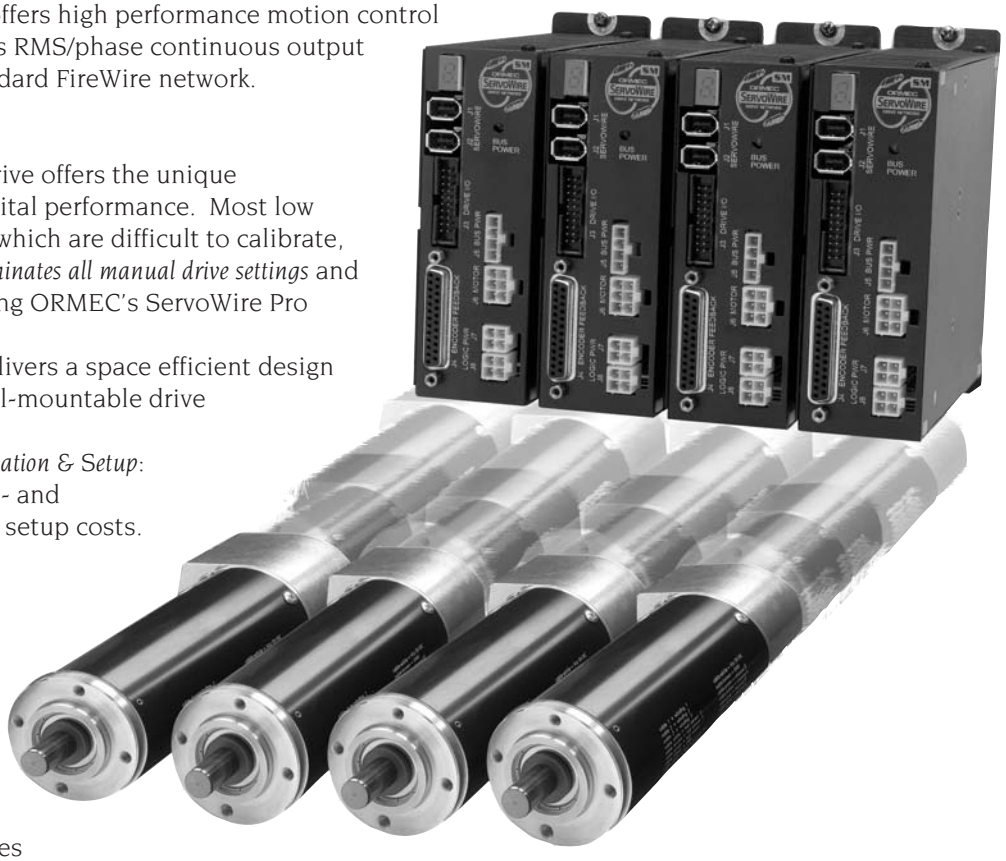
ServoWire® Low Power Drive

The ServoWire SM Low-Power Drive offers high performance motion control using all-digital servodrives (3.0 amps RMS/phase continuous output currents) connected via an open standard FireWire network.



Key Features

❒ *All-digital, low power*: The LP drive offers the unique combination of low power and all-digital performance. Most low power drives are analog input drives which are difficult to calibrate, setup and maintain. The LP drive *eliminates all manual drive settings* and is totally configurable in software using ORMEC's ServoWire Pro maintenance and diagnostic tool.

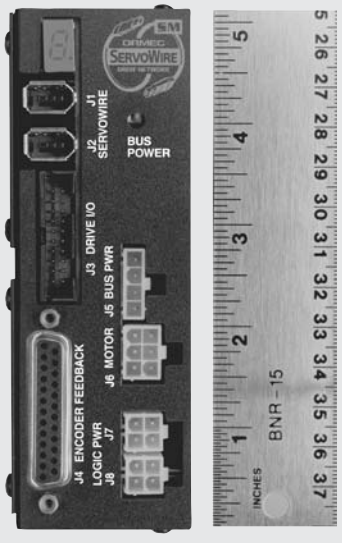
❒ *Compact Size*: The LP drive delivers a space efficient design and power in its space-efficient, panel-mountable drive footprint.

❒ *Drive Networking Saves on Installation & Setup*: Discrete wiring is a thing of the past -- and dramatically reduces installation and setup costs.

- **Network Drives:** Up to 16 ServoWire SM drives interface to an SMLC utilizing the ServoWire protocol for motion control networking.
- **Brushless or DC Servomotors:** Standard feedback interface uses quadrature encoders and hall track information, serial encoders and resolvers (optional) for brushless operation.
- **One model:** offering 3.0 amps RMS/phase continuous output currents

KEY FEATURES

- ❒ **Low Power Drive:** Offer 3.0 amps RMS/phase continuous output currents
- ❒ **Compact Size**
- ❒ **All-Digital Operation:** No manual drive settings. Totally configurable in software -- unlike other low power drives.
- ❒ **FireWire Motion Networking:** IEEE-1394 drive network
- ❒ **ServoWire Pro:** Software utilities for drive configuration, diagnostics and maintenance



