The MS-7000 combines fast scan speed with outstanding reliability, making it ideal for scanning fast-moving bar code labels. It houses a high-precision, 14-sided mirror that spins to project a laser beam through a single 40° arc. The MS-7000 offers incredible flexibility for scanning a variety of label qualities and densities through its embedded firmware, which allows operators to change motor speed from 600 to 1,000 scans per second. For custom applications, the MS-7000's autocalibration procedure finds the best combination of gain and tracking settings for ranges and scan speeds. Durably designed to withstand heavy-duty use in industrial applications, the MS-7000 is ideal for automated manufacturing, process control, route automation, and shipping systems.

MS-7000 | INDUSTRIAL BAR CODE SCANNER

Reading Versatility: The MS-7000 provides a depth of field up to 55 inches plus adjustable scan speeds from 600 to 1,000 scans per second. Its extended depth of field and high-speed scanning ability, combined with standard and ultrahigh-density options, enable the MS-7000 to handle virtually any label in any type of application.

NEMA 12 and IP64 Housing: Heavy-gauge, extruded aluminum housing assures reliability under the most demanding industrial applications by safeguarding the circuitry and optical components.

Sealed Twist-Lock Connectors: All three ports are securely adjoined with circular twist-lock connectors and sealed with neoprene gaskets, providing the most reliable and uninterrupted connection available.

Maintenance-Free, Brushless Motor: Is exceptionally reliable, spinning the scanning mirror at precise scanning rates of 600 to 1,000 scans per second, as selected by the user.

Thermo-Electric Cooling: The laser diode is thermoelectrically cooled for added protection in hot industrial environments, extending the operating temperature to 122°F (50°C).

Simple Integration: Built-in firmware makes the MS-7000 easy to configure, from a host computer terminal, a PC, or an ASCII terminal. By way of menus or command strings, operators can select between communications, operations, code types, user outputs, and raster setup.

Service Options:
• Installation assistance program
• On-site service
• Service agreements
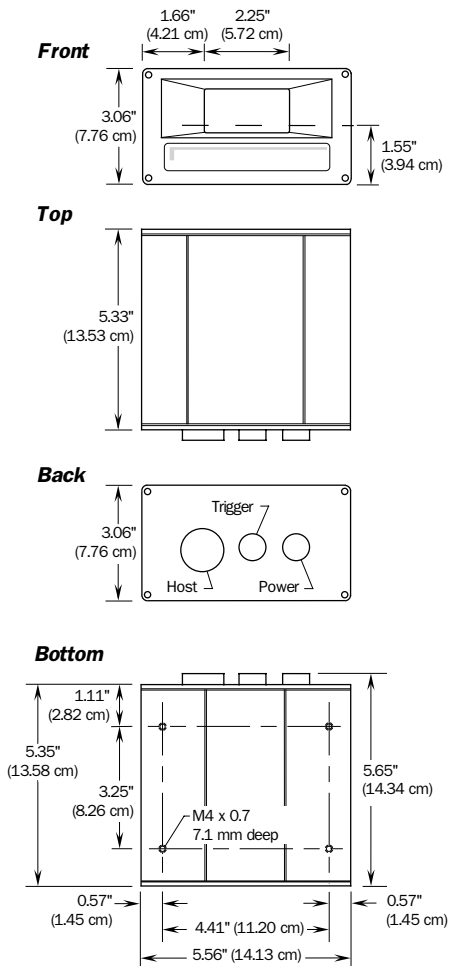• Extended warranty
• Training

Bar Code Symbologies: Like all Microscan products, the MS-7000 scans virtually all widely used bar code symbologies, including:

• Code 39	• UPC/EAN
• Codabar	• Code 128
• Interleaved 2 of 5	• Code 49
• Other codes are available, call Microscan for details.	

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MS-7000 INDUSTRIAL SCANNER
Specifications and Options

MECHANICAL

Front

1.66" (4.21 cm) 2.25" (5.72 cm)
3.06" (7.76 cm)
1.55" (3.94 cm)

Top

5.33" (13.53 cm)

Back

3.06" (7.76 cm)
Trigger
Host   Power

Bottom

1.11" (2.82 cm)
5.35" (13.58 cm)
3.25" (8.26 cm)
M4 x 0.7 7.1 mm deep
5.65" (14.34 cm)
0.57" (1.45 cm)
0.57" (1.45 cm)
4.41" (11.20 cm)
5.56" (14.13 cm)

ENVIRONMENTAL
Weight: 3.0 lbs. (1.36 kg)
Enclosure: NEMA 12 and IP64
Operating temperature (inside ambient): 32° to 122°F (0° to 50°C)
Humidity: Up to 90% (non-condensing)

