

USER MANUAL

SPEED DOME CAMERA RS-SD20IR

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RS-SD20IR

Camera

High Speed Dome HD-SDI 1080P with 20x zoom IR 150 m.



INTRODUCTION

The cameras speed domes I'm cameras Fully remote controllable. They allow an operator equipped with appropriate console command to rotate the camera in all directions and zoom in pleasure on the scenes of most interest. The model described in this guide is in HD-SDI technology allows video resolution Full HD 1080P.

What is PTZ

The cameras controlled remotely are also defined PTZ, which stands for PAN / TILT / ZOOM. PAN is the movement in horizontal, TILT movement in vertical and ZOOM control of the lens focal length. Today there are two technologies to control remote cameras: PTZ electromechanical (combined with standard motorized lenses and cameras) and Speed Dome cameras.

The HD-SDI technology

These cameras are based on the HD-SDI (High Definition Serial Digital Interface) that allows you to carry CCTV systems in Full HD resolution. The cameras are very similar

to cameras in traditional analog in how much also I'm installed with a harness of RG59 coaxial cable (BNC connectors, standard nominal impedance 75 ohms). However, these cameras can not be connected to a DVR for analog cameras, or the AV input of a TV / monitor because the signal transmitted is not a PAL video. The HD-SDI signal is capable of playing Full HD 1080i video resolution at 1920x1080 pixels and lets achieve a high system



maintaining resolution features construction of a traditional analog system. The HD-SDI standard is capable of transmitting video signals up to a distance of 100 meters with RG59 coaxial cable. To increase the signal distance you can install repeaters. The image quality is more than 5 times higher than analog cameras and the image is transmitted without compression, without loss of data, full-frame-rate 25 f / sec and no latency during viewing.

The absence of latency, that is, between video and real action delay is a significant advantage of SDI technology over IP systems.

The HD-SDI technology offers the advantages of simplicity of a traditional analogue system by combining the characteristics of High Definition of IP systems.

Viewing HD-SDI images

The Full HD image of these cameras you get with HD-SDI video recorders DSE that provide VGA video outputs for PC and HDMI monitor for Full HD TV. The correct monitor to match these DVR is not the traditional 4: 3 analog CCTV but the 16: 9 wide screen now widely used in both the PC monitor industry and in commercial TV.

Control of the cameras

To control these cameras should be a control console able to send on the RS485 bus commands following the standard protocol Pelco P / D. E 'can use the console SD-CON command or directly a series DVR DH





INSTALLATION OF CAMERA

The DSE speed dome cameras are carefully packed to prevent damage during transport. First, you must check the received material.

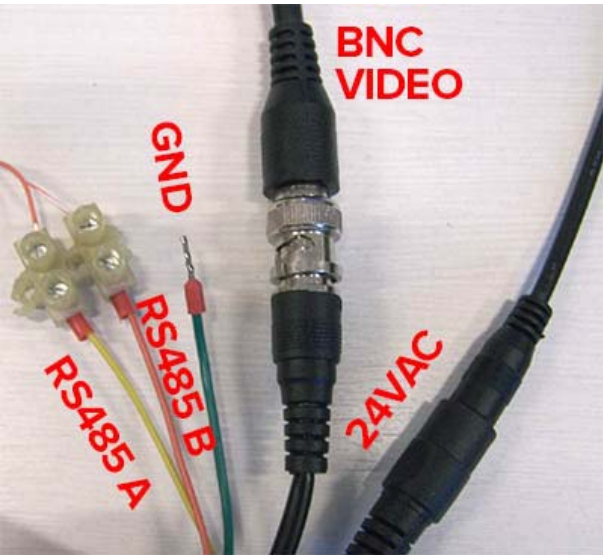
Material check

The speed dome camera that you have purchased is protected by elements
Packaging ranging
carefully removed before using it.

