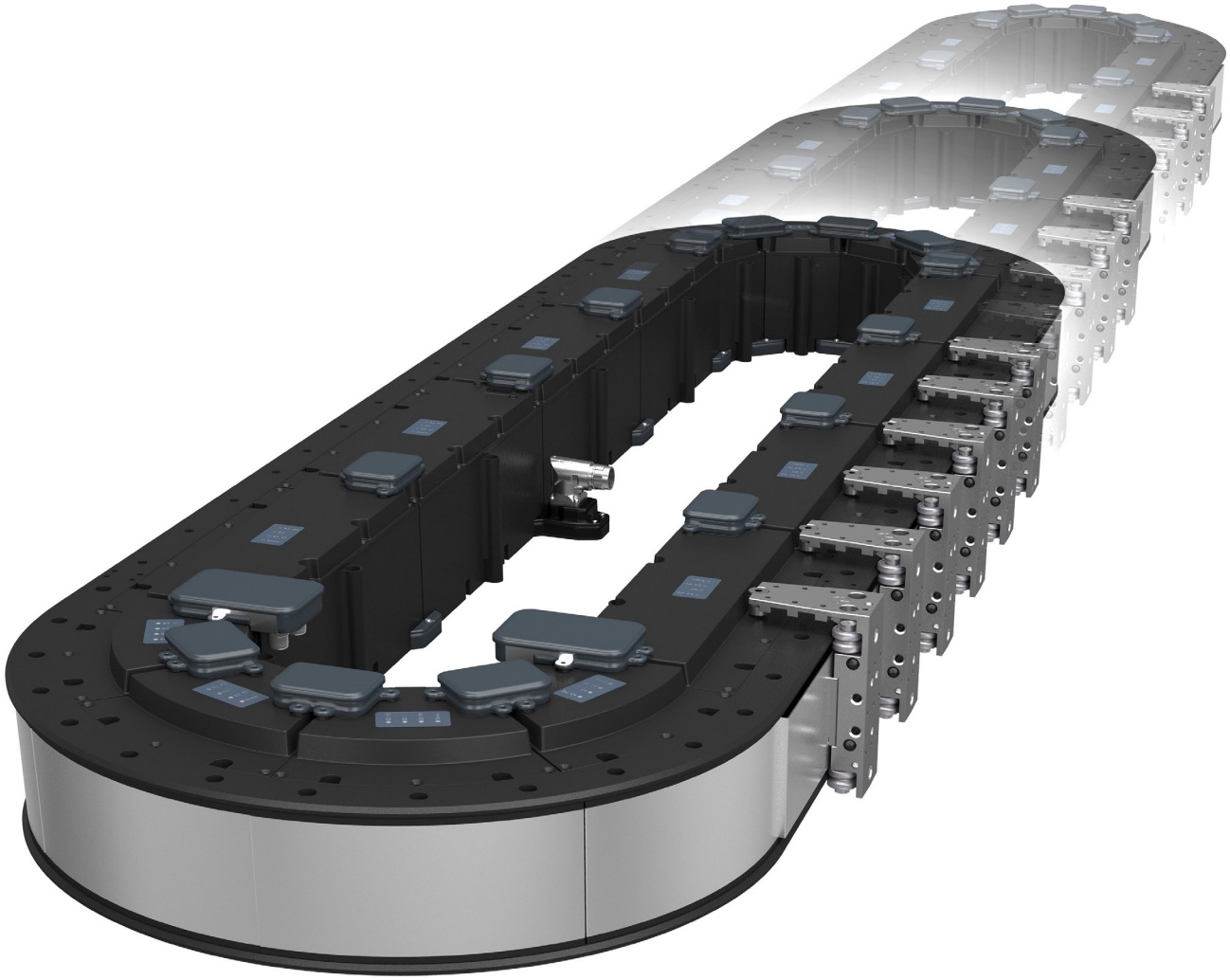
Catalog | April 2024



Lexium™ MC12 multi carrier

The multi carrier transport system

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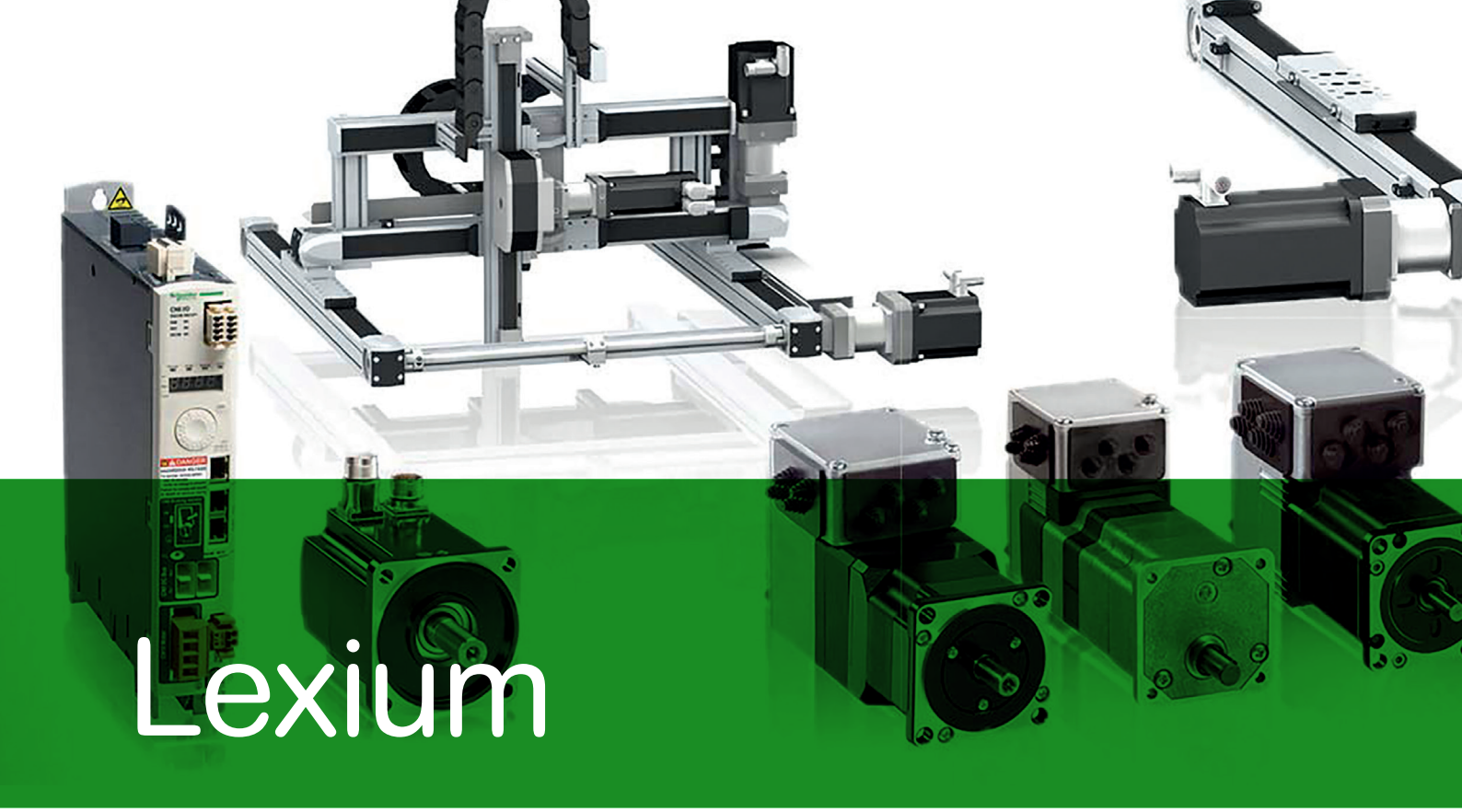

Lexium

Discover Lexium

Advanced motion control and robotics

Lexium servo drives, motors, and robotics series are designed for a broad range of motion-centric machines. From single-axis to high-performance multi-axis machines, the **Lexium** range enables high-speed movements and precise positioning in packaging, material handling, material working, electronics, and food and beverage applications.

