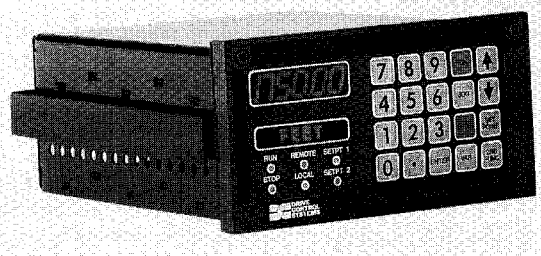
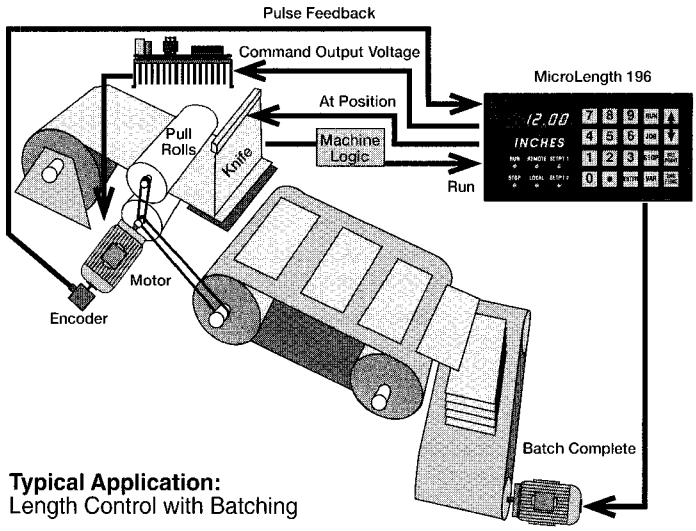
DRIVE CONTROL SYSTEMS
A Unit of ELECTRO-SENSORS, INC.

MicroLength 196

Closed Loop Position/Length Controller





Typical Application:
Length Control with Batching

The MicroLength 196© Self-Adjusts to Your System

Features:

- **Four Programmable Set Points**
- **Plus/Minus One Pulse Accuracy**
- **Isolated Command Voltage**
- **Eight-Character Alphanumeric Display to Simplify Setup and Operation**
- **Front Panel or Remotely Accessed Control Functions**
- **Selectable Lockout of Front Panel Function Keys**
- **Six Status and Alarm Outputs**
- **Diagnostics for Easy Troubleshooting**
- **DIN Standard Steel Enclosure**
- **RS 422 Computer Interface**
- **Optional PC Control and Monitoring Software**
- **Approved to UL® 508 Standard**

Typical Applications:

- **Feed-to-Stop Systems**
- **Cut-Off Machines**
- **Stamping Operations**
- **Wind and Unwind Systems**
- **Filling Equipment**
- **Positioning Systems**

Introduction:

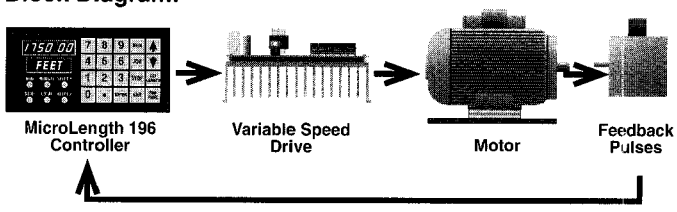
The MicroLength© 196 is a closed-loop position/length controller. Common applications include: cut-to-length and material feed applications. This unit will interface with any AC or DC variable speed drive, or with any device that is capable of accepting 0 to 15Vdc as a reference signal. The MicroLength 196 has four programmable set points, and one programmable batch counter. Flexible inputs and outputs offer complete machine control without the necessity of a complicated PLC interface. An eight-character alphanumeric display provides the operator with "plain English" prompts, to make programming simple and user friendly.

The MicroLength 196 has a setup function to calibrate the feedback pulses to a given length. The material is fed out and measured. The length is then entered and the Microlength 196 will calibrate itself for proper scaling. This feature makes initial setup much easier than other position controllers.

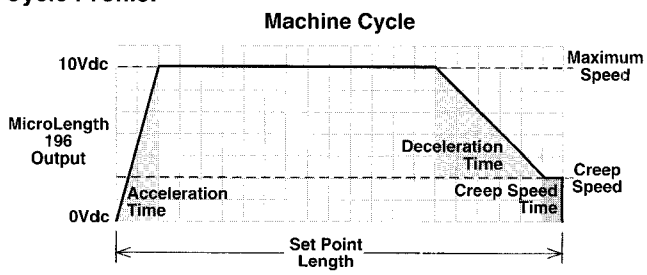
All programming data is entered via the front panel keypad or the RS 422 link. Dedicated command keys are provided for RUN, STOP, JOG, MENU SCROLL, and SET POINT. These keys, and an E-STOP, can be activated by contact closure inputs on the back panel terminal strip.