Cable connections

Each camera Speed Dome SD-A36IRT has a cable fitted with the following connections (from right to left):

- 1 cable feeding with 5.5 mm plug. 24VAC
- video Output BNC female
- 2 Cables BUS RS485 (Yellow and Orange) 1 Cable of green Earth)



To structure a system of Speed Dome cameras must prepare three types of wiring:

- Supply.** This camera is powered by 24VAC. E 'can feed the camera with the adapter 220VAC / 24VAC 3A provided.
- Video connection.** It is carried out as for any closed circuit camera in HD-SDI technology. with RG59 coaxial cables or higher.

When wiring an HD-SDI camera must consider that the SDI video signal is much more delicate than a PAL signal. We must use good quality RG59 cables as our CV-RG59 and not exceed the

wiring distance of 100 m. To overcome this distance you should use the SDI signal repeaters. You can not use minicoassiali cables (like our CV-RG179), or twisted cables.

- Telemetry RS485.** It is of the serial connection that leads the movement commands to the camera. The DSE cameras use an RS485 serial line (RS485 BUS) which is formed with a pair of twisted wires. E 'essential that the two cables are wound between them and non-parallel. In principle the RS485 serial line can extend up to 1200 meters in length and along it are connected in cascade devices. The section of the cables closely dependent on the length of the connection: for medium distances is sufficient a 0.5 mm section, while if it is necessary to reach considerable distances (max. 1200

m.) should be used upper sections of 1 mm or even 2.5 mm. The speed dome cameras and the control member (the console) are connected in cascade ie entering and exiting from 2 RS485A terminals (+) and RS485B (-). It 'important not to confuse the two cables (AB) during

the connection of the equipment.
The order in which the devices are connected to
BUS has not relevance. Every
equipment will be identified by its own unique address,
adjustable via DIP switches, which
will properly address the instructions. E 'can be connected to the same BUS up to 256 cameras.
The console does not require any
addressing, while for the cameras is necessary to set a different address for each camera, as described below.

Setting address and baud rate with microswitch

On one RS485 BUS you can connect many cameras. Each camera must have an address different from the other in order to be identified along the BUS. It must also be able to communicate with other devices using the same protocol and the same transmission rate (or baud rate). The standard protocol used by these cameras is the common PELCO PELCO P and D.

These three parameters: Address, Protocol and Baud rate is set via DIP switches on board room and critical to the operation. The proper setting of the microswitches is the first operation to be performed

even before
proceed to assembly.
To access the microswitches remove the protective cover by unscrewing the screw in the center. WARNING - If the version of the product in your possession does not include switches,
do
see the next chapter.

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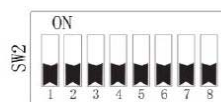
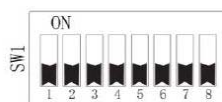
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The first block of 8 microswitch left SW1 is used to set the camera ID address that distinguishes it on the BUS (1 to 255), while the second block is used to define the transmission speed. Only the DIP switches 4 and 5 are used in this case.

The camera only handles the Pelco P / D protocol for which is not necessary to set the protocol. In the two tables to follow the possible configurations available are indicated

