

Capable of decoding 2,000 scans per second in real time, the MS-9 delivers a decode rate unmatched among small fixed mount scanners.

Ideal for high speed applications, the MS-9's superior processing also benefits other applications by providing multiple looks at a given label, which ensures data integrity. This versatile scanner reads all standard bar codes including RSS. The MS-9 also has options that can read invisible ink or OMR (Optical Mark Recognition). Easily integrated into existing machinery, the MS-9's ultra-compact size and shape allow for flexible mounting and positioning. Although designed to meet the requirements of high speed processing, the MS-9 offers broad market appeal to many industries.

MS-9

HIGH SPEED BAR CODE SCANNER

Ultra-High Speed: Processes 2,000 scans per second in real time, delivering superior performance in high throughput applications. The MS-9 can transmit at baud rates of up to 115.2k.

Compact Size: Small size and shape offers great mounting flexibility and easy integration into existing machinery.

Real-Time Controls: Includes three optoisolated programmable outputs and two optoisolated inputs. Outputs can react on conditions in a read cycle such as No Read, Match, Mismatch, and Good Read. Inputs can trigger the start of a read cycle or a new master input.

Preventative Maintenance Features: Internal diagnostic tools monitor operating conditions and send user-defined messages to alert the operator when thresholds have been exceeded.

Diagnostics monitor:

- laser current
- operating temperature
- operating hours
- power-up counts and resets

Bar Code Symbolologies: Reads multiple symbolologies, including standard bar codes as well as patented OMR (Optical Mark Recognition) and RSS (Linear and Stacked).

Performance LEDs: To streamline the setup process, multicolored LEDs, in conjunction with a programmable beeper, provide instant notification of a successful "read." The LEDs also provide a visual read rate test, useful for finding optimal read distance.



ESP™ Easy Setup Program:

Microscan's ESP™ software is a user friendly, windows-based setup program that gives the user a simplified configuration tool. It is compatible with Windows 98, NT, 2000, and XP.

Support Options: Instant software upgrades are available through a flash memory option. Users can upgrade scanners by downloading software on Microscan's website.

- Installation assistance
- Service agreements
- Training
- On-site support
- Extended warranty



Invisible Ink Option: The MS-9 has an option that allows it to detect and read infrared inks which are invisible to the eye.

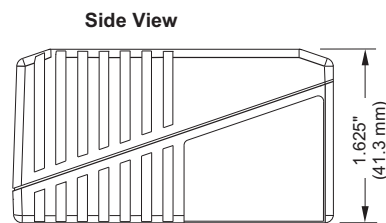
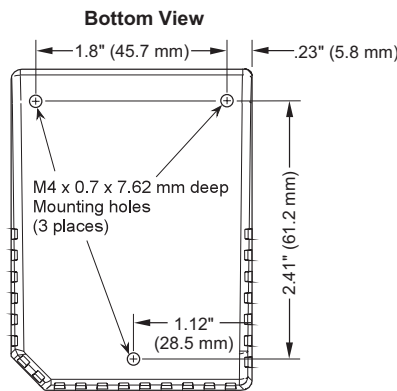
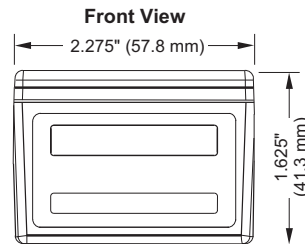
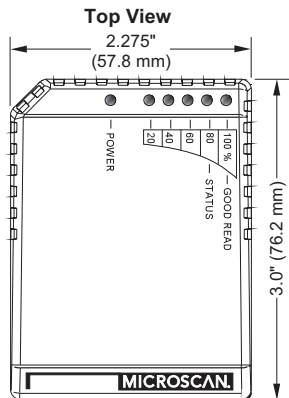
MICROSCAN®

MS-9 HIGH SPEED BAR CODE SCANNER

Specifications and Options

MECHANICAL

Depth: 3.0" (76.2 mm)
 Width: 2.275" (57.8 mm)
 Height: 1.625" (41.3 mm)
 Weight: 11 oz. (311 g)



ENVIRONMENTAL

Enclosure rating: IP54
 Operating temperature: 0° to 40°C
 Storage temperature: -50° to 75°C
 Humidity: Up to 90% (non-condensing)

LASER LIGHT

Type: Semiconductor visible laser diode (650 nm nominal)
 Optional: Invisible ink
 Safety class: CDRH Class II

