

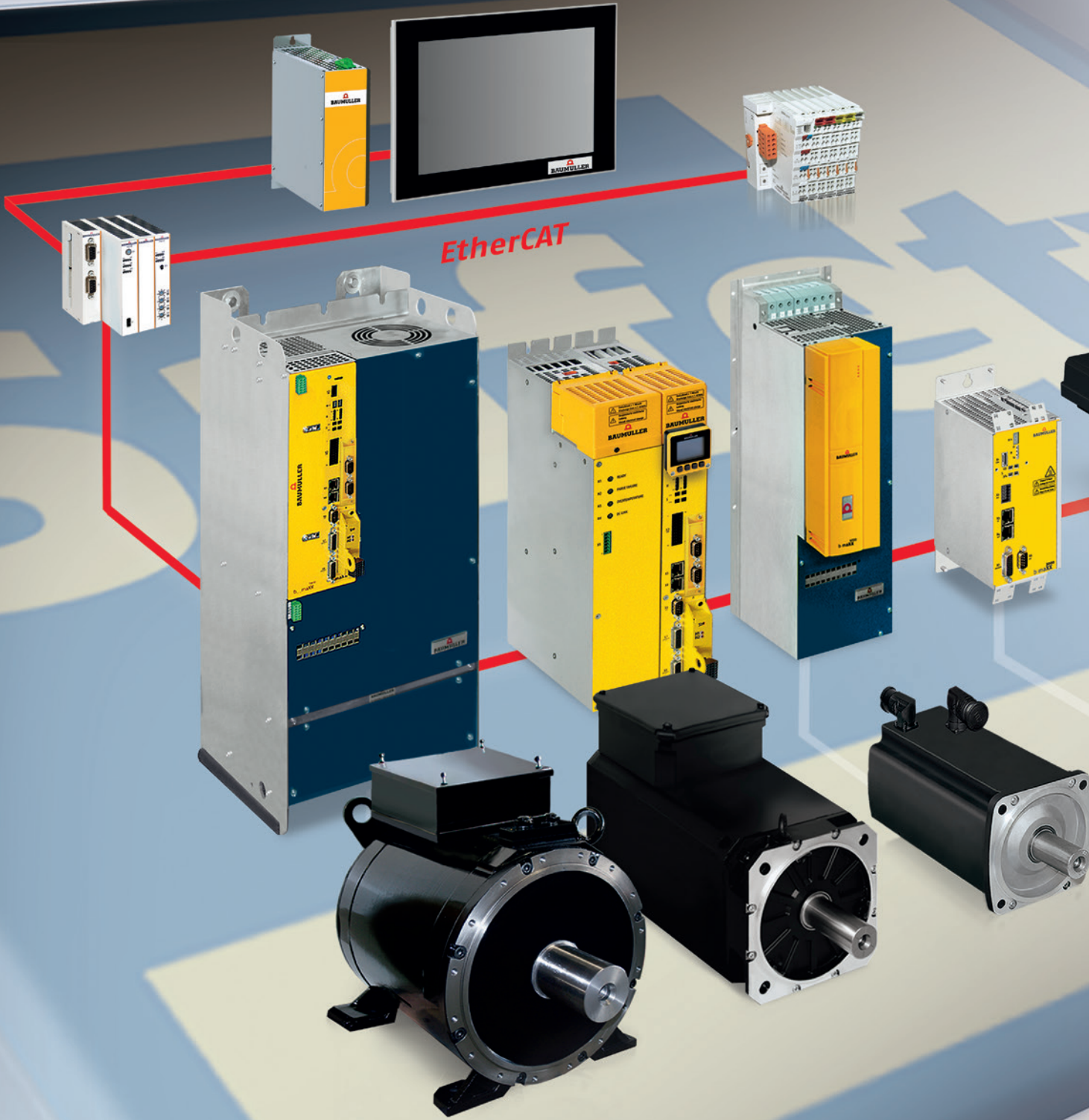



BAUMÜLLER

b maXX

be in motion



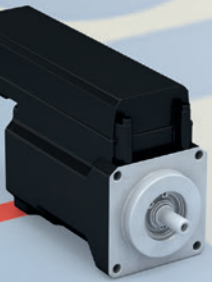


Added value for our customers

Our goal is to enable more flexibility in your machine design and ensuring your machine users the necessary productivity and efficiency in production, thereby giving your machines a competitive edge.

That is why the focus of our development is not just the entire system of a machine, but also the added value that we make available to our customers with the modularization of machines, the scalability of components and flexible technology blocks.

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b maXX 5000

The safe, modular servo controller



*) In preparation

Baumüller sets standards with the converter generation b maXX 5000. The further development of the successful b maXX series towards modular systems convinces with high-performance power units in air-cooled, water-cooled and cold plate cooling versions and with flexible expandability and the accessibility to an integrated communication concept. Standardized as well as complex automation solutions can be implemented with Baumüller's converters and controllers within a power range between 1 and 100 kW.

The machine and installation requirements with regard to future reliability, flexible expansion possibilities and a simple adjustment to changed production processes were already considered during the preliminary development process stages of the b maXX 5000.



Individual modules easily can be removed or added over an integrated drive connect system without having to disconnect the entire drive system.

b maXX 5000 – Integrated safety concept instead of add-on solution

- ⊙ Plug-in module, optionally with or without safety functions
- ⊙ Three different safety modules with scalable functionality
- ⊙ All modules with integrated parameter memory for safe and unsafe data
- ⊙ Safety functions according to IEC 61800-5-2
- ⊙ Power output for motor brake
- ⊙ Choice of safety functions via local safe I/O or EtherCAT FSoE



Safety functions
according to
IEC 61800-5-2

Technical data b maXX 5000 – Supply units



Frame size 3 4 7

Type	Frame size	DC link power		DC link peak power ¹⁾		Overload factor	Dimensions WxHxD [mm]
		[kW]	[hp]	[kW]	[hp]		
5031	3	10	13.4	15	20.1	1.5	75 x 395 x 280 / 210 ²⁾
5032	3	18	24.1	27	36.2	1.5	75 x 395 x 280 / 210 ²⁾
5043	4	36	48.2	54	72.4	1.4	100 x 395 x 280 / 210 ²⁾
5044	4	70	93.8	70	93.8	1.0	100 x 395 x 280 / 210 ²⁾
5072 *	7	70	93.8	140	188	2	175 x 395 x 250 ³⁾
5073 *	7	90	121	180	241	2	175 x 395 x 250 ³⁾
5074 *	7	150	201	300	402	2	175 x 395 x 250 ³⁾
5075 *	7	200	268	300	402	1.5	175 x 395 x 250 ³⁾

Technical data b maXX 5100 – Regenerative units



Frame size 4 7 8 9

Type	Frame size	DC link power		DC link peak power ¹⁾		Overload factor	Dimensions WxHxD [mm]
		[kW]	[hp]	[kW]	[hp]		
5143	4	36	48.2	52	69.7	1.4	100 x 395 x 280 / 210 ²⁾
5174	7	64	87	96	130.2	1.5	175 x 395 x 280 / 210 ²⁾
5182 *	8	70	93.8	140	188	2	225 x 395 x 250 ³⁾
5183 *	8	90	121	180	241	2	225 x 395 x 250 ³⁾
5192 *	9	150	201	300	402	2	425 x 395 x 250 ³⁾
5193 *	9	200	268	300	402	1.5	425 x 395 x 250 ³⁾

Supply units, regenerative units:

Supply voltage: 207 – 528 V ± 0% AC

Supply frequency: 50/60 Hz

Electronics supply: external 24 V DC

Supply rated voltage: 400 V

DC link rated voltage: 540 V (supply unit),
640 V (regenerative unit)

Certification: CE, cUL

*) In preparation

1) for 150 seconds

2) depth air cooling / depth cold plate

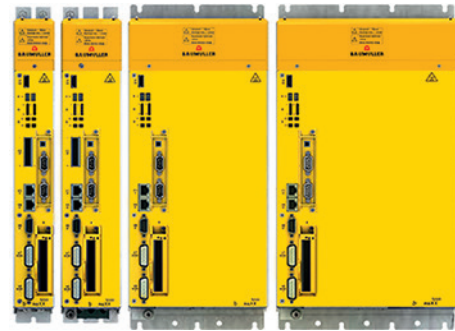
3) depth water cooling

Height and depth without mounting brackets;

Depth including required bending radius of connecting cables

Subject to alteration

Technical data b maXX 5300 – Axis units



Frame size 2 3 7 8

Type	Frame size	I _N [A]	I _{MAX} [A]	typ. motor rating ¹⁾		Overload factor	Dimensions W x H x D [mm]
				[kW]	[hp]		
5323	2	2 x 3	2 x 9	2 x 1.6	2 x 2.1	3	50 x 395 x 280 / 210 ²⁾
5325	2	2 x 6	2 x 18	2 x 3.2	2 x 4.2	3	50 x 395 x 280 / 210 ²⁾
5326	2	12	24	6.5	8.7	2	50 x 395 x 280 / 210 ²⁾
5327	2	20	40	10.8	14.5	2	50 x 395 x 280 / 210 ²⁾
5328	2	30	60	16.2	21.7	2	50 x 395 x 280 / 210 ²⁾
5331	3	2 x 12	2 x 24	2 x 6.5	2 x 8.7	2	75 x 395 x 280 / 210 ²⁾
5332	3	2 x 20	2 x 40	2 x 10.8	2 x 14.5	2	75 x 395 x 280 / 210 ²⁾
5333	3	2 x 30	2 x 60	2 x 16.2	2 x 21.7	2	75 x 395 x 280 / 210 ²⁾
5334	3	40	60	21.6	29.0	1.5	75 x 395 x 280 / 210 ²⁾
5335	3	60	90	32.4	43.4	1.5	75 x 395 x 280 / 210 ²⁾
5372 *	7	90	180	48.6	65.1	2	175 x 395 x 250 ³⁾
5373 *	7	120	240	64.8	86.8	2	175 x 395 x 250 ³⁾
5374 *	7	150	300	81	108.5	2	175 x 395 x 250 ³⁾
5375 *	7	180	360	97.2	130.2	2	175 x 395 x 250 ³⁾
5382 *	8	210	360	113.4	152.0	1,7	225 x 395 x 250 ³⁾
5383 *	8	250	375	135	180.9	1,5	225 x 395 x 250 ³⁾

Axis units:

Electronics supply: external 24 V DC
DC link voltage: 540 V rated voltage
Chopping frequency: 4/8 kHz
Certification: CE, cUL

For further information, see the b maXX complete catalogue

*) In preparation

- 1) Load cycles as per EN 61800
- 2) depth air cooling / depth cold plate
- 3) depth water cooling

Height and depth without mounting brackets;

Depth including required bending radius of connecting cables

Subject to alteration

b maXX 5500 – The servo drive for higher output ratings



*) In preparation

The modular converters 5000 have been extended to mono units in the range 5500. This covers power ratings of 10 to 315 kW and higher safety functions

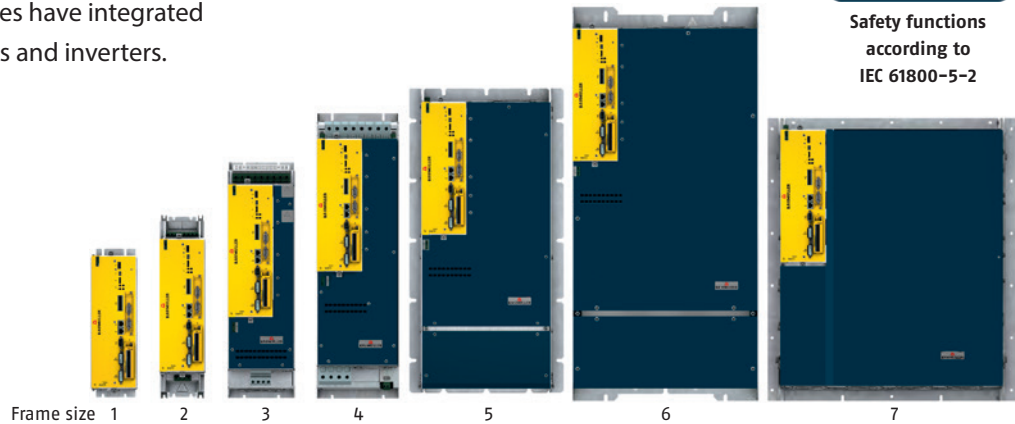
such as SLS (safely limited speed) and SLP (safely limited position) can be integrated up to high power ratings.



Safety functions
according to
IEC 61800-5-2

b maXX 5500 converter family

b maXX 5500 offers a performance range from 1.1 kW to 315 kW. All devices have integrated rectifiers, DC link capacitors and inverters.