Explore our offer

- Lexium Servo Drives and Motors
- Lexium Integrated Servo Drives
- Lexium Robotics
- Lexium Stepper Drives

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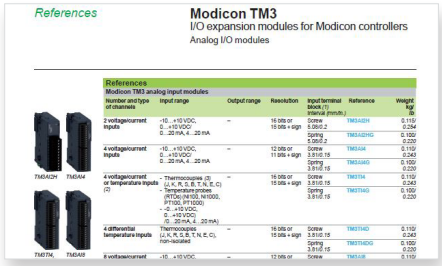
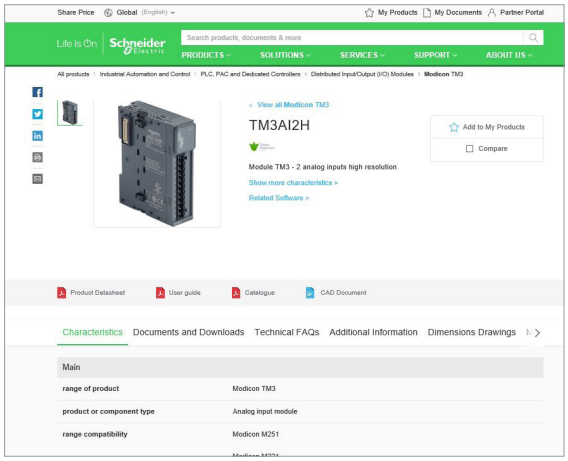
Quick access to product information

Get technical information about your product

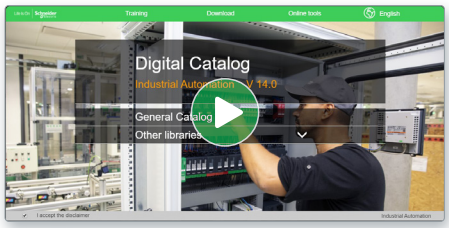


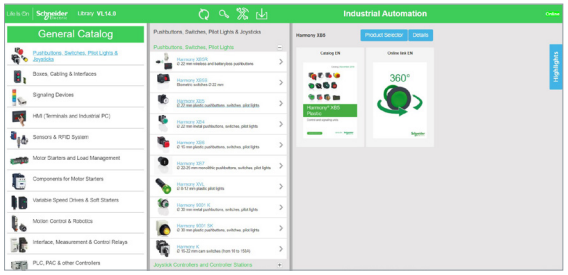


Each commercial reference presented in a catalog contains a hyperlink. Click on it to obtain the technical information of the product:

- Characteristics, Dimensions and drawings, Mounting and clearance, Connections and schemas, Performance curves
- Product image, Instruction sheet, User guide, Product certifications, End of life manual

Find your catalog





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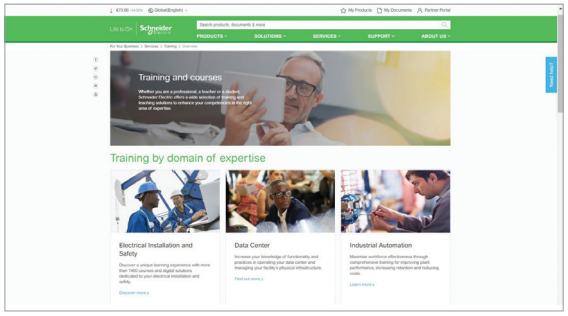

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Life Is On Schneider Electric

General content

Lexium™ MC12 multi carrier
The multi carrier transport system

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EcoStruxure™
Innovation At Every Level

To be competitive in today's digital era, machine builders must be innovative. Smart machines, those that are better connected, more flexible, more efficient, and safe, are enabling machine builders to innovate in ways never before possible.

EcoStruxure, Schneider Electric's open, IoT-enabled architecture and platform, offers powerful solutions for the digital era. As part of this, EcoStruxure Machine brings powerful opportunities for machine builders and OEMs, empowering them to offer smart machines and compete in the new, digital era.

EcoStruxure Machine brings together key technologies for product connectivity and edge control on premises, and cloud technologies to provide analytics and digital services. EcoStruxure Machine helps you bring more innovation and added value to your customers throughout the entire machine life cycle.

Innovation at Every Level for Machines is full systems across three layers:

– Connected products
Our connected products for measuring, actuating, device level monitoring, and control adhere to open standards to provide unmatched integration opportunities and flexibility

– Edge Control
We are IIoT-ready with a proven set of tested and validated reference architectures that enable the design of end-to-end open, connected, and interoperable systems based on industry standards. Ethernet and OPC UA facilitates IT/OT convergence meaning machine builders reap benefits from web interfaces and cloud.

– Apps, Analytics & Services
Seamless integration of machines to the IT layer allows the collection and aggregation of data ready for analysis – for machine builders and end users alike this means increased uptime and the ability to find information faster for more efficient operations and maintenance.

These levels are completely integrated from shop floor to top floor. And we have cloud offers and end-to-end cybersecurity wrapped around.

EcoStruxure Machine makes it easier for OEMs/ machine builders to offer their customers smarter machines. The advent of smart machines is driven by the changing needs of end users:

– Evolving workforce
– Reducing costs
– Dynamic markets
– Shorter life cycles
– Prioritizing functional safety and cybersecurity

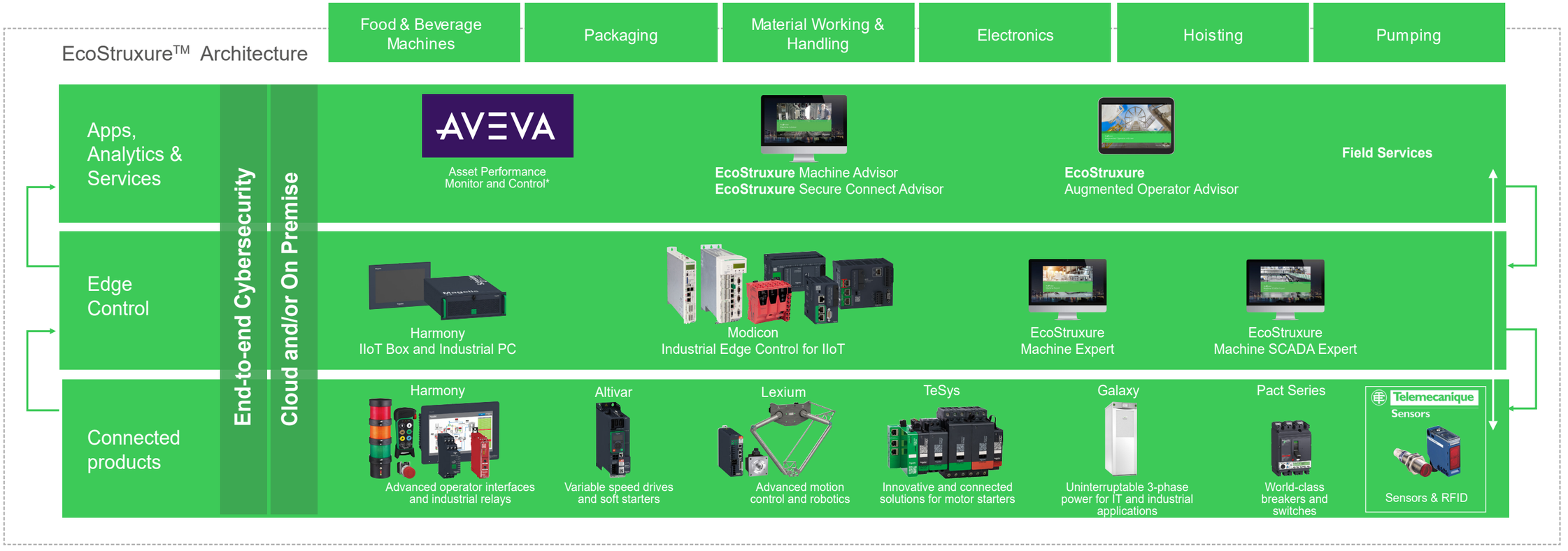
EcoStruxure Machine provides one solution for the whole machine life cycle:

