Motion control

Lexium 05
The high concentrate
solution for your machines
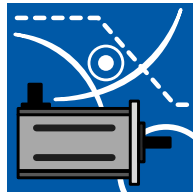
Telemecanique
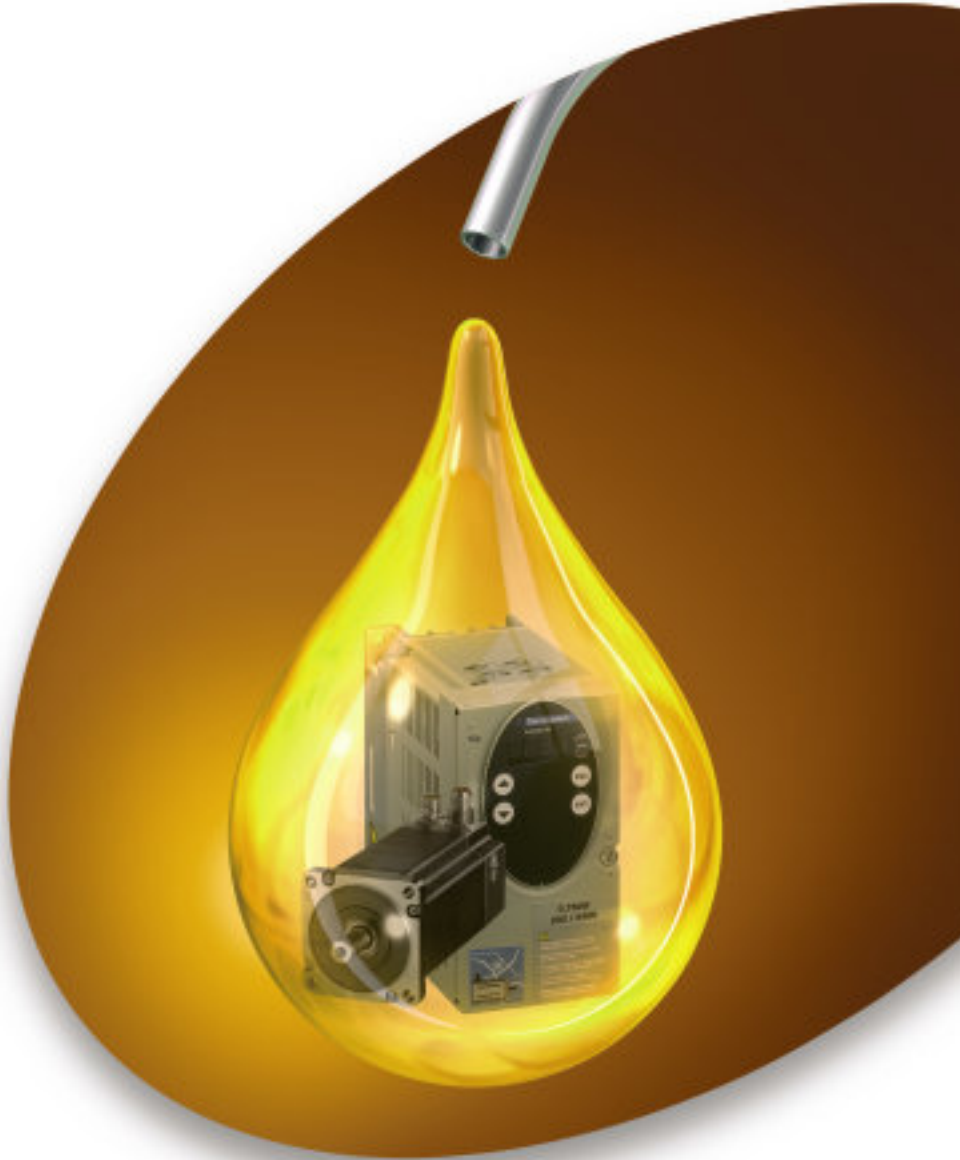
Simply Smart !
**Leveraging
ingenuity**
and intelligence
for **ease** of use

Top grade performance

With this new generation of motors and drives, you have the benefit of powerful solutions to design and optimize machines - the perfect answer to your technical and economic challenges. By combining the essential motion control functions with control and command interfaces, Schneider Electric meets your requirements for the simplest, most reliable… and most cost-effective machines.

