Matrix 450N™ QUICK REFERENCE GUIDE

SUPPORT THROUGH THE WEBSITE

Your product Reference Manual including installation procedures is available for download on our website as well as the configuration program.

Datalogic provides several services as well as technical support through its website. Log on to www.datalogic.com and click on the SUPPORT > Unattended Scanning Systems category link. From this page you can select your product model from the dropdown list which gives you access to:

- Downloads including Data Sheets, Manuals, Software & Utilities, and Drawings, Repair Program for On-Line Return Material Authorizations (RMAs) plus Repair Center contact information;
- Service Program containing details about Maintenance Agreements;
- Technical Support through email or phone.

HMI X-PRESS™ INTERFACE

In normal operating mode the colors and meaning of the five LEDs are illustrated in the following table:

- READY (green) indicates the device is ready to operate.
- GOOD (green) confirms successful reading.
- TRIGGER (yellow) indicates the status of the reading phase.
- COM (yellow) indicates active communication on main serial port.
- STATUS (red) indicates a NO READ result.

During the reader startup (reset or restart phase), all the LEDs blink for one second.

![Matrix 450N Power, COM, I/O](image)

Matrix 450N Power, COM, I/O

The single push button gives immediate access to the following relevant functions:

- Test Mode with bar graph visualization to check static reading performance
- AutoFocus turns on the laser pointers or blue diamonds to aim the reader at the target. For liquid lens versions the autofocus procedure is incorporated into this function.
- AutoSetup to self-optimize and auto-configure photometry parameters
- AutoLearn to self-detect and auto-configure for reading unknown barcodes (by type and length)

WARNING: Matrix 450N can only receive input power through these connectors, it cannot source power from these connectors. See Reference Manual for details.

![Matrix 450N Lighting System Control, Power](image)

Matrix 450N Lighting System Control, Power

![Matrix 450N GigabitEthernet](image)

Matrix 450N GigabitEthernet

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### M16 19-pin Power, Serial (COM), and I/O Connector Pinout

<table>
<thead>
<tr>
<th>Pin</th>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>VDC</td>
<td>Power supply input voltage +</td>
</tr>
<tr>
<td>L</td>
<td>GND</td>
<td>Power supply input voltage -</td>
</tr>
<tr>
<td>K</td>
<td>CHASSIS</td>
<td>Cable shield internally connected by capacitor to the chassis</td>
</tr>
<tr>
<td>B</td>
<td>HA</td>
<td>External Trigger A (polarity insensitive)</td>
</tr>
<tr>
<td>C</td>
<td>HB</td>
<td>External Trigger B (polarity insensitive)</td>
</tr>
<tr>
<td>D</td>
<td>IA</td>
<td>Input A (polarity insensitive)</td>
</tr>
<tr>
<td>E</td>
<td>IB</td>
<td>Input B (polarity insensitive)</td>
</tr>
<tr>
<td>F</td>
<td>O1+</td>
<td>Output 1 +</td>
</tr>
<tr>
<td>G</td>
<td>O1-</td>
<td>Output 1 -</td>
</tr>
<tr>
<td>H</td>
<td>O2+</td>
<td>Output 2 +</td>
</tr>
<tr>
<td>I</td>
<td>O2-</td>
<td>Output 2 -</td>
</tr>
<tr>
<td>S</td>
<td>RX</td>
<td>Auxiliary RS232 RX</td>
</tr>
<tr>
<td>Q</td>
<td>TX</td>
<td>Auxiliary RS232 TX</td>
</tr>
<tr>
<td>E</td>
<td>C+</td>
<td>RS-485 network</td>
</tr>
<tr>
<td>P</td>
<td>D+</td>
<td>RS-485 network</td>
</tr>
</tbody>
</table>

### M12 8-pin Lighting System Connector Pinout

<table>
<thead>
<tr>
<th>Pin</th>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SPOT1</td>
<td>Red spot control signal</td>
</tr>
<tr>
<td>2</td>
<td>STROBE</td>
<td>Illuminator control signal</td>
</tr>
<tr>
<td>3</td>
<td>SPOT2</td>
<td>Green spot control signal</td>
</tr>
<tr>
<td>4</td>
<td>AMING</td>
<td>Aiming lasers control signal</td>
</tr>
<tr>
<td>5</td>
<td>LDA</td>
<td>12C channel data signal</td>
</tr>
<tr>
<td>6</td>
<td>LDL</td>
<td>12C channel clock signal</td>
</tr>
<tr>
<td>7</td>
<td>GND</td>
<td>Power supply input voltage negative</td>
</tr>
<tr>
<td>8</td>
<td>VOC</td>
<td>Power supply input voltage positive</td>
</tr>
</tbody>
</table>

### M12 8-Pin GigabitEthernet Network Connector Pinout

<table>
<thead>
<tr>
<th>Pin</th>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DB-</td>
<td>Channel B bi-directional data (negative pin)</td>
</tr>
<tr>
<td>2</td>
<td>DD+</td>
<td>Channel D bi-directional data (positive pin)</td>
</tr>
<tr>
<td>3</td>
<td>DD-</td>
<td>Channel D bi-directional data (negative pin)</td>
</tr>
<tr>
<td>4</td>
<td>DA+</td>
<td>Channel A bi-directional data (positive pin)</td>
</tr>
<tr>
<td>5</td>
<td>DA-</td>
<td>Channel A bi-directional data (negative pin)</td>
</tr>
<tr>
<td>6</td>
<td>DC+</td>
<td>Channel C bi-directional data (positive pin)</td>
</tr>
<tr>
<td>7</td>
<td>DC-</td>
<td>Channel C bi-directional data (negative pin)</td>
</tr>
<tr>
<td>8</td>
<td>DA-</td>
<td>Channel B bi-directional data (positive pin)</td>
</tr>
</tbody>
</table>