– With Smart Design & Engineering the time to market is reduced by up to 30% using our automated engineering and the simulation capabilities

– During Commissioning & Operation of the machine, resources such as energy, material and loss can be improved, and with seamless integration to the IT world efficiency can be improved by up to 40%

– Smart Maintenance & Services reduces the time for corrective actions up to 50%

EcoStruxure™ Machine



* The Schneider Electric industrial software business and AVEVA have merged to trade as AVEVA Group plc, a UK listed company. The Schneider Electric and Life is On trademarks are owned by Schneider Electric and are being licensed to AVEVA by Schneider Electric.

Lexium MC12 multi carrier

The multi carrier transport system

Specifications

Specifications of Lexium MC12 multi carrier

Lexium MC12 multi carrier transport system

Lexium MC12 multi carrier is an innovative transport system to be used in machines. It uses latest linear motion technology to move products individually through the machine. These individual movements allow for new machine designs making machines faster, more flexible and space efficient.

New level of performance & flexibility for more sustainability

- Less format specific parts needed, a big step ahead in direction of toolless change over at a push of a button
- Leap in flexibility, larger variety of products can be run on the same machine

Packaging application

Simplified operation and maintenance

- Integral part of PacDrive 3 system diagnostic mechanisms
- Automatic configuration after replacement of segments or carriers
- Enhanced diagnostics and commissioning with EcoStruxure Machine Expert software
- Mobile app for diagnostics (Industrial Device)
- Integral part of Schneider Electric´s solution for remote monitoring/health monitoring and predictive maintenance (Machine Advisor)
- Modular mechanical design for quick replacements

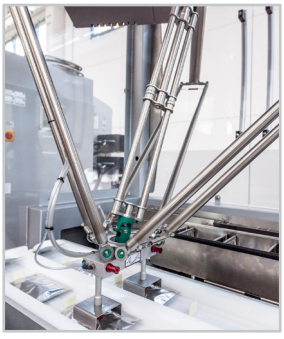
Differentiation & saving time in machine design for less time to market

- Game changer for machine design
  Next generation of multi carrier system, providing new leeway for even better machine designs
- The evolution – mechanical camming – electronic camming – no camming – is providing new unknown potential for more flexible machines with less footprint!
- Efficient engineering and life cycle management with a single and well-known engineering tool
- Shorter time to market though easy and time saving mechanical/electrical/program implementation
- Virtual commissioning to verify machine behavior in an early implementation phase
- Transportation, grouping and positioning of products is completely decoupled from the machine cycle

Food processing application

Increasing the Overall Equipment effectivness of machine

> Higher flexibility – more formats per machine and simplified change over procedures with less format specific part
> Optimized maintenance by high-service-parts
> In summary resulting in higher machine uptime
> Better use of production space through machines with less footprint



Material handling application

Main fields of application

- Lexium MC12 multi carrier is transporting, grouping and positioning products in discrete processes for such typical applications:

> Packaging
  - Cartoning
  - Stacking (grouping)
  - Product flow adjustments (gap correction, position correction)
  - Filling, folding (tubes, bottles, pouches, …)
  - Labelling
> Food processing
  - Applicating
  - Cutting
> Assembly
  - Mechatronical products
  - Pharmaceutical products
> Material handling

Lexium MC12 multi carrier

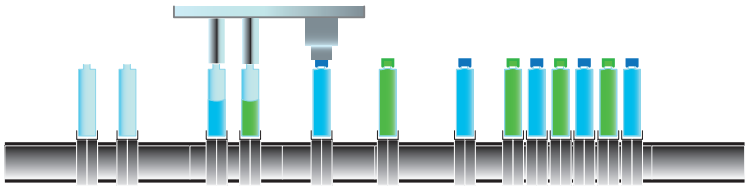
The multi carrier transport system

Examples of applications

Examples of applications

The Lexium MC12 multi carrier system is a transport system for moving, positioning or grouping objects in machines for discrete processes.

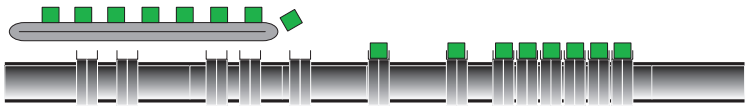
Filling



Filling

- Multi carrier replaces transportation chain
- Individual bottle movements
- Bottles move twice as fast through capping station
- Smaller gaps between products outside processing stations reduces footprint
- Clamping for different bottle diameters increases flexibility
- Less stations (cost savings)
- More compact
- Faster and simplified format change

Grouping



Grouping

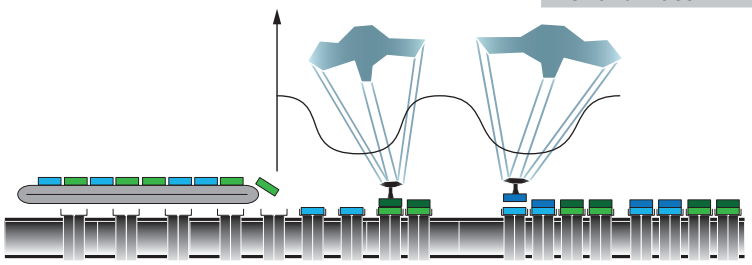
- Products can be loaded on the fly
- Pocket size can be adjusted to adapt to formats or to simplify loading
- Products move individually, high performance, increasing group size does not impact performance
- Buffer between loading and unloading station can compensate jitter in product flow
- Flexible grouping patterns

Stacking

Stacking and Grouping

- Pocket "grows" with products put into pocket
- Different products from different infeed stations can be stacked into same pocket
- Grouping of stacked products
- Products can be pushed together

Pick and Place



Pick and Place with variable speed of carrier

- More picks per min, products can be picked more often in robot sweet spot by slower speeds in working envelope and higher speeds during transfer (to next robot)
- Better accuracy, no belt slipping

Free movements

Free movements

- A carrier can be moved freely throughout the track. It can brake, accelerate, position or exert a constant force when stationary or also in motion.
  Like any linear motor, the carrier can synchronize on other movements.
  When arranged in a circle, the carriers move endlessly following the flow of product.
- Several carriers can all be moved independently of each other. They can be positioned at absolute positions over the entire distance traveled. In addition, they can be moved relative to each other and avoid collisions with their neighbour.

