Unattended Scanning Systems

MATRIX-2000™

1D & 2D, Stacked, Postal Code Area CCD Reader

Extensive optical solutions

Autolearning

Multicode

VisiSet™ via Ethernet

General Description

Matrix-2000™ is an area CCD reader for industrial applications using bar codes, 2D, stacked and postal codes. The fully integrated reader combines a LED lighting system, image capturing, decoding and communication interfaces in a single compact product. Matrix-2000™ now offers full programmability via Ethernet, an Autolearning function for quick installation and set-up without a PC, higher dynamic reading performance and DPM (Direct Part Marking) decoding capabilities.

Besides the VisiSet™ software configuration, Matrix-2000™ Ethernet connectivity also includes several communication channels, such as TCP/IP socket for data and image transfer, HTTP server, FTP and mail client. These features allow high effectiveness in the fast growing Ethernet applications.

Matrix-2000™ DPM decoding capabilities permit the reading of DataMatrix and Dot Matrix codes directly marked with laser etching, dot peening and low resolution ink jet technologies. DPM technologies are widely used in automotive, aerospace and tooling manufacturing industries. In specific reading conditions, best results are obtained jointly with external lighting systems, available as Datalogic accessories.

Matrix-2000™ diagnostic software tools enable real time monitoring of code printing quality, position and orientation, exposure quality and decoding time. The Matrix-2XX2 DM models offer diagnostic software tools according to AIM standards.

Matrix-2000™ state-of-the-art decoding libraries are extremely effective on damaged and low quality bar code applications. The reader flexibility allows a smooth transition from standard bar code reading to 2D bar code symbologies.

Matrix-2000™ is ready for use in various applications, offering many optical solutions to guarantee high accuracy in identifying codes with different resolutions at various distances with the best reading performance in its class. Customized solutions for specific applications are also available upon request.

Features

- Up to 60 frames/s (3600 frames/min)
- Multicode reading in a single frame
- Over 6.0 m/s object speed
- 1D & 2D, stacked, postal code reading
- Autolearning function
- Code quality control (AIM)
- Ethernet configuration/data collection
- Image transfer capability via Ethernet
- Integrated LED lighting system
- Direct or 90° reading window

Applications

- WIP control / product traceability
- Document and mail processing
- PCB production line tracking
- Direct Part Marking (DPM) applications
- Semiconductor production line tracking
- Chemical and biomedical analysis machines
- Small objects/pharmaceutical packaging

DATALOGIC

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Specifications

ELECTRICAL CHARACTERISTICS

POWER SUPPLY	10 to 30 Vdc
POWER CONSUMPTION	8 W max.; 5 W typ.

MECHANICAL CHARACTERISTICS

DIMENSIONS	121 x 73 x 57 mm (4.76 x 2.87 x 2.24 in)
WEIGHT	380 g (13.40 oz)
CASE MATERIAL	Magnesium alloy

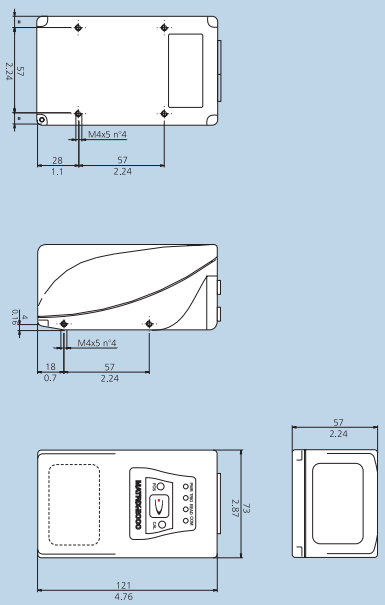
PERFORMANCE

OPTICAL FEATURES	VGA format CCD sensor / LED array lighting systems
FRAME RATE	Up to 60 frames/s
READING WINDOW	Direct or 90°
READING ANGLES	Max. Pitch: ± 35°; Tilt: 360°
READABLE SYMBOLOGIES	DataMatrix, QR Code, Maxicode, Aztec Code, PDF417, I 2/5, Code 128, Code 39, EAN/UPC, Pharmacode, postal codes and many more
COMMUNICATION INTERFACE	RS232 + optocoupled RS232/RS422/RS485 up to 115.2 Kbit/s Ethernet IEEE 802.3 10 Base T and IEEE 802.3U 100 BaseTx compliant
CONNECTIVITY modes	Pass Through, Master/Slave, Multiplexer, ETH point to point and network
DIGITAL INPUTS	Two SW programmable, optocoupled and polarity insensitive
DIGITAL OUTPUTS	Three SW programmable optocoupled
PROGRAMMING METHOD	Windows™ based configuration software (VisiSet™) via serial or Ethernet link
DIAGNOSTIC SW TOOLS	Code Quality Index, Exposure Indication, Code Position and Orientation, Decoding time. On 2XX2 models, AIM standards
USER INTERFACE	Beeper, Keypad Button, LEDs (PWR, TRIG, READ, COM, POS, CAL)

ENVIRONMENT

OPERATING TEMPERATURE	0 to 40 °C (32 to 104 °F)
STORAGE TEMPERATURE	-20 to 70 °C (-4 to 158 °F)
HUMIDITY	90% non condensing
VIBRATION RESISTANCE	IEC 68-2-6 test FC 1.5 mm; 10 to 55 Hz; 2 hours on each axis
SHOCK RESISTANCE	IEC 68-2-27 test EA 30 G; 11ms; 3 shocks on each axis
PROTECTION CLASS	IP64 (20XX models)

Dimensions



Reading Characteristics

MODEL / DESCRIPTION	MAX. 2D CODE RESOLUTION mm (mils)	MAX. LINEAR RESOLUTION mm (mils)	FOCUS DISTANCE (mm)	FIELD OF VIEW (mm x mm)	MIN. DEPTH OF FIELD (mm)
MATRIX-2011/2111 ULTRA HIGH DENSITY	0.13 (5)	0.10 (4)	60	17 x 13	23
MATRIX-2021/2121/2121-R HIGH DENSITY	0.19 (7.5)	0.10 (4)	85	25 x 19	15
MATRIX-2031/2131 STANDARD DENSITY	0.25 (10)	0.15 (6)	115	34 x 26	30
MATRIX-2041/2141/2141-R LOW DENSITY	0.38 (15)	0.20 (8)	80	54 x 40	35
MATRIX-2051/2151 MEDIUM RANGE	0.60 (24)	0.30 (12)	160	95 x 70	100
MATRIX-2061/2161 LONG RANGE	0.60 (24)	0.30 (12)	500	110 x 82	140
MATRIX-2032/2132 DIRECT MARKING SD	0.25 (10)	0.15 (6)	115	34 x 26	30
MATRIX-2042/2142 DIRECT MARKING LD	0.38 (15)	0.20 (8)	80	54 x 40	35

**20xx = serial models; 21xx = Ethernet models; 21xx-R = 90° reading window models. Customized models available upon request.*

Accessories

Cone Lighting System

Spot Lighting System

C-Box Line

Datalogic Communication Division
Printed in Italy in May 2004
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