LASER LIGHT
Type: Semiconductor visible laser diode, infrared Class I version available
Output wavelength: 670 nm nominal
Operating life: 10,000 hours min. @ 50°C (122°F)
Laser cooling: Thermostatically-controlled thermocooler
Safety class: CDRH Class II

SCANNING PARAMETERS
Mirror type: Rotating, 14-faceted
Scan rate: Adjustable from 600 to 1,000 scans/second
Scan width angle: 40°
Pitch: ±50°
Skew: ±40°
Label contrast: 25% min. absolute dark-to-light differential at 670 nm wavelength

COMMUNICATION
Interface: RS-232, RS-422, RS-485 multidrop

READ RANGES AND SCAN WIDTHS[1]

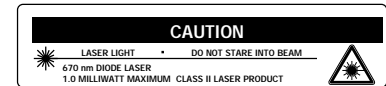| Narrow-bar-width	Read Range	Maximum Scan Width
LOW DENSITY		
.020" (.508 mm)	6" to 23" (15.2 to 58.4 cm)	13" (33.0 cm)
.030" (.762 mm)	6" to 34" (15.2 to 86.4 cm)	18" (45.7 cm)
.040" (1.02 mm)	10" to 44" (25.4 to 112 cm)	25" (63.5 cm)
.050" (1.27 mm)	10" to 55" (25.4 to 140 cm)	34" (86.4 cm)
HIGH DENSITY		
.010" (.254 mm)	6" to 11" (15.2 to 27.9 cm)	7.5" (19.1 cm)
.015" (.381 mm)	5" to 15" (12.7 to 38.1 cm)	10.5" (26.7 cm)
.020" (.508 mm)	3" to 16" (7.6 to 40.6 cm)	10" (25.4 cm)
.030" (.762 mm)	4" to 20" (10.2 to 50.8 cm)	13.5" (34.3 cm)
.040" (1.02 mm)	4" to 20" (10.2 to 50.8 cm)	13.5" (34.3 cm)
ULTRA HIGH DENSITY		
.005" (.127 mm)	2" to 4.25" (5.1 to 10.8 cm)	3.25" (8.3 cm)
.0075" (.191 mm)	2" to 5" (5.1 to 12.7 cm)	3.75" (9.5 cm)

[1]. At 1000 decodes per second using Code 39 grade A label.

PIN ASSIGNMENTS

Host Port Pin No.	Function	Trigger Port Pin No.	Function	Power Port Pin No.	Function
1	Chassis ground	1	Power ground	1	Power ground
2	Transmit data (RS-232)	2	+12 VDC (out)	2	Aux. Transmit data (RS-232)
3	Receive data (RS-232)	3	10 to 28 VDC (in)	3	10 to 28 VDC (in)
4	Request to send (RS-232)	4	Trigger input	4	Aux. Receive data (RS232)
5	Clear to send (RS-232)	5	Power ground	5	Chassis ground
6	Relay driver TTL	6	10 to 28 VDC (in)	6	10 to 28 VDC (in)
7	Signal ground (RS-232)	7	Relay contact 1 (1 watt)	7	Relay contact 1 (1 watt)
8	Noread	8	Noread output	8	Noread output
9	+5 VDC out (100 mA max.)	9	Relay contact 2 (1 watt)	9	Relay contact 2 (1 watt)
10	Trigger in. (0 VDC to +24 VDC)				
11	+12 VDC out (50 mA max.)				
12	−12 VDC out (20 mA max.)				
13	Signal ground				
14	Pwr In. (10 to 28 VDC unreg.)				
15	TXD+ (RS-422/RS-485)				
16	TXD− (RS-422/RS-485)				
17	Reserved				
18	Aux transmit data (RS-232)				
19	Aux receive data (RS-232)				
20	Power ground				
21	RXD+ (RS-422/RS-485)				
22	RXD− (RS-422/RS-485)				
23	Reserved				
24	Reserved				
25	Reserved				
26	Default config.				
27	New master				
28	CPU master reset				

CODE TYPES
Standard codes: Code 39, Codabar, Interleaved 2 of 5, UPC/EAN, Code 128, Code 49 optional

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 • User Defined • User Defined Multidrop

CONNECTORS
Type: Circular, Amp twist-lock connector (CPC series)

ELECTRICAL
Power requirement: Input 10 to 28 VDC unregulated @ 9W max. with less than 1V p-p ripple

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

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

ISO 9001/Cert. No. US96/0465

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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