



## MX-E25/45

### Industrial Vision Processor

#### with PNP (sourcing) I/O

#### DESCRIPTION

This guide covers MX-E25/45 Industrial Vision Processor models that contain the letter "P". For example MX-E25-P-2. These models provide PNP (sourcing) inputs and outputs. MX-E25/45 offer the most powerful and flexible way to solve even complex machine vision applications.

- Rugged IP20 housing
- Low Maintenance
- 16 Inputs and 16 Outputs
- Up to 4 GigE cameras
- Easily Accessed connectors

#### SYSTEM SPECIFICATIONS

##### Industrial Vision Processors

MX-E25: Intel Celeron 1.7 GHz, 2 cores

MX-E45: Intel Celeron 2.4 GHz, 2 cores

##### Storage

128 GB SSD

##### GigE camera ports

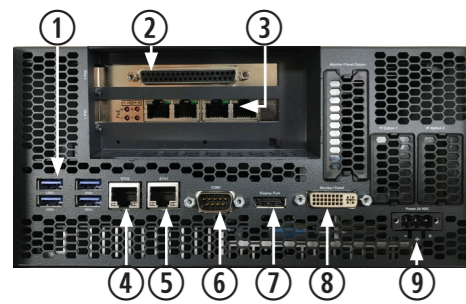
MX-E25-2/MX-E45-2: 2 ports (all are PoE capable)

MX-E25-4/MX-E45-4: 4 ports (all are PoE capable)

All MX-E25/45 Industrial Vision Processors have the following specifications:

- HD graphics (1920x1200)
- 2 x 10/100/1000 Mbps Base-T Network Interface
- Ethernet/IP, Modbus TCP, OPC, PROFINET communications supported
- 1 x RS232 Serial port
- 16 x Optically Isolated Digital In + 16 x Optically Isolated Digital Out
- Microsoft Windows 10 IoT Enterprise 2016 64-bit

#### GENERAL VIEW



- 1) USB 3.0 Keyboard/Mouse
- 2) 37-pin D-Sub Digital I/O
- 3) Camera connectors
- 4) Ethernet 2
- 5) Ethernet 1
- 6) COM 1 x RS-232 Serial Port
- 7) Monitor output: Display Port
- 8) Monitor output: DVI-I
- 9) Supply Voltage Connection

#### SUPPLY VOLTAGE CONNECTION

Power Connector  
+ 24VDC Supply Plus  
GND Functional Ground\*  
- 24VDC Supply Minus



Supplied Power Plug



\*Connect the ground using a conductor with minimum 2,5mm<sup>2</sup> cross section

#### HASP KEY USB PORT

- 1) Reset button
- 2) USB Port Hasp Key

To enable cameras and licenses, insert the provided Hasp key in the USB port (labeled USB5), located behind the Front Cover.

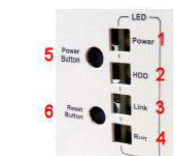


Behind front Cover

#### STATUS LEDs AND BUTTONS

- 1) Power, Green
- 2) HDD, Yellow
- 3) Link, Yellow
- 4) Run, Green
- 5) Power Button
- 6) Reset Button

Power Button: Press and release to turn on the unit or shut down the OS and switch off the unit. Press and hold to switch off without OS shutdown. Reset Button: Triggers a hardware and PCI reset. The unit is restarted.



Behind Front Cover

#### COMMUNICATIONS

Camera communication uses Cat6 Ethernet cable and provides POE for M1xx and E1xx cameras. Use only Datalogic provided cables.

#### DIGITAL I/O CABLES TERMINALS AND CONNECTIONS

Cable	Part Number
Digital I/O 37-pin to Terminal Block 248-01 10	606-0675-xx
Digital I/O 37-pin to pigtail (remove one end)	606-0675-xx

NOTE: Do not disconnect the cable at the connector while power is on.

