

# Product datasheet

Specifications



## Lexium motion servo drive Controller - 24 V DC - 0.5 A

LMC20A1307

⚠ Discontinued on: 21 Jun 2022

⚠ Discontinued

### Main

|                           |                                |
|---------------------------|--------------------------------|
| Range of product          | Lexium Controller              |
| Product or component type | Motion servo drive controllers |
| Component name            | LMC                            |
| Type of polarization      | 10 kOhm for Modbus protocol    |

### Complementary

|                             |                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| power supply voltage        | 24 V                                                                                                                                                                                                                                                                                                                                                                                         |
| power supply circuit type   | DC                                                                                                                                                                                                                                                                                                                                                                                           |
| power supply voltage limits | 19...30 V                                                                                                                                                                                                                                                                                                                                                                                    |
| Maximum supply current      | 0.5 A                                                                                                                                                                                                                                                                                                                                                                                        |
| Inrush current              | 10 A for 0.2 ms                                                                                                                                                                                                                                                                                                                                                                              |
| Discrete input number       | 1 master encoder discrete input(s)<br>2 event-triggered discrete input(s)<br>2 touch probe discrete input(s)<br>8 discrete discrete input(s)                                                                                                                                                                                                                                                 |
| Discrete input type         | 12 mA master encoder input for 2 kOhm<br>7 mA discrete input for 3 kOhm<br>7 mA event-triggered input for 3 kOhm<br>7 mA touch probe input for 3 kOhm                                                                                                                                                                                                                                        |
| Discrete input voltage      | 5.5 V DC for master encoder input<br>24 V DC (voltage limits: 19...30 V) for discrete input<br>24 V DC (voltage limits: 19...30 V) for event-triggered input<br>24 V DC (voltage limits: 19...30 V) for touch probe input                                                                                                                                                                    |
| Discrete input logic        | Positive logic (source) for discrete input                                                                                                                                                                                                                                                                                                                                                   |
| Electrical connection       | 1 HE-10 connector discrete input<br>1 HE-10 connector event-triggered input<br>1 HE-10 connector touch probe input<br>1 high density 15-way female SUB-D connector master encoder input                                                                                                                                                                                                      |
| Filter time                 | 0.5 µs at state 0 for touch probe input(s)<br>1 µs at state 1 for touch probe input(s)<br>15 µs at state 1 for discrete input(s)<br>15 µs at state 1 for event-triggered input(s)<br>70 µs at state 0 for discrete input(s)<br>70 µs at state 0 for event-triggered input(s)                                                                                                                 |
| Insulation                  | Discrete input for between input channels with internal logic via optical coupler<br>Event-triggered input for between input channels with internal logic via optical coupler<br>Logic output for between output channels with internal logic via optical coupler<br>Master encoder input for 2500 V<br>Touch probe input for between input channels with internal logic via optical coupler |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input compatibility                  | Encoder with open collector output, 5 V power supplied for master encoder<br>Encoder with push-pull output, 5 V power supplied for master encoder<br>Encoder with RS422 compatible differential outputs, 5 or 24 V power supplied for master encoder<br>Universal encoder with SSI output, 24 V power supplied for master encoder                                                                                                      |
| Discrete output number               | 8                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Discrete output logic                | 2 positive logic (source)                                                                                                                                                                                                                                                                                                                                                                                                              |
| Discrete output voltage              | 24 V DC 19...30 V                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Discrete output current              | 200 mA                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Maximum output short-circuit current | 1 A                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Response time                        | 150 µs at state 1 for logic output<br>250 µs at state 0 for logic output                                                                                                                                                                                                                                                                                                                                                               |
| Memory type                          | Flash EPROM 1 MB application<br>NVRAM 60 kB data storage<br>RAM 1 MB application                                                                                                                                                                                                                                                                                                                                                       |
| Realtime clock                       | Built-in for 20 days                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Application structure                | 2 event-triggered tasks<br>1 auxiliary task<br>1 master task                                                                                                                                                                                                                                                                                                                                                                           |
| Cycle time                           | 2 ms for 4 synchronized axes<br>4 ms for 8 synchronized axes                                                                                                                                                                                                                                                                                                                                                                           |
| Exact time for 1 Kinstruction        | < 120 µs (in structured language, 60 % Boolean, 20 % numerical, 20 % floating point)                                                                                                                                                                                                                                                                                                                                                   |
| Communication port protocol          | CANopen Motionbus<br>Modbus TCP network<br>CANopen machine bus<br>Profibus DP fieldbus<br>Modbus protocol                                                                                                                                                                                                                                                                                                                              |
| Connector type                       | 1 RJ45 for Modbus protocol<br>1 RJ45 for Modbus TCP network<br>9-way male SUB-D connector for CANopen machine bus<br>9-way male SUB-D connector for CANopen Motionbus<br>9-way male SUB-D connector for Profibus DP fieldbus                                                                                                                                                                                                           |
| Physical interface                   | 2-wire RS 485 for Modbus protocol<br>2-wire RS 485 for Modbus TCP network<br>Ethernet 2 for Modbus TCP network                                                                                                                                                                                                                                                                                                                         |
| Exchange mode                        | Half duplex and full duplex Modbus TCP network                                                                                                                                                                                                                                                                                                                                                                                         |
| Communication data link              | LLC : IEEE 802.2 for Modbus TCP network<br>MAC : IEEE 802.3 for Modbus TCP network                                                                                                                                                                                                                                                                                                                                                     |
| Communication network type           | ICMP<br>IP conforming to RFC791                                                                                                                                                                                                                                                                                                                                                                                                        |
| Communication transport type         | TCP conforming to RFC793<br>UDP                                                                                                                                                                                                                                                                                                                                                                                                        |
| Mode of transmission                 | RTU for Modbus protocol                                                                                                                                                                                                                                                                                                                                                                                                                |
| Transmission rate                    | 1 Mbps for bus length of 15 m for CANopen machine bus<br>1 Mbps for bus length of 15 m for CANopen Motionbus<br>10/100 Mbps, autodetected for Modbus TCP network<br>19.6 kbps or 38.4 kbps for Modbus protocol<br>250 kbps for bus length of 250 m for CANopen Motionbus<br>50 kbps for bus length of 1000 m for CANopen machine bus<br>500 kbps for bus length of 80 m for CANopen Motionbus<br>Autodetected for Profibus DP fieldbus |
| Method of access                     | Master CANopen machine bus<br>Master CANopen Motionbus<br>Slave Modbus protocol                                                                                                                                                                                                                                                                                                                                                        |
| Data format                          | 8 bits, no parity, 1 stop for Modbus protocol                                                                                                                                                                                                                                                                                                                                                                                          |

