



MS320 Closed Loop Motor Speed Controller

- Use with AC or DC variable speed drives
- 0.02% speed regulation
- Security lockout
- Diagnostics for easy troubleshooting
- Isolated speed reference signal
- Optional analog feedback and set point
- Two optional relay outputs
- Optional DC input power 10-30 Vdc

Product Information

Description

Electro-Sensors Model MS320 Closed Loop Motor Speed Controller provides precise regulation of motor speed by controlling the speed reference signal to the variable speed drive. The MS320 monitors a feedback pulse sensor mounted on the motor, or on a down stream shaft, and compensates for any variations between the actual operating speed set point and the desired speed by automatically fine tuning the speed reference signal. The MS320 display can be scaled into meaningful units for operator ease in monitoring and setting the desired speed: RPM, GPM, FPM.

In the Master Mode, the MS320 ramps the motor to the selected set point at the programmed acceleration rate. Every 20 milliseconds the MS320 compares the set point with the digital or analog feedback signal. The control algorithm adjusts the speed reference signal to reduce the error to zero.

In the Follower Mode, the MS320 controls the motor speed based on a digital or analog lead signal. The follower motor runs at a user selectable ratio based on the lead input signal. The digital or analog feedback signal from the follower is used as a reference to confirm that it is running at the correct ratio, and that any speed error is driven to zero.

Diagnostic test procedures are provided for easy troubleshooting of all input and output functions as well as keypad and display operation. A programmable security code and keypad lockout allow the user to protect selectable program variables and front panel functions from unwanted changes during operation.

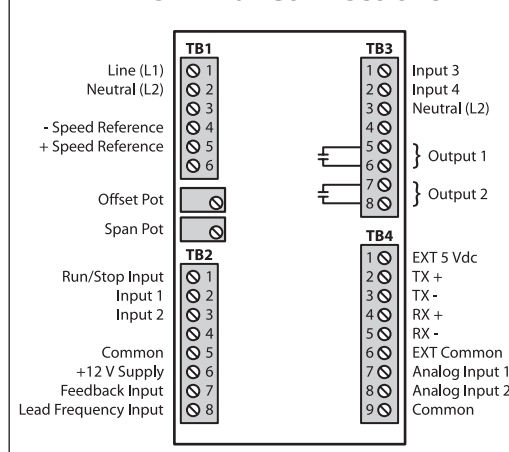
There are three AC inputs, one dedicated for Run/Stop and two programmable for the following: Fast Stop, Jog, Set Point 1, Set Point 2, Scroll Set Point Up, Scroll Set Point Down, Master/Follower, Closed/Open Loop, Speed Command and Signal Reset.

Optional Expansion Board

The optional expansion board provides the user with two additional inputs programmable for the same functions as the two standard inputs. Two SPST relay outputs are provided and programmable for the following: High Alarm, Low Alarm, Deviation Alarm, Zero Speed, Drive Enable and Ramp Complete. Two analog inputs (4-20 mA or 0-10 Vdc) are provided and programmable for the following: Feedback Frequency, Lead Frequency, Master Setpoint, Follower Ratio, Setpoint/Ratio Trim, Setpoint/Ratio Inverse Trim and Wind/Unwind with Core Calculation.