Pin/Terminal Number	Color Code	Signal Name
1	Black	Input Minus (Note 1)
2	Brown	Input 1- and Event 1-
3	Red	Input 2- and Event 2-
4	Orange	Input 3-
5	Yellow	Input 4-
6	Green	Input 5-
7	Blue	Input 6-
8	Purple	Input 7-
9	Gray	Input 8-
10	White	Input 9-
11	Pink	Input 10-
12	Light Green	Input 11-
13	Black/White	Input 12-
14	Brown/White	Input 13-
15	Red/White	Input 14-
16	Orange/White	Input 15-
17	Green/White	Input 16-
18	Blue/White	Output Plus (Note 2)
19	Purple/White	No Connection
20	Red/Black	No Connection
21	Orange/Black	Output 1
22	Yellow/Black	Output 2
23	Green/Black	Output 3
24	Gray/Black	Output 4
25	Pink/Black	Output 5
26	Pink/Red	Output 6
27	Pink/Blue	Output 7
28	Pink/Green	Output 8
29	Light Blue	Output 9
30	Light Blue/Black	Output 10
31	Light Blue/Red	Output 11
32	Light Blue/Blue	Output 12
33	Light Blue/Green	Output 13
34	Gray/Red	Output 14
35	Gray/Green	Output 15
36	Purple/Black	Output 16
37	Blue/Black	Output Plus (Note 2)

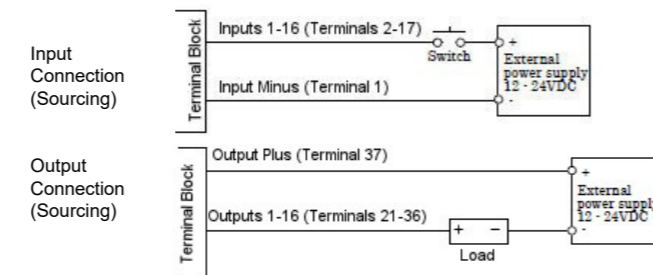
Pin 1 → Female Connector Solder Side

NOTES:  
1: Common Minus for input ports (External 12 to 24 VDC Minus)  
2: Common Plus for output ports (Not an output voltage source. External 12 to 24 VDC Plus is required)

#### I/O CONFIGURATION

Vision Program Manager (VPM) software installed on the processor is used to create vision programs and configure input and output response. Refer to the Impact Reference Guide for programming details.

#### EXAMPLE I/O CIRCUIT DIAGRAMS

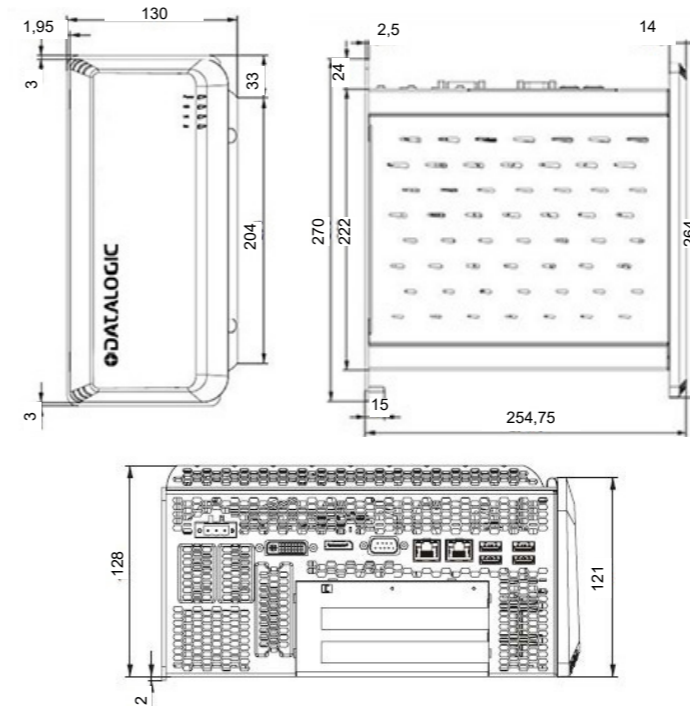


#### CAMERA CABLES AND TERMINALS CONFIGURATION

Camera trigger and strobe output are provided by an external 6-pin I/O cable with no connection to the Industrial Vision Processor. Use cable 606-0672-xx (unterminated) or cable 606-0674-xx (with terminal block 661-0399 or 248-0140). Refer to the MX-E Series Hardware Guide.

