The most economical way to add digitally precise, PID speed regulation to stand-alone or multi-section systems

The Dynapar brand MSJR4 improves the speed regulation and adds new capabilities to variable speed drives. Regulating extruders, mixing pumps or material handling conveyors eliminates speed variations from temperature, power line voltage or motor load changes, and results in consistently higher quality production. The MSJR4 also operates in minutes and seconds, for food and beverage applications that need to control the cooking time of ovens and broilers.

In the follower mode, the MSJR4 will precisely match the speed of one motor, machine section or manufacturing process to another. With the assurance of zero cumulative error (drift) over time, it economically automates transfer lines, coating or draw of plastics film, and paper or plastics winding/unwinding.

Inherent in the MSJR4 is a large, LED display of actual process time or speed, which can be scaled into meaningful units (feet per minute, gallons per second, or RPM) for operator ease in monitoring and setting the desired speed.

General features include:
■ Leader or follower operation
■ Speed or Process Time (inverse speed) setpoints
■ PID with velocity feedforward
■ Programmable Accel/Decel ramp rate
■ Speed display calibration in engineering units
■ High and Low alarms in setpoint units or percentage of setpoint
■ Three level security of setpoints, loop gains and program data
■ NEMA4/IP66 front panel washdown rating
■ Nonvolatile memory

Installation is simplified through the use of pluggable terminals and simple input and output diagnostics. The rugged metal enclosure and isolated drive output provide complete immunity from electrical noise and the universal power input is fully filtered for low emissions.

SPECIFICATIONS

Input Power: universal, 85 to 265 VAC, 50-60 Hz, 18 VA

Sensor Power: selectable, 5 or 12 VDC ± 10%, 0 to 125 mA max

Display: 5 digit, 0.56" bright red 7-segment LED; 9 program and status display annunciators

Setpoints: Speed: 4 digit, programmable decimal point; Ratio: 4 digit, fixed decimal point X.XXX; Process Time: 4 digit, fixed format MM:SS; Jog Speed: 4 digit

Alarms: high and low; programmable as actual value or percentage of sepoint

Security: 3 levels: Program (Disable/Enable); Setup (Off/On) and Setpoint Adjustment (Incremental/Digit by Digit/Both/None)

Signal Inputs: Feedback and Reference: squarewave (pulse) or sinewave (magnetic), 20 kHz max each

Control Inputs: Auto/Manual; Trim Reset/Jog; Ramp Hold

Analog Output: 0 to 10 VDC at 5 mA max using internal reference; or 0 to external Reference voltage, 15 VDC max
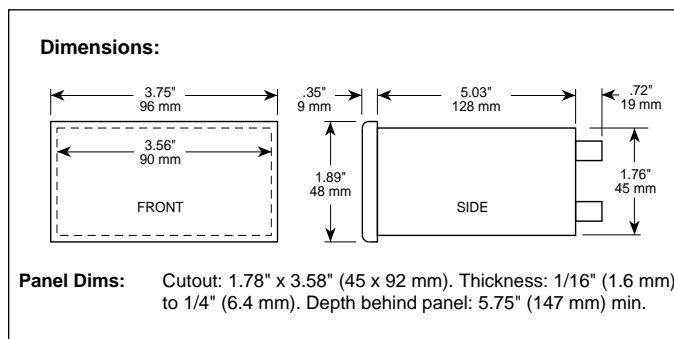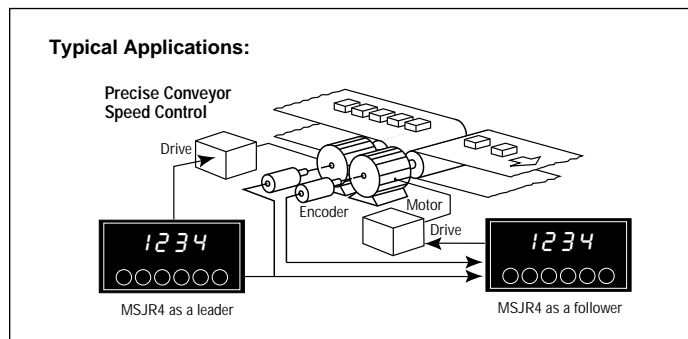
Alarm Outputs: open collector, 100 mA max. sink, 28 VDC max

Regulation: Leader (speed): 0.05%; Follower (ratio): 0.05% with zero long term drift; Process Time: 0.05%

Loop Time: 16 milliseconds

Operating Temperature: 32° to 122°F (0° to 50°C)

Model No.	Description
MSJR4U00	Digital Speed Controller

Typical Applications:

Precise Conveyor Speed Control

MSJR4 as a leader

MSJR4 as a follower

Dimensions:

3.75" / 96 mm · .35" / 9 mm · 5.03" / 128 mm · .72" / 19 mm · 3.56" / 90 mm · FRONT · 1.89" / 48 mm · SIDE · 1.76" / 45 mm

Panel Dims: Cutout: 1.78" x 3.58" (45 x 92 mm). Thickness: 1/16" (1.6 mm) to 1/4" (6.4 mm). Depth behind panel: 5.75" (147 mm) min.

