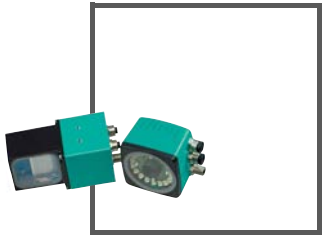
QUICK START GUIDE

OPC / OPD / OPE

DE Optical Print Inspector

EN Optical Print Inspector



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DE Es gelten die Allgemeinen Lieferbedingungen für Erzeugnisse und Leistungen der Elektroindustrie, herausgegeben vom Zentralverband Elektroindustrie (ZVEI) e.V. in ihrer neusten Fassung sowie die Ergänzungsklausel: "Erweiterter Eigentumsvorbehalt".

EN With regard to the supply of products, the current issue of the following document is applicable: The General Terms of Delivery for Products and Services of the Electrical Industry, published by the Central Association of the Electrical Industry (Zentralverband Elektrotechnik und Elektroindustrie (ZVEI) e.V.) in its most recent version as well as the supplementary clause: "Expanded reservation of proprietorship"

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1 Introduction

1.1 Purpose of this quick start guide

This quick start guide contains basic instructions for operating the device. However, the manual takes priority over the quick start guide.

1.2 Intended Use

The stationary read devices OPC-*, OPD-*, and OPE-* are used to decode 1-D and 2-D codes.

Always operate the device as described in these instructions to ensure that the device and connected systems function correctly. The protection of operating personnel and plant is only guaranteed if the device is operated in accordance with its intended use.

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2 Product Description

2.1 Displays and Controls

OPC reader and OPD reader

The illumination unit has 7 LED indicators that provide information on the various statuses of the device.

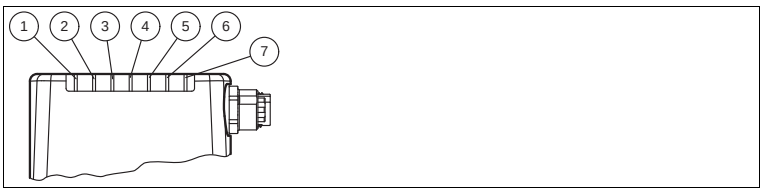

Figure 2.1 Displays and controls

1 **DIAG 2:** Yellow LED. Generales different flashing sequences to signal diagnostic messages.
2 **DIAG 1:** Yellow LED. Generales different flashing sequences to signal diagnostic messages.
3 **Power (PWR):** Lights up green when the sensor is ready for operation.
4 **Ready:** Lights up yellow if the sensor is ready.
5 **Reading process triggered (BAD):** Lights up yellow if the reading was unsuccessful.
6 **Reading process triggered (GOOD):** Lights up yellow if the reading was successful.
7 **Trigger sensor (TRG):** Lights up yellow when a connected trigger sensor send a trigger (impulse).

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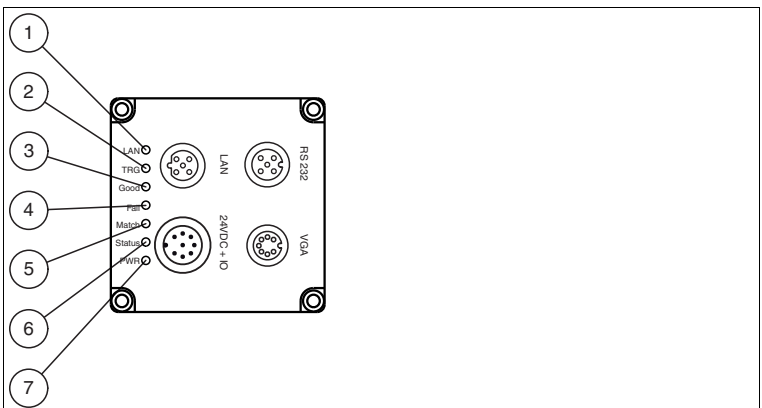
Caution!

Software update

The Ready LED flashes while the sensor is being programmed. During this time, the sensor must **not** be switched off.

OPE reader



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1 **Network (LAN):**
Lights up yellow as soon as a physical connection is established.

2 **Trigger (TRG):**
Lights up yellow when a trigger sensor is connected.

3 **OK (Good)**
Lights up green if the reading was successful.

4 **Error (Fail):**
Lights up red if the reading was unsuccessful.

5 **Result (Match)**
Flashes green if the match code corresponds to the read code.
Flashes red if the match code does not correspond to the read code.

6 **Status (Status)**
Flashes yellow briefly when the device is switched on.
Flashes yellow during a firmware update.
Lights up green when the device is ready.
Lights up red when a device error occurs.