Cable	Part Number
Camera Trigger and Strobe 6-pin to Terminal Block 248-0140 or 661-0399	606-0674-xx
Camera Trigger and Strobe: 6-pin to pigtail	606-0672-xx

#### MECHANICAL DIMENSIONS



#### TECHNICAL DATA

ELECTRICAL FEATURES	
Supply voltage (Vs)	24 VDC ± 25%
Current Consumption	Nominal: 5.5 A at 24VDC
Digital Inputs	16 opto-isolated, see Digital I/O Specifications.
Input Current	ON: 2.0 mA or more OFF 1: 0.16 mA or less
Input Resistance	4.7kΩ
On Current	2.0 mA or more
Off Current	0.16 mA or less
Response time	200µsec
Digital Outputs	16 opto-isolated current sourcing, see Digital I/O Specifications.
Format	Opto-coupler isolated open emitter output
Output Voltage	35VDC (max)
Output Current	100mA (per channel max)
Output saturation voltage	<1V
Residual Voltage Output On	0.5V or less (Output current ≤50mA) 1.0V or less (Output current ≤100mA)
Response time	200µsec
Camera interface	GigE (x 2 or x4 depending on model)
USB Hardware Port	USB 2.0 front covered port for USB Hardware Key
USB Ports	4x USB 3.0 ports for monitor, mouse and keyboard
Graphic Interface	Intel® HD (1920x1200 resolution), DVI
<b>Host Communications:</b>	
Serial Communications	1x RS-232 Serial Port
Ethernet	10/100/1000 Mbps Ethernet x 2 Ethernet/IP, Modbus, TCP, OPC, PROFINET communications supported.
PCI connections	1x PCIe x8 + 1 PCI
<b>PHYSICAL FEATURES</b>	
Dimensions	10.03 w x 5.11 h x 10.62 d (in) 255 w x 130 h x 270 d (mm)
Weight	2050 g

Housing material	Galvanized plate, plastic
<b>ENVIRONMENTAL FEATURES</b>	
Temperature	Operating: 0° to +50° C (+32° to +122° F) Storage: -20° to +60° C (-4° to +140° F)
Relative Humidity (30°)	Operating: 10 to 90% Storage: 5 to 95%
Vibrations (EN60068-2-6)	2 to 8 Hz: 1.75 mm amplitude / 9 to 200 Hz: 0,5 g
Shock resistance (EN60068-2-27)	11ms (15g)
Mechanical protection (EN 60529)	IP20
<b>SOFTWARE FEATURES</b>	
Minimum Impact Software Version Required	12.2.2
<b>HARDWARE FEATURES</b>	
CPU	MX-E25: Intel Celeron 1.7 GHz, 2 cores MX-E45: Intel Celeron 2.4 GHz, 2 cores
System Memory	MX-E25/45 DDR4 RAM 8GB
Storage	128 GB, SSD, 1 SATA slot

#### SUPPORT THROUGH THE WEBSITE

Datalogic provides several services as well as technical support through its website. Log on to [www.datalogic.com](http://www.datalogic.com).

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.

#### PATENT

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

This product is covered by one or more of the following patents:

Utility patents: EP2517148B1, EP2649555B1, US10095951, US8888003, US8915443, US9396404, US9495607, US9798948, ZL200980163411.X, ZL201080071124.9

#### SEALS

The Industrial Vision Processor has seals in some areas. The seals must not be broken or removed for any reason. The sealed parts may be opened only and exclusively by Datalogic. Breakeage of these seals by a customer shall result in immediate cancellation of the warranty on the entire Industrial Vision Processor.

#### WARRANTY

The warranty period for this product is 24 months. See General Terms and Conditions of Sales at [www.datalogic.com](http://www.datalogic.com) for further details.

