

# Display LCD 10"

User manual

No. UM0972020 R3-0

Software version 2.3.0

05/2012

English



## User Manual

### ORLACO Display LCD 10”

Manual No. IM0972020, R3-0  
Software version 2.3.0

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#### Introduction

Check with Orlaco 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 display 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 system, ISO 14001 environmental management systems.

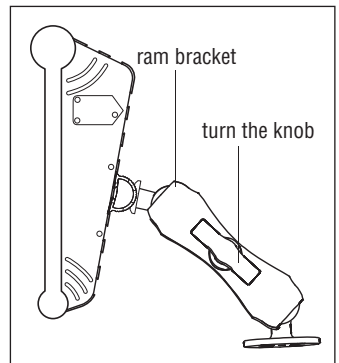


## Article numbers ORLACO Display LCD 10"

0206501  
0206510  
0206520  
0206530  
0206560  
0206570  
0206580



If you want to change the position of the monitor, please turn the knob of the bracket loose to change the position of the monitor.



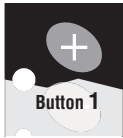
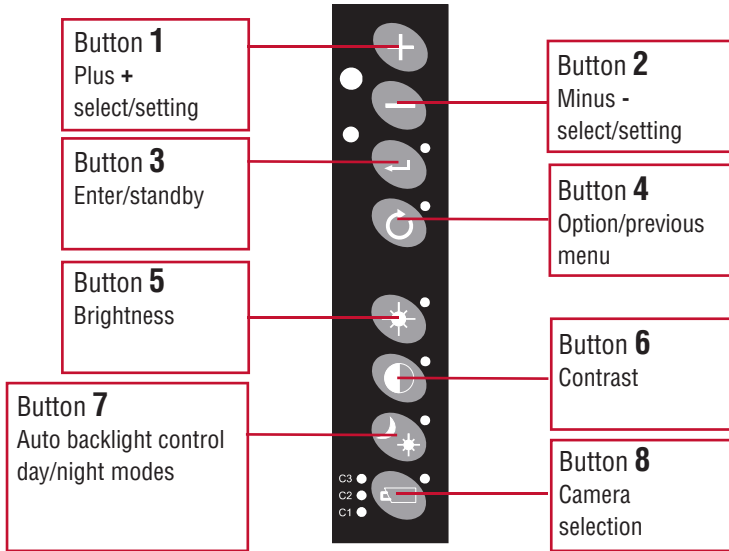
### Used abbreviations

ABC = Auto Backlight Control  
AFZ = Auto Focus Zoom  
AGC = Automatic Gain Control  
BHO = Black Hot  
CCC = Compact Color Camera  
LUT = Look Up Table  
DDE = Digital Detail Enhancement  
FUS = Fusion  
I&F = Ice and Fire  
NTS = NTSC  
OSD = Operating System Display  
PTZ = Pan & Tilt Zoom  
RB = Rainbow  
Stndrd = Std = Standard  
TCH = Tachometer  
TIC = Thermal Image Camera  
WHO = White Hot  
ZOO = Zoom

# 1. Quick Reference

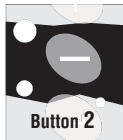
## Keyboard

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



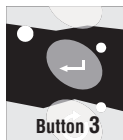
### Button 1, plus

Go to the previous menu option or move right



### Button 2, minus

Go to the next menu option or move left.



### Button 3, enter

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



### Button 4, option/previous menu

Return to the previous menu.



### **Buttons 5 and 6, setting color saturation**

Press the contrast (6) and brightness (5) buttons simultaneously to enable the setting mode. Set the required color saturation using the minus and plus buttons. This setting must be set separately for each camera.



### **Button 5, setting the brightness**

Press the brightness button once in order to enable the setting mode. Set the required brightness using the minus and plus buttons. Press the button again to disable the setting mode.



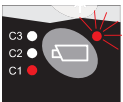
### **Button 6, setting the contrast**

Press the button once in order to enable the setting mode. Use the minus and plus buttons to set the required contrast. Press the button again to disable the setting mode.



### **Button 7, auto backlight control day/night settings**

Press this button to switch between the auto backlight day and night settings.



### **Button 8, camera selection**

Press the camera selection button once. The camera LED flashes to indicate that manual camera selection is enabled. Use the minus and plus buttons to select the camera. Press the button again to disable manual camera selection.

## 2. Getting started

### 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.

### 2.2. Description of the keyboard

Button no. **1** = Plus selection/setting button (+)

Button no. **2** = Minus selection/setting button (-)

Button no. **3** = Enter/Standby

Button no. **4** = Option/previous menu

Button no. **5** = Brightness

Button no. **6** = Contrast

Button no. **7** = Auto LCD backlight control day/night settings

Button no. **8** = Camera selection

### 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 4 on page 13. The OSD menu is available in English, Dutch, German, French, Italian, Czech, Hungarian, Polish, Portuguese, Spanish, Turkish, Swedish, Finnish, Danish and Norwegian.

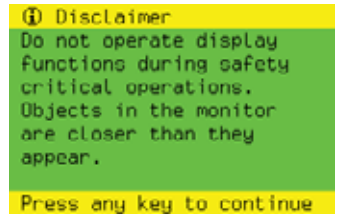
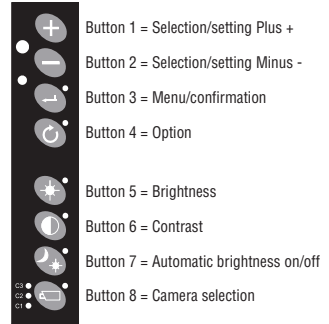


Figure 1

## 3. Keyboard

### 3.1. Button 8, camera selection

Press the camera selection button (8) once (see Figure 2). The camera LED flashes to indicate that manual camera selection is enabled (see Figure 3). Press the button again to disable manual camera selection.

Use the minus and plus buttons to select the desired camera.

The other buttons (6 = contrast, 5 = brightness and 5+6 = saturation) can also be used and these functions can be adjusted with the minus and plus buttons. Disable these functions by reselecting a camera with the minus and plus buttons.

Manual camera selection has priority over the scan function and the switchwires. The button function can be disabled in the service menu via the option 'system settings → keyboard → keyboard lock'. See system settings for more information (section 4.3. on page 12).

### 3.2. Button 7, auto LCD backlight control day/night settings

See figure 4.

For a compact camera, press this button to switch between:

- The ABC mode
- The LCD backlight day setting
- The LCD backlight night setting

TIC and AFZ cameras are exceptions. For these, pressing button 7 makes other functions available (see sections 3.8.1. and 3.8.2. on page 9).

The ABC mode controls the backlight between a minimum (adjustable; see also under service menu on page 13) and a maximum level depending on the intensity of the ambient light. A light sensor on the keyboard measures the ambient light (see Figure 6).

In the day and night mode the brightness of the backlight can be manually set using the minus and plus buttons (the settings are saved). These settings are not camera dependent and therefore apply for all cameras (see Figure 5).

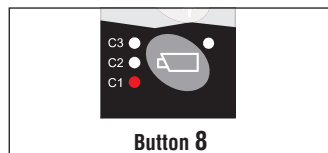
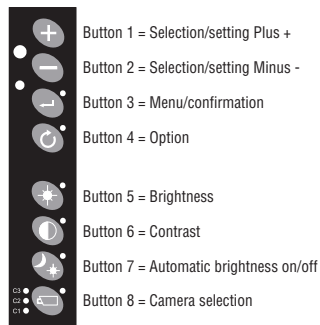


Figure 2

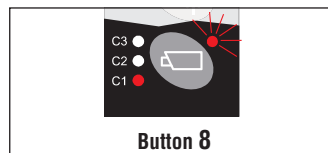


Figure 3



Figure 4



Figure 5

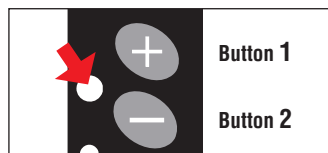


Figure 6

## 3. Keyboard

### 3.3. Button 6, setting the contrast

Press the contrast button (6) once to enable the setting mode (see Figure 7). Use the minus and plus buttons to set the required contrast. This setting must be set separately for each camera.

### 3.4. Button 5, setting the brightness

Press the brightness button (5) once to enable the setting mode (see Figure 8). Set the required brightness using the minus and plus buttons. This setting must be set separately for each camera.

### 3.5. Buttons 5 and 6, setting color saturation

Press the contrast (6) and brightness (5) buttons simultaneously to enable the setting mode.

Set the required color saturation using the minus and plus buttons. This setting must be set separately for each camera.

### 3.6. Locking buttons 5, 6 and 7

These buttons can be locked in the service menu (section 4.3.3. keyboard, see page 13).

### 3.7. Button 4, option button

#### • Single scan sequence

If the option button (4) is pressed and a CCC is selected (see camera settings on page 10), then the display generates a single scan (not continuous) of multiple connected cameras in a sequence (using the set time interval. The scan time must only be set if the main scan is started and then stopped again). See page 14, scanning.

#### • Connection with an AFI/AFZoom camera

This option enables the zoom function (indicated by the illuminated button). The zoom factor can be changed using the plus and minus buttons.

#### • Connection with a TIC camera

Zoom factors for a TIC camera are: 1x (standard display), 2x and 4x. When zooming out to 1x, the pan/tilt function is set at the starting point.

#### • Connection with a PTZ camera

If pan/tilt is enabled and the option button (button 4) is pressed several times, then the ZOOM, PAN, TILT sequence is run through (see Figure 10). The minus and plus buttons are used to activate the ZOOM, PAN or TILT movement (PAN and TILT for a TIC camera only work if the digital zoom is 2x or 4x).

The TIC camera video standard and spot meter settings are only accessible via the camera menus. There are no keys for direct access to these settings.

See page 10, section 4: service menu, camera settings.

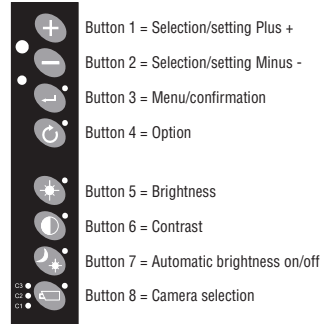


Figure 7



Figure 8



Figure 9



## 3. Keyboard

### 3.8. Quick settings

When in normal image mode, the following quick settings are available as shortcuts:

#### 3.8.1. TIC camera

When a TIC camera is selected and button 7 (Figure 12) is pressed, then Color LUT and DDE quick settings are enabled (indicated by illuminated button 7). Using the minus button (button 2), the Color LUT settings (WHO, BHO, FUS, RB, I&F) can be selected (see Figure 11). Using the plus button (button 1), the DDE settings (OFF, LOW, MED, HI) can be selected.

If button 7 (Figure 12) is pressed for more than 3 seconds, then the TIC camera performs a FFC (Flat Field Correction) cycle.

#### 3.8.2. AFZ camera

If an AFZ camera is selected and button 7 is pressed (Figure 12), then the zero lux and backlight functions of the AFZ camera are enabled/disabled.

#### 3.8.3. CCC camera

If a CCC is selected, then pressing button 7 (Figure 12) switches between all backlight settings for the entire system (DAY, NIGHT, ABC). See section 3.2.



Figure 10



Figure 11



Figure 12

## 4. Service menu

### 4. Using the service menu

To open the service menu, simultaneously press the camera selection button (8), the minus button (2) and the plus button (1) (see Figure 13). The display (see Figure 14) will appear. The following buttons are used to navigate through the menus:

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

#### 4.1. Camera settings

Select camera settings. Press enter to open the 'Camera settings' menu. Use the minus (2) and plus (1) buttons to select which camera to configure. Then confirm this selection by pressing the enter button (3). The yellow cursor is now activated in the list of items. Use the minus (2) and plus (1) buttons to select the item to adjust and then confirm this selection by pressing the enter button. 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 (2) and plus (1) buttons. Save the new settings by pressing the enter button (3).

##### 4.1.1. Mirror

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

##### 4.1.2. Upside down

This option flips the image (upside down).

##### 4.1.3. Switch delay

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

##### 4.1.4. Horizontal line mark

Enable this option to show a reference line. The reference line is displayed as a horizontal green line. See Figure 37 on page 16.

##### 4.1.5. Line position

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

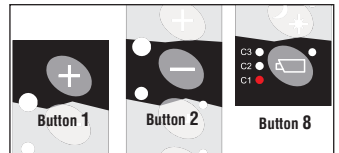
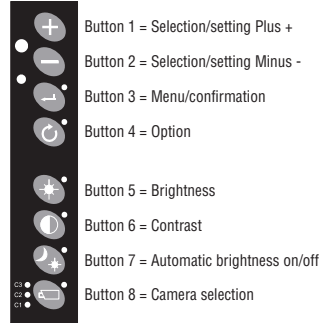


Figure 13

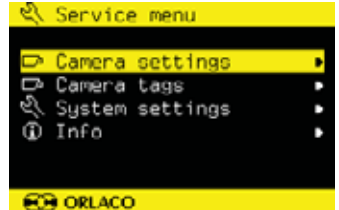


Figure 14



Figure 15

## 4. Service menu

### 4.1.6. Camera type

Select the camera type that is connected. The special features of that camera type will then become available. The camera types that can be selected are:

**AFZ:** Enable this option if an AF/AF zoom camera is connected. If AFZ is selected, the backlight, zero lux and stabilizer options are enabled.

Operation of the zoom function:

**Button 1** - Zoom in.

**Button 2** - Zoom out.

**Button 4** - Enable the zoom function. The zoom function is disabled if the button is pressed again.

**TIC:** Enable this option if a Thermal Image Camera (TIC) is connected. If TIC is selected, then the video standard, color LUT, TIC DDE and spot meter options are enabled.

**CCC:** Enable this option if a Compact Color Camera (CCC) is connected.

### 4.1.7. Video stndrd

Video standard: The camera type must be set to TIC. Select the standard video output for the camera: PAL or NTSC (NTS).

### 4.1.8. Backlight

This option corrects the background light in order to improve the screen display of dark objects in bright/lit surroundings. This option is only available if an AFZ camera is connected to a display LCD 10" serial. For direct button operation: Button 7.

### 4.1.9. Zero lux

Enable this option to improve the light sensitivity of the camera in dark surroundings. This option is only available if an AFZ camera is connected to a display LCD 10" serial.

### 4.1.10. Stabilizer

This option enables the stabilizer function, if the camera has one. This option is only available if an AFZ camera is connected to a display LCD 10" serial.

### 4.1.11. Color LUT (look up table)

The camera type must be set to TIC. Select the color palette to be used to give the correct color temperature. Select from WHO (white hot), BHO (black hot), FUS (mixed), RB (rainbow) and I&F (ice and fire). The AGC (automatic gain control) is automatically set for the WHO, BHO, FUS and RB settings.

### 4.1.12. TIC DDE (TIC digital detail enhancement)

Possible settings are: OFF, LOW, MED and HI. Select the desired degree of image enhancement.



Figure 16

Depending on the choice of camera type (see Figure 17), the settings marked in blue will or will not be available.

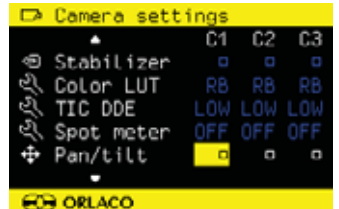


Figure 17

## 4. Service menu

### 4.1.13. Spot meter

Only works if TIC is selected as the camera type (see section 4.1.6. on page 11):

**OFF** (spot meter off)

**B C** (bar in Celsius)

**B F** (bar in Fahrenheit)

**N C** (number in Celsius)

**N F** (number in Fahrenheit)

**BNC** (bar + number in Celsius)

**BNF** (bar + number in Fahrenheit)

### 4.1.14. Pan/tilt

Enabling the pan/tilt function makes standard pan and tilt operation possible (option button = button 4). It is possible to use digital pan/tilt when the TIC image is zoomed 2x or 4x.

### 4.1.15. Brightness

The setting for the brightness of the monitor. For direct button operation: Button 5.

### 4.1.16. Contrast

The setting for contrast on the monitor. For direct button operation: Button 6.

### 4.1.17. Saturation

The color saturation setting for the camera image. For direct button operation: Buttons 5+6.

## 4.2. Camera tags

See Figure 19. In this menu, names can be given to the camera inputs. See Figure 20.

The number of inputs depends on the video switch type that is set (see section 4.3.7. on page 14).

## 4.3. System settings (see Figure 21)

### 4.3.1. Language

See Figure 22. 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.

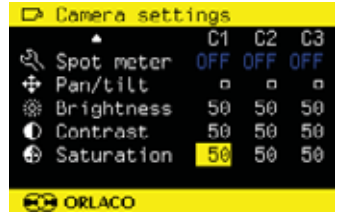


Figure 18

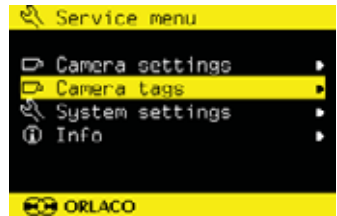


Figure 19

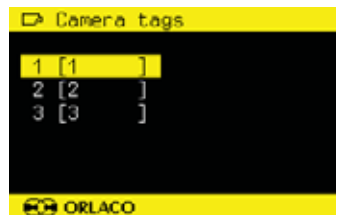


Figure 20



Figure 21

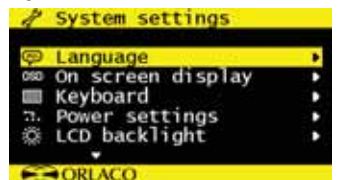


Figure 22

## 4. Service menu

### 4.3.2. On Screen Display (OSD)

This option opens the OSD settings menu. See Figure 23. 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 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.

### 4.3.3. Keyboard

This option opens the keyboard menu. See Figure 24. This menu has the following option:

#### Keyboard lock

This option opens the settings menu for the keyboard lock. It is possible to lock various functions in order to prevent an unwanted changes. See Figure 25.

### 4.3.4. Power settings

See Figure 26. This menu has the following option:

#### Standby mode

There are three available choices — use the minus and plus buttons to select the various functions.

**MNU** = With this setting you access the operator menu via the enter button (3). Select the required setting.

**IMM** = Immediate standby

**2S** = Standby after a delay of 2 seconds

### 4.3.5. LCD backlight

This option opens the backlight submenu for the 10" display. See Figure 27. This menu has the following 4 options:

#### LCD backlight mode

This option enables automatic backlight control (ABC). The display automatically adapts its brightness to the ambient light. Metering sensor on the keyboard. If required, a specific day or night brightness can be manually set.

#### 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%).



Figure 23

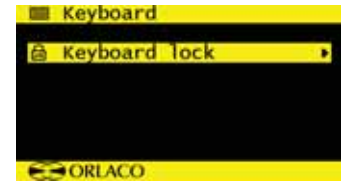


Figure 24



Figure 25

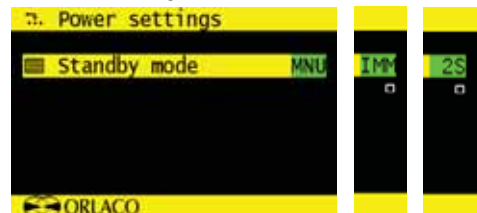


Figure 26

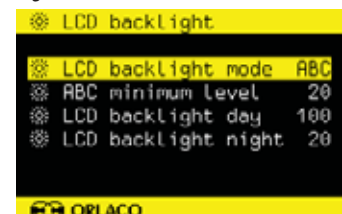


Figure 27

## 4. Service menu

### 4.3.6. Scanning

This option opens the camera scanning submenu. See Figure 28.

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.

### 4.3.7. Camera switch

This option configures the type of video switch that is used. See Figure 29.

'OFF' if no camera switch is used → 1 camera system.

'3C' for an external camera switch → 3 camera system.

'2C' if a 2-4 camera cable is used → 2 camera system.

'4C' if a combination of internal and external switches and a 2-4 camera cable are used → 4 camera system.

'QUA' for a quad system, only in combination with the quad switch.

### 4.3.8. AUX wire function

Select the function of the AUX 1 and AUX 2 wires. Set to TCH for tachometer on AUX 1, or ZOO for + and - functions on AUX 1/2.

### 4.3.9 Default settings

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). You can choose between 16 sets of default settings. Contact ORLACO for further information. Select the option 'Restore defaults' to restore the factory settings.

#### Warning:

All user settings are lost when the factory defaults are restored!

### 4.3.11. External device configuration

This option opens the configuration menu for an external device. Only use this option if a device is connected that has its own OSD (Multiview, Spectrum Scanner, etc.). Exit the menu by pressing the option button (4) for 3 seconds.

## 4.4. Info

This user manual describes the functions of the software version indicated on this display (see Figure 32).

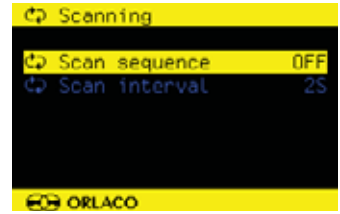


Figure 28



Figure 29

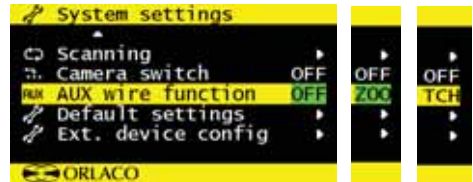


Figure 30

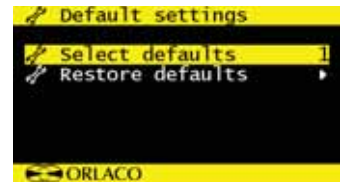


Figure 31



Figure 32

## 5. Operator menu

### 5. Using the operator menu

The operator menu is not available by default due to the keyboard lock. To disable the lock, refer to system settings on page 13.

Press the minus and plus buttons simultaneously to open the operator menu. The following buttons are used for navigation:

**1 - Plus:**

Go to the previous menu option

**2 - Minus:**

Go to the next menu option

**3 - Enter:**

Select or enable the chosen option

**4 - Option/previous menu:**

Return to the previous menu

The following settings can be adjusted (see Figure 34):

**Language**

**Camera settings**

**Set video channel**



- Button 1 = Selection/setting Plus +
- Button 2 = Selection/setting Minus -
- Button 3 = Menu/confirmation
- Button 4 = Option
- Button 5 = Brightness
- Button 6 = Contrast
- Button 7 = Automatic brightness on/off
- Button 8 = Camera selection

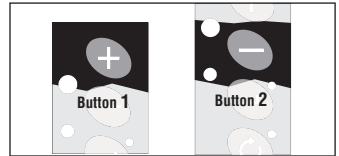


Figure 33

#### 5.1. Language

This option opens the language selection menu (see Figure 35). The selected language will be used for all OSD (On Screen Display) menus. The OSD menu is available in English, Dutch, German, French, Czech, Hungarian, Italian, Polish, Portuguese, Spanish, Turkish, Swedish, Finnish, Danish and Norwegian.

#### 5.2. Camera settings (see Figure 36)

**Horizontal line mark**

Enable this option to show a reference line. The reference line is displayed as a horizontal green line. See Figure 37.

**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.

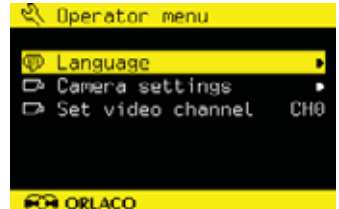


Figure 34



Figure 35



Figure 36

## 5. Operator menu

### 5.3. Video channel settings

See Figure 38.

This option sets the video channel for the Orlaco Spectrum Scanner (see Figure 39).

The following options are available:

CH0 = channel 0 to CH7 = channel 7

AUT = automatic

See the Spectrum Scanner IM0004060 installation manual for descriptions of these channels.



Figure 37

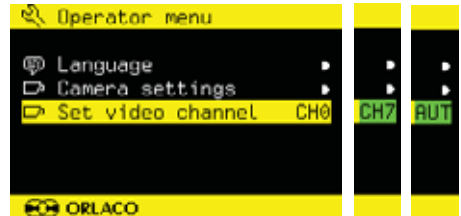


Figure 38

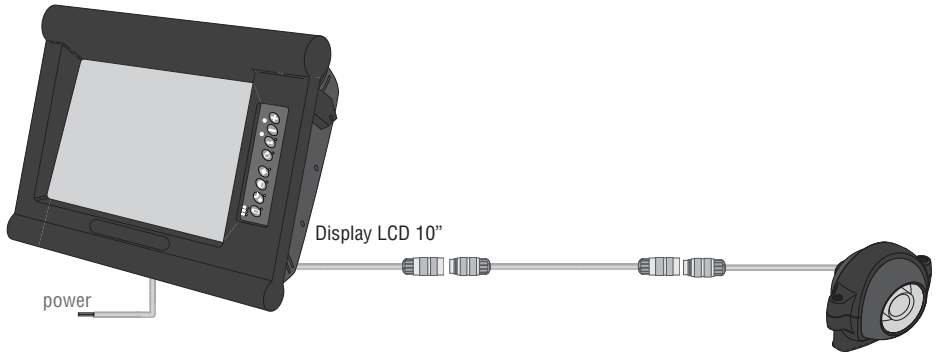


Figure 39

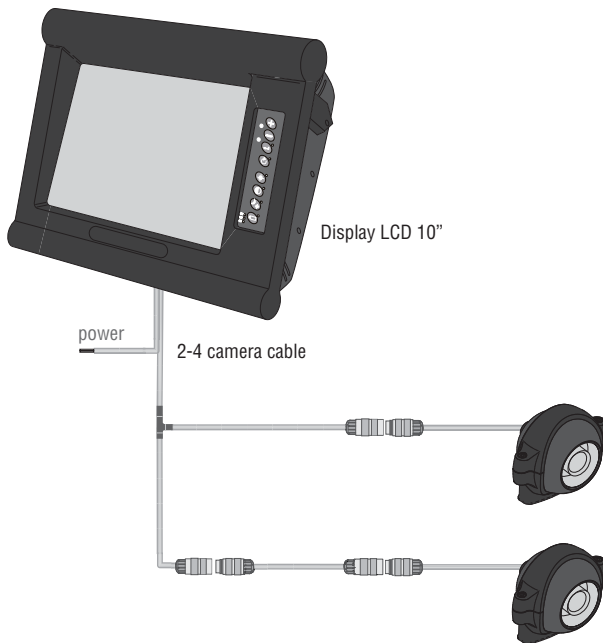


# 6. System overview

## 1 camera system

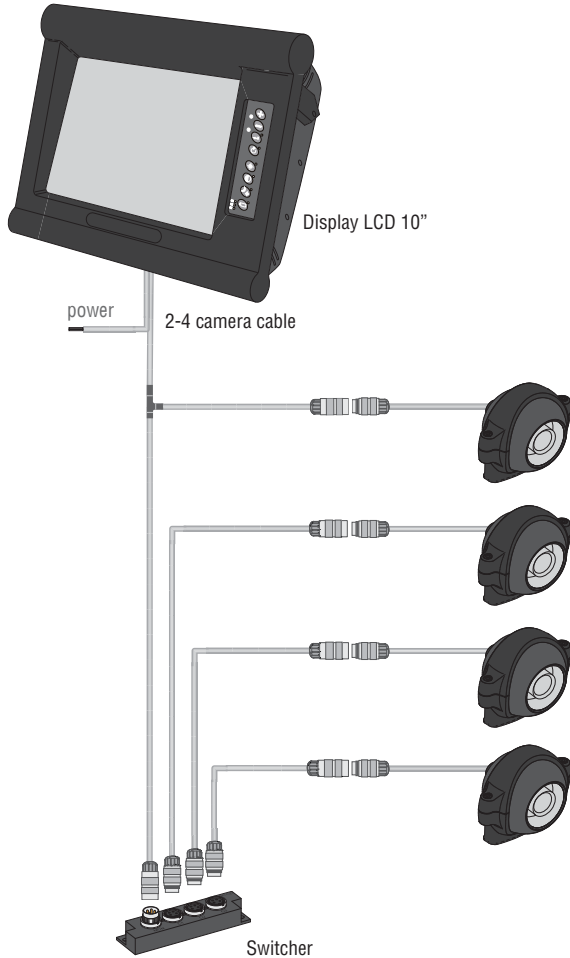


## 2 camera system With Y-split cable



## 4 camera system

With Y-split cable



# 7. Overview of menus

## Standby menu

Enter

Standby menu ↓	
Standby	Display is on but there is no picture
Info	Software information

## Operator menu

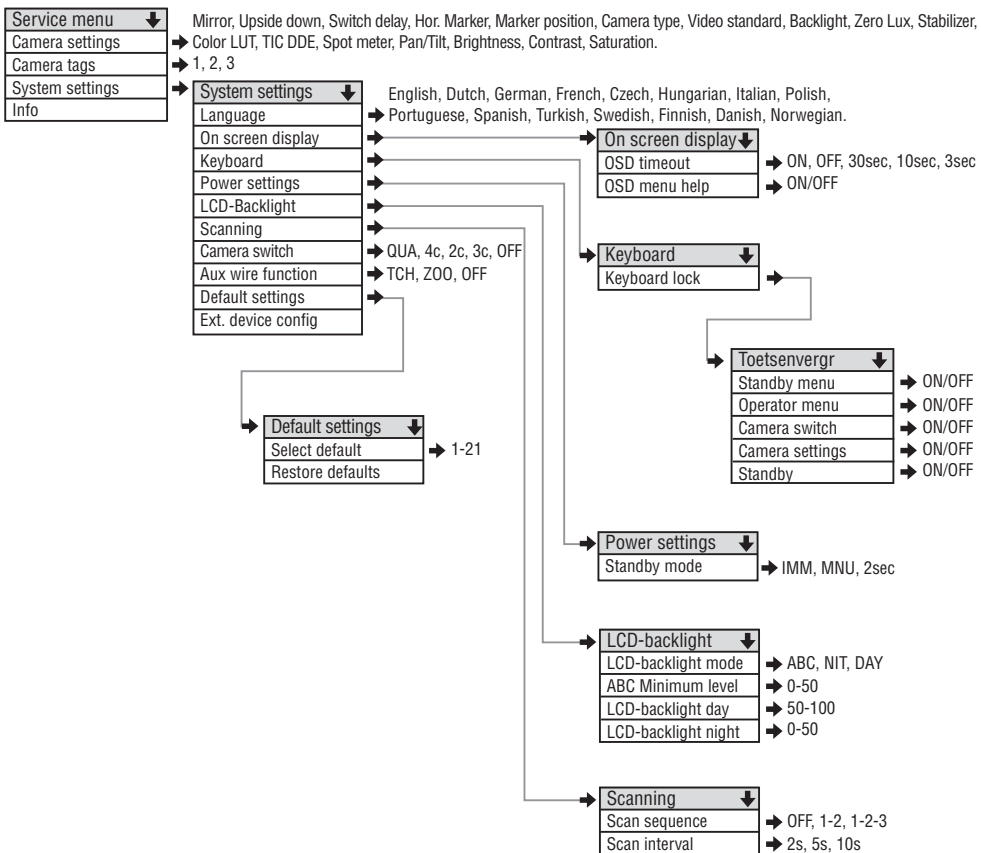
The operator menu is not available by default due to the keyboard lock.

Minus- and Plus buttons

Operator menu ↓	English, Dutch, German,
Language	→ French, Czech, Hungarian, Italian, Polish, Portuguese, Spanish, Turkish, Swedish, Finnish, Danish, Norwegian.
Camera settings	→ Horizontal Marker, Marker position.
Set video channel	→ CH0, CH1, CH2, CH3, CH4, CH5, CH6, CH7, AUT

## Service menu

Camera- + Minus- and Plus buttons



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 factory in Barneveld, we have a production department, warehouse, design department, service department and showroom.

Vision is our mission, and Orlaco therefore deploys the development, manufacture, supply and service of camera and display 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 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](http://www.orlaco.com)



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