

«Inspired by Simplicity»

The servo range «Lexium 32»

Lexium 32, a servo drive range with powerful drives and motors, adds a unique level of simplicity to the entire lifecycle of your machines from engineering, installation and commissioning all the way to operation and maintenance.



Schneider Electric Industries S.A.S.

Head Office
35 rue Joseph Monier
92500 Rueil-Malmaison
FRANCE

www.schneider-electric.com

Owing to changes in standards and equipment, the characteristics given in the text and images in this document are not binding until they have been confirmed with us.

Design: BrainFactory
Photos: Schneider Electric, Getty Images, iStockphoto

DIAT7ED1090106EN



«Inspired by Simplicity»

"Simplicity is the ultimate sophistication."

Leonardo da Vinci (1452–1519)

With Lexium 32, we built a new, best-in-class servo drive. And we designed the Lexium BMH and BSH servo motors.

Lexium 32 gives you maximum performance, a host of functionality and outstanding power. But we wanted more.

When designing and engineering Lexium 32, we were driven by the idea that even a maximum performance servo drive solution should be as simple as possible. So we analyzed a great number of use-cases as well as each individual phase of the lifecycle of a machine.

And we added an unprecedented level of sophistication – simplicity.

Lexium 32 now makes the full power and performance of servo drives easily manageable while shielding you and your customers from the complexity.

Discover how Lexium 32 can simplify your mission as a machine manufacturer and see how the spirit of Leonardo da Vinci, one of the greatest engineers ever, has come full circle.



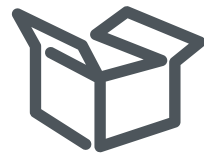


The Applications

The best-in-class servo drive solution for your specific applications.
As simple as that.



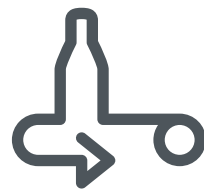
Printing



Packaging



Textile



Material handling



Material working



Lexium 32 for the Leading Edge

Where power meets simplicity

Lexium 32 is a servo drive range with three servo drive models and two servo motor families. It provides you with the drive and motor combination that has exactly the power, performance and functionality you need and that comes at the right price.

Superior performance and compact design

Increase the productivity of your machine with peak performance values and outstanding motor control. Reduce the machine footprint with highly compact motors and drives.

Simplified engineering, installation and commissioning

Get your machine up and running faster, with more ease and cost-effectiveness than ever.

Open for the world of motion

Lexium 32 supports a great number of standardized motion interfaces. Communication boards and encoder options adapt your Lexium 32 solution to your automation architecture. Leverage the full power of existing assets such as applications or legacy motors.

Integrated safety

Benefit from standards-compliant safety on board. If required, use the optional safety module to easily add more safety and reduce the time and money spent on safety engineering and certifications.



Where Power Meets Simplicity

Lexium 32 is a servo drive range designed to provide you with a solution that meets exactly your requirements. Lexium 32 offers a selection of servo drives and motors, options and accessories. Intelligently segmented, Lexium 32 simplifies all aspects in the lifecycle of your machine from design, engineering, installation and commissioning to operation and maintenance. As simple as that.



Compact



Advanced



Modular

Lexium 32 Compact
for communication
via +/- 10V or
pulse train input

Lexium 32 Advanced
for CANopen or
CANmotion
architectures

Lexium 32 Modular
is open for the world
of motion with
numerous modules

Lexium BMH
extremely versatile

Lexium BSH
highly dynamic



BMH



BSH



Where Power Meets Simplicity

The servo drives

The Lexium 32 servo drive platform consists of three book-size servo drive models to simplify optimum adaptation to your specific cost, power and performance requirements: Lexium 32 Compact, Lexium 32 Advanced and Lexium 32 Modular.

The servo drives cover the power range from 0.15 kW to 7 kW. The supply voltages are adjustable so the servo drives can be used wherever your customers are (110 V - 240 V single-phase, 380 - 480 V three-phase). All servo drives come with the "Safe Torque Off" safety function (IEC/EN 61800-5-2) on board.