7 **Power (PWR)**
Lights up green when the sensor is connected to a power supply.

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2.2 Interfaces and Connections

OPC reader and OPD reader

The device includes the following connections:

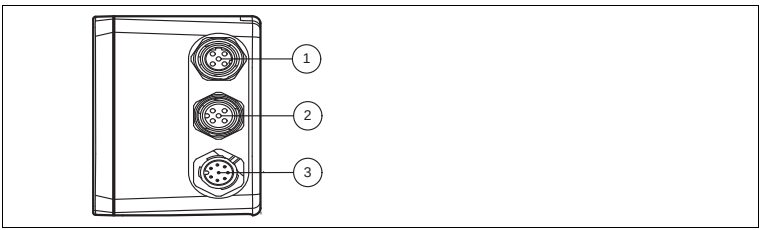

Figure 2.2 Device connections

1. Network (4-pin M12 socket)
2. Input IO (5-pin M12 socket)
3. Power supply, inputs and outputs (8-pin M12 connector)

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Power Supply

There is an 8-pin M12 plug on the side of the housing to connect the power supply and the inputs and outputs. The following diagram shows the pinning:

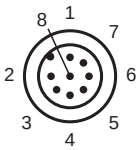

Figure 2.3 Connection layout for supply voltage and inputs and outputs

1 IN Trigger
2 + UB
3 OUT Good
4 OUT Bad
5 IN 1
6 OUT 1
7 GND
8 OUT Matchcode

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RS232 Interface

There is a 5-pin M12 socket on the side of the sensor housing. The following diagram shows the pinning:

Figure 2.4 RS 232 interface connection layout

1 + UB
2 TX RS232
3 GND
4 RX RS232
5 NC

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Network

There is a 4-pin M12 socket on the side of the sensor housing to connect to the network. The following diagram shows the pinning:

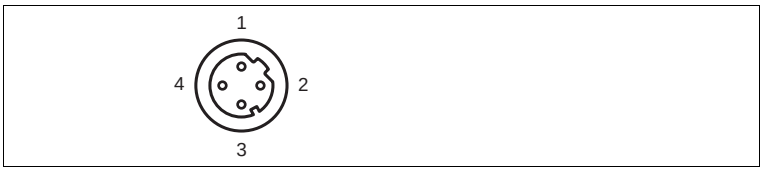

Figure 2.5 Network connection layout

1 TX+ Ethernet
2 RX+ Ethernet
3 TX- Ethernet
4 RX- Ethernet

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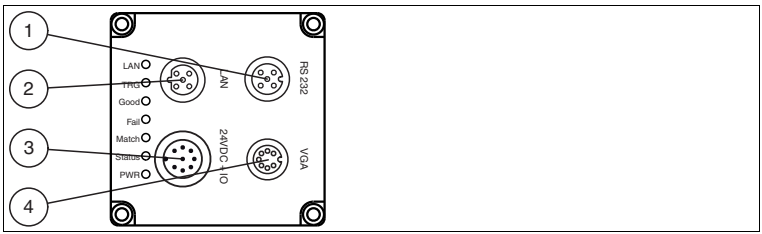
OPE reader

The device includes the following connections:



1. RS 232 interface (5-pin M12-Connector)
2. Network (4-pin M12-Connector)
3. Power supply, inputs and outputs (8-pin M12-Connector)
4. Video output (7-pin M12-Connector)

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Power Supply

There is an 8-pin M12 plug on the back of the sensor housing to connect the power supply and the inputs and outputs. The following diagram shows the pinning:

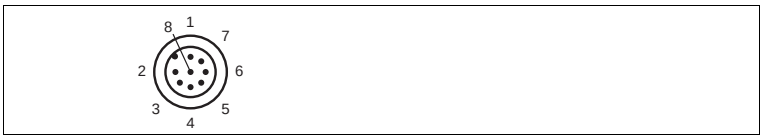

Figure 2.6 Connection layout for power supply and inputs and outputs

1 IN TRG / OUT 1
2 +UB
3 OUT Good / IN 1
4 OUT Fail / IN 2
5 IN 3
6 IN 4 / OUT 2
7 GND
8 OUT Match

Pin 1, Pin 3, Pin 4, and Pin 6 have dual assignments, but these dual assignments are not currently supported by the software: OUT 1, IN 1, IN 2, IN 3, IN 4 are intended for future applications.

