# QUICK START GUIDE

# ODT-MAC40*-*-*-MC

**DE** **Stationäres Lesegerät für alle gängigen 1D- und 2D-Barcodes**

**EN** **Stationary readers for all common 1D- and 2D-barcodes**

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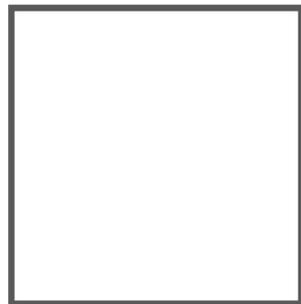
**DE** Es gelten die Allgemeinen Lieferbedingungen für Erzeugnisse und Leistungen der Elektroindustrie, herausgegeben vom Zentralverband Elektroindustrie (ZVEI) e.V. in ihrer neusten Fassung sowie die Ergänzungsklausel: "Erweiterter Eigentumsvorbehalt".

**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 Product documentation on the internet

You can view all the relevant documentation and additional information on your product at http://www.pepperl-fuchs.com. Simply enter the product name or model number in the **Product/Key word search** box and click **Search**.



Select your product from the list of search results. Click on the information you require in the product information list, e.g., **Technical documents**.



A list of all available documents is displayed.

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## 1.3 General safety instructions

**Class 2 laser product**

This device is a class 2 laser product:



**Standards**

IEC 60825-1:2007 certified. Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated 06-24-07.

> *Warning!*
>
> Visible red class 2 laser light
>
> The irradiation can lead to irritation especially in a dark environment. Do not point at people!
>
> Caution: Do not look into the beam!
>
> Maintenance and repairs should only be carried out by authorized service personnel!
>
> Attach the device so that the warning is clearly visible and readable.
>
> Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure..

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Only use recommended original accessories.

The operating company bears responsibility for observing locally applicable safety regulations.

Installation and commissioning of all devices must be performed by a trained professional only.

User modification and or repair are dangerous and will void the warranty and exclude the manufacturer from any liability. If serious faults occur, stop using the device. Secure the device against inadvertent operation. In the event of repairs, return the device to your local Pepperl+Fuchs representative or sales office.

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## 1.4 Intended use

The ODT-MAC4**-LD-RD-MC stationary reader is intended to be used only for the identification of objects by means of 1D- and 2D-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
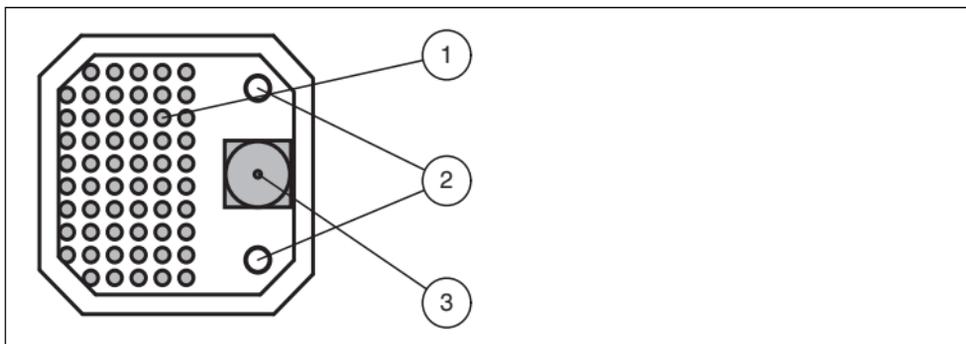


1. Lightning unit
2. Laser diodes (depending on version)
3. CMOS camera

The stationary reader ODT-MAC403-* does not have laser diodes.

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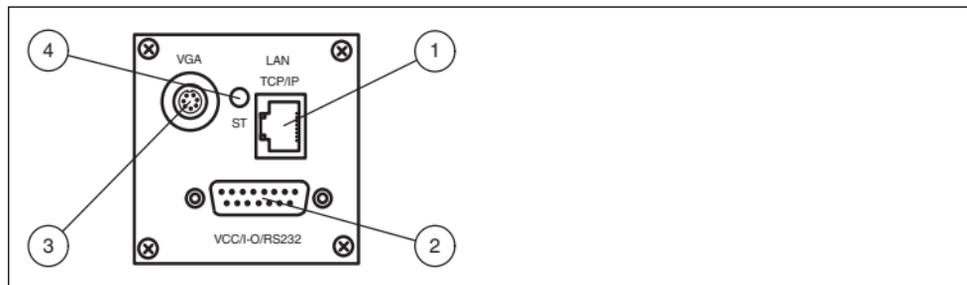
**1** RJ45 Ethernet network socket