Lexium MC12 multi carrier

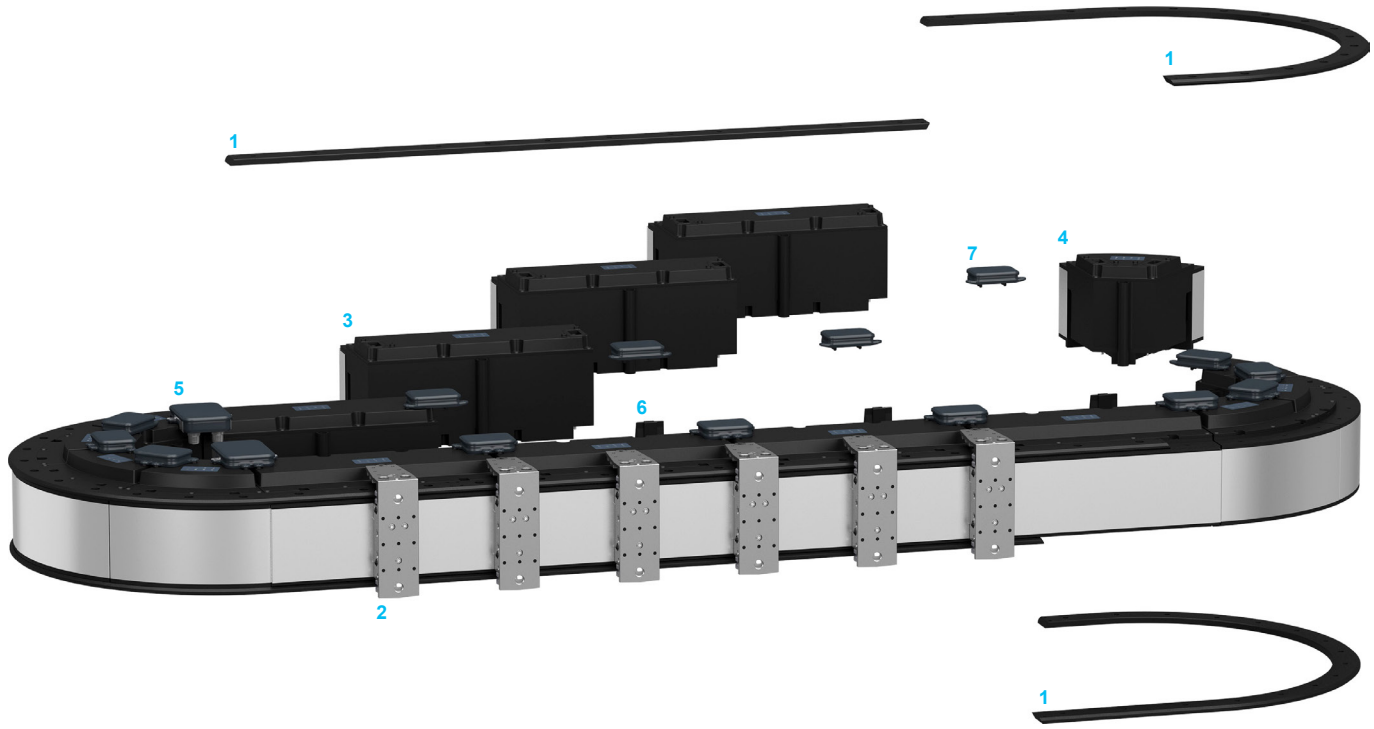
The multi carrier transport system

System components to create a track

System components to create a track

Lexium MC12 multi carrier is a modular system for machine applications and consists of long stator motors, on which multiple carrier units can be moved independently from each other.

> The system components are designed for compact, modular, flexible and efficient machine designs. Lexium MC12 multi carrier can reduce engineering efforts, mechanical variants, and changeover time.
> The components of Lexium MC12 multi carrier are mounted at the machine frame.



Guide rails 1

> Same curve and straight guide rails are installed at top and bottom of the straight and curved long stator motor segments, used to handle the carriers. Guide rails are available in different length and can be combined freely.

Carriers 2

> The carrier contains magnetic plates which, with the coil of the long stator motor segment can generate propulsive force. The encoder integrated in long stator motor segment measures the position of each carrier.
> Up to 130 removable carriers can move on a same track. The motion of each carrier is independent from each other allowing different spacings, different cycle times, and different speeds (up to 4 m/s).
> The minimal gap between two carriers is null.

Straight 3 and curve 4 longstator motor segments

> These are linear motors with integrated power electronics and multi carrier position measurement. The longstator motor segments can be combined freely into open and closed tracks, and can be mounted from top on a base plate.
> Integrated mechanical alignments simplify the mounting process.
> No cabinet space is required for the drive electronics as it is integrated in the track segments.
> Tracks can be designed in machines in horizontal or vertical position.
> The maximum length of a track is 40 m *(131.23 ft) (1)*
> Each segment is equipped with electronic type plates which enables the controller to identify the segments and the resulting track geometry automatically.

Communication interconnect 5

> Communication interconnects are used to interconnect the straight or curve longstator motor segments and to support the transmission of the communication (Sercos III), and of the SFO safety function (Safe Force Off).

Connection modules 6

> The Connection modules ensure the overvoltage protection, and the supply voltage monitoring.

Power interconnects 7

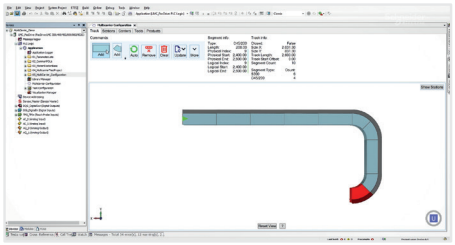
> Power interconnects are used to interconnect the straight or curve longstator motor segments, and to support the transmission of the DC power, ensuring a quick wiring.
> When mounting two longstators, supply voltage is automaticaly connected through.

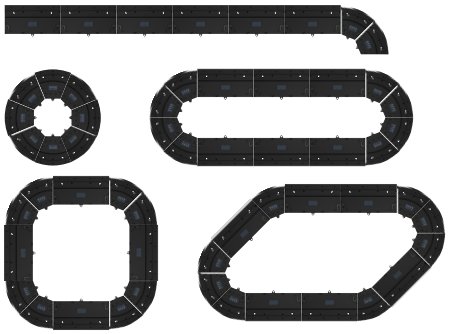
(1) For track lenght of more than 20 m (65,61 ft), Please contact your SE representative.

Lexium MC12 multi carrier

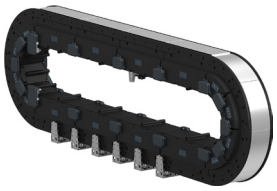
The multi carrier transport system

Setting up





Available Open or closed track geometries



Vertical orientation

Horizontal orientation

Setting up the system components

Designing a track

Shapes

> Open tracks or closed tracks that can be realized with 300 mm *(11.81 in)* straight long stator motor segments and 200 mm *(7.87 in)* 45° outside curve long stator motor segments.

> The Maximum track length is 40 m *(131.23 ft) (1)* .

> The free space left inside a track allows the integration of additional equipment such as Delta robots, reduces the space of an installation, and ease the access for service or maintenance.

> **Track's orientation**

- Track can be mounted in Vertical or Horizontal orientations.

Connecting a track

Communication interconnects

> There are different interconnects available, e.g. to connect Sercos cables or to connect Safe Force Off signal.

> The communication interconnects ensure the Sercos communication and Safety function:

- Once connected, the interconnects eliminate further wiring
- Multiple safety zones are allowed with one connection per zone

Connection modules

> Connection module are installed close to power supply, between power supply and power connector at track.They provide the internal DC Bus and power supply on tracks, they ensure the overvoltage protection, and the supply voltage monitoring.