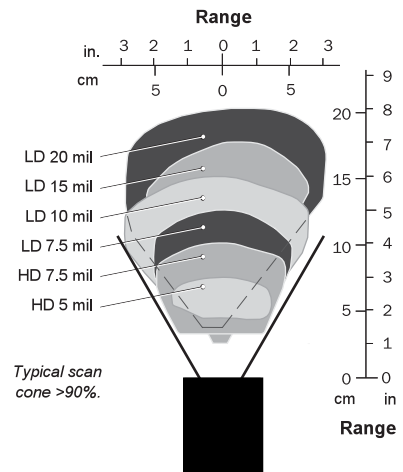
READ RANGES

| Narrow-Bar-Width | Read Range |
|---------------------|---------------------------|
| LOW DENSITY | |
| .0075" (.191 mm) | 2" to 5" (51 to 127 mm) |
| .010" (.254 mm) | 1.5" to 6" (38 to 152 mm) |
| .015" (.381 mm) | 1" to 7" (25 to 178 mm) |
| .020" (.508 mm) | 1" to 9" (25 to 229 mm) |
| HIGH DENSITY | |
| .005" (.127 mm) | 1.75" to 3" (44 to 76 mm) |
| .0075" (.191 mm) | 1.5" to 4" (38 to 101 mm) |

Scan width: 4" (101.6 mm) at 3" (76.2 mm) from exit window of scanner with a 10 mil, Code 39 label.

| Invisible Ink Option | |
|----------------------|----------------------------|
| .010" (.25 mm) | 1.5 to 4.0" (38 to 101 mm) |
| .015" (.38 mm) | 1.5 to 6.0" (38 to 152 mm) |
| .020" (.51 mm) | 1.5 to 6.0" (38 to 152 mm) |

Ranges based on Code 39 symbols



COMMUNICATION

Interface: RS-232, RS-422/485, Daisy Chain

SCANNING PARAMETERS

Mirror type: Rotating, single line 9-faceted mirror
 Optional raster: 9 raster lines over a 2 arc°
 Scan/decode rate: 2,000 per second
 Scan width angle: 56°
 Pitch angle: ±50° Skew angle: ±40°

PROTOCOLS

Point-to-Point • Point-to-Point w/RTS/CTS
 • Point-to-Point w/RTS/CTS & XON/XOFF
 • Point-to-Point w/XON/XOFF • Polling
 Mode D • Multidrop • User Defined • User Defined Multidrop • Daisy Chain

CONNECTOR

3 ft. (914.4 mm) cable terminated with a high density 15-pin D-Sub plug connector

ELECTRICAL

Power requirement: 10–28 VDC, 200 mA p-p max ripple, 185 mA at 24 VDC (typ.)

DISCRETE I/O

Inputs: Optoisolated Trigger and New Master/OMR, 4.5–28 VDC rated, (12 mA at 24 VDC)
 Outputs (1, 2, 3): Optoisolated 1–28V rated (I_{CE} < 100 mA at 24 VDC, current limited by user)

PIN ASSIGNMENTS

| Pin No. | Host RS232 | Host/Aux RS232 | Host RS422/485 | In/Out |
|---------|------------------------------------|----------------|----------------|--------|
| 1 | Power +10 to 28 VDC | | | In |
| 2 | Host TxD | Host TxD | TxD(-) | Out |
| 3 | Host RxD | Host RxD | RxD(-) | In |
| 4 | Power/Signal Ground | | | |
| 5 | Trigger (-) | | | In |
| 6 | RTS | Aux TxD | TxD(+) | Out |
| 7 | Output 1 (+) | | | Out |
| 8 | Default configuration ^a | | | In |
| 9 | Trigger (+) | | | In |
| 10 | CTS | Aux RxD | RxD (+) | In |
| 11 | Output 3 (+) | | | In |
| 12 | New Master/OMR | | | In |
| 13 | Chassis ground ^b | | | |
| 14 | Output 2 (+) | | | Out |
| 15 | Outputs 1,2,3 (-) | | | Out |

a. The default is activated by connecting pin 8 to ground pin 4.
 b. Chassis ground: Used to connect chassis body to earth ground only. Not to be used as power or signal return.

CE MARK

General immunity for light industry:
 EN 55024: 1998 ITE Immunity Standard
 Radiated and conducted emissions of ITE equipment: EN 55022:98 ITE Disturbances

SYMBOLOGIES

Code 39, Codabar, Code 128, I 2 of 5, Code 93, UPC/EAN, RSS (Linear and Stacked)
 Optional: patented OMR (Optical Mark Recognition) or Pharmacode

INDICATORS

Beeper: Good read, Match/Mismatch, Noread, On/Off
 LEDs: 1 status, 1 power, 1 good read, 5 read performance (representing percentage of good decodes)

SAFETY CERTIFICATIONS

CDRH, FCC, UL/cUL, CE

ISO CERTIFICATION

Issued by RWTüV, USA Inc.
 ISO 9001:2000 – Cert No. 03–1212

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 Specifications subject to change. Updates to this specification can be found on our website.

Product specifications are given for typical performance at 25°C (77°F) using grade A labels. Some performance characteristics may vary at high temperatures or other environmental extremes.

Warranty—One year limited warranty on parts and lab.

MICROSCAN

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