

MS-890




Industrial Automation Scanner


The MS-890 is a heavy duty scanner with the flexibility to solve a multitude of applications under a variety of factory conditions. The extended read range and intelligent sweeping raster provide robust reading of both linear barcodes and stacked symbologies.


Versatility and rugged design make the MS-890 an ideal scanner for industrial applications.


MS-890: At a Glance

- Scans/second: 400 to 1000
- Read Range: 10 to 120" (254 to 3048 mm)
- IP65 Enclosure
- Optional IB-890 Wiring Box

 **ESP® Easy Setup Program:** Single-point software solution provides quick and easy setup and configuration of all Microscan readers.

 **EZ Button:** This performs reader setup and configuration with no computer required.

 **Visible Indicators:** Performance indicators include "good read" green flash and LEDs.

 **Sweeping Raster:** This programmable feature enables the reader for multiple symbols at varying distances and locations.

For more information on this product, visit www.microscan.com.

MS-890: Available Codes

Linear All Standard


Stacked PDF417 AIAG
 Formats

Long Read Range

The MS-890 optics were engineered for successful reading at extended or varying distances, such as a safety or clearance zone required around conveyor or assembly areas.

Visible Indicators

Illuminated LEDs on the MS-890 provide instant visual confirmation of successful reads. A "good read green flash" is projected from the front window and is visible within a 360 degree radius from the scanner.

Optional Wiring Box

The IB-890 wiring box provides easy and flexible integration, without any special cables or connectors. Features include:

- Pluggable relay modules
- Terminal strip connectivity
- Connectivity with handheld scanners

Intelligent Raster

The MS-890 features an intelligent raster which can be optimized for scan angle and speed to read multiple symbols or inconsistently placed labels.

Autocalibration

The autocalibration feature automatically determines and selects optimal read settings for focus, gain and tracking.

Barcode Programming

Changing scanner configuration on the factory floor is as simple as presenting a barcode and pushing the EZ button. This feature makes it simple to replicate settings on multiple MS-890 scanners.

Application Examples

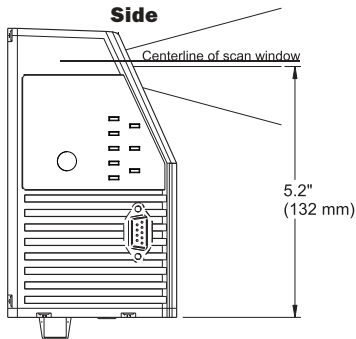
- Light to heavy industry
- Forklifts or conveyor lines

MICROSCAN®

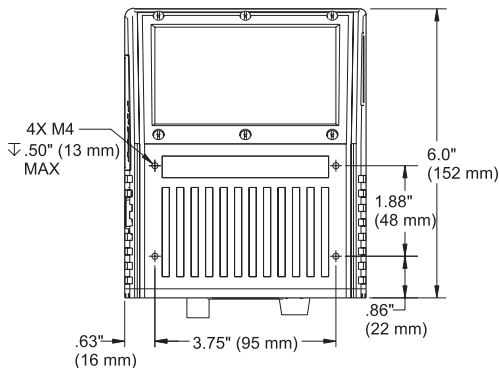
MS-890 SCANNER SPECIFICATIONS AND OPTIONS

MECHANICAL

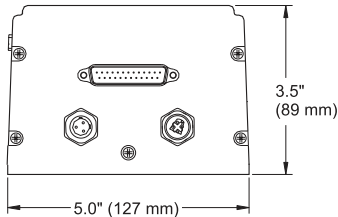
Length: 3.5" (88 mm)
Width: 5" (127 mm)
Height: 6" (152 mm)
Weight: 5 lbs. (2268 g)



Front



Bottom

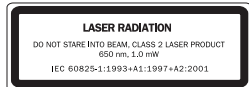


ENVIRONMENTAL

Enclosure: IP65
Operating Temperature: 0° to 50° C (32° to 122° F)
Storage Temperature: -50° to 75° C (-63° to 167° F)
Humidity: Up to 90% (non-condensing)

LASER LIGHT

Type: Semiconductor visible laser diode (650 nm nominal)
Operating Life: 50,000 hours @ 25° C (77° F)
Safety Class: CDRH Class II



SCANNING PARAMETERS

Scanner Mirror Type: Rotating, single line, 14-faceted mirror
Scan Rate: Adjustable from 400 to 1000 scans/second (default = 500 sps)
Raster Sweep Speed: 1 to 30 sweeps per second
Raster Sweep Angle: 30° maximum
Scan Width Angle: Typically 60°
Pitch Angle: ±50° maximum
Skew Angle: ±40° maximum
Label Contrast: 25% min. absolute dark to light differential at 650 nm wavelength

READ RANGES¹

| Narrow-Bar-Width | Read Range |
|-------------------|------------------------------|
| .0075" (0.190 mm) | 10" to 35" (254 to 889 mm) |
| .010" (0.254 mm) | 10" to 44" (254 to 1118 mm) |
| .015" (0.381 mm) | 10" to 74" (254 to 1880 mm) |
| .020" (0.508 mm) | 10" to 90" (254 to 2286 mm) |
| .030" (0.762 mm) | 10" to 100" (254 to 2540 mm) |
| .040" (1.020 mm) | 10" to 110" (254 to 2794 mm) |
| .050" (1.27 mm) | 10" to 120" (254 to 3048 mm) |

¹ Ranges based on a Code 39 Grade A label.

