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Sensor Intelligence.

PALLOC

QUICKSTART en

1 About this document

This document contains instructions and descriptions that support the basic setup of the PALLOC sensor, including basic image acquisition. This document is valid for the PALLOC sensor. For more information on the PALLOC sensor, please refer to the Operating Instructions (8029330).

Download the Operating Instructions from the SICK Support Portal. You must register a user account to access the SICK Support Portal.

2 Safety information

2.1 Operational safety and particular hazards

- Read the entire Quickstart before using the system.
- Connection, assembly, and settings must be performed by competent technicians.
- Do not use the system in explosion-hazardous areas, in corrosive environments, or under extreme environmental conditions.

CAUTION

Optical radiation: Class 1 Laser Product

The accessible radiation does not pose a danger when viewed directly for up to 100 seconds. It may pose a danger to the eyes and skin in the event of incorrect use.

- Do not open the housing. Opening the housing may increase the level of risk.
- Current national regulations regarding laser protection must be observed.

If the product is operated in conjunction with external illumination systems, the risks described here may be exceeded. This must be taken into consideration by users on a case-by-case basis. Please note the accompanying production documentation.

3 Product description

3.1 System overview

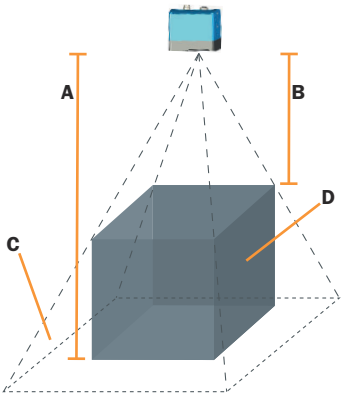
PALLOC is a robot guidance system used for automatic depalletizing, comprising a 3D color camera with embedded PALLOC software based on deep learning. The PALLOC system is used for three-dimensional localization and automatic depalletizing of boxes of various sizes and appearences.

Ensure that the installation is performed by a qualified technician permitted to do electrical installations.

3.2 Dimensional drawing

PALLOC dimensional drawing (not true-to-scale), see Appendix: A

3.3 Volume of view



A Maximum distance
B Minimum distance
C Volume of view
D Search volume

Parameter	Visionary-S
Recommended min. distance	1000 mm
Recommended max. distance	2000 mm
Field of view at recommended min. distance[1]	1000x900 mm
Field of view at recommended max. distance[1]	2200x1800 mm
Example search volume[2]	1000x900x1000 mm

1 Length x Width
2 Length x Width x Height

CAUTION

Ensure that the camera is unpowered during the mounting and electrical installation process.

4 Mounting

NOTICE

Do not touch the electrical connections, the lens glass, or the LEDs of the lighting ring.

Mounting concepts

- Mounted to the robot arm, moving with the robot. We call this a robot mounted sensor.
- Mounted in a fixed position, overlooking the robot cell. We call this a stationary mounted sensor.

Required parts:

- Mounting device (bracket) with sufficient load-bearing capacity and suitable dimensions
- Mounting screws

Mount the sensor mechanically, e.g. by using a mounting bracket from SICK.

For further information about accessories and specific part numbers, see section 10.

5 Electrical installation

5.1 Connectors and pin assignments

The PALLOC sensor uses a M12, 17-pin male connector, for power, and a M12, 8-pin connector, X-coded, for ethernet.

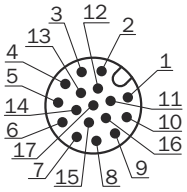


Figure 1: Visionary-S, power connector

Pin assignments for the Visionary-S power connector

Pin	Signal
1	Ground (GND)
2	24 V DC ± 15 % – supply voltage
3	Not connected
4	Not connected
5	Not connected
6	Not connected
7	TxD (RS-232), Aux – service only
8	RxD (RS-232), Aux – service only
9	SENS GND – GND for electrically decoupled inputs
10	SENS IN1 – switch input, electrically decoupled
11	Not connected
12	Not connected
13	INOUT 1
14	INOUT 2
15	SENS IN2 – switch input, electrically decoupled
16	INOUT 3
17	INOUT 4

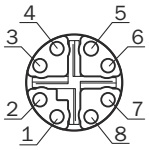


Figure 2: Visionary-S, ethernet connector

Pin assignments for the Visionary-S ethernet connector

Pin	Signal
1	TRD0_P
2	TRD0_N
3	TRD1_P
4	TRD1_N
5	TRD3_P
6	TRD3_N
7	TRD2_P
8	TRD2_N

5.2 Connecting the device

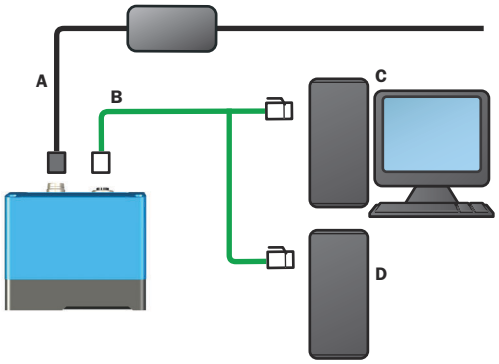


Figure 3: Connection example diagram

A Power cable
B Gigabit ethernet cable
C PC
D Robot controller

1. Connect the Ethernet connector on the sensor to the network connector on the PC and to the robot controller using a Gigabit Ethernet cable.
2. Connect an unpowered power supply to the power connector on the sensor using a power cable.
3. Switch on the power supply.
   For detailed installation information, see the Operating Instruction (8029330).

