Monitor 7” ELED
Standard Ethernet
BroadR-Reach

User manual
No. UM0972229 A 03

01/2021
English

Monitor 7” ELED

ORLACO
Specialised Camera Solutions

User Manual

Orlaco Monitor 7” ELED
Standard Ethernet, BroadR-Reach

Monitor 7” ELED;

Manual number UM0972229, Version A 03

Check at www.orlaco.com which language versions are available. This manual contains user instructions. Used photographs and illustrations give general information and may differ from the products you use.

Contact your Orlaco dealer if you have questions, additional information, or want to make changes that are not described in this manual.

The camera and monitor systems from Orlaco comply with the latest CE, ADR, EMC and mirror-directive regulations. All products are manufactured in accordance with the ISO 9001 quality management, IATF 16949 quality automotive and ISO 14001 environmental management.

For installation Orlaco Monitor 7” ELED
see Manual IM0973576

Used abbreviations

ABC = Automatic Backlight Control
OSD = On Screen Display
HDR = High Dynamic Range
STND = Standard
LCD = Liquid Crystal Display
CAN = Controller Area Network
SRD = Short Range Device
T_T = Tacho-Turn
NIT = Night mode
TCH = Tachometer

Article numbers ORLACO Monitor 7” ELED

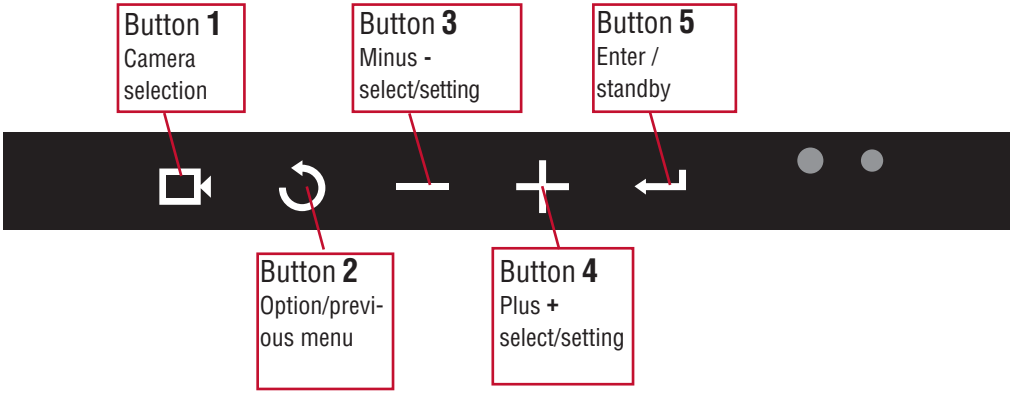
This manual describes the operating instructions of the following ORLACO article numbers. The article numbers can be found on the label on the back of the Monitors.

ELED Ethernet; Art. No. 0228000
ELED BroadR-Reach; Art. No. 0228020

Contents

Keyboard

Below is a brief description of the key functions. See sections 3 and 4 for a more detailed explanation.



Button 1

Key 1, camera selection

Press the camera selection key once; manual camera selection is enabled. Use the plus and minus keys to select the camera. Press the key again to disable manual camera selection.

Button 2

Key 2, option/previous menu

Return to the previous menu.

Button 3

Key 3, minus

Go to the next menu option or move left.

Button 4

Key 4, plus

Go to the previous menu option or move right.

Button 5

Key 5, enter/standby

Switch to Standby or in the menus, select or activate the chosen option.

2.1. Disclaimer

When switching on the monitor for the first time, a disclaimer appears in English for 5 seconds (see Figure 1).
Displayed text: *Do not operate display functions during safety critical operations. Objects in the monitor are closer than they appear.* If a different language is subsequently set, the disclaimer text appears in the set language.