The servo motors

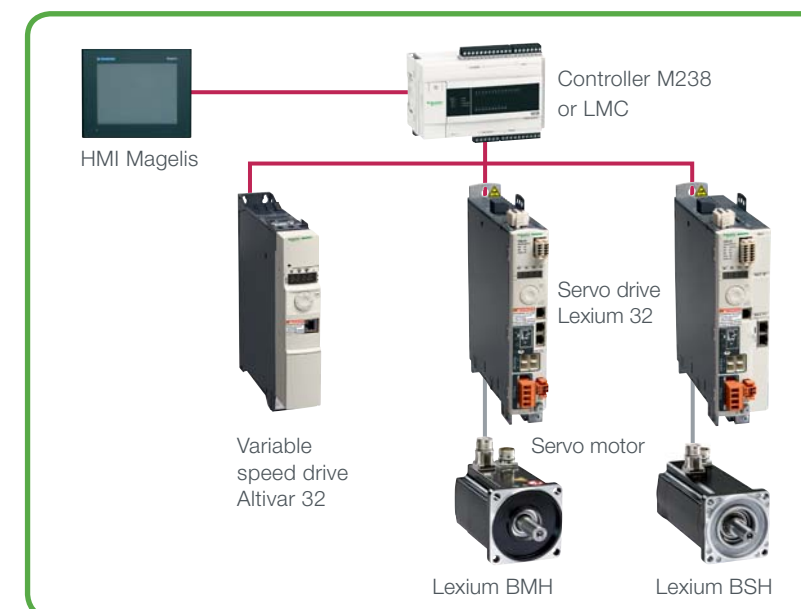
The servo drives are complemented by two motor families – the medium-inertia Lexium BMH and the low-inertia BSH. At a high power density, the motors cover a torque range from 0.5 Nm to 88 Nm.

The inertia of the new Lexium BMH is higher by a factor of 2.4 as compared to Lexium BSH which allows higher load inertia per motor frame size and increases the gain for settling. The BMH lends itself for applications requiring robust load adaptation and easiest plug-and-play motion tuning while the BSH motor is the optimum solution for highly dynamic applications. The two motor families are flange-compatible.

Each of the motors can be equipped with a wide range of options such as different shaft versions, various connector versions, holding brake and various IP degrees of protection.

The integration

Lexium 32 can be seamlessly integrated into Schneider Electric architectures:



Servo technology is the most efficient motion technology. And Lexium 32 lets you even use the generated braking energy

