

# LXM05AD10M2

motion servo drive LXM05A - 0.75kW -  
200..240 V - 1-phase - with EMC filter



## Main

|                           |                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------|
| Range of product          | Lexium 05                                                                                 |
| Product or component type | Motion servo drive                                                                        |
| Component name            | LXM05A                                                                                    |
| Network number of phases  | Single phase                                                                              |
| Power supply voltage      | 200...240 V - 15...10 %                                                                   |
| Continuous output current | 3.2 A at 8 kHz<br>4 A at 4 kHz                                                            |
| Nominal power             | 0.75 kW at 4 kHz                                                                          |
| Type of polarization      | Integrated and switchable impedances for CANopen<br>No polarization impedances for Modbus |

## Complementary

|                                                        |                                                                                                                                                                                                                                                                                                                                                 |
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| Power supply voltage limits                            | 170...264 V                                                                                                                                                                                                                                                                                                                                     |
| Supply frequency                                       | 50/60 Hz - 5...5 %                                                                                                                                                                                                                                                                                                                              |
| Power supply frequency limits                          | 47.5...63 Hz                                                                                                                                                                                                                                                                                                                                    |
| Transient RMS output current                           | 6 A at 8 kHz for 3 s<br>7 A at 4 kHz for 3 s                                                                                                                                                                                                                                                                                                    |
| Line current                                           | 6.7 A at 240 V<br>8.1 A at 200 V                                                                                                                                                                                                                                                                                                                |
| Maximum prospective line Isc                           | 1 kA                                                                                                                                                                                                                                                                                                                                            |
| Switching frequency                                    | 4 kHz<br>8 kHz                                                                                                                                                                                                                                                                                                                                  |
| Overvoltage category                                   | III                                                                                                                                                                                                                                                                                                                                             |
| Inrush current                                         | < 60 A                                                                                                                                                                                                                                                                                                                                          |
| Leakage current                                        | < 30 mA                                                                                                                                                                                                                                                                                                                                         |
| Output voltage                                         | <= power supply voltage                                                                                                                                                                                                                                                                                                                         |
| Insulation                                             | Electrical between power and control                                                                                                                                                                                                                                                                                                            |
| Recommended type of cable for mounting in an enclosure | Without mounting kit :single-strand IEC cable at 45 °C , copper 90 °C XLPE/EPR<br>Without mounting kit :single-strand IEC cable at 45 °C , copper 70 °C PVC                                                                                                                                                                                     |
| Electrical connection                                  | Terminal , clamping capacity: 2.5 mm <sup>2</sup> (AWG 14) R/L1, S/L2, T/L3<br>Terminal , clamping capacity: 2.5 mm <sup>2</sup> (AWG 14) PA/+, PBI, PBe                                                                                                                                                                                        |
| Tightening torque                                      | 0.8 N.m (R/L1, S/L2, T/L3)<br>0.8 N.m (PA/+, PBI, PBe)                                                                                                                                                                                                                                                                                          |
| Discrete input number                                  | 2 safety input(s)<br>4 logic input(s)                                                                                                                                                                                                                                                                                                           |
| Discrete input type                                    | Logic input(s) (LI1, LI2, LI3, LI4)<br>Safety input(s) (PWRR_A, PWRR_B)                                                                                                                                                                                                                                                                         |
| Sampling duration                                      | 0.25 ms (LI1, LI2, LI3, LI4), discrete input(s)<br>0.25 ms (ANA1+/ANA1-, ANA2+/ANA2-), analog input(s)                                                                                                                                                                                                                                          |
| Discrete input voltage                                 | 24 V DC (logic input(s))<br>24 V DC (safety input(s))                                                                                                                                                                                                                                                                                           |
| Discrete input logic                                   | Negative (LI1, LI2, LI3, LI4) state 0: > 19 V, state 1: < 9 V conforming to EN/IEC 61131-2 type 1<br>Positive logic (compliment of PWRR_A, compliment of PWRR_B) state 0: < 5 V, state 1: > 15 V conforming to EN/IEC 61131-2 type 1<br>Positive logic (LI1, LI2, LI3, LI4) state 0: < 5 V, state 1: > 15 V conforming to EN/IEC 61131-2 type 1 |
| Response time                                          | <= 10 ms                                                                                                                                                                                                                                                                                                                                        |
| Discrete output number                                 | 2 discrete output(s)                                                                                                                                                                                                                                                                                                                            |
| Discrete output type                                   | Logic output(s) (LO1, LO2) 24 V DC                                                                                                                                                                                                                                                                                                              |
| Discrete output voltage                                | ≤ 30 V DC                                                                                                                                                                                                                                                                                                                                       |