A new *"additive free"* approach

With the integration of functions and components that are usually external, the Lexium 05 range opens the way for a new generation of more reliable, more compact machines.

For conformity in total safety…

> **Integrated EMC filter**
- Level A conducted and radiated
- Conforming to CE marking

> **"Power Removal" safety function**
- Prevents the machine starting unintended, ensuring operator safety
- Conforms to machinery standard EN 954-1 category 3, and standard IEC/EN 61508-1 SIL2 on electrical installations
- Certified by the TÜV

Speeding up movement…

> **"Simply Start" menu**
- For quick starting with PowerSuite

> **Automatic identification of the motor parameters**
- Simply connect the SinCos® Hiperface® encoder to the drive

> **Autotuning**
- This automatically defines the optimum control loop gains of the axis

A wide and powerful range

> **Lexium 05 servo drives**
- Power range from 0.4 to 6 kW
- Voltage range from 115 V to 480 V

> **BSH servo motors**
- Nominal torque of 0.42 to 33.5 Nm.
- Nominal speed of 1250 to 6000 rpm
- Compact, due to its new winding technology based on salient poles

> **A dynamic combination**
- Low inertia of the BSH motors
- Fast control loop response time (Current loop sampling time of 62.5 µs)

Lexium 05

Ideally adapted for motion control

You can increase the capabilities of your machines and improve their overall performance.

Accurate control…

> **4 modes**

Select the control mode of your Lexium 05 drive to suit for your application.
- Point-to-point positioning:
  □ Relative or absolute movement
  □ Target position and parameters transmitted via the communication network
- Torque or speed regulation
- Electronic shaft
- Manual mode

Unrestricted communication…

> **CANopen**

- Lexium 05 incorporates the CANopen fieldbus as standard. High-speed data exchange and direct connection to industrial control systems is also available with these drives.
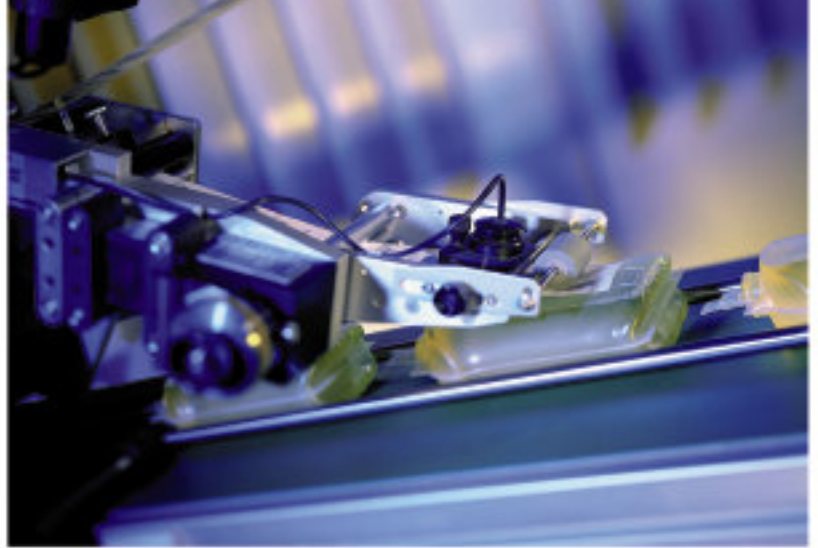Conforming to CANopen standard DSP 402, Lexium 05 incorporates the position, torque and speed profiles, and new references are taken into account in 1 ms !

> **Profibus DP**

- A version of Lexium 05 integrates Profibus DP, adding to the possible connections to communication networks.

