAM	102
B-Primis DC-Pro 7 Duo	DualCore, 7 Zoll, 256MB Flash, 512MB RAM	104
B-Primis DC-Pro 10 Duo	DualCore, 10,1 Zoll, 2GB Flash, 1GB RAM	106
B-Primis DC-Pro 15 Duo	DualCore, 15,6 Zoll, 2GBFlash, 1GB RAM	108

B-Primis DC-Prime Duo

Capacitive Display Controller with 2x 800 MHz Arm Cortex CPU and up to 2 GB Flash and 1 GB RAM
Interfaces: up to 4DI, 4DO, 4AI (U/PT), 2x CAN, 1x SD card, 1x USB, 1x RS232/485 combo, 1x Ethernet, 1x EtherCAT

B-Primis DC-Prime Duo		
Description	Features	Page
B-Primis DC-Prime 7 Duo	DualCore, 7 Zoll, 2GB Flash, 1GB RAM	110
B-Primis DC-Prime 10 Duo	DualCore, 10,1 Zoll , 2GB Flash, 1GB RAM	112
B-Primis DC-Prime 15 Duo	DualCore, 15,6 Zoll,2GBFlash, 1GB RAM	114

B-Fortis CC-Prime Duo

Compact Controller with 2x 800 MHz ARM Cortex CPU and up to 1 GB Flash and 1 GB RAM
Interfaces: up to 16DI, 16DO, 3x 4AI(I/U/PT)-2AO(U), 1x CAN, SD card, 1x USB, 1x RS232/485 combo,
1x RS485, 1x Ethernet, 1x EtherCAT

B-Fortis CC-Prime		
Description	Features	Page
B--Fortis CC-Prime Duo	DualCore, bis zu: 1 GB Flash, 1 GB RAM	52

B-Fortis CC-Slim Duo

Compact Controller with 2x 800 MHz ARM Cortex CPU and up to 256 MB Flash, 512 MB RAM
Interfaces: up to 4DI, 4DO, 4AI (U/PT), 2x CAN, 1x SD card, 1x USB, 1x RS232/485 combo, 1x Ethernet,
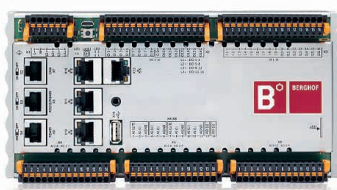1x EtherCAT

B-Fortis CC-Slim		
Description	Features	Page
B--Fortis CC-Slim Duo	DualCore, 256MB Flash, 512MB RAM	50

PIONEERING AUTOMATION TECHNOLOGY

TOUCH PANELS
B-PRIMIS ET-PRO
B-PRIMIS ET-PRIME

B-PRIMIS **ET - TOUCH PANELS**

→ Exceptionally high-quality design, only available from Berghof

→ Bright and brilliant displays

→ HTML 5 Web and Target Visualization

→ Unconditionally trimmed for performance

→ High input accuracy

→ Touchscreen in analog-resistive or projective-capacitive technology

→ Operation with gloves even in dirty and wet conditions

→ Horizontal and vertical application

→ Support of various mounting options

→ Ethernet, SD card slot, USB connection and LED displays integrated as standard

Touch panels

B-PRIMIS ET

Extra-class touch panels

The Panel Series B-Primis continues the successful previous generation with new possibilities, including its hereditary traits and with respect for the already existing characteristics. With the PRO series resistive touch panels are available, the PRIME series includes operator terminals in capacitive design. The devices already show their inside on the outside: With a high-quality frame, B-Primis PRO impress at every installation location and characterise the exclusivity of the machine, whereas B-Primis PRIME shines without a frame – a novelty in the market. Products with clean front are a matter of course for us. High-performance hardware ensures smooth operation and a data-secure connection to attached systems. Ethernet as communication interface as well as USB host and SD card slot are not common in this class, but allow a multitude of supporting functions and are integrated in the Berghof standard. The devices can be easily connected to other control components such as the Berghof CC- or MC- system or control systems from other manufacturers due to the unconditional compliance with general regulations.

Touch panel on request without logo, in your corporate design or completely customized

Protection up to IP65, matched components offer operation even with water and dirt on it

Mounting brackets in various designs, already integrated depending on model
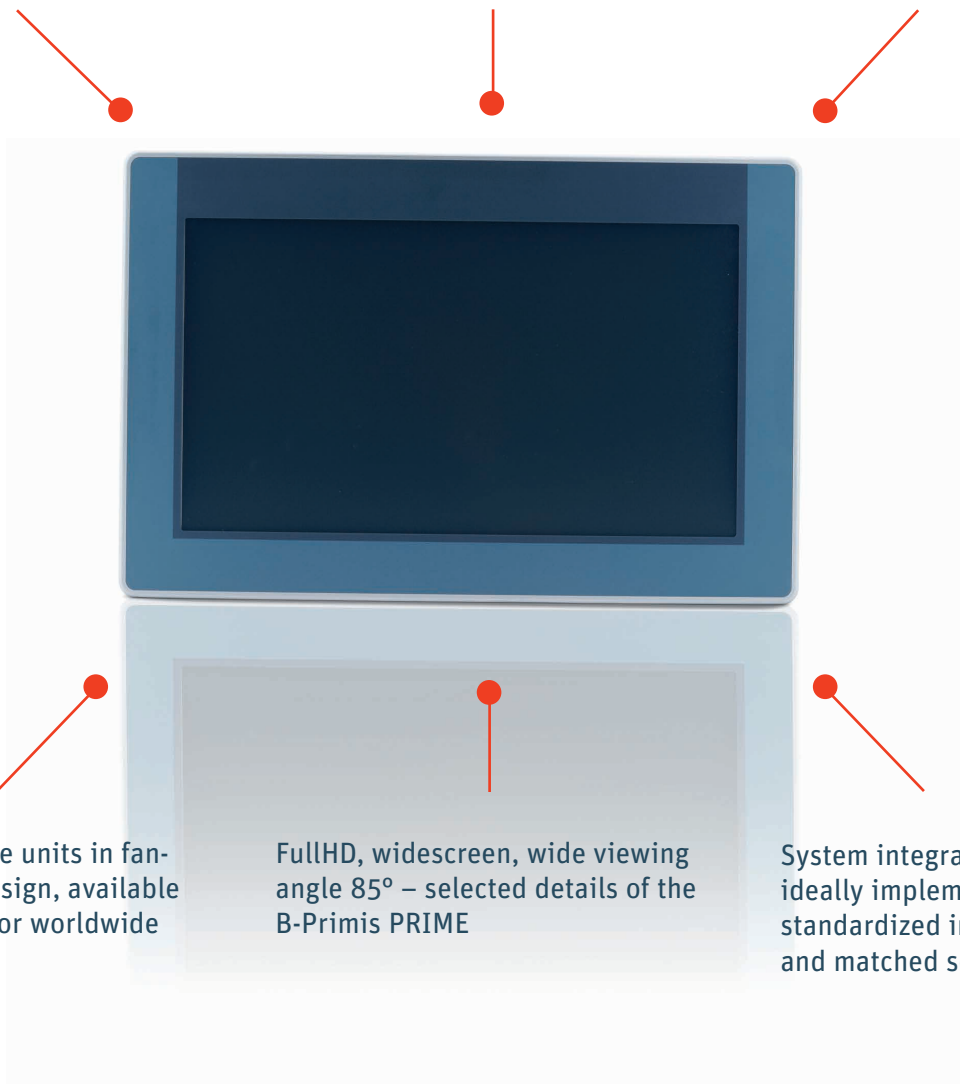
Maintenance-free units in fan-less standard design, available with approvals for worldwide use

FullHD, widescreen, wide viewing angle 85° – selected details of the B-Primis PRIME

System integration ideally implemented via standardized interfaces and matched software

B-PRIMIS **ET-PRO**

Exceptionally clean
by means of continuous, nicheless clean front without edges

Robust throughout
due to a multi-layer front foil construction with high resistance to many chemicals and a particularly torsion-resistant design of the mechanics in the metal housing

Easy and safe to assemble
due to integrated retaining clamps, tool-less / snap-in installation; as well as overload, short-circuit, reverse polarity and overvoltage-proof design, wiring errors are no danger

Logical in commissioning
including a central service welcome page, which starts without further installation effort and offers the possibility to set all required configurations directly on the device

Wide range of applications
thanks to approval in the „Basic electromagnetic environment" according to EN 61326-1/ Residential, small business, laboratory, etc.

Performance in plenty
through the use of state of the art components with 800 MHz ARM®CPU A9 single core (optional dual or quad core) and up to 4GB RAM / 512MB Flash / 64bit Bus onboard

Impressive visualization
by means of bright and brilliant displays (> 400 Cd/m2) and also centrally adjustable brightness from the control system

Sovereign in use
due to the universally applicable HTML 5 web browser, target visualization via VNC protocol

Well thought-out equipment
with possible application update via USB, connection of a control mouse and display LEDs

Environmentally friendly across the board
through energy-saving components and software functions as well as appropriate packaging

B-PRIMIS **ET-PRIME**

Professional future
from the combination of performance and properties

Powerful supplement
of the B-Primis ET-PRO, of course with continuation of its features

Uniquely designed
without frame, which means full flexibility in installation

Brilliant in display
due to a high-class display with 85° viewing angle in all directions and particularly clear colour reproduction

Strong appearance
through chemically hardened glass in the extraordinarily stable 2mm version

Optimal image
with widescreen resolutions and up to Full-HD at 1920x1080 pixels

Outstanding operation
also with gloves on a surface exposed to water and dirt

Versatile preparation
thanks to Multi-Touch and enabled gesture control

Variable in use
with panel mounting as well as prepared for narrow cut operating housings also with support arm and lift system

Environmentally friendly across the board
through energy-saving components and software functions as well as appropriate packaging

B-PRIMIS ET-PRIME

B-Primis ET-PRO 4	Specification	
Description	ET-PRO 4 S01	ET-PRO 4 S02
Order number	**S-01010202-0101**	**S-01010202-0201**
Dimensions WxHxD [mm]	161 x 103 x 42	
Display diagonals/resolution	4,3" display / 480 x 272 (WQVGA)	
Touch operation	Resistive	
Colours	TFT: 16,7 M (24 Bit/Pixels)	
Weight	approx. 450 g	
Mounting	Integrated securing clips	
Certification	CE (EN 61131-2) / CB Scheme (IEC 61010-2-201) / $_c$UL$_{us}$ (UL 61010-2-201)	
CPU	800 MHz Arm® CPU with Cortex™-A9 Single Core	
RAM / Flash storage	512 MB RAM / 512 MB Flash	
Communication interfaces	1x Ethernet, 10/100 Base, RJ45	
Visualization	Target Visu (VNC Client)	Target Visu (VNC Client), Web Visu (Web Client, HTML5)
Additional features	1x host USB 2.0 / USB plug type A	
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection	
Current consumption	Typ. 0,3 A, max. 1,2 A at +24V	
Operating conditions Transport / Storage	Ambient temperature: operational: 0 °C bis 55 °C / transport -20 °C bis +70 °C Relative humidity: max. 85%, non-condensing	
EMC, protection type		
Emitted Interface	EN 55011 class B group 1	
Immunity to interface	EN 61131-2	
Protection class	III	
Insulation strength	EN 61131-2	
Protection type	IP20, front IP54 (IP65 only with twist locks catches tightend)	
Vibration	Sinusoidal (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)	
Schock resistance	15 G (approx. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea	

B-PRIMIS **ET-PRO 4**
INFORMATION **DIMENSIONS**

161 mm

39 mm

7

103 mm

85,6 mm

4,3"

122,6 mm
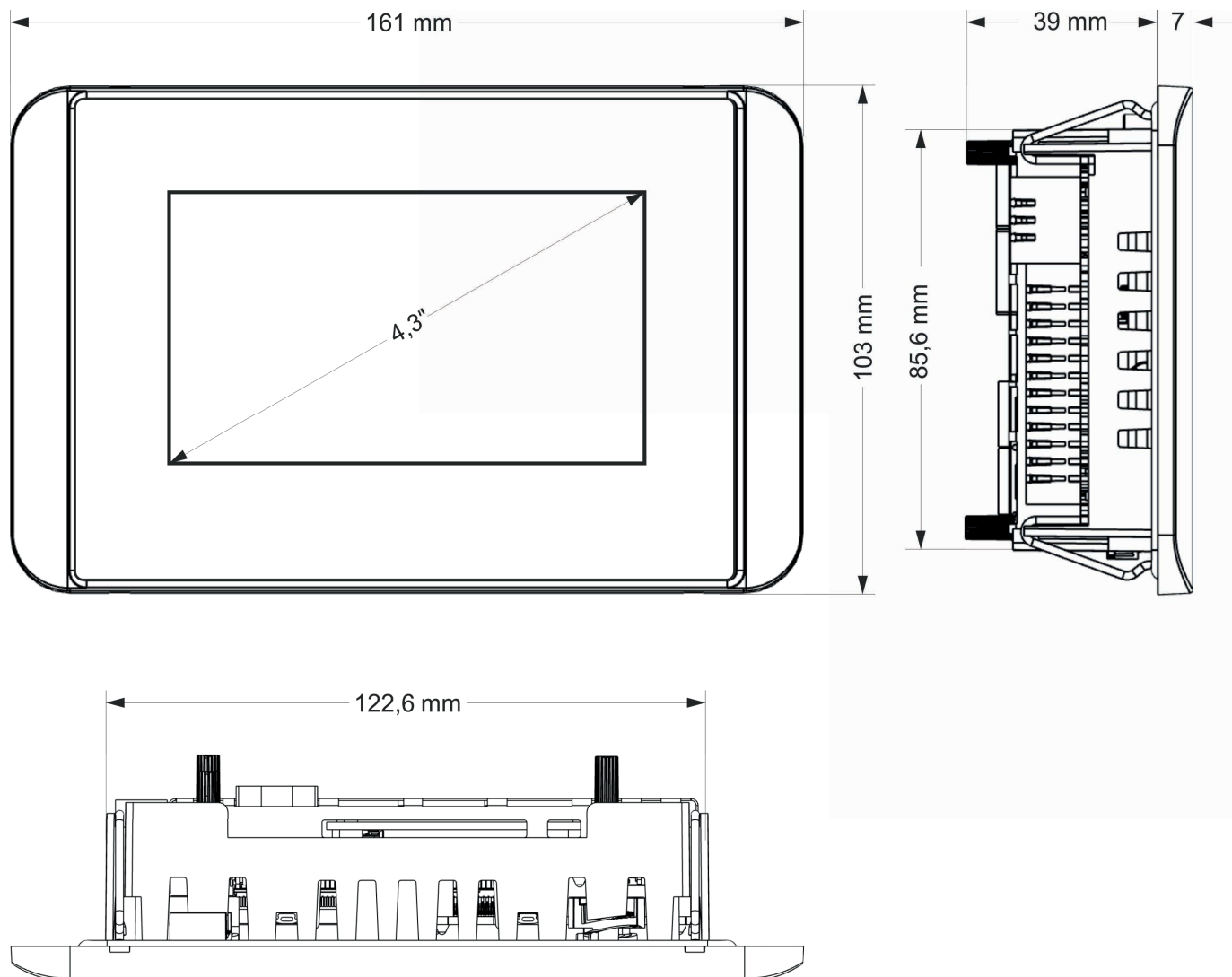
Dimensions B-Primis ET-Pro 4

B-Primis ET-PRO 7	Specification	
Description	ET-PRO 7 S01	ET-PRO 7 S02
Order number	**S-01010202-0104**	**S-01010202-0204**
Dimensions WxHxD [mm]	222 x 152 x 45	
Display diagonals/resolution	7" display / 800 x 480 (WVGA)	
Touch operation	Resistive	
Colours	TFT: 16,7 M (24 Bit/Pixels)	
Weight	approx. 600 g	
Mounting	Integrated securing clips	
Certification	CE (EN 61131-2) / CB Scheme (IEC 61010-2-201) / $_c$UL$_{us}$ (UL 61010-2-201)	
CPU	800 MHz Arm® CPU with Cortex™-A9 Single Core	
RAM / Flash storage	512 MB RAM / 512 MB Flash	
Communication interfaces	1x Ethernet, 10/100 Base, RJ45	
Visualization	Target Visu (VNC Client)	Target Visu (VNC Client), Web Visu (Web Client, HTML5)
Additional features	1x host USB 2.0 / USB plug type A	
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection	
Current consumption	Typ. 0,3 A, max. 1,2 A at +24V	
Operating conditions Transport / Storage	Ambient temperature: operational: 0 °C bis 55 °C / transport -20 °C bis +70 °C Relative humidity: max. 85%, non-condensing	
EMC, protection type		
Emitted Interface	EN 55011 class B group 1	
Immunity to interface	EN 61131-2	
Protection class	III	
Insulation strength	EN 61131-2	
Protection type	IP20, front IP54 (IP65 only with twist locks catches tightend)	
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)	
Schock resistance	15 G (approx. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea	

B-PRIMIS **ET-PRO 7**
INFORMATION **DIMENSIONS**
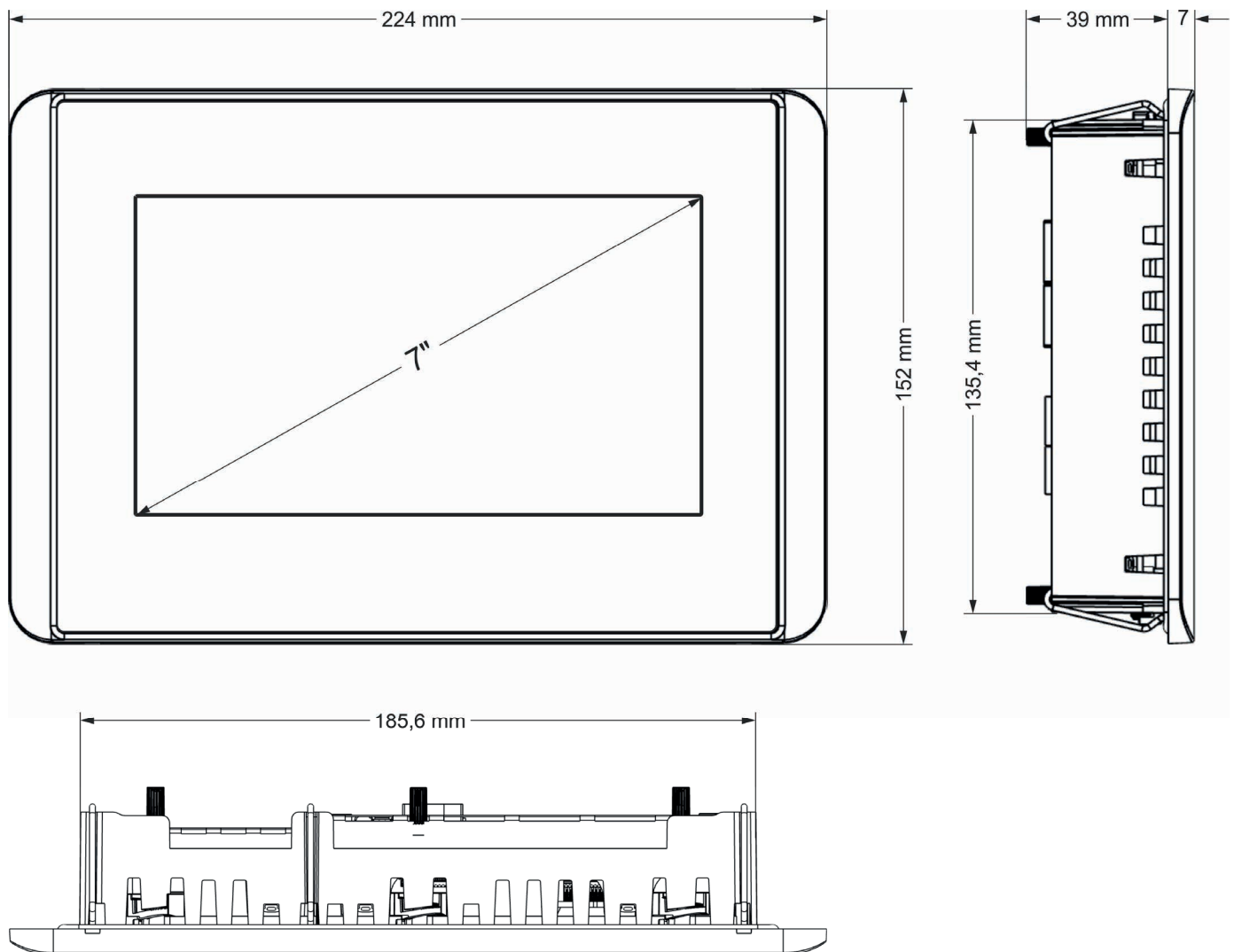
Dimensions B-Primis ET-Pro 7

B-Primis ET-Pro 10	Specification	
Description	**ET-Pro 10 S01**	**ET-Pro 10 S02**
Order number	**S-01010202-0105**	**S-01010202-0205**
Dimensions WxHxD [mm]	283 x 198 x 55	
Display diagonals/resolution	10,1" Display / 1280 x 800 (WXGA)	
Touch operation	Resistive	
Colours	TFT: 16,7 M (24 Bit/Pixels)	
Weight	approx. 2,5 Kg	
Mounting	Integrated securing clips	
Certification	CE (EN 61131-2) / CB Scheme (IEC 61010-2-201) / $_c$UL$_{us}$ (UL 61010-2-201)	
CPU	800 MHz Arm® CPU with Cortex™-A9 Single Core	
RAM / Flash storage	512 MB RAM / 512 MB Flash	
Communication interfaces	1x Ethernet, 10/100 Base, RJ45	
Visualisization	Target Visu (VNC Client)	Target Visu (VNC Client), Web Visu (Web Client, HTML5)
Additional features	1x host USB 2.0 / USB plug type A	
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection	
Current consumption	Typ. 0,3 A, max. 1,2 A at +24V	
Operating conditions Transport / Storage	Ambient temperature: operational: 0 °C bis 55 °C / transport -20 °C bis +70 °C Relative humidity: max. 85%, non-condensing	
EMC, protection type		
Emitted Interface	EN 55011 class B group 1	
Immunity to interface	EN 61131-2	
Protection class	III	
Insulation strength	EN 61131-2	
Protection type	IP20, front IP54 (IP65 only with twist locks catches tightend)	
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)	
Schock resistance	15 G (approx. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea	

B-PRIMIS **ET-PRO 10**
INFORMATION **DIMENSIONS**

278,9 mm

195,5 mm

10,1"

50 mm

max. 6 mm

172,5 mm

252,9 mm

Dimensions B-Primis ET-Pro 10

BERGHOF - PIONEERING AUTOMATION TECHNOLOGY

B-Primis ET-Pro 15	Specification	
Description	**ET-Pro 15 S01**	**ET-Pro 15 S02**
Order number	**S-01010202-0108**	**S-01010202-0208**
Dimensions WxHxD [mm]	425 x 280 x 55	
Display diagonals/resolution	15,6" display / 1366 x 768 (WXGA)	
Touch operation	Resistive	
Colours	TFT: 16,7 M (24 Bit/Pixels)	
Weight	approx. 3 kg	
Mounting	Integrated securing clips	
Certification	CE (EN 61131-2) / CB Scheme (IEC 61010-2-201) / $_c$UL$_{us}$ (UL 61010-2-201)	
CPU	800 MHz Arm® CPU with Cortex™-A9 Single Core	
RAM / Flash storage	512 MB RAM / 512 MB Flash	
Communication interfaces	1x Ethernet, 10/100 Base, RJ45	
Visualisization	Target Visu (VNC Client)	Target Visu (VNC Client), Web Visu (Web Client, HTML5)
Additional features	1x host USB 2.0 / USB plug type A	
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection	
Current consumption	Typ. 0,3 A, max. 1,2 A at +24V	
Operating conditions Transport / Storage	Ambient temperature: operational: 0 °C bis 55 °C / transport -20 °C bis +70 °C Relative humidity: max. 85%, non-condensing	
EMC, protection type		
Emitted Interface	EN 55011 class B group 1	
Immunity to interface	EN 61131-2	
Protection class	III	
Insulation strength	EN 61131-2	
Protection type	IP20, front IP54 (IP65 only with twist locks catches tightend)	
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)	
Schock resistance	15 G (approx. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea	

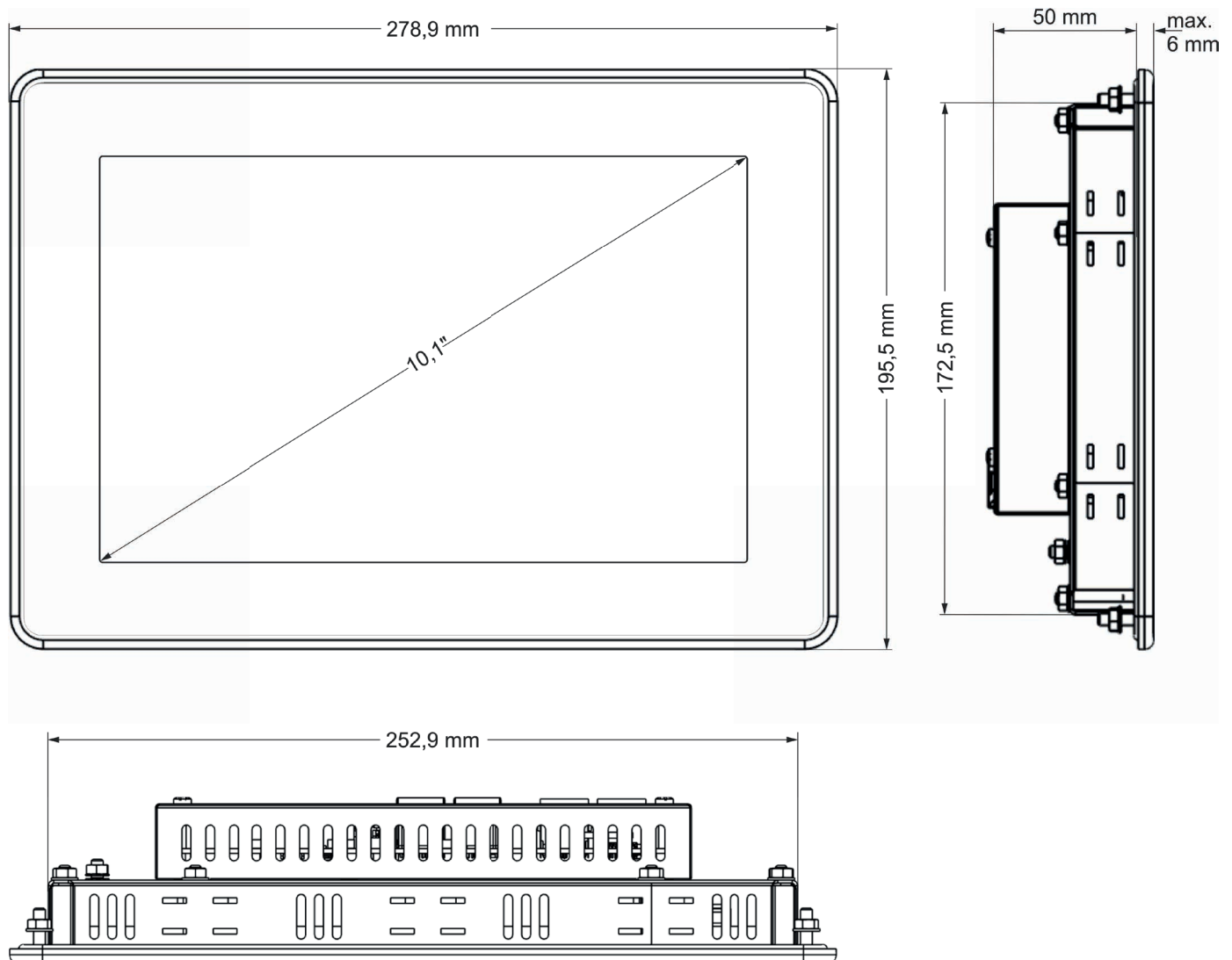# B-PRIMIS **ET-PRO 15**
INFORMATION **DIMENSIONS**

425 mm

280 mm

50

max. 6 mm

258 mm

15,6"

400 mm
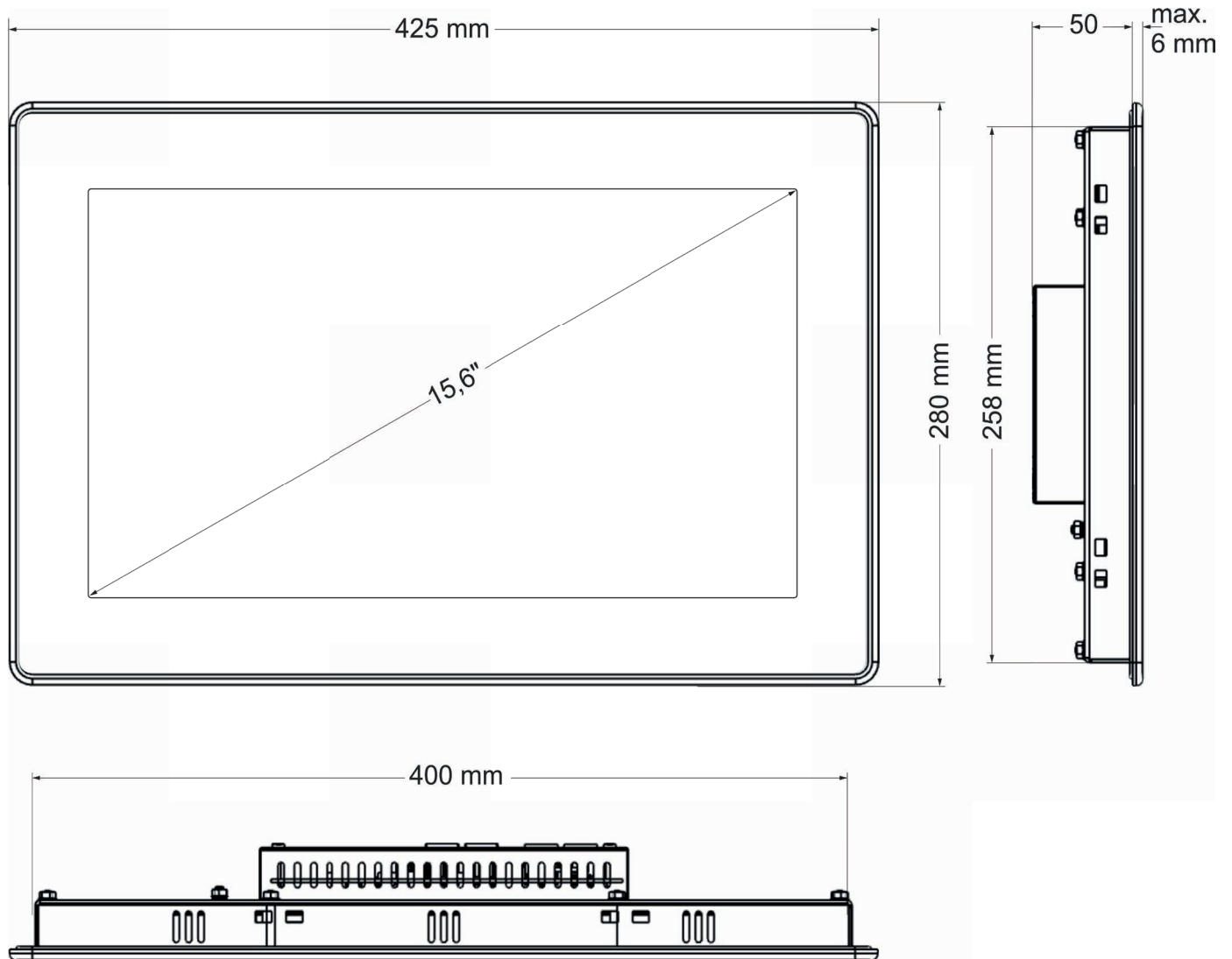
Dimensions B-Primis ET-Pro 15

BERGHOF - PIONEERING AUTOMATION TECHNOLOGY

B-Primis ET-Prime 7"	Specification	
Description	ET-Prime 7 S01	ET-Prime 7 S02
Order number	**S-01010203-0104**	**S-01010203-0204**
Dimensions WxHxD [mm]	197 x 136 x 56	
Display	WVGA	
Display diagonals	7"	
Resolution	800 x 480 Pixels	
Colours	TFT: 16,7 M (24 Bit/Pixel)	
Weight	approx. 2 kg	
Mounting	Removable securing clips	
Certification	According to product standards EN 61010-2-201, EN 61131-2	
CPU	i.MX6 800 MHz / Single Core	
RAM / Flash storage	512 MB RAM / 2 GB Flash	
Communication interfaces	1x Ethernet, 10/100 Base, RJ45	
Visualization	Target Visu (VNC Client)	Target Visu (VNC Client), Web Visu (Web Client, HTML5)
Additional features	1x host USB 2.0 / USB plug type A	
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection	
Current consumption	Typ. 0,3 A, max. 1,2 A at +24V	
Operating conditions Transport / Storage	Ambient temperature: operational: 0 °C bis 55 °C / transport -20 °C bis +70 °C Relative humidity: max. 85%, non-condensing	
EMC, protection type		
Emitted Interface	EN 55011 class B group 1	
Immunity to interface	EN 61131-2	
Protection class	III	
Insulation strength	EN 61131-2	
Protection type	IP20, front IP54 (IP65 only with twist locks catches tightend)	
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)	
Schock resistance	15 G (approx. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea	

B-PRIMIS **ET-PRIME 7**
INFORMATION **DIMENSIONS**

197 mm

136 mm

7"

