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For quick access, from the home page click on the search icon, and type in the name of the product you're looking for. This allows you access to download Data Sheets, Manuals, Software & Utilities, and Drawings. Hover over the Support & Service menu for access to Services and Technical Support.

### 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.

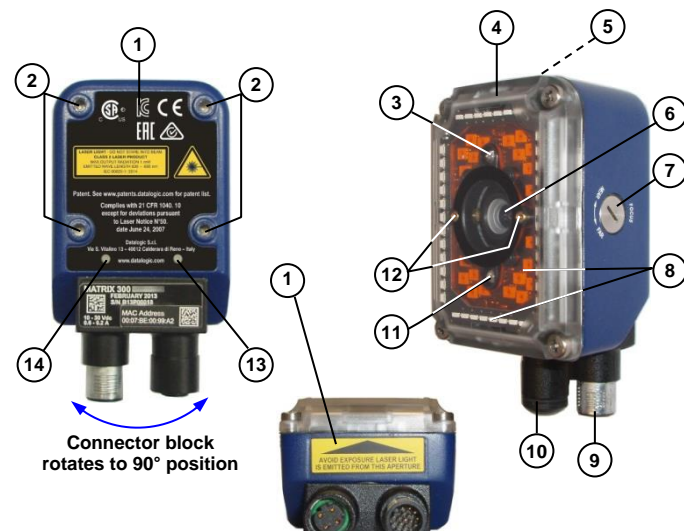


HMI X-PRESS™

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

- Test Mode with bar graph visualization to check static reading performance
- Aim/Focus 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)

### Matrix 300N™ 1.3 MP Manual / Software Adjustable Focus Models



General View

- ① Device Class and Warning Labels
- ② Mounting Holes (4)
- ③ Good Read LED (green)
- ④ Lens Cover
- ⑤ HMI X-PRESS™ Interface
- ⑥ Lens
- ⑦ Focus Adjustment Screw (Manual Adjustable Focus Models only)
- ⑧ Internal Illuminator
- ⑨ Power - Serial - I/O Connector
- ⑩ Ethernet Connector
- ⑪ No Read LED (red)
- ⑫ Aiming System Laser Pointers
- ⑬ Ethernet Connection LED
- ⑭ Power On LED

### Matrix 210N™ Software Adjustable Focus Models



- ① Device Class and Warning Labels
- ② Mounting Holes (4)
- ③ Ethernet Connection LED
- ④ Ethernet Connector
- ⑤ Power - Serial - I/O Cable Connector
- ⑥ Power On LED
- ⑦ HMI X-PRESS™ Interface
- ⑧ Lens
- ⑨ Internal Illuminator
- ⑩ Good Read LED Spot (green)
- ⑪ Aiming System Laser Pointers
- ⑫ No Read LED Spot (red)

### Matrix 210N™ Fixed Focus Models



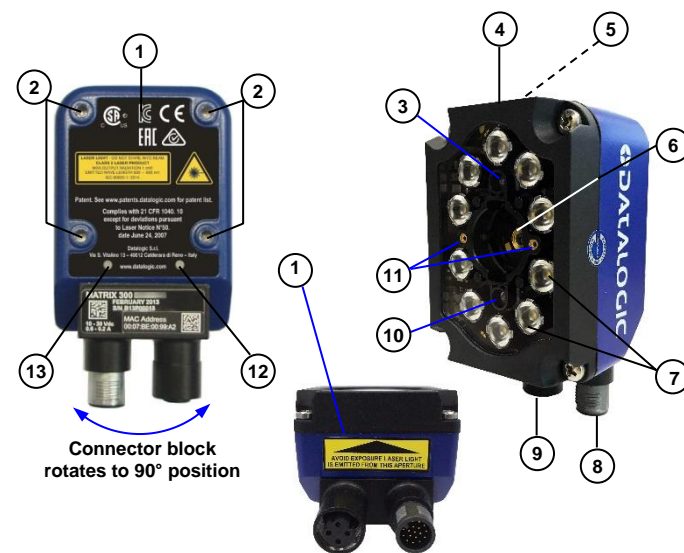
- ① Device Labels
- ② Mounting Holes (4)
- ③ Ethernet Connection LED
- ④ Ethernet Connector
- ⑤ Power - Serial - I/O Cable Connector
- ⑥ Power On LED
- ⑦ HMI X-PRESS™ Interface
- ⑧ Aiming System (Blue Ring)
- ⑨ Lens
- ⑩ Internal Illuminator
- ⑪ Good Read LED Spot (green)