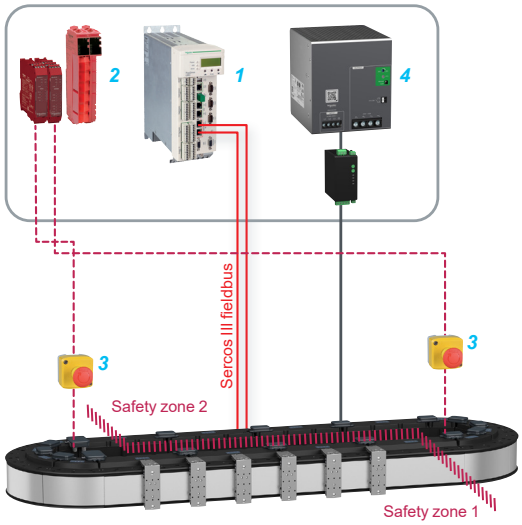
> The Internal DC Bus and the power supply (48 V DC) are automatically connected through when mounting two segments.

- No wiring is required between the segments
- Up to three 48 V power supplies can be installed in parallel according to the needs of application
- The Power infeed is applied in parallel at straight and/or curves long stator segments

Power interconnects

> There are different versions available, e.g. with a power connector to connect power to the track or a disconnector which allows to split a track into different power zones.

> The power interconnects ensure the power distribution in the track. They are mounted at the bottom side and provide an alignment aid helping to mount the long stator motor segments properly.



Communication interconnects associated to Sercos as provided by LMCPro2 motion controller (1) and safe outputs: TM5SDO4TFS, TM5SDO4TAFS safety modules, and XPSMCMRO0004G, XPSMCMDO0004G modular safety modules (2) combined with Harmony XB5 Emergency stop pushbuttons (3).
ABLU3A48200 (4): 3-phase power supply is dedicated to Lexium MC12 multi carrier system.

(1) For track lenght of more than 20 m (65,61 ft), Please contact your SE representative.

Lexium MC12 multi carrier

The multi carrier transport system

Complementary of offers

Complementary of offers

Control

> Lexium MC12 multi carrier is integrated into PacDrive 3 system, using PacDrive 3 motion controllers (LMC Pro2). Lexium MC12 becomes part of PacDrive 3 architecture.

Configuration

> Lexium MC12 multi carrier applications can be developed and commissioned with dedicated application libraries (CAD, Eplan, Application function block, ...) embedded in **EcoStruxure Machine Expert**, Schneider Electric´s single engineering environment for developing, configuring and commissioning complete automation solutions, with less time to market.
> The multi dimensional software architecture allows visualization and simulation during the conception of a motion centric machine.

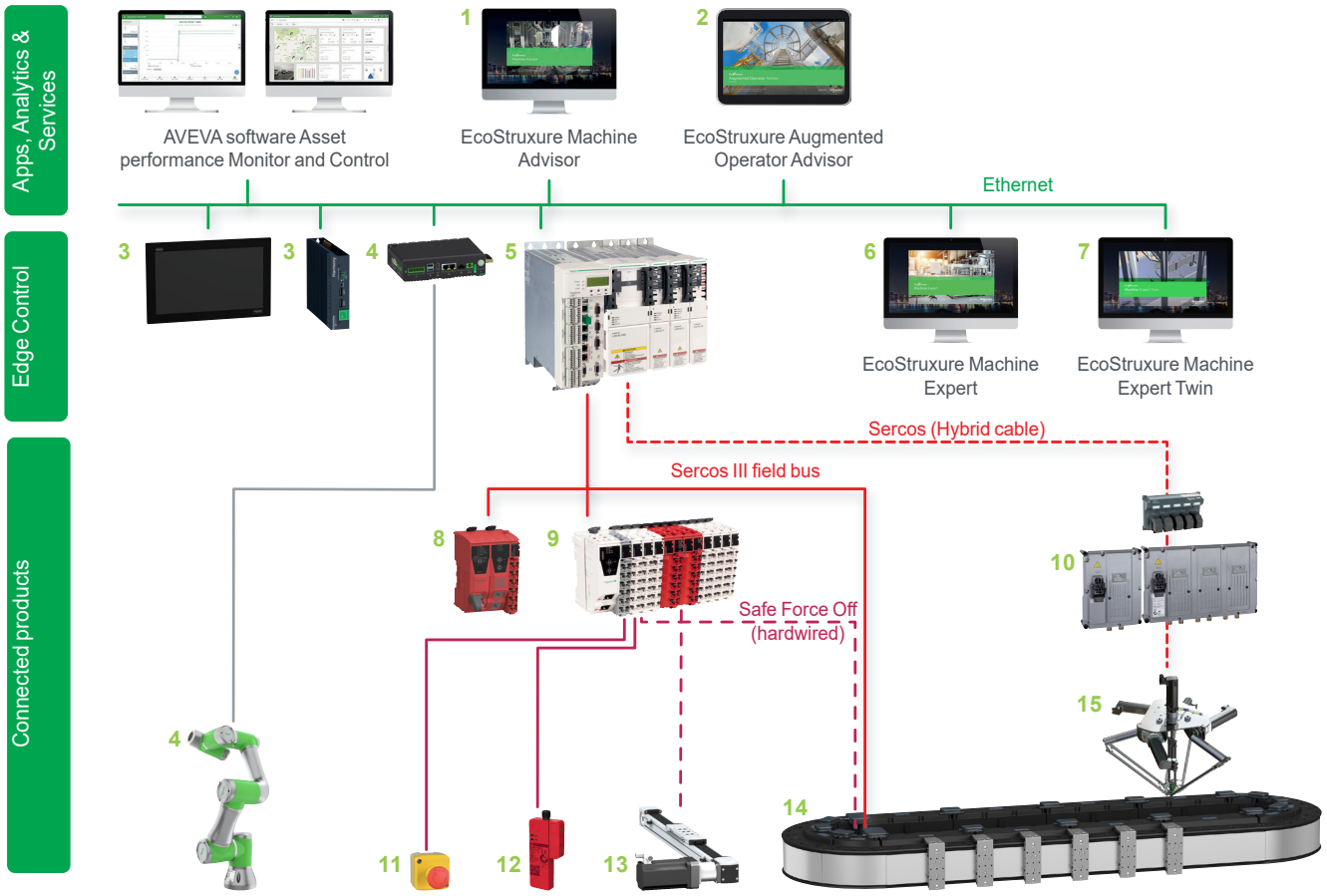
> Lexium MC12 multi carrier is part of the EcoStruxure Machine Expert Twin software, **Builder** and **Visu** license (integrated in EcoStruxure Machine Expert):

- EcoStruxure Machine Expert **Visu** together with the Multi Carrier Configurator of Machine Expert is allowing users to automatically create Digital twin models of 1 multi carrier, allowing to visualize 3D models for testing purposes.
- EcoStruxure Machine Expert Twin **Builder** is allowing users to automatically generate digital twin models from tracks pre-defined in Machine Expert and deployed to a PacDrive LMC. Multiple models can be generated.

Related products

> Schneider Electric offers several ranges of robots and products (actuators, control systems) to complete a PacDrive 3 automation solution.

> The compact design of the Lexium MC12 multi carrier leaves space to mount additional equipment like Delta robots within closed tracks.



1 EcoStruxure Machine Advisor
2 EcoStruxure Augmented operator Advisor
3 Harmony iPC panel, Harmony Edge box
4 Lexium Cobot: Collaborative robot and Cobot compact controller *(1)*
5 PacDrive LMC Pro2 Motion controller, Lexium 62 Multi axis servo drive
6 EcoStruxure Machine Expert software
7 EcoStruxure Machine Expert Twin software
8 Modicon TM5CSLC Safety logic controller
9 Modicon TM5: Sercos interface module, Safety IO expansion module, IO expansion module (IP 20)
10 Lexium 62 ILD detached servo drives
11 Harmony XALD Harmony XB5 Emergency stop pushbuttons
12 Telemecanique XCSR contactless RFID safety switch
13 Lexium PAS: Linear axes with fixed axis body
14 Lexium MC12 multi carrier
15 Lexium P Delta 3 robot

(1) Scheduled for commercialization in the third quarter of 2023.