50 mm

max. 6 mm

121 mm

184 mm
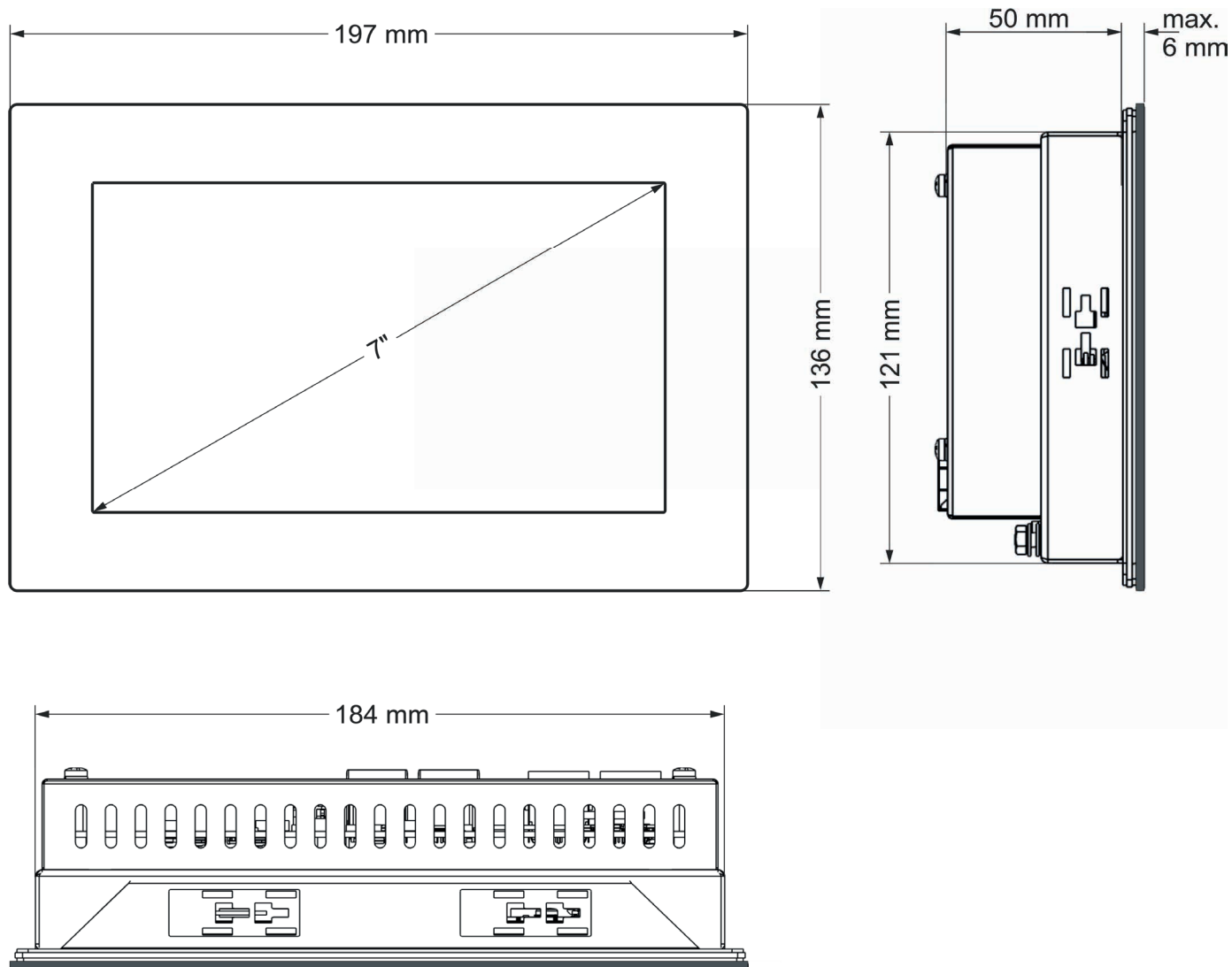
Dimensions B-Primis ET-Prime 7

B-PRIMIS **ET-PRIME 10**
INFORMATION **TECHNICAL DATA**

B-Primis ET-Prime 10	Specification	
Description	**ET-Prime 10 S01**	**ET-Prime 10 S02**
Order number	**S-01010203-0105**	**S-01010203-0205**
Dimensions WxHxD [mm]	259 x 177 x 55	
Display	WXGA	
Display diagonals	10,1"	
Resolution	1280 x 800 Pixels	
Colours	TFT: 16,7 M (24 Bit/Pixel)	
Weight	approx. 2,5 kg	
Mounting	Removable securing clips	
Certification	According to product standards EN 61010-2-201, EN 61131-2	
CPU	i.MX6 800 MHz / Single Core	
RAM / Flash storage	512 MB RAM / 2 GB Flash	
Communication interfaces	1x Ethernet, 10/100 Base, RJ45	
Visualization	Target Visu (VNC Client)	Target Visu (VNC Client), Web Visu (Web Client, HTML5)
Additional features	1x host USB 2.0 / USB plug type A	
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection	
Current consumption	Typ. 0,3 A, max. 1,2 A at +24V	
Operating conditions Transport / Storage	Ambient temperature: operational: 0 ºC bis 55 ºC / transport -20 ºC bis +70 ºC Relative humidity: max. 85%, non-condensing	
EMC, protection type		
Emitted Interface	EN 55011 class B group 1	
Immunity to interface	EN 61131-2	
Protection class	III	
Insulation strength	EN 61131-2	
Protection type	IP20, front IP54 (IP65 only with twist locks catches tightend)	
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)	
Schock resistance	15 G (approx. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea	

B-PRIMIS **ET-PRIME 10**
INFORMATION **DIMENSIONS**

50 mm

max. 6 mm

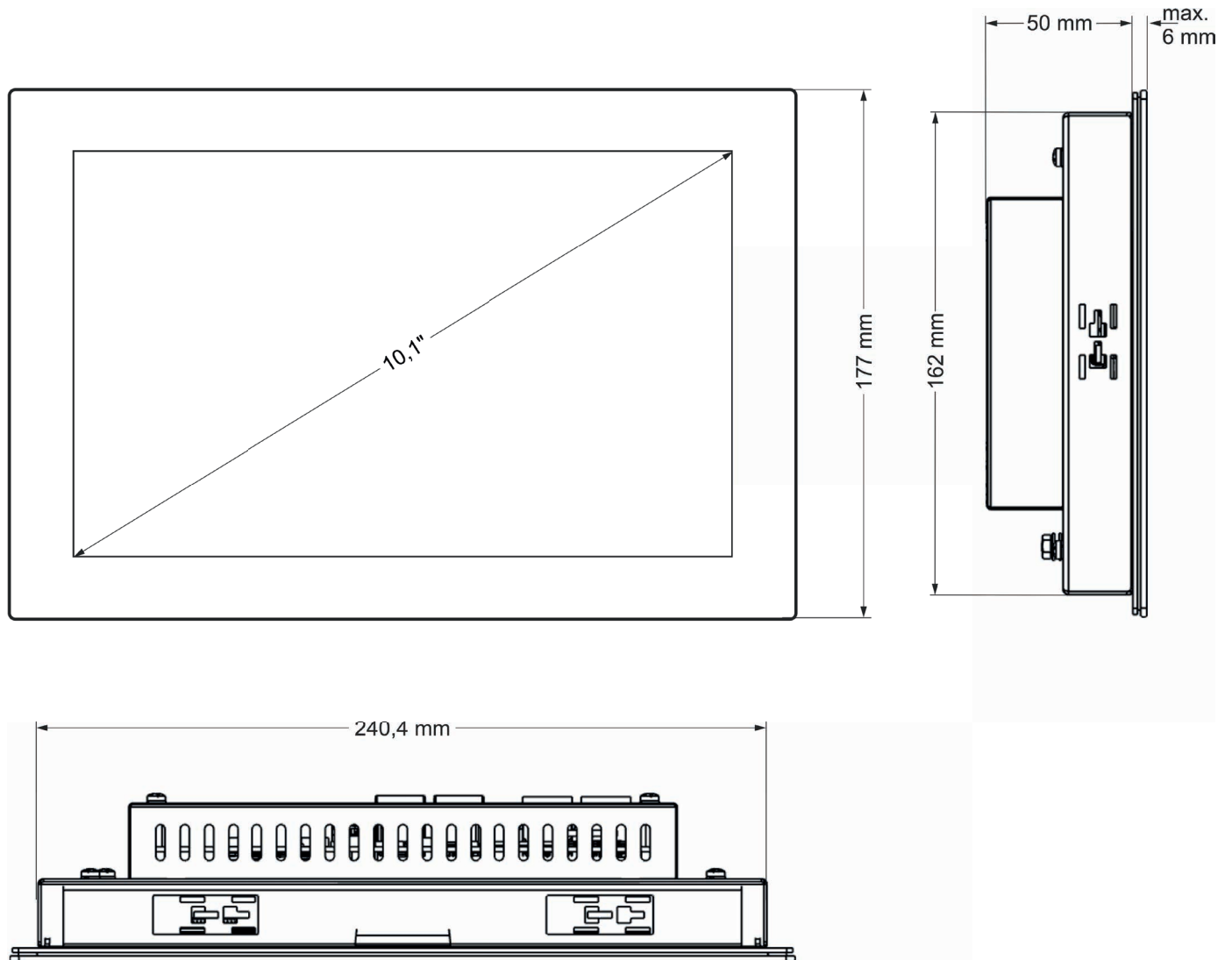177 mm

162 mm

10,1"

240,4 mm

Dimensions B-Primis ET-Prime 10

B-PRIMIS **ET-PRIME 15**
INFORMATION **TECHNICAL DATA**

B-Primis ET-Prime 15	Specification	
Description	**ET-Prime 15 S01**	**ET-Prime 15 S02**
Order number	**S-01010203-0108**	**S-01010203-0208**
Dimensions WxHxD [mm]	392 x 241 x 55	
Display	WXGA	
Display diagonals	15,6"	
Resolution	1920 x 1080 Pixels	
Colours	TFT: 16,7 M (24 Bit/Pixels)	
Weight	approx. 3 kg	
Mounting	Removable securing clips	
Certification	According to product standards EN 61010-2-201, EN 61131-2	
CPU	i.MX6 800 MHz / Single Core	
RAM / Flash storage	512 MB RAM / 2GB Flash	
Communication interfaces	1x Ethernet, 10/100 Base, RJ45	
Visualization	Target Visu (VNC Client)	Target Visu (VNC Client), Web Visu (Web Client, HTML5)
Additional features	1x Host USB 2.0 / USB-Stecker Typ A	
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection	
Current consumption	Typ. 0,3 A, max. 1,2 A at +24V	
Operating conditions Transport / Storage	Ambient temperature: operational: 0 °C bis 55 °C / transport -20 °C bis +70 °C Relative humidity: max. 85%, non-condensing	
EMC, protection type		
Emitted Interface	EN 55011 class B group 1	
Immunity to interface	EN 61131-2	
Protection class	III	
Insulation strength	EN 61131-2	
Protection type	IP20, front IP54 (IP65 only with twist locks catches tightend)	
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)	
Schock resistance	15 G (approx. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea	

B-PRIMIS **ET-PRIME 15**
INFORMATION **DIMENSIONS**

392 mm

241 mm

229 mm

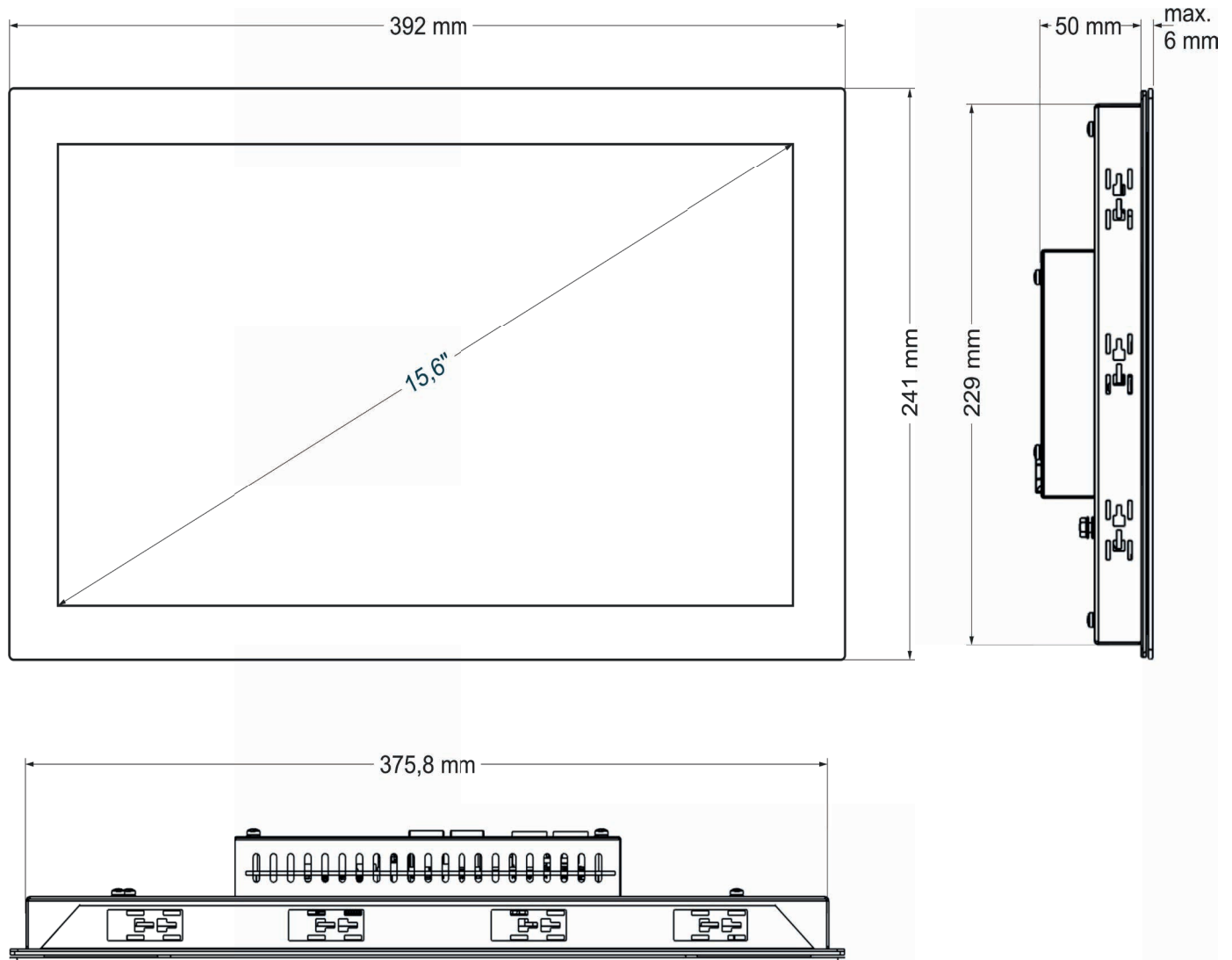50 mm

max. 6 mm

15,6"

375,8 mm

Dimensions B-Primis ET-Prime 15

B-PRIMIS **ET - TOUCH PANEL**
CUSTOMIZING

Products off the shelf are offered by many - At Berghof you get individuality.
Our products offer you the ability to customize them completely according to your needs.
All products are customizable in three categories according to the Berghof customizing concept.
(see catalog section Berghof Customizing)

1. Customized Adaptions

Customer requirement:
Nameplate, documentation, etc. with customer's brand, Berghof not recognizable as supplier

Your advantages:
- Use of high quality standard products with your branding
- Demonstration of own expertise
- Repair flow management

2. Customized Extensions

Customer requirement:
Extension of the devices with operating elements, wiring with switching elements

Your advantages:
- Minimization of assembly time of the machine
- Rapid replacement of a complete operating unit in the event of a fault
- Complete documentation of the entire module via Berghof

3. Customized Developments

Customer requirement:
Form factor of display, defined display of the controls mounted in the housing by adapting software, use of third-party controls

Your advantages:
- Integration of new products into existing application, no changes to machine required
- Certified operating interface remains, no recertification necessary
- Connection to third-party PLC does not force a time-consuming change of system

B-PRIMIS **ET - TOUCH PANEL**
OVERVIEW

B-PRIMIS **ET-PRO**

Specification	Order number
B-Primis ET-Pro 4 S01	S-01010202-0101
B-Primis ET-Pro 4 S02	S-01010202-0201
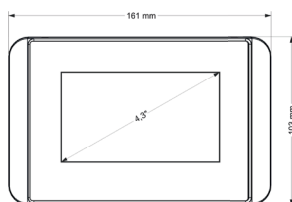
Specification	Order number
B-Primis ET-Pro 7 S01	S-01010202-0104
B-Primis ET-Pro 7 S02	S-01010202-0204
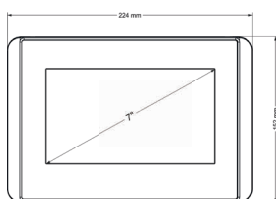
Specification	Order number
B-Primis ET-Pro 10 S01	S-01010202-0105
B-Primis ET-Pro 10 S02	S-01010202-0205
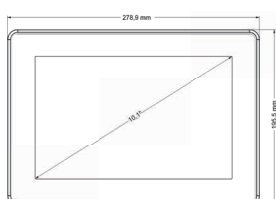
Specification	Order number
B-Primis ET-Pro 15 S01	S-01010202-0108
B-Primis ET-Pro 15 S02	S-01010202-0208
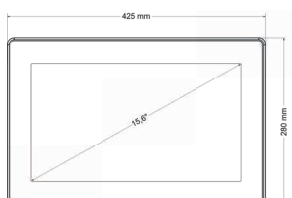
B-PRIMIS **ET-PRIME**

Specification	Order number
B-Primis ET-Prime 7 S01	S-01010202-0101
B-Primis ET-Prime 7 S02	S-01010202-0201
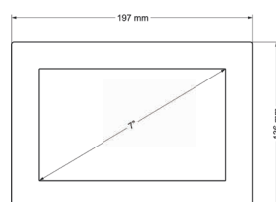
Specification	Order number
B-Primis ET-Prime 10 S01	S-01010203-0105
B-Primis ET-Prime 10 S02	S-01010203-0205
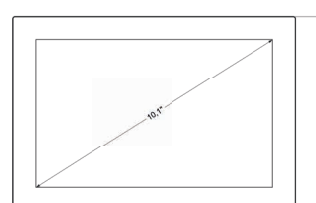
Specification	Order number
B-Primis ET-Prime 15 S01	S-01010203-0108
B-Primis ET-Prime 15 S02	S-01010203-0208
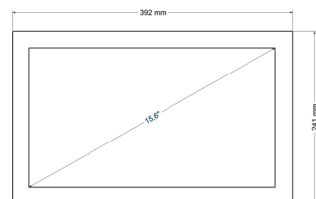
PIONEERING AUTOMATION TECHNOLOGY

COMPACT CONTROL SYSTEM
B-FORTIS CC-LITE
B-FORTIS CC-SLIM
B-FORTIS CC-PRIME
B-FORTIS CC-I/O

B-FORTIS CC - COMPACT CONTROL SYSTEM

BERGHOF AUTOMATION AND CONTROL SOLUTIONS

→ High number of integrated features due to long experience of customized system solutions
→ Hardware versions without limits, adapted on request
→ Very robust components with proven high quality
→ Service concept: replacement within seconds
→ Standard SD card slot and USB connection
→ Integrated web server and target visualization
→ Up- and downwards compatible software management
→ Uncomplicated licensing of third-party software components
→ Battery-buffered, maintenance-free real-time clock
→ Power consumption reduced by up to 30% compared to previous generations

Compact CODESYS Control System
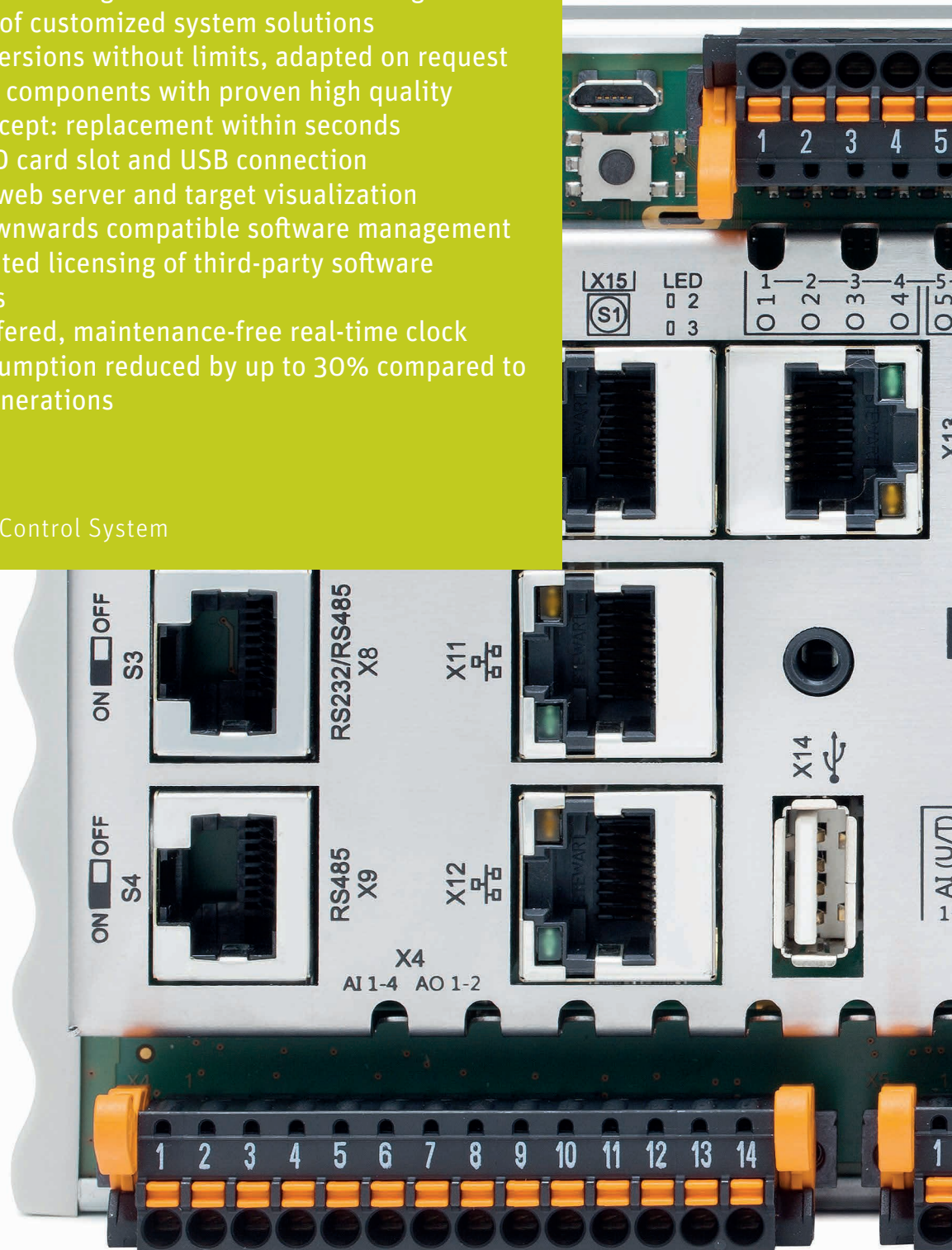
B-FORTIS **CC**

Compact CODESYS PLC in All-In-One-Design

The award-winning B-Fortis CC series meets every requirement for compact CODESYS high-performance controllers. It replaces numerous individual components with a function-integrated device. With on-board peripherals and countless technological functions, you save additional investments in additional modules. Compared to modular product solutions, you do not only save on logistics costs. For example, B-Fortis CC, as an integrated unit, increases functional reliability with faster data communication and easy project planning and programming. There are no functional limitations with the help of a layout tailored to your requirements. Three versions are sufficient to meet all requirements. If this is not enough, expansion modules are available. Furthermore, the devices can be easily combined with other control components such as the standardized Berghof MC or ET system. Extensive effort has been put on the equipment also with the inner values: for example, the devices can only be exchanged by changing the SD card – which is just one outstanding example of many possibilities.

Powerful compact CODESYS control platform

Modules in fanless standard design, available with approvals for worldwide use

Simple programming according to IEC61131
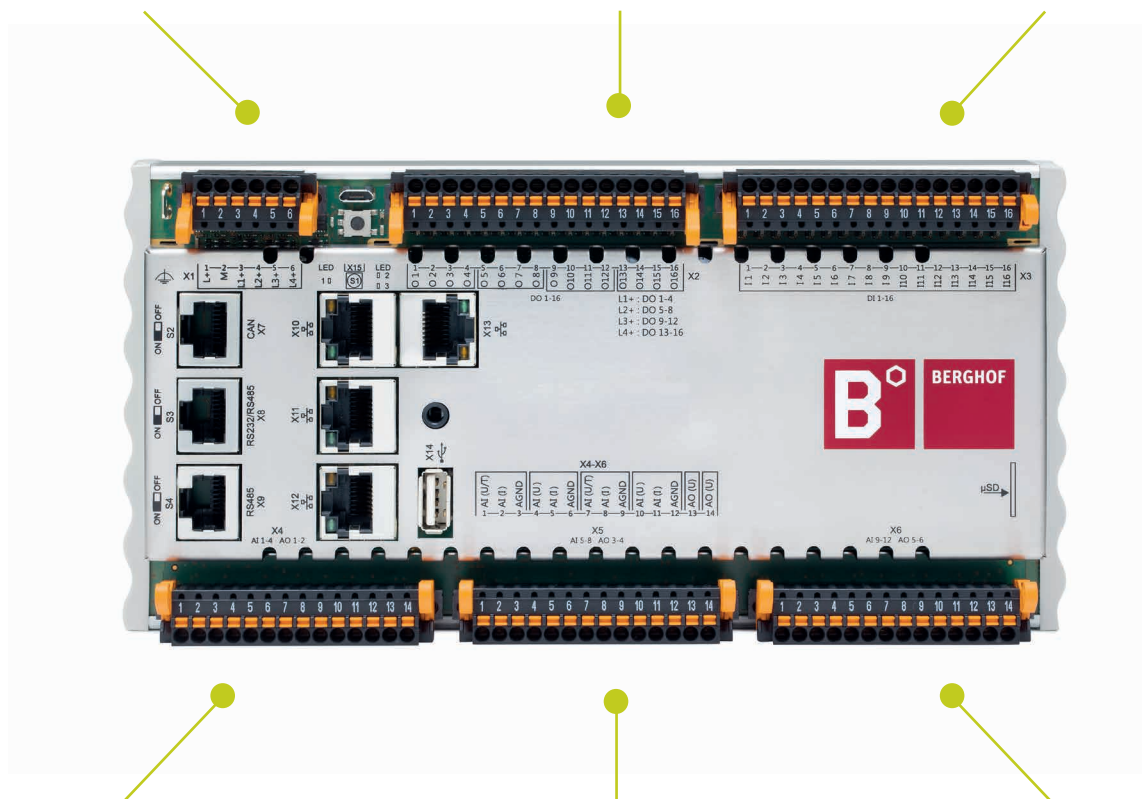
Maximum product density with integration of many interfaces and indicator

Standard plug, safe in connection, with ejection technology, compatible across various manufacturers

Very robust versions with up to 1mm stainless steel housing

B-FORTIS CC-LITE

Unsurpassed ratio
from performance to price

Performance in plenty
through the use of state of the art components

Unrivaled upgrade capability
open to any idea, e.g. replacing the single core
with a dual or quad core processor

Ideal as central controller
for remote units or applications such as Motion

Highly flexible connection
thanks to the realization of countless communi-
cation channels using full bandwidths

Sophisticated handling
with service and update concepts, tool-free
installation and much more

Impressive basic equipment
which at this point only allows a rudimentary
excerpt:
➜ Overload, short-circuit, reverse polarity and
 overvoltage proof, wiring faults without
 danger
➜ Living area approval
➜ Application update via USB
➜ Application protection via tamper-proof
 HW identification
➜ Reduction of the PLC cycle time optionally
 up to 500 µs
➜ Versatile fonts
➜ VNC + HTML5 web browser universally
 applicable
➜ OpenVPN

Environmentally friendly across the board
through energy-saving components and soft-
ware functions as well as appropriate packaging

B-FORTIS **CC-SLIM**

Powerful supplement
of the B-Fortis CC-LITE, of course with
continuation of its features

Superior hardware concept
not only by mere interface expansion, but
beyond that by its designs, for example with
independent Ethernet interfaces

Safe application
thanks to practical solutions for practical use:

→ remanent hardware memory independent
   of the battery
→ Integrated temperature sensor monitoring,
   e.g. for the control cabinet
→ potential-separated interfaces, etc.

Can be used across industries
by means of adaptations to specific markets,
e.g. I/O with N circuit

Highly accurate information
through analog I/O with up to 24-bit resolution

Extended basic equipment
with features that are additive to the B-Fortis
CC-Lite (exemplary excerpt):

→ Inputs configurable to counter and encoder
→ Operating buttons for resetting / stopping/
   starting the PLC application
→ switchable terminating resistors of the
   interfaces integrated
→ External two-stage HW-Watchdog
→ Analog inputs PT100/ PT1000 capable
→ Separate power supply of the digital
   outputs in groups
→ serial 9bit Multi-Drop Mode
→ Operating hours counter

Vocal
due to buzzer and optional sound chip for mp3
playback

B-FORTIS **CC-PRIME**

Extraordinary completion
of the portfolio of compact controllers, including
the capabilities of B-Fortis CC-LITE and CC-SLIM

Unsurpassed versatility
thanks to various expansion stages, due to
sophisticated design easily supplemented by
required variants on request

Maximum performance
with sufficient room for interfaces and functions in
a minimum of space

Sufficiently dimensioned
with RAM, Flash and Retain and room for more

Reduced costs and time requirements
proven by numerous special customer execu-
tions and the use of always uniform standard
components and development templates

**Easy to configure, error-reducing, easy to install,
easy to service**
due to always the same form factor and uniform
interface arrangements

Unique basic equipment
in addition on the features of the B-Fortis CC-
SLIM (exemplary excerpt):

→ Interrupt / event inputs integrated
→ Ethernet switch included as standard
→ Current capability of the digital outputs
  optionally up to 1A
→ suitable for multimaster operation

Optimally analyzed
through mature implementation of status
LED`s

Widely positioned application
with the extremes, e.g. from harsh outdoor use
to building automation with the BACnet network
protocol

Highly accurate information
through analog I/O with up to 24-bit resolution

B-Fortis CC-Lite	Ausprägungen		
Description	CC-Lite S01	CC-Lite S02	CC-Lite S03
Order number	S-01020101-0100	S-01020101-0200	S-01020101-0300
Dimensions WxHxD [mm]	83,6 x 110,3 x 35,4		
Weight	approx. 250 g		
Mounting	Rail mounting DIN EN 60715:2001, 35 x 7,5 mm		
Development environment	CODESYS V3 (IEC 61131-3)		
CPU	800 MHz ARM® CPU		
RAM /Flash / Retain Storage	256 MB RAM / 256 MB Flash	256 MB RAM / 512 MB Flash	256 MB RAM / 2 GB Flash
	Retain replaced by CODESYS Persistence Manager		
Certification	according to product standards DIN EN 61010-2-201, DIN EN 61131-2		
Communication interfaces	1x Ethernet, 10/100 Base, RJ45		
Protocols	Optional: EtherCat Master, Modbus TCP M/S, SNMP, OPCuA, J1939, Ethernet/IP, PROFINET, BACnet		
Visualization	Target Visu (VNC-Server), Optional : CODESYS-WebVisu		
Additional features	1x Host USB 2.0 / USB plug type A		
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection		
Current consumptopn	Typ. 0,1 A, max. 0,2 A at +24V DC		
Operating conditions Transport / storage	Ambient temperature: operational: 0 ℃ bis 55 ℃ / transport -20 ℃ bis +70 ℃ Relative humidity: max. 85%, non-condensing		
EMC, protection type			
Emitted interference	EN 61131-2; EN 61000-6-3, living area		
Immunity to interference	EN 61131-2; EN 6100-6-2, Industrial area		
Protection class	III		
Insulation strength	EN 61131-2		
Protection type	IP20		
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)		
Schock resistance	15 G (ca. 150 m/s^2), 11 ms duration, half-sine (EN 60068-2-27) test: Ea		

B-FORTIS **CC-LITE**
INFORMATION **DIMENSIONS**

(83,6)

77

35,4

110,3
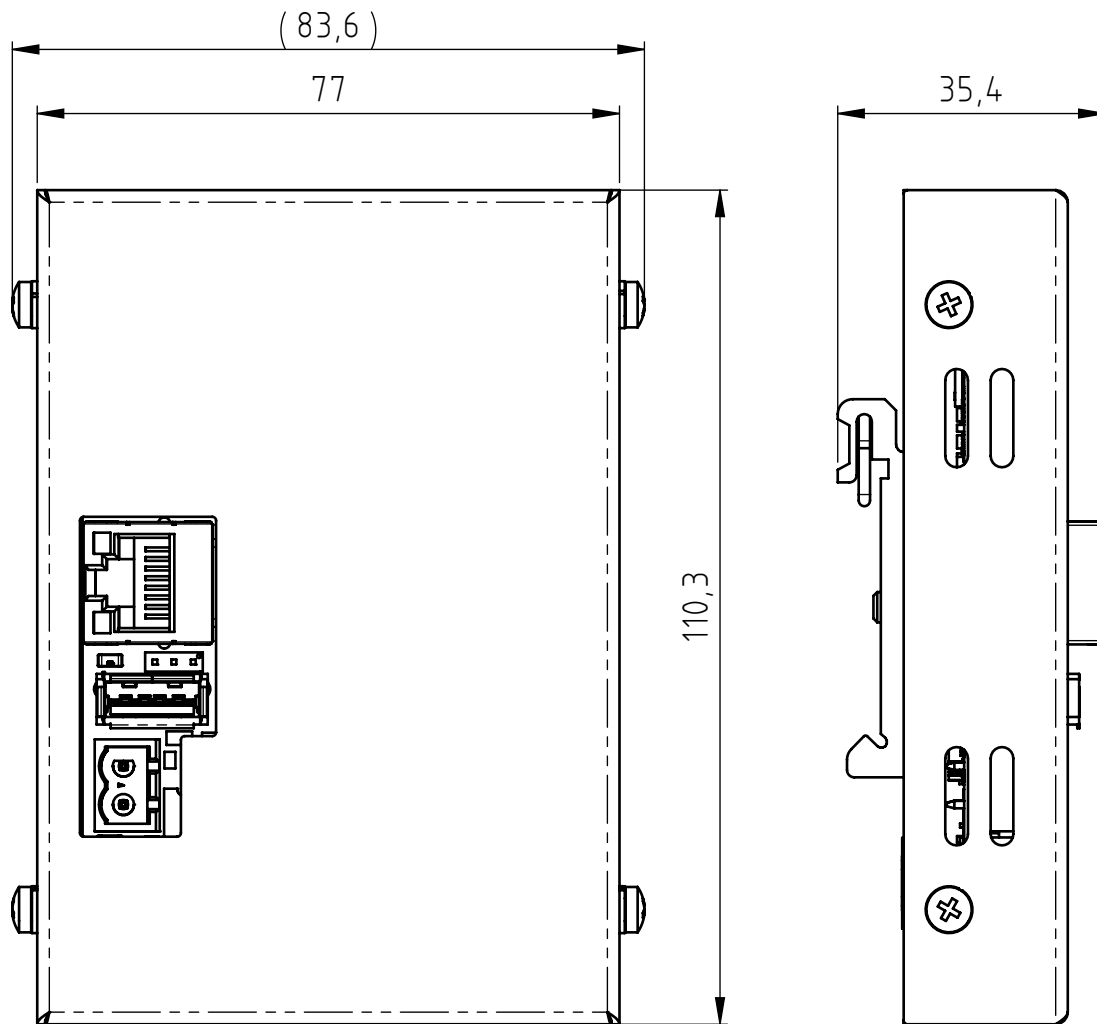
Dimensions B-Fortis CC-Lite

B-Fortis CC-Slim	Specification				
Description	**CC-Slim S01**	**CC-Slim S02**	**CC-Slim S03**	**CC-Slim S04**	**CC-Slim S05**
Order number	**S-01020102-0100**	**S-01020102-0200**	**S-01020102-0300**	**S-01020102-0400**	**S-01020102-0500**
Oder number Dualcore	-	-	-	**S-01020102-2400**	**S-01020102-2500**
Dimensions WxHxD [mm]	92 x 128 x 40,3				
Weight	approx. 550 g				
Mounting	Rail mounting NS 35/7,5 EN 50022				
Development environment	CODESYS V3 (IEC 61131-3)				
CPU	800 MHz ARM® CPU Cortex™- A9 single Core / Dualcore: 2x 800 MHz ARM® CPU Cortex™- A9				
RAM /Flash / Retain storage	256 MB RAM / 256 MB Flash / 100 kB FRAM				
Dualcore	512 MB RAM / 256 MB Flash / 100 kB Retain				
Certification	CE (EN 61131-2) / CB Scheme (IEC 61010-2-201) / cULus (UL 61010-2-201)				
Communication interfaces	1x Ethernet, 10/100 Base, RJ45				
	1x EtherCAT, RJ45	1x EtherCAT, RJ45	1x EtherCAT, RJ45	1x EtherCAT, RJ45	1x EtherCAT, RJ45
	-	-	1x CAN Bus, RJ45	1x CAN Bus, RJ45	2x CAN Bus, RJ45
	-	-	-	1x RS232/485 combo, RJ45	1x RS232/485 combo, RJ45
Protocols	Standard: EtherCAT Master, CANOpen Master Optional: Modbus RTU/TCP, SNMP, OPCuA, J1939, Ethernet/IP, PROFINET, BACnet, KNX, NTP, FTP, IoT				
Visualization	Target Visu (VNC-Server), Optional : CODESYS-WebVisu				
Additional features	1x host USB 2.0 / USB plug type A				
	1x RTC, battery buffered				
	-	-	1x MicroSD-Card slot	1x MicroSD-Card slot	1x MicroSD-Card slot
Digital I/O`s	4x digital input, 4x digital output (0,5 A)				
Analogue I/O´s	-	4 x universal analogue Input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit			
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection				
Current consumption	Typ. 0,3 A, max. 1,2 A at +24V DC				
Operating conditions Transport / storage	Ambient temperature: operational: 0 ºC bis 55 ºC / transport -20 ºC bis +70 ºC Relative humidity: max. 85%, non-condensing				
EMC, protection type					
Emitted interference	EN 55011 class B group 1				
Immunity to interference	EN 61131-2				
Protection class	III				
Insulation strength	EN 61131-2				
Protection type	IP20				
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)				
Schock resistance	15 G (approx. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea				