### Matrix 410N™ (shown with Lens and Illuminator accessories)



- ① Device Class and Warning Labels
- ② Mounting Holes (12)
- ③ Lens Cover
- ④ Lens (separate accessory)
- ⑤ Internal Illuminator (separate accessory)
- ⑥ HMI X-PRESS™ Interface
- ⑦ Power On LED
- ⑧ Power - Serial - I/O Connector
- ⑨ Ethernet Connector
- ⑩ Ethernet Connection LED

### Matrix 300N™ 2 MP Software Adjustable Focus Models



General View

- ① Device Class and Warning Labels
- ② Mounting Holes (4)
- ③ Good Read LED (green)
- ④ Lens Cover
- ⑤ HMI X-PRESS™ Interface
- ⑥ Lens
- ⑦ Internal Illuminator
- ⑧ Power - Serial - I/O Connector
- ⑨ Ethernet Connector
- ⑩ No Read LED (red)
- ⑪ Aiming System Laser Pointers
- ⑫ Ethernet Connection LED
- ⑬ Power On LED

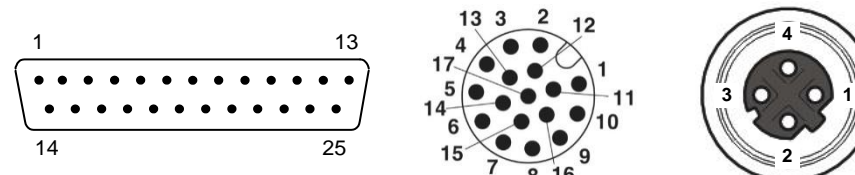
### Power - Serial - I/O Connector Pinout

25-pin	17-pin	Name	Function	25-pin	17-pin	Name	Function
1		CHASSIS	Cable shield connected to chassis	18	6	I1A	External Trigger (polarity insensitive)
20	14**	RX	Receive Data of Auxiliary RS232	19	5	I1B	External Trigger (polarity insensitive)
21	4**	TX	Transmit Data of Auxiliary RS232	6	13	I2A	Input Signal 2 (polarity insensitive)
8	9**	O1+	Configurable Digital Output 1 - positive pin	10	3	I2B	Input Signal 2 (polarity insensitive)
22	-	O1-	Configurable Digital Output 1 - negative pin	23	7	ID+	ID-NET™ network +
11	8**	O2+	Configurable Digital Output 2 - positive pin	24	15	ID-	ID-NET™ network -
12	-	O2-	Configurable Digital Output 2 - negative pin	9, 13	1	Vdc	Power Supply Input Voltage +
14, 15		nc	not connected	7, 25	2	GND	Power Supply Input Voltage -
16, 17	16	nc	not connected				

### Main Interface Pinout

25-pin	17-pin	RS232	RS422 Full Duplex
2	17	TX	TX+
3	11	RX	***RX+
4	12	RTS	TX-
5	10	CTS	***RX-

\*\* referenced to GND; Outputs become opto-isolated and polarity sensitive when connected through the CBX connection box. See Reference Manual for connection details.  
\*\*\* do not leave floating. See Reference Manual for connection details.



Standard M12 D-Coded 4-pin female connectors are provided for the Ethernet and Profinet-IO interfaces which are IEEE 802.3u 100 BaseTx compliant. Use Cat 5e or superior cables.  
Pin 1 = TX+; Pin 2 = RX+  
Pin 3 = TX-; Pin 4 = RX-



## TECHNICAL FEATURES

ELECTRICAL FEATURES	210N	300N	300N PoE	410N
<b>Power</b> Supply Voltage (Vdc) Consumption (A) Max.	10 to 30 0.4 to 0.15	10 to 30 0.7 to 0.2	48 13 W	10 to 30 0.8 to 0.27
<b>Communication Interfaces</b> Main - RS232 - RS422 full-duplex Auxiliary – RS232 ID-NET™ Ethernet <sup>1</sup>	2400 to 115200 bit/s 2400 to 115200 bit/s 2400 to 115200 bit/s Up to 1Mbaud 10/100 Mbit/s			
<b>Inputs:</b>	Opto-coupled and polarity insensitive (see Reference Manual for details)			
<b>Outputs:</b>	Opto-coupled (see Reference Manual for details)			
<b>OPTICAL FEATURES</b> (see Reference Manual for details)				