Technical data b maXX 5500

Type	Frame size	I _N [A]	I _{MAX} [A]	typ. motor rating		Overload factor	Dimensions W x H x D ¹⁾ [mm]
				[kW]	[hp]		
5512 *	1	2.5	5	1.1	1.5	2	106 x 310 x 263 / ---
5513 *	1	4.5	9	2	2.7	2	106 x 310 x 263 / ---
5522	2	7.5	15	3.4	4.6	2	106 x 428 x 340 / 320
5523	2	11	22	5	6.7	2	106 x 428 x 340 / 320
5524	2	15	30	6.8	9.1	2	106 x 428 x 340 / 320
5525	2	15	40 ²⁾	6.8	9.1	2.6	106 x 428 x 340 / 320
5526 ³⁾	2	22.5	45 ²⁾	6	8.0	2	106 x 428 x 340 / 320
5526	2	22.5	45 ²⁾	10	13.4	2	106 x 428 x 340 / 320
5532	3	22.5	45	10	13.4	2	155 x 510 x 340 / 325
5533	3	30	60	13	17.4	2	155 x 510 x 340 / 325
5534	3	45	90	20	26.8	2	155 x 510 x 340 / 325
5535	3	60	90	28	37.5	1.5	155 x 510 x 340 / 325
5543	4	80	120	36	48	1.5	190 x 624 x 374 / 327
5544	4	100	130	45	60	1.3	190 x 624 x 374 / 327
5545	4	130	170	58	78	1.3	190 x 624 x 374 / 327
5546	4	150	200	75	100	1.3	190 x 624 x 374 / 327
5553	5	150	195	75	100	1.3	307 x 656 x 374 / 321
5554	5	210	260	110	147	1.3	307 x 656 x 374 / 321
5562	6	250	325	132	177	1.3	437 x 815 x 378 / 316
5563	6	300	390	160	215	1.3	437 x 815 x 378 / 316
5566	6	350	450	175	234	1.3	437 x 815 x 378 / 316
5572	7	450	585	225	302	1.3	520 x 600 x --- / 340
5573	7	615	780	315	422	1.3	520 x 600 x --- / 340

Supply voltage: 207–528 V ± 0% AC
Supply frequency: 50/60 Hz
Supply rated voltage: 400 V
DC link voltage: 540 V rated voltage
Chopping frequency: 2/4/8 kHz
Output voltage: 0–95 % of supply voltage

Electronics supply: external 24 V DC (diagnostic capability)
Fan connection: frame size 1–3: 24 V DC electronics supply,
frame size 4–7: 230 V AC ± 10 %
Certification: CE, CSA, UL

Subject to alteration

*) in preparation

1) Depth air cooling / depth water cooling

2) for 1 second

3) single phase

Height and depth without mounting brackets;
depth including required bending radius of
connecting cables

b maXX 5600/5700

The application specific servo drive



*) In preparation

The established automation and drive solution b maXX was expanded with the new peak load and nominal load devices of the 5600 and 5700 series. The units complete the b maXX series and are available in five sizes. Therewith, Baumüller meets the requirements of industry-specific applications such as in the field of injection moulding or extrusion processes, because here either short-term peak power or permanent

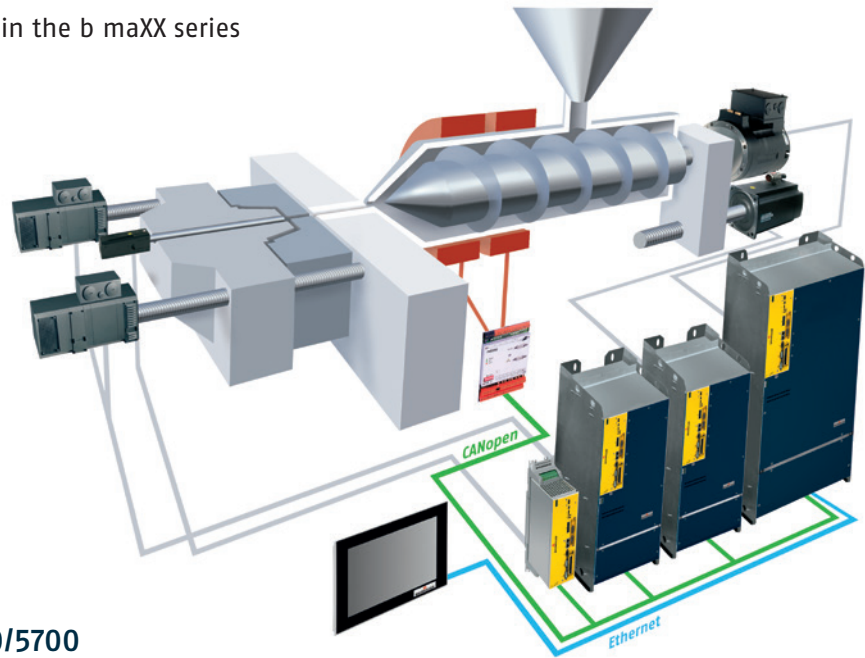
maximum power in constant operation are in demand. The drive can optimally be matched to the power demands of the respective application. Even though the series is equipped with greater power rating it is available in smaller sizes and minimizes the required space in the control cabinet – hence the user benefits twice.



Safety functions
according to
IEC 61800-5-2

b maXX 5600/5700 – Your benefits at a glance

- ⊙ Optimised drive solution for specific industry requirements
- ⊙ Different sizes available for compatible drive dimensions
- ⊙ Less space required in the control cabinet due to smaller devices and the use of water cooling, control cabinet therefore less expensive to manufacture
- ⊙ Water cooling in the control cabinet provides a cost-effective solution
- ⊙ Compatible with other devices in the b maXX series



Technical data b maXX 5600/5700

b maXX 5600 Type	Frame size	I_N [A]	I_{MAX} [A]	Overload factor ¹⁾	Dimensions WxHxD [mm]
5632-F	3	60	120	2	208 x 556.5 x 325
5641-F	4	85	170	2	242 x 681 x 327
5642-F	4	100	200	2	242 x 681 x 327
5650-F ²⁾	5	130	260	2	360 x 550 x 285
5651-F ²⁾	5	165	330	2	360 x 550 x 285
5652-F ²⁾	5	200	400	2	360 x 550 x 285
5661-F ²⁾	6	250	500	2	490 x 710 x 285
5662-F ²⁾	6	300	600	2	490 x 710 x 285

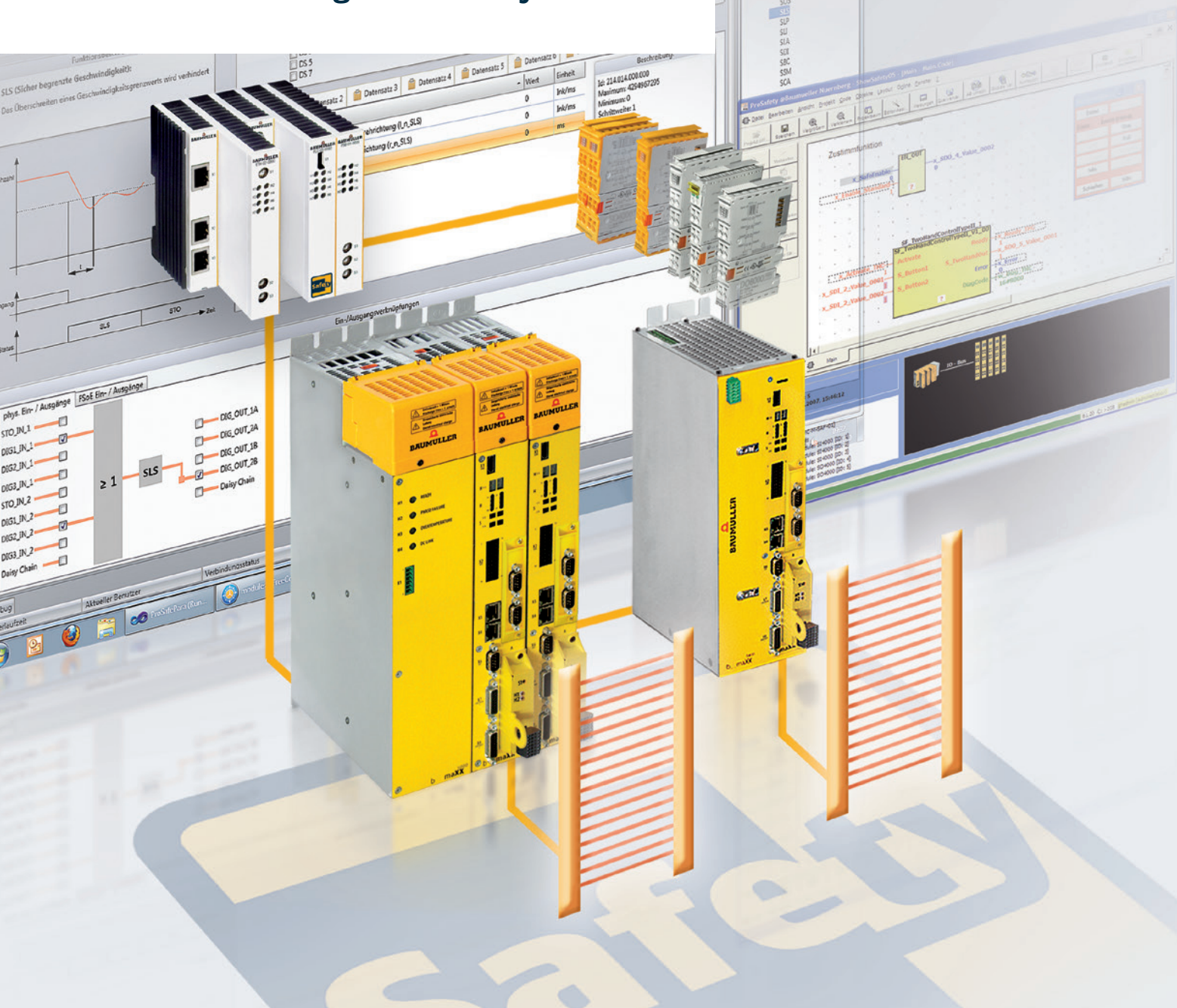
b maXX 5700 Type	Frame size	I_N [A]	I_{MAX} [A]	Overload factor ¹⁾	Dimensions WxHxD [mm]
5755-F ²⁾	5	260	260	1	360 x 550 x 285
5766-F ²⁾	6	450	450	1	490 x 710 x 285
5773-F	7	720	800	1.1	580 x 660 x 340

1) for 1 second with a cycle of 5 seconds

2) compact design, water-cooled

Subject to alteration

Drive-integrated safety



The machine manufacturer as well as the operator must comply with the safety requirements of the standard EN ISO 13849. In order to ensure this, Baumüller starts where all machine processes are coordinated: in the automation system. Baumüller prefers a holistic solution contrary to conventional concepts, which require for example, additional emergency stop devices. Precondition for a holistic solution are hardware components which are

scalable and configured with high-class safety functions.

Baumüller provides such a control system - the b maXX-safePLC. This is an essential component of the comprehensive drive-integrated safety concept. In this way Baumüller complies with the requirements of the new Machinery Directive. The new safety control b maXX-safePLC and the new converter generation b maXX 5000 are the main components.



SAF-000



Safety function:
none
Parameter memory: yes

SAF-001



Safety function:
STO
Safely controlled via: I/O
Parameter memory: yes

SAF-002



Safety function:
STO, SS1, SS2, SOS, SDI, SLS, SBC
Safely controlled via:
I/O and field bus
Parameter memory: yes

SAF-003



Safety function:
STO, SS1, SS2, SOS, SLA, SLS,
SLP, SLI, SDI, SBC,SSM,SCA
Safely controlled via:
I/O and field bus
Parameter memory: yes

Plug-in safety for the b maXX 5000

Four modules with plug-in board design for the b maXX 5000 provide the perfect solution for drive-based safety. Machine manufacturers can quickly and flexibly adapt the converter to meet the relevant application requirements.

