Decentralised Motion Solutions with Lexium Integrated Drives

Motor, positioning controller, power electronics, fieldbus and safety function “Safe Torque Off” are integrated in a single device.

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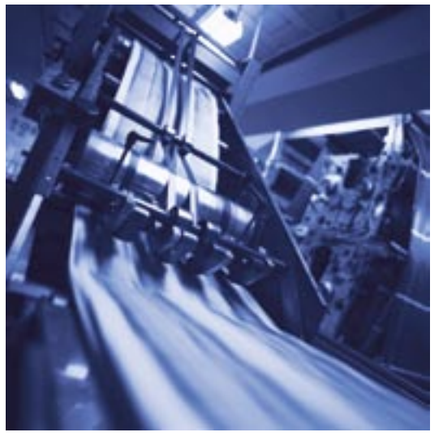
Lexium Integrated Drives – For a Wide Range of Applications




Printing, paper, packaging

Handling, labelling

Textile industry

Electronics manufacture

Medical technology

Lexium Integrated Drives – Cutting Edge Technology

Extremely compact design
for new perspectives in planning, design and installation – dramatically reduce the space requirements in the control cabinet

Great versatility
for a wide range of applications with three motor technologies

Open communication
with all important communication interfaces for all industrial automation environments

Easy installation and commissioning
by minimised wiring, a simplified EMC concept and the “Lexium Commissioning Tool” software

Integrated safety
by integrated safety function “Safe Torque Off” (“STO”) as per IEC/EN 61800-5-2

Compact intelligence

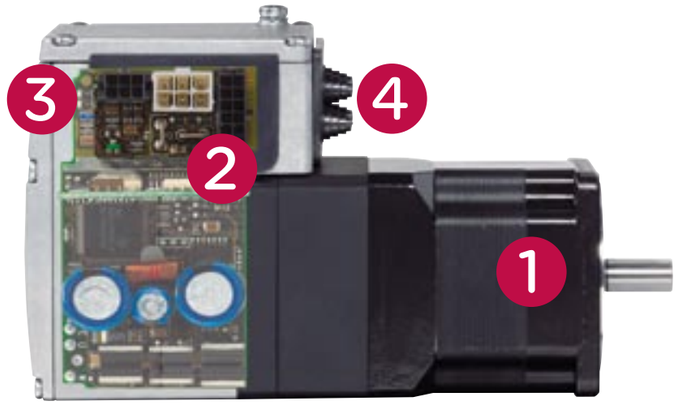
× 3 =

With servo, brushless DC or stepper motor

More success by innovative, decentralised automation

Extremely Compact Design

A whole range of new possibilities for designing machines



Save up to 50% of space
in the control cabinet in your machine design

100.000
Lexium Integrated Drives running successfully in the field

1. Three motor technologies
2. Integrated electronics
3. Integrated fieldbus
4. Flexible connection technologies

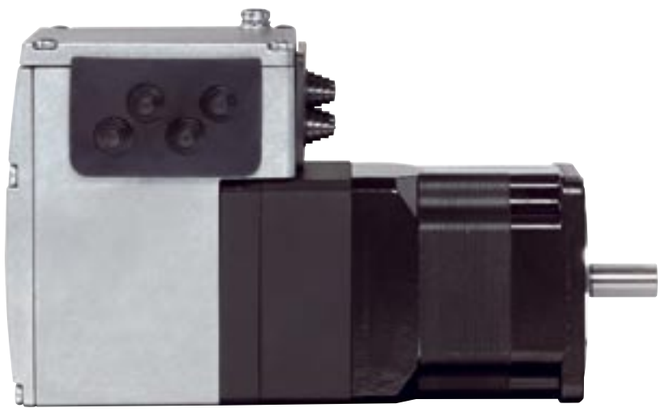
Operating modes

- “Profile Position” for applications such as “Pick-and-Place”
- “Profile Velocity” for applications requiring high constant velocity characteristics
- “Electronic Gear“ for master slave applications

Great Versatility – For a Wide Range of Applications with Three Motor Technologies

