

Product identification

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

Connections

Electrical connection	1 HE-10 connector discrete input 1 HE-10 connector event-triggered input 1 HE-10 connector touch probe input 1 high density 15-way female SUB-D connector master encoder input
Type of connector	1 RJ45 for Modbus protocol 1 RJ45 for Modbus TCP network 9-way male SUB-D connector for CANopen Motionbus 9-way male SUB-D connector for CANopen machine bus

Installation

Installed device	CANopen Motionbus : 8 Lexium 05 or Lexium 15 servo drives or SD3 28A stepper drives
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Electrical

Power supply voltage	24 V
Power supply circuit type	DC
Power supply voltage limits	19...30 V
Supply current	0.4 A
Inrush current	≤ 10 A for 0.2 ms
Insulation	Discrete input for between input channels with internal logic via optical coupler Event-triggered input for between input channels with internal logic via optical coupler Logic output for between output channels with internal logic via optical coupler Master encoder input for 2500 V Touch probe input for between input channels with internal logic via optical coupler
Output short-circuit current	1 A

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Communication

Discrete output logic	2 positive logic (source)
Communication port protocol	CANopen Motionbus CANopen machine bus Modbus TCP network Modbus protocol
Physical interface	Modbus TCP network : 2-wire RS 485 Modbus TCP network : Ethernet 2 Modbus protocol : 2-wire RS 485
Communication data link	LLC : IEEE 802.2 for Modbus TCP network MAC : IEEE 802.3 for Modbus TCP network
Communication network type	ICMP IP conforming to RFC791
Communication transport type	TCP conforming to RFC793 UDP
Mode of transmission	RTU for Modbus protocol
Method of access	Master for CANopen Motionbus Master for CANopen machine bus Slave for Modbus protocol
Data format	8 bits, no parity, 1 stop for Modbus protocol
Web server	Class C20 for Modbus TCP network
Communication service	CANopen Motionbus : 2 PDOs per slave (1 transmit and 1 receive) CANopen Motionbus : 2 SDOs per cycle (1 read and 1 write) CANopen Motionbus : emergency CANopen Motionbus : CiA DSP 301 V4.02 CANopen Motionbus : CiA DSP 405 CANopen Motionbus : note guarding, heartbeat CANopen machine bus : 10 PDOs per slave CANopen machine bus : 2 SDOs per cycle CANopen machine bus : CiA DSP 301 V4.02 CANopen machine bus : CiA DSP 405 CANopen machine bus : note guarding, heartbeat Modbus TCP network : BOOTP Modbus TCP network : DHCP Modbus TCP network : read holding registers (03), 121 words maximum Modbus TCP network : write single register (06) Modbus TCP network : write multiple registers (16), 121 words maximum Modbus TCP network : read device identification (43) Modbus TCP network : diagnostics (08) Modbus TCP network : SNMP Modbus TCP network : FTP for web server Modbus TCP network : monitoring inhibitible Modbus TCP network : time out adjustable from 0.5...60 s Modbus protocol : configurable time out Modbus protocol : read holding registers (03), 121 words maximum Modbus protocol : write single register (06) Modbus protocol : write multiple registers (16), 121 words maximum Modbus protocol : read device identification (43) Modbus protocol : diagnostics (08)

Functional

Discrete input number	1 master encoder 2 event-triggered 2 touch probe 8 discrete
Discrete input type	7 mA discrete input for 3 kOhm 7 mA event-triggered input for 3 kOhm 7 mA touch probe input for 3 kOhm 12 mA master encoder input for 2 kOhm
Discrete input voltage	5.5 V DC master encoder input 24 V DC (19...30 V) discrete input 24 V DC (19...30 V) event-triggered input 24 V DC (19...30 V) touch probe input
Discrete input logic	Positive logic (source) for discrete input
Filter time	0.5 µs at state 0 for touch probe inputs 1 µs at state 1 for touch probe inputs 15 µs at state 1 for discrete inputs 15 µs at state 1 for event-triggered inputs 70 µs at state 0 for discrete inputs 70 µs at state 0 for event-triggered inputs

Input compatibility	Encoder with RS422 compatible differential outputs, 5 or 24 V power supplied for master encoder Encoder with open collector output, 5 V power supplied for master encoder Encoder with push-pull output, 5 V power supplied for master encoder Universal encoder with SSI output, 24 V power supplied for master encoder
Discrete output number	8
Discrete output voltage	24 V DC (19...30 V)
Discrete output current	200 mA
Response time	150 µs at state 1 for logic output 250 µs at state 0 for logic output
Memory type	NVRAM 60 kB for data storage RAM 1 MB for application Flash EPROM 1 MB for application
Realtime clock	Built-in for 20 days
Application structure	1 auxiliary task 1 master task 2 event-triggered tasks
Cycle time	2 ms for 4 synchronized axes 4 ms for 8 synchronized axes
Exact time for 1 Kinstruction	< 120 µs in structured language, 60 % Boolean, 20 % numerical, 20 % floating point
Exchange mode	Half duplex and full duplex for Modbus TCP network
Transmission rate	1 Mbps for bus length of ≤ 15 m CANopen machine bus 1 Mbps for bus length of ≤ 15 m CANopen Motionbus 10/100 Mbps, autodetected Modbus TCP network 19.6 kbps or 38.4 kbps Modbus protocol 50 kbps for bus length of ≤ 1000 m CANopen machine bus 250 kbps for bus length of ≤ 250 m CANopen Motionbus 500 kbps for bus length of ≤ 80 m CANopen Motionbus
Number of addresses	CANopen machine bus : 1...32 Modbus protocol : 1...247
Local signalling	1 LED activity Modbus protocol 1 LED activity CANopen Motionbus 1 LED activity CANopen machine bus 1 LED activity Modbus TCP network
Marking	CE

Physical characteristics

Product weight	0.697 kg
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Certifications and standards

Standards	EN/IEC 61800-3 environment 1 EN/IEC 61800-3 environment 2 EN/IEC 61800-5-1
Product certifications	C-Tick CCC CSA GOST UL

Environment

Electromagnetic compatibility	Electrostatic discharge conforming to EN/IEC 61000-4-2 level 3 Immunity to electrical transients conforming to EN/IEC 61000-4-4 level 4 Immunity to radiated radio-electrical interference conforming to EN/IEC 61000-4-3 level 3 Voltage/Current impulse conforming to EN/IEC 61000-4-5 level 3
IP degree of protection	IP20
Vibration resistance	1 gn (f = 13...200 Hz) conforming to EN/IEC 60068-2-6 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	5...95 % for storage, without condensation conforming to IEC 61131-2 10...95 % for operation, without condensation
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