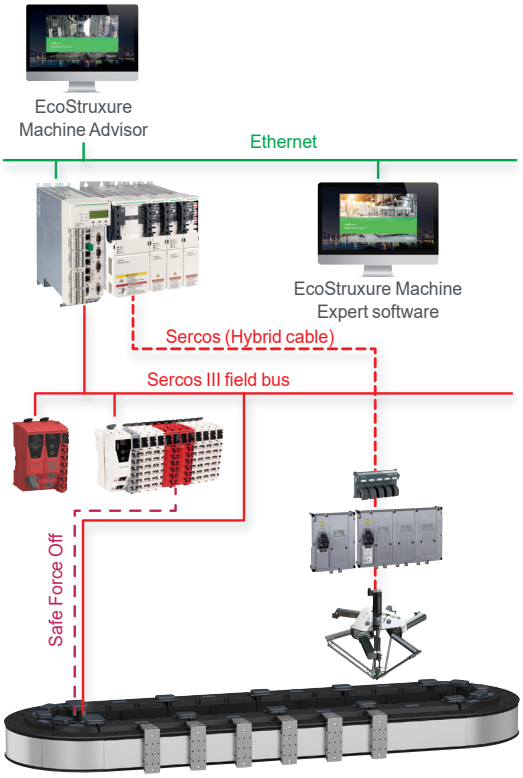
Lexium MC12 multi carrier

The multi carrier transport system

Communication, Embedded safety function SFO, Main characteristics

sercos the automation bus

- Cat 5e
- Baudrate: 100 Mbps
- Cycle time: 1…4 ms



Communication

Lexium MC12 multi carrier is communicating via Sercos III automation bus, and controlled by the PacDrive 3 LMC Pro2 motion controller.

- Each carrier is handled as Sercos device by the system with a Sercos ID and a reserved area for communication, similar to a servo drive in configuration and application.

Embedded safety function SFO

Lexium MC12 multi carrier is an integral part of the Machine safety system with its drive embedded Safe Force Off (SFO) function.

- This function meets the requirements of SIL 3 according IEC 61800-5-2, IEC 62061 and IEC 61508 as well as up to category 3 and PLe according to EN ISO 13849-1.
- It simplifies the setup of installations requiring complex safety equipment and improves performance during maintenance operations.

Main characteristics *(1)*

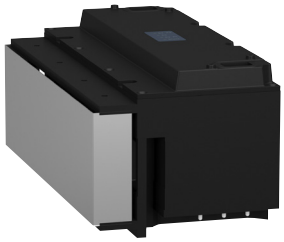
Lexium MC12 multi carrier		
Peak Force *(2)*		120 N *(26.97 lbf)*
Total mass *(3)*		⩽ 3 kg *(6.61 lb)*
Nominal mass of a carrier		0,8 kg *(1.76 lb)*
Max. payload per carrier		2.2 kg *(4.85 lb)*
Max. acceleration for 1 kg *(2.204 lb)*		120 m/s² *(393.70 ft/s²)*
Max. speed		4 m/s *(13.12 ft/s)*
Length	Straight longstator segment	300 mm *(11.81 in)*
	Curve longstator segment	200 mm *(7.87 in)* – Radius: 255 mm *(10.04 in)*
Repetetive accuracy *(4)*	Straight longstator segment	0.03 mm *(0.001 in)*
	Curve longstator segment	0.05 mm *(0.002 in)*
Absolute accuracy	Straight longstator segment	0.25 mm *(0.009 in)*
	Curve longstator motor	0.35 mm *(0.013 in)*
IP Class		IP65
Cleanroom Class (ISO / GMP)		5 / A targeted
Max. number of carriers	per track	Equals max. number of servo axis controller can handle (currenty up to 130)
	per segment	6 carriers on Straight longstator segment
		4 carriers on Curve longstator segment
Carrier	Width x Height	50 x 143 mm *(1.96 x 5.63 in)*
	Weight without load	0.8 kg *(1.763 lb)*
Max. track length		40 m *(131.23 ft) (5)*

(1) More characteristics on Product datasheet.
(2) Max. force generated in moving direction of carrier, Peak force can be increased by use of multiple carriers together.
(3) Mass of the carrier plus payload.
(4) Single carrier to single point accuracy.
(5) For track lenght of more than 20 m (65,61 ft), Please contact your SE representative.

Lexium MC12 multi carrier

The multi carrier transport system

System components



LXMMC12MS06S100

LXMMC12MA02S100

LXMMCABR120S100

LXMMCACMD02S100

LXMMCBCA001S100

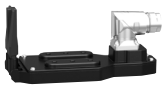
LXMMCBCAS01S100

LXMMCBCAF01S100

LXMMCBDASF1S100

LXMMCBDAS01S100

LXMMCBPA001S100
LXMMCBPA00XS100



LXMMCBPAP01S100

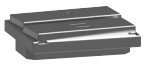
LXMMCBPAB01S100

LXMMC12CA51S100

LXMMCACT0A1S100

LXMMCAMGEALS100

LXMMCARS0AXS100



LXMMCAMGMALS100

VW33MAP22

System components

Designation	Description		Reference (1)	Weight kg lb
Longstator motor segment to create tracks				
Longstator motor segment with an integrated drive, IP65	Straight segment Length: 300 mm *(11.81 in)*		LXMMC12MS06S100	7.900 *17.41*
	Curve segment 45° arc		LXMMC12MA02S100	4.500 *9.92*
Braking resistor to increase the amount of energy that can be absorbed during deceleration phases of demanding applications				
Braking resistor (to connect to Connection module)	Degree of protection: IP65 Ohmic value: 3 Ω Continuous power: 100 W Connection cable length: 2 m *(78.74 in)*		LXMMCABR120S100	0.600 *1.32*
Connection module providing the internal DC Bus and power supply on tracks				
Connection module	20 A continuous power to connect track to power supply Installed between two segments		LXMMCACMD02S100	0.045 *0.09*
	Connection module connector kit (Spare part)		LXMMCACMCS1S100	0.045 *0.09*
Communication interconnects supporting the transmission of communication (Sercos III), and/or SFO safety function (Safe Force Off)				
Communication interconnects	Communication interconnect between segments	Sold by 1 piece	LXMMCBCA001S100	0.050 *0.11*
		Sold by 10 pieces	LXMMCBCA00XS100	0.100 *0.22*
		With two additional Sercos connectors (infeed port/outfeed port)	LXMMCBCAS01S100	
		With one additional SFO connector	LXMMCBCAF01S100	
	To use at the beginning of an open track	With one additional Sercos connector (infeed port) and one additional SFO connector	LXMMCBDASF1S100	
	To use at the end of an open track	With one additional Sercos connector (outfeed port)	LXMMCBDAS01S100	
Power interconnects supporting the transmission of the DC power				
Power interconnects	To use between segments	1 piece	LXMMCBPA001S100	0.400 *0.88*
		Sold by 10 pieces	LXMMCBPA00XS100	3.500 *7.71*
		With M23 power infeed connector	LXMMCBPAP01S100	0.600 *1.32*
Power disconnector	Used to separate the DC bus between segments		LXMMCBPAB01S100	0.400 *0.88*
Carrier				
Carrier	Carrier for Lexium MC12 multi carrier	1 piece	LXMMC12CA51S100	0.800 *1.76*
		Sold by 10 pieces	LXMMC12CA5XS100	8.000 *17.6*
Carrier handling tool	Handling tool to put carrier on track or to remove carrier from track		LXMMCACT0A1S100	0.520 *1.15*
Carrier roller replacement set	10 sets of 4 rollers and required screws, 10x 2 lubrication pads		LXMMCARS0AXS100	0.500 *1.1*
Encoder magnet for carrier		Sold by 50 pieces	LXMMCAMGEALS100	0.200 *0.44*
Motion magnet set for carrier		Sold by 50 pieces	LXMMCAMGMALS100	1.850 *4.08*
Accessories				
Material test kit 1	Material probes for resistance tests		LXMMCAMK001S100	1.250 *2.76*
Set of hard stops	Set of 2 (one hard stop for each end of the track) To stop carriers at the end of an open track		LXMMCAHS001S00	6.300 *13.89*
Single-hand lubrication gun	To refill the lubrication reservoirs of the carriers Oil capacity:120 cc Delivery volume: 0.5 cc/stroke		VW33MAP22	0.563 *1.241*