B-FORTIS **CC-SLIM**
INFORMATION **DIMENSIONS**

(92)

87

40,3

128
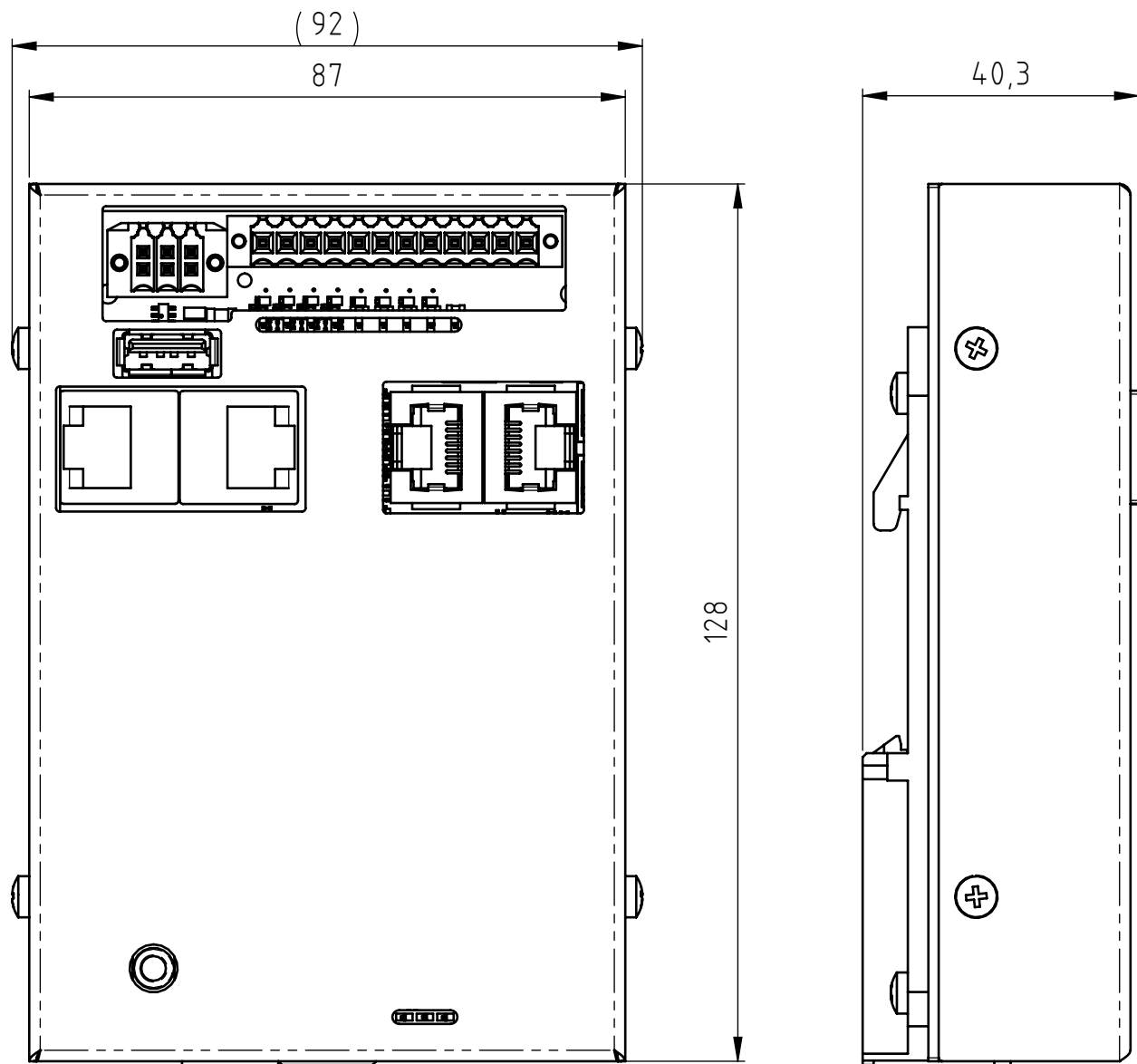
Dimensions B-Fortis CC-Slim

B-Fortis CC-Prime	Specification			
Description	CC-Prime S01	CC-Prime S02	CC-Prime S03	CC-Prime S04
Order number	S-01020103-0100	S-01020103-0200	S-01020103-0300	S-01020103-0400
Dimensions WxHxD [mm]	212 x 105 x 46,5			
Weight	approx. 750 g			
Mounting	Rail mounting NS 35/7,5 EN 50022			
Certification	CE (EN 61131-2) / $_c$UL$_{us}$ (UL 61010-2-201)			
Development environment	CODESYS V3 (IEC61131-3)			
CPU	800 MHz Arm® CPU with Cortex™-A9 Single Core			
RAM /Flash /Retain storage	256 MB RAM /256 MB Flash /100 KB FRAM			
Communication interfaces	1x Ethernet, 10/100 Base with 3x RJ45 (integrated switch)	1x Ethernet, 10/100 Base with 3x RJ45 (integrated switch)	1x Ethernet, 10/100 Base with 3x RJ45 (integrated switch)	1x Ethernet, 10/100 Base with 3x RJ45 (integrated switch)
	1x EtherCAT , RJ45	1x EtherCAT , RJ45	1x EtherCAT , RJ45	1x EtherCAT , RJ45
	-	1x CAN Bus, RJ45 (opto-isolated)	1x CAN Bus, RJ45 (opto-isolated)	1x CAN Bus, RJ45 (opto-isolated)
	-	-	-	1x Rs232/485 combo, Rj45
Protocols	Standard: EtherCAT Master, CANOpen Master Optional: Modbus RTU/TCP, SNMP, OPCuA, J1939, Ethernet/IP, PROFINET, BACnet, KNX, NTP, FTP, IoT			
Visualization	Target Visu (VNC Server), Optional: Web Visu (Web Server, HTML 5)			
Additional featurs	1x host USB 2.0 / USB plug type A	1x host USB 2.0 / USB plug type A	1x host USB 2.0 / USB plug type A	1x host USB 2.0 / USB plug type A
	-	-	1x MicroSD-Card Slot (SDHC standard up to 32 GB)	1x MicroSD-Card Slot (SDHC standard up to 32 GB)
	1x RTC, battery buffered	1x RTC, battery buffered	1x RTC, battery buffered	1x RTC, battery buffered
Digital I/O`s	8x digital input	12x digital input	16x digital input	16x digital input
	8x digital output (0,5 A)	12x digital output (0,5 A)	16x digital output (0,5 A)	16x digital output (0,5 A)
Analogue I/O`s (-10 V..+10V, -20mA..+20mA, 6x PT100/Pt1000)	4x analog input Resolution: 24 Bit	4x analog input Resolution: 24 Bit	4x analog input Resolution: 24 Bit	8x analog input Resolution: 24 Bit
	2x analog input Resolution: 12 Bit	2x analog input Resolution: 12 Bit	2x analog input Resolution: 12 Bit	4x analog input Resolution: 12 Bit

B-FORTIS **CC-PRIME**
INFORMATION **TECHNICAL DATA**

B-Fortis CC-Prime	Specification			
Description	CC-Prime S01	CC-Prime S02	CC-Prime S03	CC-Prime S04
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection			
Current consumption Module	Typ. 0,3 A, max. 1,0 A at +24 VDC			
Current consumption dig. Outputs	according to outputload, continuous 4x max. 2 A			
Operating conditions Transport / storage	Ambient temperature: operational: 0 °C bis 55 °C / transport -20 °C bis +70 °C			
	Relative humidity: max. 85%, non-condensing			
EMC, protection type				
Emitted interference	EN 55011 class B group 1			
Immunity to interference	EN 61131-2			
Protection class	III			
Insulation strength	EN 61131-2			
Protection type	IP20			
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)			
Schock resistance	15 G (approx. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea			

B-FORTIS **CC-PRIME**
INFORMATION **TECHNICAL DATA**

B-Fortis CC-Prime	Specification			
Description	CC-Prime S05	CC-Prime S06	CC-Prime S07	CC-Prime S08
Order number	**S-01020103-0500**	**S-01020103-0600**	**S-01020103-0700**	**S-01020103-0800**
Order number Dualcore	**S-01020103-2500**	**-**	**-**	**S-01020103-2800**
Dimensions WxHxD [mm]	212 x 105 x 46,5			
Weight	approx. 750 g			
Mounting	Rail mounting NS 35/7,5 EN 50022			
Certification	CE (EN 61131-2) / $_c$UL$_{us}$ (UL 61010-2-201)			
Development environment	CODESYS V3 (IEC61131-3)			
CPU	800 MHz Arm® CPU with Cortex™-A9 Single Core / Dualcore: 800 MHz Arm® CPU mit Cortex™-A9			
RAM /Flash /Retain storage	256 MB RAM 256 MB Flash 100 KB FRAM	256 MB RAM 256 MB Flash 100 KB FRAM	256 MB RAM 256 MB Flash 100 KB FRAM	1 GB RAM 1GB Flash 100 KB FRAM
Dualcore	512 MB RAM 256 MB Flash 100 KB FRAM	-	-	1 GB RAM 1GB Flash 100 KB FRAM
Communication interfaces	1x Ethernet, 10/100 Base mit 3x RJ45 (integrated switch)	1x Ethernet, 10/100 Base mit 3x RJ45 (integrated switch)	1x Ethernet, 10/100 Base mit 3x RJ45 (integrated switch)	1x Ethernet, 10/100 Base mit 3x RJ45 (integrated switch)
	1x EtherCAT , RJ45	1x EtherCAT , RJ45	1x EtherCAT , RJ45	1x EtherCAT , RJ45
	1x CAN Bus, RJ45 (opto-isolated)	1x CAN Bus, RJ45 (opto-isolated)	1x CAN Bus, RJ45 (opto-isolated)	1x CAN Bus, RJ45 (opto-isolated)
	2x RS485, RJ45 (opto-isolated, 1x together with RS232)	2x RS485, RJ45 (opto-isolated, 1x together with RS232)	2x RS485, RJ45 (opto-isolated, 1x together with RS232)	2x RS485, RJ45 (opto-isolated, 1x together with RS232 without Bias resistance, with 5V on pin7)
	1x RS232, RJ45 (opto-isolated together with RS485)	1x RS232, RJ45 (opto-isolated together with RS485)	1x RS232, RJ45 (opto-isolated together with RS485)	1x RS232, RJ45 (opto-isolated together with RS485)
Protocols	Standard: EtherCAT Master, CANOpen Master Optional: Modbus RTU/TCP, SNMP, OPCuA, J1939, Ethernet/IP, PROFINET, BACnet, KNX, NTP, FTP, IoT			
Visualization	Target Visu (VNC Server), Optional: Web Visu (Web Server, HTML 5)			
Additional features	1x host USB 2.0 / USB plug type A	1x host USB 2.0 / USB plug type A	1x host USB 2.0 / USB plug type A	1x host USB 2.0 / USB plug type A
	1x MicroSD-Card slot (SDHC standard up to 32 GB)	1x MicroSD-Card slot (SDHC standard up to 32 GB)	1x MicroSD-Card slot (SDHC standard up to 32 GB)	1x MicroSD-Card slot (SDHC standard up to 32 GB)
	1x RTC, battery buffered	1x RTC, battery buffered	1x RTC, battery buffered	1x RTC, battery buffered
Digital I/O`s	16x digital Input			
	16x digital Output (0,5 A)			

B-FORTIS **CC-PRIME**
INFORMATION **TECHNICAL DATA**

B-Fortis CC-Prime	Specification			
Description	**CC-Prime S05**	**CC-Prime S06**	**CC-Prime S07**	**CC-Prime S08**
Analogue I/O`s (-10 V..+10V, -20mA..+20mA, 6x PT100/Pt1000)	12x analog Input Resolution: 24 Bit	-	4x analog Input Resolution: 24 Bit	12x analog Input Resolution: 24 Bit
	6x analog Output Resolution: 12 Bit	-	2x analog Output Resolution: 12 Bit	6x analog Output Resolution: 12 Bit
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection			
Current consumption Module	Typ. 0,3 A, max. 1,0 A at +24 VDC			
Current consumption dig. Outputs	according to outputload, continuous 4x max. 2 A			
Operating conditions Transport / storage	Ambient temperature: operational: 0 °C bis 55 °C / transport -20 °C bis +70 °C			
	Relative humidity: max. 85%, non-condensing			
EMC, protection type				
Emitted interference	EN 55011 classe B group 1			
Immunity to interference	EN 61131-2			
Protection class	III			
Insulation strength	EN 61131-2			
Protection type	IP20			
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)			
Schock resistance	15 G (approx. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea			

B-FORTIS **CC-PRIME**
INFORMATION **DIMENSIONS**

Dimensions B-Fortis CC-Prime

B-FORTIS **CC-I/O**

B-Fortis CC-DIO 16/16

Remote EtherCAT digital I/O extension with integrated bus coupler

→ Compact EtherCAT I/O extension
→ Integrated bus coupler
→ Integrated extender
→ Connection with Ethernet cables up to 100m
→ 16 digital inputs
→ 16 digital outputs
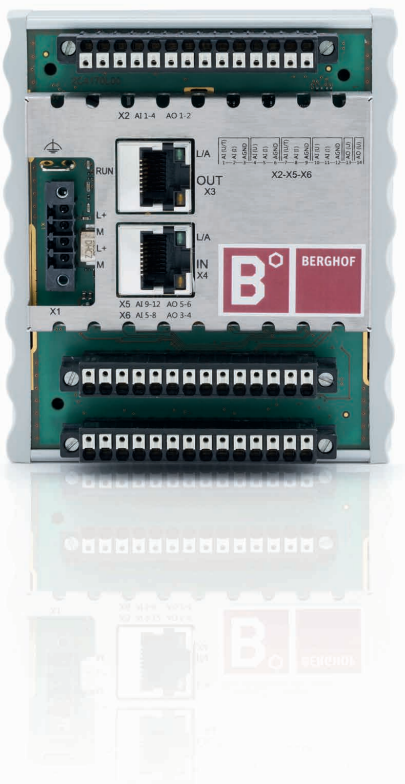
B-Fortis CC-AIO 12/6

Remote EtherCAT analog I/O expansion with integrated bus coupler

→ Compact EtherCAT I/O extension
→ Integrated bus coupler
→ Integrated extender
→ Connection with Ethernet cables up to 100m
→ Inputs adjustable to voltage, current or temperature
→ Simple configuration
→ 12 analog multifunction inputs
→ 6 analog voltage outputs

B-FORTIS **CC-I/O**
INFORMATION **TECHNICAL DATA**

| B-Fortis CC-I/O	Specification		
Description	**CC-DIO 16/16 P**	**CC-DIO 16/16 N**	**CC-AIO 12/6**
Order number	**S-01020201-0100**	**S-01020201-0200**	**S-01020202-0100**
Dimensions WxHxD [mm]	92 x 105 x 46,5		
Weight	approx. 200 g		
Mounting	Rail mounting NS 35/7,5 EN 50022		
Development environment	CODESYS V3 (IEC 61131-3)		
Certification	CE (EN 61131-2) / cULus (UL 61010-2-201)		
Communication interfaces	1x EtherCAT In, RJ45 (integrated bus coupler)		
	1x EtherCAT Out, RJ45 (integrated bus coupler)		
Protokolle	EtherCAT Slave		
Digital I/O´s	16x digital input 16x digital output positive switching	16x digital Input 16x digital output negative switching	-
Analogue I/O´s	-	-	12 x universal analog input (-10V..+10V, -20mA..+20mA, 6x PT100/PT1000) Resolution: 24 Bit
	-	-	6 x analog output (0V..+10V) Resolution: 12 Bit
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection		
Current consumption Module	Typ. 0,05 A, max. 0,25 A at +24V DC		
Current consumption dig. Outputs	according to outputload, continuous 4x max.	according to outputload, continuous 4x max.	-
Operating conditions Transport / storage	Ambient temperature: operational: 0 °C bis 55 °C / transport -20 °C bis +70 °C Relative humidity: max. 85%, non-condensing		
EMC, protection type			
Emitted interference	EN 55011 class B group 1		
Immunity to interference	EN 61131-2		
Protection class	III		
Insulation strength	EN 61131-2		
Protection type	IP20		
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)		
Schock resistance	15 G (approx. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea		

B-FORTIS **CC-I/O**
INFORMATION **DIMENSIONS**
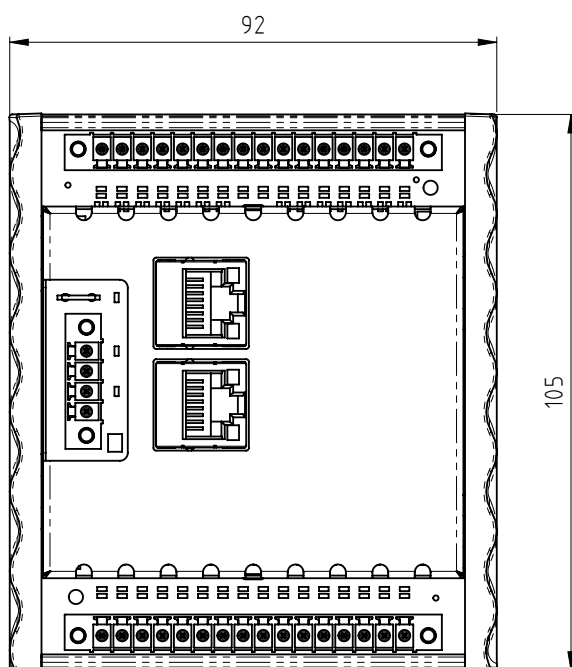
Dimensions B-Fortis CC-DIO 16/16
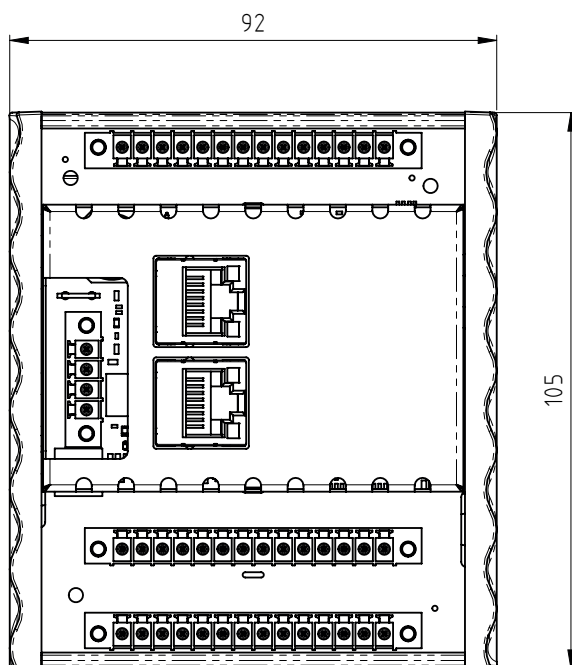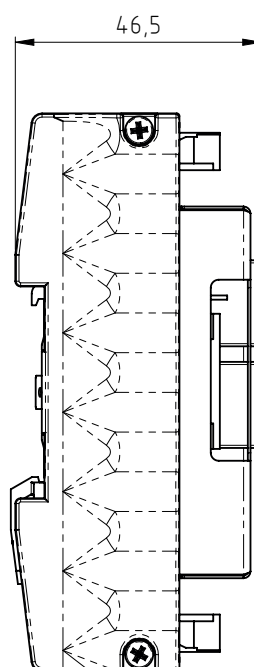
Dimensions B-Fortis CC-AIO 12/6
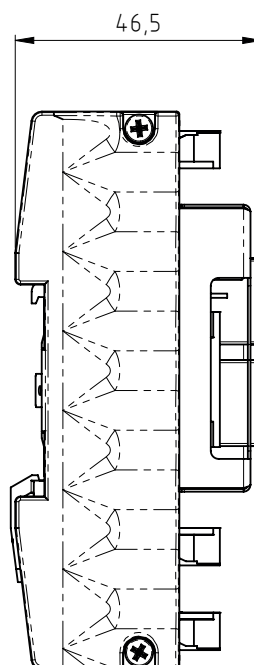
B-FORTIS **CC - COMPACT CONTROL SYSTEM**
CUSTOMIZING

Products off the shelf are offered by many - At Berghof you get individuality.

Our products offer you the ability to customize them completely according to your needs.

All products are customizable in three categories according to the Berghof customizing concept.

(see catalog section Berghof Customizing)

1. Customized Adaptions

Customer requirement:

Color scheme of the controls in the corporate design of the customer

Your advantages:
- Demonstrate your expertise
- Presentation of responsibilities/contacts for end customers
- Repair flow management

2. Customized Extensions

Customer requirement:

Integration of an additional communication interface

Your advantages:
- Use of the existing standard product
- No schematic and design changes
- Cost reduced solution

3. Customized Developments

Customer requirement:

Limited space for installation of the control system

Your advantages:
- Standard: only redesign of the basic circuit diagram, no special solutions with regard to software or components used
- Standard: Integrated in PLM process and thus compatible with future product changes due to component discontinuations or SW updates
- Ideal application solution

B-FORTIS **CC - COMPACT CONTROL SYSTEM**
OVERVIEW

B-FORTIS **CC-LITE**

Description	Order number
B-Fortis CC-Lite S01	S-01020101-0100
B-Fortis CC-Lite S02	S-01020101-0200
B-Fortis CC-Lite S03	S-01020101-0300
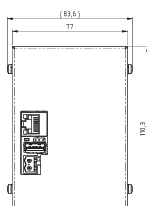
B-FORTIS **CC-SLIM**

Description	Order number
B-Fortis CC-Slim S01	S-01020102-0100
B-Fortis CC-Slim S02	S-01020102-0200
B-Fortis CC-Slim S03	S-01020102-0300
B-Fortis CC-Slim S04	S-01020102-0400
B-Fortis CC-Slim S04 Duo	S-01020102-2400
B-Fortis CC-Slim S05	S-01020102-0500
B-Fortis CC-Slim S05 Duo	S-01020102-2500
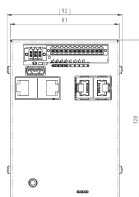
B-FORTIS **CC-PRIME**

Description	Order number
B-Fortis CC-Prime S01	S-01020103-0100
B-Fortis CC-Prime S02	S-01020103-0200
B-Fortis CC-Prime S03	S-01020103-0300
B-Fortis CC-Prime S04	S-01020103-0400
B-Fortis CC-Prime S05	S-01020103-0500
B-Fortis CC-Prime S05 Duo	S-01020103-2500
B-Fortis CC-Prime S06	S-01020103-0600
B-Fortis CC-Prime S07	S-01020103-0700
B-Fortis CC-Prime S08	S-01020103-0800
B-Fortis CC-Prime S08 Duo	S-01020103-2800
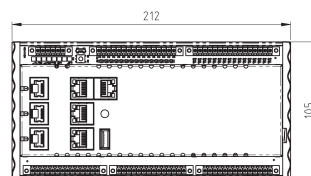
B-FORTIS **CC-I/O**

Description	Order number
B-Fortis CC-DIO 16/16 P	S-01020201-0100
B-Fortis CC-DIO 16/16 N	S-01020201-0200
B-Fortis CC-CC-AIO 12/6	S-01020202-0100
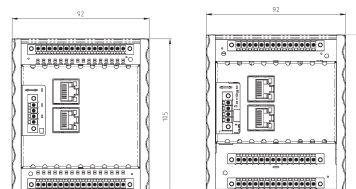
PIONEERING AUTOMATION TECHNOLOGY

MODULAR CONTROL SYSTEM
B-NIMIS MC-CLASSIC
B-NIMIS MC-PRO
B-NIMIS MC-I/O

B-NIMIS **MC-MODULAR CONTROL SYSTEM**

BERGHOF AUTOMATION AND CONTROL SOLUTIONS

→ Complete range of services
→ Same form factor for all assemblies
→ Universal parity of parts
→ SD card slot and USB port included as standard
→ Extraordinary combinability
→ Integrated web server
→ Battery-buffered, maintenance-free real-time clock

Modular CODESYS Control System & I/O-Expansions

BERGHOF - PIONEERING AUTOMATION TECHNOLOGY
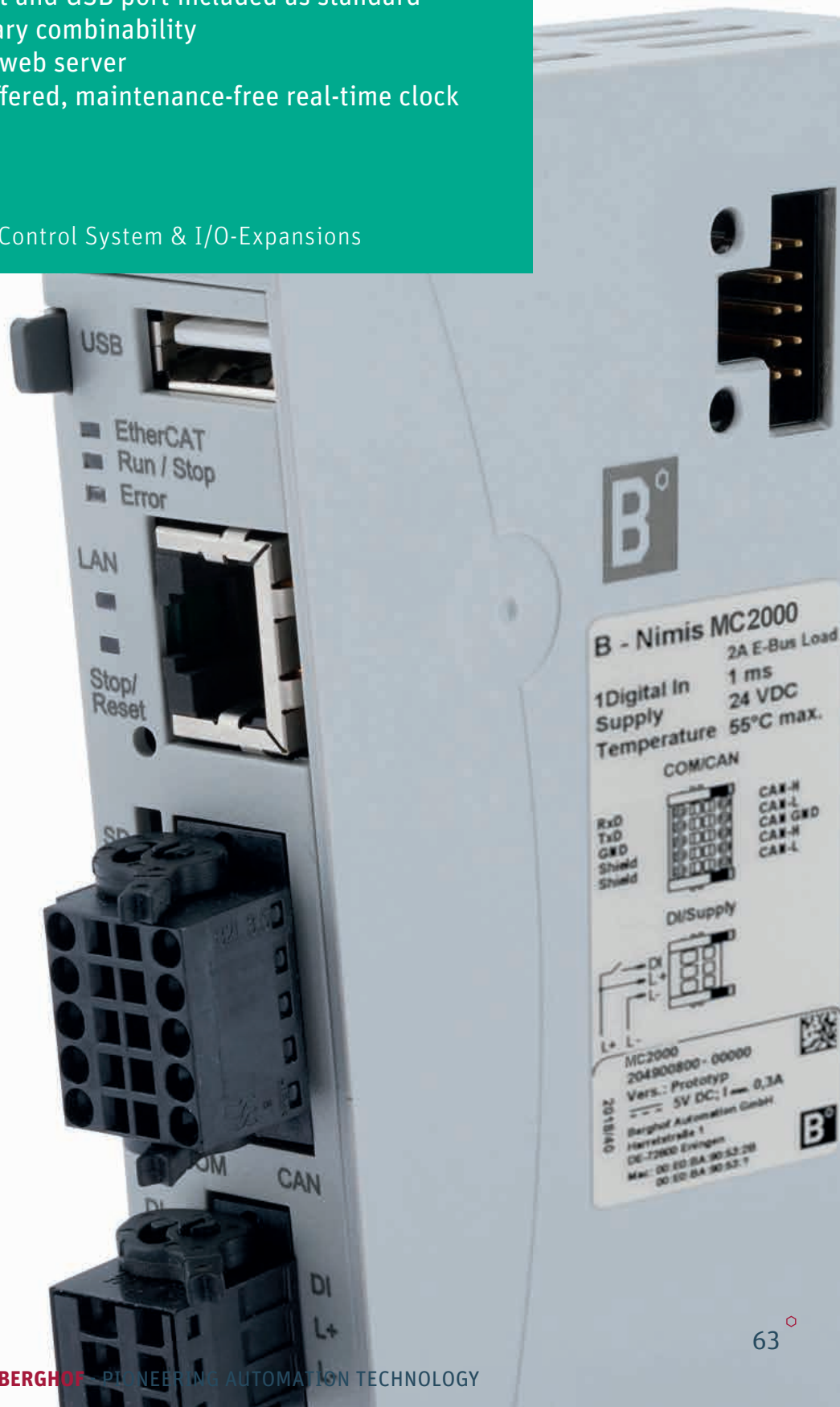
B-NIMIS **MC**

Modular CODESYS PLC with EtherCAT I/O system

With the B-Nimis MC series, Berghof offers a modular high-performance control system. The available modules allow almost all requirements to be met, from the MC-Classic, a proven controller with CODESYS V2.3 or V3, through MC-Pro, a high-performance CODESYS V3 controller, to a wide range of expansion modules. The uncompromising adherence to general standards is not only reflected in the interfaces and connectable options, even internal mechanisms are oriented towards this, e.g. with an internal communication system based on EtherCAT® as a consistently uniform concept. This allows the user full control of all influencing variables. Furthermore, the devices can be easily installed and combined with other control components such as the standardized Berghof B-Primis or B-Fortis system.

Security system for protected internal communication

Labelling fields for system identification

Simple programming according to IEC-61131

Modules in fanless standard design with various status displays assigned to the respective connection point

Maximum communication through integration of many interfaces

Comprehensive modular CODESYS control platform

Protected modules with shield connection

Standard plug, secure connection, with eject mechanism

B-NIMIS **MC-CLASSIC/-PRO**

Unsurpassed flexibility
thanks to modular expandability and any division within the system control, open for all fieldbuses

Versatile use
with small and always the same form factor, only minor restrictions in project planning, designed for mounting on standard rails

Performance in abundance
through the use of state of the art components

Comprehensively operated
through support of CODESYS V2.3 and V3

Secure communication
via internal bus system, between the modules with guaranteed vibration-proof connection

Highly protected
through an integrated EMC concept with cable shielding and internal earthing

Optimally evaluated, analysed or exchanged
thanks to storage or backup of data or project planning on the SD card of the PLC

Sophisticated support
with various conversions, e.g. interrupt input on the controller or reverse polarity protection

Reduced costs
due to the comprehensive use of always the same standard components such as plugs, shields, etc.

Ideally updated
using the standard USB interface

B-NIMIS **MC PI-PRO**

Powerful complement
to the B-Nimis MC-Pro, of course with continuation of its features

Excellent real-time performance
thanks to quadcore and perfect harmony between hardware and software

No limits for your applications
due to more than enough memory (8GB) which can still be expanded

Future-proof control system
thanks to great flexibility in the configuration and standardization of the CPU module

Perfectly integrated into the Berghof I/O portfolio
by means of EtherCAT standard fieldbus and modular expandability - plug & play

No service costs
due to maintenance-free control concept

Wide range of applications
thanks to industrial temperature ranges

Secured communication
via internal bus system, between modules with guaranteed vibration-proof connection

Best protection
by a consistent EMC concept with Line shielding and internal grounding

Prepared for worldwide use
thanks to availability of all required certificates (CE, UL, EAC, CCC, etc.)

