

ServoSensor™



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Description

The S-Series ServoSensor™ is a complete servo controller installed and interfaced inside an MTS® R-series platform. It consists of a Servo Controller Module (SCM), driver module (DM) and sensing element (SE) combined inside the sensor head body. MTS® proprietary technology is integrated directly to the SCM. This integration in the SC□ can typically be positioned to .001".

Features

New Features

- Two new velocity loop window selections.
- 1"/sec to 400"/sec..01"/sec to 40"/sec.
- Discrete output can be programmed.

Features

- Operates from single +24 Vdc power supply
- Low supply current- typical 100mA with current controlled devices
- Voltage or current drive output
- Single cable run to ServoSensor™ Controller
- Servo device interfaced at ServoSensor™ end cap
- 1 millisecond Servo Loop update time
- Two wire RS-485 network compatible
- Up to 26 units per link
- User selectable Baud Rates
- 16 bit CRC error checking
- Visible indications for power and status located on end cap
- Same robust design as MTS Temposonics® R-series sensor
- Four user selectable modes of operation
- Reverse polarity protected
- ESD protected

ServoSensor™ Setup Software

- PTJ Servo Control Center software provided
- Operates under Windows 95/98, ME, 2000 Pro, NT
- Programmable port location used to program the ServoSensor™ when the host controller can not.

ServoSensor™ Applications

- Hydraulic cylinders – linear motion
- Pneumatic cylinders
- Linear measure in control of ball screw applications, etc.

Certifications

- CE Certified
- EN50082-2 Immunity
- EN50081-2 Emissions
- FCC Part 15 Subpart B
- Industry Canada ICES-003
- Tested to IP67 Standard

Industry Applications

- Aerospace
- Automotive
- Food products industry
- Metal manufacturing
- Plastic manufacturing
- Steel manufacturing/production
- Wood products industry

Component Descriptions

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- Pressure Housing
- Rod style, hollow stainless steel tube for basic mounting structure
- Inserts into hydraulic/pneumatic cylinders with bored pistons

Sensing Element

- Self-contained magnetostrictive device anchored inside the main body of sensor cartridge

Driver Module

- Provides power conversions for driving the SE
- Supplies power for SCM
- Provides data control interfacing to SCM

Servo Control Module

- Consists of MTS proprietary data acquisition technology, high speed micro controller, serial interface, servo driver and a power conversion device.

End Cap

- Houses one eight pin female connector for servo cable, one eight pin male connector for com cable
- Red and green visual status indicators (LED's)

Hardware Specifications

Drive Output

- Output: current, thermal and short circuit protected
- Range: 0 to +/- 10 Vdc or 0 to +/-50 mA, factory set
- Resolution: 12 bit

Loop Update Time

- 1 msec to 110"

Velocity

- .1 to 400"/sec @ .001" resolution

Resolution

- In Inches
 - 0.0005" to 32.0"
 - 0.001" to 65.0"
 - 0.002" to 131.0"
- In Millimeters
 - 0.01 mm to 655.35 mm
 - 0.02 mm to 1310.07 mm
 - 0.04 mm to 2621.40 mm
- Inches or millimeter resolution set at factory per time of order

Discrete I/O

- - Isolation: 2500 VAC
- - Three source 24 Vdc inputs
- - One source 24 Vdc output; 25 mA max
- - 3 microsecond on/5 microsecond off
- - Maximum input voltage: 28.8 Vdc

Power Requirements

- Voltage: +24 Vdc, -5 to +5%
- Current: 100 mA typical with +/-50 mA drive output
- DC-DC converter isolation: 1000 Vrms

Temperature

- Range -40 to 75 degrees C

Dimensions

- ServoSensor™ length: Stroke dependent
- End cap length: 6.5 inches including straight connectors

Communication Interface

- RS-485 two wire
- ASCII code with eight bit
- 16 bit CRC
- Baud rates: 19.2, 38.4, 57.6, 115.2 kb
- See ServoSensor™ manual for communication instruction set

Visual Indicators

- Indicators located at end cap of controller
- Red lamp indicates power applied
- Green lamp indicates controller status
- Green lamp flashes at rates that equate to operation or faults

System Integration

Single Unit Slave System

□ The host computer monitors status and position information sent by the unit. When a new target is necessary, a target and velocity command is sent one time. If target is acknowledged we return to reading position and status. An operator interface would be connected to some form of input/output device installed locally in the computer or externally.

Multi-Unit Slave System

A multiple s□A host computer requires an RS-485 interface. An RS-485 card can be used. New PLC modules loaded with translator software also can be used for multiple axes. Address loading of the ServoSensor™ on a network would be required and would be accomplished using program software.

Discrete Control Inputs

The ServoSensor™ Controller has three independent discrete +24 Vdc inputs for cont□

Discrete Control Output

The discrete output is a 24 Vdc signal that is programmed to act differently in two modes. With the first mode, the output will come on when a set is achieved and within a target window specified in the program. The second mode is used with the cycle program mode. When a cycle is complete the output will come on.

Probe Lengths

Probe lengths are available in one inch (1") to sixty-five inches (65.0"). For longer lengths consult the factory. Probes are available in inches or millimeters.