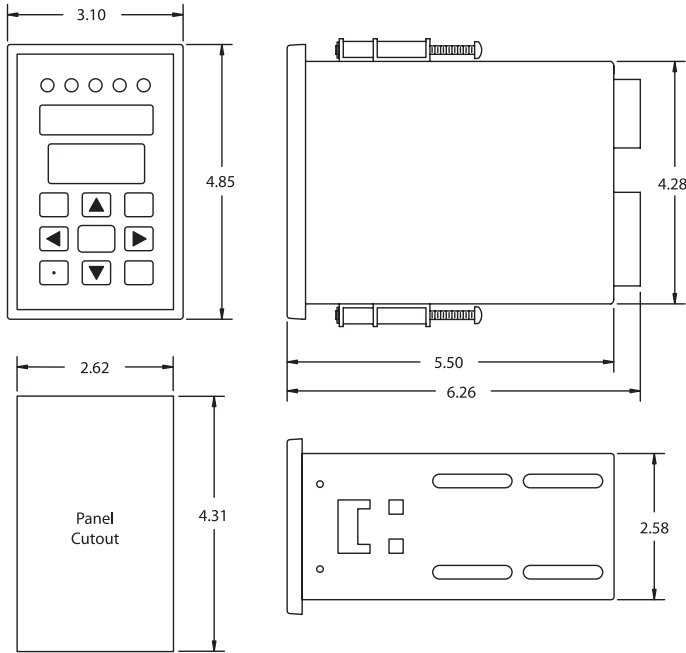
The MS320 is ideal for Packaging Machinery, Centercore and Surface Winders, Wire and Cable Machinery, Feed-to-Stop Systems, Cut Off Machines, Traverse Winding, Ovens and Fans, Pumps, Blenders and Feeders, Overhead/Floor Conveyors and Extruders.

Terminal Connections

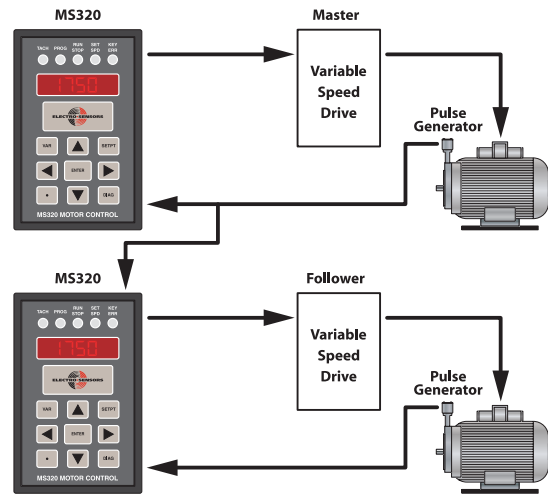


Dimensional Drawings • MS320

(Dimensions In Inches)



System Diagram



Specifications • MS320 Closed Loop Motor Speed Controller

Input Power

Voltage	115 Vac Standard 230 Vac Optional 50 - 60 Hz, 6W 10 - 30 Vdc Optional
Fuse	External Fuse required, 1/16 slo-blo recommended for 115 Vac and 1/32 A for 230 Vac, 2 Amp 10 - 30 Vdc
Sensor Supply	12 Vdc unreg., 100 mA max.
Sensor Input	Square, Triangle, Sine (Switch Selectable)
NPN Open Collector	2200 Ω Pull Up, 2.5V Trigger Level
PNP Open Collector	2200 Ω Pull down, 2.5V Trigger Level
Logic Level	2.5V Trigger Level
Magnetic Pickup	150 mV peak to peak min signal, 50 mV Trigger Level
Maximum Frequency	4000 Hz

External Control I/O

Standard Inputs	3 AC Switch Inputs - 1 fixed (Run/Stop) 2 Programmable
Optional Programmable Inputs	2 Additional AC Inputs, 2 Analog Inputs 0-10 Vdc or 4-20 mA

Optional Relay Outputs	2 Programmable, Rated 250 Vac 5A, 30 Vdc 5A, Resistive Load
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Analog Command Output

Standard Command Output	12 Bit DAC 0-10 Vdc Isolated Speed Command, Span Adjustable from 3 to 15V Output Span, 1500V Isolation
Optional Command Output	4-20 mA Isolated Speed Command, 1500V Isolation

Operation

Accuracy	0.02% Master and Follower Mode
Response Time	20 msec
Modes of Operation	Master/Follower
Presets	2 Master, 2 Follower, 1 Jog
Display	4 Digit 0.3" 7-Segment Displays, 5 Status LEDs

Mechanical

Enclosure	ABS Plastic
Keypad	Polycarbonate Tactile Switch Pad, Chemical-Resistant, Splashproof, NEMA 4
Operating Temperature	0°C to +50°C, +32°F to 122°F
Humidity	0-90% Non-Condensing

Specifications subject to change without notice.

DCS 925-Rev B