

## Lexium MDrive CANopen LMDAA421C

NEMA size 17 (42 mm) Quick Reference

### Notes and Warnings

This document is intended to provide an overview of critical specifications, wiring and connections. The product manual must be read and understood prior to using this device. > [Product Manual Downloads](#)

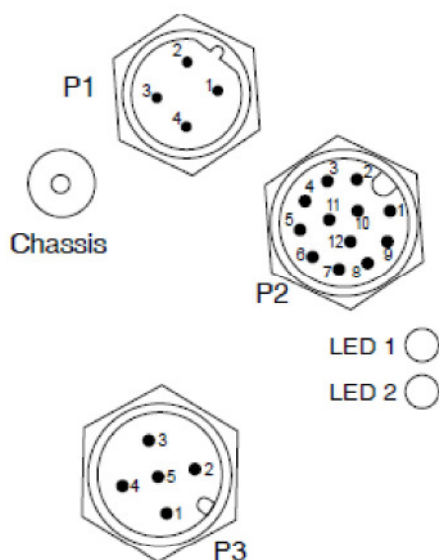
### Overview of product

Part number	LMDAA421C
NEMA size	17 (42 mm)
Input Voltage	+12 to +48 VDC
Stack length	Single
Holding torque	43.9 oz-in (31 N-cm N-cm)
Feedback loop	Absolute closed loop with HMT
Communication	CANopen
Default Node ID	41h
Default BAUD	1 Mbps

### Connector overview

#### Connectors

- P1: DC & Aux Power input
- P2: Multifunction Interface
- P3: CANopen Interface



#### LEDs

- LED 1: DC/Aux Power supply status
- LED 2: CANopen status

Lexium MDrive circular connectors are pinned as follows:

- P1: 4-pin M12 (Male, B-coded)
- P2: 12-pin M12 (Male, A-coded)
- P3: 5-pin M12 (Male, A-coded)

#### Recommended interface cables:

### Specifications

Input Voltage	[+VDC] nominal	24 / 36
	[+VDC] min/max	12/48
Supply current	[A] max per unit	2.0
Aux supply	[+VDC]	12 / 24
Aux current	[mA] max per unit	200
Temperature	[C°] heat sink	85
	[C°] motor	100
IP rating	motor shaft not sealed	IP65

### Connecting the Power Supply

Read the Product Hardware Manual Section 5: Engineering before connecting DC Power.

- Use shielded twisted pairs for cabling with shield earthed at the power supply end.
- Power supply wiring should be shielded twisted pairs. Use 18 AWG wires if load is less than 4 amps, or 16 AWG for more than 4 amps.
- Never use a "daisy-chain" power supply wiring scheme to system components.

Wire colors shown for SEM MD-CS620-000 cable option.

Pin 1	Brown	Power supply output voltage
Pin 2	White	Power supply return (Ground)
Pin 3	Blue	Aux power input
Pin 4	Black	Power supply return (Ground)

### Connecting communication

SEM recommends using the MD-CC502-000 USB to CANopen communication converter with first Lexium MDrive purchase. This adapter and cable kit with terminating resistor block needs only be connected from your PC to the M12 (Male) A-coded connector at P3 following driver installation. Note that the MD-CC502-000 or equivalent PEAK/PHYTEC adapter is REQUIRED to field upgrade firmware or use the CANopen Configuration Utility.

Any CANopen controller or adapter may be used to configure the device via LSS (Layer Setting Services), cabling and connector pinning follows CiA DR-303-1

If multiple units need to be daisy chained together, a Y-splitter, the MD-CS660-000, is available.

Pin 1	CAN_SHLD	Pin 4	CAN_H
Pin 2	CAN_V+	Pin 5	CAN_L
Pin 3	CAN_GND		

The drivers and installation guide for this adapter kit may be found on the included DVD. Alternately, they may be downloaded from <https://www.peak-system.com/PCAN-USB.199.0.html?&L=1>

## Connecting I/O (Multifunction interface)

See product hardware manual for detailed description of pin functions and interface methods and requirements.