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Network

There is a 4-pin M12 socket on the back of the sensor housing to connect to the network. The following diagram shows the pinning:

Figure 2.7 Network connection layout

1 TX+ Ethernet
2 RX+ Ethernet
3 TX- Ethernet
4 RX- Ethernet

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RS232 Interface

There is a 5-pin M12 plug on the back of the sensor housing for connecting the RS232 interface or for external lighting. When used as the RS232 interface, do not connect a cable to Pin 1 or Pin 5. The following diagram shows the pinning:

Figure 2.8 Connection layout RS 232

1 +UB
2 TX RS232
3 GND
4 RX RS232
5 IN 5 / OUT 3

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VGA Output

There is a 7-pin M9 socket on the back of the sensor housing to connect the VGA plug. The following diagram shows the pinning:

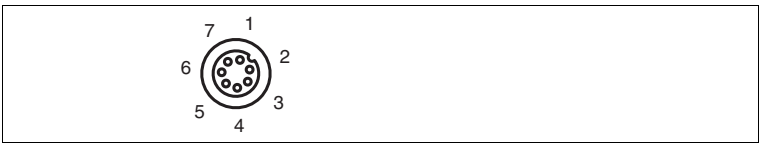

Figure 2.9 Connection layout for video output VGA

1 OUT VSYNC
2 GND
3 OUT R
4 OUT G
5 GND
6 OUT B
7 OUT HSYNC

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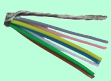
2.3 Accessories

Various accessories are available.

2.3.1 Power supply

Use the following connection cable to connect the power supply, inputs and outputs to the sensor.

M12 connection cables

	Material	Length	Cable end, field attachable 
8-pin M12 socket, straight 	PUR	2 m	V19-G-2M-PUR-ABG
		5 m	V19-G-5M-PUR-ABG
		10 m	V19-G-10M-PUR-ABG

Field-attachable M12 connectors

Model number	Description	mm^2	Cable dia.
V19-G-ABG-PG9	8-pin M12 socket, straight	max. 0.75	5 to 8 mm

Other lengths on request.

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2.3.2 Network cable

The sensor is connected to the network using an M12 connector.

Designation	Description
V45-G	RJ45 network connector, field attachable
V1S-G	4-pin M12 connector, field attachable
V1SD-G-2M-PUR-ABG-V45X-G	Connection cable, RJ45 network connector with M12 plug, cross-over, 4-pin
V1SD-G-2M-PUR-ABG-V45-G	Connection cable, RJ45 network connector with M12 plug, 4-pin

2.3.3 RS232 interface

The RS232 sensor interface is connected via an M12 connector.

Designation	Description
V15S-G-5M-PUR-ABG	Male cordset, M12, 5-pin, PUR cable, shielded cap nut
V15S-G-5M-PUR-ABG-SUBD9	Connection cable, M12 plug, 5-pin, to Sub-D housing, 9-pin

2.3.4 VGA output

The sensor is connected to a monitor using an M9 connector.

Designation	Description
ODZ-MAC-CAB-VIDEO	Video connecting cable, cylindrical connector, 7-pin on SUB-D socket, 15-pin VGA, length: 2 m

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3 Installation

3.1 Connecting the Device

Connecting the Supply Voltage

To supply voltage to the sensor, proceed as follows:

1. Plug the 8-pin M12 socket into the plug provided on the side of the housing.
2. Screw the cap nut onto the connector as far as it will go.

   ↳ This ensures that the power cable cannot be pulled out accidentally.

Note!

Documenting the Network Configuration

The sensor communicates with the connected evaluation system using the TCP/IP protocol. To ensure proper communication, you must record all the changes made to the network configuration.

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Note!

Network Cabling

Use a crossover network cable to connect the sensor directly to a PC. If you are operating the sensor within a network, use a twisted-pair network cable to connect the sensor to the network.

Establishing a Network Connection

To establish a network connection, proceed as follows:

1. If you are using a network cable with an RJ45 network plug at one end and a 4-pin M12 socket at the other, insert the 4-pin M12 socket in the plug on the side of the sensor.
2. When delivered, the sensor has a fixed IP address (192.168.2.3). To facilitate communication within the network, you must configure your network. You can find the configuration data in the network configuration overview.

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4 Commissioning

4.1 Connecting the Stationary Read Device

The reader can be controlled via the Vision Configurator software. You have the ability to make adjustments on the stationary reader directly using the Vision Configurator software.

Aligning the Stationary Reader

Use the image display in the Vision Configurator software to optimally align the reader.

1. Power the reader via the 24 VDC + IO socket on the device.
2. Align the device such that the contrast between the code and the background in the image display is as sharp as possible.

   ↳ This sets the ideal reading distance between the stationary reader and the code to be read.

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5 Vision Configurator Software

The sensor is commissioned and operated with the Vision Configurator software.

