

VYDAS

INTERNATIONAL MARKETING

Specialist Sensors & Instruments for Industry

MassaSonic™ M-5000/220 Smart Ultrasonic Sensor

So Smart So Easy to Use

DESCRIPTION

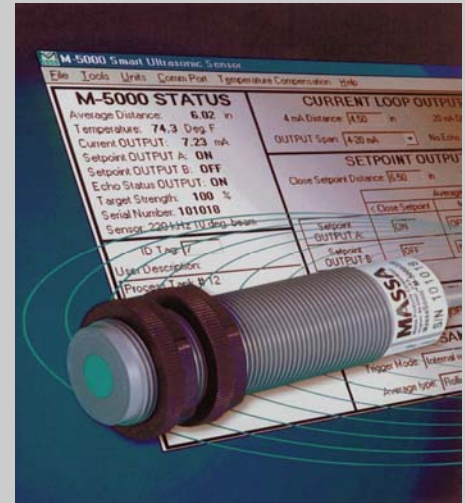
The MassaSonic™ M5000/220 Smart Ultrasonic Sensor incorporates state-of-the-art ultrasonic and microprocessor technology to provide precision non-contact distance measurement for factory automation or industrial process control. The M5000/220 stands out over all other systems because of its extraordinary ease of operation, genuinely user-friendly software, versatility in user controlled outputs, and the ability to be set up *without using a target*.

The sensor transmits narrow beam sound pulses at a user selected rate (or it can be externally triggered), processes return echoes, and produces several outputs dependent on the position of the target.

Operating from 12 to 28 V DC, the M5000/220 provides non contact measurement over a nominal target range of 100 mm to 1 m (4" to 40"). Outputs include a 0 to 20 mA or 4 to 20 mA DC analogue current loop, two independent set point switches, and echo status by both an LED indicator and an Echo Status Output switch. The system parameters and outputs are fully user programmable via an RS485 data link, thereby eliminating the sealing and tampering problems associated with adjustment potentiometers or pushbuttons. Some additional programmable features include: analogue output slope, sampling rate, averaging of multiple target distance measurements, loss-of-echo time out, and set point hysteresis.

Massa's extremely user-friendly software works with a PC running under Windows® 95 or 98 operating systems. The M5000/220 connects to a serial port of the PC using an RS485/RS232 converter. The RS485 data link allows up to 32 M5000/220 sensors to be on the same multi-drop communications network. For users that prefer not to use a PC, the sensors can be programmed at the factory to the customer's exact specifications for true "plug and play" operation.

Other features of the M5000/220 include: industry standard 30 mm diameter CPVC housing, environmentally sealed to IEC IP 67 and NEMA 6 specifications, operation from 20° C to 65° C with built in temperature compensation, diagnostic and monitoring outputs, and protection from over voltage, short circuits, and reverse polarity.



FEATURES

- ◆ Precision Distance Measurement
 - High Resolution (0.25mm)
- ◆ Analogue & Set point Outputs
- ◆ Plug & Play Set-up
 - **No Target Needed**
- ◆ Software Set Span and Zero
 - No Pots or Pushbuttons
 - Tamperproof Settings
- ◆ Easy to Use Set-up Software
 - Windows® 95 , 98, NT, 2000
- ◆ Sensor Sealed to IEC IP 67
- ◆ Built-in Temperature/Sound

APPLICATIONS

- ◆ Automatic Filling Operations
- ◆ Mechanical Positioning
- ◆ Roll Diameter Measurement
- ◆ Web Loop Monitoring
- ◆ Liquid Level Control
- ◆ Automatic Packaging
- ◆ Machine Tool Fluid Level
- ◆ Paper/Plastic Film Processing
- ◆ Robotics and Factory Automation



ORDERING INFORMATION

MP-200504-501
M-5000/220 Full Sensor Kit
 which includes:

MP-300280-501 MassaSonic M-5000/220
 Smart Ultrasonic Sensor
 MP-7873-1 Locknuts (Qty. 2)
 MP-7875-1 Installation &
 Operation Guide
 MP-200511 Mounting Bracket
 MP-7868-1 Communications
 Converter
 MP-7876-1 Installation &
 Setup
 Software (3 Disks)

MP-200504-502
M5000/220 Sensor, Locknuts

MP-200504-503
**M5000/220 Sensor, Locknuts &
 Mounting Bracket**

Custom configurations available
 for OEM quantities.

Consult factory for custom
 preset M5000/220 Sensors.

SPECIFICATIONS

PERFORMANCE

(Typical at 24 V DC, 22° C and 50% RH)
 Ultrasonic Frequency: 220 kHz
 System Beam Angle: 8° Conical
 Target Detection
 Minimum Distance: 4 inches (100 mm)
 Maximum Distance: 40 inches (1 m)
 Accuracy: ± 0.25% of max. distance (± 0.1 inches)
 in homogeneous environment
 (warmup time: 15 minutes)
 Measurement Resolution: 0.01 inches (0.25 mm)
 Power Required: 12 to 28 V DC (reverse polarity protected),
 80 mA max.
 Temperature Compensation: Internal probe

PROGRAMMABLE OUTPUTS (Can be Factory Preset)

Current Loop Output: 0 to 20 mA or 4 to 20 mA DC sourcing,
 12-bit resolution, invertible
 Span & Zero Distance: Programmable from 4 to 40 inches
 Loss-of-Echo Options: 0, 3.5, 4.0, 20.0, or 20.5 mA
 Setpoints and Echo Status: Protected current sink, open drain
 Nchannel MOSFETs, 28 V DC max.,
 100 mA max.
 Setpoint Distances: Programmable from 4 to 40 inches
 Setpoint Hysteresis: 0% to 89%, in 1% increments

PROGRAMMABLE SAMPLING SETTINGS (Can be Factory Preset)

Sampling Rate: 0.1 Hz to 100 Hz in 0.1 Hz increments
 Trigger Modes: Internal, internal with trigger output,
 external, external with delay, manual
 Target Distance Averaging: Rolling Average: up to 32 samples, or
 Boxcar Average: up to 1,024 samples
 Loss-of-Echo Timeout: Up to 255 consecutive samples

ADDITIONAL OUTPUTS

Diagnostic LED: Power, loss of echo, system error
 Echo Monitor: Amplified ultrasonic signal
 Communications: RS485, transient protected, multidrop
 up to 32 sensors

MECHANICAL

Housing Dimensions: 30 mm diameter M-30X1.5 threaded tube,
 100 mm long
 Housing Material: CPVC
 Transducer Surface: MassaPlastä 102 (custom PPA)
 Cable: 10 conductor, PVC jacket, 24 AWG,
 10 ft. (3 m), user extendable to 1,500 ft.

ENVIRONMENTAL

Operating Temperature: -20°C to +65°C
 Storage Temperature: -40°C to +85°C
 Environmental Sealing: IEC IP67, NEMA 6
 (submersible for short periods)
 Relative Humidity: 0 to 95%, non condensing

PROGRAMMING REQUIREMENTS

Communications Converter: RS485/RS232 with automatic send
 data control
 Operating System: Windows® 95/98/NT/2000

All Specifications subject to change without notice.



Call **01428 751822**

For Further Information

MANUFACTURER

