

MS-4

The MS-4 is designed specifically for embedded bar code applications. It is the ideal imager for OEM design engineers who need to read 2D codes in tight spaces, while still requiring 100% data integrity.

Currently the world's smallest high resolution imager, the MS-4's ultra-compact size and wide angle optics provide the widest scan window available for reading any code at close range. EZ button setup, symbol locator, and visible performance indicators provide ease of use while omni directional reading and form factor allow for positioning flexibility.

TINY IMAGER SCANS 2D & BAR CODES

Compact Shape and Size

MS-4 is the world's smallest high performance imager, measuring 1" (25.2 mm) height x 1.8" (45.7 mm) width x 2.10" (53.3) length and weighs less than 2 ounces (57 g).

Omni-Directional Reading

Decodes linear bar codes or 2D codes in any orientation. Compact shape and omni directional reading allow for flexible positioning, with no need to plan for laser line alignment.

Wide Field of View

Wide scan window allows linear and 2D codes to be read as close as 1" (25.2 mm).



Visible Performance Indicators

- Symbol Locator
- Good Read Indicator
- Read Performance

Mounting Flexibility

The MS-4's compact size, right angle mirror option, and design features such as the cable's corner positioning conserve cubic space to create the tightest fit possible within instrumentation and equipment.



Push-Button Setup

The EZ button is a powerful setup feature. Three programmable positions can be used to quickly perform complex tasks. EZ button user-selectable functions include:









- Read Rate
- Calibration
- Save for Power-on
- Load New Master
- Sleep Mode

Symbologies




2D Symbologies

- Data Matrix (ECC 0-200) 
- QR Code 

Linear Bar Code

- Code 39 
- Code 128 
- Code 93 
- I-2 of 5 
- UPC/EAN 
- Pharmacode 
- BC 412 
- Codabar 

Stacked Symbology

- PDF417 
- RSS (Stacked, Composite) 
- Micro PDF 

Codes depicted above are for display purposes only. For a sample packet, contact Microscan.info@microscan.com.

Real-Time Controls

The inputs include a trigger signal, a "new master" input, and a programmable input for resetting counters or releasing outputs. The outputs can be configured to activate upon a number of conditions including matchcode and diagnostic operations.

High Data Level Output

2D codes have a high level of data capacity storage and the MS-4 maintains high decode speed to output large amounts of data in milliseconds.

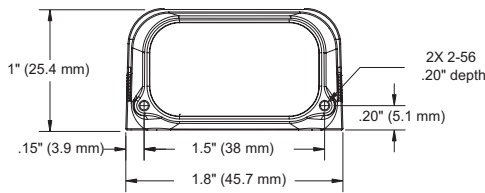


ESP™ Easy Setup Program

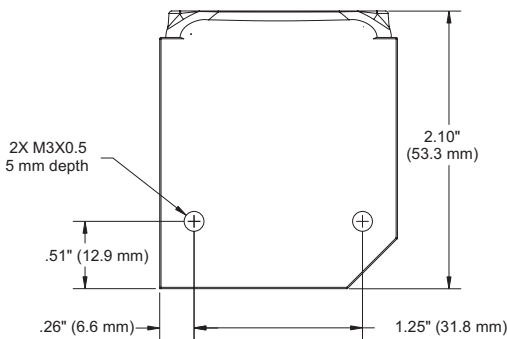
ESP™ is Microscan's software to operate Microscan readers. ESP™ is compatible with Windows 98, NT, 2000, and XP.

MS-4 IMAGER SPECIFICATIONS AND OPTIONS

Front



Base



MECHANICAL

Height: 1" (25.4 mm)
Width: 1.8" (45.7 mm)
Depth: 2.10" (53.3 mm)
Weight: 2-oz (57 g)

ENVIRONMENTAL

Enclosure: IP54
Operating Temperature: 0° to 40°C (32° to 104°F)
Storage Temperature: -50° to 75° C (-58 to 167°F)
Humidity: up to 90% (non-condensing)

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

LIGHT SOURCE

Type: High output LEDs

LIGHT COLLECTION OPTIONS

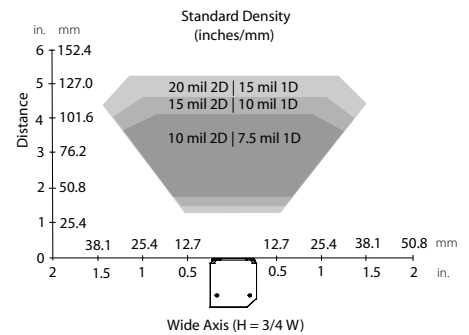
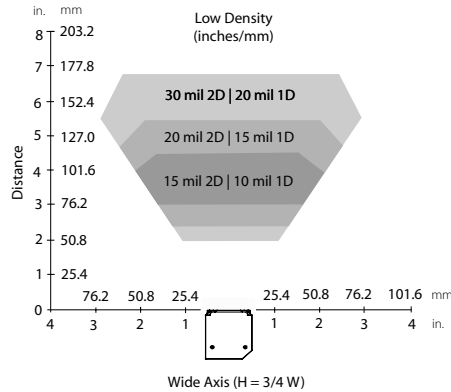
Progressive scan, square pixel.
 Software adjustable shutter speed, electronic mechanism
VGA Array: 640 by 480 pixels

SYMBOLGY TYPES

2D Symbolgies:
 Data Matrix (ECC 0-200), QR Code
Stacked Symbolgies: PDF417, Micro PDF417, RSS (Composite & Stacked)
Linear Bar Codes: Code 39, Code 128, BC 412, I2 of 5, Pharmacode, UPC/EAN, Codabar, Code 93

READ PARAMETERS

Pitch: ±30° **Skew:** ±30° **Tilt:** 360°
Decode Rate: Up to 10 decodes per second
Focal Range: 2 to 6" (50.8 to 152.4 mm) (factory adjustable)



*Scan area depictions subject to change. Contact Microscan for updated graphs.

HOST CONNECTOR/PIN ASSIGNMENTS

High Density 15 Pin D-sub Socket Connector

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

a. Can sink 10 mA and source 10 mA.
 b. The default is activated by connecting pin 8 to ground pin 4.
 c. Chassis ground: Used to connect chassis body to earth ground only. Not to be used as power or signal return.

CONNECTOR

Type: 3 ft. cable terminated with High Density 15-pin D-Sub socket connector

INDICATORS

LEDs: Read Performance, Power, Read Status
Green Flash: Good read
Blue V: Symbol locator
Beeper: Good read, match/mismatch, noread, serial command confirmation, on/off

COMMUNICATION PROTOCOLS

Standard Interface: RS-232, RS-422
Optional Interface: USB

ELECTRICAL

Power: 5 VDC +/- 5%, 200 mV p-p max. ripple, 400mA @ 5 VDC (typ.)

DISCRETE I/O

Trigger Input: 5 to 29.9V rated (160 mA)
New Master: 5 to 29.9V rated (160 mA)
Outputs (1, 2, 3): 5V TTL compatible, can sink 10 mA and source 10mA

SAFETY CERTIFICATIONS DESIGNED FOR

CDRH, FCC, UL/cUL, CE, CB

ISO CERTIFICATION

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

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 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 labor. Extended warranty available.

MICROSCAN®

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