The CANopen and Profibus DP drives also have a **Modbus** serial link.
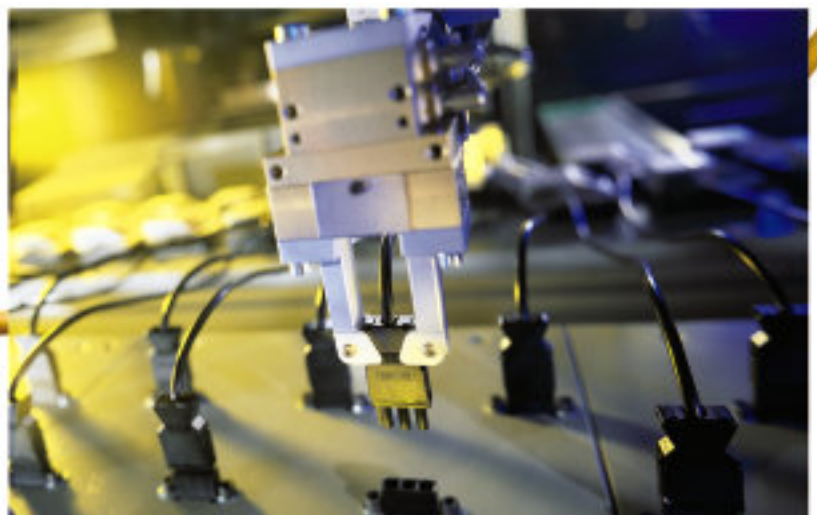
Combine various possibilities…

> Two +/- 10 V analog inputs

■ Lexium 05 can also be connected to all controllers with analog outputs: the precision of its two +/- 10 V analog inputs with 14-bit resolution, combined with very fast control loop reaction times, gives very high performance levels and a high degree of adaptability.

> An RS 422 incremental encoder interface

■ Use as an encoder emulation output:
□ Position feedback to a controller
□ Position reference to a slave drive
■ Use as a position reference input in electronic shaft mode
■ This interface can also be configured as a pulse/direction input

Connected via CANopen, Lexium 05 combined with a Twido controller provides the ideal solution for "pick and place" applications.
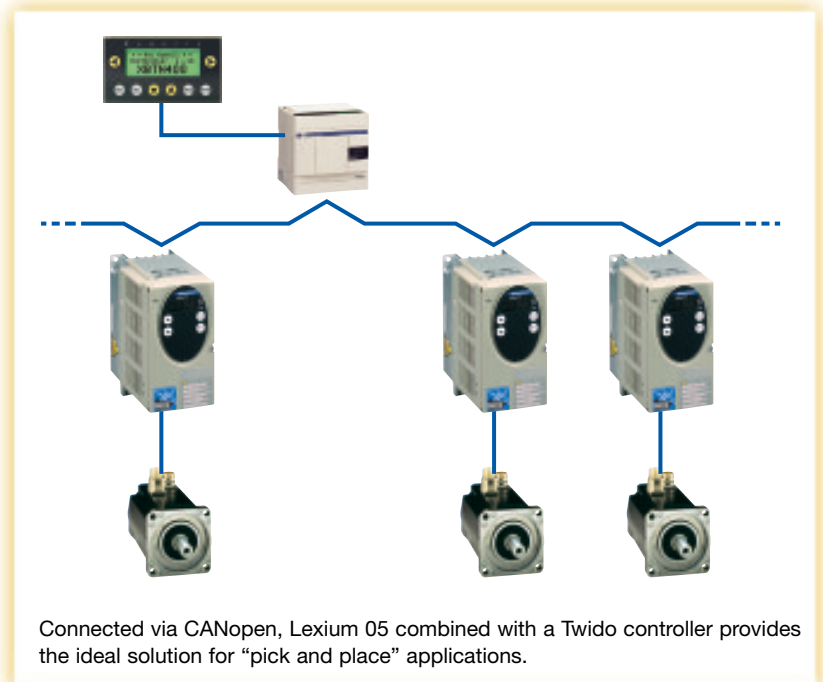
Lexium 05

The ultimate in *simplicity…*

The sole aim of the advanced design of the Lexium 05 range is to make it easier to integrate and simplify startup and operation of the machine.

