



**Let us protect your business!**

**CCTV Camera User Manual**



## Summary

<b>1 Warnings &amp; Precautions</b> .....	2
<b>1.1 Safety Terms and Symbols</b> .....	2
<b>1.2 European Union Directives</b> .....	3
<b>1.3 Warnings</b> .....	3
<b>2 General Precautions</b> .....	3
<b>3 Limitations and Disclaimer of Warranty</b> .....	4
<b>4 Connections</b> .....	4
<b>4.1 Connecting the video signal</b> .....	5
<b>4.2 Power connection</b> .....	5
<b>4.3 Video signal switching</b> .....	6
<b>5 Installation</b> .....	6
<b>5.1 Bullet type camera</b> .....	6
<b>5.2 Dome type camera</b> .....	7
<b>5.3 Framing adjustment</b> .....	7
<b>5.4 Focal adjustment</b> .....	7
<b>6 OSD menu</b> .....	8
<b>6.1 OSD menu management via joystick</b> .....	8
<b>6.2 OSD menu management via coaxial control</b> .....	8
<b>7 Troubleshooting</b> .....	12

## 1 Warnings & Precautions

Dear Customer, We thank you for choosing one of our products whose correct use guarantees solutions of the highest quality and reliability over time. This manual provides detailed information and instructions for using the product. Read it carefully before installing in order to take full advantage of the features of the device and store it in a safe place for future and useful consultations. Dear Customer, We thank you for choosing one of our products whose correct use guarantees solutions of the highest quality and reliability over time. This manual provides detailed information and instructions for using the product. Read it carefully before installing in order to take full advantage of the features of the device and store it in a safe place for future and useful consultations.



### 1.1 Safety Terms and Symbols

The following indications may appear in the manual:



The lightning bolt with arrow symbol, within an equilateral triangle, is intended as a danger to the user due to the possibility of an electric discharge from the product which may be of sufficient magnitude to constitute a risk of electric shock to people.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of dangerous operations and maintenance, described in the manual accompanying the electrical appliance.

## 1.2 European Union Directives



The device complies with the European Union Directive on electromagnetic compatibility (2004/108 / EC).



### Correct disposal of the product

**(WEEE = European directive on waste electrical and electronic equipment)**

*(applicabile nell'Unione Europea e in altri paesi europei che adottano sistemi di raccolta differenziata)*

The use of this symbol on the product indicates the possibility of disposing of this product as household waste at the end of its life cycle. Incorrect disposal of this product helps prevent potential negative consequences for the environment and health, which may be caused as a result of inappropriate handling of the product as waste.

For more detailed information on the recycling of this product, contact the local municipal office in charge, the household waste disposal service or the shop where the purchase was made.

## 1.3 Warnings

Changes or alterations made to the equipment, if not expressly approved by the Manufacturer, will void the warranty and the User's authorization for its use.

## 2 General Precautions

- Please read this manual carefully before installing the camera and keep it in a safe place and in good condition for future consultation and maintenance of the camera itself.
- The installation must be carried out in an appropriate way and place, in order to ensure the correct functioning of the device and the best image quality.
- The installation and maintenance of the camera must be carried out only by qualified technical personnel and in full compliance with the safety regulations in force.
- There are no parts inside the equipment that may be subject to maintenance by the User. All maintenance interventions must only be carried out by authorized and qualified personnel.
- Strictly follow the installation criteria dictated by the rule of common sense and degree of protection of the equipment IP66 / IP67 (CEI 60 529) depending on the model and in any case away from the possibility of being immersed in water.
- Keep the front glass or plexiglass clean at all times to ensure the best image quality. Be especially careful not to leave fingerprints or streaks on the glass. If necessary, clean the plexiglass with a soft, damp cloth to avoid scratches. Do not use abrasive cleaners or cloths.