PHYSICAL FEATURES	210N Liquid Lens	210N Straight	210N 90°	300N (connectors at 0° position)	410N
Dimensions mm (inch)	61 x 25 x 45 (2.4 x 1 x 1.8)	50 x 25 x 45 (2.0 x 1 x 1.8)	54 x 32 x 45 (2.1 x 1.3 x 1.8)	<b>1.3 MP models</b> 95 x 54 x 43 (3.7 x 2.1 x 1.7) <b>2 MP models</b> 95 x 54 x 45 (3.7 x 2.1 x 1.8)	125 x 65 x 87 (4.9 x 2.6 x 3.4)
Weight grams (ounces)	237 (8.4) with cable	204 (7.2) with cable	190 (6.7) with cable	<b>1.3 MP models</b> 238 (8.4) <b>2 MP models</b> 236.5 – 274.5	482 (17)
Material	ZAMA/Nickel Finish	ZAMA	Aluminium	Aluminium	Aluminium

ENVIRONMENTAL FEATURES				
Operating Temperature <sup>2 3</sup>	0 to 50 °C (32 to 122 °F)			
Storage Temperature	-20 to 70 °C (-4 to 158 °F)			
Max. Humidity	90% non-condensing			
Vibration Resistance EN 60068-2-6	14 mm @ 2 to 10 Hz; 1.5 mm @ 13 to 55 Hz; 2 g @ 70 to 500 Hz; 2 hours on each axis			
Bump Resistance EN 60068-2-29	30g; 6 ms; 5000 shocks on each axis			
Shock Resistance EN 60068-2-27	30g; 11 ms; 3 shocks on each axis			
Protection Class <sup>4</sup> EN 60529	IP65 (IP54 for ESD models)		IP65 and IP67	IP65 and IP67
USER INTERFACE				
LED Indicators	Power; Ready; Good; Trigger; Com; Status; Ethernet Network; Green Spot; (see Reference Manual for other LEDs)			
Other	X-PRESS™ Keypad Button (configurable via DL.CODE™), Beeper			

SOFTWARE FEATURES				
Readable Code Symbolologies				
1-D and stacked		2-D	POSTAL	
<ul style="list-style-type: none"> <li>PDF417 Standard and Micro PDF417</li> <li>Code 128 (GS1-128)</li> <li>Code 39 (Standard and Full ASCII)</li> <li>Code 32</li> <li>MSI</li> <li>Standard 2 of 5</li> <li>Matrix 2 of 5</li> <li>Interleaved 2 of 5</li> </ul>	<ul style="list-style-type: none"> <li>Codabar</li> <li>Code 93</li> <li>Pharmacode</li> <li>EAN-8/13 - UPC-A/E (including Addon 2 and Addon 5)</li> <li>GS1 DataBar Family</li> <li>Composite Symbolologies</li> </ul>	<ul style="list-style-type: none"> <li>Data Matrix ECC 200 (Standard, GS1 and Direct Marking)</li> <li>QR Code (Standard and Direct Marking)</li> <li>Micro QR Code</li> <li>MAXICODE</li> <li>Aztec Code</li> </ul>	<ul style="list-style-type: none"> <li>Australia Post</li> <li>Royal Mail 4 State Customer</li> <li>Kix Code</li> <li>Japan Post</li> <li>PLANET</li> <li>POSTNET</li> <li>POSTNET (+BB)</li> <li>Intelligent Mail</li> <li>Swedish Post</li> </ul>	
<b>Operating Mode</b>	CONTINUOUS, ONE SHOT, PHASE MODE, PACKTRACK™			
<b>Configuration Methods</b>	X-PRESS™ Human Machine Interface Windows-based SW (DL.CODE™) via Ethernet Host Mode Programming sequences sent over Serial or Ethernet TCP interfaces			
<b>Parameter Storage</b>	Permanent memory (Flash)			

<sup>1</sup> the embedded Ethernet interface supports application protocols: TCP/IP, EtherNet/IP, PROFINET-IO, Modbus TCP

<sup>2</sup> high ambient temperature applications should use metal mounting bracket for heat dissipation.