Ensuring the best quality drives…

> Algorithms with amazing results
With autotuning users can achieve their required motion performance levels quickly and easily. It provides an optimum answer to machine performance and efficiency, even for vertical movement.

> An oscilloscope function
Available with the PowerSuite software workshop, this enables users to display the electrical and mechanical values of the movement.

Staying in contact and in control…

For programming, display and diagnostics, Lexium 05 has:

> An integrated 7-segment display terminal

> A remote terminal for mounting on an enclosure door

> The user-friendly "PowerSuite" software workshop
PowerSuite provides access to all the parameters of the application and full, instant diagnostics of the status of the axis, using a PC connected via Modbus or a Bluetooth wireless link.

And integrating with no restrictions

> It comprises the following in a compact unit:
■ EMC filter
■ The braking resistor, which does away with the need to use an external resistor in most applications
■ The "Power Removal" safety function, which prevents electromechanical redundancy
■ Operation up to 50°C without derating

> Simplified installation
■ Side by side mounting
■ DIN rail mounting
■ Use of spring terminals

Selection *guide*

BSH servo motors — Lexium 05 servo drives

BSH servo motor	Mo	n_N	110/120 V single phase, with integrated EMC filter LXM 05● D10F1 0.4 kW	D17F1 0.65 kW	D28F1 1.4 kW	n_N	200/240 V single phase, with integrated EMC filter LXM 05● D10M2 0.75 kW	D17M2 1.2 kW	D28M2 2.5 kW
BSH 0551T	0.5 Nm	3000 rpm	1.4 Nm			6000 rpm	1.4 Nm		
BSH 0552M	0.9 Nm					1500 rpm	2.3 Nm		
BSH 0552P	0.9 Nm					4000 rpm	2.7 Nm		
BSH 0552T	0.9 Nm	3000 rpm	1.77 Nm	2.7 Nm		6000 rpm	1.77 Nm		
BSH 0553M	1.3 Nm					1500 rpm	4.2 Nm		
BSH 0553P	1.3 Nm					4000 rpm	3.18 Nm		
BSH 0553T	1.3 Nm	3000 rpm		3.31 Nm		6000 rpm		3.31 Nm	
BSH 0701P	1.4 Nm					3000 rpm	3.2 Nm		
BSH 0701T	1.4 Nm	2500 rpm	2.42 Nm			5000 rpm		3.19 Nm	
BSH 0702M	2.1 Nm					1500 rpm	6.8 Nm		
BSH 0702P	2.2 Nm					3000 rpm	5.37 Nm	7.55 Nm	
BSH 0702T	2.12 Nm	2500 rpm		4.14 Nm		6000 rpm		4.14 Nm	6.8 Nm
BSH 0703M	2.8 Nm					1500 rpm	10 Nm		
BSH 0703P	3.1 Nm					3000 rpm		7.28 Nm	10.3 Nm
BSH 0703T	2.8 Nm	2500 rpm			7.38 Nm	6000 rpm			7.38 Nm
BSH 1001T	3.4 Nm	2500 rpm			8.5 Nm	4000 rpm			8.5 Nm
BSH 1002P	5.8 Nm					2000 rpm			18.3 Nm
BSH 1003P	7.8 Nm					2000 rpm			22.79 Nm