#### 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 20th, 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.

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## MX-E25/45

### Industrial Vision Processor

#### with NPN (sinking) I/O

#### DESCRIPTION

This guide covers MX-E25/45 Industrial Vision Processor models that contain the letter "P". For example MX-E25-P-2. These models provide NPN (sinking) inputs and outputs. MX-E25/45 offer the most powerful and flexible way to solve even complex machine vision applications.

- Rugged IP20 housing
- Low Maintenance
- 16 Inputs and 16 Outputs
- Up to 4 GigE cameras
- Easily Accessed connectors

#### SYSTEM SPECIFICATIONS

##### Industrial Vision Processors

MX-E25: Intel Celeron 1.7 GHz, 2 cores

MX-E45: Intel Celeron 2.4 GHz, 2 cores

##### Storage

128 GB SSD

##### GigE camera ports

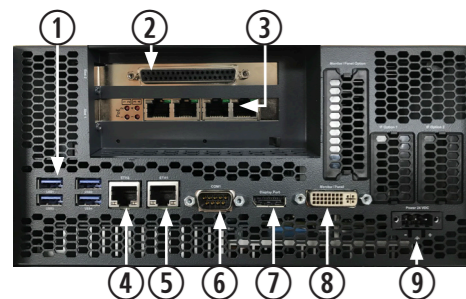
MX-E25-2/MX-E45-2: 2 ports (all are PoE capable)

MX-E25-4/MX-E45-4: 4 ports (all are PoE capable)

All MX-E25/45 Industrial Vision Processors have the following specifications:

- HD graphics (1920x1200)
- 2 x 10/100/1000 Mbps Base-T Network Interface
- Ethernet/IP, Modbus TCP, OPC, PROFINET communications supported
- 1 x RS232 Serial port
- 16 x Optically Isolated Digital In + 16 x Optically Isolated Digital Out
- Microsoft Windows 10 IoT Enterprise 2016 64-bit

#### GENERAL VIEW



- 1) USB 3.0 Keyboard/Mouse
- 2) 37-pin D-Sub Digital I/O
- 3) Camera connectors
- 4) Ethernet 2
- 5) Ethernet 1
- 6) COM 1 x RS-232 Serial Port
- 7) Monitor output: Display Port
- 8) Monitor output: DVI-I
- 9) Supply Voltage Connection

#### SUPPLY VOLTAGE CONNECTION

Power Connector  
+ 24VDC Supply Plus  
GND Functional Ground\*  
- 24VDC Supply Minus



Supplied Power Plug

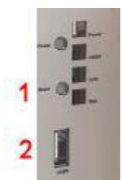


\*Connect the ground using a conductor with minimum 2,5mm<sup>2</sup> cross section

#### HASP KEY USB PORT

- 1) Reset button
- 2) USB Port Hasp Key

To enable cameras and licenses, insert the provided Hasp key in the USB port (labeled USB5), located behind the Front Cover.

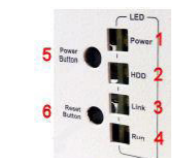


Behind Front Cover

#### STATUS LEDs AND BUTTONS

- 1) Power, Green
- 2) HDD, Yellow
- 3) Link, Yellow
- 4) Run, Green
- 5) Power Button
- 6) Reset Button

Power Button: Press and release to turn on the unit or shut down the OS and switch off the unit. Press and hold to switch off without OS shutdown.  
Reset Button: Triggers a hardware and PCI reset. The unit is restarted.



Behind Front Cover

#### COMMUNICATIONS

Camera communication uses Cat6 Ethernet cable and provides POE for M1xx and E1xx cameras. Use only Datalogic provided cables.

#### DIGITAL I/O CABLES TERMINALS AND CONNECTIONS

Cable	Part Number
Digital I/O 37-pin to Terminal Block 248-01 10	606-0675-xx
Digital I/O 37-pin to pigtail (remove one end)	606-0675-xx

NOTE: Do not disconnect the cable at the connector while power is on.