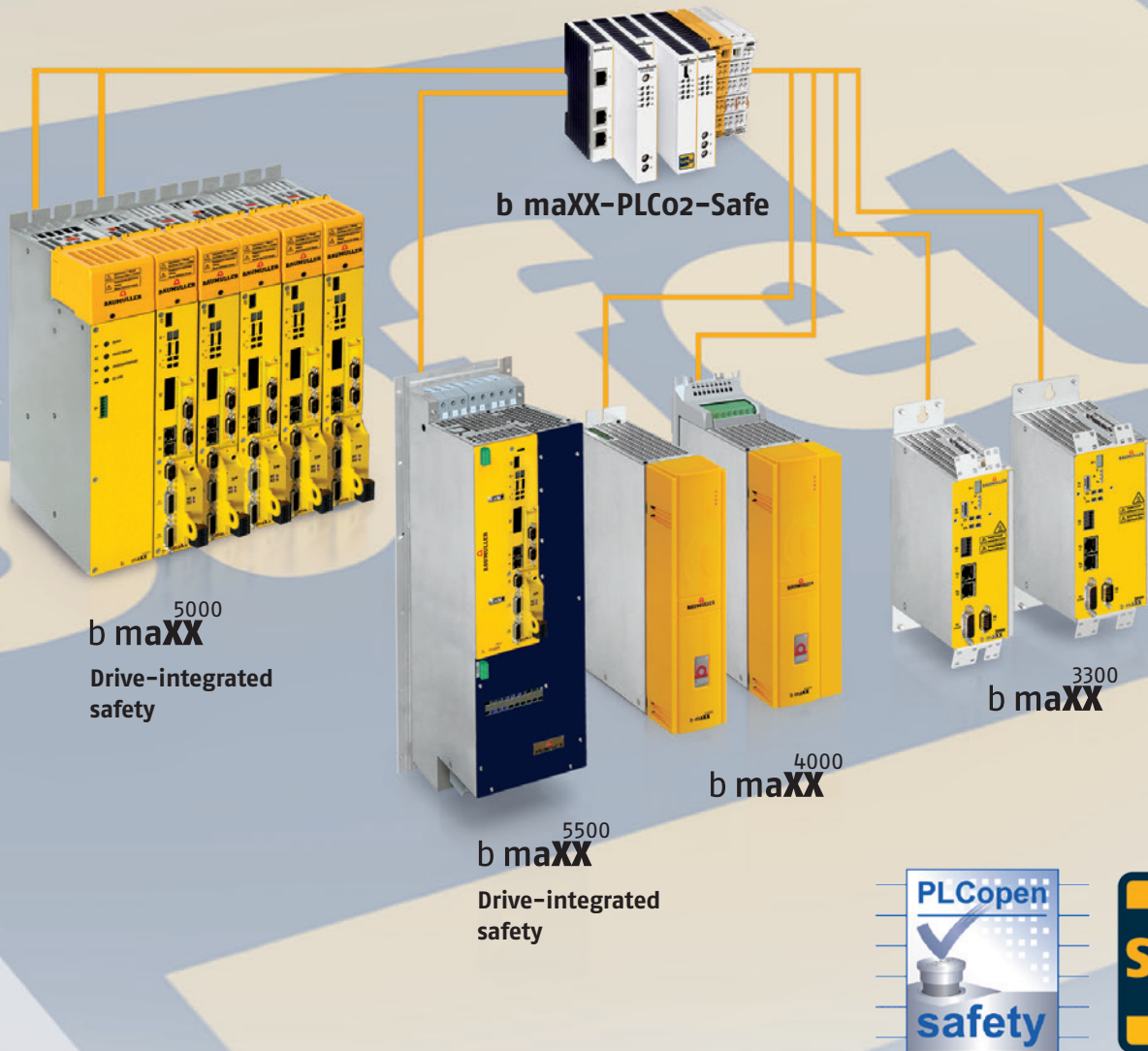
Three safety options with the safety modules

The SAF-001, 002 and 003 safety modules guarantee the required machine safety and future compatibility in line with the latest standards. The b maXX 5000 fulfils the guidelines in standard EN ISO 13849 up to SIL 3 with its scalable range of functions and EN 62061 up to PL_e.

The plug-in SAF modules allow the user to respond to new requirements with maximum speed and flexibility. All modules are equipped with an integral parameter memory that stores all the safe and unsafe parameters preset on the b maXX drive controller.

The safe functions are selected via safe local I/Os or EtherCAT-FSoE, which are integrated on the safety module.

The safe application



EN 13849-1 builds on the qualitative aspect of EN 954-1 by including a quantitative calculation of safety functions. For many systems, this will mean that a safety control will need to be used. As a member of the PLCopen Safety organization, Baumüller has addressed the new automation sector requirements, enabling it to offer you safety solutions in conformance with PLCopen Safety and which can be integrated into

the machine's automation system as a whole. The concept encompasses centralized, modular decentralized, and hybrid automation structures and is reflected in every area of the application. In this way, Baumüller integrates its safety concept into all automation components – including communication – as well as into the ProMaster Engineering Framework.

b maXX-PLC02-Safe safety control

In addition to the safety aspect, the b maXX-PLC02-Safe is also characterized by the way in which it reduces complexity. This is achieved by eliminating the need for complicated wiring, reducing the number of wires involved, and minimizing the inspection effort required. Centralized safety controls often make multi-coupled units completely superfluous to requirements. Therefore, the combined SIL0/SIL3 safety control not only reduces the complexity of your system or machine and ensures safe operation, it also offers a cost benefit compared to conventional solutions.

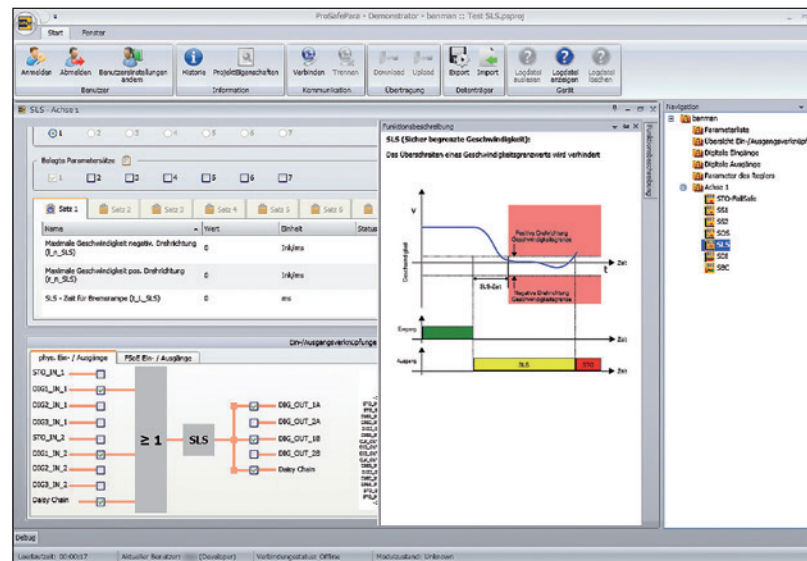


Easy, intuitive parameterisation of drive safety with ProSafePara

Baumüller is one of the few drive and automation manufacturers that consistently offers integral safety solutions for central, local modular and hybrid automation structures in line with the standards stipulated in the Machinery Directive, EN ISO 13849-1 and EN IEC 62061 up to Performance Level e and Safety Integrity Level 3. The ProMaster engineering tool supports configuration of the parameters of the b maXX safety modules SAF-002 and SAF-003. ProMaster enables the scalable integration of b maXX 5000 safety modules in standard automation technology using the integral safe parameterisation environment ProSafePara.

Safety technology is fully integrated in the ProMaster engineering tool in the ProSafePara environment and accesses the same project database.

The environment was developed according to the requirements of standard IEC 61508 and covers all safety requirements up to SIL 3, thereby guaranteeing the safe parameterisation of safety modules SAF-002 and SAF-003.



Parameterisation screen for SLS safety function (Safe speed)

b maXX softdrivePLC



With the new b maXX softdrivePLC Baumüller makes separate control hardware unnecessary for some applications. Due to the combination of motion control and SPS functions in the controller, Baumüller has created a decentralized control architecture for programming according to IEC 161131 which enables the simple structuring of distributed intelligence in the machine. Using the parameterization tool ProDrive, tasks such as the simple

evaluation of digital inputs up to sophisticated control algorithms can be easily completed, without the need for complex control programming tools.

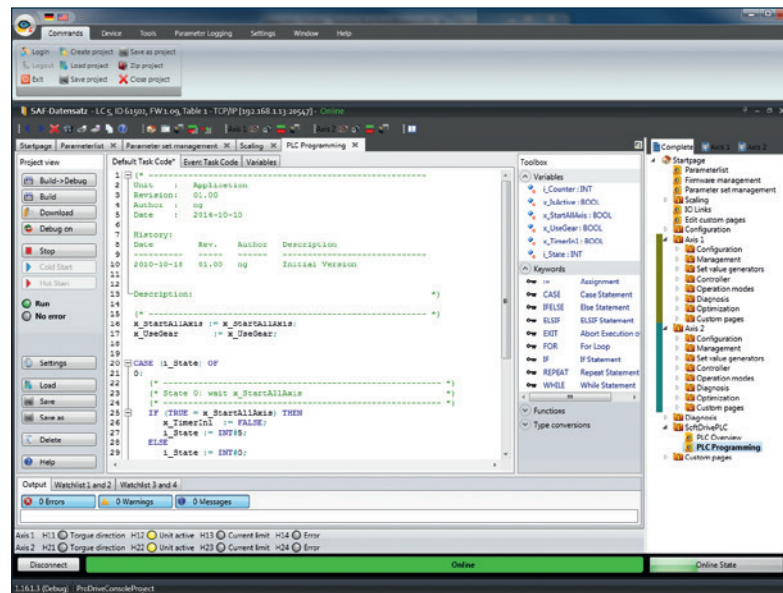
b maXX softdrivePLC runs as part of the firmware in the Baumüller drive concepts b maXX 5000, b maXX 3300 as well as in the decentralized drive concept b maXX 2500 and works with single axis applications as well as with double axis applications.

By means of the softdrivePLC, programs run highly synchronous to the control cycle at cycle times up to 125 μ in the controller and special filters, for example, can be programmed. You can furthermore profit from many other advantages:

- Cost saving due to omission of control hardware
- Fieldbus communication between two axes not applicable
- Easy implementation of master-slave functionalities
- Multi-axis access to the parameters is possible

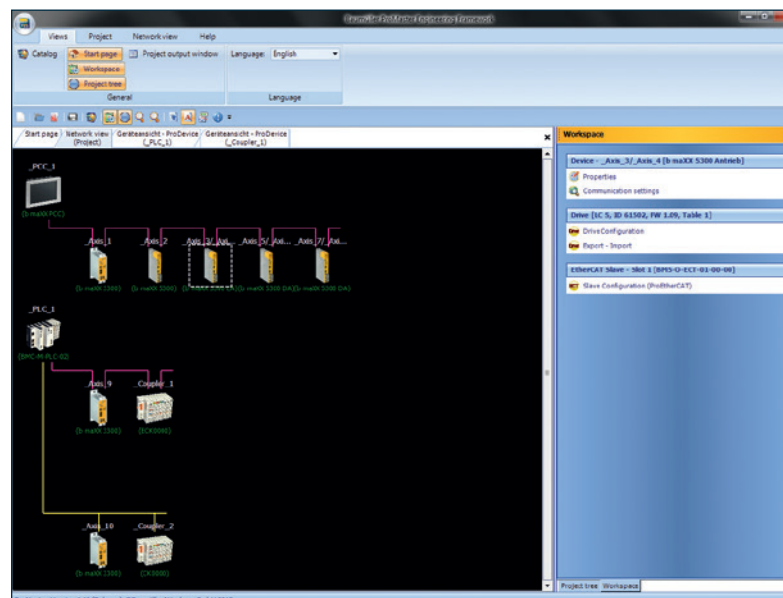
Programming with ProDrive for basic version

Using the softdrivePLC you no longer require complex tools for control programming. Control tasks can be locally implemented very easily with the parameterization tool ProDrive in the controller – from simple calculations to highly complex control algorithms.

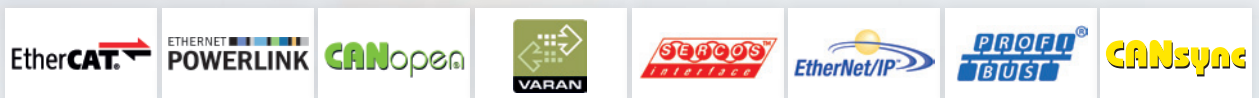


Embedded in ProMaster and programmable with PROPROG 5 as an extended version

The extended version of the softdrivePLC is completely integrated into the engineering framework ProMaster. Here you will find all applications for the generation of a machine and installation topology, the fieldbus / and I/O configurations as well as the programming environment PROPROG 5, the cam editor ProCAM and much more.



b maXX 4000 Modular servo controller



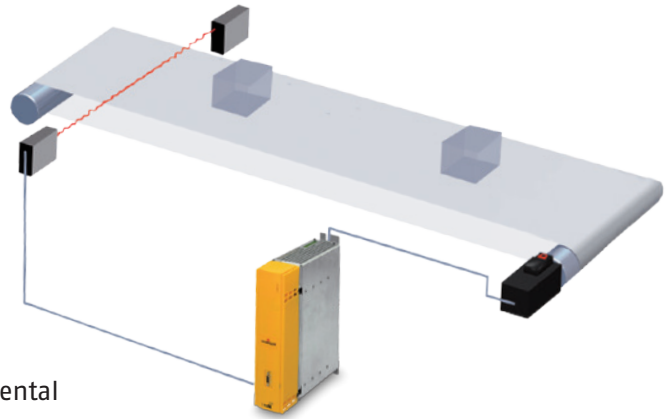
b maXX has up to eleven inserts for plug-in modules and can therefore be individually adapted for special automation tasks. Special plug-in modules interface b maXX, including interface adaptors for most standard bus systems. The plug-in b maXX-drivePLC module provides integrated intelligent control.

