

## Drive Software

### Drive CM Configuration Software

Drive CM is an optional free downloadable configuration software package for LS Electric servo drives. A PC may be directly connected to the servo drive via any standard USB-A to USB mini-B cable (SV2-PGM-USB15 or SV2-PGM-USB30 recommended).

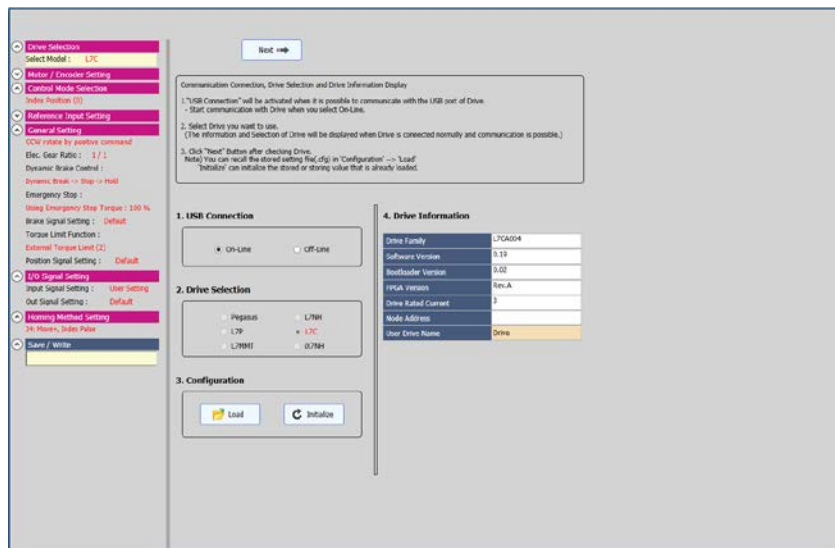
#### Features

- Easy-to-use setup wizard guides you through the most common setup functions.
- Digital I/O / Jog Control allows the user to operate the servo system from the PC. This allows the servo to perform some basic motion and check the I/O during startup.
- Parameter Object editor for setting up all drive parameters.
- Tune and check the servo response in real-time using the scope feature.
- Upload and download the drive configuration. Save the drive configuration as a file for backup or future use.
- Edit the drive configuration.
- View all drive faults.
- View drive variable trends in real-time.
- (L7P/L7C series only) Set up 64 internal Indexes (point-to-point moves) that can be triggered by digital inputs or serial communications. Indexes can repeat and can initiate another Index when one move completes.

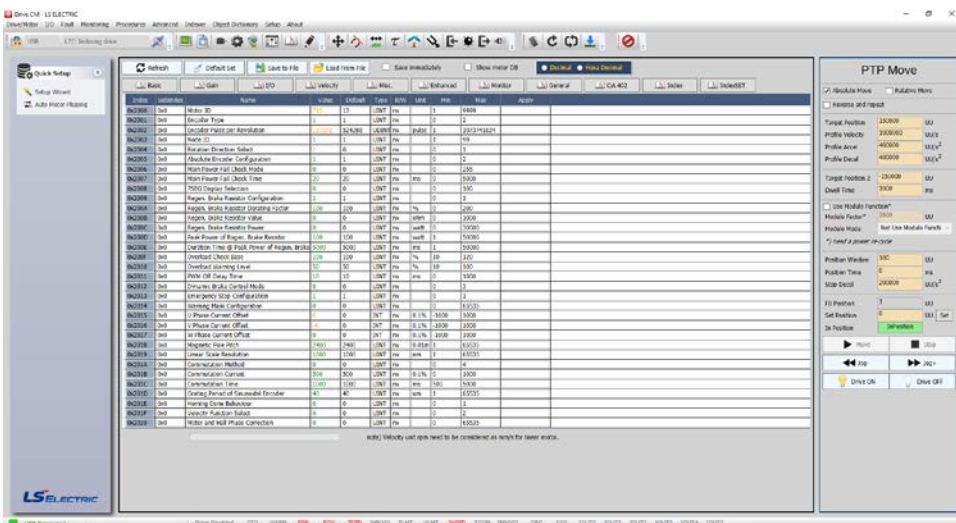
#### Download

Download the Drive CM software from AutomationDirect's LS Electric support page:

<https://support.automationdirect.com/products/lselectric.html>



Setup Wizard Screen



Drive CM Software Interface

### Parameter Object Editor

The Drive CM configuration tool logically organizes all servo drive object parameters for viewing and editing using the Object Dictionary screen. Each parameter has a factory default that usually allows the servo to run "out-of-the-box".

The parameters can be easily changed with available setting ranges displayed. Tuning modes and parameters can also be changed using Drive CM. After the parameters have been defined, the complete setup can be stored and archived. Drive configurations can be uploaded, edited, saved, and downloaded as often as necessary.

Using the Drive CM software you can also configure and commission your drive without having to be connected to the master controller.

## Drive Software, continued

### Digital I/O, Jog Control, and Scope

The Digital I/O / Jog Control screen allows the user to operate the servo system from the PC. This is a great aid during start-up to allow the servo to perform some basic motion and to check the I/O.

Drive CM also includes a powerful scope function that allows the user to have as many as four channels of data displayed simultaneously. Each channel has a drop-down table to select the data to be displayed. The scope has the ability to save traces to a file and load those traces for offline review/analysis. This function is a valuable tool for tuning LS Electric servo drives.



Jog Control / Scope Screen

The screenshot displays the 'General Setup Screen'. It contains various configuration parameters for the servo drive, including motor data, brake settings, and communication options. The parameters are organized into sections, and some have dropdown menus or input fields for selection.

General Setup Screen

The screenshot displays the 'Alarm History Screen'. It shows a list of alarms with columns for 'No.', 'Message', and 'Comment'. The table lists various alarm events, such as 'Encoder cable open' and 'No error'.

| No. | Message               | Comment      |
|-----|-----------------------|--------------|
| 1   | [3]Encoder cable open | Newest alarm |
| 2   | [3]Encoder cable open |              |
| 3   | [3]Encoder cable open |              |
| 4   | [3]Encoder cable open |              |
| 5   | [3]Encoder cable open |              |
| 6   | [0]No error           |              |
| 7   | [0]No error           |              |
| 8   | [0]No error           |              |
| 9   | [0]No error           |              |
| 10  | [0]No error           |              |
| 11  | [0]No error           |              |
| 12  | [0]No error           |              |
| 13  | [0]No error           |              |
| 14  | [0]No error           |              |
| 15  | [0]No error           |              |
| 16  | [0]No error           | Oldest alarm |

Alarm History Screen

The screenshot displays the 'Indexer Setting Screen'. It shows configuration parameters for multiple indexes (Index 0 to Index 7). Each index has a set of parameters including 'Index Type', 'Distance', 'Velocity', 'Acceleration', 'Regeneration', 'Regeneration Velocity', 'Repeat Count', 'Dwell Time', and 'Next Index'.

Indexer Setting Screen  
(L7P/L7C series only)

The screenshot displays the 'Object Dictionary Screen'. It shows a list of parameters with columns for 'Index', 'SubIndex', 'Name', 'Value', 'Default', 'Type', 'P/W', 'Unit', 'Min', 'Max', and 'Apply'. The parameters include various servo drive settings such as 'Motor ID', 'Encoder Pulse per Revolution', 'Rotation Direction Select', and 'Absolute Encoder Configuration'.

