

# MS-7100

With an exceptional read range capability from 2 inches (5.08 cm) to 4.58 feet (140 cm), the MS-7100 offers incredible flexibility for scanning a variety of label qualities and densities from a multitude of distances. Its embedded firmware allows operators to change the motor speed from 600 to 1,000 scans per second to accommodate fast-moving bar code labels. For custom applications, the MS-7100's autocalibration procedure finds the best combination of gain and tracking settings for ranges and scan speeds. Durably designed with sealed twist-lock connectors and an IP65 enclosure, the MS-7100 is protected for heavy-duty use in industrial applications, making it ideal for automated manufacturing, process control, route automation, and distribution systems.

## INDUSTRIAL BAR CODE SCANNER

**Reading Versatility:** The MS-7100 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-7100 to handle virtually any label in any type of application.

**IP65 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:** Exceptionally reliable motor spins 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-7100 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

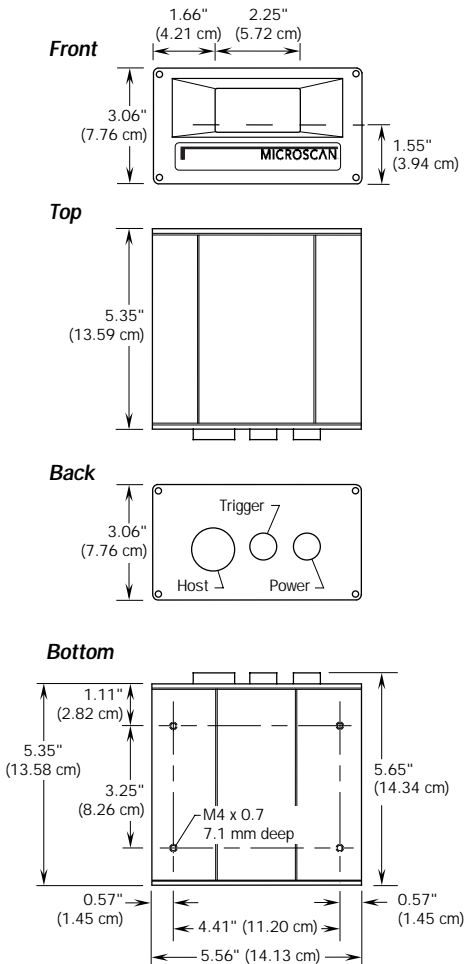
**Bar Code Symbolologies:** Like all Microscan products, the MS-7100 scans virtually all widely used bar code symbolologies, including:

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

# MS-7100 INDUSTRIAL SCANNER

## Specifications and Options

### MECHANICAL



### ENVIRONMENTAL

**Weight:** 3.0 lbs. (1.36 kg)  
**Enclosure:** IP65  
**Operating temperature (inside ambient):** 32° to 122°F (0° to 50°C)  
**Humidity:** Up to 90% (non-condensing)  
**EFT:** IEC801-3 level

### 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<sup>1</sup>

Narrow-bar-width	Read Range	Maximum Scan Width
<b>LOW DENSITY</b>		
.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)
<b>HIGH DENSITY</b>		
.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)
<b>ULTRA HIGH DENSITY</b>		
.005" (.127 mm)	2" to 3" (5.1 to 7.62 cm)	3.25" (8.3 cm)
.0075" (.191 mm)	2" to 4.5" (5.1 to 11.43 cm)	3.75" (9.5 cm)

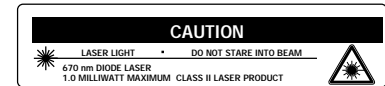
<sup>1</sup>: At 1000 decodes per second using Code 39 grade A label.

### PIN ASSIGNMENTS

Host Port		Trigger Port		Power Port	
Pin No.	Function	Pin No.	Function	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	Programmable output 1 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 output 3 TTL	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	Programmable output 2 TTL				
26	Default config.				
27	New master				
28	CPU master reset				

### SAFETY CERTIFICATIONS

CDRH, FCC, UL/cUL, TÜV, CE



ISO 9001/Cert. No. US96/0465

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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.

### 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

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