### Connector P2

Wire colors shown for SEM MD-CS610-000 cable option.

Pin 1	Brown	INPUT 4 (+5 to +24 VDC)
Pin 2	Blue	INPUT 2 (+5 to +24 VDC)
Pin 3	White	INPUT_REFERENCE
Pin 4	Green	DO NOT CONNECT
Pin 5	Pink	INPUT 3 (+5 to +24 VDC)
Pin 6	Yellow	External Battery +
Pin 7	Black	External Battery —
Pin 8	Gray	SIGNAL_OUTPUT_EMITTER (5.5 mA max)
Pin 9	Red	SIGNAL_OUTPUT_COLLECTOR (5.5 mA max)
Pin 10	Violet	DO NOT CONNECT
Pin 11	Gray/pink	DO NOT CONNECT
Pin 12	Red/blue	DO NOT CONNECT

## LED Indicators

### LED 1: Power Indication

Color	Status
Off	No Power
Green	+VDC supply in range
Flashing green	+VDC off, drive on AUX power
Red	+VDC supply out of range
Flashing red	+VDC off, AUX power out of range

### LED 2: CANopen status

Color	Status
Red - single flash	At least one of the error counters of the CAN controller has reached or exceeded the warning level (too many error frames).
Red - double flash	A guard event (NMT-Slave or NMT-master) or a heartbeat event (Heartbeat consumer) has occurred.
Red - triple flash	The SYNC message has not been received within the configured communication cycle period time out (see Object Dictionary Entry 0x1006).
Red - on	The CAN controller is bus off
Green - single flash	The Device is in STOPPED state
Green - blinking	The Device is in the PREOPERATIONAL state
Green - on	The Device is in the OPERATIONAL state

## Software - CANopen Configuration Utility

The CANopen Configuration Utility is a graphical user interface (GUI) used to set the NodeID and Baud rate configuration parameters of the Lexium MDrive CANopen products.

Note that the CANopen Configuration Utility is not required to set the parameters. CANopen setup can also be accomplished using a CANopen Master over Layer Setting Services (LSS). The CANopen Configuration Utility can only be used in conjunction with the MD-CC50x-000 or equivalent Peak Systems/Phytec adapter dongle or PC card.

This GUI is a component of the Lexium MDrive Software Suite, which contains the software for all SEM Lexium MDrive products and may be downloaded at <https://motion.schneider-electric.com/lmd/lexium-mdrive-software.php>.

To install:

1. Download and install the Lexium MDrive Software Suite, open the program.
2. Click the button labeled: Install Lexium MDrive CANopen Interface.
3. Follow the on-screen prompts. Install button will change to Launch.
4. Launch the CANopen Configuration Utility to begin parameterization.

The Manual for the Software Suite contains detailed usage instructions for this software and may be accessed via this link [https://motion.schneider-electric.com/lmd/downloads/literature/lmd\\_software\\_suite.pdf](https://motion.schneider-electric.com/lmd/downloads/literature/lmd_software_suite.pdf)

## Establish CANopen communication

### Using Layer Setting Services (LSS)

The Lexium MDrive CANopen is compliant with CiA DSP-305: Layer Setting Services. Reference the CANopen Fieldbus Manual Section 5: Commissioning for details. This document is available at [https://motion.schneider-electric.com/lmd/downloads/literature/CANopen\\_LMD.pdf](https://motion.schneider-electric.com/lmd/downloads/literature/CANopen_LMD.pdf)

### The CANopen Configuration Utility

1. Launch the CANopen Configuration Utility.
2. Apply power to the Lexium MDrive.
3. Verify the default NodeID and Baud of 41h and 1 Mbits.
4. Click the button labeled "CAN Init".
5. The NodeID and Baud rate may be changed to meet your system needs.
  - The Node ID may be changed without power cycle.
  - Changing the Baud requires that power be cycled to the Lexium MDrive.
6. Click the "Toggle Operation Mode" button until the Status Word reads "Operation Enabled".
7. Operation may be verified by exercising motion and I/O.