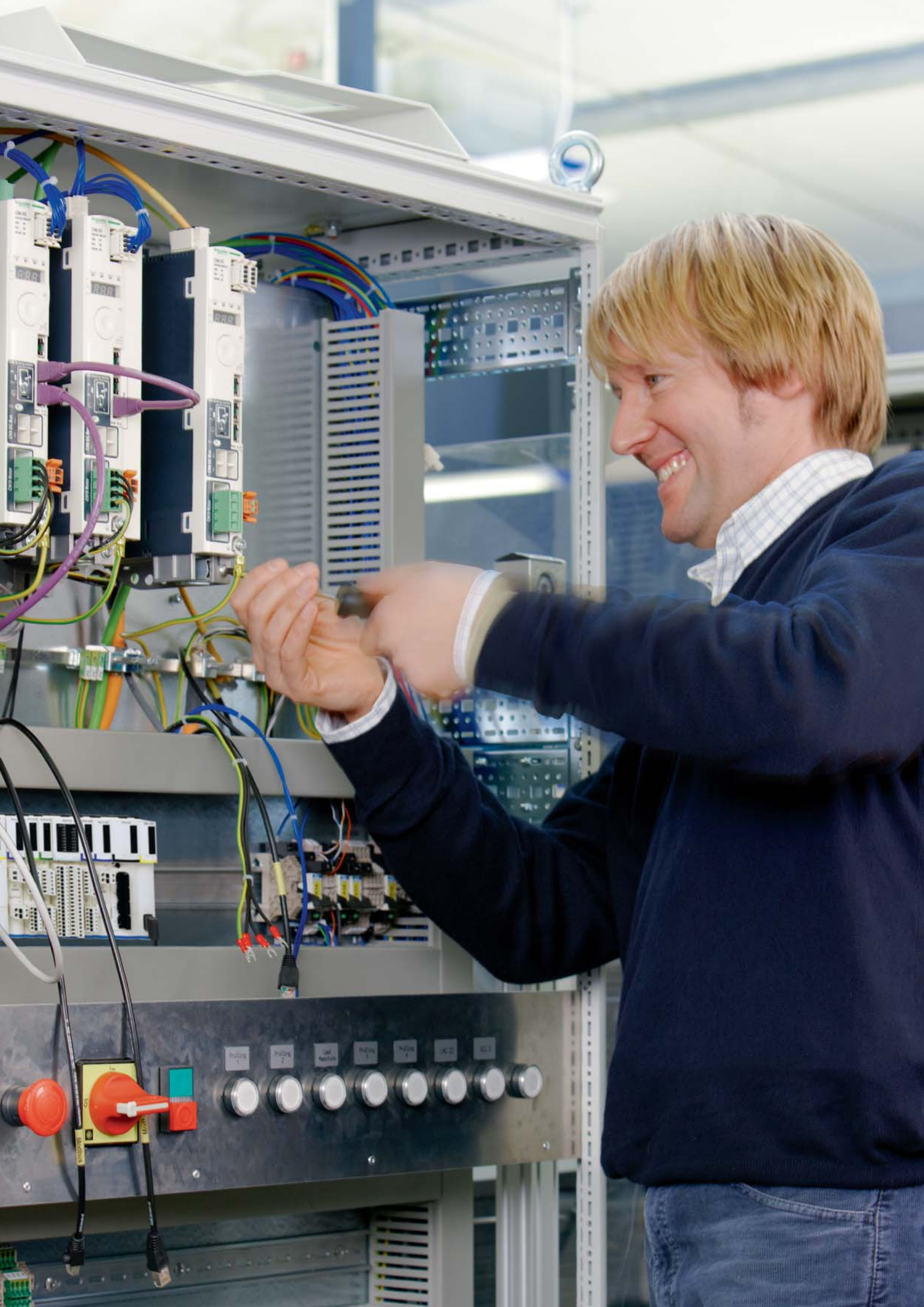
Lexium 32 complies with the
RoHS
Directive 2002/95/EC

Options and accessories

- Graphic display terminal
- Multiloader
- Memory card
- Powerful integration and design software



Multiloader
for parameterisation,
even when the drive
is off



Superior Performance and Compact Design

Best-in-class servo drives

The book-size Lexium 32 servo drives pack maximum power into minimum volume. This saves on cabinet space and size, reduces the machine footprint and decreases costs. Lexium 32 also offers an impressive overload capacity of 400%. With an $I_{peak}/I_{continuous}$ ratio of 3 to 4, the servo drives provide superior performance and outstanding dynamics for faster production.

With a power density of

548 W/l

Lexium 32 is among the leaders in the motion industry

High-performance motor control

Excellent performance is also ensured by enhanced motor control. Highly efficient vibration reduction with autonomic parameter calculation, second notch filter and speed observer all contribute to making Lexium 32 the servo drive of choice.

A speed bandwidth of

1,600 Hz

provides outstanding response by cutting the settling time to a minimum

Top-notch motors

The medium-inertia BMH and low-inertia BSH motors also excel with best-in-class power density values. The compact BMH and BSH power packs require less space in your machine. And with various connector options, you can adapt the motor to your application's space and mounting requirements.

Compare the impressive torque of

2.7 Nm/l*

to other offers

*BMH, size 100

Configurable extra performance

The Lexium 32 servo drive range allows you to easily add extra performance features by means of options. You can choose from three external encoder modules, certified safety technology and a large variety of communication modules.