Easy visualization
via VNC and web interface as well as additional digital display interface

State-of-the-art - maximum performance
through the use of the Compute Module 4 and thus the latest Raspberry technology

POWERED BY
Raspberry Pi

B-NIMIS **MC-PI PRIME**

Powerful complement
to the B-Nimis MC-Pi Pro, of course with
continuation of its features

Unsurpassed flexibility
thanks to modular expandability and arbitrary
partitioning within the plant control system,
open for all fieldbuses

Easy data management
thanks to more than enough retain memory

Optimally evaluated, analyzed or exchanged
by means of storage or backup of data or project
planning on the SD card of the PLC

Erweiterte Grundausstattung
with additive features compared to the B-NImis
MC-Pi Pro

→   2 x Host USB 3.0 / USB-plug type A
→   2 x Host USB 2.0 / USB-plug type A
→   1 x uSD (SDXC)

Sophisticated update concept
 with time-saving update processes via USB or SD
card for firmware and customer applications in
the field

Simple and fast commissioning
through preconfigured devices or automatic con-
figuration via USB stick

Time-optimized fault analysis
using a tried-and-tested diagnostic concept

Future-proof connection
via state-of-the-art communication interfaces
such as USB 3.0, Gigabit Ethernet and WLAN

State-of-the-art - maximum performance
through the use of the Compute Module 4 and
thus the latest Raspberry technology

MODULAR CONTROL SYSTEM

67

B-Nimis MC	Specification		Specification
Description	**MC-Classic S01**	**MC-Classic SO2**	**B-Nimis MC-Pro**
Order number	**S-01030101-0100**	**S-01030101-0200**	**S-01030102-0100**
Dimensions WxHxD [mm]	25 x 124 x 83	25 x 124 x 83	25 x 124 x 83
Weight	approx. 150 g		approx. 150 g
Mounting	Rail mounting NS 35/7,5 EN 50022		Rail mounting NS 35/7,5 EN 50022
Certification	CE (EN 61131-2) / $_c$UL$_{us}$ (UL 508)		CE (EN 61131-2) / $_c$UL$_{us}$ (UL 508)
Development environment	CODESYS V2.3 (IEC61131-3)	CODESYS V3 (IEC61131-3)	CODESYS V3 (IEC61131-3)
CPU	Freescale PowerPC, 400 MHz		1 GHz Arm® Cortex A9
RAM /Flash /Retain storage	128 MB RAM /64 MB Flash /24 KB Retain		256 MB RAM /256 MB Flash / Retain substitution via CODESYS Persistence Manager
Communication interfaces	1x Ethernet, 10/100 Base T, RJ45		1x Ethernet, 10/100 Base, RJ45
	1x EtherCAT LVDS		1x EtherCAT, LVDS
	1x CAN Bus, 2x5 pol. plug (galvanically isolated with RS232 together)		1x CAN Bus, 2x5 pol. plug (galvanically isolated with RS232 together)
	1x RS232, 2x5 pol. plug (galvanically isolated with CAN together)		1x RS232, 2x5 pol. (galvanically isolated with CAN together)
Protocols	Standard: EtherCAT Master, CANOpen Master Optional: Modbus RTU/TCP, SNMP, OPCuA, J1939, Ethernet/IP, PROFINET, BACnet, KNX, NTP, FTP, IoT		Standard: EtherCAT Master, CANOpen Master Option: Modbus RTU/TCP, SNMP, OPCuA, J1939, Ethernet/IP, PROFINET, BACnet, KNX, NTP, FTP, IoT
Visualization	TargetVisu (VNC Server), WebVisu (WebServer, Java)	TargetVisu (VNC Server), Optional: WebVisu (WebServer,HTML5)	TargetVisu (VNC Server), Optional: WebVisu (WebServer, HTML5)
Additional features	1x host USB Rev. 1.1 / USB plug type A		1x host USB 2.0 / USB plug type A
	1x SD-Card slot (SD standard up to 2GB)		1x SD-Card slot (SDHC up to 32GB)
	1x RTC, battery buffered		1x RTC, battery buffered
Digital I/O`s	1x digital Input		1x digital interrupt-input
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection		+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection
Current consumption	Typ. 0,3A, max. 0,3 A at +24 VDC		Typ. 0,3A, max. 0,3 A at +24 VDC
Operating conditions Transport / storage	Ambient temperature: operational: 0 ℃ to 55 ℃ / transport -20 ℃ to +70 ℃ Relative humidity: max. 85%, non-condensing		Ambient temperature: operational: 0 ℃ bis 55 ℃ / transport -20 ℃ bis +70 ℃ Relative humidity: max. 85%, non-condensing

B-NIMIS **MC-CLASSIC/-PRO**
INFORMATION **TECHNICAL DATA / DIMENSIONS**

B-Nimis MC		
Description	MC-CLASSIC S01/S02	B-Nimis MC-PRO
EMC, protection type		
Emitted interference	EN 61000-6-4, industrial sector	EN 61000-6-4, industrial sector
Immunity to interference	EN 61000-6-2, industrial sector	EN 61000-6-2, industrial sector
Protection class	III	III
Insulation strength	SELV (U_w < 30 V) according EN 61131-2	SELV (U_w < 30 V) according EN 61131-2
Protection type	IP20	IP20
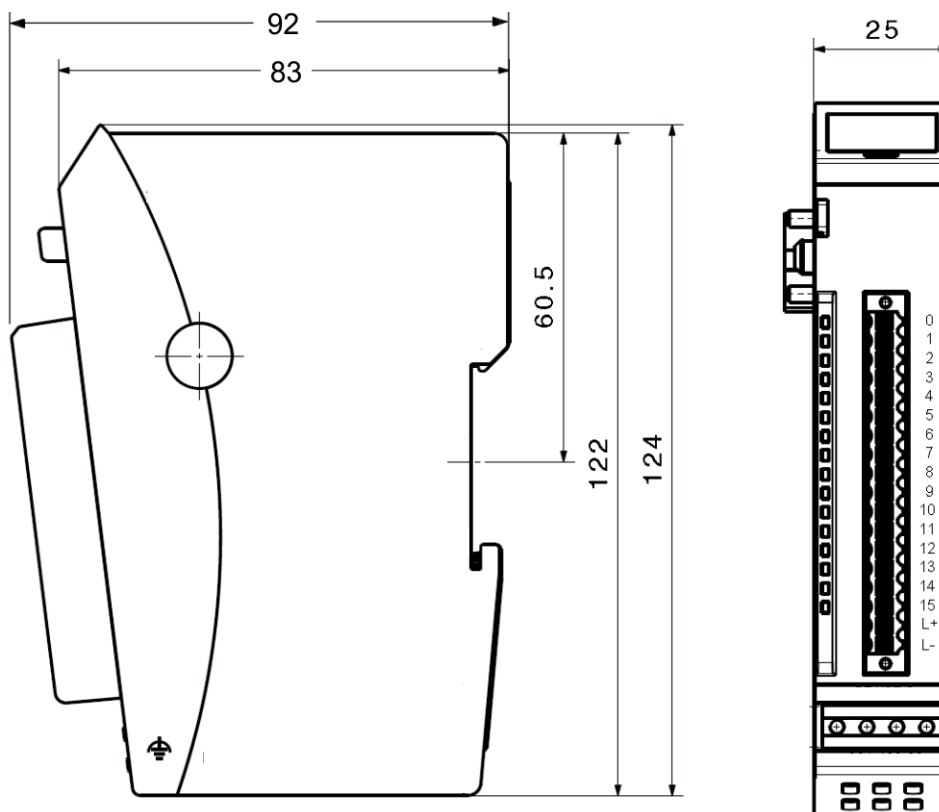
Dimension drawing B-Nimis MC-System
* valid for all MC- and SC-I/O-modules

B-Nimis MC Pi-Pro	Specification	
Description	**MC Pi-Pro S01**	**MC Pi-Pro S02**
Order number	**S-01030301-0100**	**S-01030301-0200**
Dimensions WxHxD [mm]	38 x 122 x 87	
Mounting	Rail mounting NS 35/7,5 EN 50022	
Certification	CE (EN 61131-2)	
Development environment	CODESYS V3 (IEC61131-3)	
CPU	BCM2711, 1,5 GHz Quad Core	
RAM /Flash /Retain	1GB RAM / 8GB Flash / 200 kB Retain	2GB RAM / 8GB Flash / 200 kB Retain
Communication interfaces	1x Ethernet 10/100/1000 Base, RJ45	
	1x EtherCAT LVDS	
	-	WLAN/Bluetooh (optional)
Protocols	Standard: EtherCAT Master Optional: Modbus TCP, SNMP, OPCuA, Ethernet/IP, PROFINET, BACnet, KNX, NTP, FTP, IoT CANOpen Master and J1939 with additional MC-IO Module	
Visualization	Standard: TargetVisu (VNC Server, Display interface) Optional: WebVisu (WebServer, HTML5)	
Additional features	1x Host USB 3.0 / USB plug type A	
	1x Host USB 2.0 / USB plug Type A	
	1x Digital display interface	
	1x 2 Pin JST for cooling fan (5V)	
	1x Real Time Clock, 72h Puffer	
	Extended heat sink (optional)	
Extensions	B-Nimis MC-IO EtherCAT Expansion modules (DIO, AIO, temperature, counter, Realais Multi, communication)	
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection	
Current consumption	Typ. x,y A, max. x,y A bei +24 VDC	
Operating conditions Transport / storage	Ambient temperature: : Operational: -10 °C bis 40 °C / Transport -20 °C bis +70 °C Relative humidity: max. 85%, non-condensing	
Emitted interference	EN 61000-6-4, Living area	
Immunity to interference	EN 61000-6-2, Industrial area	
Protection class	III	
Insulation strength	SELV (Uw < 30 V) according EN 61131-2	
Protection type	IP20	

Dimensions B-NIMIS MC-Pi Pro

B-NIMIS **MC PI-PRIME**
INFORMATION **TECHNICAL DATEN**

B-Nimis MC Pi-Prime	Specification	
Description	MC Pi-Prime S01	MC Pi-Prime S02
Order number	**S-01030302-0100**	**S-01030302-0200**
Dimensions WxHxD [mm]	58 x 122 x 87	
Mounting	Rail mounting NS 35/7,5 EN 50022	
Certification	CE (EN 61131-2)	
Development environment	CODESYS V3 (IEC61131-3)	
CPU	BCM2711, 1,5 GHz Quad Core	
RAM /Flash /Retain	1GB RAM / 8GB Flash / 200 KB Retain	2GB RAM / 8GB Flash / 200 KB Retain
Communication interfaces	1x Ethernet 10/100/1000 Base, RJ45	
	1x Ethernet 10/100 Base 2-Port Switch, RJ45	
	1x Ethercat, LVDS	
	-	WLAN/Bluetooh (Optional)
Protocols	Standard: EtherCAT Master Optional: Modbus TCP, SNMP, OPCuA, Ethernet/IP, PROFINET, BACnet, KNX, NTP, FTP, IoT CANOpen Master and J1939 with additional MC-IO Module	
Visualization	Standard: TargetVisu (VNC Server, Display interface) Optional: WebVisu (WebServer, HTML5)	
Additional features	2x Host USB 3.0 / USB plug type A	
	2x Host USB 2.0 / USB plug type A	
	1x uSD (SDXC)	
	1x Digitale display interface	
	1x 2 Pin JST for cooling fan (5V)	
	1x Real Time Clock, 72h Puffer	
	Extended heat sink (optional)	
Extensions	B-Nimis MC-IO EtherCAT Expansion modules (DIO, AIO, temperature, counter, Realais Multi, communication)	
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection	
Current consumption	Typ. x,y A, max. x,y A bei +24 VDC	
Operating conditions Transport / storage	Ambient temperature: : Operational: -10 °C bis 40 °C / Transport -20 °C bis +70 °C Relative humidity: max. 85%, non-condensing	
Emitted interference	EN 61000-6-4, Living area	
Immunity to interference	EN 61000-6-2, Industrial area	
Protection class	III	
Insulation strength	SELV (Uw < 30 V) according EN 61131-2	
Protection type	IP20	

B-NIMIS **MC PI-PRIME**
INFORMATION **TECHNICAL DATA/DIMENSIONS**
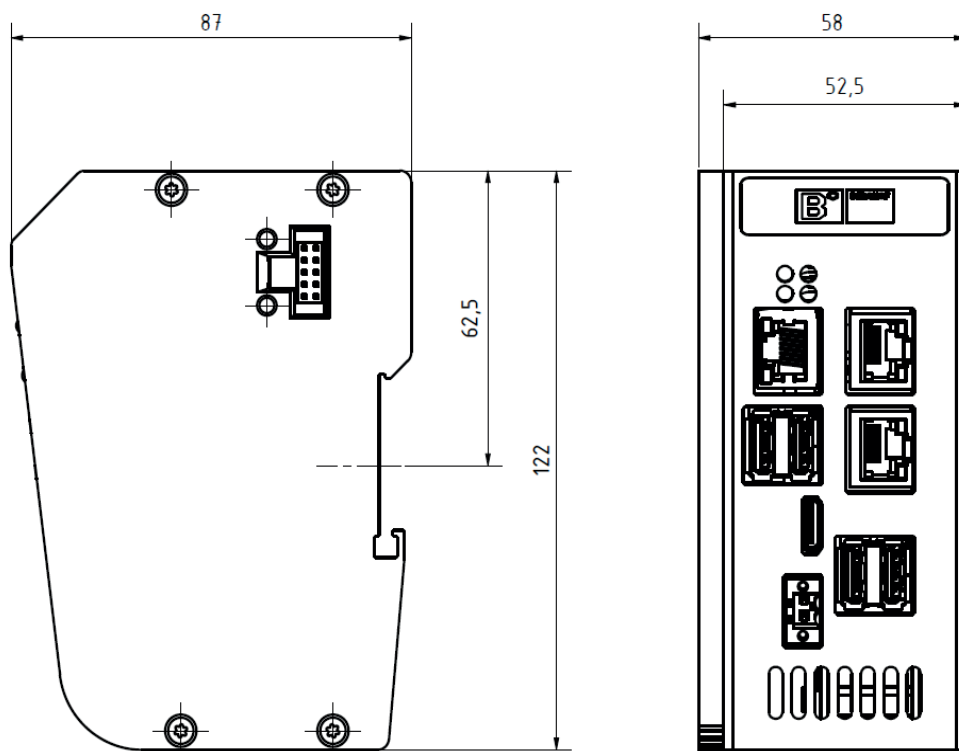
Dimensions B-NIMIS MC-Pi Prime

B-NIMIS **MC-I/O**

B-Nimis MC-Bus coupler 3A
MC bus coupler

B-Nimis MC-BK DI 16 / DO 16
MC bus coupler with 16 digital inputs and 16 digital outputs.

B-Nimis MC-Extender 2 Port
The Extender is used to extend E-I/O blocks with additional EtherCAT devices which do not have the MC format. The Extender converts the transmission physics from LVDS (E-bus) to twisted Ethernet.

B-Nimis MC-CAN
Extends a MC-Classic/MC-Pro/MC-PI control system by an additional CAN interface, which is connected via EtherCAT

B-NIMIS **MC-I/O**
INFORMATION **TECHNICAL DATA**

B-Nimis MC-I/O				
Description	**MC-Bus coupler 3A**	**MC-BK Di 16/DO16**	**MC-Extender 2 Port**	**MC-CAN**
Order number	**S-01030203-0100**	**S-01030203-0200**	**S-01030203-0300**	**S-01030203-0500**
Dimensions WxHxD [mm]	25 x 124 x 83	42 x 120 x 92	25 x 124 x 83	25 x 124 x 83
Weight	approx. 150 g			
Mounting	Rail mounting NS 35/7,5 EN 50022			
Certification	CE (EN 61131-2) / $_c$UL$_{us}$ (UL 61010-2-201)			
Development environment	CODESYS V3 (IEC61131-3)			
Communication interfaces	1x EtherCAT In, Rj45 1x EtherCAT Out, RJ 45 1x EtherCAT, LVDS	1x EtherCAT In, Rj45 1x EtherCAT Out, RJ 45 1x EtherCAT, LVDS	2x EtherCAT out, Rj45 1x EtherCAT, LVDS	1x CAN
Protocols	EtherCAT Slave			EtherCAT Slave
Analog I/O´s	-	8x temperature In	-	
	-		-	
Digital I/O´s	-	16x digital In 16x digital Out 1ms / 0,5A	-	16x digital In 16x digital Out 1ms / 0,5A
Supply voltage	+24 VDC (-20% / +25%) SELV max. AC voltage component 5% with reverse voltage protection			
Current consumption	Typ. 0,2 A, max. 0,2 A at +24 VDC			
Current consumption I/Os	max. 3 A (approx. 20 modules)	max. 2 A (approx. 11 Modules)	Typ. 0,16 A for Out1 max. 0,21A for Out1+Out2	
Operating conditions transport / storage	Ambient temperature: operational: 0 °C bis 50 °C / transport -25 °C bis +70 °C Relative humidity: max. 95%, non-condensing			
EMC, protection type				
Emitted interference	EN 61000-6-4, Industrial sector			
Immunity to interference	EN 61000-6-4, Industrial sector			
Protection class	III			
Insulation strength	EN 61131-2			
Protection type	IP20			
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (Operation mode)			
Shock resistance	15 G (ca. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea			

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B-NIMIS **MC-I/O**

B-Nimis MC-DI 16 1ms
16 digital In

B-Nimis MC-DI32 1ms
32 digital Out

B-Nimis MC-DO 16 0,5A
16 digital Out

B-Nimis MC-DI/DO 16/16
16 digital Out and 16 digital In

B-NIMIS **MC-I/O**
INFORMATION **TECHNICAL DATA**

B-Nimis MC-I/O				
Description	MC-DI 16 1ms	MC-DI 32 1ms	MC-DO 16 0,5A	MC-DI/DO 16/16
Order number	S-01030201-0100	S-01030201-0200	S-01030201-0300	S-01030201-0400
Dimensions WxHxD [mm]	25 x 124 x 92			
Weight	approx. 150 g			
Mounting	Rail mounting NS 35/7,5 EN 50022			
Certification	CE (EN 61131-2) / $_c$UL$_{us}$ (UL 61010-2-201)			
Development environment	CODESYS V3 (IEC61131-3)			
Communication interfaces	1x EtherCAT, LVDS			
Protocols	EtherCAT Slave			
Digital I/O´s	16x digital In	32x digital In	16x digital Out	16x digital In 16x digital Out
	1 ms	1 ms	0,5 A	1ms / 0,5A
Supply voltage	+24 VDC (-20% / +25%) SELV max. AC voltage component 5% with reverse voltage protection			
Current consumption I/Os	Protection depending on I/O load max. 12 A			
Operating conditions transport / storage	Ambient temperature: operational: 0 °C bis 50 °C / transport -25 °C bis +70 °C Relative humidity: max. 95%, non-condensing			
EMC, protection type				
Emitted interference	EN 61000-6-4, Industrial sector			
Immunity to interference	EN 61000-6-4, Industrial sector			
Protection class	III			
Insulation strength	EN 61131-2			
Protection type	IP20			
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)			
Shock resistance	15 G (approx. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea			

B-NIMIS **MC-I/O**

B-Nimis MC-Relais NO 24V
8 Relais outputs 24 Volt

B-Nimis MC-Relais NO 230VAC
8 Relais outputs 230 V

B-Nimis MC-AI4-I 12 Bit CoE*
4 analog inputs for current signals.
The measuring range for each channel
can be set to 0 ... 20 mA or 4 ... 20 mA .

B-Nimis MC-AI8-I 12 Bit CoE*
8 analog inputs for current signals.
The measuring range for each channel
can be set to 0 ... 20 mA or 4 ... 20 mA.

* CoE = CANopen over EtherCAT®

B-Nimis MC-I/O				
Description	**MC-Relais No 24V**	**MC-Relais No 230VAC**	**MC-AI4-I 12 Bit CoE**	**MC-AI8-I 12 Bit CoE**
Order number	**S-01030205-0100**	**S-01030205-0200**	**S-01030202-0100**	**S-01030202-0200**
Dimensions WxHxD [mm]	25 x 124 x 92			
Weight	approx. 150 g			
Mounting	Rail mounting NS 35/7,5 EN 50022			
Certification	CE (EN 61131-2) / $_c$UL$_{us}$ (UL 61010-2-201)			
Development environment	CODESYS V3 (IEC61131-3)			
Communication interfaces	1x EtherCAT, LVDS			
Protocols	EtherCAT Slave			
Digital I/O´s	8x Relais Out NO (lockable)		-	-
	Switching voltage: max. 24VAC / 24 VDC	Switching voltage: max. 230VAC / 24VDC	-	-
Analog I/O´s	-	-	4x analog In Current 0(4)...20mA Resolution: 12 Bit	8x analog In Current 0(4)...20mA Resolution: 12 Bit
Supply voltage	+24 VDC (-20% / +25%) SELV max. AC voltage component 5% with reverse voltage protection			
Current consumption I/Os	Protection depending on I/O load max. 12 A		Typ. 0,2 A, max. 0,2 A at +24 VDC	
Operating conditions transport / storage	Ambient temperature: operational: 0 °C bis 50 °C / transport -25 °C bis +70 °C Relative humidity: max. 95%, non-condensing			
EMC, protection type				
Emitted interference	EN 61000-6-4, Industrial sector			
Immunity to interference	EN 61000-6-4, Industrial sector			
Protection class	III			
Insulation strength	EN 61131-2			
Protection type	IP20			
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)			
Shock resistance	15 G (ca. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea			

MODULAR CONTROL SYSTEM

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B-NIMIS **MC-I/O**

B-Nimis MC-AI4/8-U 13 Bit CoE*
8 analog voltage inputs
0(-10)...10V; -5...5V; -2.5...2.5V

B-Nimis MC-AI8/16-U 13 Bit CoE*
16 analog voltage inputs. 0(-10)...10V; -5...5V;
-2.5...2.5V

B-Nimis MC-AI4-Thermo 16 Bit CoE*
4 analog inputs for PT100(0), NI100(0) and thermo-
couples type J/K.

B-Nimis MC-AI8-Thermo 16 Bit CoE*
8 analog inputs for PT100(0), NI100(0) and
thermocouples type J/K.

* CoE = CANopen over EtherCAT®

B-Nimis MC-I/O				
Description	**MC-AI4/8-U 13 Bit CoE**	**MC-AI 8/16-U 13 Bit CoE**	**MC-AI4-Thermo 16 Bit CoE**	**MC-AI8-Thermo 16 Bit CoE**
Order number	**S-01030202-0300**	**S-01030202-0400**	**S-01030204-0200**	**S-01030204-0100**
Dimensions WxHxD [mm]	25 x 124 x 92			
Weight	approx. 150 g			
Mounting	Rail mounting NS 35/7,5 EN 50022			
Certification	CE (EN 61131-2) / $_c$UL$_{us}$ (UL 61010-2-201)			
Development environment	CODESYS V3 (IEC61131-3)			
Communication interfaces	1x EtherCAT, LVDS			
Protocols	EtherCAT Slave			
Analog I/O´s	4x differential or 8x single ended analog In	8x differential or 16x single ended analog In	4x Temperature In	8x Temperature In
	Voltage 0(-10)...10V; -5...5V; -2,5...2,5V Resolution: 13 Bit		PT100 / Ni100 oder PT1000 / Ni1000 or Thermo / Typ J, K or mV Resolution: 16 Bit	
Supply voltage	+24 VDC (-20% / +25%) SELV max. AC voltage component 5% with reverse voltage protection			
Current consumption	Typ. 0,2 A, max. 0,2 A at +24 VDC		Typ. 0,15 A, max. 0,2 A at +24 VDC	
Operating conditions transport / storage	Ambient temperature: operational: 0 ºC bis 50 ºC / transport -25 ºC bis +70 ºC Relative humidity: max. 95%, non-condensing			
EMC, protection type				
Emitted interference	EN 61000-6-4, Industrial sector			
Immunity to interference	EN 61000-6-4, Industrial sector			
Protection class	III			
Insulation strength	EN 61131-2			
Protection type	IP20			
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)			
Shock resistance	15 G (ca. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea			

MODULAR CONTROL SYSTEM

BERGHOF - PIONEERING AUTOMATION TECHNOLOGY

B-NIMIS **MC-I/O**

B-Nimis MC-AO4-U/I 16 Bit CoE*

4 analog outputs, each channel can be set unipolar or bipolar and output either voltage or current. 0(-10)...10V; 0(4)...20mA

B-Nimis MC-XR01

8 analog I/O´s, 8 digital outputs, 8 digital inputs which can also be used as encoder and counter inputs.

B-Nimis MC-XR02

8 digital outputs, 8 digital inputs which can also be used as encoder and counter inputs.

B-Nimis MC-Counter/Posi 2 5V

The module has two identically structured channels. Each channel has a connection for an incremental encoder as well as 4 digital inputs, 1 digital output and an analog output.

* CoE = CANopen over EtherCAT®

MODULAR CONTROL SYSTEM

B-Nimis MC-I/O				
Description	**MC-AO4-U/I 16 Bit CoE**	**MC-XR01**	**MC-XR02**	**MC-Counter/Posi 2 5V**
Order number	**S-01030202-0500**	**S-01030207-0100**	**S-01030207-0200**	**S-01030206-0100**
Dimensions WxHxD [mm]	25 x 124 x 92			
Weight	approx. 150 g			
Mounting	Rail mounting NS 35/7,5 EN 50022			
Certification	CE (EN 61131-2) / $_c$UL$_{us}$ (UL 61010-2-201)			
Development environment	CODESYS V3 (IEC61131-3)			
Communication interfaces	1x EtherCAT, LVDS			
Protocols	EtherCAT Slave			
Digital I/Os		8x digital In or Out (4x capture in) 8x digital In (configurable as up/ down counter or quadratur encoder)	8x digital In or Out (4x capture In) 8x digital In (2x up/ down counter and 2x quadratur encoder)	8x digital In 2x digital Out 2x Counter In (A, B, Ref)
		1ms / 0,5A max. 10 kHz counter frequency per counter In (yields a counting frequency of 40 kHz for quadrature encoders)		1ms 2,0A Encodertype: RS422, 24 VDC max. 200 KHz
Analog I/Os	4x universal analog Out	4x analog In 4x universal analog In-/Out	-	2x analog Out
	0(-10)...10V 0(4)...20mA	- 10..10V | -20..20mA	-	10...10V
	Resolution Outputs: 16 Bit	Resolution In: 22 Bit Resolution Out: 16 Bit	-	Resolution Out: 12 Bit
Supply voltage	+24 VDC (-20% / +25%) SELV max. AC voltage component 5% with reverse voltage protection			
Current consumption I/Os	Protection depending on I/O load max. 12 A			
Operating conditions transport / storage	Ambient temperature: operational: 0 °C bis 50 °C / transport -25 °C bis +70 °C Relative humidity: max. 95%, non-condensing			
EMC, Protection type				
Emitted interference	EN 61000-6-4, Industrial sector			
Immunity to interference	EN 61000-6-4, Industrial sector			
Protection class	III			
Insulation strength	EN 61131-2			
Protection type	IP20			
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)			
Schock resistance	15 G (ca. 150 m/s^2), 10 ms duration, half-sine (EN 60068-2-27) test: Ea			

BERGHOF - PIONEERING AUTOMATION TECHNOLOGY

B-NIMIS **MC - MODULARE CONTROL SYSTEM**
CUSTOMIZING

Products off the shelf are offered by many - At Berghof you get individuality.
Our products offer you the ability to customize them completely according to your needs.
All products are customizable in three categories according to the Berghof customizing concept.
(see catalog section Berghof Customizing)

1. Customized Adaptions

Customer requirement:
Nameplate, documentation, etc. with customer's brand, Berghof not recognizable as supplier

Your advantages:
- Use of high quality standard products with your branding
- Demonstration of own expertise
- Repair flow management

2. Customized Extensions

Customer requirement:
Number of I/O on a module deviating from standard portfolio

Your advantages:
- Limited installation space in machine, saving of additional I/O modules
- No alternative in-house developments required
- Cost optimal solution

3. Customized Developments

Customer requirement:
Use of a Raspberry PI with existing I/O extensions of the B-Nimis MC portfolio

Your advantages:
- Use of known platform
- A continuous control system
- Use of the full range of available I/O

B-NIMIS **MC - MODULARE CONTROL SYSTEM**
OVERVIEW

B-NIMIS **MC-CLASSIC/-PRO**

Specification	Ordner number
B-Nimis MC-Classic S01	S-01030101-0100
B-Nimis MC-Classic S02	S-01030101-0200
B-Nimis MC-Pro S01	S-01030102-0100
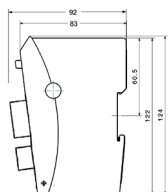
B-NIMIS **MC PI-PRO**

Specification	Ordner number
B-Nimis MC Pi-Pro S01	S-01030301-0100
B-Nimis MC-Pi Pro S02	S-01030302-0200
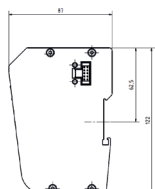
B-NIMIS **MC PI-PRIME**

Specification	Ordner number
B-Nimis MC Pi-Prime S01	S-01030302-0100
B-Nimis MC-Pi Prime S02	S-01030302-0200
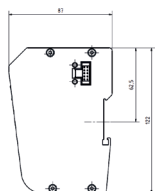
B-NIMIS **MC-I/O**

Specification	Ordner number
MC-Buskoppler 3A	S-01030203-0100
MC-BK Di 16 / DO16	S-01030203-0200
MC-Extender 2 Port	S-01030203-0300
MC-CAN	S-01030203-0500
MC-DI 16 1ms	S-01030201-0100
MC-DI 32 1ms	S-01030201-0200
MC-DO 16 0,5A	S-01030201-0300
MC-DI/DO 16/16	S-01030201-0400
MC-Relais No 24V	S-01030205-0100
MC-Relais No 230VAC	S-01030205-0200
MC-AI4-I 12 Bit CoE	S-01030202-0100
MC-AI8-I 12 Bit CoE	S-01030202-0200
MC-AI4/8-U 13 Bit CoE	S-01030202-0300
MC-AI 8/16-U 13 Bit CoE	S-01030202-0400
MC-AI4-Thermo 16 Bit CoE	S-01030204-0200
MC-AI8-Thermo 16 Bit CoE	S-01030204-0100
MC-AO4-U/I 16 Bit CoE	S-01030202-0500
MC-XR01	S-01030207-0100
MC-XR02	S-01030207-0200
MC-Counter/Posi 2 5V	S-01030206-0100
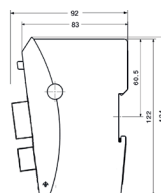
PIONEERING AUTOMATION TECHNOLOGY

RASPBERRY PI BOX-PC
B-NIMIS BC-PI PRO
B-NIMIS BC-PI PRIME

B-NIMIS **BC-PI**

BERGHOF AUTOMATION AND CONTROL SOLUTIONS

→ Industrial CM4 based Raspberry BoxPC
→ Comprehensive I/O extensions through seamless integration into the B-Nimis MC series
→ Raspian OS
→ Extraordinary combinability
→ Battery-backed, maintenance-free real-time clock
→ Future-proof control system

Industrial Box PC with Raspberry OS

B-NIMIS **BC-PI**

Industrial Box PC with Raspberry OS

Berghof goes Raspberry Pi. With this sophisticated hybrid of an industrial PC and a PLC, Berghof introduces the first truly industrial-grade, high-performance Raspberry Pi solution to the market.The versions available as a single slot module and as a double slot module with additional interfaces and optional heat sink not only impress with their compact design based on the B-Nimis MC series, but above all with the open system and thus the use of synergy with the Raspberry community. As a Berghof customer, you benefit not only from seamless integration into the entire Berghof portfolio, but also from the special know-how of our specialists and thus comprehensive support. Due to the high software compatibility and the flexibility of the MC series, the box PC can also be used for various IOT and industrial control tasks without any problems. Not only in terms of functionality, the B-Nimis BC-Pi proves to be extremely flexible, because customized solutions according to your requirements are also easy to realize.

Compatible with the entire
B-Nimis MC I/O portfolio

Wide range of
USB peripherals usable

Programming with
CODESYS according to
IEC61131 possible

EtherCAT via Open-
Source or CODESYS

Industrial
Temperature ranges

Optimal hardware for the
Raspberry community

Certificates for worldwide
use CE, UL, EAC, CCC, etc.

Other systems implemen-
table (Java, Python, JSON,
etc.)
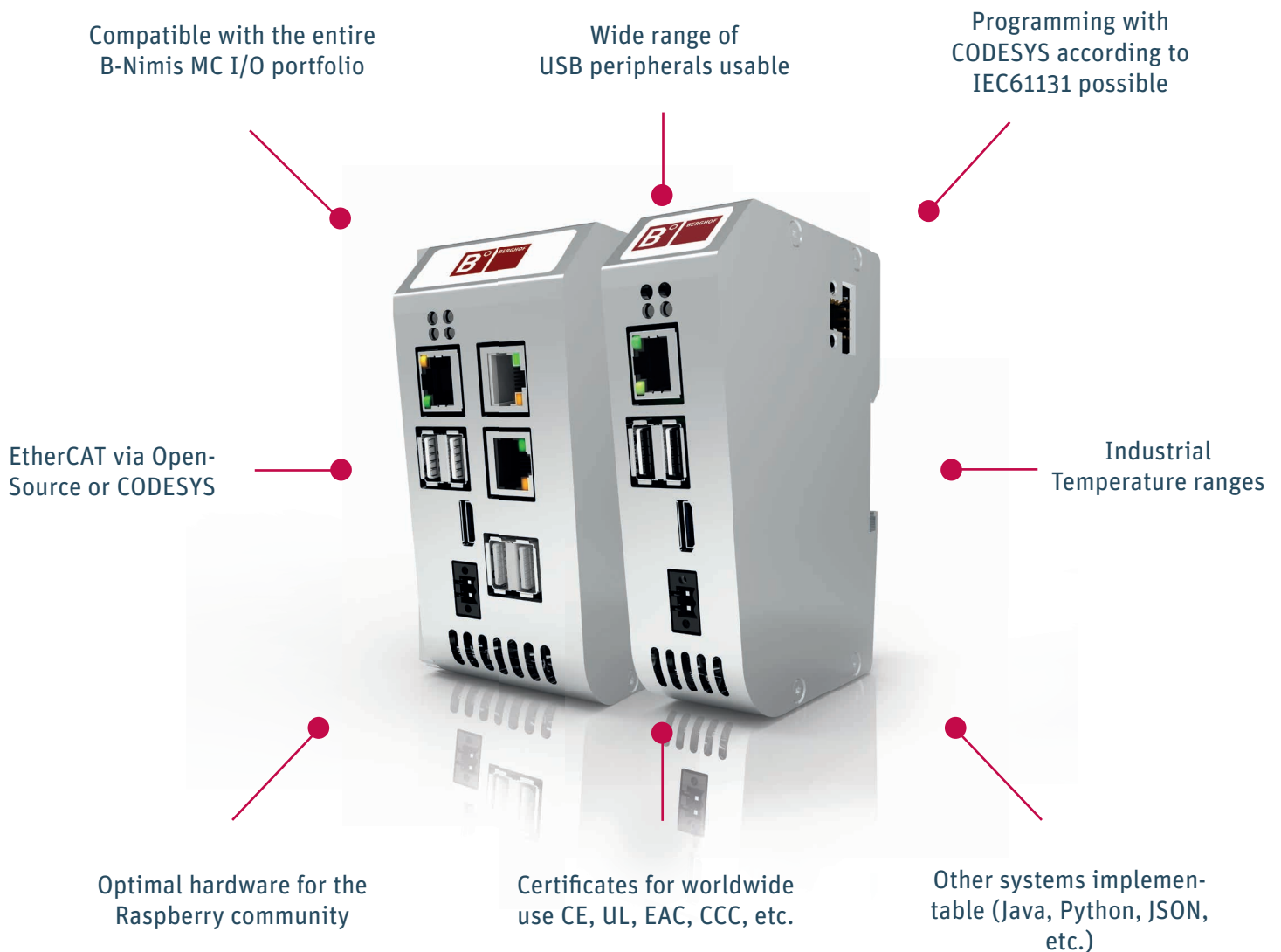
B-NIMIS **BC-PI PRO**

Adaptable
as required, for use as an industrial PC or
control system with Berghof CODESYS

State of the art - maximum performance
by using the Compute Module 4 and thus the
latest Raspberry technology
with optional 1 to 4 GB RAM

Wide range of applications
thanks to industrial temperature ranges

Cost-efficient
thanks to particularly low starting price and
low-priced entry module

Secured communication
by means of internal bus system, between the
modules with guaranteed vibration-proof
connection

Unsurpassed flexibility
due to modular expandability and arbitrary parti-
tioning within the plant control system

Best protection
due to a consistent EMC concept with
line shielding and internal grounding

Cleverly supported
by connecting the following peripherals:
- External monitors up to 4K60
- Berghof EasyConnect
- Standard EtherCAT Module
- Berghof B-Nimis MC-I/O via
  standardized interface
- Wide range of USB peripherals

Well thought-out software concept
with container packages for easy extension of the
software

B-NIMIS **BC-PI PRIME**

Powerful complement
of the B-Nimi BC-Pi Pro with continuation of its features

Extended temperature ranges
due to recess in the housing for an optional heat sink

Flexible in use
thanks to interfaces already integrated in the standard:
- 2x Ethernet
- 1x EtherCAT
- 1x Display inerface
- 2x USB 3.0
- 2x USB 2.0

Optimally evaluated, analyzed or exchanged
due to storage or backup of data or project planning on the SD card

Maximum performance
with sufficient space for interfaces and functions in the smallest possible space

Sufficiently dimensioned
in RAM, flash and retain and room for more

Highly flexible connection
due to the realization of countless communication paths using full bandwidths

State of the art - maximum performance
by using the Compute Module 4 and thus the latest Raspberry technology
with optional 1 to 4 GB RAM

Convenient data handling
thanks to more than sufficient retain memory

Environmentally friendly across the board
through energy-saving components and software functions and appropriate packaging

B-NIMIS **BC-PI**

B-Nimis BC-Pi Pro	Specification		
Description	BC-Pi Pro S01	BC-Pi Pro S02	BC-Pi Pro S03
Order number	S-01080101-0100	S-01080101-0200	S-01080101-0300
Dimensions WxHxD [mm]	38 x 122 x 87		
Mounting	Rail mounting NS 35/7,5 EN 50022		
Certification	CE (EN 61131-2)		
Development environment	Raspberry OS		
	Compatible with Raspberry community		
CPU	BCM 2711, 1,5 GHz Quadcore		
RAM / Flash	1GB RAM / 8GB Flash	2 GB RAM / 8 GB Flash	4 GB RAM / 32 GB Flash
Communication interfaces	1x Ethernet 10/100/1000 Base, RJ45		
	1x EtherCAT LVDS		
	-	WLAN / Bluetooth (optional)	
Protokolle	EtherCAT Master and others available via third party suppliers		
Visualization	via display interface		
Additional features	1x Host USB 3.0 / USB plug type A		
	1x Host USB 2.0 / USB plug type Typ A		
	1x digital display interface		
	1x uSD (SDXC)		
	1x 2 Pin JST for cooling fan (5V)		
	1x Real Time Clock, 72h Puffer		
	Extended heat sink (optional)		
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection		
Current consumption	Type 0.3 A, max. 1.5A at +24 VDC		
Operating conditions Transport / storage	Ambient temperature: : Operational: -10 °C bis 45 °C / Transport -20 °C bis +70 °C Relative humidity: max. 85%, non-condensing		
Emitted interference	EN 61000-6-4, Industrial area		
Immunity to interference	EN 61000-6-2, Industrial area		
Protection class	III		
Insulation strength	SELV (Uw < 30 V) according EN 61131-2		
Protection type	IP20		

B-NIMIS **BC-PI PRO**
INFORMATION **DIMENSIONS**

Dimensions B-NIMIS BC-Pi Pro

B-Nimis BC-Pi Prime	Specification		
Description	**BC-Pi Prime S01**	**BC-Pi Prime S02**	**BC-Pi Prime S03**
Order number	**S-01080102-0100**	**S-01080102-0200**	**S-01080102-0300**
Dimensions WxHxD [mm]	58 x 122 x 87		
Mounting	Rail mounting NS 35/7,5 EN 50022		
Certification	CE (EN 61131-2)		
Development environment	Raspberry OS		
	Compatible with Raspberry community		
CPU	BCM 2711, 1,5 GHz Quadcore		
RAM / Flash / Retain	1GB RAM / 8GB Flash / 200 KB Retain	2 GB RAM / 8 GB Flash / 200 KB Retain	4 GB RAM / 32 GB Flash / 200 KB Retain
Communication interfaces	1x Ethernet 10/100/1000 Base, RJ45		
	1x EtherCAT LVDS		
	-	WLAN / Bluetooth (optional)	
Protocols	EtherCAT Master and others available via third party suppliers		
Visualization	via display interface		
Additional features	2x Host USB 3.0 / USB plug type A		
	2x Host USB 2.0 / USB plug type A		
	1x digital display interface		
	1x 2 Pin JST for cooling fan (5V)		
	1x Real Time Clock, 72h Puffer		
	Extended heat sink (optional)		
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection		
Current consumption	Type 0.5A, max. 2A at +24 VDC		
Operating conditions Transport / storage	Ambient temperature: : Operational: -10 °C bis 40 °C / Transport -20 °C bis +70 °C Relative humidity: max. 85%, non-condensing		
Emitted interference	EN 61000-6-4, Industrial area		
Immunity to interference	EN 61000-6-2, Industrial area		
Protection class	III		
Insulation strength	SELV (Uw < 30 V) according EN 61131-2		
Protection type	IP20		

