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 3 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 and heavy industrial rating makes it ideal for applications such as conveyors, assembly lines, or embedding within machinery.

MS-820

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 uses flash memory that allows firmware updates to occur onsite.
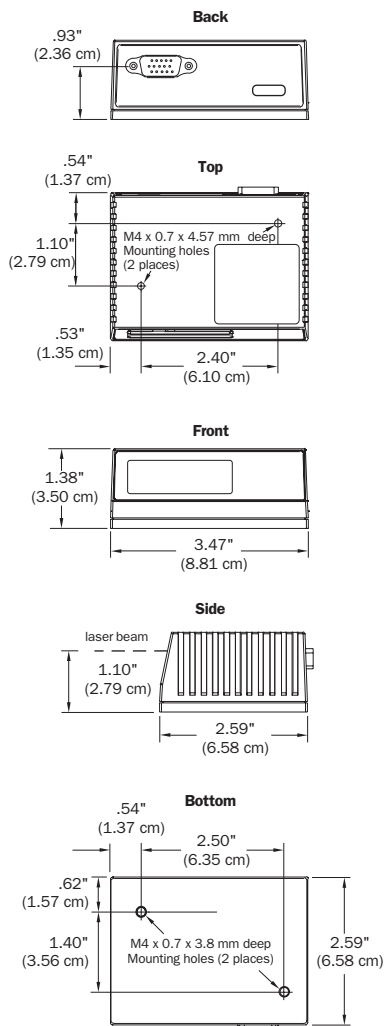

Noise Protection: Fully shielded circuitry protects the MS-820 from the invasion of electrical fast transients (EFT), electrical static discharge (ESD), and radio frequency interference (RF). Signal integrity is assured with circuitry specifications designed to International Electrotechnical Commission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

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 95, 98, NT, and 2000.

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

- PDF417
- Code 128
- Code 39
- I 2 of 5
- Codabar
- UPC/EAN
- Code 93

Support Options:
- Installation assistance
- Service agreements
- Training
- On-site support
- Extended warranty

MICROSCAN®

MS-820 INDUSTRIAL BAR CODE SCANNER

Specifications/Options

MECHANICAL
Depth: 2.59" (6.58 cm)
Width: 3.47" (8.81 cm)
Height: 1.38" (3.50 cm)
Weight: 7.5 oz. (212 g)

Back

.93"
(2.36 cm)

Top

.54"
(1.37 cm)

1.10"
(2.79 cm)

M4 x 0.7 x 4.57 mm deep
Mounting holes
(2 places)

.53"
(1.35 cm)

2.40"
(6.10 cm)

Front

1.38"
(3.50 cm)

3.47"
(8.81 cm)

Side

laser beam

1.10"
(2.79 cm)

2.59"
(6.58 cm)

Bottom

.54"
(1.37 cm)

2.50"
(6.35 cm)

.62"
(1.57 cm)

1.40"
(3.56 cm)

M4 x 0.7 x 3.8 mm deep
Mounting holes (2 places)

2.59"
(6.58 cm)

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	Read Range Scan Width
.0075" (.191 mm)	10 to 12" (25 to 30.5 cm)	N/A
.010" (.254 mm)	7 to 16" (17.8 to 40.6 cm)	10" at 12" (25.4 at 30.5 cm)
.015" (.381 mm)	6 to 19" (15.2 to 48.3 cm)	N/A
.020" (.508 mm)	5 to 22" (12.7 to 55.8 cm)	N/A
.040" (1.02 mm)	4 to 30" (10.2 to 76.2 cm)	N/A

HIGH DENSITY RANGE DATA

Narrow-bar-width	Read Range	Read Range Scan Width
.0033" (.084 mm)	Call Microscan	N/A
.005" (.127 mm)	4" to 5.5" (10.2 to 14 cm)	4" at 4.5" (10.2 at 11.4 cm)
.0075" (.191 mm)	3.5" to 6.75" (8.9 to 17.1 cm)	5" at 4.5" (12.7 at 11.4 cm)
.010" (.254 mm)	3.25" to 8" (8.2 to 20.3 cm)	N/A
.015" (.381 mm)	3" to 9" (7.6 to 22.9 cm)	N/A

*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 (20.3 cm) distance).
Scan rate: Adjustable from 350 to 1100 scans/second, default=400
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 Boxes: available for DeviceNet and Ethernet.

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.
Applications Standards: UCC/EAN-128, AIAG

HOST CONNECTOR 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	Ouput 1 (+)			Out
8	Default configuration[a]			In
9	Trigger (+)			In
10	CTS	Aux RxD	RxD (+)	In
11	Output 3 (+)			In
12	New Master (+)			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.

CONNECTOR
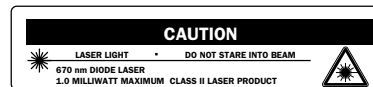**Type:** 15-pin high density D-subminiature plug

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): Opto-isolated, 1–28V rated, (I_{CE} <100 mA at 24 VDC, current limited by user)

SAFETY CERTIFICATIONS
CDRH, FCC, UL/cUL, TüV, CE, BSMI

CAUTION
LASER LIGHT · DO NOT STARE INTO BEAM
670 nm DIODE LASER
1.0 MILLIWATT MAXIMUM CLASS II LASER PRODUCT

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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