The Vision Configurator software provides you with a user-friendly interface for easy operation of the sensor. Standard tasks include establishing connections to the sensor, specifying the operating parameters, saving data sets, as well as the transfer and display of data and error diagnostics.

Note!

In the as-delivered version, the following user roles will already be defined with various authorizations.

User rights and password

User rights	Description	Password
Default	View all information Create users at same level or lower	A password is not required
User	View all information Configuring the sensor Create users at same level or lower	User
Admin	View all information Configuring the sensor Create and delete users	Request the Admin password from P+F

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Establishing a Network Connection

To establish a network connection with the sensor, proceed as follows:

1. Supply the sensor with power.
2. Start the Vision Configurator software.
3. Select the connected sensor.
4. Check that the correct IP address has been entered.
5. Enter your user name and password.

   ↳ A connection to the sensor is established.

Note!

Documenting the Network Configuration

The sensor communicates with the connected evaluation system using the TCP/IP protocol. To ensure proper communication, you must record all changes made to the network configuration.

An up-to-date description of the Vision Configurator software can be found at http://www.pepperl-fuchs.com.

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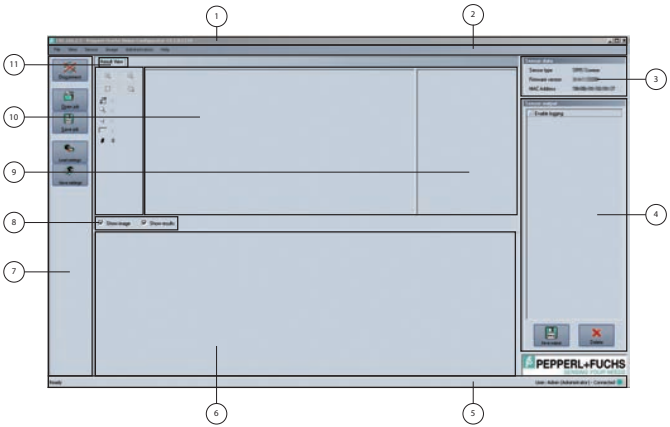
5.1 Application window structure

The application screen opens after you log in.

Note!

The individual functions depend on the type of sensor connected and the current authorization level and are, therefore, not always all visible.



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The software is designed to be similar to most Windows applications.

1	Title bar	■ Shows the IP address, the software name, and the version number ■ Contains the **Minimize/Maximize/Close** buttons
2	Menu bar	■ Displays all the menus in the program ■ Provides an overview and helps with navigation
3	**Sensor data** screen	■ Displays data for the connected sensor
4	**Sensor output** screen	**Sensor output** screen
5	Status bar	■ Displays status information about the application
6	Configuration window	■ Contains the sensor-specific parameters that you can set
7	Toolbar	■ Contains icon buttons as an extension to the menu
8	Checkbox	■ Show image: activate or deactivate the image display ■ Show results: activate and deactivate the result display
9	Results area	■ Displays result data from the sensor ■ A varying number of tabs can be displayed depending on which sensor is connected. ■ This field can be activate or deactivate with the point **Show results**

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10	Image display	■ Displays the images captured or stored in the error memory ■ This field can be activate or deactivate with the point **Show image**
11	Tab	Displays information about the current image and the pixel under the mouse pointer. The following items are displayed: ■ Image size ■ Zoom level ■ Mouse position in image coordinates ■ Current grayscale value ■ Image number

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6 Operation

6.1 Reading out a 1-D/2-D Code

You can process up to four different 1-D/2-D codes with one image capture using the reader. Depending on the number of codes you want to read, you must activate or deactivate Window tab 1–4. If more than one Window tab is activated, all the read codes must be OK for the decoding in order to output a good read. The following description relates to the Window 1 tab.

Decode 1-D/2-D

The following instruction relates to the decoding of a code to be read.

1. In the **Window 1** configuration window in the **Window Setup** menu item, set the inspection type to **Decode 1-D/2-D** .
2. In the **Window 1** configuration window in the **1-D/2-D Parameter** menu item, set the symbology to be read .
3. Make sure that in the **Window 1** configuration window in the **Window Setup** menu item, the window is switched to active.
4. Place the first sheet with the code to be read under the reader.
5. Press the **Trigger** button in the "Vision Configurator" software. The captured image will be shown in the image display.

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6. 

Click with the mouse on the frame with the designation Window 1
7. Adjust the height and width of the frame to your requirements.
8. Press the **Trigger** button in the "Vision Configurator" software again. The captured image will be shown in the image display.

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9.

10. You can see the result of the read code in the result window.

    ↳ The reader is now set for code reading.

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