B-NIMIS **BC-PI PRIME**
INFORMATION **DIMENSION**
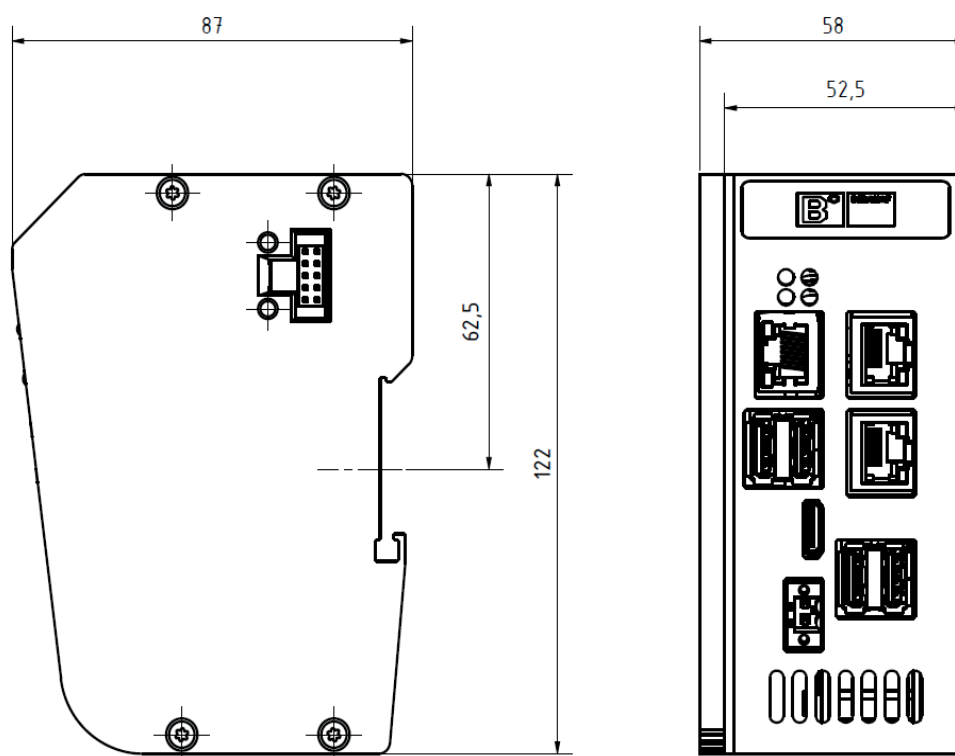
Dimensions B-NIMIS BC-Pi Prime

PIONEERING AUTOMATION TECHNOLOGY

DIALOG CONTROL SYSTEM
B-PRIMIS DC-PRO
B-PRIMIS DC-PRIME

B-PRIMIS **DC-DIALOG CONTROL SYSTEM**

→ Exceptionally high-quality design, only available from Berghof

→ Very robust, components with proven high quality

→ Unconditionally trimmed for performance, equipped with plenty of RAM, flash and retain memory

→ Highly luminous and brilliant displays with high input accuracy, can be used horizontally or vertically

→ HTML5 Web and Target Visualization

→ Touch screen in analog-resistive or projective-capacitive technology

→ Operation with gloves even in dirty and wet conditions

→ Uncomplicated licensing of third-party software components

→ EtherCAT Master + CANopen Master as well as digital and analogue I/O already integrated as standard

→ Battery-buffered, maintenance-free real-time clock

→ Up- and downwards compatible software management

CODESYS Dialog Controller
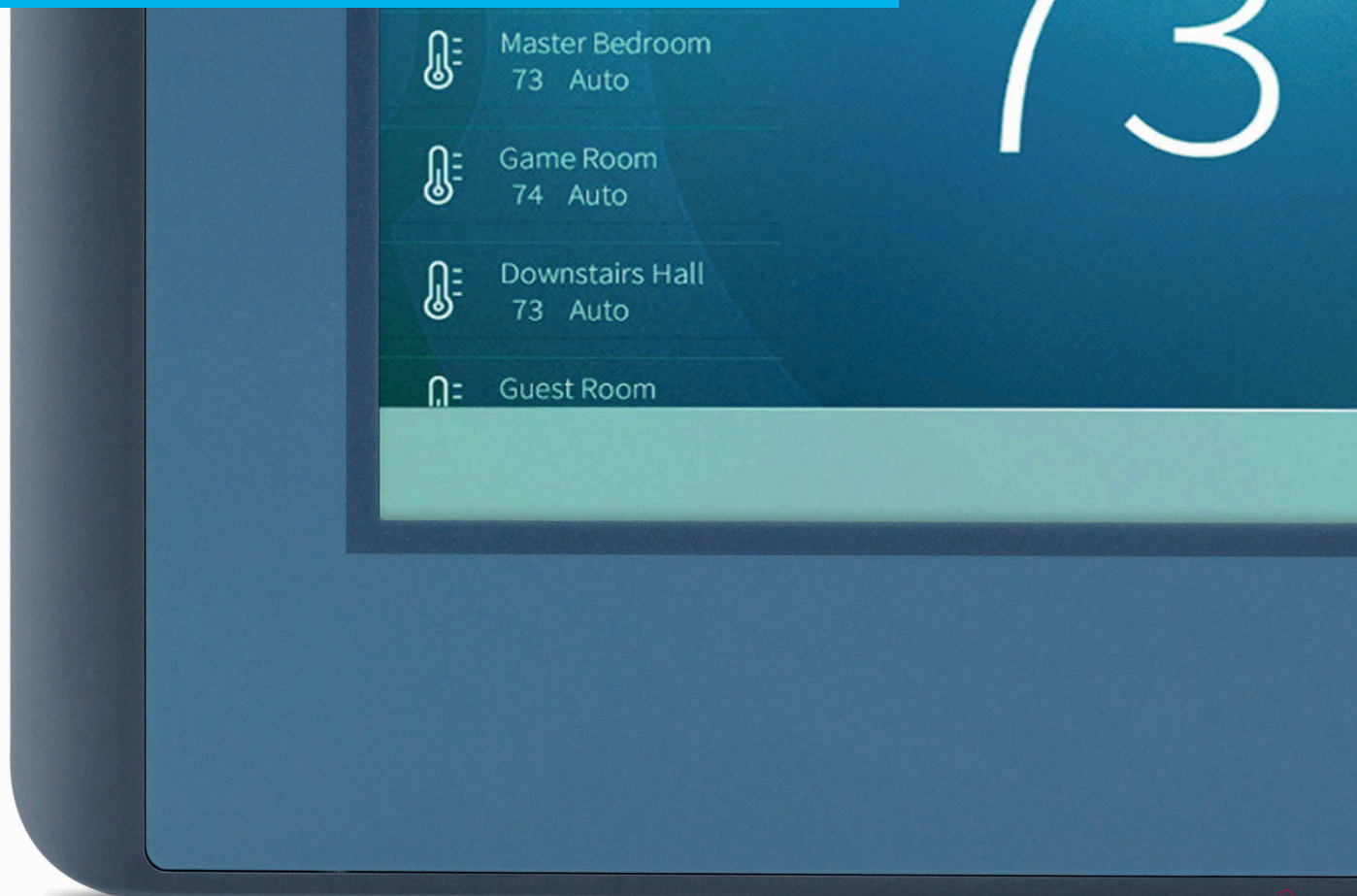
B-PRIMIS DC

Display control in high-end segment

With the CANtrol DC series, Berghof Automation & Control Solutions once introduced the combination of controllers and HMI terminals into the automation market. The design of the B-Primis DC series display controller was based not only on this experience, but also on the knowledge gained from the realization of numerous projects with consistent suggestions and helpful customer requests in order to implement the respective application extraordinarily well. It all depends on the small details – B-Primis DC contains many features in the standard that are unparalleled in the performance class, and it is constantly becoming more and more. The device series combines the products of the B-Primis ET / control panel and B-Fortis CC-Slim / compact control series and automatically benefits from all the extensions we work on every day. All functions and features, including the extensive basic equipment of the two excellent product series, are combined in the current HMI controller: extremely powerful and proven high-quality fail-safe components, extensive on-board peripherals, countless technological functions or clean fronts. With the Classic version, resistive touch panels are available, equipped with a high-quality frame. The Prime version consists of frameless capacitive displays.

Powerful compact CODESYS control platform, easy programming according to IEC61131

On request without logo, in your corporate design or completely customized

Protection up to IP65, matched components offer operation even with water and dirt
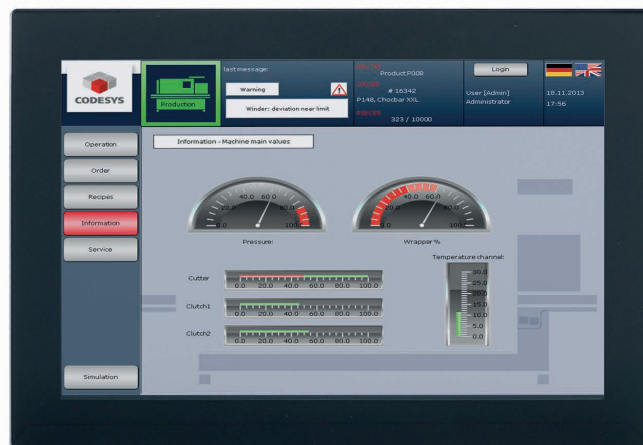
Maximum product density with integration of many interfaces and indicator LEDs

Maintenance-free units in fanless standard design, available with approvals for worldwide use

FullHD, widescreen, wide viewing angle 85° – selected details of the B-Primis DC-Prime

B-PRIMIS **DC-PRO**

Exceptionally clean
by means of continuous, nicheless clean front
without edges

Robust throughout
due to a multi-layer front foil construction with
high resistance to many chemicals and a parti-
cularly torsion-resistant design of the mechanics
in the metal housing

Easy and safe to assemble
due to integrated retaining clips and twist locks,
tool-less / snap-in installation

Impressive in consideration
by means of bright and brilliant displays (> 400
Cd/m2) as well as brightness centrally adjustable
from the control unit

Impressive basic equipment
which at this point only allows a rudimentary
excerpt:
➔ Overload, short-circuit, reverse polarity and
  overvoltage proof, wiring faults without
  danger
➔ Living area approval
➔ Application update via USB
➔ Application protection via tamper-proof
  HW identification
➔ Downgrading of the PLC cycle time
  optionally up to 500µs
➔ Diverse fonts
➔ Three-wire measurement for compensation
  of line resistances
➔ OpenVPN
➔ VNC + HTML5 web browser universally
  applicable
➔ Inputs configurable to counter and encoder
➔ Operating buttons for resetting / stopping /
  starting the PLC application
➔ Switchable terminating resistors integrated
  to interfaces
➔ External two-stage HW watchdog
➔ Analog inputs PT100/PT1000 capable
➔ Separate power supply of the
  digital outputs in groups
➔ Serial 9bit Multi-Drop Mode
➔ Operating hours counter
➔ Buzzer and optional sound chip for
  mp3 playback

Secure application
thanks to practical solutions for practical use:
➔ Remanent hardware memory independent
  of the battery of the real-time clock
➔ Integrated temperature sensor monitoring
  e.g. for the control cabinet
➔ Potential-separated interfaces, etc.

Environmentally friendly across the board
through energy-saving components and software
functions as well as appropriate packaging

99

B-PRIMIS **DC-PRIME**

Professional future
from combinatorics of performance and properties

Powerful supplement
of the B-Primis DC-PRO, of course with continuation of its features

Uniquely engineered
without frame, which means full flexibility in installation

Brilliant visualization
due to a high-class display with 85° viewing angle in all directions and particularly clear colour reproduction

Strong appearance
through chemically hardened glass in the extraordinarily stable 2mm version

Optimal image
with widescreen resolutions and up to Full-HD at 1920x1080 pixels

Outstanding operation
also with gloves on a surface exposed to water and dirt

Versatile prepared
due to Multi-Touch and enabled gesture control

Variable in use
with panel mounting as well as prepared for narrow cut operating housings also with support arm and lift system

100

B-PRIMIS **DC-PRIME**

Screen content:

CODESYS

Production

last message:
Warning
Winder: deviation near limit

Product P008
16342
P148, Chocbar XXL
323 / 10000

- Operation
- Order
- Recipes
- Information
- Service
- Simulation

Information - Machine main values

Pressure:
Wrapper %
Temperature channel

Cutter   0.0 20.0 40.0 60.0 80.0 100.0
Clutch1   0.0 20.0 40.0 60.0 80.0 100.0
Clutch2   0.0 20.0 40.0 60.0 80.0 100.0

BERGHOF - PIONEERING AUTOMATION TECHNOLOGY

B-Primis DC-PRO 4,3"	Specification				
Description	**DC-Pro 4,3" S01**	**DC-Pro 4,3" S02**	**DC-Pro 4,3" S03**	**DC-Pro 4,3" S04**	**DC-Pro 4,3" S05**
Order number	**S-01010103-0101**	**S-01010103-0201**	**S-01010103-0301**	**S-01010103-0401**	**S-01010103-0501**
Order number Dualcore	-	-	-	**S-01010103-2401**	**S-01010103-2501**
Dimensions WxHxD [mm]	161 x 103 x 42				
Display diagonals/resolution	4,3" Display / 480 x 272 (WQVGA)				
Touch operation	Resistive				
Colours	TFT: 16,7 M (24 Bit/Pixels)				
Weight	approx. 450 g				
Mounting	Integrated securing clips				
Certification	CE (EN 61131-2) / CB Scheme (IEC 61010-2-201) / $_c$UL$_{us}$ (UL 61010-2-201)				
CPU	800 MHz Arm® CPU with Cortex™-A9 Single Core / Dualcore: 2x 800 MHz Arm® CPU with Cortex™-A9				
RAM / Flash / Retain	256 MB RAM / 256 MB Flash / 100 kb FRAM				
	-	-	-	512 MB RAM 256 MB Flash 100 kb FRAM	512 MB RAM 256 MB Flash 100 kb FRAM
Communication interfaces	1x Ethernet, 10/100 Base, RJ45				
	1x EtherCAT, RJ45				
	-	-	1x CAN Bus, RJ45	1x CAN Bus, RJ45	2x CAN Bus, RJ45
	-	-	-	1x RS232/485 Combo	1x RS232/485 Combo
Protocols	Standard: EtherCAT Master, CANopen Master Optional: Modbus RTU M/S, Modbus TCP M/S, SNMP, OPC UA, J1939, Ethernet/IP, PROFINET, BACnet				
Visualization	Target Visu (VNC Server), Optional: Web Visu (Web Server, HTML5)				
Additional features	1x host USB 2.0 / USB plug type A	1x host USB 2.0 / USB plug type A	1x host USB 2.0 / USB plug type A	1x host USB 2.0 / USB plug type A	1x host USB 2.0 / USB plug type A
	1x RTC, battery buffered	1x RTC, battery buffered	1x RTC, battery buffered	1x RTC, battery buffered	1x RTC, battery buffered
	-	-	1x Micro SD-Card slot up to 32 GB	1x Micro SD-Card slot up to 32 GB	1x Micro SD-Card slot up to 32 GB
Digital I/O´s	4x digital inputs, 4x digital outputs (0,5A)				
Analogue I/O´s	-	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit			
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection				
Current consumption modules	Typ. 0,3 A, max. 1,2 A at +24V				
Current consumption dig. outputs	depending on output load, in the long run max. 2A				
Operating conditions Transport / storage	Ambient temperature: operational: 0 ºC to 55 ºC / transport -20 ºC to +70 ºC Relative humidity: max. 85%, non-condensing				

B-PRIMIS **DC-PRO 4,3"**
INFORMATION **TECHNICAL DATA / DIMENSIONS**

B-Primis DC-Pro 4,3"	Specification				
Description	DC-Pro 4,3" S01	DC-Pro 4,3" S02	DC-Pro 4,3" S03	DC-Pro 4,3" S04	DC-Pro 4,3" S05
EMC, Protection type					
Emitted interference	EN 61131-2; EN 61000-6-3, living area				
Immunity to interference	EN 61131-2				
Protection class	III				
Insulation strength	EN 61131-2				
Protection type	IP20, Front IP54 (IP65 only with twist locks catches tightened)				
Vibration	Sinusodial (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)				
Schock resistance	15 G (ca. 150 m/s^2), 11 ms duration, half-sine (EN 60068-2-27) test: Ea				

Dimensions B-Primis DC-Pro 4,3"

B-Primis DC-PRO 7"	Specification				
Description	**DC-PRO 7" S01**	**DC-PRO 7" S02**	**DC-PRO 7" S03**	**DC-PRO 7" S04**	**DC-PRO 7" S05**
Order number	**S-01010103-0104**	**S-01010103-0204**	**S-01010103-0304**	**S-01010103-0404**	**S-01010103-0504**
Order number Dualcore	-	-	-	**S-01010103-2404**	**S-01010103-2504**
Dimensions WxHxD [mm]	224 x 152 x 45				
Display diagonals/re-solution	7" Display / 800 x 480 (WVGA)				
Touch operation	Resistive				
Colours	TFT: 16,7 M (24 Bit/Pixels)				
Weight	approx. 600 g				
Mounting	Integrated securing clips				
Certification	CE (EN 61131-2) / CB Scheme (IEC 61010-2-201) / $_c$UL$_{us}$ (UL 61010-2-201)				
CPU	800 MHz Arm® CPU with Cortex™-A9 Single Core / Dualcore: 800 MHz Arm® CPU with Cortex™-A9				
RAM / Flash / Retain	256 MB RAM / 256 MB Flash / 100 kb FRAM				
Dualcore	-	-	-	512 MB RAM 256 MB Flash 100 kb FRAM	512 MB RAM 256 MB Flash 100 kb FRAM
Communication interfaces	1x Ethernet, 10/100 Base, RJ45				
	1x EtherCAT, RJ45	1x EtherCAT, RJ45	1x EtherCAT, RJ45	1x EtherCAT, RJ45	1x EtherCAT, RJ45
	-	-	1x CAN Bus, RJ45	1x CAN Bus, RJ45	2x CAN Bus, RJ45
	-	-	-	1x RS232/485 Combo	1x RS232/485 Combo
Protocols	Standard: EtherCAT Master, CANopen Master Optional: Modbus RTU M/S, Modbus TCP M/S, SNMP, OPC UA, J1939, Ethernet/IP, PROFINET, BACNet				
Visualization	Target Visu (VNC Server), Optional: Web Visu (Web Server, HTML5)				
Additional features	1x host USB 2.0 / USB plug type A				
	1x RTC, battery buffered				
	-	-	1x Micro SD-Card slot up to 32 GB	1x Micro SD-Card slot up to 32 GB	1x Micro SD-Card slot up to 32 GB
Digital I/O´s	4x digital input, 4x digital output (0,5A)				
Analogue I/O´s	-	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bi	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bi	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bi
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection				
Current consumption modules	Typ. 0,3 A, max. 1,2 A at +24V				
Current consumption dig. outputs	depending on output load, in the long run max. 2A				
Operating conditions Transport / storage	Ambient temperature: operational: 0 ºC to 55 ºC / transport -20 ºC to +70 ºC Relative humidity: max. 85%, non-condensing				

B-PRIMIS **DC-PRO 7"**
INFORMATION **TECHNISCHE DATA / DIMENSIONS**

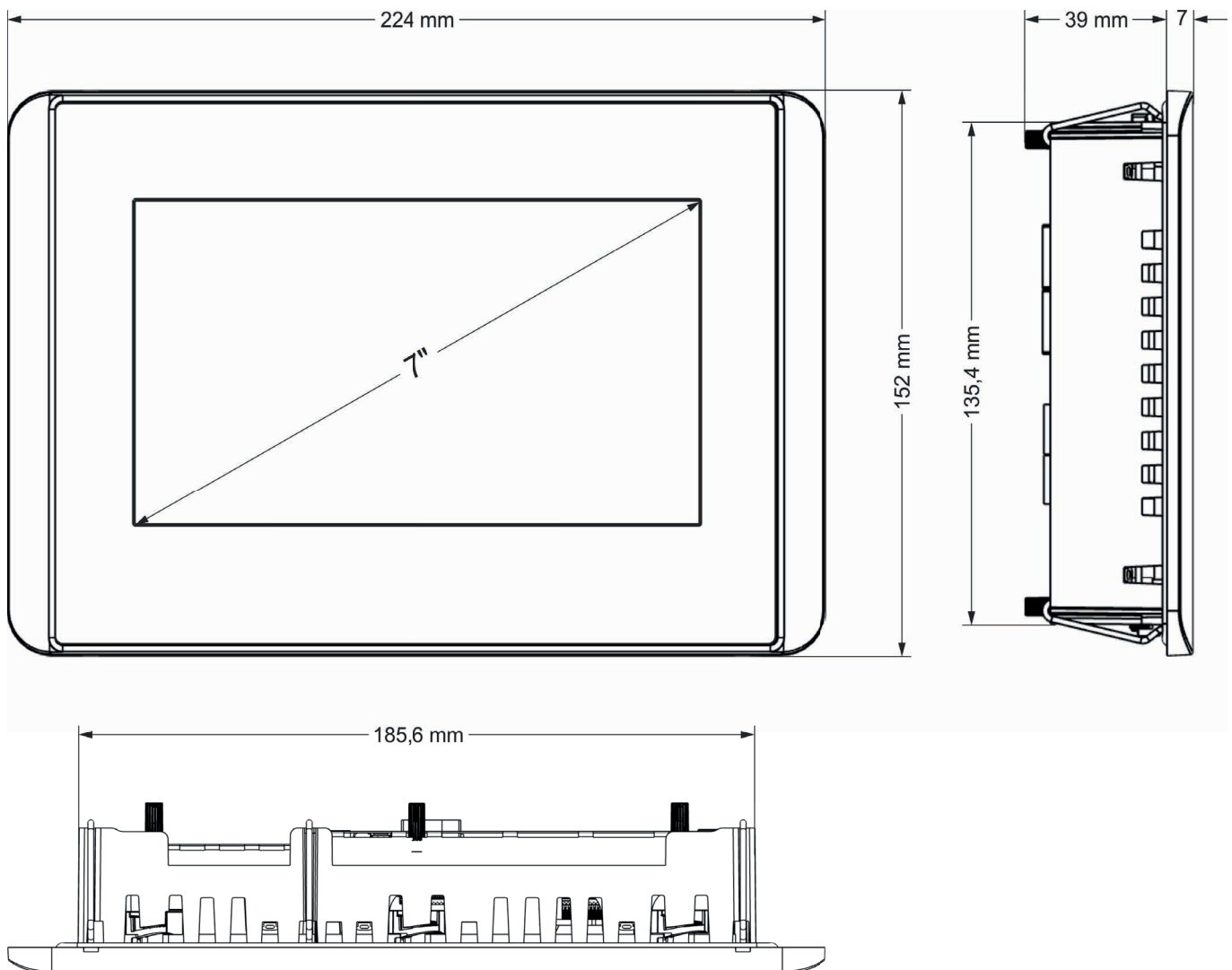| B-Primis DC-PRO 7"	Specification				
Description	DC-PRO 7" S01	DC-PRO 7" S02	DC-PRO 7" S03	DC-PRO 7" S04	DC-PRO 7" S05
EMC, protection type					
Emitted interference	EN 55011 class B group 1				
Immunity to interference	EN 61131-2				
Protection class	III				
Insulation strength	EN 61131-2				
Protection type	IP20, Front IP54 (IP65 only with twist locks catches tightened)				
Vibration	Sinusoidal (EN 60068-2-6) test: Fc;10 ... 150 Hz, 1 G (operation mode)				
Schock resistance	15 G (approx. 150 m/s²), 10 ms duration, half-sine (EN 60068-2-27) test: Ea				

Dimensions B-Primis DC-Pro 7"

B-Primis DC-Pro 10,1"	Specification				
Description	DC-Pro 10,1" S01	DC-Pro 10,1" S02	DC-Pro 10,1" S03	DC-Pro 10,1" S04	DC-Pro 10,1" S05
Order number	S-01010103-0105	S-01010103-0205	S-01010103-0305	S-01010103-0405	S-01010103-0505
Order number Dualcore	-	-	-	S-01010103-2405	S-01010103-2505
Dimensions WxHxD [mm]	278,9 x 195,5 x 56				
Display diagonals/resolution	10,1" Display / 1280 x 800 (WXGA)				
Touch operation	Resistive				
Colours	TFT: 16,7 M (24 Bit/Pixels)				
Weight	approx. 2,5 Kg				
Mounting	Bolt mounting, additional option tension clamps for IP65 front side				
Certification	CE (EN 61131-2) / CB Scheme (IEC 61010-2-201) / $_c$UL$_{us}$ (UL 61010-2-201)				
CPU	800 MHz Arm® CPU with Cortex™-A9 Single Core / Dualcore: 800 MHz Arm® CPU mit Cortex™-A9				
RAM / Flash / Retain	512 MB RAM 512 MB Flash 100 kb FRAM	512 MB RAM 512 MB Flash 100 kb FRAM	512 MB RAM 1 GB Flash 100 kb FRAM	512 MB RAM 2 GB Flash 100 kb FRAM	512 MB RAM 2 GB Flash 100 kb FRAM
Dualcore	-	-	-	1 GB RAM 2 GB Flash 100 kb FRAM	1 GB RAM 2 GB Flash 100 kb FRAM
Communication interfaces	1x Ethernet, 10/100 Base, RJ45				
	1x EtherCAT, RJ45				
	-	-	1x CAN Bus, RJ45	1x CAN Bus, RJ45	2x CAN Bus, RJ45
	-	-	-	1x RS232/485 combo	1x RS232/485 combo
Protocols	Standard: EtherCAT Master, CANopen Master Optional: Modbus RTU M/S, Modbus TCP M/S, SNMP, OPC UA, J1939, Ethernet/IP, PROFINET, BACne				
Visualization	Target Visu (VNC Server), Optional: Web Visu (Web Server, HTML5)				
Additional features	2x host USB 2.0 / USB plug type A				
	1x RTC, battery buffered				
	-	-	1x Micro SD-Card slot up to 32 GB	1x Micro SD-Card slot up to 32 GB	1x Micro SD-Card slot up to 32 GB
Digital I/O´s	4x digital input, 4x digital output (0,5A)				
Analogue I/O´s	-	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection				
Current consumption modules	Typ. 0,8 A, max. 1,2 A at +24V				
Current consumption dig. outputs	depending on output load, in the long run max. 2A				
Operating conditions Transport / storage	Ambient temperature: operational: 0 °C to 55 °C / transport -20 °C to +70 °C Relative humidity: max. 85%, non-condensing				

B-PRIMIS **DC-PRO 10,1"**
INFORMATION **TECHNICAL DATA / DIMENSIONS**

B-Primis DC-Pro 10,1"	Specification				
Description	**DC-Pro 10,1" S01**	**DC-Pro 10,1" S02**	**DC-Pro 10,1" S03**	**DC-Pro 10,1" S04**	**DC-Pro 10,1" S05**
EMC, Protection type					
Emitted interference	EN 61131-2				
Immunity to interference	EN 61131-2				
Protection class	III				
Insulation strength	EN 61131-2				
Protection type	IP20, Front IP55/IP65				
Vibration	Sinusoidal (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)				
Schock resistence	15 G (ca. 150 m/s^2), 11 ms duration, half-sine (EN 60068-2-27) test: Ea				
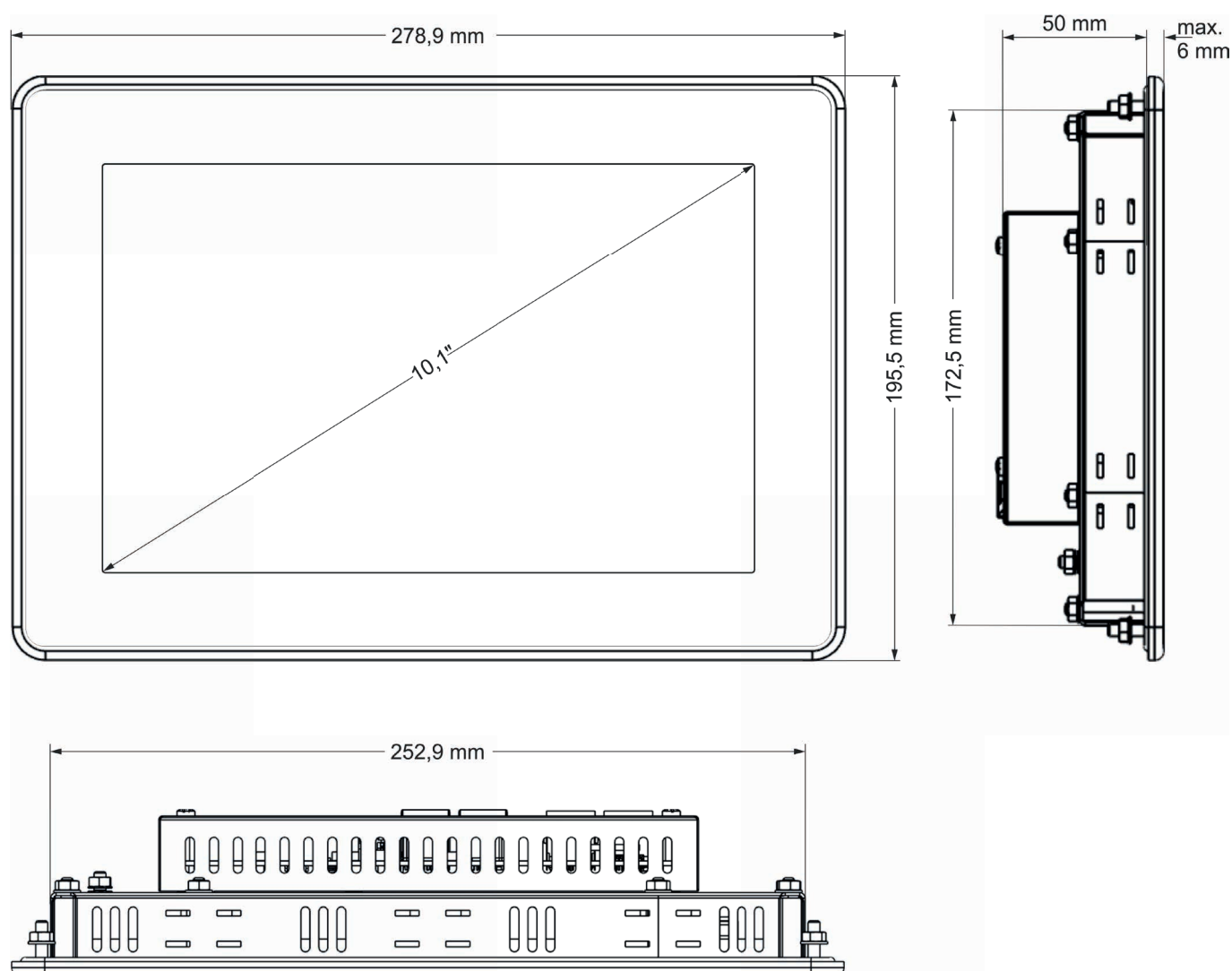
Dimensions B-Primis DC-Pro 10,1"

B-Primis DC-PRO 15,6"	Specification				
Description	**DC-PRO 15,6" S01**	**DC-PRO 15,6" S02**	**DC-PRO 15,6" S03**	**DC-PRO 15,6" S04**	**DC-PRO 15,6" S05**
Order number	**S-01010103-0108**	**S-01010103-0208**	**S-01010103-0308**	**S-01010103-0408**	**S-01010103-0508**
Order number Dualcore	-	-	-	**S-01010103-2408**	**S-01010103-2508**
Dimensions WxHxD [mm]	425 x 280 x 55				
Display diagonals/resolution	15,6" Display / 1366 x 768 (WXGA)				
Touch operation	Resistive				
Colours	TFT: 16,7 M (24 Bit/Pixels)				
Weight	approx. 3 Kg				
Mounting	Integrated secure clips				
Certification	CE (EN 61131-2) / CB Scheme (IEC 61010-2-201) / $_c$UL$_{us}$ (UL 61010-2-201)				
CPU	800 MHz Arm® CPU with Cortex™-A9 Single Core / Dualcore: 2x 800 MHz Arm® CPU mit Cortex™-A9				
RAM / Flash / Retain	512 MB RAM 512 MB Flash 100 kb FRAM	512 MB RAM 512 MB Flash 100 kb FRAM	512 MB RAM 1 GB Flash 100 kb FRAM	512 MB RAM 2 GB Flash 100 kb FRAM	512 MB RAM 2 GB Flash 100 kb FRAM
Dualcore	-	-	-	1 GB RAM 2 GB Flash 100 kb FRAM	1 GB RAM 2 GB Flash 100 kb FRAM
Communication interfaces	1x Ethernet, 10/100 Base, RJ45				
	1x EtherCAT, RJ45				
	-	-	1x CAN Bus, RJ45	1x CAN Bus, RJ45	2x CAN Bus, RJ45
	-	-	-	1x RS232/485 combo	1x RS232/485 combo
Protocols	Standard: EtherCAT Master, CANopen Master Optional: Modbus RTU M/S, Modbus TCP M/S, SNMP, OPC UA, J1939, Ethernet/IP, PROFINET, BACne				
Visualization	Target Visu (VNC Server), Optional: Web Visu (Web Server, HTML5)				
Additional features	2x host USB 2.0 / USB plug type A				
	1x RTC, battery buffered				
	-	-	1x Micro SD-Card slot up to 32 GB	1x Micro SD-Card slot up to 32 GB	1x Micro SD-Card slot up to 32 GB
Digital I/O´s	4x digital input, 4x digital output (0,5A)				
Analogue I/O´s	-	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection				
Current consumption modules	Typ. 0,8 A, max. 1,2 A at +24V				
Current consumption dig. outputs	depending on output load, in the long run max. 2A				
Operating conditions Transport / storage	Ambient temperature: operational: 0 ºC to 55 ºC / transport -20 ºC to +70 ºC Relative humidity: max. 85%, non-condensing				

