

MS-4

The Microscan® 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 mm) 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 Codes

- Code 39 
- Code 128 
- Code 93 

Stacked Symbology

- PDF417 
- I-2 of 5 
- RSS (Stacked, Composite) 
- UPC/EAN 
- Micro PDF 
- Pharmacode 
- BC 412 
- Codabar 

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.

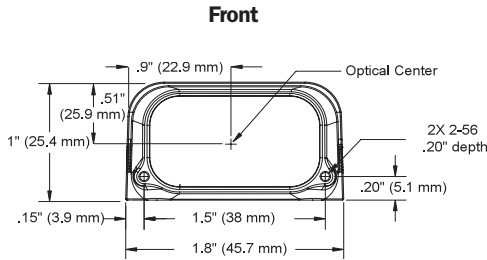


ESP® Easy Setup Program

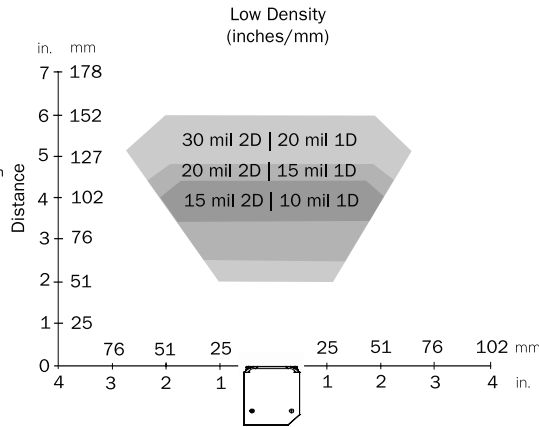
ESP is Microscan's software to operate Microscan readers. ESP is compatible with Windows 98, NT, 2000, and XP.

MS-4 IMAGER SPECIFICATIONS AND OPTIONS

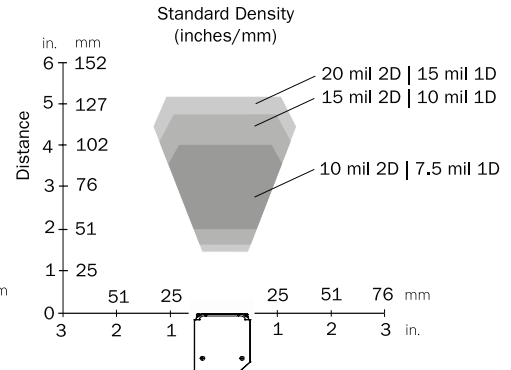
READ RANGES (GRAPHS AND TABLES)



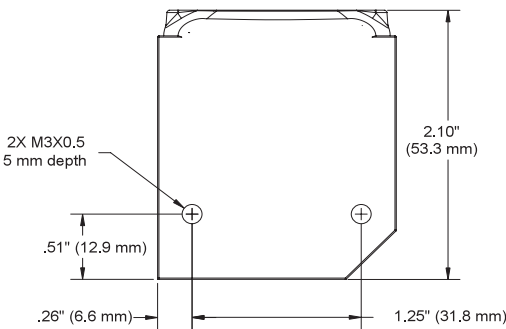
Front



Wide Axis (H = 3/4 W)



Wide Axis (H = 3/4 W)



Base

Narrow-bar-width		Field of View (maximum)	Read Range
1D	2D		
Standard Density			
.0075" (0.19 mm)	.010" (.25 mm)	2.4" (61 mm)	2 to 4.0" (51 mm to 102 mm)
.010" (0.25 mm)	.015" (.38 mm)	2.6" (66 mm)	1.7 to 4.7" (43 mm to 119 mm)
.015" (0.38 mm)	.020" (.51 mm)	2.8" (71 mm)	1.4 to 5.2" (36 mm to 132 mm)
Low Density			
.010" (0.25 mm)	.015" (.38 mm)	4.2" (107 mm)	3.5 to 4.5" (89 mm to 114 mm)
.015" (0.38 mm)	.020" (.51 mm)	4.5" (114 mm)	2.7 to 5.0" (69 mm to 127 mm)
.020" (0.51 mm)	.030" (.76 mm)	5.5" (140 mm)	2.0 to 6.0" (51 mm to 152 mm)

Subject to change. Contact Microscan for updated graphs.

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 (category 2)
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 shutter
VGA: 640 by 480



SYMBOLGY TYPES

2D Symbolologies:
 Data Matrix (ECC 0-200), QR Code
Stacked Symbolologies: 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

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 or USB type A 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 or USB

ELECTRICAL

Power: 5 VDC +/- 5%, 200 mV p-p max. ripple, 394mA @ 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

FCC, UL/cUL, CE, CB

ISO CERTIFICATION

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



ISO 9001:2000 Certified QMS

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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.

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