Fields of application

b maXX 4400 was designed and developed for a wide range of applications. For very simple applications with an open loop vector control for the encoderless control of standard motors and for standard servo applications with a closed loop vector control, b maXX 4400 is typically equipped with:

- ⊙ Encoder feedback such as resolver, SinCos or incremental
- ⊙ Digital I/Os for recording control signals

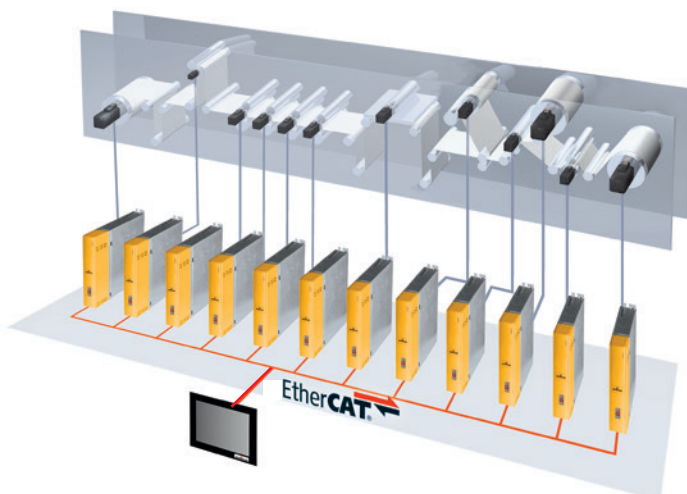
This configuration meets the requirements for simple positioning and drive tasks in the following fields: conveyor belts, material handling systems, cutting equipment, punches, presses and many more.



For complex automation tasks b maXX 4400 is typically equipped with

- ⊙ Encoder feedback such as SinCos, incremental or full digital encoder systems
- ⊙ Asynchronous field bus interfaces such as CANopen or Profibus DP
- ⊙ Synchronous field bus interfaces such as CANsync or Sercos, CANopen with Sync-Telegram
- ⊙ Ethernet-based field buses such as EtherCAT, Powerlink, Varan, EtherNet/IP
- ⊙ Ethernet TCP/IP: the data highway for diagnosis, visualisation, teleservice, engineering
- ⊙ Integrated PLC: b maXX-drivePLC for complex control/technology tasks
- ⊙ Digital I/Os for process interfacing
- ⊙ Analogue I/Os for measured value acquisition
- ⊙ Encoder emulation (incremental/SSI)

Consequently, b maXX 4400 is suitable for complete automation solutions:



- ⊙ Newspaper, form or label printing
- ⊙ Plastics processing
- ⊙ Textile manufacture and processing
- ⊙ Packaging and food processing
- ⊙ Robotics and handling
- ⊙ Machine tools
- ⊙ Paper processing
- ⊙ Metal and wire processing
- ⊙ Wood working and many more

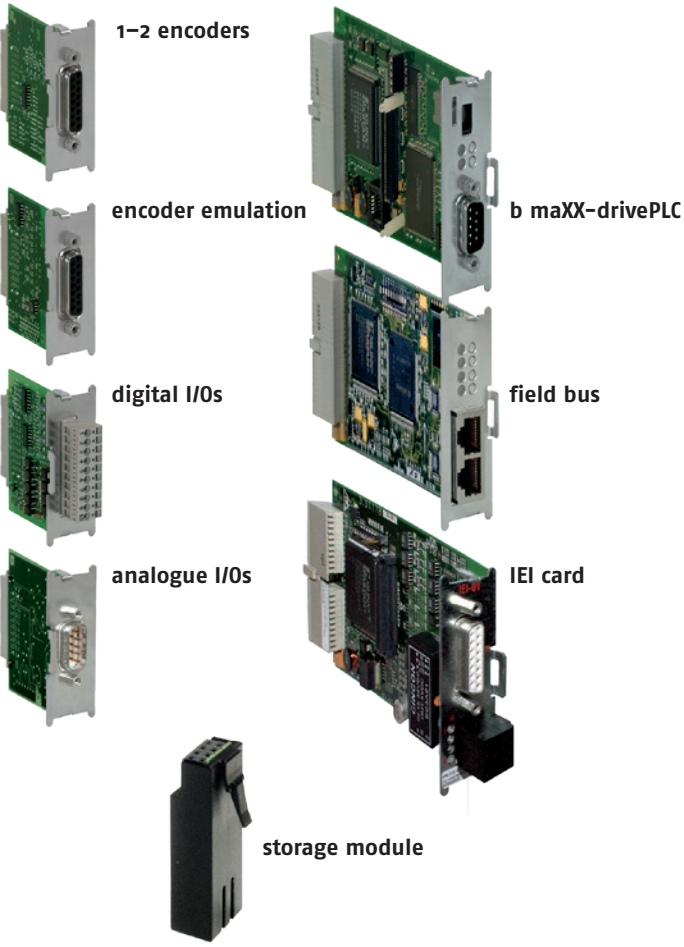
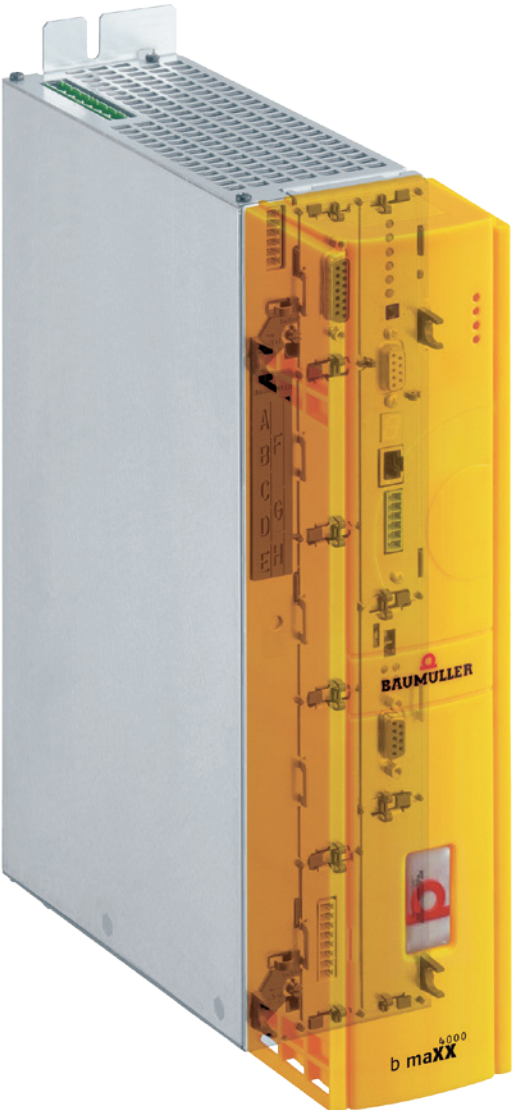
Function and option modules for b maXX 4400

With more than 30 different function and option modules b maXX can easily be adapted in line with the individual tasks of the automation and drive solution.

The individual modules are designed as plug-in boards and therefore the drive controller no longer has to be ordered as a preassembled unit. By using various plug-in boards, the machine manufacturer can secure a wide variety of functions and configure

the appropriate combinations on their own. In this way, he can react quickly and flexibly to new requirements.

This system also ensures that the drive can be quickly expanded at the user's facility. Production adjustments can be implemented within a short space of time and with minimal effort.



Digital I/Os



- ⊙ 4 inputs, 24 V industrial logic, isolated
- ⊙ 4 outputs, 24 V industrial logic, isolated, 0.5 A

Encoder Interfaces



- ⊙ SinCos encoder
With hipurface interface and electronic rating plate. Resolution: up to several million incr./rev.
- ⊙ Resolver, resolution: 1024 incr./rev.
- ⊙ 5 V-square-wave incremental encoder, res.: (stroke no. x 4) incr./rev.
- ⊙ SinCos encoder with EnDat® interface
Sine/cosine encoder with EnDat 2.1 and 2.2 interface for single and multiturns, length measurement systems and absolute position recognition.
- ⊙ SinCos encoder with SSI interface
Sine/cosine encoder with SSI standard interface, with internal and external encoder power supply.
- ⊙ Incremental encoder emulation
5 V-square-wave/differential signal, 90° phase shift

Storage module



The parameter storage module contains all the parameters that are set on the drive controller of the b maXX for all 8 parameter data records and all 16 positioning profiles. New parameters can be loaded to the drive controller simply by plugging in the module. Given that the parameter module is pluggable, a drive can be replaced during servicing without the need for any knowledge of the operating software. Servicing could not be easier.

Analogue I/Os



- ⊙ 2 inputs ± 10 V 12 Bit and 2 outputs ± 10 V 8 Bit
- ⊙ 2 inputs ± 10 V 16 Bit and 2 outputs ± 10 V 16 Bit
- ⊙ 2 inputs ± 10 V 12 Bit and 2 outputs ± 10 V 12 Bit
- ⊙ 2 inputs 4–20 mA, 16 Bit, 2 outputs ± 10 V 16 Bit

Field bus modules for b maXX 4400



b maXX 4400 supports all conventional field bus systems. b maXX can be optimally integrated into all systems by simply replacing the corresponding option module. EtherCAT is the standard field bus.

Field bus interfaces

Field bus	b maXX 4400	b maXX-drivePLC
EtherCAT	Slave	Slave, Master, Cluster
EtherNet/IP	Slave	-
CANopen	Slave	Slave, Master
CANsync	Slave	Slave, Master
Profibus	Slave	Slave
Sercos	Slave	-
Varan	Slave	-
POWERLINK	Slave	Slave
Ethernet	TCP/IP	TCP/IP



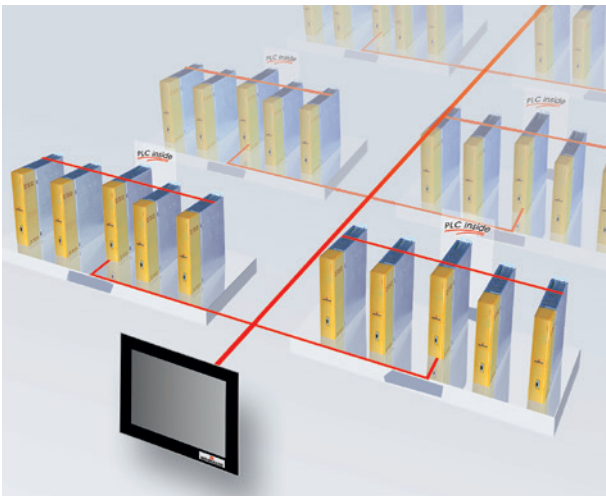


The control unit b maXX-drivePLC

The b maXX-drivePLC module makes the drive intelligent. This in-drive control intelligence allows very fast access to the setpoints and actual values of the drive controller. Therefore, the functionality of the drive can be enhanced with complex motion, control and technology functions. This ensures that the application can be created quickly and economically.

b maXX-drivePLC – one of the fastest in-drive PLCs in the world

With a typical cycle time of 100 microseconds for 1,000 lines of STL, b maXX-drivePLC is one of the fastest in-drive PLCs in the world and is therefore ideal not only for sophisticated control tasks but also for demanding motion control tasks. This relieves the burden on the control PLC which can, if required, now be replaced with a smaller control unit. The machine program and the motion control application can be completely decoupled. This enhances the transparency and clarity of the application.

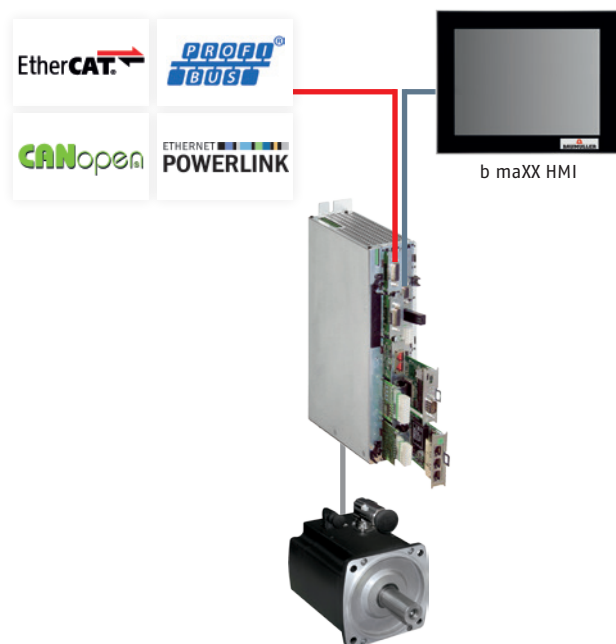


The CAN option module serves as a CANopen master for b maXX-drivePLC. Up to 65,536 digital I/O points can be connected with this module. With the existing EtherCAT master and the CANsync master, sophisticated and highly synchronous motion sequences can be controlled directly on the b maXX-drivePLC. The comprehensive product range includes decentralised analogue and digital I/O modules.

The program memory of the b maXX-drivePLC is sufficient for 120,000 lines of STL. 2 MB RAM is available for variables. The optional, nonvolatile 56 KB memory requires no battery and features a NOVRAM buffer. This guarantees that sufficient code memory is available. Cost-intensive memory expansions are not necessary. Thanks to the battery-free NOVRAM, the data is available maintenance-free and without data loss after each switching off/on operation.