B-PRIMIS **DC-PRO 15,6"**
INFORMATION **TECHNICAL DATA / DIMENSIONS**

B-Primis DC-Pro 15,6"	Specification				
Description	DC-Pro 15,6" S01	DC-Pro 15,6" S02	DC-Pro 15,6" S03	DC-Pro 15,6" S04	DC-Pro 15,6" S05
EMC, Protection type					
Emitted interference	EN 61131-2				
Immunity to interference	EN 61131-2				
Protection class	III				
Insulation strength	EN 61131-2				
Protection type	IP20, Front IP65				
Vibration	Sinusoidal (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)				
Schock resistance	15 G (ca. 150 m/s^2), 11 ms duration, half-sine (EN 60068-2-27) test: Ea				
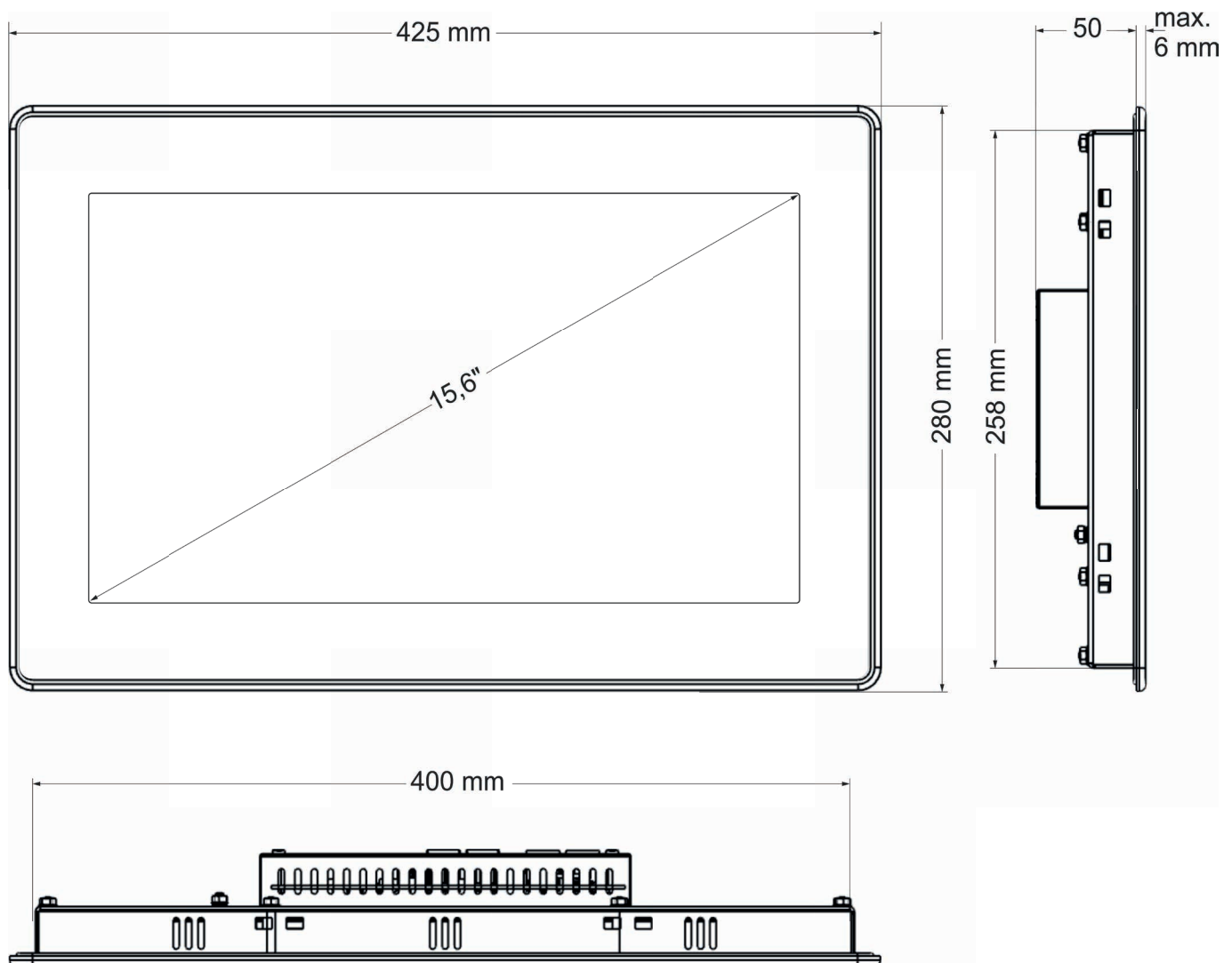
Dimensions B-Primis DC-Classic 15,6"

B-Primis DC-Prime 7"	Specification				
Description	DC-Prime 7" S01	DC-Prime 7" S02	DC-Prime 7" S03	DC-Prime 7" S04	DC-Prime 7" S05
Order number	S-01010104-0104	S-01010104-0204	S-01010104-0304	S-01010104-0404	S-01010104-0504
Order number Dualcore	-	-	-	S-01010104-2404	S-01010104-2504
Dimensions WxHxD [mm]	197 x 136 x 56				
Display diagonals/re-solution	7" Display / 800 x 480 (WVGA)				
Touch operation	Capacitive, multitouch				
Colours	TFT: 16,7 M (24 Bit/Pixels)				
Weight	approx. 2,5 Kg				
Mounting	Integrated secure clips				
Certification	CE (EN 61131-2) / CB Scheme (IEC 61010-2-201) / $_c$UL$_{us}$ (UL 61010-2-201)				
CPU	800 MHz Arm® CPU with Cortex™-A9 Single Core / Dualcore: 800 MHz Arm® CPU mit Cortex™-A9				
RAM / Flash / Retain	512 MB RAM 512 MB Flash 100 kb FRAM	512 MB RAM 512 MB Flash 100 kb FRAM	512 MB RAM / 1 GB Flash / 100 kb FRAM	512 MB RAM / 2 GB Flash / 100 kb FRAM	512 MB RAM / 2 GB Flash / 100 kb FRAM
Dualcore	-	-	-	1 GB RAM 2 GB Flash 100 kb FRAM	1 GB RAM 2 GB Flash 100 kb FRAM
Communication interfaces	1x Ethernet, 10/100 Base, RJ4				
	1x EtherCAT, RJ45				
	-	-	1x CAN Bus, RJ45	1x CAN Bus, RJ45	2x CAN Bus, RJ45
	-	-	-	1x RS232/485 combo	1x RS232/485 combo
Protocols	Standard: EtherCAT Master, CANopen Master Optional: Modbus RTU M/S, Modbus TCP M/S, SNMP, OPC UA, J1939, Ethernet/IP, PROFINET, BACNet				
Visualization	Target Visu (VNC Server), Optional: Web Visu (Web Server, HTML5)				
Additional features	2x host USB 2.0 / USB plug type A				
	1x RTC, battery buffered				
	-	-	1x Micro SD-Card slot up to 32 GB	1x Micro SD-Card slot up to 32 GB	1x Micro SD-Card slot up to 32 GB
Digital I/O´s	4x digital inputs, 4x digital outputs (0,5A)				
Analogue I/O´s	-	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection				
Current consumption modules	Typ. 0,8 A, max. 1,2 A at +24V				
Current consumption dig. outputs	depending on output load, in the long run max. 2A				
Operating conditions Transport / storage	Ambient temperature: operational: 0 °C to 55 °C / transport -20 °C to +70 °C Relative humidity: max. 85%, non-condensing				

B-PRIMIS **DC-PRIME 7"**
INFORMATION **TECHNICAL DATA / DIMENSIONS**

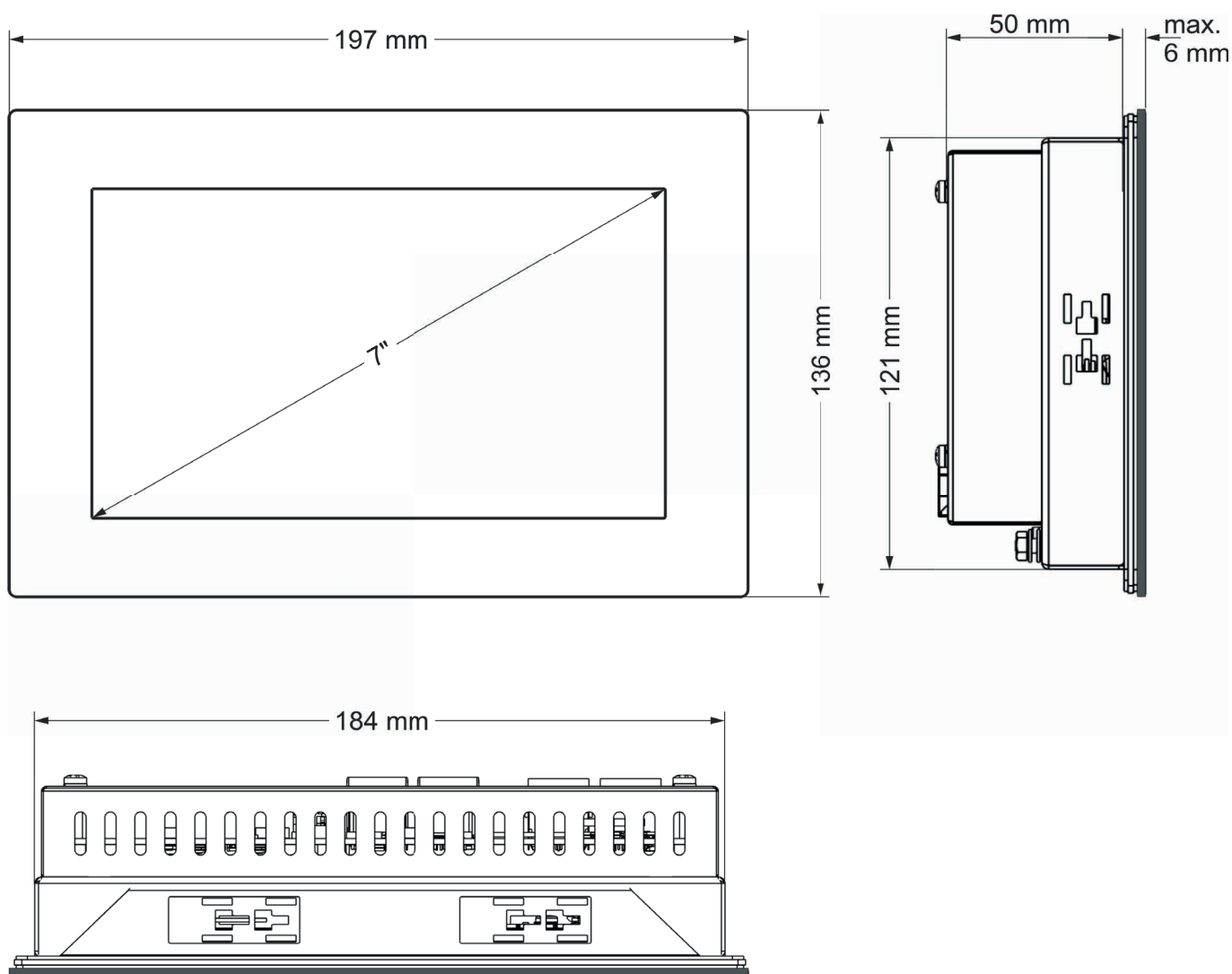| B-Primis DC-Prime 7"	Specification				
Description	DC-Prime 7" S01	DC-Prime 7" S02	DC-Prime 7" S03	DC-Prime 7" S04	DC-Prime 7" S05
EMC, Protection type					
Emitted interference	EN 61131-2				
Immunity to interference	EN 61131-2				
Protection class	III				
Insulation strength	EN 61131-2; 500 V DC Prüfspannung				
Protection type	IP20, Front IP55				
Vibration	Sinusoidal (EN 60068-2-6) test: Fc; 10 ... 150 Hz, 1 G (operation mode)				
Schock resistance	15 G (ca. 150 m/s^2), 11 ms duration, half-sine (EN 60068-2-27) test: Ea				

Dimensions B-Primis DC-Prime 7"

B-Primis DC-Prime 10	Specification				
Description	**DC-Prime 10 S01**	**DC-Prime 10 S02**	**DC-Prime10 S03**	**DC-Prime 10 S04**	**DC-Prime 10 S05**
Order number	**S-01010104-0105**	**S-01010104-0205**	**S-01010104-0305**	**S-01010104-0405**	**S-01010104-0505**
Order number Dualcore	-	-	-	**S-01010104-2405**	**S-01010104-2505**
Dimensions WxHxD [mm]	259 x 177 x 55				
Display diagonals/re-solution	10,1" Display / 1280 x 800 (WXGA)				
Touch operation	Capacitive				
Colours	TFT: 16,7 M (24 Bit/Pixels)				
Weight	approx. 2,5 Kg				
Mounting	Integrated secure clips				
Certification	CE (EN 61131-2) / CB Scheme (IEC 61010-2-201) / $_c$UL$_{us}$ (UL 61010-2-201)				
CPU	800 MHz Arm® CPU with Cortex™-A9 Single Core / Dualcore: 2x 800 MHz Arm® CPU mit Cortex™-A9				
RAM / Flash / Retain	512 MB RAM 512 MB Flash 100 kb FRAM	512 MB RAM 512 MB Flash 100 kb FRAM	512 MB RAM 1 GB Flash 100 kb FRAM	512 MB RAM 2 GB Flash 100 kb FRAM	512 MB RAM 2 GB Flash 100 kb FRAM
Dualcore	-	-	-	1 GB RAM 2 GB Flash 100 kb FRAM	1 GB RAM 2 GB Flash 100 kb FRAM
Communication interfaces	1x Ethernet, 10/100 Base, RJ45				
	1x EtherCAT, RJ45				
	-	-	1x CAN Bus, RJ45	1x CAN Bus, RJ45	2x CAN Bus, RJ45
	-	-	-	1x RS232/485 combo	1x RS232/485 combo
Protocols	Standard: EtherCAT Master, CANopen Master Optional: Modbus RTU M/S, Modbus TCP M/S, SNMP, OPC UA, J1939, Ethernet/IP, PROFINET, BACNet				
Visualization	Target Visu (VNC Server),Optional: Web Visu (Web Server, HTML5)				
Additional features	2x host USB 2.0 / USB plug type A				
	1x RTC, battery buffered				
	-	-	1x Micro SD-Card slot up to 32 GB	1x Micro SD-Card slot up to 32 GB	1x Micro SD-Card slot up to 32 GB
Digital I/O´s	4x digital inputs, 4x digital outputs (0,5A)				
Analogue I/O´s	-	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection				
Current consumption modules	Typ. 0,8 A, max. 1,2 A at +24V				
Current consumption dig. outputs	depending on output load, in the long run max. 2A				
Operating conditions Transport / storage	Ambient temperature: operational: 0 ºC to 55 ºC / transport -20 ºC to +70 ºC Relative humidity: max. 85%, non-condensing				

B-PRIMIS **DC-PRIME 10**
INFORMATION **TECHNICAL DATA / DIMENSIONS**

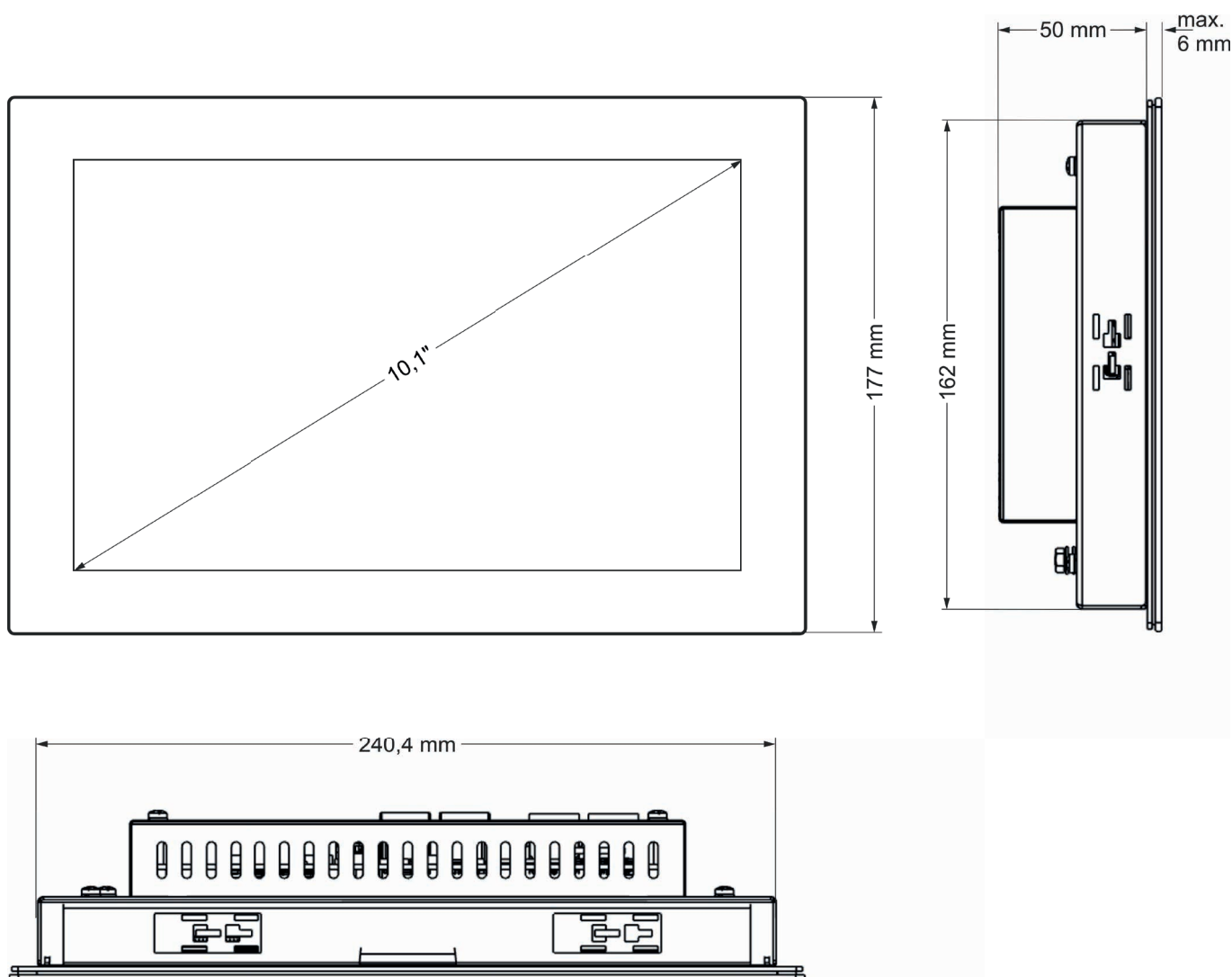| B-Primis DC-Prime 10	Specification				
Description	DC-Prime 10 S01	DC-Prime 10 S02	DC-Prime 10 S03	DC-Prime 10 S04	DC-Prime 10 S05
EMC, Protection type					
Emitted interference	EN 61131-2				
Immunity to interference	EN 61131-2				
Protection class	III				
Insulation strentgh	EN 61131-2; 500 V DC Prüfspannung				
Protection type	IP20, front IP55				
Vibration	Sinusoidal (EN 60068-2-6) test: Fc;10 ... 150 Hz, 1 G (operation mode)				
Schock resistance	15 G (approx. 150 m/s²), 10 ms duration, half-sine (EN 60068-2-27) test: Ea				

Dimensions B-Primis DC-Prime 10

B-PRIMIS **DC-PRIME 15**
INFORMATION **TECHNICAL DATA**

B-Primis DC-Prime 15	Specification				
Description	**DC-Prime 15 S01**	**DC-Prime 15 S02**	**DC-Prime 15 S03**	**DC-Prime 15 S04**	**DC-Prime 15 S05**
Order number	**S-01010104-0108**	**S-01010104-0208**	**S-01010104-0308**	**S-01010104-0408**	**S-01010104-0508**
Order number Dualcore	-	-	-	**S-01010104-2408**	**S-01010104-2508**
Dimensions WxHxD [mm]	391 x 241 x 55				
Display diagonals/resolution	15,6" Display / 1920 x 1080 Full HD				
Touch operation	Capacitive				
Colours	TFT: 16,7 M (24 Bit/Pixels)				
Weight	approx. 3 Kg				
Mounting	Integrated secure clips				
Certification	CE (EN 61131-2) / CB Scheme (IEC 61010-2-201) / $_c$UL$_{us}$ (UL 61010-2-201)				
CPU	800 MHz Arm® CPU with Cortex™-A9 Single Core / Dualcore: 2x 800 MHz Arm® CPU mit Cortex™-A9				
RAM / Flash / Retain	512 MB RAM 512 MB Flash 100 kb FRAM	512 MB RAM 512 MB Flash 100 kb FRAM	512 MB RAM 1 GB Flash 100 kb FRAM	512 MB RAM 2 GB Flash 100 kb FRAM	512 MB RAM 2 GB Flash 100 kb FRAM
Dualcore	-	-	-	1 GB RAM 2 GB Flash 100 kb FRAM	1 GB RAM 2 GB Flash 100 kb FRAM
Communication interfaces	1x Ethernet, 10/100 Base, RJ45				
	1x EtherCAT, RJ45				
	-	-	1x CAN Bus, RJ45	1x CAN Bus, RJ45	2x CAN Bus, RJ45
	-	-	-	1x RS232/485 combo	1x RS232/485 combo
Protocols	Standard: EtherCAT Master, CANopen Master Optional: Modbus RTU M/S, Modbus TCP M/S, SNMP, OPC UA, J1939, Ethernet/IP, PROFINET, BACNet				
Visualization	Target Visu (VNC Server), Optional: Web Visu (Web Server, HTML5)				
Additional features	2x host USB 2.0 / USB plug type A				
	1x RTC, battery buffered				
	-	-	1x Micro SD-Card Slot bis 32 GB	1x Micro SD-Card Slot bis 32 GB	1x Micro SD-Card Slot bis 32 GB
Digital I/O´s	4x digital Inputs, 4x digitaler outputs (0,5A)				
Analogue I/O´s	-	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit	4x universal analog input (-10V..+10V, 2x PT100/PT1000) Resolution: 24 Bit
Supply voltage	+24 VDC (-15% / +20%) SELV max. AC voltage component 5% with reverse voltage protection				
Current consumption modules	Typ. 0,8 A, max. 1,2 A at +24V				
Current consumption dig. outputs	depending on output load, in the long run max. 2A				
Operating conditions Transport / storage	Ambient temperature: operational: 0 °C to 55 °C / transport -20 °C to +70 °C Relative humidity: max. 85%, non-condensing				

B-PRIMIS **DC-PRIME 15**
INFORMATION **TECHNICAL DATA / DIMENSIONS**

| B-Primis DC-Prime 15	Specification				
Description	DC-Prime 15 S01	DC-Prime 15 S02	DC-Prime 15 S03	DC-Prime 15 S04	DC-Prime 15 S05
EMC; protection type					
Emitted interference	EN 61131-2				
Immunity to interference	EN 61131-2				
Protection class	III				
Insulation strength	EN 61131-2; 500 V DC test voltage				
Protection type	IP20, Front IP55				
Vibration	Sinusoidal (EN 60068-2-6) test: Fc;10 ... 150 Hz, 1 G (operation mode)				
Schock resistance	15 G (approx. 150 m/s²), 10 ms duration, half-sine (EN 60068-2-27) test: Ea				

Dimensions B-Primis DC-Prime 15

BERGHOF - PIONEERING AUTOMATION TECHNOLOGY
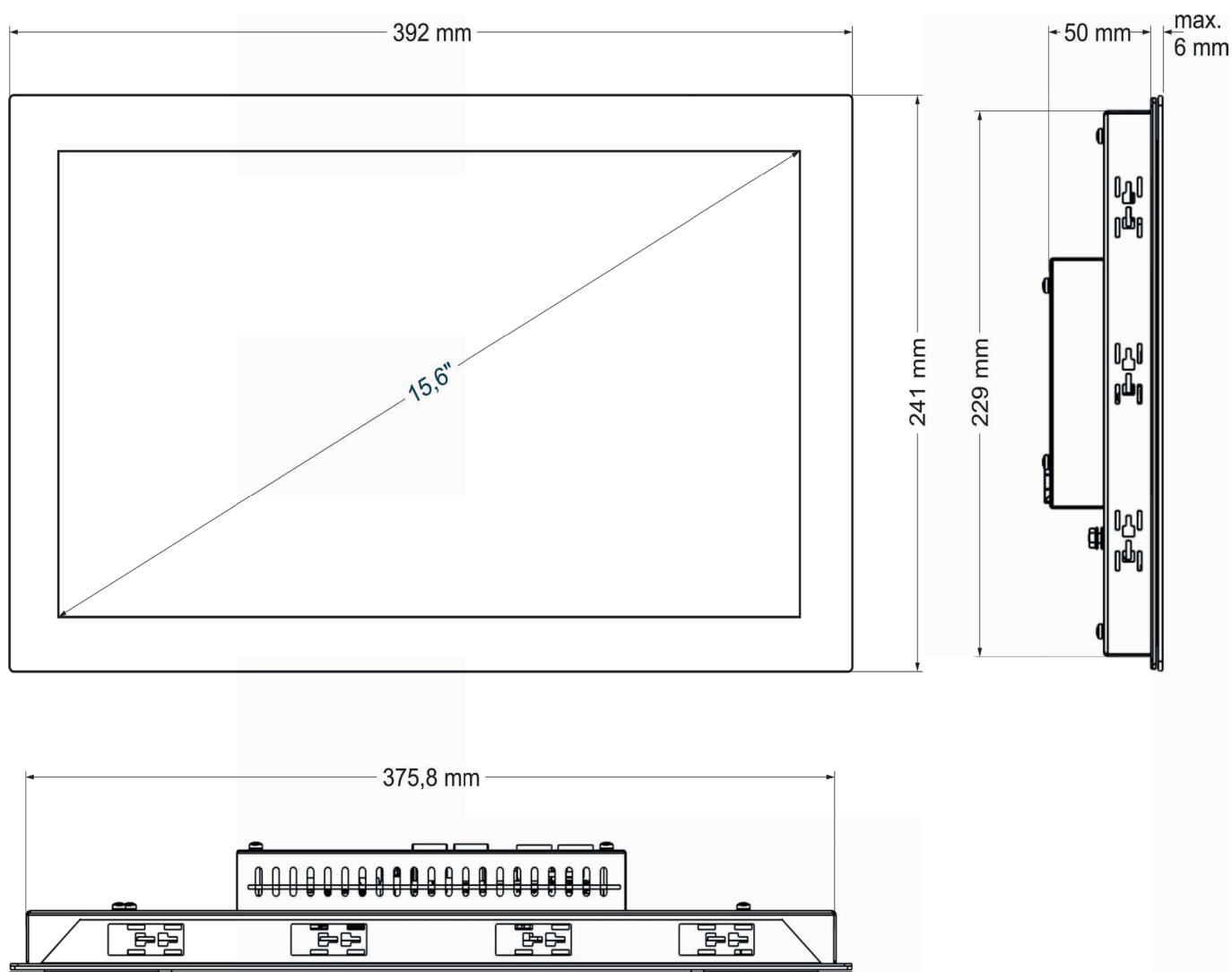
B-PRIMIS **DC - DIALOG CONTROLLER**
CUSTOMIZING

Products off the shelf are offered by many - At Berghof you get individuality.
Our products offer you the ability to customize them completely according to your needs.
All products are customizable in three categories according to the Berghof customizing concept.
(see catalog section Berghof Customizing)

1. Customized Adaptions

Customer requirement:
Display color scheme in the customer's corporate design

Your advantages:
- Demonstrate your expertise
- All products devliered to the end customer designed according to your corporatedesign
- Repair flow management

2. Customized Extensions

Customer requirement:
Integration of an additional communication interface

Your advantages:
- Use of the existing standard product
- No schematic and design changes
- Cost reduced solution

3. Customized Developments

Customer requirement:
Limited space for installation of the control system

Your advantages:
- Standard: only redesign of the basic circuit diagram, no special solutions with regard to software or components used
- Standard: Integrated in PLM process and thus compatible with future product changes due to component discontinuations or SW updates
- Ideal application solution

B-PRIMIS **DC - DIALOG CONTROLLER**
OVERVIEW

B-PRIMIS **DC-PRO**

Specification	Order number
B-Primis DC-Pro 4 S01	S-01010103-0101
B-Primis DC-Pro 4 S02	S-01010103-0201
B-Primis DC-Pro 4 S03	S-01010103-0301
B-Primis DC-Pro 4 S04	S-01010103-0401
B-Primis DC-Pro 4 S04 Duo	S-01010103-2401
B-Primis DC-Pro 4 S05	S-01010103-0501
B-Primis DC-Pro 4 S05 Duo	S-01010103-2501

Specification	Order number
B-Primis DC-Pro 7 S01	S-01010103-0104
B-Primis DC-Pro 7 S02	S-01010103-0204
B-Primis DC-Pro 7 S03	S-01010103-0304
B-Primis DC-Pro 7 S04	S-01010104-0404
B-Primis DC-Pro 7 S04 Duo	S-01010104-2404
B-Primis DC-Pro 7 S05	S-01010103-0504
B-Primis DC-Pro 7 S05 Duo	S-01010103-2504

Specification	Order number
B-Primis DC-Pro 10 S01	S-01010103-0105
B-Primis DC-Pro 10 S02	S-01010103-0205
B-Primis DC-Pro 10 S03	S-01010103-0305
B-Primis DC-Pro 10 S04	S-01010103-0405
B-Primis DC-Pro 10 S04 Duo	S-01010103-2405
B-Primis DC-Pro 10 S05	S-01010103-0505
B-Primis DC-Pro 10 S05 Duo	S-01010103-2505

Specification	Order number
B-Primis DC-Pro 15 S01	S-01010103-0108
B-Primis DC-Pro 15 S02	S-01010103-0208
B-Primis DC-Pro 15 S03	S-01010103-0308
B-Primis DC-Pro 15 S04	S-01010103-0405
B-Primis DC-Pro 15 S04 Duo	S-01010103-2405
B-Primis DC-Pro 15 S05	S-01010103-0508
B-Primis DC-Pro 15 S05 Duo	S-01010103-2508

B-PRIMIS **DC-PRIME**

Specification	Order number
B-Primis DC-Prime 7 S01	S-01010104-0104
B-Primis DC-Prime 7 S02	S-01010104-0204
B-Primis DC-Prime 7 S03	S-01010104-0304
B-Primis DC-Prime 7 S04	S-01010104-0404
B-Primis DC-Prime 7 S04 Duo	S-01010104-2404
B-Primis DC-Prime 7 S05	S-01010104-0504
B-Primis DC-Prime 7 S05 Duo	S-01010104-2504

Specification	Order number
B-Primis DC-Prime 10 S01	S-01010104-0105
B-Primis DC-Prime 10 S02	S-01010104-0205
B-Primis DC-Prime 10 S03	S-01010104-0305
B-Primis DC-Prime 10 S04	S-01010104-0405
B-Primis DC-Prime 10 S04 Duo	S-01010104-2405
B-Primis DC-Prime 10 S05	S-01010104-0505
B-Primis DC-Prime 10 S05 Duo	S-01010104-2505

Specification	Order number
B-Primis DC-Prime 15 S01	S-01010104-0108
B-Primis DC-Prime 15 S02	S-01010104-0208
B-Primis DC-Prime 15 S03	S-01010104-0308
B-Primis DC-Prime 15 S04	S-01010104-0408
B-Primis DC-Prime 15 S04 Duo	S-01010104-2408
B-Primis DC-Prime 15 S05	S-01010104-0508
B-Primis DC-Prime 15 S05 Duo	S-01010104-2508

SAFETY CONTROL SYSTEM
B-NIMIS **SC-1000**
B-NIMIS **SC-I/O**

B-NIMIS **SC-SAFETY CONTROL SYSTEM**

→ Certified in compliance with the CODESYS standard
→ Can be combined with standard products
→ Fail Safe over EtherCAT (FSoE)
→ Safety software package merged into CODESYS
→ Online monitoring of secure and insecure data
→ SIL3 according to IEC 61508
→ PLe according to DIN EN ISO 13849

Integrated and CODESYS programmable safety solution.

B-NIMIS **SC-1000, SC-I/O**

Safety technology under control

The innovative and integrated safety solution from Berghof comprises a freely programmable CODESYS Safety PLC and a Safety I/O module in accordance with the requirements of the safety standards IEC 61508 SIL 3 and DIN ISO 13849-1 PLe. The core of the Safety PLC consists of two microprocessors that implement the safety functions and communicate with each other in order to exchange process data and monitor each other. A third microprocessor manages the external communication. The Safety I/O module has 4 digital inputs and 2 digital outputs and allows the connection of common safety devices. The outputs of the module ensure safe connection of actuators such as contactors, signal lamps or drives. As add-on standard modules with integrated bus system, the devices can be easily installed and combined with other control components such as the standardized Berghof MC-system.

Simple programming according to IEC61131

CODESYS safety solution with openSafety and FSoE

Integrated diagnostics and error localization

Safety channels can also be used as standard I/O`s

CODESYS Safety PLC (2 channels)

Safety I/O with 4 digital IN, 2 digital OUT

Familiar modules in standard design with various status displays

Fail Safe over EtherCAT (FSoE)

B-NIMIS **SC-1000, SC-I/O**

Safety technology under control
with certified PLCopen function blocks in Basic
and Extended Level as well as certified hardware

Maximum system solution
through modular implementation and easy
interaction with all Berghof standard products

Unsurpassed flexibility
thanks to modular expandability and any division
within the plant control system

Excellent plant integration
due to simple connection of any FSoE slaves
(e.g. safety I/O modules, drive controllers)

No limits
due to limitation of the number of usable safety
modules only by the device memory

Ideal operation
by integrating the safety software into the
CODESYS standard and graphically interconnec-
ting all elements

Intuitive project planning and programming
with the Berghof Safety Package, which allows
the user to feel no boundaries between safety
and non-safety components

Best possible control
through exchangeability of information for
diagnosis or status as well as interconnection
of signals between all levels

Optimally secured
with the help of additional functions for
safeguarding the safety function, e.g. change
tracking, safe signal flow, safe versioning,
separation of safe operation

B-Nimis SC-1000, SC-I/O		
Description	**SC-1000**	**SC-I/O**
Order number	**S-01060101-0000**	**S-01060201-0000**
Dimensions (WxHxD) [mm]	25 x 124 x 83	25 x 124 x 92
Weight	approx. 150 g	
Mounting	Rail mounting NS 35/7,5 EN 50022	
Safety standard	IEC 61508 SIL 3 and DIN EN ISO 13849-1 PL e	
Development environment	CODESYS V3 (IEC61131-3) with Safety Plug in	
Communication interfaces	1x EtherCAT, LVDS	
Safety protocol	Safety over EtherCAT (FSoE)	
Digital I/Os	-	4x failsafe digital In 2x failsafe digital Out
Realizable safety functions	4x emergency stop 4x contact detector 2x light grids 2x single-hand operation 2x independent	
Supply voltage	5 V DC via LVDS connection comes from head module (Bus Coupler or PLC in accordance with EN 61131-2, Supply with 24 V DC, min. -15% / +20% SELV/PELV)	
Current consumption	Typ. 0,3 A	Typ. 0,3 A max. 2x 2A depending on load of the I/O
Operating conditions transport / storage	Ambient temperature: Operating: 0 °C to 55 °C / Transport -25 °C to +70 °C Relative humidity: 5...95%, non-condensing	
EMC, Protection type		
Immunity of interference	Installation in zone B according to 61000-6-2, in accordance with EN61131-2, installation on earthed top-hat rail in earthed switch cabinet. Install the earthing according to the operating conditions.	Zone B according to EN 61131-2:2007, Installation on earthed rail in earthed switch cabinet
Overvoltage category	Category II according to IEC 60664-1, in accordance with EN 61131-2	Categories II and II of Annex I EN 61131-2:2007
Protection type	IP20	
Vibration	5...8,4 Hz: ±3,5 mm Amplitude, 8,4...150 Hz: 10 m/s² (1g), nach IEC 60068-2-6, Prüfung Fc	
Schock resistance	150 m/s² (15g), 11 ms half-sine, after IEC 60068-2-27	

B-NIMIS **SC-1000, SC-I/O**
INFORMATION **DIMENSIONS**
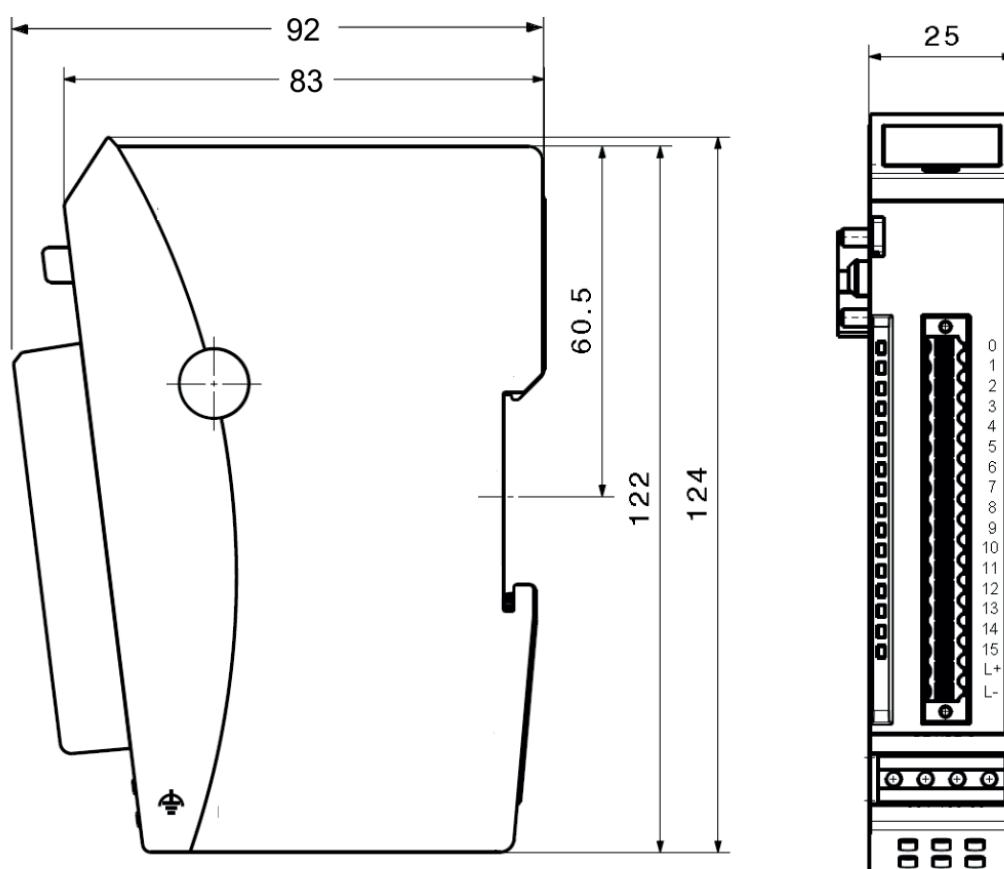
Dimensions B-Nimis SC-System

BERGHOF - PIONEERING AUTOMATION TECHNOLOGY

SAFETY SERVICES
RISK ASSESSMENT
SAFETY CONCEPTS
DOCUMENTATION
VERIFICATION
SAFETY TRAININGS

SAFETY SERVICES
MAN, MACHINE AND PLANT SAFE FOR THE FUTURE

As a machine manufacturer as well as a machine operator, you are faced with the responsibility to bring plants and machines to such a safety level as the latest state of the art allows.