Keys

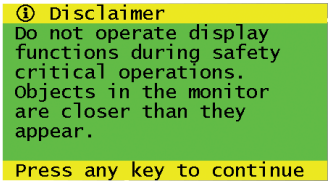


Figure 1

2.2. Description of the keyboard

Button no. **1** = Camera selection
Button no. **2** = Option/previous menu
Button no. **3** = Minus selection/setting key (-)
Button no. **4** = Plus selection/setting key (+)
Button no. **5** = Enter/Standby

2.3. Language setting for the OSD (On Screen Display) menu

The OSD menu language is set as English by default. If you would like to operate the OSD menu in a different language, open the service menu → system settings. See section 3 on page 6. The OSD menu is available in English, Dutch, German, French, Czech, Hungarian, Italian, Polish, Portuguese, Spanish, Turkish, Swedish, Finnish, Danish and Norwegian.

2.4. New camera detected menu

The “New camera detected” menu appears whenever a new camera is recognized by the ELED (see figure 2). The MAC address of the camera is displayed, and the user has to choose which camera number this camera will receive. Each camera will show ‘In use’ if it has been assigned, or ‘Free’ if no camera has been assigned. An ‘In use’ camera can be reassigned, the MAC address and camera number will be overwritten with the new one.

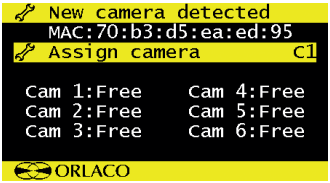


Figure 2

If during the life time of the ELED you would like to reassign the camera order, please refer to section 3.3.11, subsection Exchange cameras.

3. Using the service menu

To open the service menu, simultaneously press the camera selection key (1), the minus key (3) and the plus key (4). The Service menu (see Figure 3) will appear. The following keys are used to navigate through the menus:

2 - Option/previous menu: Return to the previous menu
3 - Minus: Go to the next menu option
4 - Plus: Go to the previous menu option
5 - Enter: Select or enable the chosen option

Keys

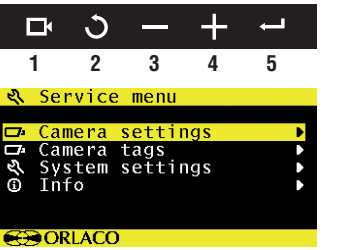


Figure 3

3.1. Camera settings

Select camera settings. Press enter to open the 'Camera settings' menu.
Press enter again to activate the cursor in the list of items. Use the minus (3) and plus (4) keys to select the item to adjust and then confirm this selection by pressing the enter key. If the selection is an on/off switch, you can choose between on and off. If the selection is a number, you can change the value using the minus (3) and plus (4) keys. Save the new settings by pressing the enter key (5).

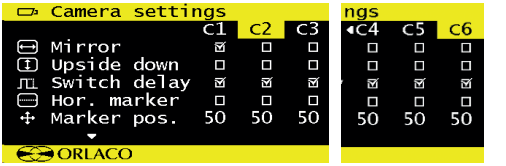


Figure 4

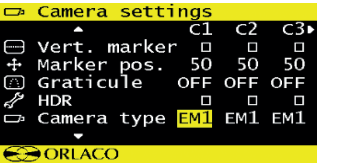


Figure 5

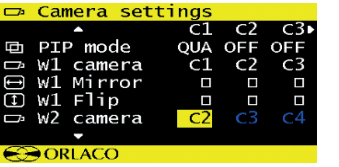


Figure 6

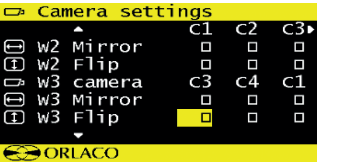


Figure 7

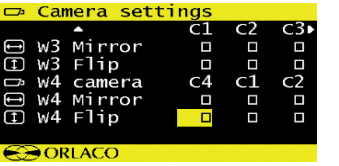


Figure 8

3.1.1. Mirror

Enable this option to mirror the image (reverse left and right).

3.1.2. Upside down

This option flips the image (upside down).

3.1.3 Switch delay

Enable this option if the switchwire is controlled by an intermittent signal (e.g. from an indicator light).

3.1.4. Horizontal marker

Enable this option to show a reference line. The reference line is displayed as a horizontal green line.

3.1.5. Marker position

Adjusts the vertical height of the reference line. 0 corresponds to the top edge of the monitor and 100 to the bottom edge.

3.1.6. Vertical marker

Enable this option to show a reference line. The reference line is displayed as a vertical green line.