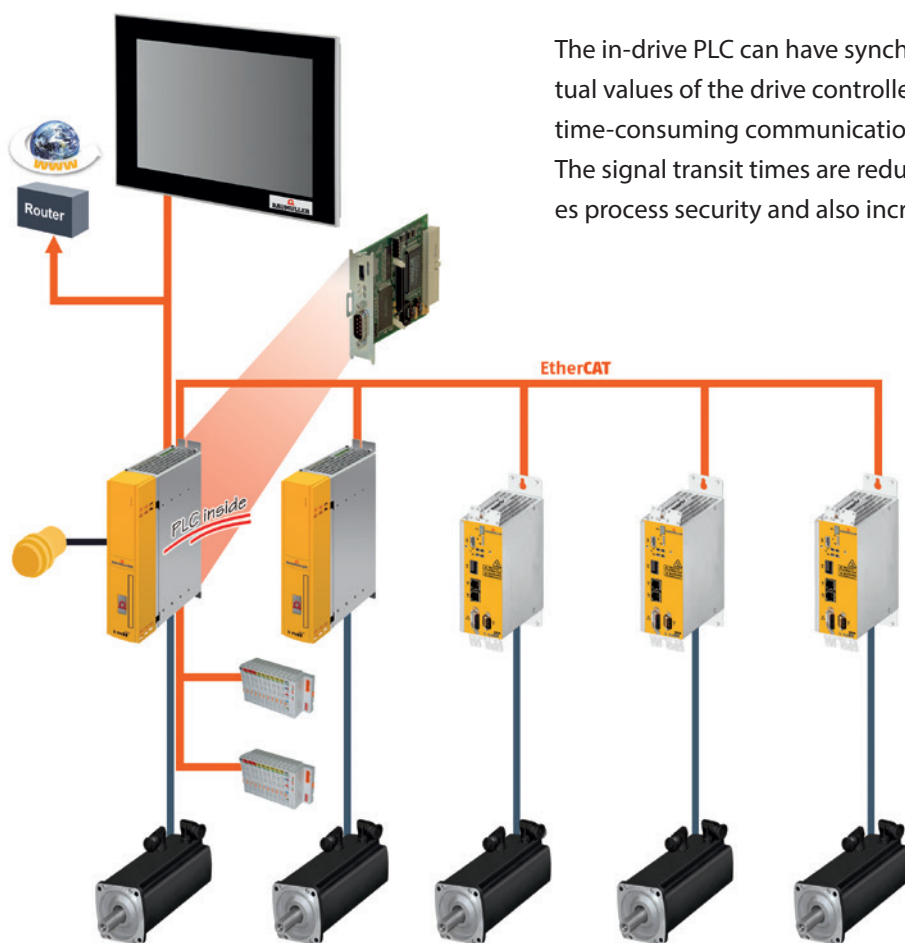
Technical data

- ⦿ 32 bit processor, 120 MHz
- ⦿ 2 MB program memory for max. 200,000 STL lines or typically 60,000 STL lines
- ⦿ 2 MB variables memory
- ⦿ 1.4 MB memory for debug functions, e.g. logic analysis
- ⦿ Typically 100 μ sec/1000 lines STL
- ⦿ 56 kB nonvolatile memory and 4 MB flash expansion (optional)
- ⦿ IEC 61131 multi-tasking, real-time operating system



PLC and drive are synchronous

The in-drive PLC can have synchronized access to all setpoints and actual values of the drive controller via the internal parallel bus. Therefore, time-consuming communications programs do not have to be created. The signal transit times are reduced to a minimum. This greatly enhances process security and also increases the availability of the system.



Further details on how b maXX 4400 can be extended into a complete automation system can be found in the brochure with the title "Automation".

All the advantages at a glance

- ⦿ Fast, synchronous PLC access to the drive controller:
Sophisticated communications programs are no longer required – the burden on the system is relieved
- ⦿ No wiring between the PLC and the drive:
Fault-prone cable connections can be reduced – availability is increased
- ⦿ Compact design saves control cabinet space:
The volume of the control cabinet can be reduced
- ⦿ Maximum PLC and servo controller performance due to independent processors:
No limitations due to overlapping processes – the system remains stable and reliable
- ⦿ Baumüller is the contact partner for the PLC and drive system, and therefore the automation system as a whole: Experience and competence for the entire automation system – direct communication with one reliable partner reduces the amount of engineering that is required



Five cooling concepts for seven frame sizes allow you to select the optimal power modules for your requirements.

New approach for power modules

Baumüller has adopted a new approach with its power modules. To enhance diagnostics capability, the power modules are coupled with the drive controller via internal, serial communication. In this way, the drive controller can be parameterized independent of the size of the power module. The amount of engineering required is reduced.

The power modules are provided with integrated line voltage measurement for operation in different networks throughout the world, e.g. the USA.

A wide variety of cooling concepts allow you to select the optimal cooling system. The push-through cooling concept greatly reduces power loss in the control cabinet. Depending on the application, cost-intensive cooling and air-conditioning systems are not required.

The utilization of the water cooling version paves the way for a reduction of the construction volume and, as a result, cost-effective control cabinet designs can be implemented. Stainless steel cooling systems guarantee low-maintenance operation and high availability.

Braking energy

Brake resistor activation is integrated in the form of a brake chopper. A regenerative resistor is connected externally. This paves the way for optimal dimensioning and also reduces the volume of the control cabinet.

Line filter

To optimize configuration from a cost perspective, line filters are always connected in series outside the device. Several power modules can thus be grouped for each line filter resulting in reduced costs for the system as a whole.

Temperature-dependent fan control

The fan is controlled relative to the temperature inside the device. This leads to a reduction in energy consumption and therefore lowers the overall costs of a system.

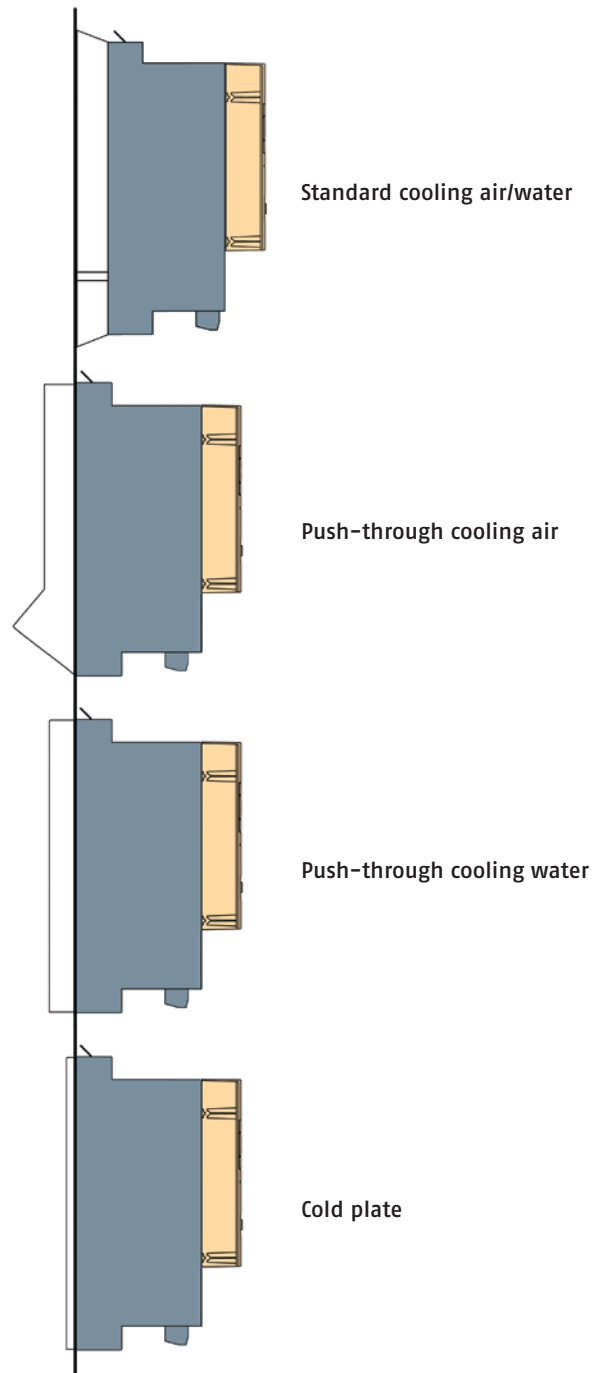
DC link coupling

DC link coupling can be achieved for a number of power modules for the purpose of energy compensation. Surplus energy is not “burned”. It is made available to other drive units without taking additional energy from the supply network.

Safety module

With the optional safety module, the option “safety stop” in accordance with EN ISO 13849 safety category 4 can easily be realized without the integration of additional contactors in the motor line. This ensures that the structure of the safety circuit remains simple and transparent. The danger potential of the machine is reduced — the machine works reliably.

Types of cooling

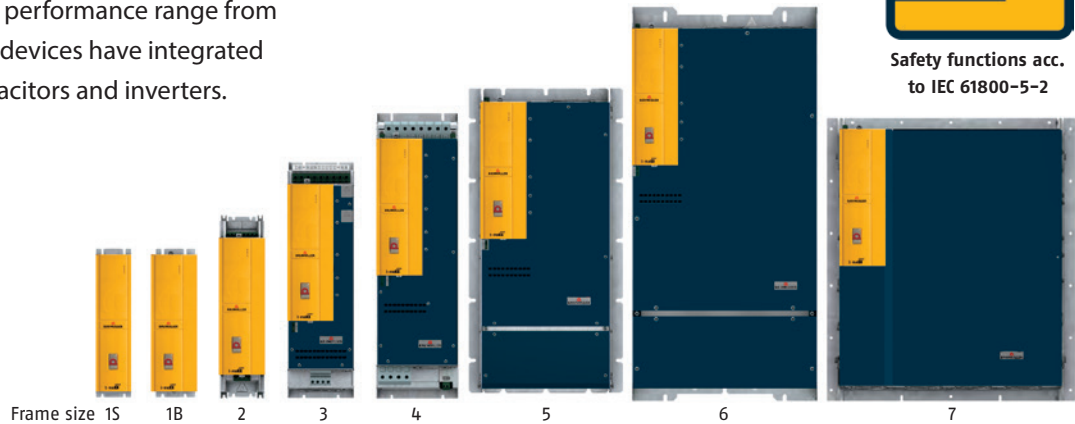




Safety functions acc.
to IEC 61800-5-2

b maXX 4400 converter family

b maXX 4400 offers a performance range from 1.1 kW to 315 kW. All devices have integrated rectifiers, DC link capacitors and inverters.



Technical data b maXX 4400

Type	Frame size	I _N [A]	I _{MAX} [A]	typ. motor rating		Overload factor	Dimensions WxHxD ¹⁾ [mm]
				[kW]	[hp]		
4412	1 S	2.5	5	1.1	1.5	2	80 x 310 x 263 / ---
4413	1 S	4.5	9	2	2.7	2	80 x 310 x 263 / ---
4412	1 B	2.5	5	1.1	1.5	2	106 x 310 x 263 / ---
4413	1 B	4.5	9	2	2.7	2	106 x 310 x 263 / ---
4422	2	7.5	15	3.4	4.6	2	106 x 428 x 340 / 320
4423	2	11	22	5	6.7	2	106 x 428 x 340 / 320
4424	2	15	30	6.8	9.1	2	106 x 428 x 340 / 320
4425	2	15	40 ²⁾	6.8	9.1	2.6	106 x 428 x 340 / 320
4426 ³⁾	2	22.5	45 ²⁾	6	8.0	2	106 x 428 x 340 / 320
4426	2	22.5	45 ²⁾	10	13.4	2	106 x 428 x 340 / 320
4432	3	22.5	45	10	13.4	2	155 x 510 x 340 / 325
4433	3	30	60	13	17.4	2	155 x 510 x 340 / 325
4434	3	45	90	20	26.8	2	155 x 510 x 340 / 325
4435	3	60	90	28	37.5	1.5	155 x 510 x 340 / 325
4443	4	80	120	36	48	1.5	190 x 624 x 374 / 327
4444	4	100	130	45	60	1.3	190 x 624 x 374 / 327
4445	4	130	170	58	78	1.3	190 x 624 x 374 / 327
4446	4	150	200	75	100	1.3	190 x 624 x 374 / 327
4453	5	150	195	75	100	1.3	307 x 656 x 374 / 321
4454	5	210	260	110	147	1.3	307 x 656 x 374 / 321
4462	6	250	325	132	177	1.3	437 x 815 x 378 / 316
4463	6	300	390	160	215	1.3	437 x 815 x 378 / 316
4466	6	350	450	175	234	1.3	437 x 815 x 378 / 316
4472	7	450	585	225	302	1.3	520 x 600 x --- / 340
4473	7	615	780	315	422	1.3	520 x 600 x --- / 340

Supply voltage: 207–528 V ± 0% AC
 Supply frequency: 50/60 Hz
 Supply rated voltage: 400 V
 DC link voltage: 540 V rated voltage
 Chopping frequency: 2/4/8 kHz
 Output voltage: 0–95% of supply voltage

Electronics supply: external 24 V DC (diagnostic capability)
 Fan connection: frame size 1–3: 24 V DC electronics supply
 frame size 4–7: 230 V AC ± 10%
 Certification: CE, CSA, UL

Subject to alteration

*) In preparation

1) Depth air cooling / depth water cooling

2) for 1 second

3) single phase

Height and depth without mounting brackets;
 depth including required bending radius of
 connecting cables

b maXX 4100 Regenerative power supply unit

It is often the case with electrical drives that energy costs make up almost 90% of the overall life-cycle costs. With this in mind, regenerative systems help to reduce the total cost of ownership.