At national and international level, standards and directives stipulate the point at which you, as a machine manufacturer or installer of a system, have fulfilled your duty of care.

Berghof has developed an innovative and integrated safety solution to minimize the risk to people and the environment from technical equipment.
This comprises a freely programmable CODESYS Safety PLC and a Safety I/O Module (see catalog page 120) in accordance with the requirements of the safety standard norms according to IEC 61508 SIL 3 and DIN EN ISO 13849-1 PLe.

With the Berghof Safety System it is easy to implement the safety functions certified according to PLCopen:

- 		Emergency stop switch (EN 418)
- 		Two-handed operation (EN 574)
- 		Enabling switch, operating mode selector switch (IEC 60204)
- 		Safety door (EN 953/1088)
- 		Light barrier (IEC 61496 / 62046)
- 		Muting sensors (IEC 61496 / 62046)
- 		Actuator/valve with safe state or safe function (IEC 60204)
- 		Relay with feedback contact (IEC 60204)
- 		Unsafe switched output with monitoring (IEC 60204)

Do you need support in implementing the standards and guidelines correctly, understanding them and ensuring that they are effectively internalized by your employees?

Berghof offers you a fully comprehensive safety service package and gets you to a safe machine and perfectly trained personnel in 3 steps.

SAFETY SERVICES
3 STEPS TO A SAFE MACHINE

1. Risk Assessment

2. Safety Concepts

3. Verification Documentation

Trainings

Risk Reduction

SAFETY SERVICES
3 STEPS TO A SAFE MACHINE

1. Risk Assessment

In the first step, potential hazards of your machine are analyzed and examined together with you for possible risks, taking into account the essential standards and guidelines.

Possible hazards are identified along the entire life cycle of the machine and in the various operating modes and evaluated with regard to their probability of occurrence and extent of damage.

2. Safety Concepts

In the second step, the Berghof specialists develop a customized security concept for you.

In cooperation with you, all necessary measures are defined and detailed solution proposals for the implementation of safety into your machine.

Once all measures have been defined, Berghof supports you in commissioning the necessary safety functions of your machine.

3. Verification Documentation

In the third and final step, Berghof supports you in verifying the previously implemented safety functions according to DIN EN ISO 13849-1.

To round it all off, standard-compliant and easy-to-understand operating and assembly instructions are created for you.

Trainings

Companies often lack the know-how of current safety standards and norms as well as the basic knowledge of functional safety.

In the course of safety training courses tailored to your individual needs, the know-how of your employees is sustainably built up and kept up to date.

HARDWARE & SOFTWARE OPTIONS

HARDWARE & SOFTWARE **OPTIONS**

Optional expansions for automation

During development, Berghof Automation & Control Solutions attaches great importance to a **manufacturer-independent solution** and relies on the long-term reliability of the **CODESYS automation software**, which makes it possible to carry out a wide range of tasks in automation technology. The platform used is **Linux**, which offers significant advantages over other solutions.

By combining these two open standards of the software, we are able to easily implement functional enhancements. For you as a user, this means unlimited functionality, independence from additional tools and the comprehensive applicability of CODESYS.

Extensions can be selected by means of a standardized or specially tailored range of options. Our products and processes are designed in such a way that a selection can be made both with and after product ordering.

Repeat orders are no challenge for us, neither in the allocation in the corresponding product file (e.g. for the purpose of support) nor in the delivery with possibly immediate dispatch by electronic means or online connection.

This can be done by specifying the appropriate option code when ordering a product that includes a fully configured device, or by specifying the associated order number, with separate delivery of the function.

The options complement the range of functions that Berghof has already created based on CODESYS (see excerpt on page 11).

Below you will find the standardized additional functions that can be ordered. If you cannot find what you are looking for, please contact us.

We will realize it for you.
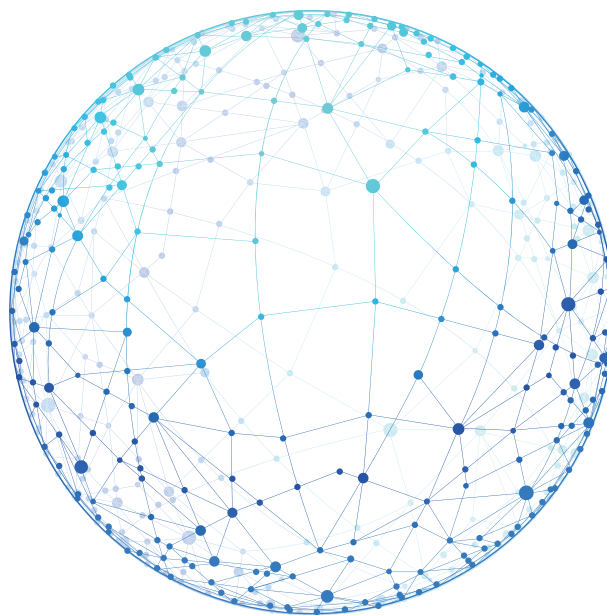
OPTIONS

ID	Option	Description	Order number
S000	Counter Encoder Interface	With the help of this option it is possible to operate local inputs as counter or encoder inputs.	S-05000201-0000
S001	Hardware Watchdog	Option for monitoring the IEC tasks by an external watchdog.	S-05000202-0000
S002	USB Serial Interface	Option to communicate via USB Serial Adapter.	S-05000203-0000
S003	USB Ethernet	Option for an additional USB network interface for non fieldbus relevant communication.	S-05000204-0000
S004	USB Keyboard	Option for a USB keyboard / USB barcode scanner.	S-05000205-0000
S006	Fast Event IOs	Option for fast inputs and outputs. These are then handled independently of the I/O or bus cycle.	S-05000206-0000
S100	CODESYS MODBUS RTU/TCP	Operation of the controller as Modbus master and / or as Modbus slave. Both Modbus TCP via Ethernet and Modbus RTU via serial connections are supported.	S-05000301-0000
S101	CODESYS BACNET	Integration of the control in a BACnet network for building automation possible.	S-05000302-0000
S102	CODESYS J1939	Operation of the controller in a J1939 network. The roles J1939 Manager and J1939 ECU are supported.	S-05000303-0000
S103	CODESYS CANopen Master	With the help of this software option it is possible to operate the controller as a CANopen master and to communicate with CANopen slaves.	S-05000305-0000
S104	CODESYS EtherCAT Master	With this software option it is possible to operate the controller as an EtherCAT master and thus extend the controller with EtherCAT modules.	S-05000304-0000
S105	CODESYS Profinet Device (Slave)	With this software option it is possible to operate the controller as a Profinet Device in a higher-level Profinet plant network.	S-05000307-0000
S106	CODESYS OPCuA Server	Export of variables via OPCuA. This makes it possible to exchange data via an OPCuA-enabled client and server.	S-05000308-0000
S107	CODESYS EtherNet/IP Scanner (Master)	Integration of EtherNet/IP based slave devices (adapters) into the IO image.	S-05000309-0000
S108	CODESYS EtherNet/IP Adapter (Slave)	Integration of the controller as an EtherNet/IP adapter (slave) in an EtherNet/IP network.	S-05000310-0000
S109	VPN Client IXON Client	Integration of the controller into a virtual private network (VPN) as a client. The VPN basic technology used is OpenVPN.	S-05000311-0000
S110	CODESYS IOT LIBRARIES	With this option, numerous libraries can be used to support typical IoT communication protocols on the controller.	S-05000317-0000

OPTIONS

ID	Option	Description	Order number
S111	FTP Server	This option can be used to activate an FTP server on the controller. This enables, for example, the exchange of configuration data or log data with other systems.	S-05000312-0000
S112	NTP Client	Synchronization of the system time of the controller with an NTP time server.	S-05000313-0000
S113	CODESYS SNMP connectivity	Option for communication via the SNMP protocol (network management). This is typically used for communication with network components or for status queries in networks.	S-05000314-0000
S114	CODESYS Web-visualization	Use of CODESYS web visualization. This enables the visualization to be displayed in web browsers.	S-05000315-0000
S115	CODESYS Profi-net Controller	With the help of this software option, it is possible to operate the controller as a Profinet controller in a higher-level Profinet plant network.	S-05000306-0000
S116	CODESYS KNX IP	Via the KNX IP transmission medium it is possible for you to exchange information. Bus devices can be either sensors or actuators needed for controlling the building automation. All functions can be controlled, monitored and secured by alarms through a unified system without the need for additional control centers.	S-05000316-0000
S306	Motion Basic	Option to use the Berghof Motion Library for drive control. The library provides simple motion control of multiple drives using uniaxial motion (not synchronized).	S-05000401-0000
S300	Motion Basic + Softmotion	With the help of this software option it is possible to run drives controlled by the PLC. Typical motion applications with mutually coupled axes can thus be easily implemented. In addition to the Softmotion functionality, this option always includes the software option S306 (Motion Basic).	S-05000402-0000
S301	Motion Basic + Softmotion + CNC	With the help of this software option it is possible to run drives controlled by the PLC. In addition to the CNC functionality, this option always includes the software option S300 (Motion Basic + Softmotion).	S-05000403-0000
S400	Powertrack Communication	This software option activates (service) communication in Powertrack systems. This creates a direct connection between CODESYS and PLC, independent of their current position / segment in the Powertrack system (Online connection to moving vehicles).	S-05000501-0000
S401	Powertrack Servicetool	Activation of the service tool for Powertrack systems. This supports the cross-segment management of control systems in the Powertrack network.	S-05000502-0000

OPTIONS

ID	Option	Description	Order number
S402	Powertrack Software blocks	With this option it is possible to use the Powertrack system software blocks. With the support of these modules, a wide range of requirements for the control of electric monorail and electric floor conveyors can be covered.	**S-05000503-0000**
S500	PDF Creation Library	Library for the creation of PDF documents. With this option, the creation of protocols, measured values or error reports, for example, can be carried out directly on the controller as a PDF file.	**S-05000601-0000**
S501	Backup/Restore functionality	This option enables the triggering and importing of a PLC application via the web interface. This can be used e.g. for backup purposes or for the efficient installation of the PLC application in series production.	**S-05000602-0000**
S502	Display Rotation	With this software option it is possible to rotate the screen by 90°, 180° or 270°. This can be achieved, for example, by installing display devices in portrait format.	**S-05000603-0000**
S503	Onboard configuration protection	Option to password protect the configuration settings via the display menu. This protects the configuration from unauthorized modification.	**S-05000604-0000**
S505	Application Protection	This option protects your application programs from unwanted duplication by binding the application to the hardware.	**S-05000605-0000**

ID	Option*	Description
H001	Plug set	When this option is selected, the appropriate plug set is supplied with the device when it is ordered. If you wish to order plugs separately from a device, please select the appropriate plug set from our accessories. There you will find the respective order numbers.
H002	Extended Heat sink	With this option, the case is equipped with an extended heat sink which improves the thermal properties in passively cooled operation.
H100	UL certificate	With this option you guarantee the proven conformity of the product with the certification regulations of Canada and the USA.
H101	CCC certificate	With this option you guarantee the proven conformity of the product with the certification regulations of China.
H102	EAC certificate	With this option you guarantee the proven conformity of the product with the certification regulations of the Eurasian Economic Union.

* These options are only available when purchasing a product

OPTIONS

ID	Option*	Description
H200	MicroSD 2GB	Device comes with a pre-installed industrial MircroSD card with 2GB SLC memory.
H201	MircoSD 16GB	Device comes with a pre-installed industrial MircroSD card with 16GB SLC memory.
H300	Warranty extension for 1 year	With this option, an additional product warranty period of one year beyond the statutory warranty period is agreed. The total product warranty / guarantee period is hereby 2 years.
H301	Warranty extension for 2 years	With this option, an additional product warranty period of two years beyond the statutory warranty period is agreed. The total product warranty / guarantee period is hereby 3 years.
H400	WLAN	This option enables WLAN functionality on compatible devices and allows wireless connectivity on standard networks.
H401	Bluetooth	This option enables Bluetooth functionality on compatible devices and allows wireless connection with other Bluetooth devices is allowed
H402	Antenna	WLAN / Bluetooth antenna with screw mount and 3m cable for improved reception

* These options are only available when purchasing a product

ID	Option*	Description
C100	Customized device	With this option, a combination of all compatible C1xx options can be combined into one option.
C110	Customized front	With this option, a Berghof display device can be equipped with a customer-specific front.
C120	Customized hood	With this option, a Berghof device without display can be equipped with a customer-specific hood.
C130	Customized logo	With this option, a Berghof device can be provided with a customer-specific logo.
C140	Customized nameplate	With this option, a Berghof device can have a customer-specific nameplate affixed. This option requires approval documents for CE and, if applicable, UL, EAC from the customer.
C150	Customized software configuration	With this option, a Berghof device is delivered with a customized device configuration

* These options are only available when purchasing a product

BERGHOF - PIONEERING AUTOMATION TECHNOLOGY

OPTIONS
AVAILABILITY OF OPTIONS FOR THE PRODUCTS

	DC-Pro 4,3"	DC-Pro 7"	DC-Pro 10,1"	DC-Pro 15,6"	DC-Prime 7"	DC-Prime 10,1"	DC-Prime 15,6"	CC-Lite	CC-Slim	CC-Prime	CC-I/O
S000 - Counter/Encoder Interface	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	-
S001 - Hardware Watchdog	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	-
S002 - USB Serial Interface	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S003 - USB Ethernet	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S004 - USB Keyboard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S006 - Fast Event I/O´s	-	-	✔	✔	✔	✔	✔	-	-	✔	-
S100 - MODBUS RTU/TCP V3	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S101 - BACNET	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S102 - J1939	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	-
S103 - CANopen Master	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	-
S104 - EtherCAT Master	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S105 - Profinet Device (Slave)	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S106 - OPC UA Server	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S107 - EtherNet/Ip Scanner (Master)	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S108 - EtherNet/IP Adapter (Slave)	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S109 - VPN Client	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S110 - CODESYS IoT Libraries	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S111 - FTP Server	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S112 - NTP Client	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S113 - CODESYS SNMP Connectivity	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S114 - CODESYS WebVisu	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S115 - CODESYS Profinet Controller	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S116 - CODESYS KNX IP	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S300 - Motion Basic+SoftMotion	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S301 - Motion Basic+SoftMotion+CNC	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S306 - Motion Basic	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-

✔	Option can be ordered for product	**req**	Options are interdependent
-	Option cannot be ordered for product	**o.r.**	on request
*	Separate network interface required	******	available via third parties

OPTIONS
AVAILABILITY OF OPTIONS FOR THE PRODUCTS

	ET-Pro 4,3"	ET-Pro 7"	ET-Pro 10,1"	ET-Pro 15,6"	ET-Prime 7"	ET-Prime 10,1"	ET-Prime 15,6"	MC-Pro	MC-Classic	MC-Pi Pro/Prime	BC-Pi Pro/Prime
S000 - Counter/Encoder Interface	-	-	-	-	-	-	-	-	-	-	-
S001 - Hardware Watchdog	-	-	-	-	-	-	-	-	-	-	-
S002 - USB Serial Interface	-	-	-	-	-	-	-	✔	-	✔	✔
S003 - USB Ethernet	-	-	-	-	-	-	-	✔	-	✔	✔
S004 - USB Keyboard	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔
S006 - Fast Event I/O´s	-	-	-	-	-	-	-	-	-	✔	-
S100 - MODBUS RTU/TCP V3	-	-	-	-	-	-	-	✔	-	✔	**
S101 - BACNET	-	-	-	-	-	-	-	✔	-	✔	**
S102 - J1939	-	-	-	-	-	-	-	✔	-	a.A	**
S103 - CANopen Master	-	-	-	-	-	-	-	✔	✔	a.A	**
S104 - EtherCAT Master	-	-	-	-	-	-	-	✔	✔	✔	**
S105 - Profinet Device (Slave)	-	-	-	-	-	-	-	✔	-	✔	**
S106 - OPC UA Server	-	-	-	-	-	-	-	✔	-	✔	**
S107 - EtherNet/Ip Scanner (Master)	-	-	-	-	-	-	-	✔	-	✔	**
S108 - EtherNet/IP Adapter (Slave)	-	-	-	-	-	-	-	✔	-	✔	**
S109 - VPN Client	-	-	-	-	-	-	-	✔	-	✔	**
S110 - CODESYS IoT Libraries	-	-	-	-	-	-	-	✔	-	✔	**
S111 - FTP Server	-	-	-	-	-	-	-	✔	-	✔	**
S112 - NTP Client	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	**
S113 - CODESYS SNMP Connectivity	-	-	-	-	-	-	-	✔	-	✔	**
S114 - CODESYS WebVisu	-	-	-	-	-	-	-	✔	✔	✔	**
S115 - CODESYS Profinet Controller	-	-	-	-	-	-	-	✔	-	✔	**
S116 - CODESYS KNX IP	-	-	-	-	-	-	-	✔	-	✔	**
S300 - Motion Basic+SoftMotion	-	-	-	-	-	-	-	✔	-	✔	**
S301 - Motion Basic+SoftMotion+CNC	-	-	-	-	-	-	-	✔	-	✔	**
S306 - Motion Basic	-	-	-	-	-	-	-	✔	-	✔	**

✔	Option can be ordered for product	req	Options are interdependent
-	Option cannot be ordered for product	o.r.	on request
*	Separate network interface required	**	available via third parties

AVAILABILITY OF OPTIONS FOR THE PRODUCTS

	DC-Pro 4,3"	DC-Pro 7"	DC-Pro 10,1"	DC-Pro 15,6"	DC-Prime 7"	DC-Prime 10,1"	DC-Prime 15,6"	CC-Lite	CC-Slim	CC-Prime	CC-I/O
S400 - Powertrack Basiscommun.	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	-
S401 - Powertrack Servicetool	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	-
S402 - Powertrack Systemsoftware	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	-
S500 - PDF Creation Library	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S501 - Backup/Restore Functionality	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S502 - Display Rotation	-	✔	✔	✔	✔	✔	✔	-	-	-	-
S503 - Onboard Config. Protection	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S504 - Application protection	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
H001 - Plug set	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
H002 - Heat sink	-	-	-	-	-	-	-	-	-	-	-
H003 - Cooling fan	-	-	-	-	-	-	-	-	-	-	-
H100 - UL Certificate	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
H101 - CCC Certificate	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
H102 - EAC Certificate	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
H200 - MicroSD 2GB	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
H201 - MicroSD 16GB	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
H300 - Extended warranty 1 year	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
H301 - Extended warranty 2 years	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
H400 - WiFi	-	-	-	-	-	-	-	-	-	-	-
H401 - Bluetooth	-	-	-	-	-	-	-	-	-	-	-
H402 - Antenna	-	-	-	-	-	-	-	-	-	-	-
C100 - Customized device	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
C110 - Customized front	✔	✔	✔	✔	✔	✔	✔	-	-	-	-
C120 - Customized cover	-	-	-	-	-	-	-	✔	✔	✔	✔
C130 - Customized logo	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
C140 - Customized name plate	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
C150 - Customized Softwareconfig.	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

✔	Option can be ordered for product	**req**	Options are interdependent
-	Option cannot be ordered for product	**o.r.**	on request
*	Separate network interface required	******	available via third parties

OPTIONS
AVAILABILITY OF OPTIONS FOR THE PRODUCTS

	ET-Pro 4,3"	ET-Pro 7"	ET-Pro 10,1"	ET-Pro 15,6"	ET-Prime 7"	ET-Prime 10,1"	ET-Prime 15,6"	MC-Pro	MC-Classic	MC-Pi Pro/Prime	BC-Pi Pro/Prime
S400 - Powertrack Basiscommun.	-	-	-	-	-	-	-	✔	-	✔	-
S401 - Powertrack Servicetool	-	-	-	-	-	-	-	✔	-	✔	-
S402 - Powertrack Systemsoftware	-	-	-	-	-	-	-	✔	-	✔	-
S500 - PDF Creation Library	-	-	-	-	-	-	-	✔	-	✔	**
S501 - Backup/Restore Functionality	-	-	-	-	-	-	-	✔	✔	✔	-
S502 - Display Rotation	-	✔	✔	✔	✔	✔	✔	-	-	-	-
S503 - Onboard Config. Protection	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
S505 - Application protection	-	-	-	-	-	-	-	✔	-	✔	-
H001 - Plug set	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
H002 - Heat sink	-	-	-	-	-	-	-	-	-	✔	✔
H003 - Cooling fan	-	-	-	-	-	-	-	-	-	✔	✔
H100 - UL Certificate	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
H101 - CCC Certificate	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
H102 - EAC Certificate	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
H200 - MicroSD 2GB	✔	✔	✔	✔	✔	✔	✔	-	-	✔	-
H201 - MicroSD 16GB	✔	✔	✔	✔	✔	✔	✔	-	-	✔	✔
H300 - Extended warranty 1 year	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔
H301 - Extended warranty 2 years	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔
H400 - WiFi	-	-	-	-	-	-	-	-	-	✔	✔
H401 - Bluetooth	-	-	-	-	-	-	-	-	-	✔	✔
H402 - Antenna	-	-	-	-	-	-	-	-	-	✔	✔
C100 - Customized device	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔
C110 - Customized front	✔	✔	✔	✔	✔	✔	✔	-	-	-	-
C120 - Customized cover	-	-	-	-	-	-	-	✔	-	✔	✔
C130 - Customized logo	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔
C140 - Customized name plate	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔
C150 - Customized Softwareconfig.	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔

✔	Option can be ordered for product	**req**	Options are interdependent
-	Option cannot be ordered for product	**o.r.**	on request
*	Separate network interface required	**	available via third parties

BERGHOF - PIONEERING AUTOMATION TECHNOLOGY

Options not listed are considered to be basically compatible.

	S002	S003	S004	S100	S101	S105	S106	S107	S108	S115	S116	S300	S301	S306	S400	S401	S402
S002 - USB Serial Interface		-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
S003 - USB Ethernet	-		-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
S004 - USB Keyboard	-	-		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
S100 - MODBUS RTU/TCP V3	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	-	-	-	✔	✔	✔
S101 - BACNET	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	-	-	-	-	-	-
S105 - Profinet Device (Slave)	✔	✔	✔	✔	✔		✔	*	*	*	✔	*	*	*	✔	✔	✔
S106 - OPC UA Server	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	*	*	*	✔	✔	✔
S107 - EtherNet/Ip Scanner (Master)	✔	✔	✔	✔	✔	*	✔		*	*	✔	*	*	*	✔	✔	✔
S108 - EtherNet/IP Adapter (Slave)	✔	✔	✔	✔	✔	*	✔	*		*	✔	*	*	*	✔	✔	✔
S115 - CODESYS Profinet Controller	✔	✔	✔	✔	✔	*	✔	*	*		✔	✔	✔	✔	✔	✔	✔
S116 - CODESYS KNX IP	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		-	-	-	-	-	-
S300 - Motion Basic+Softmotion	✔	✔	✔	-	-	*	*	*	*	*	-		-	-	✔	✔	✔
S301 - Motion Basic+Softmotion+CNC	✔	✔	✔	-	-	*	*	*	*	*	-	-		-	✔	✔	✔
S306 - Motion Basic	✔	✔	✔	-	-	*	*	*	*	*	-	-	-		✔	✔	✔
S400 - Powertrack Basiskomm.	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	-	✔	✔	✔		req	✔
S401 - Powertrack Servicetool	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	-	✔	✔	✔	req		✔
S402 - Powertrack Systemsoftware	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	-	✔	✔	✔	req	✔	

✔	Option can be ordered for product	**req**	Options are interdependent
-	Option cannot be ordered for product	**o.r.**	on request
*	Separate network interface required	**	available via third parties
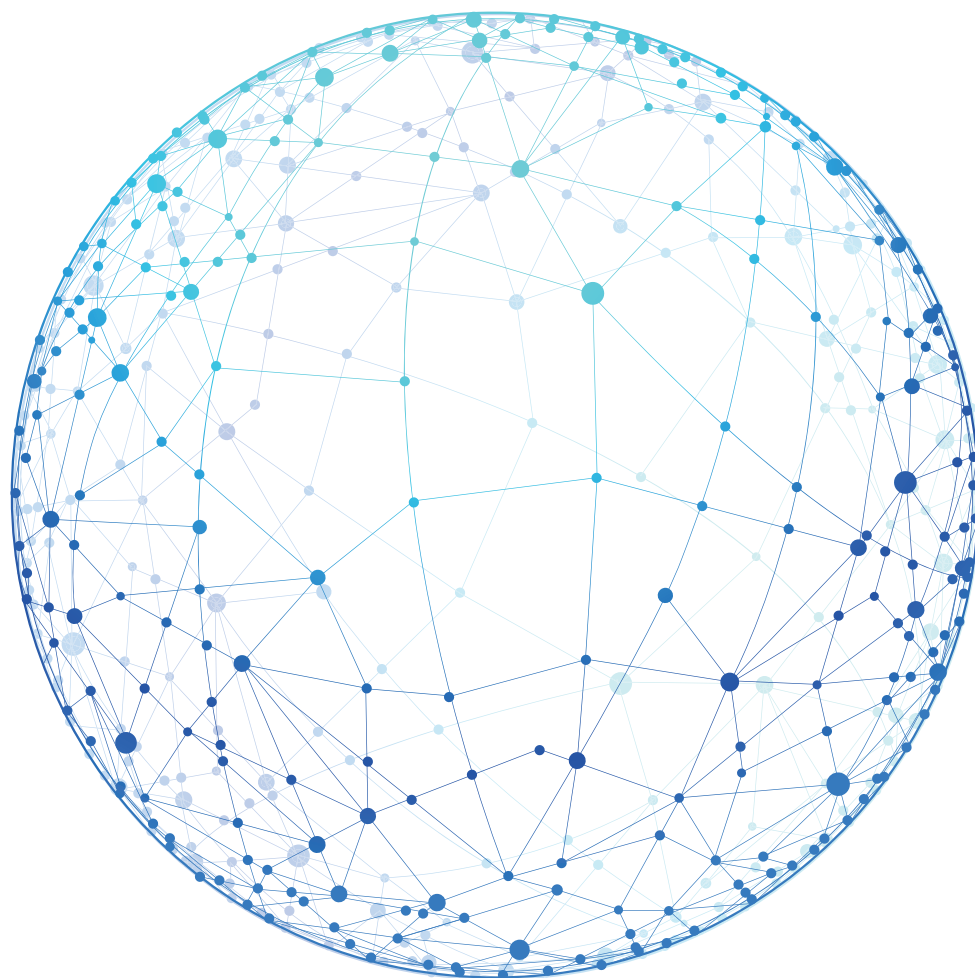
PIONEERING AUTOMATION TECHNOLOGY

ACCESSORY COMPONENTS

AI 4-TE

COUPLER

Revision 2

Run

EtherCAT
IO

EtherCAT
Out 1
Out 2

0
1
2
3
4
5
6
7

Out

Out

204809000

204801400

204801500

B

E-IO
Extender

204801500
2 Port

CE

Out1

Out2

www.

COUPLER

SI4 SO2

EtherCAT
Out
In

EtherCAT Run
Safe Status
Power

Out

In

EtherCAT

L+

24V

SI/SO

204800000

204809000

ACCESSORY **COMPONENTS**

High quality Berghof accessories

Complete system solutions from a single source. In addition to the control products, additive components can also be required. We offer you the right spectrum, tailored to the portfolio and expanding the range of functions. If something is not available, no problem! We complete the offer according to your wishes.

Functional safety, even under the increased conditions of the industrial environment – we guarantee this with our tried and tested range of accessories.

Not every component available on the market fulfils these requirements unconditionally, in most cases this is not easy to recognise despite the appropriate specification.

Our accessories are proven, have completed an extensive test and approval process and are continuously checked for function in the event of innovations.

You can count on us!

Cable		
Patch cable	**Description**	**Order number**
Patch cable Cat.6a Flex	**Colour:** black **Version:** Category 6A **Structure:** S/FTP **Cable type:** 4x2 AWD 26/7 **Technology:** PiMF (paarig in Metallfolie) **Halogen-free:** yes **Cable diameter:** 6,2 mm **Type:** Patch cable	Cable length: 0,15m — **S-02010101-0101** Cable length: 0,25m — **S-02010101-0102** Cable length: 0,5m — **S-02010101-0103** Cable length: 1m — **S-02010101-0104** Cable length: 1,5m — **S-02010101-0105** Cable length: 2m — **S-02010101-0106** Cable length: 3m — **S-02010101-0107** Cable length: 5m — **S-02010101-0108** Cable length: 7,5m — **S-02010101-0109** Cable length: 10m — **S-02010101-0110** Cable length: 15m — **S-02010101-0111** Cable length: 20m — **S-02010101-0112** Cable length: 25m — **S-02010101-0113** Cable length: 30m — **S-02010101-0114**
Adapter cable RJ45 to D-SUB9 (RS232/RS485)	Adapter cable RJ45 to D-SUB9 for Berghof MX6 controllers. Allows connection via D-SUB9 for COM1 (RS232) and (RS485) at the RJ45 socket for serial connections on the PLC.	**S-02040201-0000**
Adapter cable RJ45 to D-SUB9 (CAN)	Adapter cable RJ45 to D-SUB9 for Berghof MX6 controllers. Enables connection via D-SUB9 for CAN.	**S-02040301-0000**

ACCESSORY **COMPONENTS**

Pins		
Product	**Description**	**Order number**
MC-I/O shield connection terminal block 2x8mm	The shield connection terminal makes it easier to connect the shielding directly to MC-I/O and SC-I/O modules. The terminal leads the potential of the cable shield to the DIN rail on which the MC-I/O module is located. The size is 2 x 8mm	**S-02060101-0100**
MC-I/O shield connection terminal block 1x14mm	The shield connection terminal makes it easier to connect the shielding directly to MC-I/O modules. The terminal leads the potential of the cable shield to the DIN rail on which the MC-I/O module is located. The size is 2 x 14mm	**S-02060101-0200**
Mounting clips set ET/DC	Set of 20 mounting clips Compatible with: ET/DC-Prime 7/10/15 ET/DC-Pro 10	**S-02060201-0100**

Gateways		
Product	**Description**	**Order number**
Gateway EtherCAT-Slave to PROFIBUS DP-Master	• Integrates a subordinate PROFIBUS network strand into EtherCAT • Master for up to 125 PROFIBUS slaves • Lowest I/O data conversion time of less than 10 ms • Device exchange in seconds by charging via memory card • Loadable firmware for flexible use of further conversions • With USB diagnostic and configuration interface	**S-02050201-0100**
Gateway EtherCAT-Slave to PROFIBUS DP-Slave	• Transparent data conversion in dual-slave operation • Lowest I/O data conversion time of less than 10 ms • Device exchange in seconds by charging via memory card • Loadable firmware for flexible use of further conversions • With USB diagnostic and configuration interface	**S-02050201-0200**
Gateway EtherCAT-Slave to MODBUS RTU	• Integrates MODBUS RTU protocol-capable devices as EtherCAT slaves in EtherCAT • MODBUS RTU can be used flexibly as master or slave • Device exchange in seconds by charging via memory card • Loadable firmware for flexible use of further conversions • With USB diagnostic and configuration interface	**S-02050202-0100**
Gateway EtherCAT-Slave to CANopen-Slave	• Transparent data conversion in dual-slave operation • Lowest I/O data conversion time of less than 10 ms • Device exchange in seconds by charging via memory card • Loadable firmware for flexible use of further conversions • With USB diagnostic and configuration interface	**S-02050203-0100**
Berghof Easy Connect	The Berghof Easy Connect is a unique, intelligent interface in a compact format that makes security and connectivity challenges on a Berghof PLC a thing of the past. Via Plug n Play USB connection, the Berghof Easy Connect allows easy and secure access to a pre-configured Berghof controller without affecting the existing network structure.	**S-02040102-0000**
USB-to-Ethernet Adapter	**Connections / Interfaces:** Interface: USB 3.0, LAN: 10/100/1000, Connection: 1xRJ45 **General: Type:** Network card, Structure: external, Chipset: ASIX **Accessories:** Driver, manual execution **Standards:** IEEE 802.3, 802.3u, 802.3ab	**S-02040101-0000**

143

ACCESSORY **COMPONENTS**

Storage devices			
Product	**Description**		**Order number**
USB Flash Drive	**Product:** USB 3.0 **Power supply voltage:** 5V **Operating temperature:** 0ºC - +70ºC **Dimensions:** 68 mm x 18 mm x 8.2 mm **Constant reading rate:** 175 MB/s **Constant writing speed:** 95 MB/s	Memory capacity: 8GB	**S-02030201-0102**
		Memory capacity: 16GB	**S-02030201-0103**
SD-Card 2GB SD - formatted/UNI-CODE Font	Standard 2GB SD card with 2 partitions. This SD card can be used with DC-CLASSIC and MC-PRO controllers and allows the use of the options „Map Application on SD-card" and „Map Fonts to SD-card". The SD card also includes Arial Unicode MS font.		**S-02030101-0101**
Micro SD-Card 2GB SD - formatted/UNICODE Font	Industrielle 2GB uSD Karte mit 2 Partitionen. Diese SD Karte kann mit Berghof MX6 Steuerungen benutzt werden und erlaubt die Verwendung der Option „Map Application on SD card". Die SD-Karte beinhaltet auch das Arial Unicode MS font		**S-02030101-0201**
Micro SD-Card 16GB SD - formatted/UNICODE Font	Industrial 16GB uSD card with 2 partitions. This SD card can be used with Berghof MX6 controllers and allows the use of the option „Map Application on SD card". The SD card also includes Arial Unicode MS font		**S-02030101-0203**
Micro SD-CARD 16GB	Industrial 16GB uSD card with 1x standard partition. This SD card can be used with all Berghof devices that have a MicroSD slot and does not allow any special functions.		**S-02030101-0204**