3.1.7. Marker position

Adjusts the vertical position of the reference line. This can be set between 0 and 100. 0 corresponds to the left side of the monitor and 100 to the right side. The left and right sides swap position depending on the settings of the camera mirror-image function.

3.1.8. Graticule

This option shows a graticule for a rearview camera on the monitor.

3.1.9. HDR

Enable this option for the High Dynamic Range camera mode. Turn on or off.

3.1.10. Camera type
Select the connected camera type, which will also enable special features applicable to the selected type.

3.1.11. PIP Mode
Set this option to ON to enable Picture In Picture, Split Screen, horizontal/vertical or Quad mode.

3.1.12. PIP window settings
These menus have the following options:

W1, W2, W3, W4 Camera
Select wich camera should be shown in the PIP window.

W1, W2, W3, W4 Mirror
Set this option to “on” to mirror (exchange left/right) the PIP window.

W1, W2, W3, W4 Flip
Set this option to “on” to flip (exchange top/bottom) the PIP window.

3.2. Camera tags
See Figure 9. In this menu, names can be given to the camera inputs.

3.3. System settings (see Figure 10)

3.3.1. Language
See Figure 11. This option opens the language selection menu. The selected language will be used for all OSD menus. The OSD menu is available in English, Dutch, German, French, Czech, Hungarian, Italian, Polish, Portuguese, Spanish, Turkish, Swedish, Finnish, Danish and Norwegian.

3.3.2. On Screen Display (OSD)
This option opens the OSD settings menu. See Figure 12.
The following can be set in this menu:

OSD time-out
Sets the time (in seconds) that the OSD (camera number/name, top left) appears on the monitor. Select 'Off' to disable this and 'On' to have this permanently enabled.

OSD horizontal pos.
Adjust horizontal placement of the menu on the screen.

OSD vertical pos.
Adjust vertical placement of the menu on the screen.

OSD rotation
Adjust the rotation for the OSD so that it is legible when the monitor is rotated.

Info transparency
Changes the transparency of the camera tag, etc.

Menu transparency
Changes the transparency of the menu system.

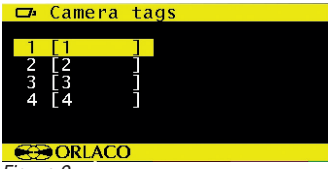


Figure 9

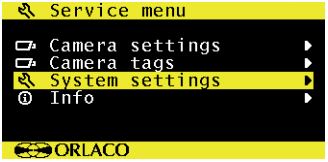


Figure 10

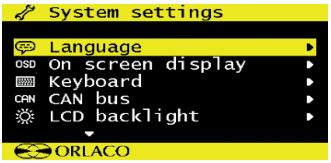


Figure 11

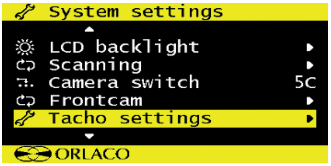


Figure 12

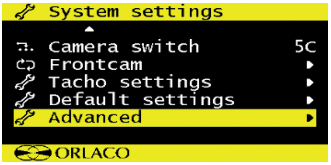


Figure 13

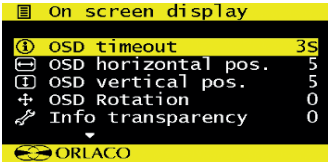


Figure 14

Disclaimer transparency

Changes the transparency of the disclaimer when starting up.

Marker transparency

Changes the transparency of the horizontal and vertical markers.

Graticule transparency

Changes the transparency of the graticule (perspective overlay).

OSD menu help

This function enables or disables the automatic text messages of the OSD help menus. If enabled, help messages automatically appear in all menus after 10 seconds of inactivity.

3.3.3. Keyboard

This option opens the keyboard menu. See Figure 16.

Keyboard lock

This option opens the settings menu for the keyboard lock. It is possible to lock various functions in order to prevent any unwanted changes. See Figure 17.

Keyboard sound

Turn the keyboard sound on and off.

Beeper volume

Set the volume of the keybourd and/or alarm beeper.

Standby mode

Choose the way you want to enter standby mode.