CONNECTORS/PIN ASSIGNMENTS

Program Connector: 9-pin D-subminiature plug

| Pin No. | Function |
|---------|---------------|
| 2 | RX-232 |
| 3 | TX-232 |
| 5 | Signal Ground |
| 9 | Boot Mode |

Power Connector: 3-pin MicroChange plug

| Pin No. | Function |
|---------|-------------------------|
| 1 | Power Ground |
| 2 | NC |
| 3 | Power 10 to 28 VDC (in) |

Trigger Connector: 4-pin MicroChange socket

| Pin No. | Function |
|---------|--------------------------|
| 1 | Power 10 to 28 VDC (out) |
| 2 | NPN |
| 3 | Ground |
| 4 | N/C |

Host Connector: 25-pin D-subminiature plug

| Pin No. | Host RS-232 | Host & Aux RS-232 | Host RS-422/485 | In/Out |
|---------|---------------------|-------------------|-----------------|-------------|
| 1 | Chassis Ground | | | |
| 2 | Host TxD | | | Out |
| 3 | Host RxD | | | In |
| 4 | RTS | Aux TxD | | Out |
| 5 | CTS | Aux RxD | | In |
| 6 | Output 1 (+) | | | Out |
| 7 | Signal Ground | | | |
| 8 | Output 2 (+) | | | Out |
| 9 | Trigger (-) | | | In |
| 10 | Trigger (+) | | | In |
| 11 | N/C | | | |
| 12 | Input 1 (+) | | | In |
| 13 | | | | RxD (+) In |
| 14 | | | | TxD (-) Out |
| 15 | Noread/Output 3 (+) | | | Out |
| 16 | | | | RxD (-) In |
| 17 | Power Ground | | | |
| 18 | Power +10 to 28 VDC | | | In |
| 19 | | | | TXD + Out |
| 20 | Output 1 (-) | | | Out |
| 21 | Output 2 (-) | | | Out |
| 22 | Noread/Output 3 (-) | | | Out |
| 23 | Input 1 (-) | | | In |
| 24 | New Master (-) | | | In |
| 25 | New Master (+) | | | In |

COMMUNICATION

Interface: RS-232, RS-422/485, daisychain/auxiliary port capable, dedicated configuration port

SYMBOLOGIES

Standard: Code 39, Code 128, UPC/EAN, Interleaved 2 of 5, Codabar, Code 93, PDF417
Applications Standard: AIAG, UCC/EAN-128

ELECTRICAL

Power Requirement: Input, 10-28 VDC, 200 mV p-p max. ripple, 230mA at 24 VDC (typ.)

EMISSIONS AND IMMUNITY

EN61000-6-3:2001: for Class A products
EN61000-3-2:2000+A2:2005
EN61000-3-3:1995+A1:2001
EN61000-6-2: Immunity

INDICATORS

Beeper: Good read, match/mismatch, no read, serial command confirmation
LEDs: 1 status, 1 power, 1 good read, and 5 read performance (representing percentage of good decodes), network/include status, green flash

DISCRETE I/O

Trigger, New Master, Input 1: Optoisolated, 5-28V rated, (12mA at 24 VDC)
Outputs (1, 2, 3): Opto-isolated, 1-28 VDC rated, (I_{CE} <100 mA @ 24 VDC, current limited by user)

SAFETY CERTIFICATIONS DESIGNED FOR

FCC, CDRH, CE, UL/cUL, BSMI

ROHS/WEEE COMPLIANT

ISO CERTIFICATION

Certified ISO 9001:2008 Quality Management System

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Read Range and other performance data is determined using high quality Grade A symbols per ISO/IEC 15415 and ISO/IEC 15416 in a 25° C environment. For application-specific Read Range results, testing should be performed with symbols used in the actual application. Microscan Applications Engineering is available to assist with evaluations. Results may vary depending on symbol quality. **Warranty**—For current warranty information on this product, please visit www.microscan.com/warranty.

MICROSCAN®

Microscan Systems Inc.

Tel 425 226 5700 / 800 251 7711
 Fax 425 226 8250

Microscan Europe

Tel 31 172 423360 / Fax 31 172 423366

Microscan Asia Pacific

Tel 65 6846 1214 / Fax 65 6846 4641

www.microscan.com

Product Information: info@microscan.com
 Technical Support: helpdesk@microscan.com