There are 2 blocks of microswitches SW1 and SW2



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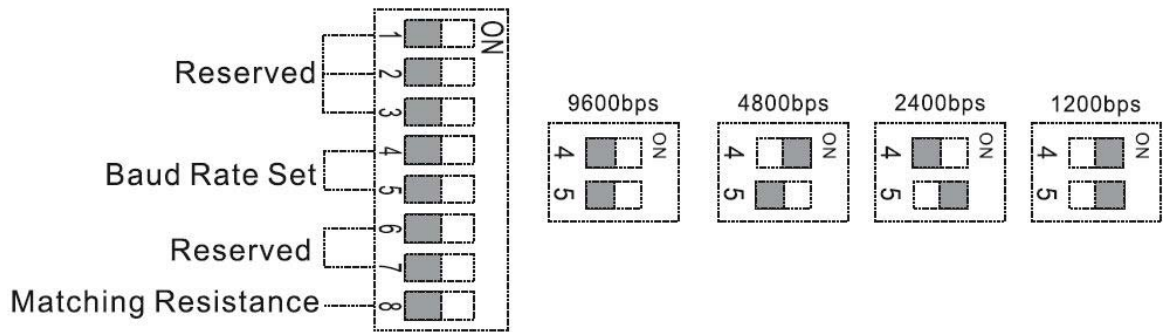
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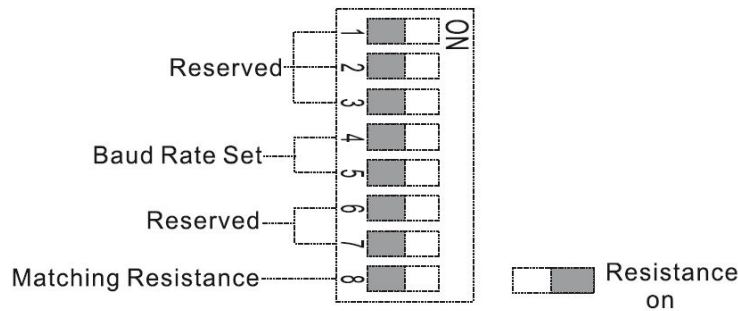


SW2 DIP SWITCHES FOR SETTING BAUD RATE

The microswitches SW2 group defines the speed of transmission of commands which must be the same as that used by the control unit (keyboard, etc. DVR). The switches are used the 4 and 5 according to the following directions:



The factory setting is 2400 bps.
It 'also possible to turn ON the microswitch 8 of the last camera connected to the bus to terminate the RS485 bus correctly.

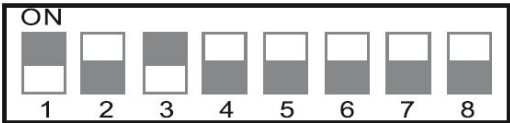


SW1 DIP SWITCH FOR SETTING ADDRESS ID

The SW1 group allows you to set the camera address that will identify it on the bus. You can assign the address from 1 to 255. The rule for building the address is as follows: Switch 1 Switch 2 = 1 = 2 = 3 Switch 4 Switch 4 Switch 5 = 8 = 16 Switch 32 Switch 6 = 7 = 64 Switch 8 = 128

The camera address is the sum of the switch that will be placed ON. EXAMPLE:

5 = 1 ADDRESS SWITCH ON SWITCH 3 ON = 1 + 4 =



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Below, for convenience the positions of the microswitches some addresses are described.

ADDRESS	SW.1	sw.2	sw.3	sw.4	sw.5	sw.6	sw.7	Sw.8
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
14	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
27	ON	ON	OFF	ON	ON	OFF	OFF	OFF
28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
29	ON	OFF	ON	ON	ON	OFF	OFF	OFF
30	OFF	ON	ON	ON	ON	OFF	OFF	OFF
31	ON	ON	ON	ON	ON	OFF	OFF	OFF
32	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
33	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
34	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
35	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
36	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
37	ON	OFF	ON	OFF	OFF	ON	OFF	OFF
38	OFF	ON	ON	OFF	OFF	ON	OFF	OFF
39	ON	ON	ON	OFF	OFF	ON	OFF	OFF
40	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
41	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
42	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
43	ON	ON	OFF	ON	OFF	ON	OFF	OFF