**2** 15-pin D-Sub connector

**3** Video output VGA

**4** Status LED

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### Status LED

| LED color | Description |
|-----------|-------------|
| Yellow | The LED briefly illuminates in yellow after switching on. |
| Green | The LED illuminates in green after a successful read (good read). |
| Red | The LED illuminates in red after an unsuccessful read (bad read). |

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## 2.2 Interfaces and Connections
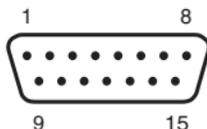


**15-Pin D-sub Plug**

| PIN | Signal | Description |
|-----|--------|-------------|
| 1, 2 | GND | GND for device |
| 3 | GND IO | GND for inputs/outputs |
| 4, 5 | +UB | 24 VDC device supply |
| 6 | + UB IO | Supply for inputs/outputs, 24 VDC |
| 7 | NC | Not connected |
| 8 | IN2 | Input 2 |
| 9 | OUT1 | Good output |
| 10 | OUT2 | Bad output |
| 11 | IN1 | Trigger |
| 12 | NC | Not connected |
| 13 | TX RS232 | Transmission line, RS232 |
| 14 | RX RS232 | Receive line, RS232 |
| 15 | IN3 | Input 3 |

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> **Caution!**
> Connecting the RS 232 interface
>
> Make sure that there is no reverse polarity of the supply voltage, before you connect the RS 232 interface.
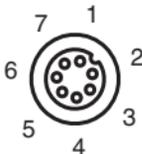


**Video Output, VGA 640x480 (7-Pin M9 Socket)**

| PIN | Signal | Description |
|-----|--------|-------------|
| 1 | OUT $V_{sync}$ | Vertical synchronization output |
| 2 | GND | Ground |
| 3 | OUT R | Red signal output |
| 4 | OUT G | Green signal output |
| 5 | GND | Ground |
| 6 | OUT B | Blue signal output |
| 7 | OUT $H_{sync}$ | Horizontal synchronization output |

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**Netzwerkanschluss**
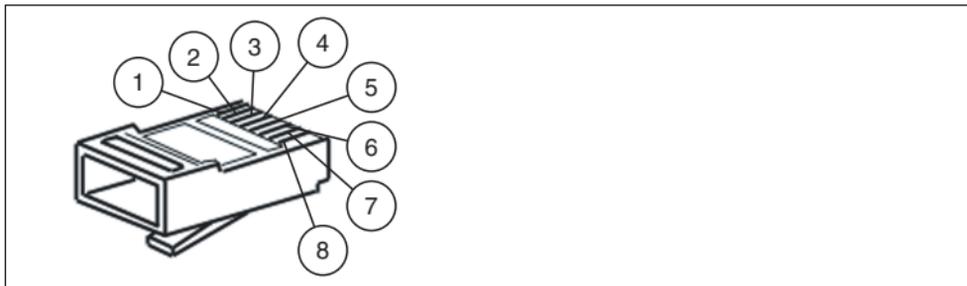


Figure 2.1        Network connection pin assignments

**1**    Transmit data (+)

**2**    Transmit data (-)

**3**    Receive data (+)

**4**    Not assigned

**5**    Not assigned

**6**    Receive data (-)

**7**    Not assigned

**8**    Not assigned

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## 2.3 Accessories

Various accessories are available.

### 2.3.1 Cables

The following cables are available as accessories.

| Model number | Description |
|---|---|
| ODZ-MAC-CAB-VIDEO | Video connection cable, cylindrical connector, 7-pin on SUB-D socket, 15-pin VGA, 2 meters |
| ODZ-MAC-CAB-15POL-2,5M-FEMALE | Connection cable, Sub-D socket, 15-pin, 2.5 meters, can be pre-assembled |
| ODZ-MAC-CAB-15POL-5M-FEMALE | Connection cable, Sub-D socket, 15-pin, 5 meters, can be pre-assembled |
| ODZ-MAC-CAB-24V-R2-2M | Connection cable for power supply, RS 232 |
| V45-G-10M-V45-G | Network cable RJ45, category 5, up to 100 MHz, 10 m |

### 2.3.2 Other accessories

Other products are available as accessories.

| Model number | Description |
|---|---|
| ODZ-MAC-PWR-24V | Desk top power supply 24 V DC, 1.88 A |

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# 3 Installation

## 3.1 Mounting

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***Note!***

***Preventing reflection and glare***

Reflection and glare from reflective surfaces can impair the captured image and therefore lead to incorrect readings. To prevent reflection and glare, install the stationary reading device at a slight angle.

