



### MicroSpeed 196 Controller



- Compatible with all variable-speed drives.
- Keypad/display menus and features.
- Setup, calibration and diagnostic utilities.
- Master, ratio-follower modes.
- Multiple set-points.
- Switch-input functions.
- NPN-output functions.
- Serial communications/Modbus.

## Product Information

### Description

The MS196 is a powerful and versatile tool for building numerous closed-loop processes. Closed-loop control capabilities include electronic line shaft/gearing, and bi-directional control. The MS196 accepts single channel encoder signals and also provides the encoder power, which makes it ideal for new or existing systems. The MS196 supplies an isolated  $0 \pm 10$  Vdc speed reference signal to the drive, making it compatible with virtually any variable speed drive (AC, DC, or servo).

### Operating Modes

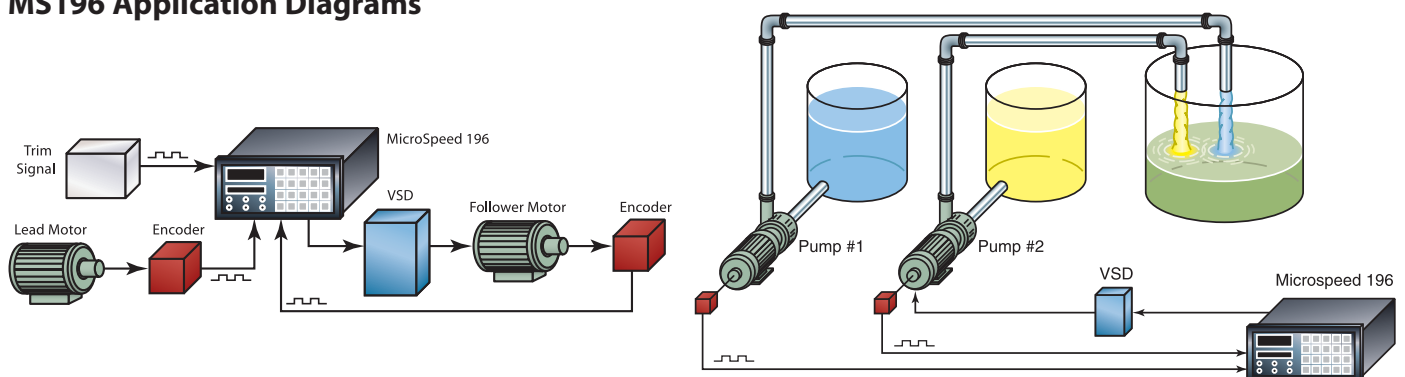
#### Master

- The MS196 maintains the desired set point speed.
- Feedback signal inputs to the MS196.
- The user may easily change the set point by entering the desired new value into the front panel keypad.

