

## MS-820



Compact Shape/Size



## MS-820: At a Glance

- Decodes/second: 350 to 1100
- Read Range: 1 to 30" (25 to 762 mm)
- High density code reading (3 mil)
- IP65 Enclosure



ESP®: Easy Setup Program software provides quick and easy setup and configuration of all Microscan readers.

For more information on this product, visit [www.microscan.com](http://www.microscan.com).

## MS-820: Available Codes

Linear

All Standard



Stacked

PDF417



## Laser Bar Code Scanner

The MS-820 is a compact single-line scanner optimized for reading high density codes. Its small size, robust reading and industrial features have established the MS-820 as the standard bar code scanner on the assembly lines of many large manufacturers.

The MS-820's IP65 enclosure rating makes it ideal for applications such as conveyors, assembly lines or integration within machinery.

**Reliability**

The MS-820 offers time-tested reading performance and design. Microscan's unmatched customer support is available to assist with custom configurations.

**Read Performance**

The MS-820 optics allow successful reading of codes out to 30" (76.2 cm), at a 60° scan angle and up to a 10" (25.4 cm) beam width.

**Real-time Controls**

Discrete input/output connections consist of three optoisolated programmable outputs, one trigger input, and one programmable input.

**Ease of Use**

A fully programmable feature set allows users of all experience levels to quickly and easily configure the scanner.

**Flexibility**

The compact size of the MS-820 allows flexible positioning for a variety of applications. Custom software options are available to further adapt the scanner to the needs of the user.

**Reverse Video**

This feature allows users the flexibility to read light-on-dark or dark-on-light bar codes.

**Application Examples**

- Any industrial environment from light to heavy duty
- Conveyor lines
- Embedded within machinery

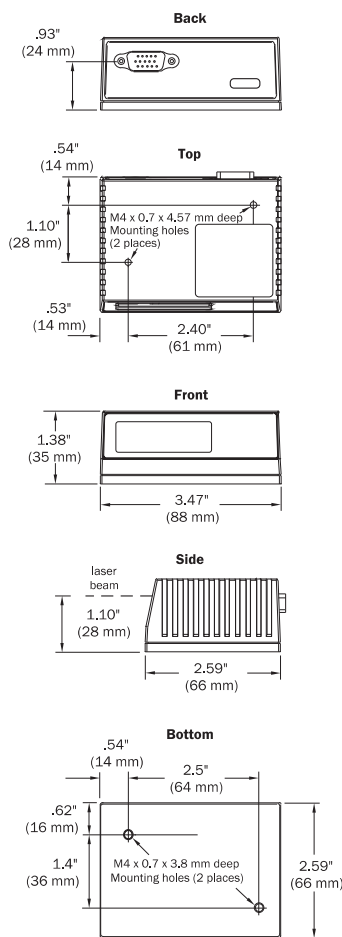
# MICROSCAN®

# MS-820 LASER BAR CODE SCANNER

## Specifications / Options

### MECHANICAL

Depth: 2.59" (66 mm)  
Width: 3.47" (88 mm)  
Height: 1.38" (35 mm)  
Weight: 7.5 oz. (212 g)



### ENVIRONMENTAL

Enclosure: die-cast aluminum, IP65 rated  
Operating temperature: 0° to 50°C (32° to 122°F)  
Storage Temperature: -50° to 75°C (-58° to 167°F)  
Humidity: Up to 90% (non-condensing)  
Ambient light immunity:

- 450 foot candles (indoor: fluorescent, incandescent, mercury vapor, sodium vapor)
- 1800 foot candles (soft outdoors)

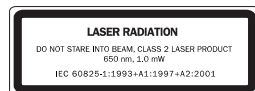
### EMISSIONS

Heavy industrial: EN 61000-6-2:1999  
Radiated emission: EN 55022:1998 Class A 30-1000 MHz  
Conducted emissions: EN 55022:1998 Class A .15-30 MHz

### LASER LIGHT

Type: Laser diode  
Output wavelength: 650 nm nominal  
Infrared Option: 780 nm nominal (MS-825)  
Operating life: 50,000 hours @ 25°C  
Safety class:

- Visible laser: CDRH Class II, 650 nm
- Infrared laser: CDRH Class I, 780 nm



### LOW DENSITY RANGE DATA

Narrow-bar-width	Read Range
.0075" (.191 mm)	10 to 12" (254 to 305 mm)
.010" (.254 mm)	7 to 16" (178 to 406 mm)
.015" (.381 mm)	6 to 19" (152 to 483 mm)
.020" (.508 mm)	5 to 22" (127 to 558 mm)
.040" (1.02 mm)	4 to 30" (102 to 762 mm)

### MEDIUM DENSITY RANGE DATA

Narrow-bar-width	Read Range
.0075" (.191 mm)	2 to 5.2" (51 to 132 mm)
.010" (.254 mm)	1.5 to 7.0" (38 to 178 mm)
.015" (.381 mm)	1.5 to 8.5" (38 to 216 mm)
.020" (.508 mm)	1.5 to 11" (38 to 280 mm)
.030" (.762 mm)	1.0 to 12" (25 to 304 mm)

### HIGH DENSITY RANGE DATA

Narrow-bar-width	Read Range
.0033" (.084 mm)	Call Microscan
.005" (.127 mm)	4 to 5.5" (102 to 140 mm)
.0075" (.191 mm)	3.5 to 6.75" (89 to 171 mm)
.010" (.254 mm)	3.25 to 8" (82 to 203 mm)
.015" (.381 mm)	3.25 to 9" (82 to 228 mm)

\*Ranges based on a Grade A, Code 39 label. If your read range falls outside the above ranges, please call Microscan.

### SCANNING PARAMETERS

Mirror type: Rotating, 10-faceted  
Optional raster mirror image: 10 raster scan lines over a 2° arc (or 0.500" raster height at 8" (203 mm) distance).  
Scan rate: Adjustable from 350 to 1100 scans/sec. Scan width angle: Typically 60°  
Pitch: ±50° max. Skew: ±40° max.  
Label contrast: 25% min. absolute dark to light differential at 650 nm wavelength.

### COMMUNICATION INTERFACE

Interface: RS-232/422/485  
Optional I/O: available for DeviceNet.

### PROTOCOLS

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

### CODE TYPES

Standard offering: Code 39, Codabar, Code 93, Interleaved 2 of 5, Code 128, and PDF417. Pharmacode (option)  
Applications Standards: UCC/EAN-128, AIAG

### ELECTRICAL

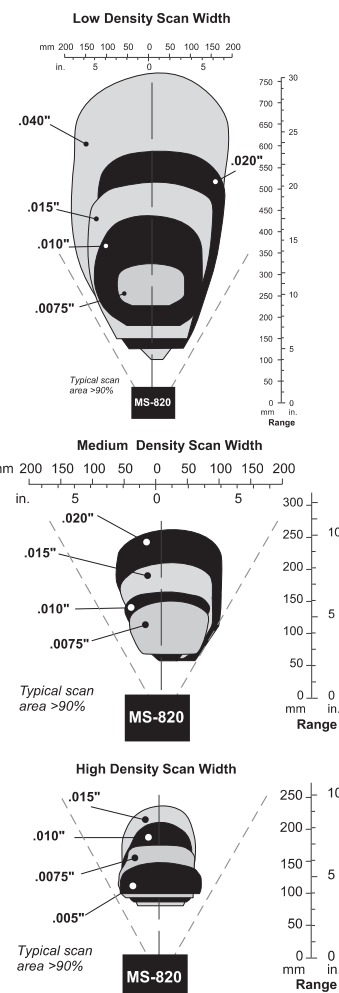
Power requirement: 10-28 VDC, 200 mV p-p max ripple, 120mA at 24 VDC (typ.)

### HOST CONNECTOR PIN ASSIGNMENTS

Type: 15-pin high density D-sub. plug

Pin No.	Host RS232	Host/Aux RS232	Host RS422/485	In/Out
1		Power +10 to 28 VDC		In
2	TxD	TxD	TxD(-)	Out
3	RxD	RxD	RxD(-)	In
4		Power/Signal Ground		
5		Trigger (-)		In
6	RTS	Aux Tx D	TxD(+)	Out
7		Output 1 (+)		Out
8		Default configuration <sup>a</sup>		In
9		Trigger (+)		In
10	CTS	Aux Rx D	RxD (+)	In
11		Output 3 (+)		Out
12		New Master (+)		In
13		Chassis ground <sup>b</sup>		
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.



### DISCRETE I/O

Trigger Input: Optoisolated, 4.5-28V rated, (12 mA at 24 VDC)  
New Master Input: Optoisolated, 4.5-28V rated, (12 mA at 24 VDC), New Master (-) to signal ground  
Outputs (1, 2 & 3): Optoisolated, 1-28V rated, (I<sub>CE</sub> <100 mA at 24 VDC, current limited by user)

### SAFETY CERTIFICATIONS

CDRH, FCC, UL/cUL, CE, BSMI



ISO 9001:2000  
Certified QMS

### ROHS/WEEE COMPLIANT

### ISO CERTIFICATION

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

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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**—One year limited warranty on parts and labor. Extended warranty available.

**MICROSCAN**

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