Pin/Terminal Number	Color Code	Signal Name
1	Black	Output Minus (Note 1)
2	Brown	Input 1- and Event 1-
3	Red	Input 2- and Event 2-
4	Orange	Input 3-
5	Yellow	Input 4-
6	Green	Input 5-
7	Blue	Input 6-
8	Purple	Input 7-
9	Gray	Input 8-
10	White	Input 9-
11	Pink	Input 10-
12	Light Green	Input 11-
13	Black/White	Input 12-
14	Brown/White	Input 13-
15	Red/White	Input 14-
16	Orange/White	Input 15-
17	Green/White	Input 16-
18	Blue/White	Input Plus (Note 2)
19	Purple/White	No Connection
20	Red/Black	Output 1 Minus (Note 1)
21	Orange/Black	Output 1
22	Yellow/Black	Output 2
23	Green/Black	Output 3
24	Gray/Black	Output 4
25	Pink/Black	Output 5
26	Pink/Red	Output 6
27	Pink/Blue	Output 7
28	Pink/Green	Output 8
29	Light Blue	Output 9
30	Light Blue/Black	Output 10
31	Light Blue/Red	Output 11
32	Light Blue/Blue	Output 12
33	Light Blue/Green	Output 13
34	Gray/Red	Output 14
35	Gray/Green	Output 15
36	Purple/Black	Output 16
37	Blue/Black	Output Plus (Note 3)

Pin 1



Female Connector  
Solder Side

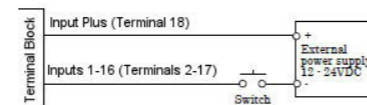
NOTES:  
1: Common Minus for output ports (External 12 to 24 VDC Minus)  
2: Common Plus for input ports (External 12 to 24 VDC Plus)  
3: Common Plus for output ports (Not an output voltage source. External 12 or 24 VDC Plus is required)

#### I/O CONFIGURATION

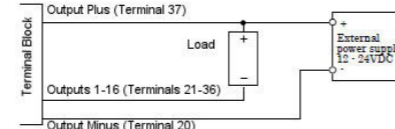
Vision Program Manager (VPM) software installed on the processor is used to create vision programs and configure input and output response. Refer to the Impact Reference Guide for programming details.

#### EXAMPLE I/O CIRCUIT DIAGRAMS

Input Connection (Sinking)



Output Connection (Sinking)



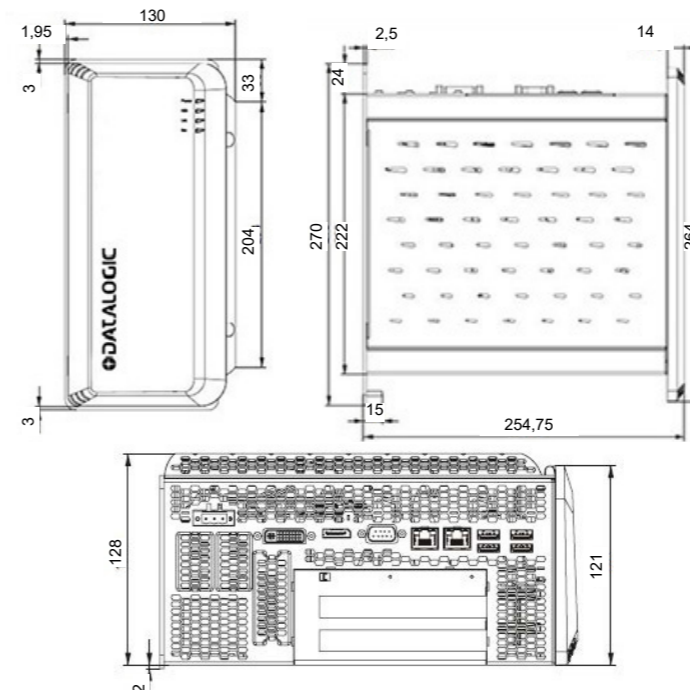
#### CAMERA CABLES AND TERMINALS CONFIGURATION

Camera trigger and strobe output are provided by an external 6-pin I/O cable with no connection to the Industrial Vision Processor. Use cable 606-0672-xx (unterminated) or

cable 606-0674-xx (with terminal block 661-0399 or 248-0140). Refer to the MX-E Series Hardware Guide.