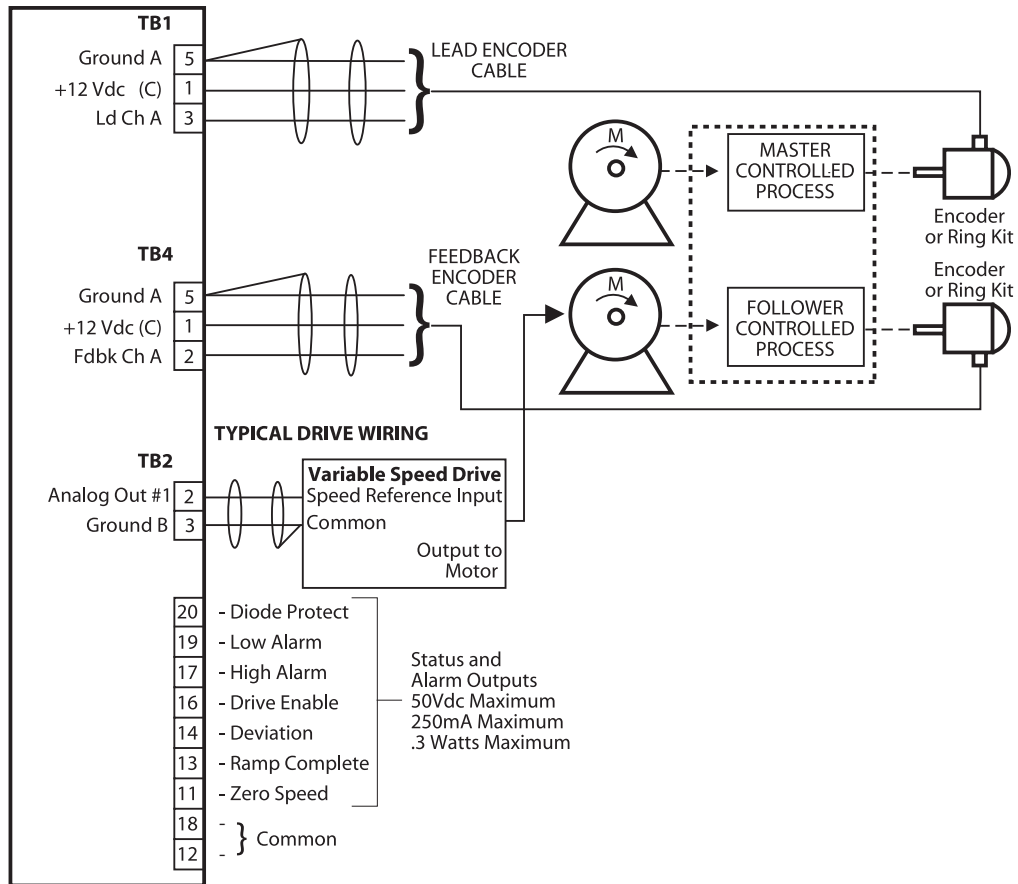
#### Ratio Follower

- The MS196 achieves true electronic gearing by precisely setting follower ratio to master speed, resulting in zero cumulative error.
- Dissimilar encoders and shaft speeds work together without error.
- Feedback and lead signals input to the MS196.
- The user enters the follower/master speed ratio and may change it on the fly.

### MS196 Application Diagrams



## Typical Encoder and Index Device Wiring



## MS196 Specifications

### Input Voltage

Power..... 115/230 Vac, 50/60 Hz

### Sensor Inputs

Sensor Supply..... 12 Vdc @ 250 mA max  
 Sensor Compatibility..... Single-ended NPN, PNP, Magnetic Pickup, Logic Level  
 Trigger Levels ..... 2 V (logic low), 3 V (logic high)  
 Encoder type..... Square Sine  
 Encoder Frequency..... 100 Hz - 40 KHz

### Analog Outputs

Type..... Isolated, 0 ± 15 Vdc  
 Resolution ..... 12 bit D/A Converter

### Transistor Outputs

Quantity..... 6  
 Type ..... NPN Open collector  
 Rating ..... 0.3 Watts (max), 50 Vdc (max)  
 Assignable Functions..... Numerous alarms and indicators

### Switch Inputs

Quantity..... 8  
 Type ..... Shorting (pull to ground)  
 Assignable Functions..... Set point, mode, parameter & diagnostic selects; special functions

### Serial Communications

RS422 Interface Standard, 300 to 19200 Baud,  
 13 Character String, 1 Start, 8 Data, No Parity, 1 Stop

### Operational

Accuracy..... Zero cumulative error (follower)  
 0.01% of speed set point (master)  
 Loop Response ..... 10ms  
 Operating Modes..... Ratio, follower, master  
 Set Points ..... 4 per operating mode

### Mechanical/Environmental

Enclosure Material ..... Cold rolled steel  
 Key Pad..... Tactile feedback membrane, chemical resistant, splash-proof  
 Operating Temperature ..... 0° C to + 50° C  
 Humidity ..... 0 to 90% non-condensing  
 Panel Cutout ..... 5.4" wide x 2.7" high x 7.2" deep  
 Weight ..... 6 lb

\* Contact factory for higher temperature ranges.  
 Specifications subject to change without notice.

DCS-910 Rev D