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| Discrete output logic       | Negative (LO1, LO2) conforming to EN/IEC 61131-2<br>Positive (LO1, LO2) conforming to EN/IEC 61131-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Contact bounce time         | 1 ms (LI1...LI4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Braking current             | 50 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Analogue input number       | 2 analogue input(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Response time on output     | 1 ms (LO1, LO2) for discrete output(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Absolute accuracy error     | < +/- 1 % 25 °C<br>< +/- 2 % over operating temperature range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Linearity error             | < +/- 0.5 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Analogue input type         | Analog input (ANA1+/ANA1-, ANA2+/ANA2-) differential +/- 10 V, ≥ 10000 Ohm, 14 bits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Protection type             | Against reverse polarity for inputs signal<br>Against short-circuits for outputs signal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Safety function             | PWR protection of the machine stop and/or prevent unintended operation of the servo motor conforming to ISO 13849-1 level d<br>PWR protection of the machine stop and/or prevent unintended operation of the servo motor conforming to IEC/EN 61800-5-2<br>PWR protection of the system process stop and/or prevent unintended operation of the servo motor conforming to EN/IEC 61508 level SIL2<br>PWR protection of the system process stop and/or prevent unintended operation of the servo motor conforming to IEC/EN 61800-5-2                                    |
| Communication port protocol | CANopen<br>CANopen Motionbus<br>Modbus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Type of connector           | RJ45 (labelled CN4) for CANopen, CANopen Motionbus<br>RJ45 (labelled CN4) for Modbus<br>Spring terminals (labelled CN1) for CANopen, CANopen Motionbus                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Method of access            | Slave for CANopen, CANopen Motionbus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Physical interface          | 2-wire RS485 multidrop Modbus<br>RS422 for 1 P/D input(s), ≤ 400 kHz<br>RS422 for 1 A/B input(s), ≤ 400 kHz<br>RS422 for 1 CW/CCW input(s), ≤ 400 kHz<br>RS422 for 1 ESIM output input(s), ≤ 400 kHz                                                                                                                                                                                                                                                                                                                                                                    |
| Transmission rate           | 50 kbps, 125 kbps, 250 kbps, 500 kbps, 1 Mbps for CANopen, CANopen Motionbus<br>9600, 19200, 38400 bps for Modbus                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Data format                 | 8 bits, no parity, 1 or 2 stop Modbus<br>8 bits, odd or even parity, 1 stop Modbus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Number of addresses         | 1...127 addresses for CANopen, CANopen Motionbus<br>1...247 addresses for Modbus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Communication service       | 1 receive SDO + 1 transmit SDO for CANopen Motionbus<br>2 PDO for CANopen Motionbus<br>2 receive SDO + 2 transmit SDO for CANopen<br>3 PDO + 1 configurable mapping PDO for CANopen<br>CiA DSP 402 profile for CANopen Motionbus<br>CiA DSP 402 profile for CANopen<br>Communication monitoring for Modbus<br>Diagnostics (08) for Modbus<br>Read/Write multiple registers (23) for Modbus<br>Read device identification (43) for Modbus<br>Read holding registers (03) for Modbus<br>Write multiple registers (16) for Modbus<br>Write single register (06) for Modbus |
| Diagnostics                 | 1 LED signalling RUN for CANopen<br>1 LED signalling error for CANopen<br>1 LED red signalling drive voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Signalling function         | Display of faults on integrated 7-segment display terminal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Max nodes number            | 31 for Modbus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Input resistance            | 5 kOhm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Marking                     | CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Type of cooling             | Natural convection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Operating position          | Vertical +/- 10 degree                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Product weight              | 1.1 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## Environment

|                                       |                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EMC filter                            | Integrated                                                                                                                                                                                                                                                                                                                                                  |
| Electromagnetic compatibility         | 1.2/50 $\mu$ s - 8/20 $\mu$ s surge immunity test level 3 conforming to IEC 61000-4-5<br>Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4<br>Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2<br>Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-4-3 |
| Standards                             | EN/IEC 50178<br>EN/IEC 61800-3<br>EN/IEC 61800-5-1                                                                                                                                                                                                                                                                                                          |
| Product certifications                | UL<br>CUL                                                                                                                                                                                                                                                                                                                                                   |
| IP degree of protection               | IP20 on upper part with protective cover removed conforming to EN/IEC 61800-5-1<br>IP20 on upper part with protective cover removed conforming to EN/IEC 60529<br>IP41 on upper part with protective cover in place conforming to EN/IEC 61800-5-1<br>IP41 on upper part with protective cover in place conforming to EN/IEC 60529                          |
| Vibration resistance                  | 1 gn (f = 13...150 Hz) conforming to EN/IEC 60068-2-6<br>1.5 mm peak to peak (f = 3...13 Hz) conforming to EN/IEC 60068-2-6                                                                                                                                                                                                                                 |
| Shock resistance                      | 15 gn (duration = 11 ms) conforming to EN/IEC 60028-2-27                                                                                                                                                                                                                                                                                                    |
| Pollution degree                      | 2 conforming to EN/IEC 61800-5-1                                                                                                                                                                                                                                                                                                                            |
| Environmental characteristic          | Classes 3C1 conforming to IEC 60721-3-3                                                                                                                                                                                                                                                                                                                     |
| Relative humidity                     | Class 3K3 (5 to 93 %) without condensation conforming to IEC 60721-3-3                                                                                                                                                                                                                                                                                      |
| Ambient air temperature for operation | 0...50 °C                                                                                                                                                                                                                                                                                                                                                   |
| Ambient air temperature for storage   | -25...70 °C                                                                                                                                                                                                                                                                                                                                                 |
| Operating altitude                    | > 1000...2000 m with conditions<br>$\leq$ 1000 m without derating                                                                                                                                                                                                                                                                                           |