(1) Click on reference to get technical characteristics.

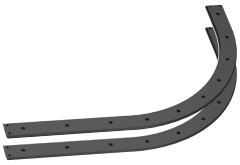
Lexium MC12 multi carrier

The multi carrier transport system

System components

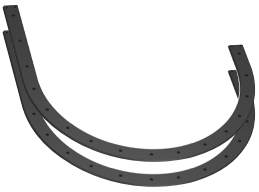
LXMMCRS0A06S100

LXMMCRABA62S100



LXMMCRABA64S100

LXMMCRABA66S100



LXMMCRABA68S100

LXMMCAPC●●●S100

XZCP1141L● XZCP1241L●

VW3E3065R0

ABLU3A48200

System components

Designation	Description		Reference (1)	Weight kg	Weight lb
Guide rail holding the segments					
Guide rail sets	Set of top and bottom guide rails for straight segment	1 unit of length, straight	LXMMCRS0A06S100	1.300	2.86
		2 units of length, straight	LXMMCRS0A12S100	2.500	5.51
		3 units of length straight	LXMMCRS0A18S100	3.800	8.37
		4 units of length, straight	LXMMCRS0A24S100	5.000	11.00
		5 units of length, straight	LXMMCRS0A30S100	6.200	13.66
	Open track with curves	0.5 units of length	LXMMCRSEA03S100	0.700	1.54
	Set of top and bottom guide rails for curve segment	45° arc, 1 unit of length straight	LXMMCRABA62S100	2.200	4.85
		90° arc, 1 unit of length straight	LXMMCRABA64S100	3.000	6.61
		135° arc, 1 unit of length straight	LXMMCRABA66S100	3.800	8.37
		180° arc, 1 unit of length straight	LXMMCRABA68S100	4.600	10.14
		360° arc	LXMMCRA0A00S100	6.600	14.55

Cables

Description	For use		Length of cable m	Length of cable ft	Reference (1)	Weight kg	Weight lb
Power cables M23 connector (Power interconnect side), free wires (connection module side)	Between Connection module LXMMCACMD02S100 and Power interconnect LXMMCBPAP01S100		2	6.56	LXMMCAPC020S100	0.500	1.10
			4	13.12	LXMMCAPC040S100	0.900	2.00
			6	6.56	LXMMCAPC060S100	1.300	2.86
			8	26.24	LXMMCAPC080S100	1.700	3.74
			10	32.80	LXMMCAPC100S100	2.100	4.62
			12	39.37	LXMMCAPC120S100	2.500	5.51
			14	45.93	LXMMCAPC140S100	2.900	6.39
			16	52.49	LXMMCAPC160S100	3.300	7.27
			18	59.05	LXMMCAPC180S100	3.700	8.15
			20	65.61	LXMMCAPC200S100	4.100	9.04
Pre-wired connectors for SFO safety function M12, 4-pin connectors Metal clamping ring PUR cable	Between Modicon TM5 safety IO module and Communication interconnects (SFO)	Straight	2	6.56	XZCP1141L2SE	0.090	0.198
			5	16.40	XZCP1141L5SE	0.190	0.418
			10	32.80	XZCP1141L10SE	0.370	0.815
		Elbowed	2	6.56	XZCP1241L2SE	0.090	0.198
			5	16.40	XZCP1241L5SE	0.190	0.418
			10	32.80	XZCP1241L10SE	0.370	0.815
Sercos cables RJ45 / M12 angled, 4-pin connector	Between LMC Pro2 motion controller or Modicon TM5 safety controller and Communication interconnects (with Sercos		3	9.84	VW3E3065R030	1.367	3.01
			5	16.40	VW3E3065R050	0.557	1.23
			10	32.81	VW3E3065R100	1.075	2.37

Dedicated offer

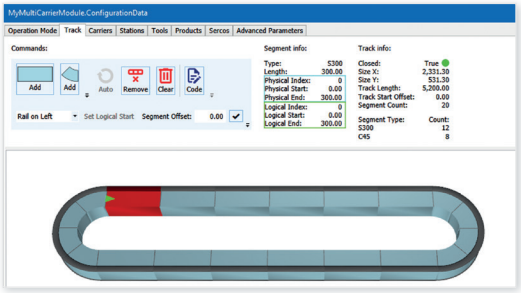
Designation	Description	Reference (1)
3-phase Power supply for industrial use, rail mounting	Input voltage: 380…500 Vac Output voltage: 48 Vdc Nominal power: 960 W Nominal current: 20 A	ABLU3A48200

Related offers

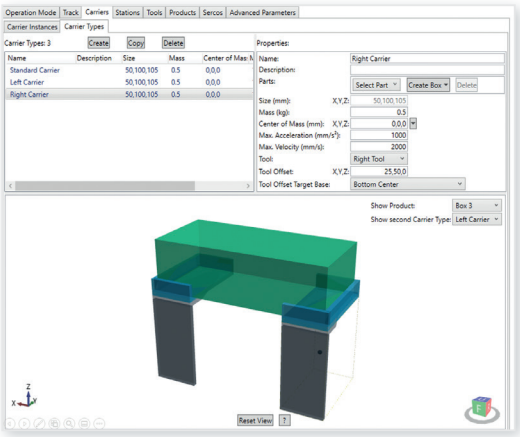
Title	Consult catalog (1)
EcoStruxure Machine Expert configuration software	DIA3ED2180701EN
PacDrive3 a complete automation solution for motor centric machines	DIA3ED2160301EN
PacDrive LMC Pro2 Motion controller for automating machines/lines with 0 – 130 servo or robot axes	DIA7ED2160303EN
Lexium 62 Multi axis servo drive and servo motors	DIA7ED2160305EN
Lexium 62 ILM Multiaxis integrated servo drives	DIA7ED2160306EN
Lexium 62 ILD detached servo drives: single drive, triple drive	DIA3ED2161202EN
Lexium T, P Delta 2 and Delta 3 robots for pick & place solutions	DIA3ED2160307EN
Lexium Cobot, Collaborative robot	DIA7ED2220801EN
Modicon TM5 High-Performance and Safe IP20 Modular I/O system	DIA3ED2131204EN

(1) Click on reference to get technical characteristics.