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44	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
45	ON	OFF	ON	ON	OFF	ON	OFF	OFF
46	OFF	ON	ON	ON	OFF	ON	OFF	OFF
47	ON	ON	ON	ON	OFF	ON	OFF	OFF
48	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
49	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
50	OFF	ON	OFF	OFF	ON	ON	OFF	OFF
51	ON	ON	OFF	OFF	ON	ON	OFF	OFF
52	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
53	ON	OFF	ON	OFF	ON	ON	OFF	OFF
54	OFF	ON	ON	OFF	ON	ON	OFF	OFF
55	ON	ON	ON	OFF	ON	ON	OFF	OFF
56	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
57	ON	OFF	OFF	ON	ON	ON	OFF	OFF
58	OFF	ON	OFF	ON	ON	ON	OFF	OFF
59	ON	ON	OFF	ON	ON	ON	OFF	OFF
60	OFF	OFF	ON	ON	ON	ON	OFF	OFF
...
...
246	OFF	ON	ON	OFF	ON	ON	ON	ON
247	ON	ON	ON	OFF	ON	ON	ON	ON
248	OFF	OFF	OFF	ON	ON	ON	ON	ON
249	ON	OFF	OFF	ON	ON	ON	ON	ON
250	OFF	ON	OFF	ON	ON	ON	ON	ON
251	ON	ON	OFF	ON	ON	ON	ON	ON
252	OFF	OFF	ON	ON	ON	ON	ON	ON
253	ON	OFF	ON	ON	ON	ON	ON	ON
254	OFF	ON	ON	ON	ON	ON	ON	ON
255	ON	ON	ON	ON	ON	ON	ON	ON

Setting address and baud rate via software

Some versions of this range there are no switches to the camera board. In these models the address and baud rate of the camera are set by software in the camera setup menu. The factory default of the camera ID is displayed on the camera itself to make the first connection.

The procedure is as follows:

- ACCESS THE MENU CAMERA - Call preset 95 as described later in this manual
- SELECT THE VOICE - SYSTEM / COMM



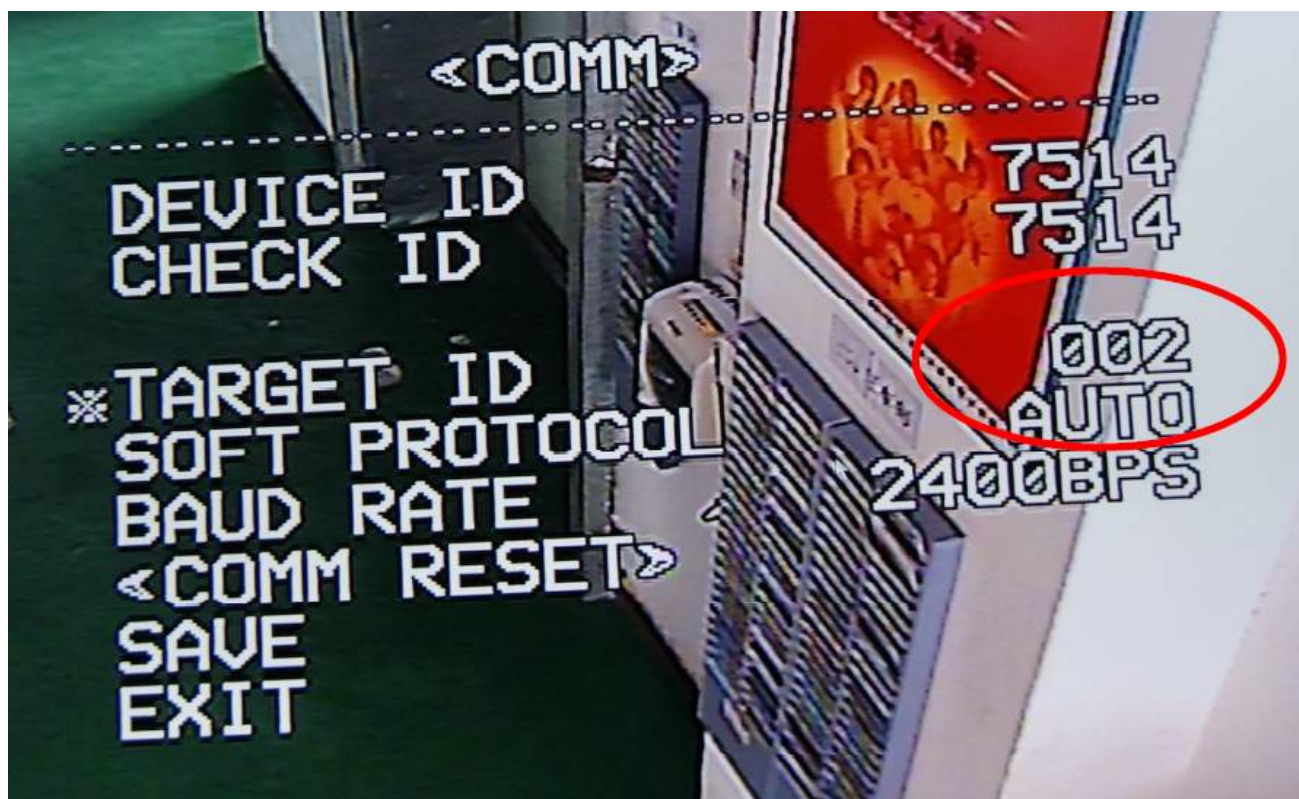
- SET CHECK ID - To prevent the camera address is changed unknowingly making the unattainable camera, before you can change the TARGET camera ID must be set to the same value of the ID CHECK DEVICE ID.