3 = 9

3 encoder modules for 9 different encoder interfaces plus 4 fieldbus interfaces

Performance for a long machine life

Performance is more than the peak values of the drive. The way the drive and the mechanical components of your machine interact is just as important. Excessive vibration may deteriorate the performance of your application, excessive jerking the life of the machine. This is why Lexium 32 brings you functions such as optimized vibration reduction and jerk limitation.



Optimised vibration reduction for long machine life



Simplified Engineering, Commissioning and Installation

We know that a short time-to-market is just as important to you as minimum machine development and production costs. So we turned the results of extensive industrial use-case analysis into powerful concepts, functions and tools to help you achieve these objectives.

Fast engineering

Powerful integration software simplifies the entire process from planning all the way to commissioning. Tools for motor sizing, CAD and cabinet drawings, support for PLCopen libraries and user-friendly commissioning software dramatically increase efficiency at all stages of the engineering phase.

The software has been optimized in view of re-usability, standards-compliance and interoperability, for example with PLCopen libraries, to give you even more power, flexibility and simplicity in engineering your application.

Commissioning and Autotuning

To get the full power and performance out of a servo drive, it needs adjustment. The new Lexium 32 Autotuning function makes tuning easier than ever before.

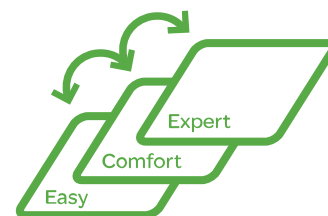
The Autotuning function provides three modes, each requiring different levels of expertise:

- Easy: Fast and efficient, this mode needs practically no user interaction to yield perfect results for simple applications.
- Comfort: This mode automatically selects and tunes all important parameters and lets you further tune the drive for excellent results for the main motion applications.
- Expert: In Expert mode, you can tweak each individual parameter to get stunning results for the ultimate in high-end applications.

Whatever mode you use – Lexium 32 makes your machine perform faster and more efficiently than ever before.



PLCopen library, CAD and cabinet drawings



Autotuning for different levels of expertise



Simplified Engineering, Commissioning and Installation

Simplified installation

Lexium 32 servo drives and motors offer a host of features to support rapid mechanical and electrical installation as well as maintenance of drives and motors.

- The compact, book-size drives are optimized for direct side-by-side cabinet mounting.
- All connections are located at the front or the top to allow for easy access.
- Removable, color-coded connectors facilitate installation and maintenance.
- Separate areas for clean and disturbing cables dramatically simplify the EMC concept.
- Optional memory cards let you parameterize servo drives without a PC in just a fraction of the time required by other approaches.

The motors are available with straight, angled and rotatable connectors to respond to your specific installation conditions.

Operation and maintenance

A machine powered by Lexium 32 has built-in reliability, durability and a long service life. However, since things do not always go according to plan, we also simplified and optimized the ways you and your customers can respond to incidents:

- The "Safe Torque Off" function integrated in all Lexium 32 drives ensures shorter down times and faster restarts after incidents such as emergency stops since the machine can resume operation exactly where it left off.
- In case of a hardware problem, hook up the new drive, just plug the memory card into the slot, have the new drive read the cloned parameters and confirm.
- In an Ethernet/IP environment, the "Faulty Device Replacement" (FDR) function allows a replacement device to read its parameters from a server. Additional functions such as remote diagnostics facilitate operation even further.

Finally, the intelligent segmentation of Lexium 32 and the consistency with the Schneider Electric automation offer ensures that a great portion of the parts is standardized and can be consistently used across the entire platform. This facilitates your entire parts logistics and makes managing of your stock of spares considerably easier.



Side-by-side mounting



Memory card

< 3 min.

for replacing a drive, thanks to smart connectors and the memory card



Open for the World of Motion

Lexium 32 supports a wide selection of standardized hardware and software motion interfaces for fast integration into your architecture and ensures vendor-independence. In addition, Lexium 32 allows you to leverage your existing assets. Whether you want new hardware power and performance for your valuable software application or a new drive for your special motor – Lexium 32 is your solution of choice.

Communication interfaces

You want servo power in a simple application? The answer is Lexium 32 Compact. It provides a +/-10 V and a pulse train interface.