Lexium MC12 multi carrier
The multi carrier transport system
Configuration



Track configuration



Carrier configuration

Catalog ref. DIA3ED2180701EN

Configuration

Toolset covering the machine life cycle

- Design & Engineering
  - Physical configuration of the track or generated from scan
  - Definition of coordinate system and direction
  - Handling physical dimensions of carriers and products
  - Visualization and virtual commissioning of multi carrier system
- Implement
  - Library
  - Mechanical bricks mounted by the OEM
  - Configurator
- Operating, Maintenance & services
  - Monitoring with Ecostruxure Machine Advisor
  - Visualization

Software

- As Lexium MC12 multi carrier becomes part of PacDrive architecture, its configuration is managed with Ecostruxure Machine Expert software *(1)* :
  - Deep integration into engineering environment
  - Different usability levels
  - Motion synchronization capabilities
  - Simulation
  - Visualization
  - Virtual commissioning

Libraries

- For the efficient
  - Predefined functions for common needs, like carrier queing, two carrier clamping, multi carrier positioning and release, automatic gap control between moving carriers, …
- For the experienced
  - Functions working on track level, like scanning a track, management of carriers on the track, monitoring and emergency reactions on track level
- For the experts
  - Carriers are represented like servo axis in the system
  - Existing functionality, e.g. camming can be applied to move carriers
  - Full freedom with full responsibility to manage all movements

(1) Consult catalog ref. DIA3ED2180701EN

Lexium MC12 multi carrier

The multi carrier transport system

Segment, Carrier

Type code

To order a Segment, make up the reference as follows:

		Family			Group		Model	Segment type	Segment geo	Length	Vvariant	Revision	Reserved
Example		***L***	***X***	***M***	***M***	***C***	***12***	***M***	***S***	***06***	***S***	***1***	***00***
Product family		**L**	**X**	**M**									
Product group	MC: Multicarrier				**M**	**C**							
Model	12 = 120N Peakforce						**12**						
Segment	M = Standard segment							**M**					
Segment geometry	S= Straight								**S**				
	A= Arc outside								**A**				
Length	for straight segments length given in n50 mm *(n1.96 in)*, e.g 06 = 300 mm *(11.81 in)*									**06**			
	for curved segments angle is given in n22,5°, e.g 02 = 45°									**02**			
Variant	Standard (Anodized Aluminum, IP65)										**S**		
Revision	1 = Initial version											**•**	
Reserved	Reserved: allways 00												00

To order a Carrier, make up the reference as follows:

		Family			Group		Model	Product group	Type	Length	Quantity	Variant	Revision	Reserved
Example		***L***	***X***	***M***	***M***	***C***	***12***	***C***	***A***	***5***	***1***	***S***	***1***	***00***
Product family		**L**	**X**	**M**										
Product group	MC: Multicarrier				**M**	**C**								
Model	120 N Peakforce						**12**							
Carrier	Always C for carrier							**C**						
Type (equals to model of rail)	Reserved: allways A								**A**					
Size	50 mm *(1.96 in)*									**5**				
Quantity	1 piece										**1**			
	10 pieces										**X**			
Variant	Standard (Anodized Aluminum, IP65)											**S**		
Revision	1 = Initial Version												**•**	
Reserved	Reserved: allways 00													00

Lexium MC12 multi carrier

The multi carrier transport system

Rail, Bridge (Communication interconnect)

Type code

To order a Rail *(1)*, make up the reference as follows:

		Family			Group		Rail	Geo. 1	Geo. 2	Model	Size	Variant	Revision	Reserved
Example		**L**	**X**	**M**	**M**	**C**	**R**	**A**	**0**	**A**	**02**	**S**	**1**	**00**
Product family		**L**	**X**	**M**										
Product group	MC: Multicarrier				**M**	**C**								
Product detail	R: Rail						**R**							
Geometry 1	S= Straight							**S**						
	A= Arc outside							**A**						
Geometry 2	0= no straight at end(s)								**0**					
	E= End of open track with curve								**E**					
	B= Straight at both sides								**B**					
Model	Reserved: allways A									**A**				
Size	nn / (ul/6) ul equals length of straight segment + air gap between segments. ul/6 equals approx. 50 mm *(1.96 in)* 30 equals a length of 5 segments + air gaps => approx. 1.5 m *(4.92 ft)* rail max. rail length is 1,5 m										●●			
Variant	S = Standard (Anodized Aluminum, IP65)											**S**		
Revision	1 = Initial Version												●	
Reserved	Reserved: allways 00													00

(1) Rails are always sold as a set of two rails (bottom and top rail).
(2) Max. rail length is 1,5 m (4.92 ft).

To order a Communication interconnect, make up the reference as follows:

		Family			Group		Bridge	Bridge type	Model	Supplies		Quantity	Variant	Revision	Reserved
Example		***L***	***X***	***M***	***M***	***C***	***B***	***C***	***A***	***0***	***0***	***1***	***S***	***1***	***00***
Product family		**L**	**X**	**M**											
Product group	MC= Multicarrier				**M**	**C**									
Product detail	B= Communication interconnect						**B**								
Bridge type	C= Communication closed track							**C**							
	D = Communication open end of track							**D**							
	P = Power closed track							**P**							
	Q = Power open end of track							**Q**							
Model	A= stands for current Bridge design								**A**						
Supplies up to 2 different inputs/outputs can be specified	0 = no supply, plain interconnect									**0**	**0**				
	D = disconnector, interrupts connection between segment, no supply									**D**	**D**				
	P = Power supply									**P**	**P**				
	S = Bus supply (Sercos III)									**S**	**S**				
	F = Safe Force Off									**F**	**F**				
Quantity	1 = 1, X = 10											●			
Variant	S = Standard (Anodized Aluminum, IP65)												**S**		
Revision	1 = Initial version													●	
Reserved	Reserved: allways 00														00

Lexium MC12 multi carrier

The multi carrier transport system

Accessory

Type code

To order an Accessory, make up the reference as follows:

				Family			Group		Accessory	Type	Specifics	Variant	Revision	Reserved
Example				**L**	**X**	**M**	**M**	**C**	**A**	**RS**	**0AX**	**S**	**1**	**00**
Product family				**L**	**X**	**M**								
Product group		MC: Multicarrier					**M**	**C**						
Accessory		A: Accessory							**A**					
Accessory type	Type	Specifics	Variant											
	FC= Safe Force Off cable	xxx: length / 10 cm *(3.93 in)*	S							**FC**	**●●●**	**S**		
	LU= Lubricant	xxx quantity / ml	S							**LU**	**●●●**	**S**		
	RS= Roller set	0xy: 0 Roller Type, x: type of rail see rails-model for coding, y qty: 1= 1, X= 10, L= 50								**RS**	**0●●**			
	MG= Magnet	xAy: x: Type of Magnet: E= Encoder, M= Motion, Variant = A, y qty: 1= 1, X= 10, L= 50								**MG**	**●A●**			
	CT= Carrier drop tool	0A1: 0 is not used, A variant of drop tool, 1 quantity								**CT**	**0A●**			
	SC= Screw sets	xAy: x: Type of screw: S= Segment, y qty, 1= 1, X= 10, L= 50								**SC**	**●A●**			
	CM= Connection module 20A	D02	S							**CM**	**D02**	**S**		
	CM= Connection module connector kit	CS1	S							**CM**	**CS1**	**S**		
	MK= Material kit	001								**MK**	**001**			
Revision	1 = Initial version												**●**	
Reserved	Reserved: allways 00													00

Lexium MC12 multi carrier

The multi carrier transport system

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LXMMCACT0A1S100 10
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LXMMCAMGMALS100 10
LXMMCAMK001S100 10
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XZCP1241L2SE 11
XZCP1241L5SE 11

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