A 16-bit microprocessor, advanced software techniques, plus high accuracy and reliability, make this controller the choice of automation specialists worldwide.

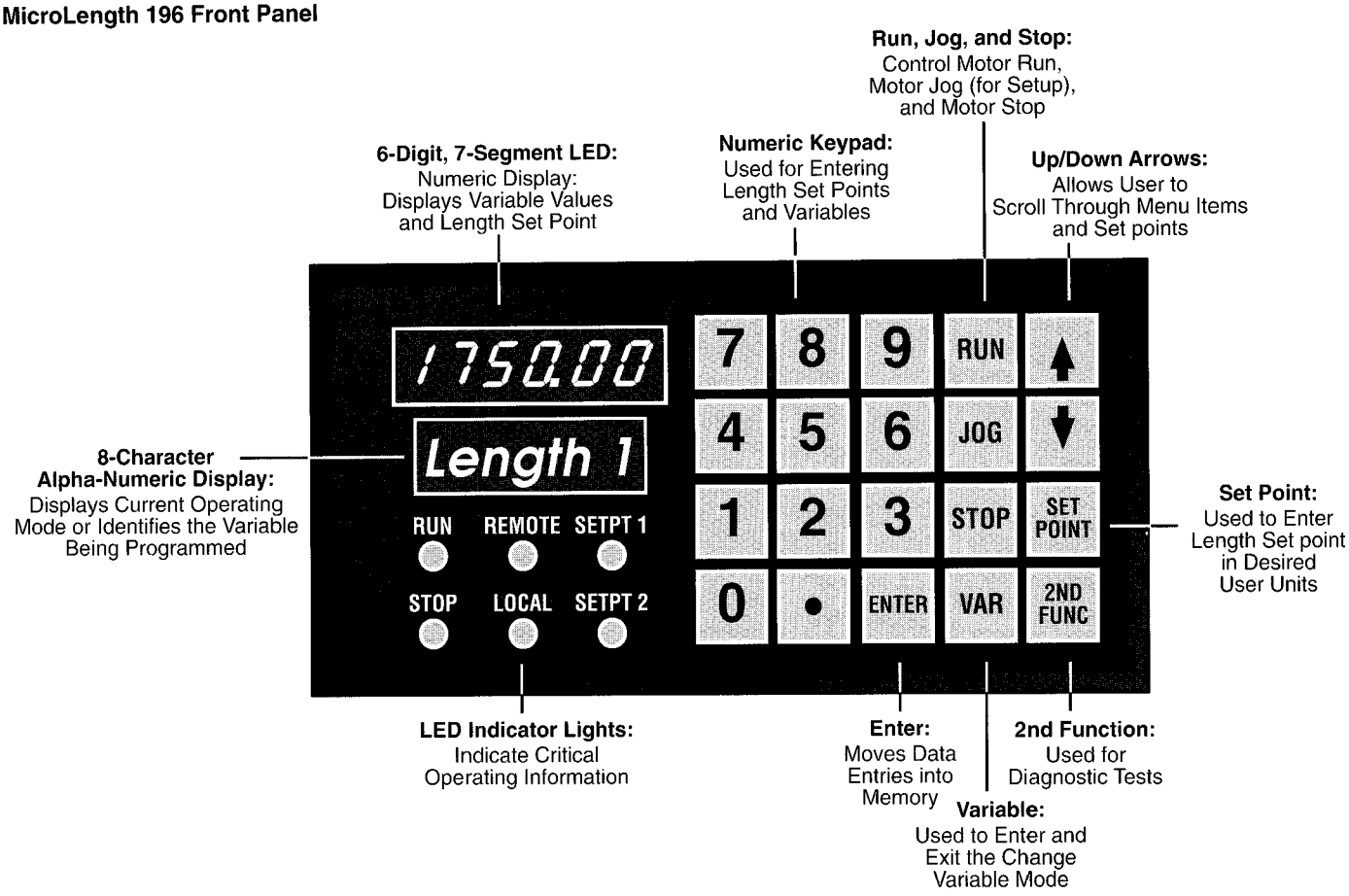
Block Diagram:



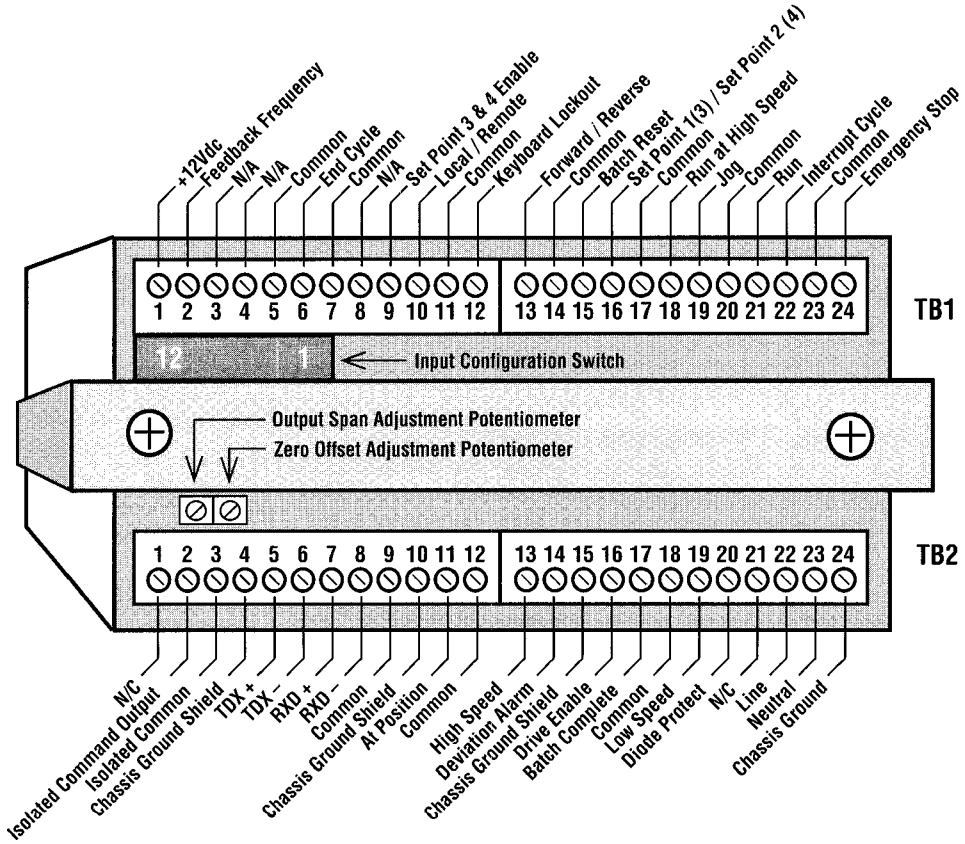
Cycle Profile:



MicroLength 196 Front Panel



MicroLength 196 Back Panel



MicroLength 196 Setup Examples

Our eight-character alphanumeric display makes the MicroLength 196 the most user-friendly Length Controller available today. The display informs you in easy-to-under-stand English words and symbols, which variable is selected during setup, the names of the function keys when they are pressed, and the operational status during use.

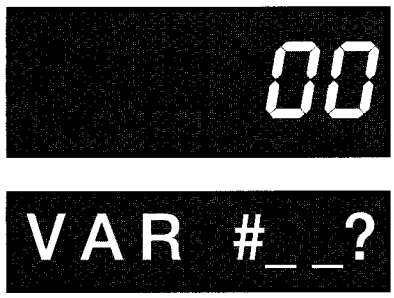
The following examples demonstrate how easy it is to set up the variables, and operate the MicroLength 196:

Example 1 - Altering a Variable:

Power-up

Upon power-up, the MicroLength 196 will display 0's (zeros) on the length display, and the alphanumeric display will read READY. This means the MicroLength 196 is ready to accept setup data, or to RUN at the previously programmed set point. After a variable is entered or a new operating length is set, the display will return to its READY state to wait for the RUN command.

Press VAR Key



To set a variable, press the VAR key. The alphanumeric display requests a two-digit variable number and the speed display shows two zeros, which will "echo" the variable selection. Simply press the variable number and then the ENTER key. If you are unsure which variable number to enter, press the up/down arrow keys to scroll through the menu of variables. When the variable you want to change is displayed, press the ENTER key.

Example 2 - Entering Variable Data:

Enter Data

The variable changed in this example is Acceleration Time (variable #07). You would have selected 07 and pressed the ENTER key in the above example. The display shown here would appear. The alphanumeric display shows that Acceleration Time (Acel Time) is being set. The length display will show the last Acel Time entered. To enter a new Acceleration Time, simply press the number of seconds desired from stop to full speed (.05 to 600 – in this example 60 seconds), and press the ENTER button.