### LT-03x Input Power

<table>
<thead>
<tr>
<th>Pin</th>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VDC</td>
<td>Power supply input voltage positive</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
<td>Power supply input voltage negative</td>
</tr>
</tbody>
</table>

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**TECHNICAL FEATURES**

**ELECTRICAL FEATURES**

- **Power**
  - Supply Voltage (Vdc): 24 Vdc ± 20%
  - Consumption (A) Max: 2.5 A (0.5 A Matrix 450N, 2 A LT-03x)
- **Communication Interfaces**
  - RJ-45
  - RS-232
- **Auxiliary**
  - RS-232 Full-duplex
- **USB**
  - USB 2.0

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**COMMUNICATION INTERFACES**

- RS-232
- Full-duplex
- USB 2.0

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**OPTICAL FEATURES**

- **Inputs**
  - Opto-coupled and polarity insensitive (see Reference Manual for details)
- **Outputs**
  - Opto-coupled (see Reference Manual for details)

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**TECHNICAL FEATURES**

- **Power**
  - Supply Voltage: 24 Vdc ± 20%
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- **Communication Interfaces**
  - RJ-45
  - RS-232
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  - RS-232 Full-duplex
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**COMMUNICATION INTERFACES**

- RS-232
- Full-duplex
- USB 2.0

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**OPTICAL FEATURES**

- **Inputs**
  - Opto-coupled and polarity insensitive (see Reference Manual for details)
- **Outputs**
  - Opto-coupled (see Reference Manual for details)

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**PHYSICAL FEATURES**

- **Dimensions**
  - Matrix 450N: 123 x 64 x 143 mm (4.8 x 2.5 x 5.6 in)
  - LT-03x: 202 x 213 x 179 mm (8.0 x 8.4 x 7.1 in)
- **Weight**
  - (Lt-03x) 600 g (2.1 lbs)
- **Material**
  - Aluminium

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**ENVIRONMENTAL FEATURES**

- **Operating Temperature**
  - 0 to 50 °C (32 to 122 °F)
- **Storage Temperature**
  - -20 to 70 °C (-4 to 158 °F)
- **Humidity**
  - 90% non-condensing
- **Vibration Resistance**
  - 1.5 mm @ 5 to 9 Hz; 0.5 g @ 9 to 150 Hz; 2 g @ 70 to 500 Hz; 2 hours on each axis
- **Shock Resistance**
  - EN 60068-2-27: 30g; 11 ms; 3 shocks on each axis
- **Protection Class**
  - IP65

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**USER INTERFACE**

- **LED Indicators**
  - Power, Ready, Good, Trigger, Com, Status, Ethernet, Network, Green Spot (see Reference Manual for other LEDs)
- **X-PRESS™**
  - Keypad & Button (configure via DL CODE™)

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**SOFTWARE FEATURES**

- **Readable Code Symbologies**
  - 1D and stacked
    - Codabar
    - Code 93
    - Pharmacode
    - EAN-8/13 - UPCA/E (including Addon 2 and Addon 5)
    - GS1 DataBar Family
    - Composite Symbologies
- **PDF417**
  - Standard and Micro PDF417
  - Code 128 (GS1-128)
  - Code 39 (Standard and Full ASCII)
  - Code 32
- **2D**
  - MAXICODE
  - Micro QR Code
  - Aztec Code
  - Data Matrix ECC 200 (Standard, GS1 and Direct Marking)
  - QR Code (Standard and Direct Marking)
  - AZTEC
  - Australia Post
  - Royal Mail 4 State Customer
  - Kix Code
  - Japan Post
  - PLANET
  - POSTNET
  - POSTNET (+BB)
  - Intelligent Mail
  - Swedish Post

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**COMPLIANCE**

**CE COMPLIANCE**

CE marking states the compliance of the product with essential requirements listed in the applicable European directive. Since the directives and applicable standards are subject to continuous updates, and since Datalogic promptly adopts these updates, therefore the EU declaration of conformity is a living document. The EU declaration of conformity is available for competent authorities and customers through Datalogic commercial reference contacts. Since April 2017, the main European directives applicable to Datalogic products require inclusion of an adequate assessment and analysis of the risks. This evaluation was carried out in relation to the applicable points of the standards listed in the Declaration of Conformity. Datalogic products are mainly designed for integration purposes into more complex systems. For this reason it is under the responsibility of the system integrator to do a new risk assessment regarding the final installation.

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**EMC COMPLIANCE**

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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**EAG COMPLIANCE**

EAN-8/13 - UPC-A/E
- Code 32
- Code 39 (Standard and Full ASCII)
- Code 128 (GS1-128)
- Codabar
- Pharocode
- EAN-8/13 - UPCA/E (including Addon 2 and Addon 5)
- GS1 DataBar Family
- Composite Symbologies
- Data Matrix ECC 200 (Standard, GS1 and Direct Marking)
- QR Code (Standard and Direct Marking)
- Micro QR Code
- MAXICODE
- Aztec Code
- Australia Post
- Royal Mail 4 State Customer
- Kix Code
- Japan Post
- PLANET
- POSTNET
- POSTNET (+BB)
- Intelligent Mail
- Swedish Post

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**POWER SUPPLY**

This product is intended to be connected to a UL Listed Plug-in Power Unit marked LPS or "Class 2."