Cable	Part Number
Camera Trigger and Strobe 6-pin to Terminal Block 248-0140 or 661-0399	606-0674-xx
Camera Trigger and Strobe: 6-pin to pigtail	606-0672-xx

#### MECHANICAL DIMENSIONS




#### TECHNICAL DATA

ELECTRICAL FEATURES	
Supply voltage (Vs)	24 VDC ± 25%
Current Consumption	Nominal: 5.5 A at 24VDC
Digital Inputs	16 opto-isolated, see Digital I/O Specifications.
Input Current	ON: 2.0 mA or more OFF 1: 0.16 mA or less
Input Resistance	4.7kΩ
On Current	2.0 mA or more
Off Current	0.16 mA or less
Response time	200µsec
Digital Outputs	16 opto-isolated current sinking, see Digital I/O Specifications.
Format	Opto-coupler isolated open collector output
Output Voltage	35VDC (max)
Output Current	100mA (per channel max)
Output saturation voltage	<1V
Residual Voltage Output On	0.5V or less (Output current ≤50mA) 1.0V or less (Output current ≤100mA)
Response time	200µsec
Camera interface	GigE (x 2 or x4 depending on model)
USB Hardware Port	USB 2.0 front covered port for USB Hardware Key
USB Ports	4x USB 3.0 ports for monitor, mouse and keyboard
Graphic Interface	Intel® HD (1920x1200 resolution), DVI
<b>Host Communications:</b>	
Serial Communications	1x RS-232 Serial Port
Ethernet	10/100/1000 Mbps Ethernet x 2 Ethernet/IP, Modbus, TCP, OPC, PROFINET communications supported.
PCI connections	1x PCIe x8 + 1 PCI
<b>PHYSICAL FEATURES</b>	
Dimensions	10.03 w x 5.11 h x 10.62 d (in) 255 w x 130 h x 270 d (mm)
Weight	2050 g

Housing material	Galvanized plate, plastic
<b>ENVIRONMENTAL FEATURES</b>	
Temperature	Operating: 0° to +50° C (+32° to +122° F) Storage: -20° to +60° C (-4° to +140° F)
Relative Humidity (30°)	Operating: 10 to 90% Storage: 5 to 95%
Vibrations (EN60068-2-6)	2 to 8 Hz: 1.75 mm amplitude / 9 to 200 Hz: 0,5 g
Shock resistance (EN60068-2-27)	11ms (15g)
Mechanical protection (EN 60529)	IP20
<b>SOFTWARE FEATURES</b>	
Minimum Impact Software Version Required	12.2.2
<b>HARDWARE FEATURES</b>	
CPU	MX-E25: Intel Celeron 1.7 GHz, 2 cores MX-E45: Intel Celeron 2.4 GHz, 2 cores
System Memory	MX-E25/45 DDR4 RAM 8GB
Storage	128 GB, SSD, 1 SATA slot

#### SUPPORT THROUGH THE WEBSITE

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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.

#### PATENT

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

This product is covered by one or more of the following patents:

Utility patents: EP2517148B1, EP2649555B1, US10095951, US8888003, US8915443, US9396404, US9495607, US9798948, ZL200980163411.X, ZL201080071124.9

#### SEALS

The Industrial Vision Processor has seals in some areas. The seals must not be broken or removed for any reason. The sealed parts may be opened only and exclusively by Datalogic. Breackage of these seals by a customer shall result in immediate cancellation of the warranty on the entire Industrial Vision Processor.

#### WARRANTY

The warranty period for this product is 24 months. See General Terms and Conditions of Sales at [www.datalogic.com](http://www.datalogic.com) for further details.

#### 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 20th, 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.

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