This example must be set on the 7514 CHECKID value as follows

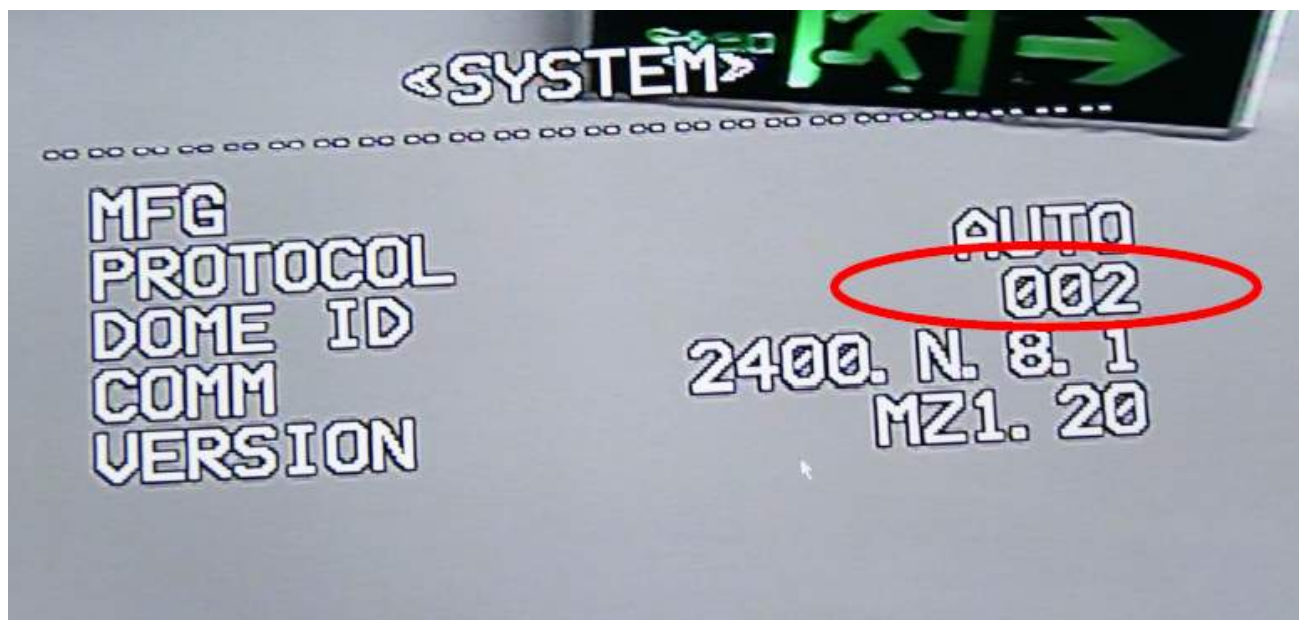


Once you set the value of CHECKID confirm pushing the cursor left.

- SET THE NEW ADDRESS - Once the CHECK correct ID set you can modify at will the TARGET ID, ie the camera ID on the RS485 BUS. In this example, you set the address 2. If necessary, you can also set a new communication speed and protocol.



SAVE - Move to SAVE and save the configuration. The camera will perform a reboot and start again with the new address you need to set the control organ.



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IR Illumination

The camera has LED illuminators for night vision 0 lux up to 150 m.

The LEDs light up in two different ways depending on the zoom level so as to provide more wide-angle illumination, or more focused remotely.

mechanical assembly

The speed dome cameras SD-A Outdoor can be installed on the wall using the included bracket. In the pictures that follow, the example of installing the wall bracket is shown.

- Fasten the wall bracket by plugs, taking care to leave the cable outlet at the center between the fixing holes.



- The connecting cables pass through the bracket.



- Connect the camera and fasten it to the bracket with the supplied screws.



Mounting console

The movement control of the speed dome cameras is done through the RS485 serial port sending commands using a special console or via a VCR.

The control devices are connected along the bus 485, such as cameras and do not require addressing. E', however, essential that the protocol used and the speed are the same as the one set in the cameras. Refer to the manual of the console or VCR for programming.

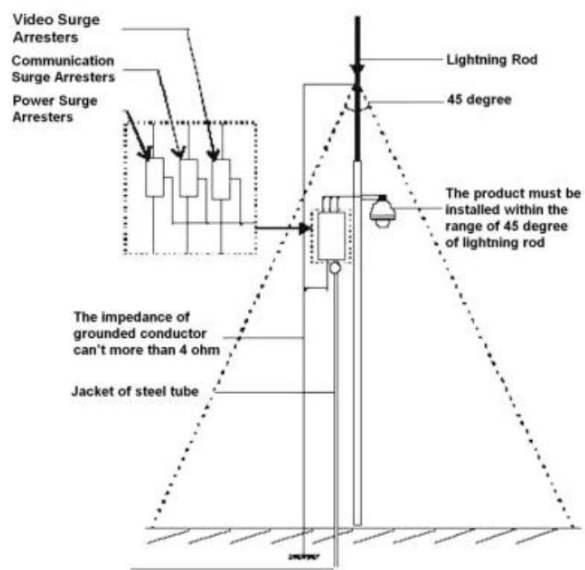
Surge protection

The overvoltages of atmospheric origin are the main cause of failure of the speed dome cameras in the exterior.

This camera is provided with protections against overvoltages able to protect it from atmospheric discharges mild.

However in outdoor installations necessary to pay attention to the following general rules:

- Keep wiring at least 50 m away from high / medium voltage
- If you can make runs and cables under the protection of a cornice
- In routes outside the building, to use underground steel pipes with a good point grounding
- Avoid overhead cables
- If the zone and subject to strong temporal or is located in close proximity to electrical power stations or booths in medium or high voltage use appropriate additional protections and possibly of a lightning conductor system





BASIC OPERATIONS

Below we listed the main controls through which it is possible to control the speed dome.

On and Self Test

Powering the camera will start a sequence of automatic operations. The camera performs a series of movements automatic and verification the functioning of the horizontal movement, of the and vertical movement of the camera body. A screen you can follow the self-test process, and will also report overlay the Protocol, the communication speed and set the camera address using the DIP switches. The overlay that appears after the self-indicating all the data necessary to connect to the dome and is very useful to reestablish the link if inappropriate changes the organ of the command had unattainable yield.

At the end of the automatic test the camera is ready to receive the incoming commands from the console.

Pan Tilt Control Manual

The first command to verify the correct communication between the camera and the console is the displacement RIGHT / LEFT (PAN) and UP / DOWN (TILT) by acting on the console joystick.

If the camera does not react to the console commands it means that something is wrong in the communication. Check in order:

1 - That the two twisted wires leading to the RS485 or wire is not reversed (A with A and B to B). 2 - What is the console that camera have been set with PELCO D protocol and equal transmission rate.

3 - That the center console is selected the camera address to be controlled.