3.3.4. CAN bus

See Figure 18. This option opens the CAN bus menu. This menu has the following 5 options:

CAN protocol

This option selects the signal, or CAN protocol, that the Monitor uses. By default this is Orlaco CAN protocol 1. Other protocols are customer-specific. The CAN speed is automatically adjusted, but it can also be set manually once the protocol has been selected.

CAN speed

This option selects the bit rate of the CAN bus. Available options are: 100, 125, 200, 250, 500 and 1000 kbit.

Set CAN-ID

The Orlaco CAN protocol has an ID (default 0) to control multiple monitors via one CAN bus. The ID is inactive when the text is blue and becomes active when the protocol is set to 1. The CAN-ID can be set from 0-15 where 0 is the default value.

Terminator

Enable/disable the 120 Ω terminator on CAN communications port

3.3.5. LCD backlight

This option opens the backlight submenu for the Monitor 7” ELED. See Figure 19. This menu has the following 3 options:

Figure 15

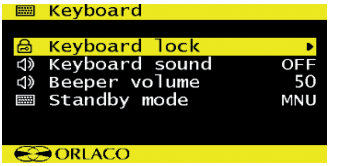


Figure 16

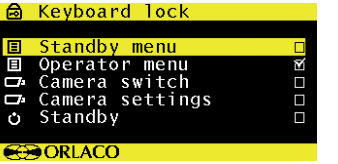


Figure 17

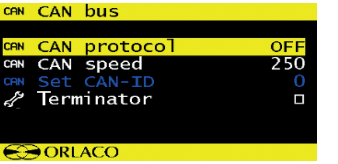


Figure 18

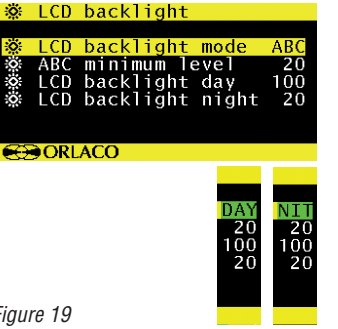


Figure 19

LCD backlight mode

This option enables automatic backlight control (ABC). The Monitor automatically adapts its brightness to the ambient light. If required, a specific day or night brightness can be manually set. Alternatively, the user can choose to manually adjust the day or night brightness setting.

ABC = Standard Automatic Brightness Control
DAY = Day mode (can be adjusted between 50–100%)
NIT = Night mode (can be adjusted between 0–50%)

ABC minimum level

This setting determines the minimum brightness the ABC can use when there is low ambient light.

LCD backlight day

This option allows the day brightness setting to be manually adjusted (50–100%).

LCD backlight night

This option allows the night brightness setting to be manually adjusted (0–50%).

3.3.6. Scanning

This option opens the camera scanning submenu. See Figure 20. This menu has the following options:

Scan sequence

This option selects the cameras from which images are to be shown in sequence.

Scan interval

This option selects how long a camera image is displayed.

3.3.7. Camera switch

Select how many cameras will be connected to the ELED monitor; options: **1c** to **6c**.

3.3.8. Front camera

This option opens the front camera submenu for the ELED 7" monitor. This enables the front camera functionality (a statutory obligation). See figure 16.

Enable frontcam

Enable this option when a frontcam is connected.

Invert handbrake

Enable this option if the handbrake signal on the yellow wire is inverted.

Pulses per meter

Set this value to the amount of pulses the tachometers generates per meter. (0 - 250).

Function AUX wire

Defines the function of the AUX1 & AUX2 switching wires (grey and yellow). Select **TCH** for the tachometer function (Tacho to AUX1). Select **KEY** for + and - key functions on AUX1/2.

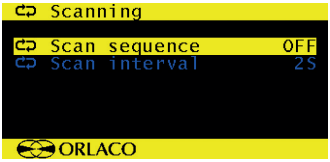


Figure 20

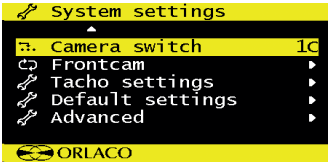


Figure 21

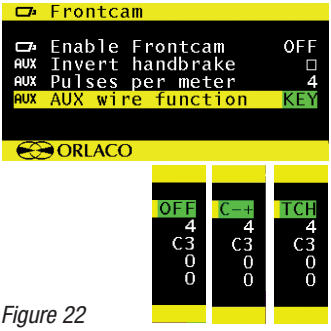


Figure 22

3.3.9. Tacho settings see figure 24.
Settings related to switching a camera based on tacho speed:

AUX wire function:
Select the function of the AUX1 and AUX2 wires.