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|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of addresses   | 1...32 for CANopen machine bus<br>1...247 for Modbus protocol<br>1...126 for Profibus DP fieldbus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Installed device      | 8 Lexium 05 or Lexium 15 servo drives or SD3 28A stepper drives for CANopen Motionbus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Web server            | Class C20, Modbus TCP network                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Communication service | 10 PDOs per slave for CANopen machine bus<br>2 SDOs per cycle for CANopen machine bus<br>CiA DSP 301 V4.02 for CANopen machine bus<br>CiA DSP 405 for CANopen machine bus<br>Note guarding, heartbeat for CANopen machine bus<br>2 PDOs per slave (1 transmit and 1 receive) for CANopen Motionbus<br>2 SDOs per cycle (1 read and 1 write) for CANopen Motionbus<br>CiA DSP 301 V4.02 for CANopen Motionbus<br>CiA DSP 405 for CANopen Motionbus<br>Emergency for CANopen Motionbus<br>Note guarding, heartbeat for CANopen Motionbus<br>Configurable time out for Modbus protocol<br>Diagnostics (08) for Modbus protocol<br>Read device identification (43) for Modbus protocol<br>Read holding registers (03), 121 words maximum for Modbus protocol<br>Write multiple registers (16), 121 words maximum for Modbus protocol<br>Write single register (06) for Modbus protocol<br>BOOTP for Modbus TCP network<br>DHCP for Modbus TCP network<br>Diagnostics (08) for Modbus TCP network<br>FTP for web server for Modbus TCP network<br>Monitoring inhabitable for Modbus TCP network<br>Read device identification (43) for Modbus TCP network<br>Read holding registers (03), 121 words maximum for Modbus TCP network<br>SNMP for Modbus TCP network<br>Time out adjustable from 0.5...60 s for Modbus TCP network<br>Write multiple registers (16), 121 words maximum for Modbus TCP network<br>Write single register (06) for Modbus TCP network<br>5 PPOs for Profibus DP fieldbus<br>Monitoring inhabitable for Profibus DP fieldbus<br>PKW service for Profibus DP fieldbus<br>PZD service for Profibus DP fieldbus<br>Time out can be set for Profibus DP fieldbus |
| Local signalling      | 1 LED - activity for CANopen machine bus<br>1 LED - activity for CANopen Motionbus<br>1 LED - activity for Modbus protocol<br>1 LED - activity for Modbus TCP network<br>1 LED - activity for Profibus DP fieldbus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Marking               | CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Net weight            | 1.076 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## Environment

|                               |                                                                                                                                                                                                                                                                                                           |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electromagnetic compatibility | Electrostatic discharge level 3 conforming to EN/IEC 61000-4-2<br>Immunity to electrical transients level 4 conforming to EN/IEC 61000-4-4<br>Immunity to radiated radio-electrical interference level 3 conforming to EN/IEC 61000-4-3<br>Voltage/current impulse level 3 conforming to EN/IEC 61000-4-5 |
| Standards                     | EN/IEC 61800-5-1<br>EN/IEC 61800-3 environment 1<br>EN/IEC 61800-3 environment 2                                                                                                                                                                                                                          |
| Product certifications        | GOST<br>CSA<br>UL<br>CCC<br>C-Tick                                                                                                                                                                                                                                                                        |
| IP degree of protection       | IP20                                                                                                                                                                                                                                                                                                      |
| Vibration resistance          | 1 gn (f= 13...200 Hz) conforming to EN/IEC 60068-2-6<br>1.5 mm (f= 5...13 Hz) conforming to EN/IEC 60068-2-6                                                                                                                                                                                              |
| Shock resistance              | 15 gn for 11 ms conforming to EN/IEC 60068-2-27                                                                                                                                                                                                                                                           |

|                                       |                                                                      |
|---------------------------------------|----------------------------------------------------------------------|
| Relative humidity                     | 10...95 % for operation, without condensation                        |
|                                       | 5...95 % for storage, without condensation conforming to IEC 61131-2 |
| Ambient air temperature for operation | 0...50 °C                                                            |
| Ambient air temperature for storage   | -25...70 °C conforming to IEC 61131-2                                |
| Operating altitude                    | 0...2000 m                                                           |

## Contractual warranty

|                      |    |
|----------------------|----|
| Warranty (in months) | 18 |
|----------------------|----|



## Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)

### Use Better



#### Materials and Substances

EU RoHS Directive

[Compliant](#)

### Use Longer



#### Lifetime extension

Repair

No

### Use Again



#### Repack and remanufacture

WEEE Label



The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins