

## MS-820

**With its performance, versatility, and robustness, the MS-820 has universal appeal to any industry planning to automate or improve bar code tracking.**

The MS-820 scanner's capacity to read various bar code densities from 1 to 30 inches makes it the leader in the class of high-speed, fixed-mount industrial scanners. Using advanced technology in decoding, optics, and analog processing, the MS-820 can decode high density labels throughout its scan speed range.

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

## INDUSTRIAL BAR CODE SCANNER

**Extended Reading:** The MS-820 is capable of reading distances between small and large packages. It can read symbols out to 30 inches (76.2 cm) at a 60° scan angle, up to 10 inches (25.4 cm) wide.

**IP65 Enclosure:** Heavy-duty, die-cast aluminum housing and industrial sealing safeguard the circuitry and optical components from dust and moisture. This makes the MS-820 impervious to the harmful effects of industrial environments.

**Downloadable Software:** The MS-820 includes flash memory that allows firmware updates to occur on site.

**Real-time Controls:** Discrete input/output connections consisting of three optoisolated programmable outputs, one trigger input, and one programmable input provide versatile programming options.

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

**Versatile Mounting:** Blind-threaded mounting holes, located on the bottom and top of the scanner, eliminate the need for bulky accessory brackets. This allows the MS-820 to be mounted to any flat surface.



**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.

**Symbologies:**

Like all Microscan scanners, the MS-820 scans virtually all widely used bar code symbologies, including:

- PDF417
- Code 128
- Code 39
- Int 2 of 5
- Codabar
- UPC/EAN
- Code 93
- Pharmacode (option)

**Support Options:**

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



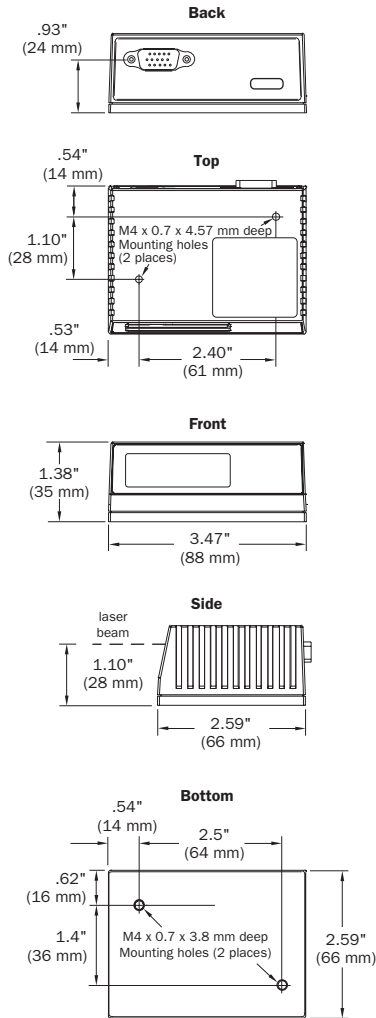
**Noise Protection:** Fully shielded circuitry protects the MS-820 from the invasion of electrical fast transients (EFT), electrical static discharge (ESD), and radio frequency interference (RF). Signal integrity is assured with circuitry specifications designed to International Electrotechnical Commission (IEC) standards of 801-4 Level 4 for EFT and 801-2 Level 4 for ESD.

# MS-820 INDUSTRIAL 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)	1.0 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

.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

.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-degree arc (or 0.500 inch raster height at 8-inch (203 mm) distance).  
**Scan rate:** Adjustable from 350 to 1100 scans/second  
**Scan width angle:** Typically 60°  
**Pitch:** ±50° maximum  
**Skew:** ±40° maximum  
**Label contrast:** 25% min. absolute dark to light differential at 650 nm wavelength.

### COMMUNICATION INTERFACE

**Interface:** RS-232/422/485  
**Optional Interface Box:** 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

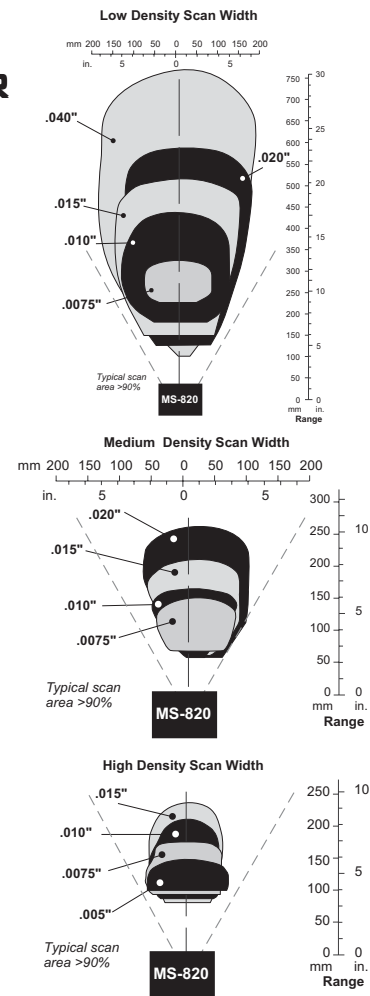
**Standard offering:** Code 39, Codabar, Code 93, Interleaved 2 of 5, Code 128, and PDF417. Pharmacode (option)  
**Applications Standards:** UCC/EAN-128, AIAG

### HOST CONNECTOR PIN ASSIGNMENTS

**Type:** 15-pin high density D-subminiature 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 TxD	TxD(+)	Out
7	Output 1 (+)			Out
8	Default configuration <sup>a</sup>			In
9	Trigger (+)			In
10	CTS	Aux RxD	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.



### ELECTRICAL

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

### 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 CERTIFICATION

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

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 Specifications subject to change.

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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