OFF - AUX wires no function.
TCH - for the tachometer.
KEY - for + and - key functions on AUX1/2.
C-+ - Aux wires open = activate Cam 1 or Monitor standby.
Aux wire 1 = activate Cam toggle up 1 to 4.
Aux wire 2 = activate Cam toggle down 1 to 4.
T_T - Tacho-Turn, setting for the Orlaco Side-eye system.
The AUX1 wire is connected to the Tacho signal and the AUX2 wire to the right turn flashing light signal.

Pulses per meter
Set this value to the amount of pulses the tachometers generates per meter. (0 - 250).

Cam to activate
Select which camera should be activated when tacho speed is within selected range. (C1 - C6).

Cam on if speed >= (0 - 130)
Tacho low limit, Camera not activated when tacho < low limit.

…. and speed < (0 - 130)
Tacho high limit, Camera not activated when tacho > high limit.
Both menus Cam if speed >= and .. and speed < are connected;
Camera activated when tacho >= low limit and tacho < high limit.
The 2 conditions together must be active to switch the camera.

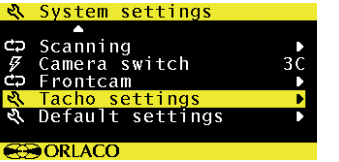


Figure 23

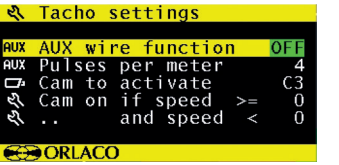


Figure 24

3.3.10. Default settings
See figure 25. This option opens the menu to restore the factory default settings. Select the number of the factory settings that you require (1 = default Orlaco settings).
Contact ORLACO for further information. Select the option 'Restore defaults' to restore the factory settings. See figure 25.

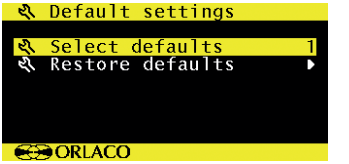


Figure 25

3.3.11. Advanced See figure 26

System frame rate
Set the system frame rate to 25/30Hz or 50/60 Hz depending on the power frequency used. This prevents flicker from TL and HID lights.

Camera mbit rate
Choose which mbit rate the cameras should be set.

Set DHCP/WISR mode
Enable the build-in DHCP server to automatically assign IP addresses or allow a WISR (Art. No. 0300100) host to handle that task.

Display number
Assign a display number to this display to enable the use of multiple display on the same ethernet segment. Turn monitor off and on for this to take effect.

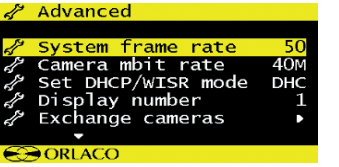


Figure 26

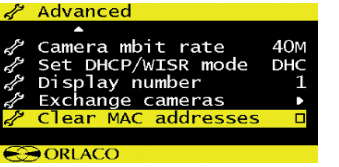


Figure 27

Exchange cameras
Exchange camera numbers. After the exchanges, the system needs to be power cycled to start new camera recognition and assignment process for the changed cameras. See figures 28, 29.

Clear MAC addresses
Clear all MAC to camera assignments. The system needs to be power cycled to start new camera recognition and assignment process.