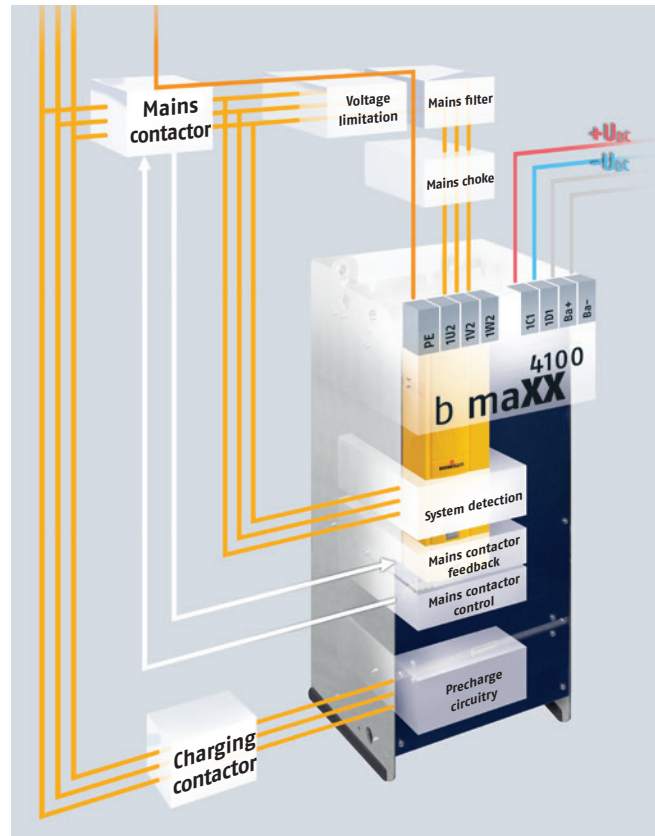
Baumüller's tried-and-tested b maXX automation and drive solution is being expanded with the addition of the new b maXX 4100 series regenerative power supplies. These units work in conjunction with b maXX 4400 series units, and can supply the DC link voltage to one or more drives. By using a b maXX 4100, all excess regenerative brake energy generated by the system is returned to the AC mains

supply rather than wastefully dissipating this energy as heat.

From the standpoint of energy costs, this offers the user considerable savings over the machine's service life. Regenerative systems help to lower energy consumption (and do their bit for the environment) by feeding the available brake energy back to the power grid rather than wasting it via a regenerative resistor.

The b maXX 4100 units are fully integrated into Baumüller's b maXX automation and drive solution family of products. The benefits which the b maXX series offers to its users such as modularity and flexibility, are also provided by the b maXX 4100. Four different frame sizes cover a DC link power range of 35 kW to 150 kW with the option of air or water cooling. The b maXX 4100 can also be integrated in the Baumüller automation environment by means of various optional fieldbuses. System consistency is achieved by adopting the same housing technology and connection arrangements as well as integrating the parameters of the b maXX 4400 into the existing b maXX ProDrive operating software.

- ⊙ Regenerative brake energy is returned as a sine wave
- ⊙ 3 frame sizes with 35 kW to 150 kW
- ⊙ 60 second overload capability
- ⊙ Current-controlled charging circuit
- ⊙ Integrated control of charging and mains contactors
- ⊙ Integral regenerative switching transistor
- ⊙ Monitoring of mains, charging connection, mains contactor, DC link voltage, and heat sink temperature
- ⊙ Optional fieldbus modules



Frame size 3 4 6

Technical data b maXX 4100

Type	Frame size	DC link power ¹⁾		DC link peak power		Overload factor ²⁾	Dimensions WxHxD ³⁾ [mm]
		[kW]	[hp]	[kW]	[hp]		
4135	3	35	47	52	70	1.5	155 x 510 x 340
4145	4	80	107	104	139	1.3	190 x 624 x 374
4163	6	150	201	190	255	1.3	437 x 815 x 378

Supply voltage: 360–528 V ± 0% AC
 Supply frequency: 45–65 Hz
 Supply rated voltage: 400 V AC
 DC link rated voltage: 640 V DC
 Switching frequency: 8 kHz
 Regenerative switching transistor: Integrated

Electronics supply: external, 19.3–30 V DC (diagnostic capability)
 Fan connection: frame size 3: 24 V DC electronics supply
 frame sizes 4–6: 230 V AC ± 10%
 Certification: CE, CSA, UL

Subject to alteration

1) For 640 V DC DC link rated voltage
 2) For 60 seconds
 3) Height and depth without mounting brackets; depth including required bending radius of connecting cables

b maXX 4600/4700 Peak and nominal load devices



Peak and nominal load devices available in five sizes supplement the proven b maXX series. Regardless of whether you require maximum performance on a continuous or temporary basis – the b maXX series offers customised drive solutions for every application.

The tried-and-tested b maXX automation and drive solution is being expanded to include new peak and nominal load devices from the 4600 and 4700 series. Baumüller is now able to meet the specific requirements of applications in the injection moulding or extrusion sector, for example, where either short-term peak output or permanent

high performance is required. As a result, the drive can be adapted perfectly to the power requirements of the relevant application.

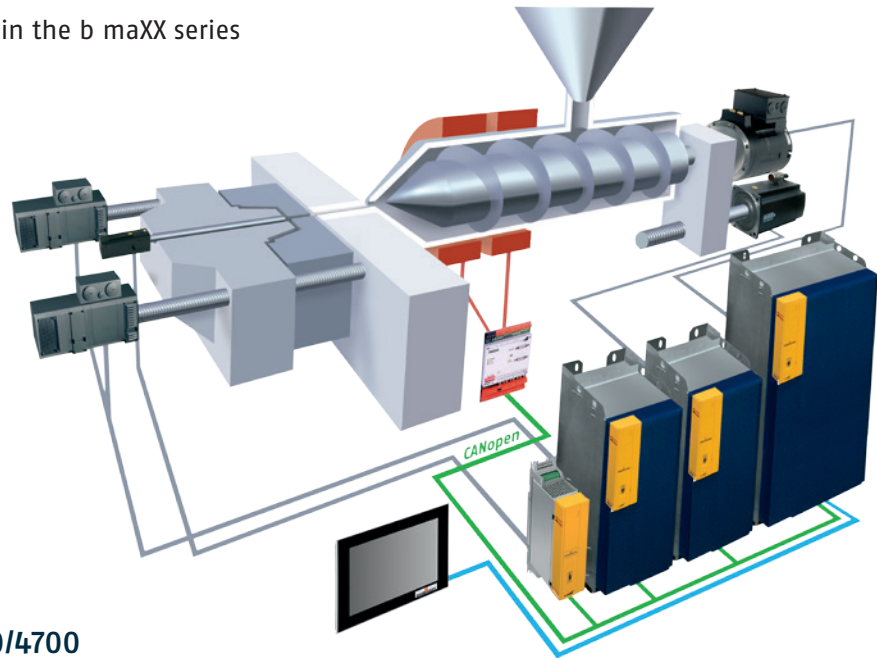
Although the devices in the series are more powerful, they have a compact design and take up much less space in the control cabinet — double benefits for the user.



Safety functions acc.
to IEC 61800-5-2

b maXX 4600/4700 – Your benefits at a glance

- ⊙ Optimised drive solution for specific industry requirements
- ⊙ Different sizes available for compatible drive dimensions
- ⊙ Less space required in the control cabinet due to smaller devices and the use of water cooling, control cabinet therefore less expensive to manufacture
- ⊙ Water cooling in the control cabinet provides a cost-effective solution
- ⊙ Compatible with other devices in the b maXX series



Technical data b maXX 4600/4700

b maXX 4600 Type	Frame size	I_N [A]	I_{MAX} [A]	Overload factor ¹⁾	Dimensions WxHxD [mm]
4632-F	3	60	120	2	208 x 556.5 x 325
4641-F	4	85	170	2	242 x 681 x 327
4642-F	4	100	200	2	242 x 681 x 327
4650-F ²⁾	5	130	260	2	360 x 550 x 285
4651-F ²⁾	5	165	330	2	360 x 550 x 285
4652-F ²⁾	5	200	400	2	360 x 550 x 285
4661-F ²⁾	6	250	500	2	490 x 710 x 285
4662-F ²⁾	6	300	600	2	490 x 710 x 285

b maXX 4700 Type	Frame size	I_N [A]	I_{MAX} [A]	Overload factor ¹⁾	Dimensions WxHxD [mm]
4755-F ²⁾	5	260	260	1	360 x 550 x 285
4766-F ²⁾	6	450	450	1	490 x 710 x 285
4773-F	7	720	800	1.1	580 x 660 x 340

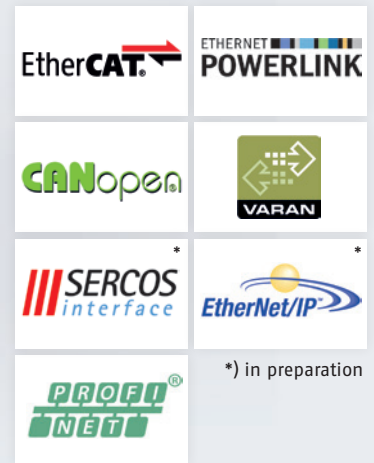
1) for 1 second with a cycle of 5 seconds

2) compact design, water-cooled

Subject to alteration

b maXX 3300

Servo controller up to 5 kW



The servo converter b maXX 3300 is a premium-quality servo controller with an integrated position control for the small power range. The b maXX 3300 distinguishes itself with its compact and space-saving construction. The field-oriented control provides an excellent rotational accuracy. Higher-level speed and position control ensure a precise positioning. b maXX 3300 is compatible with servo controllers b maXX 5000 with regards to handling, communication parameter structure, main functionality and operation. b maXX 3300 is parameterized in ProDrive.

The highly dynamic control of b maXX 3300 in conjunction with the highly dynamic small-sized servo motors of the series DSD increase the cycle-times of

the application and increase the production output of machines and installations. The high chopping frequency (16 kHz) reduces noise emission and therefore relieves the burden on the environment.

The servo controller is specifically designed for the operation with the servo motors DSD 28–100 as well as for the Baumüller disc motor series and the linear motor series. The consequent design focus of the controller on efficiency and compact construction form qualifies the b maXX 3300 for applications in the handling or robotics fields as well as for applications within the printing, textile and packing industry.

b maXX 3300 – Compact mini servo controller

The following control types are available for synchronous machines

- ⊙ Current control (sampling times 62.5 μs)
- ⊙ Speed control (sampling times 125 μs)
- ⊙ Position control (sampling times 125 μs)
- ⊙ Jogging mode
- ⊙ Referencing

Functions

- ⊙ 230 V or 400 V mains supply voltage
- ⊙ Chopping frequency 4/8/16 kHz
- ⊙ Integrated regenerative switching transistor
- ⊙ Integrated ballast resistor
- ⊙ External 24 V supply
- ⊙ 1 encoder input
- ⊙ Digital I/Os 24 V/; 2 In; 2 Out
- ⊙ Analogue I/Os ± 10 V; 1 In; 2 Out;
- ⊙ 7 parameter data sets
- ⊙ Open loop control
- ⊙ EtherCAT/CANopen on board

Encoder types

- ⊙ Resolver
- ⊙ Rectangle incremental encoder
- ⊙ SINCOS absolute encoder (single/multiturn)
- ⊙ SINCOS incremental encoder
- ⊙ ENDAT 2.1
- ⊙ SSI-Encoder

Softdrive PLC

- ⊙ Basic and extended version

Safety Technology

Certified Safety Function STO according to EN ISO 13849 up to PL_e



Frame size 0 1

Technical data b maXX 3300

Type	Frame size	I _N [A]	I _{MAX} [A]	typ. motor rating		max. peak current time [s]	Dimensions WxHxD [mm]
				[kW]	[hp]		
3302	0	1.5	6	0.8	1.07	60	65 x 170 x 170
3303	0	2.7	11	1.4	1.9	60	65 x 170 x 170
3304	0	5.0	15	2.5	3.4	30	65 x 170 x 170
3312	1	6.5	20	3.3	4.4	10	85 x 170 x 170
3313	1	10	20	5.0	6.7	10	85 x 170 x 170

Mains supply voltage: frame size 0: 110 V–243 V, single-phase; supply rated voltage: 230 V *
frame size 0/1: 180 V–528 V, three-phase; supply rated voltage: 400 V

Supply frequency: 50/60 Hz

Chopping frequency: 4/8/16 kHz

Output voltage: 0–85% (single-phase), 0–95% (three-phase) of supply voltage

Electronics supply: external 24 V DC

Data is valid for 4 kHz clock frequency; Dimensions without mounting brackets

*) in preparation

Subject to alteration

b maXX 2400 Mini servo controller up to 2 kW

b maXX 2430

b maXX 2415

b maXX 2410

b maXX 2405



CANopen

EtherCAT

PROFIBUS

Modbus

The b maXX 2400, in combination with the servo motors DSD2 28–36 and the disc motors of Baumüller forms a powerful compact system for industrial applications such as handling, packaging and robotics as well as for mobile applications for warehousing and logistics.