Lexium Integrated Drive ILA with Servo Motor

The specialist for dynamics



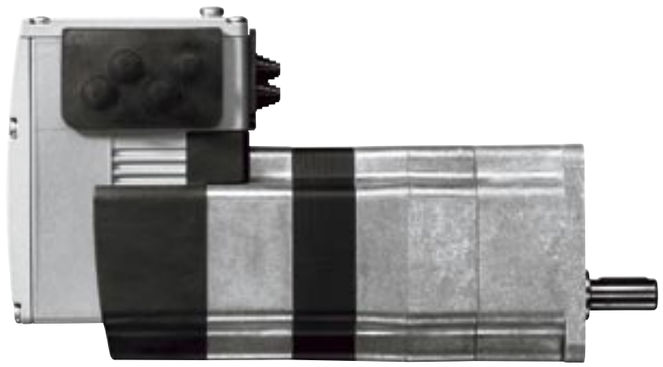
- With AC synchronous servo motor
- Superior dynamics due to high torque during acceleration
- Various winding types for adaptation to application-specific requirements
- Closed-loop drive system with high-resolution encoder
- “Lexium Commissioning Tool” for a fast and easy start

Options and accessories: Planetary gear, absolute encoder, holding brake and connection accessories

Application example DVD/CD production
The entire process from the removal of the CD/DVD from the injection moulding machine to the finished CD/DVD is automated with Lexium Integrated Drives ILA. This greatly increases the productivity while reducing the footprint of the production facility by approximately 10%.

Lexium Integrated Drive ILE with Brushless DC Motor

The specialist for flexibility



- 3-phase synchronous motor with electronic commutation (brushless DC motor)
- High detent torque eliminates the need for a holding brake in many cases
- Electronics offer the facility of absolute position feedback
- Perfect for automatic format adjustments

Options and accessories: Spurwheel gear or planetary gear for optimum tuning to application requirements, connection accessories

Application example solar cells production
The electrical tracks are printed by means of a silkscreen process. The machine uses Lexium Integrated Drives ILE for the belt drives, Lexium Integrated Drives ILS for high-precision positioning and Lexium Integrated Drives ILA for the printing process itself. The digital inputs and outputs are also employed. The machine excels with simple wiring, low inertia and superior dynamics.

Lexium Integrated Drive ILS with Stepper Motor

The specialist for precision

- With its stepper motor, the Lexium Integrated Drive ILS offers high torque at low speeds
- Space-saving solution since a gear is often not required
- Excellent solution for high-resolution positioning
- Superior constant velocity characteristics
- Plug and Play: just set the current to commission the drive

Options and accessories: Planetary gear, holding brake and connection accessories

Application example wood processing
Multi-blade circular sawing machines use laser beams as optical extension of the blades for measuring the boards. The laser is positioned with linear axes with Lexium Integrated Drives ILS. Due to difficult environmental conditions, the control cabinets are located far away from the machine. The decentralised concept dramatically reduces wiring.

Open Communication

And speak your customers' favourite language

Open to all communication networks. Whatever your communication protocol, Lexium Integrated Drives are ready to communicate with your equipment.

All important fieldbus interfaces such as PROFIBUS DP, CANopen, DeviceNet and RS 485 are available. In addition, Lexium Integrated Drives communicate via Ethernet Powerlink, EtherCAT and Modbus-TCP. This unprecedented level of connectivity allows the drives to be seamlessly integrated into all industrial automation environments.