Example 3 - Direct Selection of Length (Set Point):

Enter Desired Length Set Point

To set the length set point directly, press the SET POINT key when in the READY mode. The alphanumeric display will show that the SET POINT is being addressed. Press the number keys to select the desired motor length (in your engineering units), and then press the ENTER button. When you press the RUN button, the MicroLength 196 will ramp the motor to the speed selected. Acceleration will occur at the rate programmed by you, i.e.,when combining Examples 2 and 3, it will ramp the motor in 60 seconds, and stop at 1750.00 units.

Power:

Voltage	115 or 230Vac, 50/60 Hz, 1Ø
Fuse	1/4 Amp. Fast Blow, 115Vac 1/8 Amp. Fast Blow 230Vac
Transducer Supply	12Vdc, 250mA Max.

Transducer Input:

Wave Shape	Square, Sine
Types	NPN Open Collector PNP Open Collector Magnetic Pickup (Zero Crossing) Logic Level
Maximum Input Frequency	15KHz
Internal Pull-Up	2.2KΩ, Pull-Up to 12V
Trigger Levels	2.5Vdc (NPN, PNP, Logic) 50mV (Zero Crossing)

External Control Switches (Back Panel):

Sustained Contact Closures	Forward/Reverse Keypad Unlocked/Keypad Locked Set Points 1 & 3/Set Points 2 & 4 Set Point 3 & 4 Enable Local Command/Remote Command
Momentary Contact Closures	Batch Reset End Cycle

External Start/Stop Switches (Back Panel):

Momentary, N.O.	Run
Momentary, N.C.	Stop (Interrupt Cycle)
Sustained, N.O.	Jog
Momentary, N.C.	Emergency Stop
Sustained, N.O.	Run at High Speed

Back Panel Transistor Outputs:

NPN, Open Collector Drivers (50Vdc Max., 250mA, .3 Watts Max.)	Batch Complete Low Speed High Speed At Position Deviation Alarm Drive Enable

Analog Output:

Type	Optically Isolated 0 to +/-15Vdc
Maximum Output Current	Adjustable from +/-3Vdc to +/-15Vdc 10mA Maximum
Resolution	12-Bit D/A Converter

Operational Specifications:

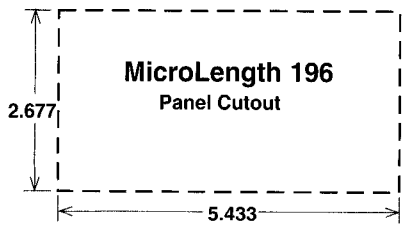
Accuracy	Plus/Minus One Pulse
Preset Set Points	Four
Batch Set Points	One
Accel/Decel Times	User Programmable from .05 to 600 Seconds
Processor	Intel 80C196TB 16-Bit Micro Controller
Length Display	6-Digit, 7-Segment LED, .36" Height
Alphanumeric Display	8-Character, 5- by 7-Dot Matrix, .20" Height
Function LEDs	1 Run (Green) 1 Stop (Red) 1 Local (Amber) 1 Remote (Amber) 1 Set Point 1 (Amber) 1 Set Point 2 (Amber)
Diagnostics/2nd Function	Diag. 0 Custom User Unit Display Diag. 1 Keypad Test Diag. 2 Display Test Diag. 3 Input Test Diag. 4 Memory Test Diag. 5 Output Test Diag. 6 Serial Interface Test Diag. 7 Return to Factory Programming Defaults Diag. 8 Automatic Setup Diag. 9 Digital Speed Potentiometer
Computer Interface	RS422 Interface Standard, 300 to 19200 Baud, Full Access to Variables and Control Functions

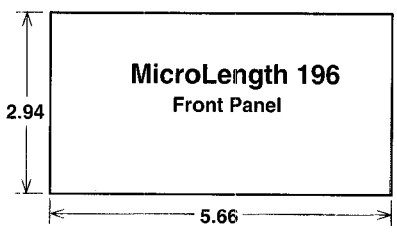
Mechanical/Environmental Specifications:

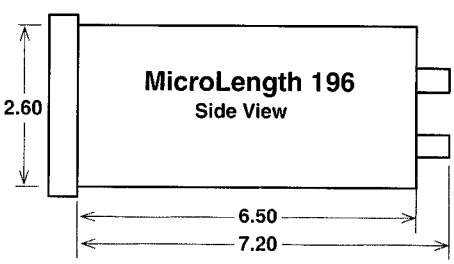
Enclosure Material	Cold Rolled Steel
Key Pad	Tactile Feedback Membrane, Chemical Resistant, NEMA 4
Operating Temperature	0° to 50° C
Humidity	0 to 90%, Non-Condensing
Panel Cutout	5.4"W x 2.7"H x 7.20"D
Weight	4.5 Lbs.

Specifications Subject to Change Without Notice.

Dimensions:
(in Inches)







CALL FOR APPLICATION SPECIALIST

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