The mini servo controller with integrated intelligence supports the fieldbuses CANopen, EtherCAT, PROFIBUS and Modbus and can thus be flexibly integrated into networked drive structures.

b maXX 2400 – compact mini servo controller

- ⊙ Compact servo controller with integrated MPU (Motion Process Unit)
- ⊙ Support of the fieldbus systems: CANopen, EtherCAT, PROFIBUS, Modbus
- ⊙ Applicable for drive systems with supply voltage 9 to 60 VDC
- ⊙ Suitable for use with BLDC and DC motors with closed-loop control and for DC motors in speed control mode with open-loop control
- ⊙ The servo controller is freely programmable
- ⊙ Optional operating modes include: Positioning control, 4Q-speed controller or current controller
- ⊙ Positioning controller (sampling time 2000 ms), speed controller (sampling time 250 ms), current controller (sampling time 125 ms)
- ⊙ Protection functions: overvoltage, under voltage and over temperature monitoring
- ⊙ LED-display for Power, Status, Error
- ⊙ The controllers have digital inputs and outputs and at least one analogue input
- ⊙ The integrated MPU is freely programmable up to 1500 lines in Python script
- ⊙ The programming of the inputs and outputs in the MPU enable following functionalities: SPS, brake control, analogue setpoint value, selectable reference travel modes
- ⊙ All connections are plug-in
- ⊙ Options: CAN-adaptor USB for parameterization and programming, external ballast module with integrated ballast resistor
- ⊙ Possibility of remote diagnosis



Technical data b maXX 2400

Type	Frame size	I_N [A]	I_{MAX} [A]	typ. motor rating		Supply voltage electronics U_e [VDC]	Supply voltage performance U_p [VDC]	Dimensions ¹⁾ WxHxD [mm]
				[kW]	[hp]			
2405	1	5	15	0.2	0.26	9 ... 30	9 ... 60	45.5 x 74 x 14 ²⁾
2410	2	10	50	0.4	0.53	9 ... 30	9 ... 60	22.5 x 77 x 110 ²⁾
2415	2	15	50	0.65	0.86	9 ... 30	9 ... 60	40 x 77 x 110 ³⁾
2430	3	30	100	1.2	1.60	9 ... 30	9 ... 60	30 x 100 x 111 ²⁾

Type	Frame size	Digital inputs #	Digital outputs #	Continuous output current [A]	Analog inputs #, type
2405	1	3	1	2.5	1 ± 10 V; differential
2410	2	8	2	2.5	1 ± 10 V; differential + single ended
2415	2	8	2	2.5	1 ± 10 V; differential + single ended
2430	3	8	2	2.5	1 ± 10 V; differential + single ended

Chopping frequency: 16 kHz

Output voltage: 0–100% of supply voltage

1) The housing dimensions vary according to the additional fieldbus modules

2) Dimensions without cooling-element, connector or additional fieldbus modules

3) Dimensions with cooling-element but without connector or additional fieldbus modules

Subject to alteration

b maXX 1000 Frequency converter



The b maXX 1000 is a frequency converter that provides for the highly efficient vector control of standard motors in three sizes with output power ranging from 0.2 kW to 11 kW. In designing the b maXX 1000, Baumüller has placed their primary focus on providing an easy to use line of products. The b maXX 1000 offers an integrated EMC filter as standard, for compliance with the applicable EU standard (EN 55011A/ Second Environment). Numerous protective and overload functions, such as phase failure detection on the line and motor side, ensure error-free operation. A comprehensive control scheme provides a constant, precise overview of the current drive status.

The b maXX 1000 is also equipped for wide-ranging applications, thanks to its 15 different preset speeds. Its adjustable pulse width modulation, from 1 kHz to 15 kHz, also means that it emits barely any noise during operation. It can achieve a rotating field frequency of between 0.1 Hz and 400 Hz, meaning that even multi-pole machines can be operated at high speeds.

The b maXX 1000 can be connected to CANopen, the premier open fieldbus system. It is also able to work as a motion control slave, due to its integrated protocols.

b maXX 1000 – Highly efficient, easy to operate frequency converter

- ⊙ Comprehensive protective functions: overvoltage and undervoltage protection, ensuring that the device cannot be destroyed; ground-fault, short-circuit, overload, and no-load protection, ensuring that the motor is protected effectively; protection against over-heating
- ⊙ Adjustable PWM frequency, 1 kHz to 15 kHz – for extremely quiet machine operation
- ⊙ Intelligent output current monitoring
- ⊙ Automatic energy-saving function – reduces cost of ownership
- ⊙ CANopen and ModBus onboard
- ⊙ Auto tuning – improves ease of setup
- ⊙ Automatic slip tracking – always provides optimum efficiency
- ⊙ Starting torque up to 150% – simple compensation for high breakaway torques
- ⊙ PID control – fast response to perturbation, constant speed
- ⊙ 15 preset speeds – for optimum speed range
- ⊙ S-curve function for smooth acceleration and deceleration – soft starting is better for your mechanical systems
- ⊙ Detachable keypad available as an option



Frame size 1 2 3

Technical data b maXX 1000

Type	Frame size	I _N [A]	I _{MAX} [A]	typ. motor rating		Overload factor ³⁾	Dimensions W x H x D ⁴⁾ [mm]
				[kW]	[hp]		
1211 ¹⁾	1	1.6	2.4	0.2	0.27	1.5	72 x 142 x 152
1212 ¹⁾	1	2.5	3.75	0.4	0.54	1.5	72 x 142 x 152
1213 ¹⁾	1	4.2	6.3	0.75	1.0	1.5	72 x 142 x 152
1412 ²⁾	1	1.5	2.25	0.4	0.54	1.5	72 x 142 x 152
1413 ²⁾	1	2.5	3.75	0.75	1.0	1.5	72 x 142 x 152
1414 ²⁾	1	4.2	6,3	1.5	2.0	1.5	72 x 142 x 152
1224 ¹⁾	2	7.5	11.25	1.5	2.0	1.5	100 x 174 x 152
1225 ¹⁾	2	11.0	16.5	2.2	3.0	1.5	100 x 174 x 152
1425 ²⁾	2	5.5	8.25	2.2	3.0	1.5	100 x 174 x 152
1426 ²⁾	2	8.2	12.3	3.7	5.0	1.5	100 x 174 x 152
1437 ²⁾	3	13.0	19.5	5.5	7.4	1.5	130 x 260 x 169
1438 ²⁾	3	18.0	27.0	7.5	10.0	1.5	130 x 260 x 169
1439 ²⁾	3	24.0	36.0	11.0	14.8	1.5	130 x 260 x 169

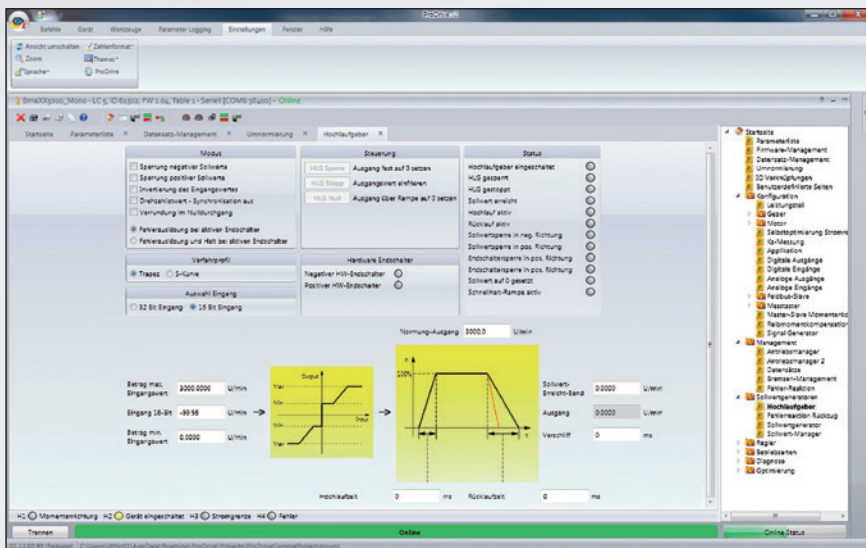
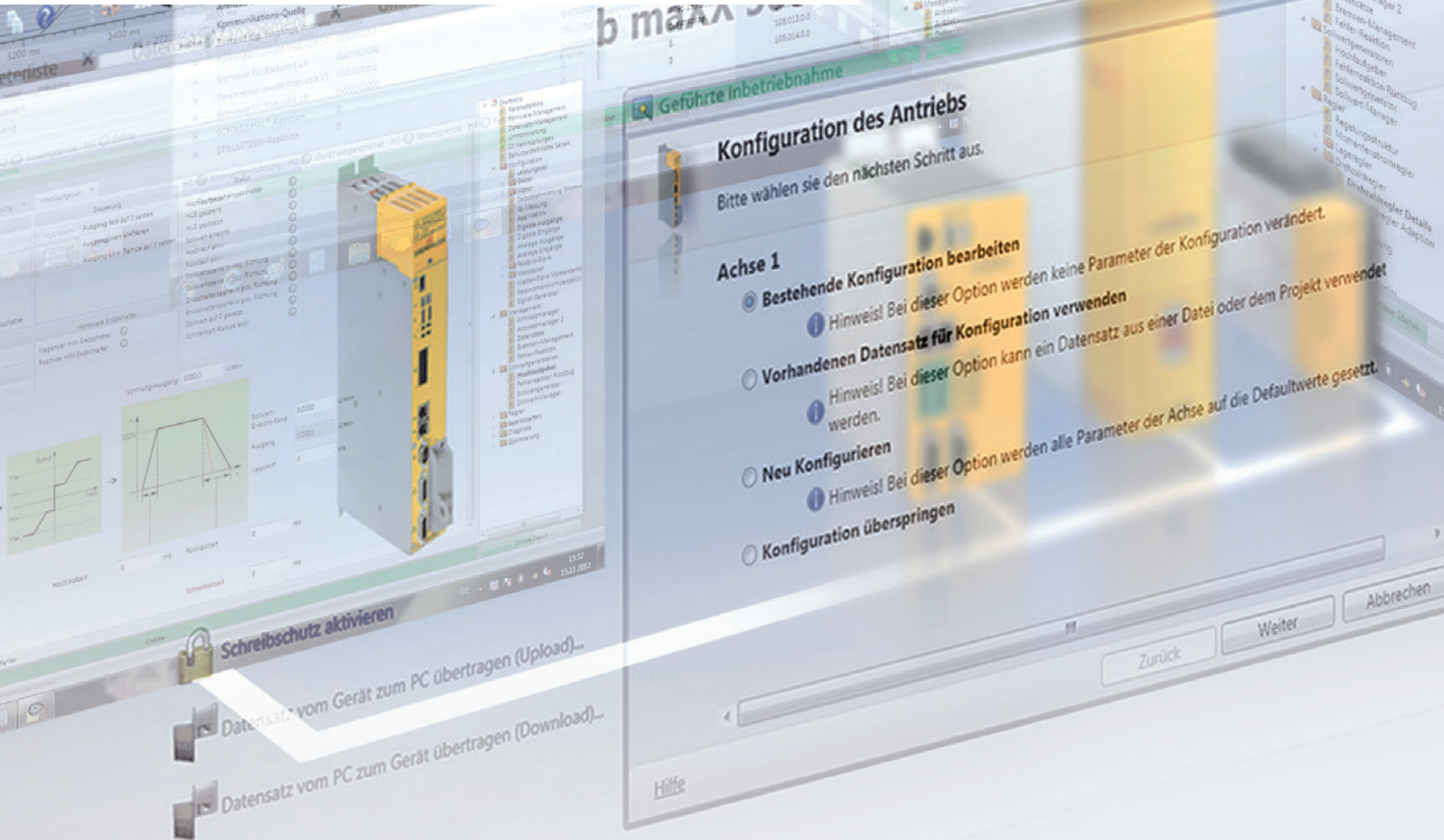
Supply voltage:
 200–240 V ± 10 % (TN-, TT-, IT mains)
 380–480 V ± 10 % (TN-, TT-, IT mains)
 Supply frequency: 47–63 Hz
 Clock frequency: 1–15 kHz
 Adjustable frequency: 0.1–599 Hz

Electronics supply: internal, 24 V DC
 Type of protection: IP20
 Operating temperature: -10°C to 50°C (to 40°C if adding)
 Certification: CE, UL

Subject to alteration

1) Single-phase, 230 V
 2) Three-phase, 400 V
 3) For 60 seconds
 4) Height and depth with mounting brackets; depth without required bending radius of connecting cables

ProDrive Commissioning and operation

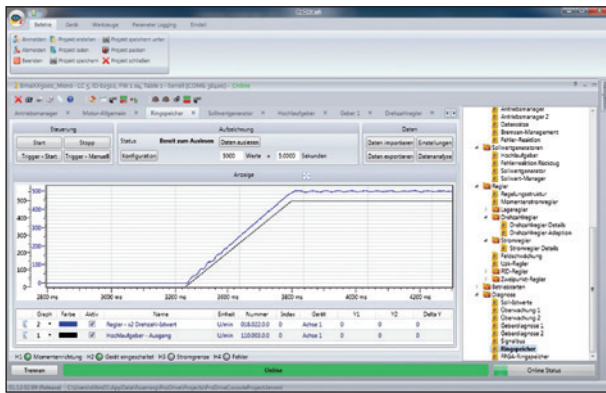


Commissioning, parameterization and operation of all b maXX controllers is simplified with ProDrive – for the beginner as well as for the professional. Especially the initial commissioning can be performed with ease and minimal effort due to ProDrive's intuitive operational guidance.