BSH servo motor	Mo	n_N	200/240 V three phase, without integrated EMC filter LXM 05● D10M3X 0.75 kW	D17M3X 1.4 kW	D42M3X 3.2 kW	n_N	380/480 V three phase, with integrated EMC filter LXM 05● D14N4 1.4 kW	D22N4 2 kW	D34N4 3 kW	D57N4 6 kW
BSH 0551T	0.5 Nm	6000 rpm	1.4 Nm							
BSH 0552M	0.9 Nm	1500 rpm	2.3 Nm							
BSH 0552P	0.9 Nm	4000 rpm	2.7 Nm			6000 rpm	2.7 Nm			
BSH 0552T	0.9 Nm	6000 rpm	1.77 Nm							
BSH 0553M	1.3 Nm	1500 rpm	4.2 Nm							
BSH 0553P	1.3 Nm	4000 rpm	3.18 Nm			6000 rpm	3.87 Nm			
BSH 0553T	1.3 Nm	6000 rpm		3.31 Nm						
BSH 0701M	1.4 Nm	1500 rpm	3.2 Nm							
BSH 0701P	1.4 Nm	3000 rpm	3.2 Nm							
BSH 0701T	1.4 Nm	6000 rpm	2.41 Nm	3.19 Nm						
BSH 0702M	2.1 Nm	1500 rpm	6.8 Nm							
BSH 0702P	2.2 Nm	3000 rpm	5.37 Nm	7.55 Nm		6000 rpm	7.55 Nm			
BSH 0702T	2.12 Nm	4500 rpm			6.8 Nm					
BSH 0703M	2.8 Nm	1500 rpm	10 Nm			3000 rpm	10.3 Nm			
BSH 0703P	3.1 Nm	3000 rpm		7.28 Nm		6000 rpm		8.92 Nm		
BSH 0703T	2.8 Nm	6000 rpm			10.25 Nm					
BSH 1001M	3.4 Nm					2000 rpm	8.5 Nm			
BSH 1001P	3.3 Nm	2000 rpm		9.45 Nm		4000 rpm		9.45 Nm		
BSH 1001T	3.4 Nm	4000 rpm			8.5 Nm					
BSH 1002M	5.5 Nm					2000 rpm	16 Nm			
BSH 1002P	5.8 Nm	2000 rpm		12.35 Nm		4000 rpm		15.43 Nm		
BSH 1002T	5.52 Nm	4000 rpm			16 Nm					
BSH 1003M	7.8 Nm					2000 rpm		27.8 Nm		
BSH 1003P	8 Nm	2000 rpm			28.3 Nm	4000 rpm			26.97 Nm	
BSH 1004P	10 Nm	1500 rpm			30.41 Nm	3000 rpm			22.53 Nm	30.41 Nm
BSH 1401P	11.1 Nm					2500 rpm			26.2 Nm	
BSH 1401T	11.1 Nm	2500 rpm			24.77 Nm					
BSH 1402M	19.5 Nm					1250 rpm			57.1 Nm	
BSH 1402P	19.5 Nm	1500 rpm			46.72 Nm	3000 rpm				57.42 Nm
BSH 1402T	14.73 Nm	2000 rpm			25.04 Nm					
BSH 1403M	27.8 Nm					1500 rpm			76.66 Nm	88.17 Nm
BSH 1403P	27.8 Nm					3000 rpm				57.24 Nm
BSH 1404M	33.4 Nm					1500 rpm				126,45 Nm
BSH 1404P	33.4 Nm					3000 rpm				60.04 Nm
BSH 2051M	36 Nm					1500 rpm				68.3 Nm

BSH motors can be equipped with:
- Holding brake
- Multiturn SinCos encoder
- 90° adjustable connectors
- An IP65 shaft end
- A gearbox

(Please consult the Lexium 05 catalog for further information).

n_N = nominal speed
Mo = torque at standstill

● replaced by A for the CANopen/analog inputs version, replaced by B for the Profibus DP version.

1.4 Nm This value corresponds to the peak torque at standstill that can be provided by the Lexium 05 servo drive/BSH servo motor combination.

The efficiency of Telemecanique branded *solutions*

Used in combination, Telemecanique products provide quality solutions, meeting all your Automation & Control applications requirements.

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System & architectures

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Motor control

Detection

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