6 Get started with PALLOC

The following section outline how to connect to the PALLOC sensor and acquire an image.

6.1 Accesing the PALLOC user interface

PALLOC uses a web based user interface. To access the interface, follow the steps below:

1. Open a web browser window.
   - The recommended browser is Google Chrome.
2. Type the preset IP address: 192.168.1.10.

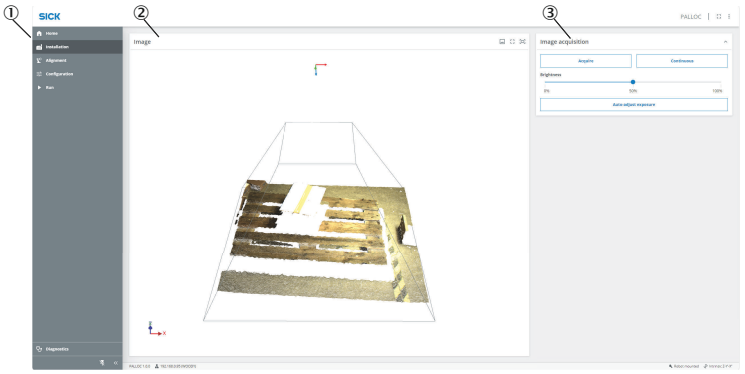
NOTE

Make sure that the network communication settings on the computer are correctly set up:

- The computer must be on the same network as the PALLOC.
- The computer must not use the same IP address as the PALLOC.

The IP address of the PALLOC sensor can be changed in the **Network settings** section on the **Home** page in the user interface.

Overview of the user interface



① Page selection panel
② Sensor image viewer
③ Settings panel

6.2 Acquire an image

This section provides the steps to acquire a basic image to see if the sensor is mounted in the correct position. Further instructions can be found in the Operating Instruction (8029330).

Acquire an image

1. In the user interface, go to the **Installation** page.
2. Click **Auto-adjust exposure**.
3. Click **Acquire**.

✓ Acquired an image.

Adjust the sensor's measuring position

1. In the user interface, go to the **Installation** page.
2. Click **Auto-adjust exposure**.
3. Click **Continous**.

✓ The sensor acquires a new image continously.

4. **Robot mounted:** Jog the robot until you are satisifed with the sensor's measuring position by monitoring the image acquisition.
5. **Stationary mounted:** Adjust the sensor's position until you are satisfied with the sensor's measuring position by monitoring the image acquisition.

7 Configuration workflow

The following configuration workflow is recommended:

System settings→Alignment→Job configuration→Analyze configuration

See the Operating Instructions (8029330) for more information about configuring the sensor.

8 Maintenance

Clean the housing using a soft cloth. Either use a dry cloth, or dampen it with lukewarm water and a small amount of mild cleaning agent.

Check the screw connections and connectors regularly.

Clean the area between the cooling ribs regularly.

9 Support

For more information about the PALLOC system, please refer to the PALLOC Operating Instruction.

For support issues, please visit the online support on: supportportal.sick.com

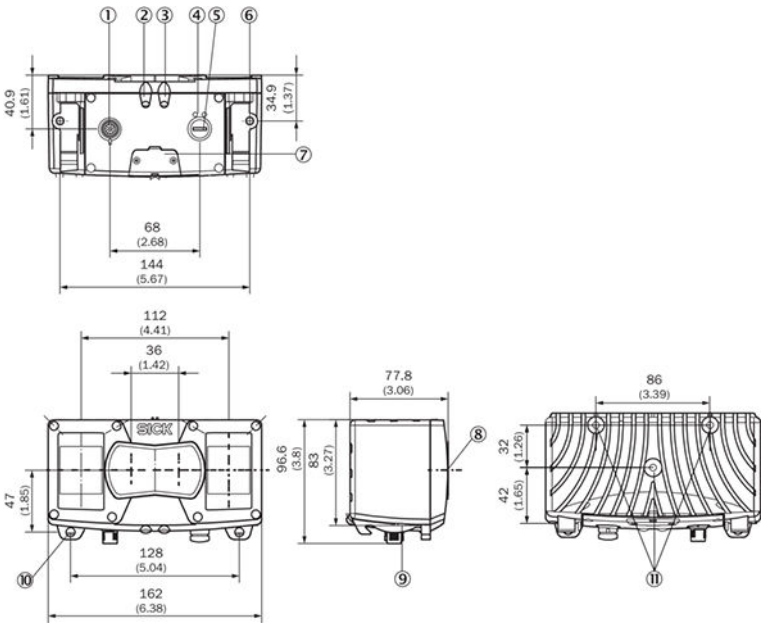
More product information is also available on: www.sick.com/PALLOC

10 Accessories

Name	Part number
Mounting set	2077710
M12 X-coded to RJ-45, robot graded	2113237
A3 Alignment target	4123283
Robot mounted:	
M12 17-pin to 4-pin, not robot graded	6044574
M12 4-pin, robot graded	2116868
Stationary mounted:	
M12 17-pin, not robot graded	2070427

All accessories for the product can be found at www.sick.com/PALLOC.

A



①	Power and I/O (M12, 17-pin)
②	Device display
③	Application display
④	Ethernet status displays
⑤	Ethernet (M12, 8-pin, x-coded)
⑥	Fastening threads (2x M6, 7 mm deep)
⑦	Service interface
⑧	Optical axis
⑨	Bracket interface
⑩	Bracket attachment
⑪	Fastening threads (3x M6, 10 mm deep)