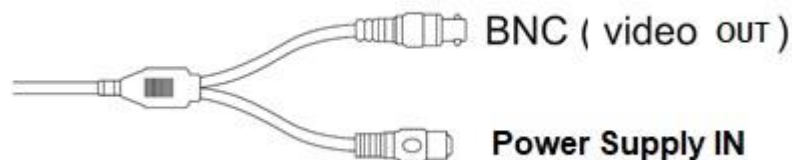
- If any kind of liquid enters the camera, it must be disconnected from the power supply immediately and have it checked by an authorized technician before restarting it.
- Do not install the camera in places subject to temperatures at the limit of operation of the device or in places with high air humidity.
- Do not install the camera in places where there are gas or oil vapors.
- Do not install the camera in places subject to unstable lighting conditions. Considerable variations in light or worse, the "flickering" of a neon lamp can compromise the normal operation of the device.
- Never touch the camera with wet hands for any reason.
- Do not expose the camera to radioactive sources as it will cause serious damage to the sensor.
- Be especially careful NOT to use any power sources other than those specified.
- Do not aim the camera lens at strong light sources that could damage the sensor and produce the "Blooming" and "Smear" effects.
- During the installation phase, avoid pointing the IR LEDs directly at the eyes (if they are on).
- Make sure that the camera has not been damaged or has suffered external shocks during transport, storage or installation.

## 3 Limitations and Disclaimer of Warranty

In no case will the retailer be liable to any other party or person for the following:

- Personal damage or any damage caused by inappropriate use or negligence on the part of the User.
- Unauthorized disassembly, repair or modification of the product by the User.
- Incidents or losses resulting from cases in which images are not displayed, for any reason or motivation including any type of product failure or problem.
- Any problems, resulting in inconvenience, loss or damage, arising from the system in combination with third party devices.

## 4 Connections



Make sure the camera is not powered before making connections.

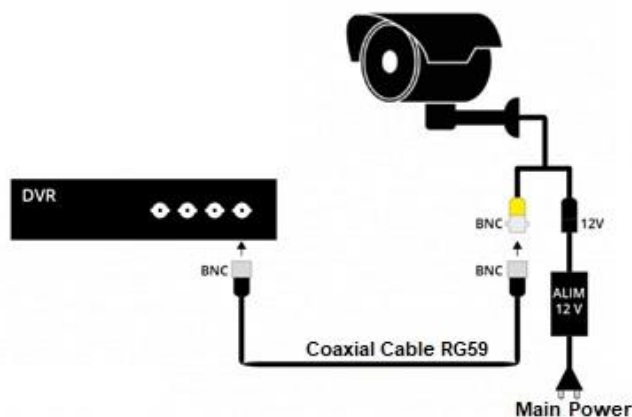
## 4.1 Connecting the video signal

The video cable is connected to the female bayonet BNC connector, which is then taken to the monitor or DVR in general via RG59 type coaxial cable and BNC connector. Twisted pair cables can also be used with balun converters.

## 4.2 Power connection

Check that the power supply is correct and provided for the camera model used.

The use of adequate power supply units is recommended. 12Vdc / 1A or 12Vdc / 1,5A stabilized is



recommended. The pin required is the standard 5.5 mm. Be careful to use STABILIZED power supplies that supply 12V in any load condition. The use of a power supply voltage other than 12VDC can generate video disturbances and in the worst cases damage the camera. Beware of power extension cables that are too long or have a small section, which could introduce an excessive voltage drop, especially when the IR illuminator is turned on. It is good practice to connect and power the camera only at the end of the installation.

The values expressed in the following table are to be considered at a temperature of 20 ° C [68 ° F].

Conductors section (AWG)	24 AWG (0,22mm <sup>2</sup> )	22 AWG (0,33mm <sup>2</sup> )	20 AWG (0,52mm <sup>2</sup> )	18 AWG (0,83mm <sup>2</sup> )
Resistance value (Ω/m)	0.078	0.050	0.030	0.018
Voltage drop (V/m)	0.028	0.018	0.011	0.006

As the copper conductor section increases, there is a decrease in the resistance value (Ω / m) and therefore in the voltage drop on the cable itself. Therefore, consider carefully the length and section of the cable during the design phase.

Excessive distances between the power supply and the camera could compromise the correct functioning of the camera.

The acceptable standard of variation of the supply voltage is 12Vdc ± 10%



The voltage drop value on the cable may slightly deviate from the above values as it may depend on the quality of the cable and on the manufacturer.

## 4.3 Video signal switching



### Joystick:

To switch to other video format, push the button for 5 seconds for to have:

To [LEFT] for AHD video format.

To [RIGHT] for CVBS video format.

To [UP] for TVI video format.

To [DOWN] for CVI video format.



**Function available only for camera models equipped with Joystick**

## 5 Installation

This section indicates how to install the camera on a ceiling or wall with protected cable passage.

Check the solidity of the structure on which you intend to fix the camera, mark the points with a pencil and drill the holes necessary for its fastening.

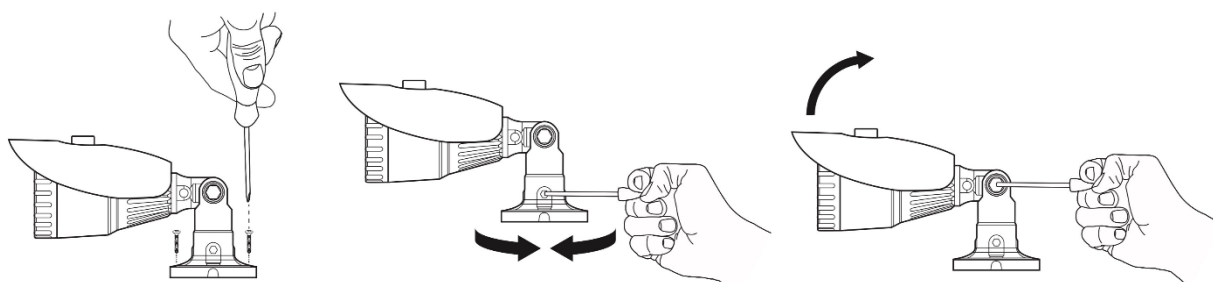


### Attention:

The plugs supplied cover most of the fixing cases, but may not be suitable for the type of support (wall / ceiling) that you are about to use to fix the camera.

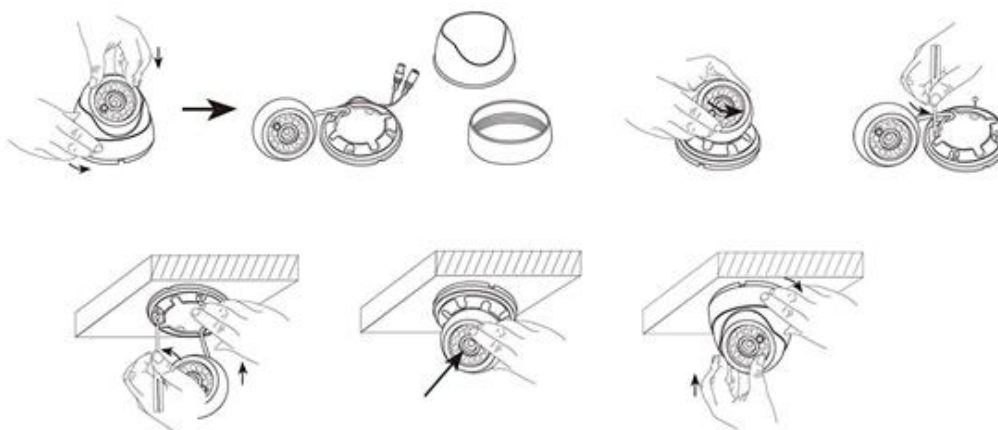
### 5.1 Bullet type camera

The bullet cameras are equipped with an integrated bracket for wall mounting, specially designed to allow the passage of cables inside it and protect them from tampering attempts. The camera is generally mounted at the cable outlet so as not to leave exposed cables. However, the fixing base also has a lateral cable outlet slot if the cables come from the side in the external duct. The bracket must be fixed to the wall or ceiling with the plugs provided.



## 5.2 Dome type camera

Dome cameras consist of the camera unit and the fixing base which are screwed together. Before proceeding with the assembly, the fixing base must be unscrewed, separating it from the camera body. Generally, no tools are needed to unscrew the fixing base from the camera body, however, if this is tightened too deeply, you can help yourself by placing a rigid rod, such as a screwdriver, between the two lateral cable outlet slots located in the base. The fixing base, separated from the camera, is fixed to the wall or to the wall with plugs in correspondence with the cable outlet hole and the camera body is subsequently screwed onto it. Before tightening fully, correctly orient the viewing angle.



## 5.3 Framing adjustment

Once correctly fixed to the wall / ceiling, point it in the desired direction and lock it (it may vary from model to model) by tightening the screws with the supplied Allen key.

## 5.4 Focal adjustment

Fixed lens cameras (IR up to 20m) do not require focus as they are factory set for most applications. Cameras with adjustable lenses are equipped with 2 external screws that allow you to adjust the lens focal length and focus without having to open the camera casing. Initially act on the ZOOM screw and adjust the width of the frame (wide angle / zoom) according to the area to be framed. Remember that a greater wide angle inevitably corresponds to less image detail. Once the field of view has been defined, use the FOCUS screw to perfectly focus the framed area. Remember that each lens has its own depth of field so that only a portion of the space in front of the camera can be perfectly focused. Concentrate on the most important area to adjust the focus in the best way.



**ATTENTION:** The focus screws have a limit switch block that prevents the drive rings from coming out of their seat. It is necessary not to force beyond the limit switch to avoid damaging the adjustment mechanism.



**Function available only for camera models equipped with varifocal lens**

To ensure excellent image quality even in low light conditions, all models are equipped with a Day & Night function with removal of the IR filter to automatically switch from color to B / W and vice versa. In addition, all models are equipped with integrated 850nm IR LED illuminators, for adequate illumination of the area being shot. Be careful not to install the camera very close to strong light sources or in places subject to reflection of light that could compromise the correct vision of the camera.



## 6 OSD menu

Depending on the camera models, two control / command tools are available:

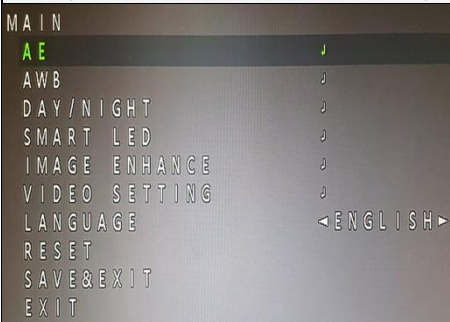
1. Joystick
2. Coaxial control

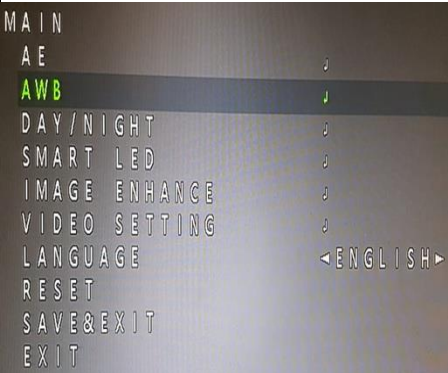
### 6.1 OSD menu management via joystick

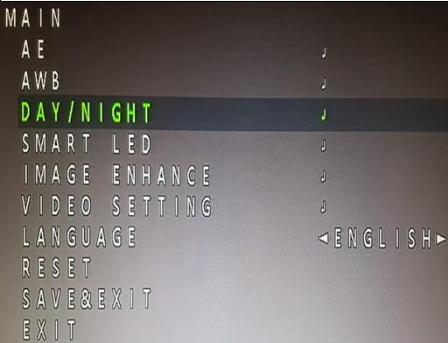
1. Press the [SET] button to enter the initial Menu page.
2. Select the topic / function of interest using the Scroll Up / Down [UP] / [DOWN] buttons.
3. Use the left [LEFT] or right [RIGHT] buttons to select the different operating modes.
4. Move to [EXIT] and press [SET] to exit the setting mode and save the configuration.

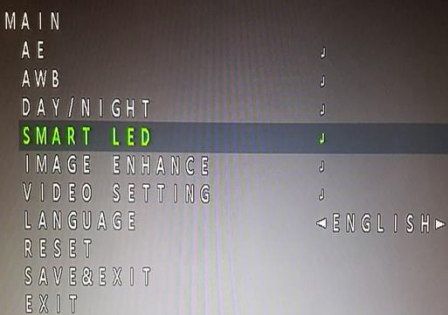
### 6.2 OSD menu management via coaxial control

1. Access the DVR menu in the appropriate coaxial configuration section (in ENVIO DVRs this setting is called "XVI control". Press the central console button that appears on the monitor to enter the menu home page.
2. Select topic / function of interest using the scroll up / down buttons.
3. Use the left or right buttons to select the different operating modes.
4. Move to [EXIT] and press the center button to exit the setting mode, without saving the settings. saving the configuration.
- 5 Navigate to [SAVE & EXIT] and press the center button to exit the setting mode, saving the settings.

AE (AUTOMATIC EXPOSURE)	
	<p>This section offers the ability to set different automatic exposure options to choose from based on the light conditions of the image to be shot.</p> <p><b>Exposure</b> adjusts the operation of the camera's automatic iris making the image lighter or darker.</p> <p>By browsing the various settings, you can directly see the image rendering and choose the mode that guarantees the best result.</p> <p><b>BRIGHTNESS</b> allows you to adjust the general brightness of the image, with values that can be set from 1 to 20.</p> <p><b>EXPOSURE</b> allows you to adjust the exposure mode:</p> <p><b>GLOBE</b> mode is used in regular lighting conditions.</p> <p><b>The BLC</b> mode is used to compensate for the presence of a dark subject on a light background such as in the case of a person with a window behind him. In BLC mode it is possible to set the compensation level (LEVEL) with values from 1 to 9.</p> <p><b>RETURN:</b> allows you to return to the previous menu by choosing whether or not to save the settings made.</p>

AWB (Auto White Balance)	
 <p>MAIN            AE  <b>AWB</b>            DAY/NIGHT            SMART LED            IMAGE ENHANCE            VIDEO SETTING            LANGUAGE &lt;ENGLISH&gt;            RESET            SAVE&amp;EXIT            EXIT</p>	<p><b>GRAY WORLD:</b></p> <p><b>ATW (Auto Tracing White Balance):</b> By setting “ATW” the camera will automatically track white, based on changes in light.</p> <p><b>MWB (Manual White Balance):</b> By setting “MWB” it is possible to manually modify the Blue and Red balance values, from 0 to 100 (default 50). In this case the camera will respect the set value.</p> <p><b>RETURN:</b> allows you to return to the previous menu by choosing whether or not to save the settings made.</p>

DAY / NIGHT	
 <p>MAIN            AE            AWB  <b>DAY/NIGHT</b>            SMART LED            IMAGE ENHANCE            VIDEO SETTING            LANGUAGE &lt;ENGLISH&gt;            RESET            SAVE&amp;EXIT            EXIT</p>	<p><b>EXT [OUTDOOR]:</b> default condition. In this mode, the Day / Night switching on a command received from the sensor located on the camera (recommended).</p> <p><b>AUTO:</b> by selecting this position, switching occurs through the analysis of the image itself. The camera reproduces color images when the lighting is sufficient and automatically switches to b / w when the lighting is insufficient to reproduce color images without background noise.</p> <p><b>COLOR:</b> set this mode to force the camera to reproduce Color images in any light condition.</p> <p><b>B / W:</b> Set this mode to force the camera to reproduce black and white images in any light condition.</p> <p><b>RETURN:</b> allows you to return to the previous menu by choosing whether or not to save the settings made.</p>

SMART LED	
 <p>MAIN            AE            AWB            DAY/NIGHT  <b>SMART LED</b>            IMAGE ENHANCE            VIDEO SETTING            LANGUAGE &lt;ENGLISH&gt;            RESET            SAVE&amp;EXIT            EXIT</p>	<p>The SMART LED function allows you to manage the operating mode of the white LEDs. There are three ways:</p> <p><b>AUTO:</b> in this mode, the white LEDs vary their intensity according to the obstacle in front of them, and they light up at night.</p> <p><b>MANUAL:</b> In this mode the LEDs are always on.</p> <p><b>CLOSE:</b> In this mode the LEDs are always off.</p> <p><b>VALUE:</b> is the intensity level of the LEDs.</p> <p><b>RETURN:</b> returns to the previous menu.</p>

## IMAGE ENHANCE



**CONTRAST:** By setting “MANUAL” it is possible to manually modify the contrast values, from 0 to 20 (default 7). In this case the camera will respect the set value.

By setting “AUTO” the contrast values will be managed automatically by the camera.

**SHARPNESS :** configure the parameters for image saturation.

By setting “AUTO” the saturation values will be managed automatically by the camera.

By setting “MANUAL” it is possible to manually modify the saturation values from 0 to 20 (default 10). In this case the camera will respect the set value.

**SATURATE :** Configures the parameters for sharpness of the image.

By setting “AUTO”, the sharpness values will be managed automatically by the camera.

By setting “MANUAL” it is possible to manually change the sharpness values from 0 to 20 (default 10). In this case the camera will respect the set value.

If the image has video noise, it is possible to intervene digitally with a noise reduction:

**3DNR** Used for scenes with fast moving objects.

By setting “AUTO” the values will be managed automatically by the camera.

By setting “MANUAL” it is possible to manually modify the values from 0 to 20 (default 0). In this case the camera will respect the set value.

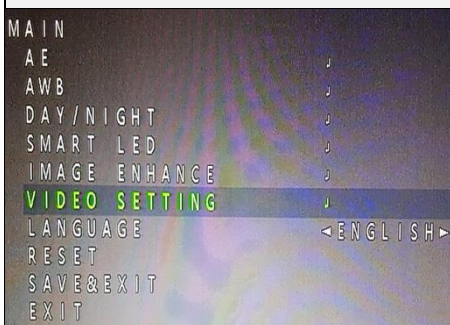
**2DNR** Used for scenes with limited movement.

By setting “AUTO” the values will be managed automatically by the camera.

By setting “MANUAL” it is possible to manually modify the values from 0 to 20 (default 0). In this case the camera will respect the set value.

**RETURN:** allows you to return to the previous menu by choosing whether or not to save the settings made.

## VIDEO SETTING

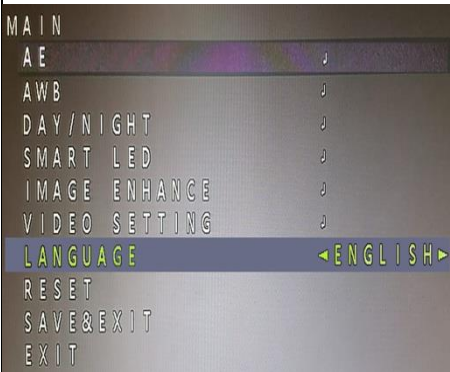



**HD:** Switches the signal to AHD, TVI, CVI, CVBS technology (960H analog signal)

**STANDARD:** allows you to vary the resolution of the camera and frame rates. In the CVBS standard the resolution is fixed and it will be possible to change only the video standard (PAL / NTSC).

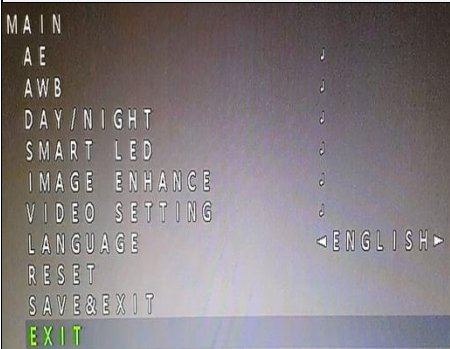
**APPLY & REBOOT:** Validation of settings. The camera will reboot keeping the settings set.

**RETURN:** allows you to return to the previous menu by choosing whether or not to save the settings made.

LANGUAGE	
	<p><b>LANGUAGE:</b> you can choose the language of the OSD menu (Default: English).</p>

RESET	
	<p><b>RESET:</b> the default configuration (factory settings) is saved.</p>

SAVE & EXIT	
	<p><b>SAVE &amp; EXIT:</b> exit from the configuration and save menu</p>

EXIT	
	<p><b>EXIT:</b> exit the menu without saving changes</p>

## 7 Troubleshooting

### Nothing is displayed on the screen.

- Check the compatibility between the video standard output from the camera (AHD or PAL) and the standard of the VCR.
- Check that the resolution of the DVR is suitable for the resolution of the camera
- Check the cable and the presence of power.
- Check that the connection between camera and monitor is correct.

### The displayed image is not clear.

- Check if the optics are clean and gently clean them with a damp cloth.
- Make sure the camera is not directly exposed to strong light. If necessary, change the shot.

### The displayed image is dark.

- Adjust the monitor contrast control.
- If there is an intermediate device, set the 75Ω / Hi-Z correctly (check the impedance value).

### The camera malfunctions and becomes excessively hot.

- Verify that the power source of the camera complies with the required requirements.

### DAY / NIGHT menu does not work.

- Check that the DAY NIGHT menu is set to 'EXT'.

### Annoying image flickering.

- Make sure the camera is not aimed at strong light sources (sun) or fluorescent light.

### The control system on coaxial is not working.

- Check that the distances between the camera and the DVR are within the recommended ones.

### The LED lights do not turn on.

- The lighting present on the scene is sufficient.
- The Day & Night function of the menu is forced to Color.

### The image is of poor quality.

- Check that suitable cable has been used and that the distances indicated have been respected.
- Check if the power supply delivers sufficient power.