Small Drive Footprint & Excellent Power Density

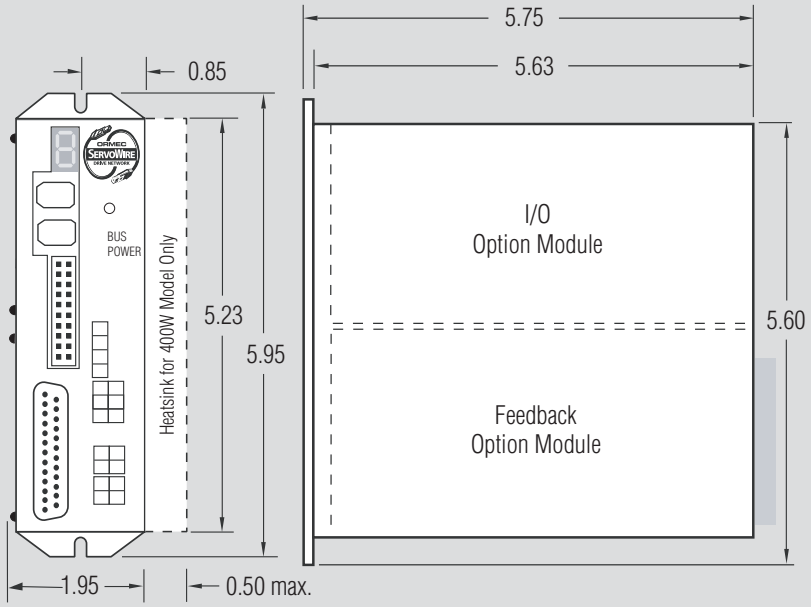
The ServoWire SM LP drive provides an highly space-efficient design and excellent power density in a space-efficient, panel-mountable drive footprint.

Advantages

- Conserve panel space with a highly efficient drive footprint
- Drive can be mounted only 1/2 inch apart to further conserve space

- **All-digital design:** eliminates all manual drive setup including pots & jumpers
- **Small footprint:** high power density reduces space requirements
- **Sinusoidal commutation:** improves low speed torque ripple and efficiency
- **Trapezoidal commutation & DC operation:** provide user flexibility
- **Status Indicator:** Single digit display for network ID & drive status
- **ServoWire Network Interface:** Two connectors provide an all-digital control link to ServoWire drive network. Network interface is galvanically isolated from the drive and powered by the SMLC.
- **Drive Power Inputs:** Separate 24 VDC logic power input and 24 – 96 VDC (nominal) bus power input with overvoltage protection.
- **Flexible Drive I/O**: ServoWire drives provide two high speed sensor inputs, four optically isolated outputs (one output can be used as a user-configurable fail-safe brake control output and another as a drive ready output), three optically isolated inputs (one input can be used as an e-stop input and/or as hardware overtravel limit switch inputs) and one bi-directional I/O point.
- **External Power Supply Configuration:** Allows bus power to be shared between drives with a single optional shunt regulator on the external power supply for dissipating regenerative energy from the system.

ServoWire SM: LP-Series Mounting Diagram



Specifications

Main Circuit Power
- 24 to 96 VDC ±10%

Control Circuit Power
- 24 VDC, +15%, -20%

Position Command/Control Loop Update Rates
- Digital position command from the SMLC via the ServoWire® network.
- Position loop updated on command at up to 2.66 kHz (application dependent).
- Velocity loop update rate: up to 5 kHz
- Torque loop update rate: 10 kHz

ServoWire® Drive Output
- 200 watts of output power (see Servomotor Selection Charts for power requirements on matching drives)
- IPM with IGBT pulse width-modulated sinusoidal or trapezoidal commutation
- Field Oriented Control (FOC) and Space Vector Modulation (SVPWM) for optimal performance at all motor speeds
- PWM frequency: 40 kHz
- Minimum inductance: 300 uH
- Peak currents up to 200% of RMS continuous capability
- Integrated output short circuit, over voltage, over temperature and peak current protection

ServoWire® Drive I/O
- Sensor inputs are software configurable for either NPN or PNP output transistor types and level or edge triggered response
- Sensor Inputs provide one microsecond response time to capture machine position and initiate motion within one servo loop update
- Optically isolated interface for general purpose and motor reference outputs updated every servo loop update with a maximum sink current of 33 ma per output
- External I/O power supply connections will accept 5-24 VDC (240mA maximum) to power input and output circuits

Motor Feedback Interface
- Three differential input channels for encoder position feedback with 5 volt encoder power supplied
- Quadrature feedback 4x decoding with data rates to 8 MHz (after decode)
- Three differential or single-ended input channels for motor hall sensors
- Serial encoder
- Resolver (optional).

ORDERING GUIDE

ServoWire LP Servodrive

SAC-SMMA03/S	Swire SM Servodrive, 24-96 VDC input, 3.0 amps RMS/phase
CON-SMMA-PWR	Conn. set, mtr. & pwr SAC-SMMA, 16-20 AWG