Please refer to the technical data in the data sheet for the read distance.

**ODT-MAC400-\***
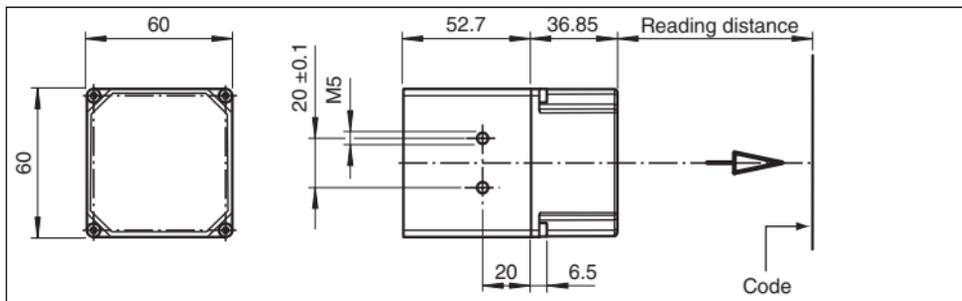


Figure 3.1    Dimensions of the **straight** housing

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**ODT-MAC401-***
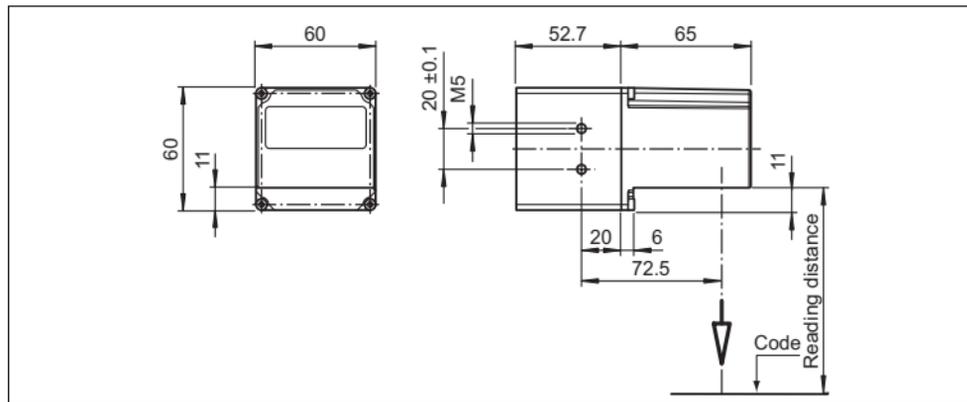


Figure 3.2    Dimensions of the **angle** housing

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**ODT-MAC403-\***



Figure 3.3    Dimensions of the **angle** housing

**Note!**

**Connection to ground**

When installing the device, ensure that it is has a ground connection.

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## 3.2 Connecting the device

▶ Connecting the power supply

To connect a power supply to the device, proceed as follows.

1. Plug the 15-pin Sub-D socket into the connector provided for this purpose on the back of the housing.

2. Screw in the two mounting screws as far as possible.

   ↳ This ensures that the cable cannot be inadvertently pulled out.

3. Next connect the power supply to the appropriate pins on the Sub-D socket.

   ↳ The power supply has now been connected.

> ⚠ *Caution!*
> Connecting the RS 232 interface
>
> Make sure that there is no reverse polarity of the supply voltage, before you connect the RS 232 interface.

To connect the power supply to the device quicker, the pre-configured connection cable can also be used. Information can be found in the Accessories section.

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**Note!**

**Record the network configuration**

The device communicates with the connected machine control system using the TCP/IP protocol. To ensure communication works correctly, you must note down all the changes you make to the network configuration.

**Note!**

**Network cabling**

Use a crossover network cable to connect the device directly to a PC. If the device is being operated within a network, use a twisted-pair network cable to connect it to the network.