A new standard for price and performance in full PID digital speed regulation, with analog input for control of dancer position or web tension

The Dynapar brand MSJR5 offers improved speed regulation and new capabilities for variable speed drives. It is similar in function to the MSJR4, with the addition of an analog input. In speed control of pumps or conveyors, an easy-to-use operator device for setting the speed is a simple potentiometer. The MSJR5 will adjust and display the setpoint directly from the pot.

For plastics converting or metal processing applications, the follower capability matches the speed of one section to another. The analog trim input allows direct control of dancer position in web processes, or tension sensing in winding or slitting operations.

The MSJR5 has a large, LED display, which can be scaled to show RPM, feet per minute, or sheets per hour, for easy monitoring and speed setting.

General features include:
■ Leader or follower operation
■ Speed or Process Time (inverse speed) setpoints
■ Analog input for remote setpoint or trim adjustment
■ PID with velocity feedforward
■ Programmable Accel/Decel ramp rate
■ Speed display calibration in engineering units
■ High and Low alarms in setpoint units or percentage of setpoint
■ Three level security of setpoints, loop gains and program data
■ NEMA4/IP66 front panel washdown rating
■ Nonvolatile memory

Installation is simplified through the use of pluggable terminals and simple input and output diagnostics. The rugged metal enclosure and isolated drive output provide complete immunity from electrical noise and the universal power input is fully filtered for low emissions.

SPECIFICATIONS

Input Power: universal, 85 to 265 VAC, 50-60 Hz, 18 VA

Sensor Power: selectable, 5 or 12 VDC ± 10%, 0 to 125 mA max

Display: 5 digit, 0.56" bright red 7-segment LED; 9 program and status display annunciators

Setpoints: Speed: 4 digit, programmable decimal point; Ratio: 4 digit, fixed decimal point X.XXX; Process Time: 4 digit, fixed format MM:SS; Jog Speed: 4 digit

Alarms: high and low; programmable as actual value or percentage of sepoint

Security: 3 levels: Program (Disable/Enable); Setup (Off/On) and Setpoint Adjustment (Incremental/Digit by Digit/Both/None)

Analog Trim Input: Range: 0 to 10 VDC max; Resolution 10 mV (0.1% of full scale); Scaling: Zero Reference and Gain Adjust

Signal Inputs: Feedback and Reference: squarewave (pulse) or sinewave (magnetic), 20 kHz max each

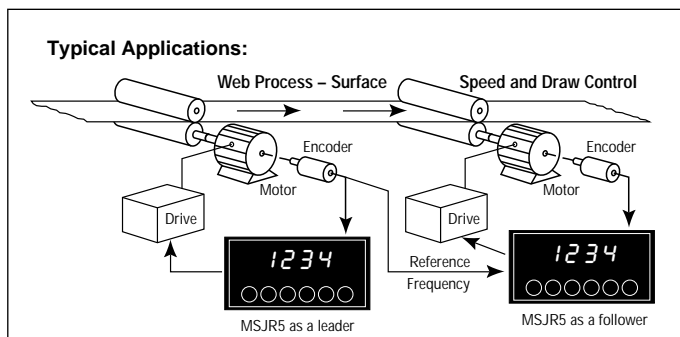**Control Inputs:** Auto/Manual; Trim Reset/Jog; Ramp Hold

Analog Output: 0 to 10 VDC at 5 mA max using internal reference; or 0 to external Reference voltage, 15 VDC max

Alarm Outputs: open collector, 100 mA max. sink, 28 VDC max

Regulation: Leader (speed): 0.05%; Follower (ratio): 0.05% with zero long term drift; Process Time: 0.05%
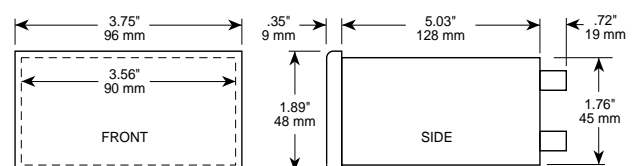
Loop Time: 16 milliseconds

Operating Temperature: 32° to 122°F (0° to 50°C)

Model No.	Description
MSJR5U00	Digital Speed Controller with Analog Trim Input

Typical Applications:

Web Process – Surface   Speed and Draw Control

Encoder   Encoder
Motor   Motor
Drive   Drive
Reference Frequency

MSJR5 as a leader   MSJR5 as a follower

Dimensions:

3.75" / 96 mm   .35" / 9 mm   5.03" / 128 mm   .72" / 19 mm

3.56" / 90 mm   1.89" / 48 mm   1.76" / 45 mm

FRONT   SIDE

Panel Dims: Cutout: 1.78" x 3.58" (45 x 92 mm). Thickness: 1/16" (1.6 mm) to 1/4" (6.4 mm). Depth behind panel: 5.75" (147 mm) min.

DANAHER CONTROLS