| Index  | SubIndex | Name                                       | Value  | Default | Type | P/W | Unit   | Min   | Max        | Apply |
|--------|----------|--------------------------------------------|--------|---------|------|-----|--------|-------|------------|-------|
| 0x2000 | 0x0      | Motor ID*                                  | 1      | 13      | UINT | rw  |        | 1     | 9999       |       |
| 0x2001 | 0x0      | Encoder Type*                              | 1      | 2       | UINT | rw  |        | 0     | 99         |       |
| 0x2002 | 0x0      | Encoder Pulse per Revolution*              | 524288 | 524288  | UINT | rw  | pulse  | 0     | 1073741824 |       |
| 0x2003 | 0x0      | Node ID*                                   | 10     | 10      | UINT | rw  |        | 0     | 65535      |       |
| 0x2004 | 0x0      | Rotation Direction Select*                 | 0      | 0       | UINT | rw  |        | 0     | 1          |       |
| 0x2005 | 0x0      | Absolute Encoder Configuration*            | 1      | 1       | UINT | rw  |        | 0     | 2          |       |
| 0x2006 | 0x0      | Main Power Fail Check Mode                 | 0      | 0       | UINT | rw  |        | 0     | 255        |       |
| 0x2007 | 0x0      | Main Power Fail Check Time                 | 40     | 40      | UINT | rw  | ms     | 0     | 5000       |       |
| 0x2008 | 0x0      | YSG Delay Selection                        | 0      | 0       | UINT | rw  |        | 0     | 100        |       |
| 0x2009 | 0x0      | Regen. Brake Resistor Configuration        | 0      | 0       | UINT | rw  |        | 0     | 1          |       |
| 0x200A | 0x0      | Regen. Brake Resistor Derating Factor      | 100    | 100     | UINT | rw  | %      | 0     | 200        |       |
| 0x200B | 0x0      | Regen. Brake Resistor Value                | 100    | 0       | UINT | rw  | ohm    | 0     | 1000       |       |
| 0x200C | 0x0      | Regen. Brake Resistor Power                | 100    | 0       | UINT | rw  | watt   | 0     | 30000      |       |
| 0x200D | 0x0      | Peak Power of Regen. Brake Resistor        | 100    | 100     | UINT | rw  | ohm    | 1     | 50000      |       |
| 0x200E | 0x0      | Duration Time @ Peak Power of Regen. Brake | 5000   | 5000    | UINT | rw  | ms     | 1     | 50000      |       |
| 0x200F | 0x0      | Overload Check Base                        | 100    | 100     | UINT | rw  | %      | 10    | 120        |       |
| 0x2010 | 0x0      | Overload Warning Level                     | 50     | 50      | UINT | rw  | %      | 10    | 100        |       |
| 0x2011 | 0x0      | PWM Off Delay Time                         | 10     | 10      | UINT | rw  | ms     | 0     | 1000       |       |
| 0x2012 | 0x0      | Dynamic Brake Control Mode                 | 0      | 0       | UINT | rw  |        | 0     | 3          |       |
| 0x2013 | 0x0      | Emergency Stop Configuration               | 1      | 1       | UINT | rw  |        | 0     | 1          |       |
| 0x2014 | 0x0      | Warning Mask Configuration                 | 0      | 0       | UINT | rw  |        | 0     | 65535      |       |
| 0x2015 | 0x0      | U Phase Current Offset                     | 0      | 0       | INT  | rw  | 0.1%   | -1000 | 1000       |       |
| 0x2016 | 0x0      | V Phase Current Offset                     | 0      | 0       | INT  | rw  | 0.1%   | -1000 | 1000       |       |
| 0x2017 | 0x0      | W Phase Current Offset                     | 0      | 0       | INT  | rw  | 0.1%   | -1000 | 1000       |       |
| 0x2018 | 0x0      | Magnetic Pole Pitch*                       | 2400   | 2400    | UINT | rw  | 0.01mm | 1     | 65535      |       |
| 0x2019 | 0x0      | Linear Scale Resolution*                   | 1000   | 1000    | UINT | rw  | mm     | 1     | 65535      |       |
| 0x201A | 0x0      | Commutation Method*                        | 0      | 0       | UINT | rw  |        | 0     | 4          |       |
| 0x201B | 0x0      | Commutation Current                        | 500    | 500     | UINT | rw  | 0.1%   | 0     | 1000       |       |

Object Dictionary Screen