▶ Establishing a network connection

In order to establish a network connection, proceed as follows.

When delivered, the device has a fixed IP address (192.168.2.2). To facilitate communication within the network, you must configure your network. The configuration data can be found in the network configuration overview.

▶ Connecting a trigger sensor

To connect a trigger sensor, proceed as follows.

Connect the trigger sensor to the cable previously connected for the power supply.

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# 4 Commissioning

## 4.1 Connecting the stationary reader

The reader has its own web server. You have the option of making settings on the stationary reader using a standard web browser.

▶ Aligning the stationary reader

To find the ideal alignment for the device, use the two laser diodes in the stationary reader.

1. Supply power to the reader via the D-Sub connector.

2. Adjust the stationary reader so that both points generated by the laser diodes are positioned on top of each other on the code to be read.

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

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# 5 Operation

## 5.1 Web-based operator interface

You have the option of configuring and operating the sensor via a web-based operator interface and using it to display information. The web-based user interface should be used only for setup and troubleshooting purposes when the machine is shut down.

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冂 *Note!*

To start the operator interface of the sensor, you need a standard web browser (e.g., Windows Internet Explorer or Mozilla Firefox) with Java script activated.

**We recommend the following browser versions**

| | | |
|---|---|---|
| Firefox | 3.6.8 or higher | Communication between MAC and PC via LAN interface |
| Internet Explorer | 6.0.2900.2180 or higher | Communication between MAC and PC via LAN interface |

➤ Starting the operator interface

To start the operator interface, proceed as follows.

In the input field of a standard web browser, enter the IP address of the stationary reader (**192.168.2.2**) and press return to confirm.

↪ The following tab opens as the start page: **Settings**.

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The following four tabs can be found on the left-hand side of the display:

- Settings
- Communication
- Gallery
- Language

Various information is displayed in the central section–depending on which tab is active.

On the right-hand side, various status information (such as the software/firmware version, the MAC address, the number of reads, etc.) is displayed, as well as the last image captured and the decoded information. On the right of the Pepperl+Fuchs company logo there is a pictorial representation of a status LED. This status LED lights up green when a device is connected. Otherwise it is red.

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▶ Activating live image capture

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⃝ ***Note!***
By viewing the captured images on the operator interface during operation, the image refresh rate reduces significantly.

To activate live image capture, click the **Start Live Mode**button on the right-hand side of the display screen.

↳ The stationary reader starts to capture images. The captured images are displayed in the results window. The decoded information is displayed beneath it in a separate window.

▶ Starting single image capture

On the right-hand side of the display screen, click on the button **Single image**.

↳ Clicking the button triggers a single image capture.

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### 5.1.1 Settings Tab

The **Settings** tab enables you to configure various parameters and send commands to the sensor. In the left display area, you can navigate to the other tabs **Communication**, **Gallery** and **Language**.



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In the center of the screen, the following functions are available in different fields:

**Sensor parameters**

| Settings | Explanation |
|----------|-------------|
| Flash duration | This parameter is used to set the duration of the flash at intervals of 10 μs. |
| Gain | This parameter is used to set the electronic brightness gain. A high value electronically increases the brightness of the captured image and can improve the readability of the code considerably in the event of poor ambient conditions. |
| Parameter set | Load from Flash: Use this button to load parameter settings from the internal memory (Flash EEPROM). Save to Flash: Use this button to save your current parameter settings in the internal memory (Flash EEPROM). |
| Command | Send individual commands to the sensor. |
| Reset counter | The trigger counter value can be reset to 0 here. |

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▶ Sending a command

You have the option of sending individual commands to the sensor. The commands are made up of 4-digit hexadecimal numbers (0 ... 9, A ... F). An overview of the available commands can be found in the appendix.

1. If you are not already on the **Settings** tab, navigate to it.

2. Enter a valid, 4-digit hexadecimal number for the required command in the **Command** field.

| Command | | Send |
|---------|--|------|

3. Click on **Send**.

↳ The relevant command will be sent to the sensor, where it will be executed.

**Decoder parameters**

Settings can be applied to the individual symbologies via the "Decoder parameters" menu option. The green checkmark and red cross show which symbologies have been activated and which have not. They can be activated or deactivated via the respective menus. You can configure settings to the general operating principle of the sensor via the **General settings** menu option.

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### 5.1.2 Note

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