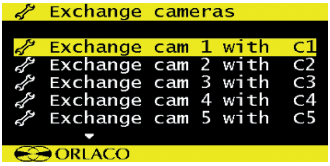


Figure 28

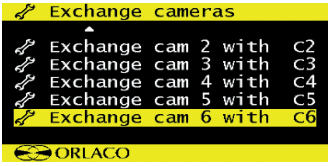


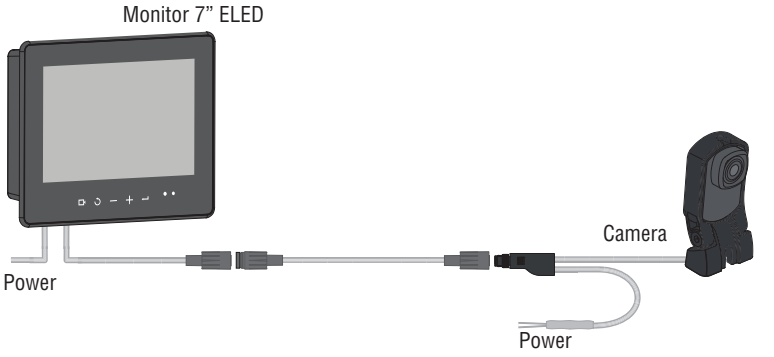
Figure 29

3.4. Info
This user manual describes the functions of the software version indicated on this monitor.

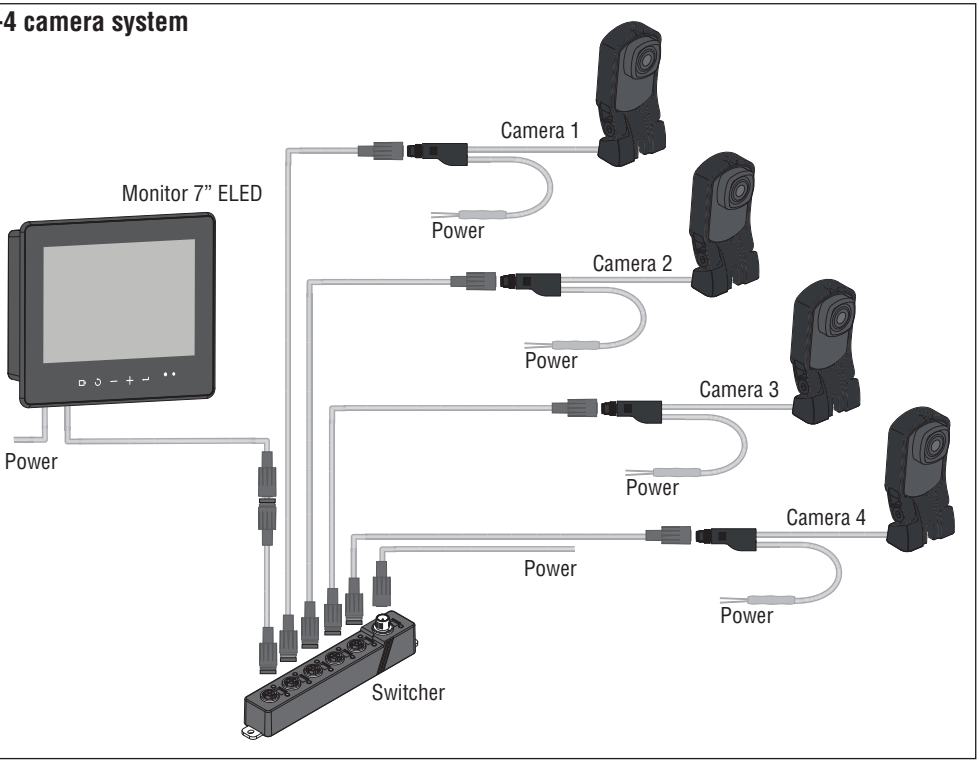
4. System overview ELED

Please pay attention that you use either Fast Ethernet or BroadR-Reach components in your system configuration. You can not mix these components.
Note that Orlaco does not offer a BroadR-Reach switch. Our Fast Ethernet switch is Art. Nr. 0405440.