If you need additional connectivity, Lexium 32 Advanced is the right choice. It can be integrated into a wide variety of control architectures via CANopen / CANmotion.

If your application requires other types of communication, the servo drive of choice is Lexium 32 Modular. It lets you add the communication board you need from a large variety of industrial protocols.

Of course, the implementations are compliant with the respective standards so you can benefit from the corresponding operating modes and functions.

	Lexium 32 Compact	Lexium 32 Advanced	Lexium 32 Modular
Communication	On board: +/- 10V or Pulse train input	On board: CANopen or CANmotion	Options: <ul style="list-style-type: none">• CANopen / CANmotion• DeviceNet• PROFIBUS DP• Ethernet/IP
Commissioning interface	Modbus	Modbus	Modbus
Operating modes	<ul style="list-style-type: none">• Jog• Electronic Gear• Speed Control• Torque Control	<ul style="list-style-type: none">• CANopen modes• CANmotion cyclic synchronous mode	<ul style="list-style-type: none">• Motion Sequence mode• Motion modes• CANmotion cyclic synchronous mode

Machine and motor interfaces

Lexium 32 supports a wide variety of machine and motor interfaces such as

- Resolver
- EnDat 2.1 / 2.2
- Hiperface
- A/B/I
- SSI
- BiSS
- 1 Vpp
- 1 Vpp + Hall

This gives you full flexibility in designing new machines and also lets you leverage the power of existing solutions



Integrated safety

Safety is a complex and costly issue in the design and operation of a machine. To make things a lot simpler for you, all Lexium 32 servo drives come with "Safe Torque Off" on board as per IEC/EN 61800-5-2. This safety function is fully compliant with and certified to international standards and provides numerous benefits:

- Simplified machine design and engineering
- Less wiring
- Simpler sensor systems
- Shorter downtimes; resume exactly where you were before incidents
- Compliance with international standards
- Machine certification becomes a lot easier

If your machine requires more safety functions than "Safe Torque Off", you can simply install the optional enhanced safety module eSM. This option frees you from the hassle of devising complex, proprietary safety concepts and having them certified in all your target countries. The safety module offers the following safety functions as per IEC/EN 61800-5-2:

- Safe Stop 1 (SS1)
- Safe Stop 2 (SS2)
- Safely Limited Speed (SLS)
- Safe Operating Stop (SOS)

- Standards
- IEC/EN 61508
 - IEC/EN 61800-5-2
 - EN ISO 13849-1
 - IEC/EN 62061



Optional safety module eSM – safety can be as simple as this

TÜV Nord

Safety approved Certification

All safety functions mentioned in this brochure as per IEC/EN 61800-5-2.



Lexium 32 Servo range Overview



The servo drives

Type	Lexium 32 Compact	Lexium 32 Advanced	Lexium 32 Modular
Voltage range	110 - 240 VAC, 1 phase		380 - 480 VAC, 3 phases
Power range	1.5 A to 10 A 150 W to 1.6 kW		1.5 to 24 A 400 W to 7 kW
Communication	On board: +/- 10 V or Pulse train input	On board: CANopen or CANmotion	Options: <ul style="list-style-type: none">• CANopen / CANmotion• DeviceNet• PROFIBUS DP• Ethernet/IP
Commissioning interface	Modbus	Modbus	Modbus
Embedded safety	"Safe Torque Off"	"Safe Torque Off"	"Safe Torque Off"
Other options	Memory card	Memory card	Memory card Enhanced safety module eSM 2nd encoder module

The servo motors

Type	Lexium BMH	Lexium BSH
Frame size	70, 100, 140, 205	55, 70, 100, 140
Torque range	1.4 - 88 Nm	0,5 - 33.4 Nm
Inertia	Factor 2.4	Factor 1
Position resolution with Lexium 32 Singleturn Multiturn	32.768 or 131.768 x 1 x 4.096	131.768 x 1 x 4.096
Options	Keyed shaft, angled connectors, brake, IP65, IP67 (compressed air)	Keyed shaft, angled connectors, brake, IP65