PROFIBUS
CANopen
DeviceNet
ETHERNET POWERLINK
EtherCAT
Modbus-IDA

Easy Installation and Commissioning

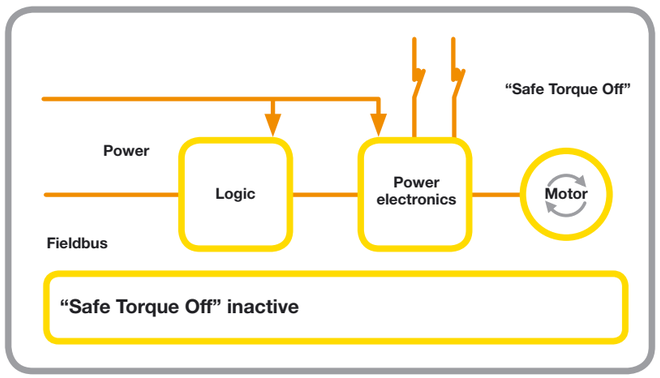
40%
decrease in cabling

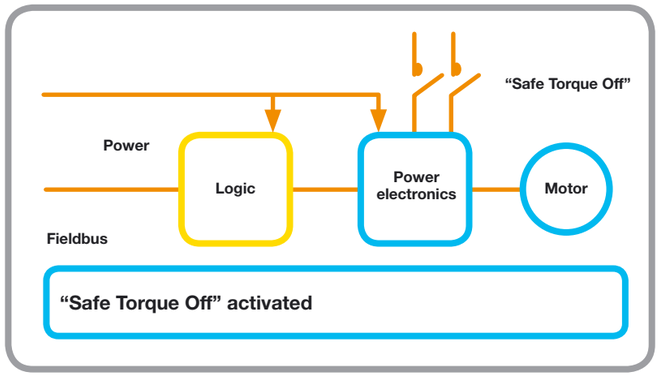
25%
reduction in your installation time

Two different connection technologies are available: printed circuit board connectors, which are ideal for series machines and cable looms, or industrial connectors for special machines and small batch sizes. The software "Lexium Commissioning Tool" is provided for a fast and easy start.

Integrated Safety

“Safe Torque Off” as per IEC/EN 61800-5-2 prevents unintended machine starts for operator safety





“Safe Torque Off” inactive
During normal operation, the controller of the Lexium Integrated Drive controls the motor position and powers the motor.

“Safe Torque Off” activated
When “Safe Torque Off” is activated, the controller remains ON and still controls the motor position while the motor power is switched OFF for safety according to the specified SIL.

The “Safe Torque Off“ functionality integrated in the drives results in additional savings in terms of wiring, sensor systems and reduced idle times. The connection to the positioning electronics and, by implication, control of the electronics, is retained even when the “Safe Torque Off” function is active. Re-homing is not necessary.

“Safe Torque Off” enables a stop by immediate removal of power to the machine actuators (stop category 0 as per IEC/EN 60204-1). With an external safety module such as Preventa XPS-AV, the actuator can be stopped according to category 1 as per IEC/EN 60204-1 (controlled stop maintaining the power on the actuators until the machine stops, then removal of the power when the actuators stop when the machine stops). The units comply with the standard for functional safety IEC/EN 61508, SIL 2 capability and performance level “d” (PLd) according to ISO 13849-1.

Product Overview

Specifications	Lexium Integrated Drives ILA	Lexium Integrated Drives ILE	Lexium Integrated Drives ILS
Torque	0.25 Nm to 0.66 Nm	3.1 Nm to 11 Nm with spurwheel gear; 0.26 Nm (without gear)	0.45 to 6 Nm (without gear)
Peak torque	0.43 Nm to 1.26 Nm	–	–
Speed	Up to 9000 rpm (without gear)	4900 rpm (without gear) 35 rpm to 270 rpm with spurwheel gear	Up to 2000 rpm (without gear)
Positioning resolution	0.022°	0.26° to 1.667° (with gear 115:1, 18:1)	0.018°
Holding torque	–	1 Nm to 8 Nm with spurwheel gear	–
Fieldbus interface	PROFIBUS DP, CANopen, DeviceNet, RS 485, Ethernet Powerlink, EtherCAT, Modbus–TCP		PROFIBUS DP, CANopen, RS 485, Ethernet Powerlink, EtherCAT, Modbus–TCP
Operating modes	Homing, profile position, profile velocity, electronics gear	Homing, profile position, profile velocity	
Configuration	Baud rate, network address and terminating resistor via DIP switch; four configurable inputs/outputs (e.g. as limit switch or stop input)		
Safety function	“Safe Torque Off” as per IEC/EN 61800-5-2 and performance level “d” (PLd) according to ISO 13849-1.		