1 camera system

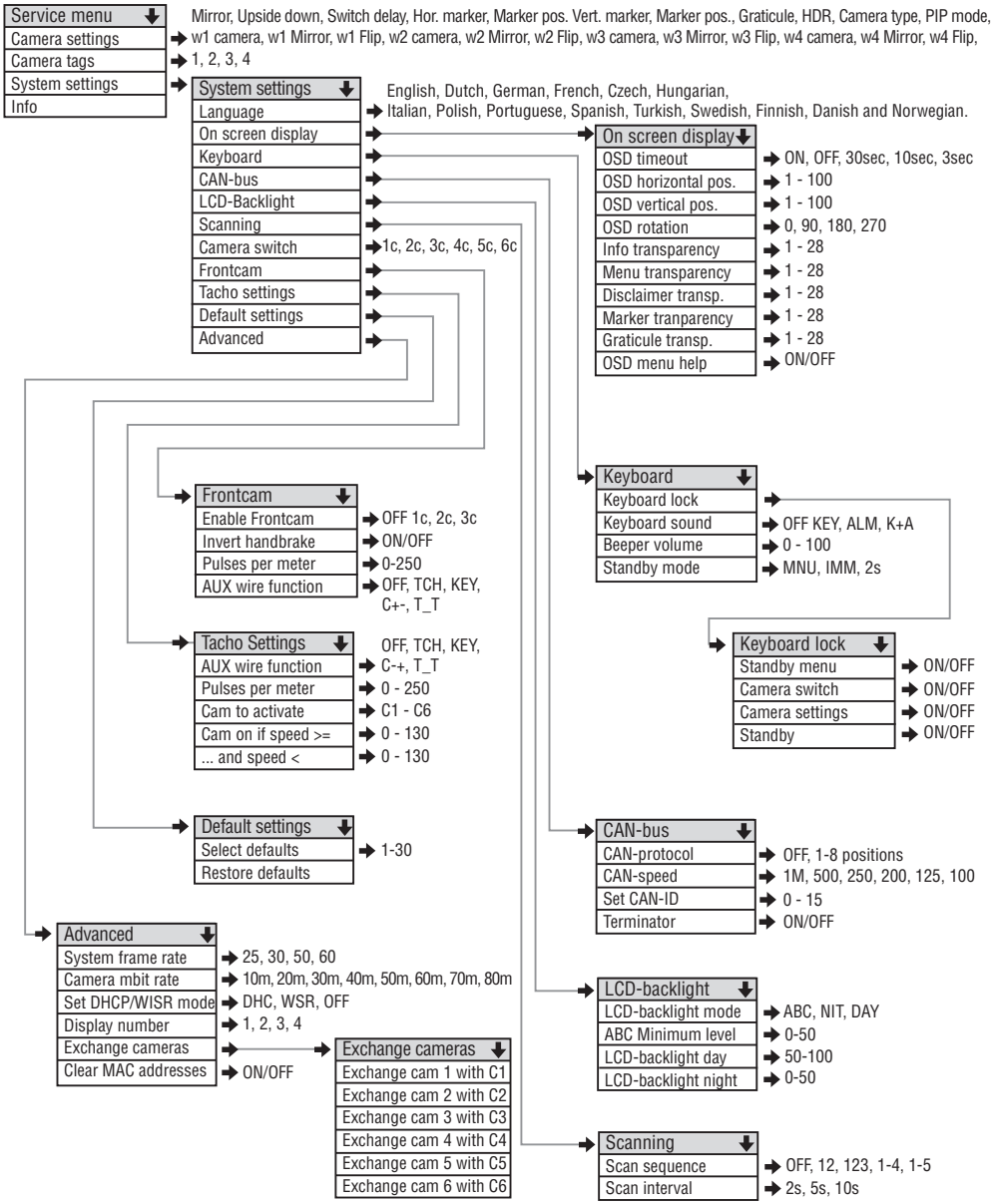


2-4 camera system



Service menu

Camera- + Minus- and Plus buttons



6. Version details

Version A 01. First issue, January 2021.
Version A 02. Multiple changes, February 2021.
Version A 03. Article numbers deleted, March 2021.

ORLACO

Orlaco is a Manufacturing company that specializes in making cameras and monitor systems for commercial vehicles, fork-lift trucks, cranes, off shore and maritime.

Our objective is to design and produce camera systems for the professional market that improve the drivers' view and increase operating efficiency.

At our facility in Barneveld we locate our design, manufacturing, warehousing and service department.

Vision is our mission®. Orlaco therefore deploys the development, manufacture, supply and service of camera and Monitor systems that will improve safety and efficiency of all vehicles, machinery and vessels. Our systems give the end user a view on each blind spot and will create comfort and improved working conditions. Our active approach will support market demands and innovations and will lead to enthusiastic ambassadors in the market; our customers.

For more information: www.orlaco.com

IM097229ENA03

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