

DIVA Automation

Innovation in Motion

SuprMotrX

Servo Controller
for DC Motors

Original release, 10/18/2006

Description

The **SuprMotrX** is a member of the SuprMotr family of controllers, developed by DIVA Automation over a period of several years. This particular branch of the family utilizes a National Semiconductor **LM629** Servo Controller for the servo functions.

The **DiMAC** macro command language, communications capability and additional input/output functions are common to all **SuprMotr** products, with only slight variations to fit the product.

Features

- A single, palm-sized board provides a **complete servo control system**, with communications, encoder interface, sequence control, motor driver and PLC functions.
- **Small size.** (2.00" x 3.175")
Small enough to be integrated almost anywhere.
- **Fully autonomous operation.**
Requires no connection to host computer after one-time setup.
- LM629 Servo Controller for simultaneous control of **position, velocity, and acceleration**, with **PID** filtering. (see appendix for detailed specifications)
- All servo parameters fully **programmable**. Includes: velocity, acceleration, PID filter gain factors, maximum error allowed, limit switch polarity, index polarity, servo windup limit, move modes and breakpoints.

- User-defined **macro commands** allow complex control modes to be easily programmed.
- A velocity mode is provided for applications with rotary stages.
- A sophisticated indexing procedure locates a reference position to within one encoder count.
- **LMD18200** Motor Driver (3 A continuous current, 6 A for 200 mS). High efficiency PWM drive.
- Additional connector for **18 analog and digital I/O signals**, fully supported by DiMAC.
- **Non-volatile** (permanent) **storage** of servo parameter setups and user programs.
- **On-board control center** with over 75 easily understood commands.
- **Storage** for 250 or more user commands.
- **Automatic execution** of stored program on power up.
- Inputs for **reference** (home position) switch and two **limit switches**.
- Single-ended or **differential encoder inputs**, up to 1 MHz, with index capability.
- A high speed programmable baud rate **RS-232 communications link** allows up to 32 **SuprMotrX** controllers to share a single RS-232 channel, with individual addressing.
- Requires a **single** motor power **voltage** of 12-36V. An on-board regulator supplies the logic and encoder voltages from the motor supply.
- The motor connector accepts compatible **Maxon** motor/encoder connectors directly.
- The SuprMotrX is available in **many configurations** for the Original Equipment Manufacturer. Unnecessary features and functions may be removed to reduce cost.



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