<sup>3</sup> for all liquid lens models (Matrix 210N™ and Matrix 300N™) operating temperature is 0 to 45 °C (32 to 113 °F).

<sup>4</sup> when correctly connected to IP67 cables with seals, and for Matrix 410N™ models the Lens Cover is correctly mounted.

## PATENTS

See [www.patents.datalogic.com](http://www.patents.datalogic.com) for patent list.

These products are covered by one or more of the following patents:

**Matrix 210N™**  
Utility patents: EP0996284B1, EP0999514B1, EP1014292B1, EP1128315B1, EP1396811B1, EP1413971B1, EP1804089B1, EP2315156B1, EP2517148B1, EP2649555B1, JP4435343B2, JP4571258B2, JP5192390B2, US6512218, US6616039, US6808114, US6997385, US7053954, US7387246, US8058600, US8113430, US8368000, US8743263, US8888003, US8915443, US9268982, US9430689, US9482793, ZL200680050007.8, ZL200880132595.9, ZL200980163411.X

**Matrix 300N™**  
Design patents: EP002197715, JP1521956, JP1522252, USD765755, ZL201330393980.2  
Utility patents: EP0996284B1, EP0999514B1, EP1014292B1, EP1128315B1, EP1396811B1, EP1413971B1, EP2517148B1, EP2649555B1, JP4435343B2, JP4571258B2, US6512218, US6616039, US6808114, US6997385, US7053954, US7387246, US8058600, US8368000, US8743263, US8888003, US8915443, US9268982, US9482793, ZL200880132595.9, ZL200980163411.X

**Matrix 410N™**  
Utility patents: EP0996284B1, EP0999514B1, EP1014292B1, EP2168076B1, EP2517148B1, EP2649555B1, IT1404187, JP4435343B2, JP4571258B2, JP5947819B2, US6512218, US6616039, US7053954, US8058600, US8289387, US8368000, US8888003, US8915443, US9268982, US9349047, ZL200780053699.6, ZL200980163411.X, ZL201280010789.8

## COMPLIANCE

See the relative Matrix Reference Manual for the Declaration of Conformity.

Only connect Ethernet and dataport connections to a network which has routing only within the plant or building and no routing outside the plant or building.

## EMC COMPLIANCE

In order to meet the EMC requirements:

- connect reader chassis to the plant earth ground by means of a flat copper braid shorter than 100 mm;
- connect pin "Earth" of the CBX connection box to a good Earth Ground;

## 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 20<sup>th</sup>, 2016 the main European directives applicable to Datalogic products require inclusion of an adequate analysis and assessment of the risk(s). 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.

### Warning

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.

## FCC COMPLIANCE

Modifications or changes to this equipment without the expressed written approval of Datalogic could void the authority to use the equipment.

This device complies with PART 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference which may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## EAC COMPLIANCE

Customs Union:

The CU Conformity certification has been achieved; this allows the Product to bear the Eurasian mark of conformity.

## LED SAFETY

LED emission according to EN 62471.

## LASER SAFETY

All Matrix 210N™ liquid lens models, all Matrix 300N™ models, and Matrix 410N™ with LT-007 illuminator accessory contain two aiming Laser LEDs used to position the reader.

These products conform to the applicable requirements of IEC 60825-1 and comply with 21 CFR 1040.10 except for deviations pursuant to Laser Notice N° 50, date June 24, 2007. These products are classified as Class 2 laser products according to IEC 60825-1 regulations.



**WARNING:** Use of controls or adjustments or performance of procedures other than those specified herein may result in exposure to hazardous visible laser light.

Disconnect the power supply when opening the device during maintenance or installation to avoid exposure to hazardous laser light. The laser beam can be switched on or off through a software command.

The following warning label content is applied to each of the laser equipped products indicated in the respective General View illustration (item ①) on the opposite page.



Example Laser Warning Labels

Produit(s) conforme selon 21CFR 1040.10 sauf des dérogations relatives à la Laser Notice N° 50, date Juin 24, 2007.

Dans le paquet il y a l'étiquette(s) pour les pays où le texte d'avertissement en français sont obligatoires. Le(s) mettre sur le produit à la place de la version anglaise.



Exemple d'étiquettes d'avertissement laser

## POWER SUPPLY

This product is intended to be installed by Qualified Personnel only.

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

## LEGAL NOTICES

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