ProDrive

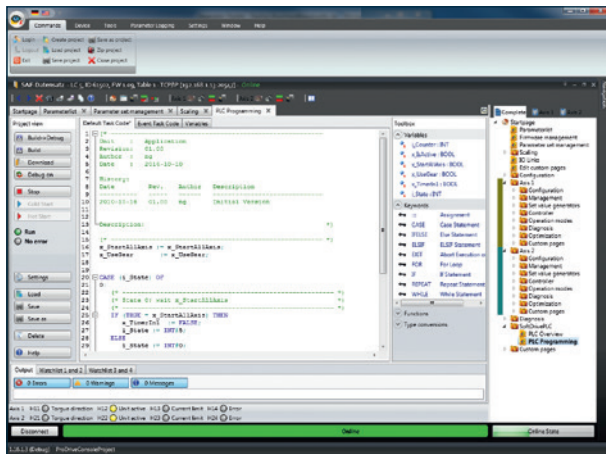
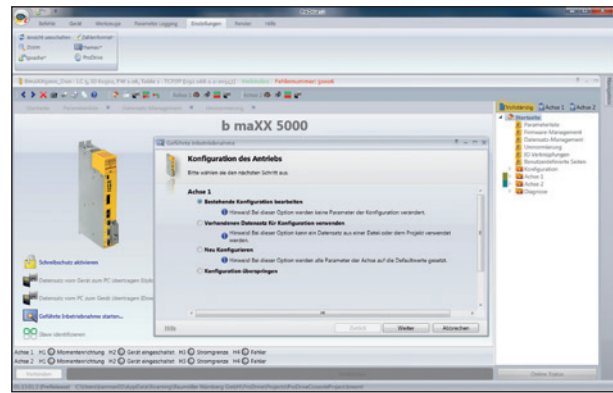
Ease of operation for newcomers

The support provided by the graphic user inter-face is very important for newcomers when parameterizing the controller. By clicking on the overview page, the user gains quick access to the individual interfaces of the drive functions. Here, he will initially only find the most important parameters, clearly arranged. In the details view, all the parameters of the corresponding drive function are listed on one page. This enhances transparency and eliminates the possibility of a mal-operation.



Range of functions

- ⊙ Integrated, updateable power module, motor and encoder database, thus ensuring up-to-date maintenance via subsequently loaded modules
- ⊙ Diagnosis/analysis tools such as oscilloscope function and FFT-analysis for optimization down to the last detail and for the simple and transparent analysis of the drive system; additional diagnosis devices are not necessary
- ⊙ On-/offline-parameterization
- ⊙ Single Axis or Multi AXIS operation via Ethernet
- ⊙ Language selection: German/English
- ⊙ Guided commissioning with wizard



With the b maXX softdrivePLC Baumüller combines motion control and SPS functions in the controller and makes separate control hardware unnecessary for some applications.

Hence, ProDrive is a tool that can save newcomers and advanced users a great deal of time: parameterization, commissioning, analysis and (remote) diagnosis.

ProMaster Engineering Framework



The more intuitive the engineering, the more efficient will be the automation solution. ProMaster allows you to introduce new machine concepts to the market-place more quickly and you systematically increase the added value of your machine.

Consistent machine configuration, parametrization, programming and diagnosis are the fundamental aspects for a machine-oriented application. The implementation of the independent standards such as Motion Control functionalities in accordance

with PLCopen or EtherCAT field bus are used. Your knowledge is managed in the form of parameters and functions in data-sets and libraries — over the entire machine life cycle.



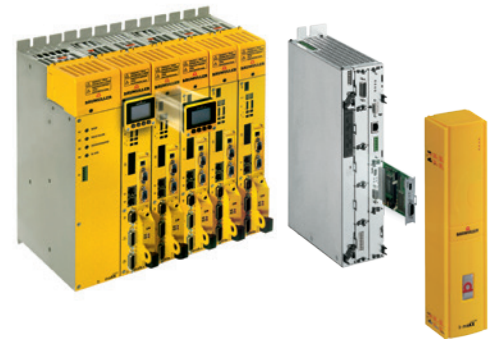
Operating and visualizing with the b maXX HMI

With the b maXX HMI series, Baumüller offers a space-saving HMI with touch panel in the sizes 4.3 up to 15.6 inches. The b maXX HMI is available in the product lines Standard and Performance thereby offering optimal scalability. The HMIs are equipped for future applications also relating to developments in relation to Industry 4.0. The visualization on the HMI can be standard or web-based. The user-friendly and well-structured operating and visualization tool enables efficient engineering and the modification of the machine, as required by the production process, on the HMI.



Drive-Integrated control system

The intelligent control b maXX-drivePLC, which is completely integrated in the Engineering Framework ProMaster, allows a very fast access to the setpoints and actual values of the drive controller. With this, the drive function can now be extended by complex motion control-, technology- and control functions. Furthermore, with the use of the softdrivePLC, Baumüller has integrated SPS functions directly in the controller and thus additional control hardware for specific applications is no longer necessary. In this way, a decentralized control architecture for the programming in accordance to IEC 61131 was created. Control jobs, as for example simple calculations of digital inputs as well as extremely sophisticated control algorithms, can now be easily implemented via the parameterization tool ProDrive.



b maXX Controller PLC – modular and safe

The b maXX Controller PLC consistently implements the concept of scalability and modularity for flexible individual adapting by the mechanical engineer. Thus the b maXX PLC02-Safe has extended the standard motion control range by a two-channel safety control system that fulfils the requirements of IEC 61508 to SIL3 and EN 13849 to PL e. This is the first certificated EtherCAT Motion Control PLC with integrated safety function.

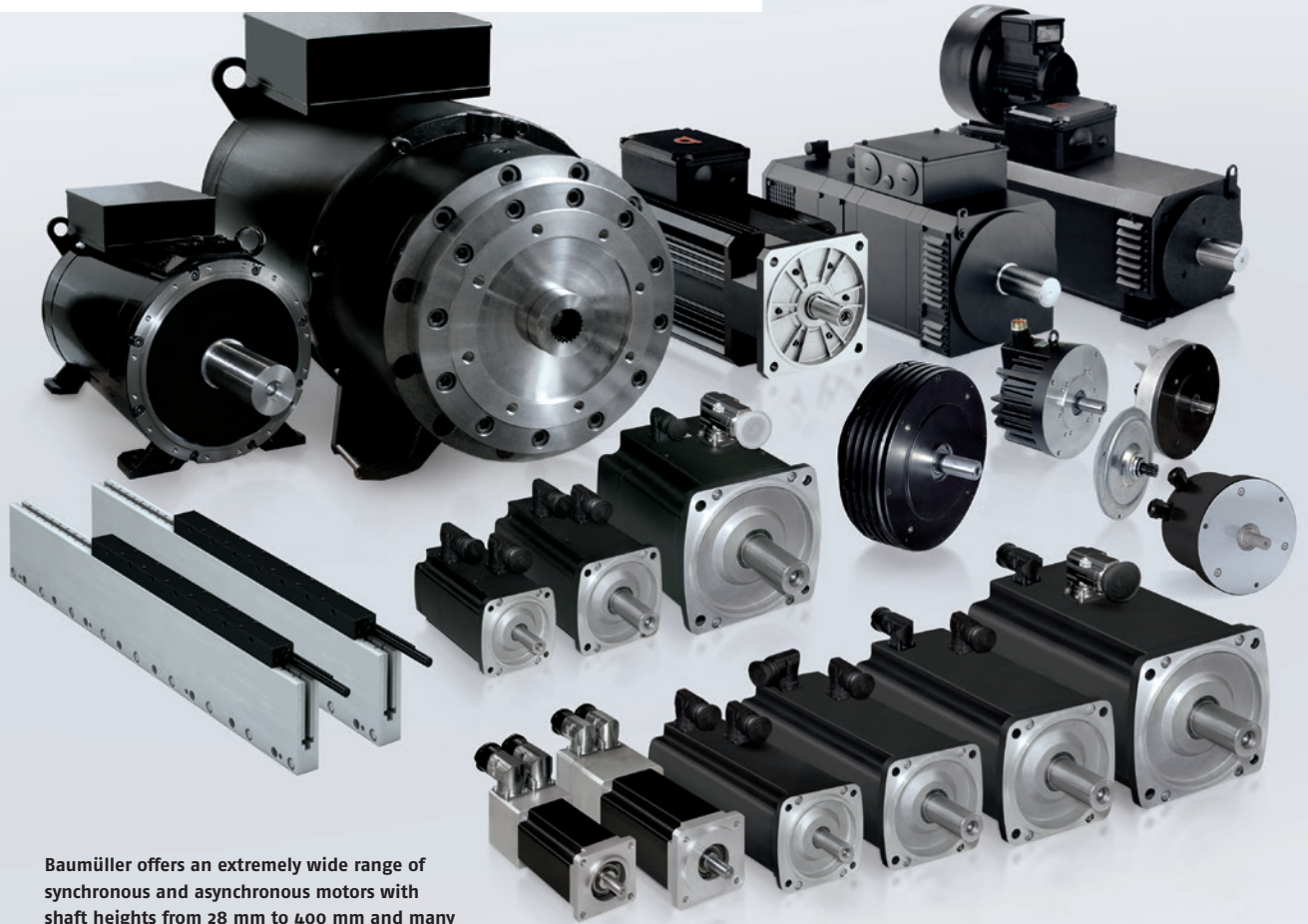


b maXX-PCC – PC based PLC

The calculation performance of an industrial PC in combination with a powerful PLC supplements the range of control systems with a reliable and innovative platform. It is equipped with components of the highest level of performance and is based on open standards in the fields of automation and IT. Multi-core processor architecture provides decisive advantages for automation solutions: various different functions can be distributed and the calculation performance can be allocated to the various tasks. It therefore not only fulfils the high real-time requirements of calculation-intensive applications in a control system, it also takes on additional tasks such as visualization or IT linking on a platform. Both box and panel versions are available.



Motors



Baumüller offers an extremely wide range of synchronous and asynchronous motors with shaft heights from 28 mm to 400 mm and many different cooling methods.



DS/DA – General purpose servo motors

The servo motor for all applications with strict energy efficiency requirements.

Type DS: Sizes 45, 56, 71, 100, 132, 160, 200,

power range 0.25–295 kW (0.33–396 hp), speeds up to 6000 min⁻¹,

type of protection: unventilated IP54, ventilated IP23/IP54, water-cooled IP54.

Type DA: Sizes 100, 132, 160, 180, 225, 280,

power range 3.5–400 kW (4.7–536 hp), speeds up to 3000 min⁻¹,

type of protection: ventilated IP23/IP54, water-cooled IP54.



DSC – Compact servo motors

The DSC 45-100 is a series of high-torque servo motors that are up to 30% more compact than conventional servo designs.

Sizes 45, 56, 71, 100, power range 0.5-18 kW (0.67-24 hp),

speeds up to 4000 min⁻¹, up to IP65 type of protection

DSP – For high speed performance

For applications requiring high rotary speeds, DSP motors complete the existing DSC range. Sizes 45, 56, 71, 100, power range 1.2–32 kW (1.6–43 hp), speeds up to 6000 min⁻¹, up to IP65 type of protection

DSD – Dynamic servo motors

The servo motors for highly dynamic applications with the highest requirements of acceleration capacity and the best start-stop qualities. Sizes 28, 36, 45, 56, 71, 100, power range 0.28–42 kW (0.38–56 hp), speeds up to 6000 min⁻¹, up to IP65 type of protection

DST – Powerful high torque motors

The high-torque motor DST2 for application with maximum torque requirements. Sizes 135, 200, 260, 315, 400, power range 2.7–320 kW (3.6–429 hp), speeds up to 1500 min⁻¹, torque up to 32,900 Nm, IP54 type of protection, water-cooled

GDM & DSM – Disc motors

Baumüller offers a wide range of disc rotors for use in a large number of different applications where installation space is at a premium. GDM DC disc motors: Power range 16–3000 W (0.02–4 hp)
DSM brushless disc motors: Power range 180–6300 W (0.24–8.4 hp)

DSE – Embedded AC synchronous motors

The DSE synchronous motors are available either as a housing version or as a built-in motor. With its buried magnets and a rotational speed range up to 9000 rpm, the motor convinces with a particularly high power density.

BPx – Planetary gear series

The BPx planetary gear series in combination with our standard DSP/DSD/DSC servo motors are ideally suited for applications with high demands on torque and dynamic.

LSC – Iron-less linear motors

The LSC iron-less linear motors from Baumüller achieve maximum current and force rise. This makes them ideal for highly dynamic applications with maximum stiffness relative to disturbing forces.

DSDI/DSMI – Motors with integrated control/power electronics

The model ranges DSDI and DSMI are servo motors with integrated control and power electronics that meet the requirements of modern, decentralized drive architectures in automation. The DSDI is a highly dynamic motor and the DSMI is a high torque servo drive. Power range 170–385 W (0.23–0.52 hp), speeds up to 6000 min⁻¹, type of protection up to IP65





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