Plugs		
Product	**Description**	**Order number**
MC-Classic/MC-Pro plug set	Packaged plug set with 1 x 3 pin plug for power supply and 1 x 10 pin plug for serial and CAN bus connection.	**S-02020101-0000**
CC-Prime S06 plug set	Packaged plug set for the CC-Prime S06 PLC with 1 x 6 pin plug for power supply, 2 x 16 pin digital I/O plug.	**S-02020102-0100**
CC-Prime S01/02/03/07 plug set	Packaged plug set for the CC-Prime S01/02/03/07 PLC with 1 x 6 pin plug for power supply, 2 x 16 pin digital I/O plug and 1 x 14 pin analog I/O plug.	**S-02020102-0200**
CC-Prime S04 plug set	Packaged plug set for the CC-Prime S04 PLC with 1 x 6-pole mains plug, 2 x 16-pole digital I/O connectors and 2 x 14-pole analog I/O connectors.	**S-02020102-0300**
CC-Prime S05/08 plug set	Packaged plug set for the CC-Prime S05/08 PLC with 1 x 6 pin power supply, 2 x 16 pin digital I/O connectors and 3 x14 pin analog I/O connectors.	**S-02020102-0400**
CC-A-I/O plug set	Packaged plug set for the CC-A-I/O module with 1 x 4 pin plug for power supply and 3 x 14 pin analog I/O plug.	**S-02020103-0200**
CC-D-I/O plug set	Packaged connector set for the CC-D-I/O module with 1 x 4 pin connector for power supply and 2 x 16 pin digital I/O connectors.	**S-02020103-0100**
ET-Pro power plug 2-pol.	Single plug with 2 pins. Can also be used as a replacement plug for the MC-I/O Bus Coupler 3A.	**S-02020201-0100**

ACCESSORY **COMPONENTS**

Plugs		
Product	**Description**	**Order number**
DC-Pro 4/7 & CC-Slim plug set	Packaged plug set for DC-Pro 4/7 and CC-Slim PLC with 1 x 12-pin plug for power supply and DI/Os and 1 x 6-pin plug for the AIOs.	S-02020105-0100
DC-Pro 4/7 S01, CC-Slim S01 plug set	Single plug for DC-Pro 4/7 S01 and CC-Slim S01 with 1 x 12-pin plug for power supply and DI/Os.	S-02020201-0600
DC-Pro 10/15 & DC-Prime plug set	Packaged plug set for DC-Pro 15 and all DC-Prime-PLC with 1 x 12 (2x6) pin plug for power supply and DIOs and 1 x 6 pin plug for the AIOs.	S-02020105-0200
CC-Lite power plug 2-pol.	Single plug with 2 pins. Can also be used as replacement plug for DC-Classic and ET-Classic.	S-02020202-0100
ET-Prime/ DC-Prime S01 / DC-Pro 10/15 S01 power plug 12-pol. (2x6)	Single plug with 12 pins, divided into two rows with six pins each.	S-02020201-0601
MC-I/O plug 18-pol.	Single plug with 18 pins.	S-02020201-0800
MC-I/O plug 36-pol. (2x18)	Single connector with 16 pins, divided into two rows with 8 pins each.	S-02020201-0900
CAN2SC plug set	Packed connector set for the CAN2SC module with 1x 2 pin connector for power supply, 1x 2 pin connector for terminating resistor and 1x 3 pin connector for SC-CAN.	S-02020106-0100

Router		
Product	**Description**	**Order number**
IX2400 - LAN	1 x Ethernet, 1 x Ethernet 4-Port Switch	S-02050102-0100
IX2410 - LAN - WiFi	1 x Ethernet, 1 x Ethernet 4 Port Switch, WLAN	S-02050102-0200
IX2405 - 4G Global - LAN	1 x Ethernet, 1 x Ethernet 4-Port Switch, 1 x SIM card slot	S-02050102-0300
IX2415 - 4G Global - LAN - WiFi	1 x Ethernet, 1 x Ethernet 4-Port Switch, WLAN, 1 x SIM card slot	S-02050102-0400

Licenses		
Product	**Description**	**Order number**
Safety-Package Company	License for the CODESYS Safety extension, which must be purchased once. The Safety Package contains all software modules and device descriptions that are necessary for programming safety applications for the Safety PLC under CODESYS.	S-05000702-0000
Berghof Target License Pro	License for the Berghof Target Pro package, which must be purchased once. It includes extended system libraries for Berghof controllers, which allow to make applications in CODESYS V3 more comfortable and to implement configuration and diagnostics of the devices in the CODESYS project. In addition, there is full access to the closed download area of Berghof Automation for future software updates.	S-05000104-00000

Protection & Hygiene		
Product	**Description**	**Order number**
Antibacterial protective foil ET/DC-Pro 4	Display protection films for subsequent installation on the active display area of B-Primis ET/DC-Pro 4 devices. These anti-bacterial foils provide effective protection against bacteria and pathogens. The foil is easy to apply and can be removed without leaving any residue, even after prolonged use. In addition, the foil protects against damage thanks to its hard layer and is easy to clean due to an „anti-finger-print" technology.	**S-02060101-0101**
Antibacterial protective foil ET/DC-Pro 7	Display protection films for subsequent installation on the active display area of B-Primis ET/DC-Pro 7 devices. These anti-bacterial foils provide effective protection against bacteria and pathogens. The foil is easy to apply and can be removed without leaving any residue, even after prolonged use. In addition, the foil protects against damage thanks to its hard layer and is easy to clean due to an „anti-finger-print" technology.	**S-02060101-0104**
Antibacterial protective foil ET/DC-Pro 10	Display protection films for subsequent installation on the active display area of B-Primis ET/DC-Pro 10 devices. These anti-bacterial foils provide effective protection against bacteria and pathogens. The foil is easy to apply and can be removed without leaving any residue, even after prolonged use. In addition, the foil protects against damage thanks to its hard layer and is easy to clean due to an „anti-finger-print" technology.	**S-02060101-0105**
Antibacterial protective foil ET/DC-Pro 15	Display protection films for subsequent installation on the active display area of B-Primis ET/DC-Pro 15 devices. These anti-bacterial foils provide effective protection against bacteria and pathogens. The foil is easy to apply and can be removed without leaving any residue, even after prolonged use. In addition, the foil protects against damage thanks to its hard layer and is easy to clean due to an „anti-finger-print" technology.	**S-02060101-0108**
Antibacterial protective foil ET/DC-Prime 7	Display protection films for subsequent installation on the active display area of B-Primis ET/DC-Prime 7 devices. These anti-bacterial foils provide effective protection against bacteria and pathogens. The foil is easy to apply and can be removed without leaving any residue, even after prolonged use. In addition, the foil protects against damage thanks to its hard layer and is easy to clean due to an „anti-finger-print" technology.	**S-02060101-0204**
Antibacterial protective foil ET/DC-Prime 1O	Display protection films for subsequent installation on the active display area of B-Primis ET/DC-Prime 10 devices. These anti-bacterial foils provide effective protection against bacteria and pathogens. The foil is easy to apply and can be removed without leaving any residue, even after prolonged use. In addition, the foil protects against damage thanks to its hard layer and is easy to clean due to an „anti-finger-print" technology.	**S-02060101-0205**
Antibacterial protective foil ET/DC-Prime 15	Display protection films for subsequent installation on the active display area of B-Primis ET/DC-Prime 15 devices. These anti-bacterial foils provide effective protection against bacteria and pathogens. The foil is easy to apply and can be removed without leaving any residue, even after prolonged use. In addition, the foil protects against damage thanks to its hard layer and is easy to clean due to an „anti-finger-print" technology.	**S-02060101-0208**

ACCESSORY **COMPONENTS**

Protection & Hygiene		
Product	**Description**	**Order number**
Work gloves size S	Comfortable and lightweight work glove in size S. This offers an ESD function, cut protection, is free of allergenic accelerators and is compatible with all Berghof display devices.	**S-02060102-0100**
Work gloves size M	Comfortable and lightweight work glove in size M. This offers an ESD function, cut protection, is free of allergenic accelerators and is compatible with all Berghof display devices.	**S-02060102-0200**
Work gloves size L	Comfortable and lightweight work glove in size L. This offers an ESD function, cut protection, is free of allergenic accelerators and is compatible with all Berghof display devices.	**S-02060102-0300**
Work gloves size XL	Comfortable and lightweight work glove in size XL. This offers an ESD function, cut protection, is free of allergenic accelerators and is compatible with all Berghof display devices.	**S-02060102-0400**
Work gloves size XXL	Comfortable and lightweight work glove in size XXL. This offers an ESD function, cut protection, is free of allergenic accelerators and is compatible with all Berghof display devices.	**S-02060102-0500**

Antennas		
Product	**Description**	**Order number**
WLAN / Bluetooth Dual band Antenna Onmidirectional	WLAN / Bluetooth dual band antenna with omnidirectional rotation for mounting directly on the device for improved reception. Compatible with all Berghof devices with WLAN capability.	**S-02050401-0100**
WLAN / BluetoothDual band Antenna screw mounting	WLAN / Bluetooth dual band antenna with screw mount and 3m extension cable for mounting on the control cabinet for improved reception. Compatible with all Berghof devices with WLAN capability.	**S-02050401-0200**
Cellular antenna 4G Global Onmidirectional	Cellular antenna for 4G Global with omnidirectional rotation to attach directly to the device for improved reception. Compatible with our cellular enabled routers.	**S-02050402-0100**
Cellular antenna 4G Global screw mounting	Cellular antenna for 4G Global with screw mount and 3m. Extension cable for mounting on the control cabinet for improved reception. Compatible with our cellular enabled routers	**S-02050402-0200**

Fans		
Product	**Description**	**Order number**
Fan 30 mm 5V	Optional 30mm size fan with 5V voltage to attach to the case to improve thermal characteristics with active cooling. Compatible with BC/MC-PI Pro.	**S-02050501-0100**
Fan 50 mm 5V	Optional 50mm size fan with 5V voltage to attach to the case to improve thermal characteristics with active cooling. Compatible with BC/MC-PI Prime.	**S-02050501-0200**

BERGHOF **SERVICES**
AS A BERGHOF CUSTOMER, WE WOULD LIKE TO OFFER YOU MAXIMUM RELIABILITY

BERGHOF **SERVICES**

Those who have mastered extensive technologies and engineering have a clear competitive advantage. We give you this competitive edge and offer comprehensive service with guaranteed competent support.

Not only is the know-how of our employees available for you at any time at the company headquarters, but our network of Solution Partners also provides you with excellent local support, in the local language with a direct connection to the Berghof central departments.

Test us: in pre-sales, in your project planning phase and in after-sales.

Das Upgrade für Ihre gesicherte Zukunft

Competitiveness means adapting to constantly changing requirements, avoiding production downtimes or keeping production costs, including maintenance, low. Missing functional extensions or spare parts cause a long path of suffering. The new acquisition of the entire automation is usually described as inevitable.

Not like that at Berghof. For us, the optimum solution is the most important thing – this can only mean the replacement of a few components, such as the control system alone. Existing technology such as switch cabinets, cabling or even drive technology does not necessarily have to be replaced in every case.

Our experts support and take over the entire upgrade and retrofit process to keep your efficiency at a maximum: from analysis, product selection and project planning to programming, assembly, commissioning and training.

We guarantee minimum downtimes of the production plants and take care of a cost-optimized implementation. Ensuring compatibility with existing plants and mixed operation with old and new technology is a focus on which we attach great importance.

In order to guarantee the retrofitting of further functions and to be able to react optimally to every situation, your old control system is kept available as a backup.
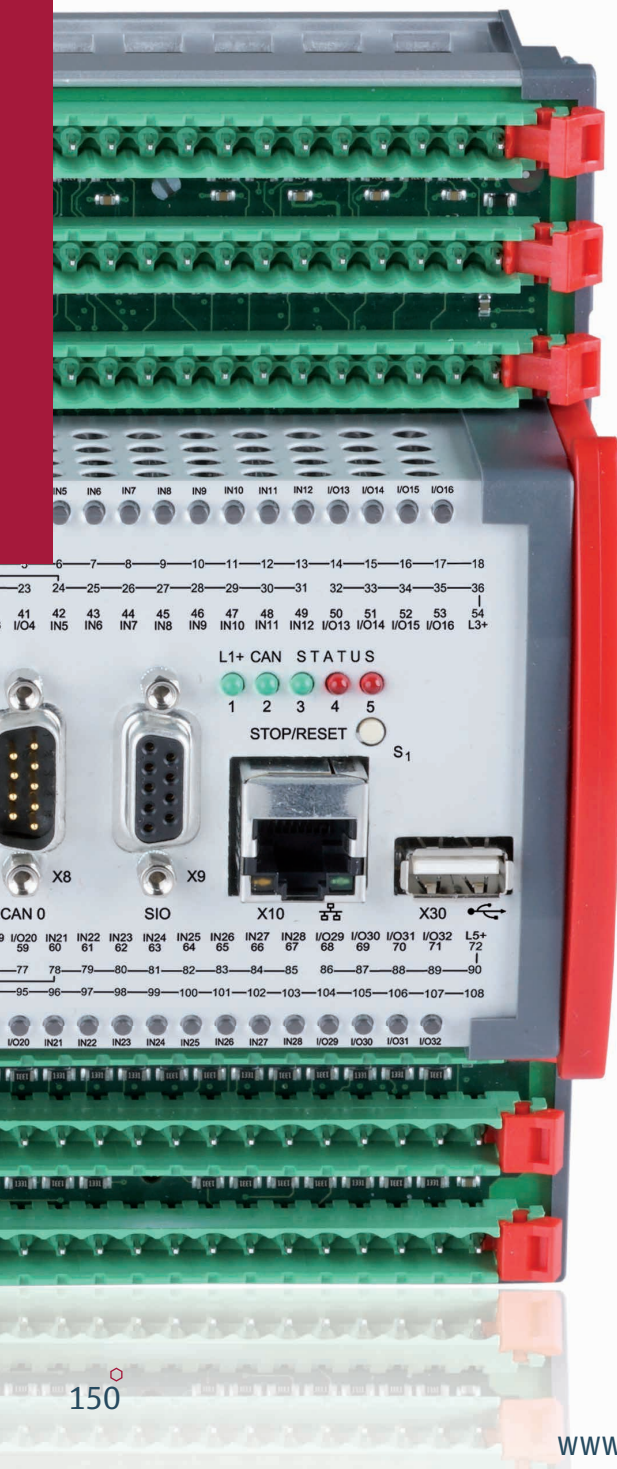
Retrofit offers numerous advantages:

→ Increase in production volume and product quality through new functions
→ Ensuring the supply of future spare parts
→ Reduction of downtimes and service uncertainties
→ Predicitve Maintenance
→ Retrofitting of automation technology possible at any time
→ Cheaper than a new purchase
→ Legal compliance
→ Fast availability

SECURE THE FUTURE

Our recipe for success - the 5 phases of retrofitting:

1. Analysis:
We analyse your plant for potentials to prepare the best possible solution for you.

2. Planning:
We will prepare an offer and adapt our concept to your wishes.

3. Programming:
Combination of the migration of the existing program with new functions or resetting the logic.

4. Assembly/Commissioning:
We replace your old control unit with our newly programmed unit and put the system into operation.

5. Service:
We accompany your production and serve as your contact for all your questions during and after the process.

Retrofitted:
Enjoy all the advantages of your retrofitted system. We will continue to support you with training & support if required.
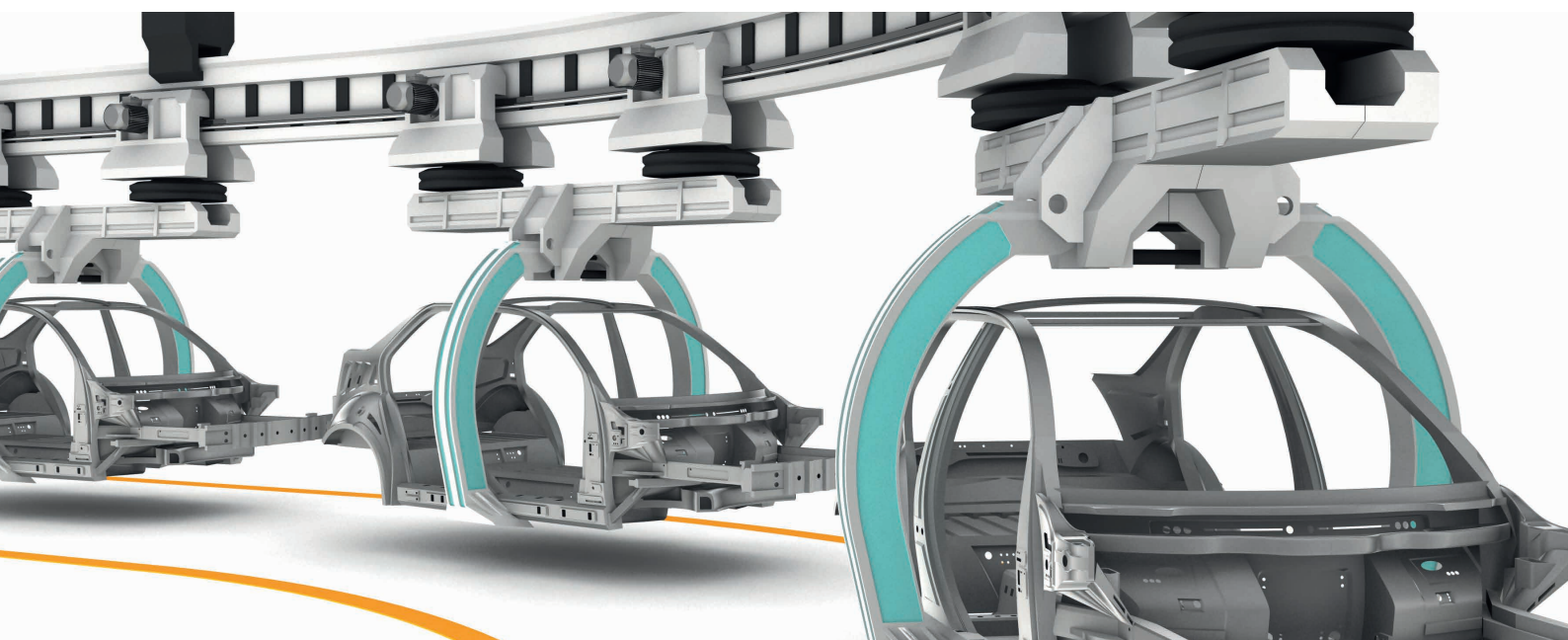
CODESYS & BERGHOF **TRAINING**

Know how with Berghof

The effectiveness of your solution depends on the optimum interaction between Berghof technology, programmer and operator. As one of the first companies in automation, we have a unique pool of knowledge and a pronounced service mentality. We would like to pass this experience on to you and therefore offer various custom-made training modules on all aspects of Berghof automation and CODESYS V3.

Module 1: Introduction to CODESYS V3 and Berghof controllers
Learn in a small group the essential functions of the Berghof controls and the basic elements of CODESYS V3 in just a short time.

Module 2: Getting started with CODESYS V3
Learn in a small group in just a short time the most important functions of CODESYS V3.

Module 3: CODESYS V3 fieldbuses
You will learn the basic functions and the use of known fieldbuses in CODESYS V3.

Module 4: Getting started with CODESYS V3 Softmotion
Learn the basic functions of CODESYS V3 SoftMotion and the configuration of drives.

Module 5: Berghof Motion
This training program introduces you to the Berghof Motion Library. You will also learn how to control your drive with PLCopen commands.

Module 6: CODESYS V3 communication
Get to know CODESYS V3 functions for communication via serial interface and network connection.

Module 7: Porting a CODESYS V2.3 project to CODESYS V3
Get to know the necessary measures of such a porting and test everything on a CODESYS SoftSPS.

Module 8: Introduction to object-oriented programming
Learn to apply your own projects independently in CODESYS V3.

Module 9: Optional topics
Use practical exercises to determine freely selectable problems with CODESYS V3.

BERGHOF **EXPRESS DELIVERY**

When time is of the essence

we offer you the possibility to purchase all our products, the appropriate accessories and spare parts through our express shipping service. As your satisfaction is at least as important to us as your machine availability, we can also leave you in urgent situations to take advantage of our express delivery service.

We do not abandon you, but are at your side as partners. Thanks to our expertise in the field of plant automation, we know how important it is to receive a spare part as quickly as possible. Because downtime costs money. You only need one device? No problem! The number of orders, size, weight and quantity of shipments are subject to only low minimum values.

BERGHOF **SOFTWAREENGINEERING**
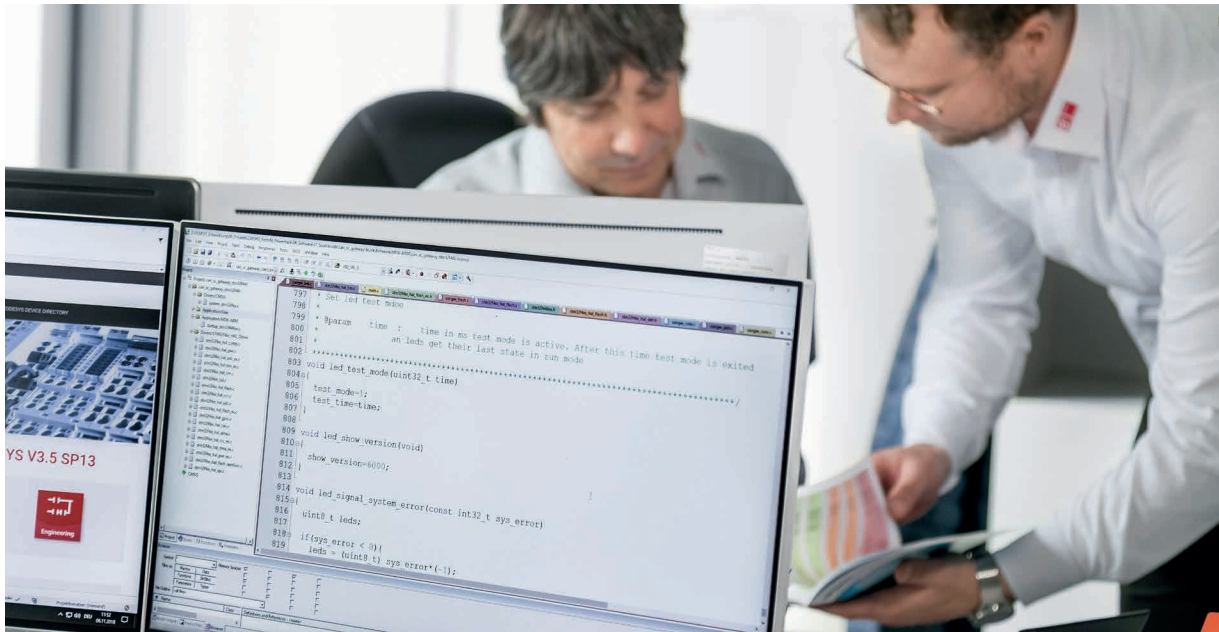
Customized software solutions

We provide the required individuality to write custom software for your application. On the basis of your specifications, we create functions that are perfectly tailored to your company.

Our spectrum of software solutions ranges from planning support to complete project planning. Here we use CODESYS V3 from 3S, the worldwide established standard for application development according to IEC 61131-3.

We guarantee optimal interaction of your hardware and software, guaranteed by our many years of expertise and the extensive know-how of the Berghof software specialists in the programming of CODESYS.

→ Consulting and planning of new plants, modernization and extensions
→ Development of requirement specifications
→ Automation concepts with design of bus and network structures
→ Development of operating concepts for fixed and mobile devices
→ Programming of PLC
→ Creation of visualizations
→ Interfaces to external controls
→ Interfaces to MES and ERP systems
→ Database applications
→ Traceability, data analysis and reporting
→ Inhouse- Tests, Factory acceptance test (FAT)

BERGHOF **MIGRATION CODESYS V2-V3**

Adapted to your requirements

Switching to the current CODESYS V3 is essential. Updates and support for previous versions are only available to a limited extent from the end of 2019.

Our CODESYS team of experts will safely port your applications to the latest version for you, regardless of the manufacturer of the hardware used.

Our software updates will then keep you up to date at all times. Your time expenditure will be kept to a minimum in order not to negatively influence the day-to-day business.

Extensive know-how. To make full use of the know-how of our experts, all you need to do is take a look into the future – where do you want to go? This perspective helps us to combine migration with optimization. If you are not yet sure, we will be happy to advise you.

Benefit from the extensive experience of our CODESYS experts from numerous challenging projects. Our team accompanies you competently and in partnership from the preliminary analysis, the execution of the porting and the commissioning up to the service, support and maintenance of your automation solution.

BERGHOF **COMMISSIONING**

The first step is always the hardest

but not with commissioning accompanied by a Berghof team of experts. The Berghof service specialists guarantee you a time- and cost-optimized realization of your projected service. Once all parameters and operating conditions have been optimised, you have a plant that is reliable in every respect. After completion of the installation and commissioning, we support you with qualified specialist personnel from the start-up phase to the continuous operation of your plant.

→ Testing of all signal paths from the control system to the field devices
→ Checking the direction of rotation of drives and the direction of action of actuators
→ Parameter setting for sensors, actuators, frequency converters, switching devices, etc.
→ Initial inspection of protective devices
→ Test of the automatic function sequences

BERGHOF **MAINTENANCE**

We predict maintenance

Failure of or even a defect in a machine causes high costs. Berghof helps you to minimize these downtimes and overspending and ensure longer machine run times. It is also important to us at Berghof not only to increase the availability of your system, but also to extend the overall life cycle.

All common service activities are adapted to your plant and needs.

All maintenance work is performed reliably and with the utmost care by certified service technicians and engineers.

The range of services includes:
→ 24-hour support via telephone, Internet or on site
→ Demand-oriented preventive maintenance
→ Performance and maintenance contracts
→ Repairs
→ Replacement deliveries
→ Plant reviews and enhancements including site migrations and capacity expansions
→ Systemupgrades and updates (Retrofit)

BERGHOF **CERTIFICATION**

We secure the interaction

You need components that work together with our controls and aren't sure it's gonna work?

Talk to us! Based on our many years of experience, we will give you detailed advice and, if necessary, subject your electronic components, modules and systems to intensive quality and functional tests.

You will then receive instructions on the use and limits of the application. You can build your application on this release with confidence.

For further questions, information or an offer for component certification, the Berghof team is always at your disposal. **Just get in touch with us.**

BERGHOF **24H SUPPORT**
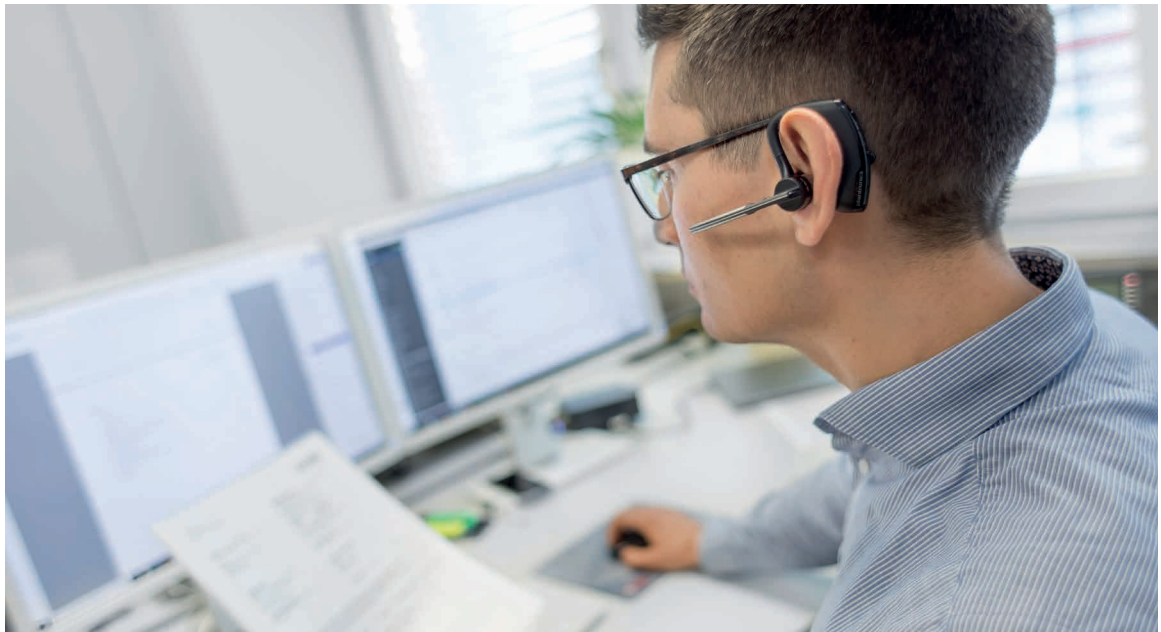
We are always available for you

Your system is awake 24/7, so are we!
You may benefit from our service including individually tailored components:

- → Telephone hotline / on-call service
- → Production support via remote access
- → On-site support

We would be pleased to create together with you the optimal service package for your needs.
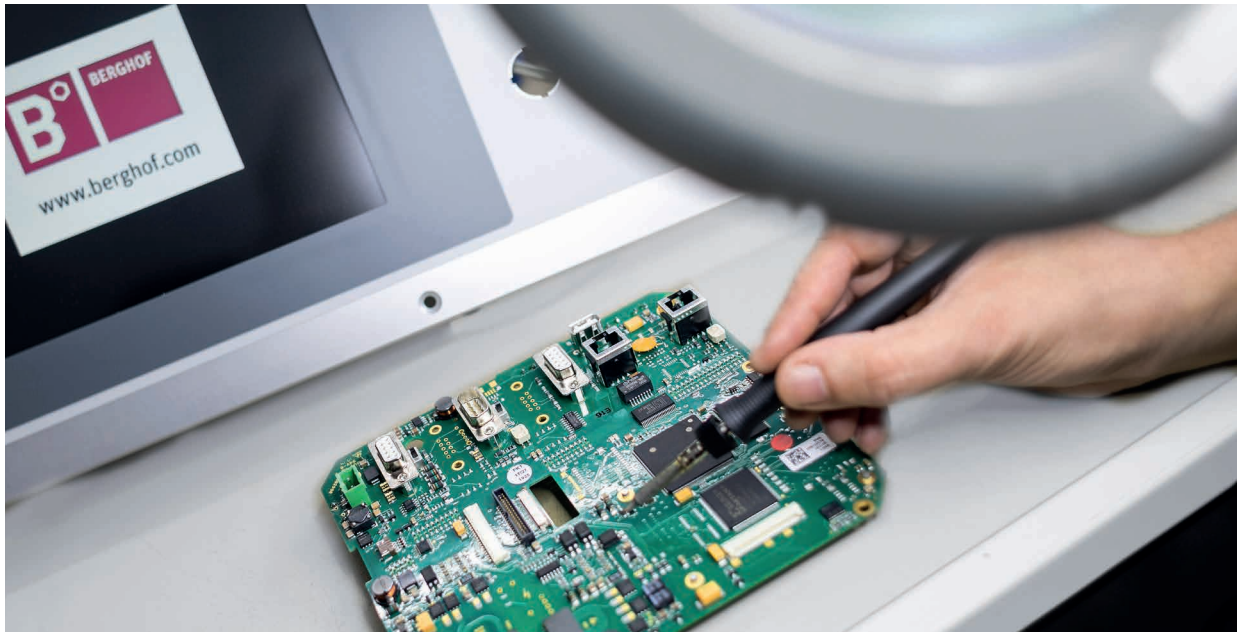
Knowledge and experience

are required for the repair of PLC components, control panel or industrial PCs. If a module has failed, a complete exchange is not always necessary. Above all, high-quality products should be reviewed for recovery by experts.

Berghof Automation and Control Solutions own a **special Maintenance team** with direct contact to the specialists of the Development and access to all documents of all product versions.

Furthermore, we provide appropriate warehousing and care about successor components in case of discontinuation. Not only current devices, also components from past generations can be easily repaired.

This is supported by an electronic device passport, which we create with each product. So even the installation of the original software at time of delivery is no challenge.

We carry out repair at component level with repair of only the defective components. We deliberately avoid, for example, board replacement in order to keep repair costs low. We charge according to a cost estimate, so you always receive the expenses in the desired scope. We finish the repair with a test procedure and a complete function test. Of course you will receive a protocol of the process.

If the cost for the reparation is too high, we are prepared to offer you other solutions.

BERGHOF **HOTLINE**
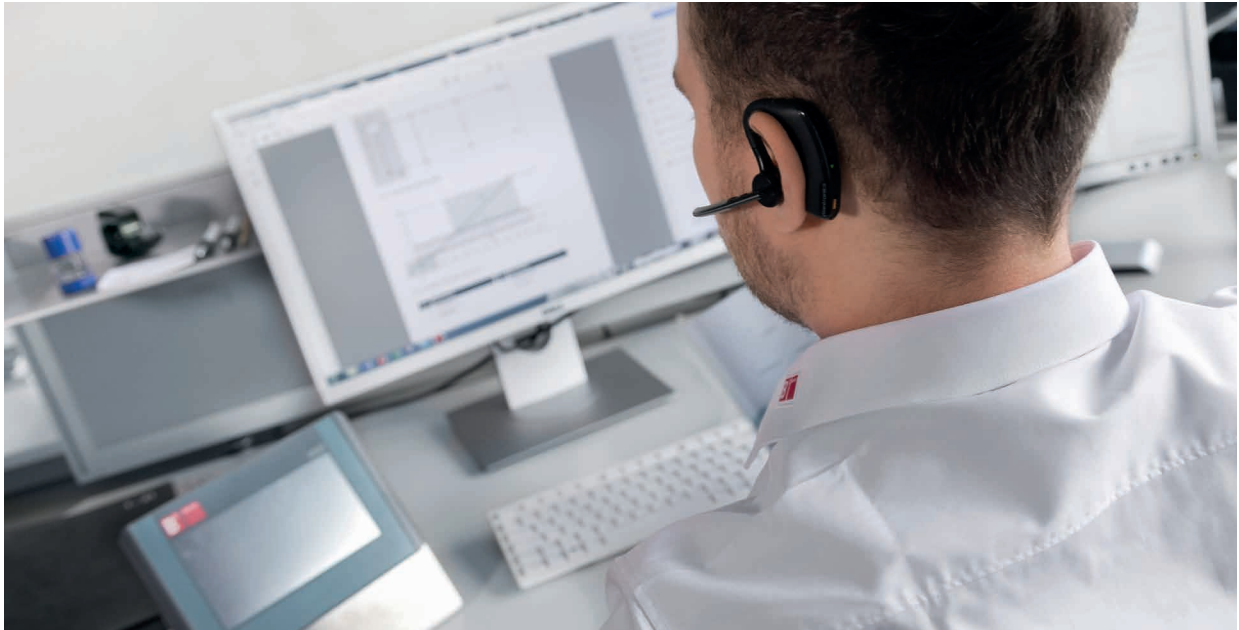
Reach us at any time

if you need it. This is our way of support. Specially trained professionals with extensive experience in the Tech fields of hardware, software, and almost all applications.

In every phase of life cycle we will be there for you by your side.

Whether in the development phase, commissioning or during of the operation of your plant
 – **Berghof is your reliable partner.**

Complex questions are answered face-to-face by replicating your constellation in our headquarter or also at your place.

You can contact us any time online or via the Support-Hotline:

Monday - Friday during office hours.
24/7 individually agreed.

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E: support-controls@berghof.com

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