To facilitate these checks, the start screen of the camera summarizes all his settings of communication (protocol, speed and address)

manual ZOOM Command

The cameras feature optical zoom. To control the zoom is possible to act on the keyboard ZOOM +/- buttons (or TELE / WIDE depending on the console). If you're using a so-called 3D console you can also control the zoom by rotating the head of the joystick.

If necessary, it is possible to change the focus by pressing the buttons FOCUS +/- (or NEAR / FAR depending on the console), but it is generally more practical to allow that the camera uses the autofocus function.

Setting PRESET

The cameras are in degree to store predefined positions that can be called up quickly without having to manually move the joystick. Each camera is capable of storing 255 PRESET each distinguished by its own value of XY coordinates, ZOOM and FOCUS. To set a preset do the following:

- Select the camera to be controlled
- Acting on the joystick to position the camera in your favorite tune and adjust zoom and eventual fire
- Dial on the keyboard to set the preset number (1 to 255)
- Press on the keyboard the setting button generally referred to as PRESET Some keyboards have a SET button that must be pressed before the sequence to enable the setting.

The camera stores the pre-positioning. To confirm the correctness of the transaction appears on-screen overlay the inscription: setXXX (where xxx is the program currently set. If confirmation does not appear, check that you have correctly used the button on the keyboard with preset function and setting not entering the number of a Preset system with unique functions (see below) .Consultate your keyboard user guide for more details.

Recalling Preset

Once you have stored presets for interest You can easily recall from the keyboard acting as follows:

- Select the camera to be controlled
- Dial the number PRESET
- to press the button recall PRESET, generalment CALL or PREVIEW depending on the console.

The camera automatically moves up to the stored position.



System PRESET

Not all of the 255 stored presets are available for user customization; some are used by the camera for specific functionality and are denominated SYSTEM PRESET.

The system Preset allow access to the configuration of the camera and to impart quickly the main controls. The complete programming of the functions, however, is always carried out in the camera setup menu that is Mr. Fox next chapter and which also includes a detailed explanation of the individual functions summarized in this table.

PRESET	FEATURE ON RECALL OF PRESET (CALL)	FURTHER INFORMATION
95	Open configuration menu	It allows you to access the full programming menu of the camera whose options are described in detail in the next chapter.
94	Close configuration menu	It allows you to access the full programming menu of the camera whose options are described in detail in the next chapter.
16	Open configuration menu (call twice presets)	Usable as an alternative to preset 95 when the control member does not handle many presets
34	Reset	It causes the camera is rebooted
75	Recall PATTERN 1	As Pattern is defined as a sequence of movements registered by the user in the configuration. The camera allows to store 4 pattern.
76	Recall PATTERN 2	Like above
77	Call up PATTERN 3	Like above
78	Call up PATTERN 4	Like above
83	Clear all presets	Delete all stored positions
81 and 41 Day / Night Automatic		Recalling this preset is the camera door in the normal automatic selection of the day / night mode
82 and 42 Night mode		Recalling this preset is the camera door in the night mode (B / N IR LED ignition) regardless of the ambient brightness
83	Day mode	Recalling this preset is the camera door in the day mode (Colors, LEDs off) regardless of the ambient brightness
84	IR long distance ON	Forsa the lighting ignition IR focused long-distance
85	IR short distance ON	Forsa the lighting ignition IR short distance Wide Angle
91 and 31 start SCAN		Scan = horizontal continuous pan rotation Movement (PAN) between two limit switches that are defined in the configuration.
92 and 32 start SCAN		Set the left limit of the horizontal scanning
93 and 33 start SCAN		Set the right limit of the horizontal scan
99	Start PAN SCAN	Start horizontal scan continuous 360 ° (no limit).
97	Start GUARD TOUR 2	Like above



automatic movements

In addition to the preset that you just talked about the cameras can perform other automatic movements which are described below.

- **GUARD TOUR** - Also called CRUISE. It means the automatic movement of the camera between presets with a residence time on each of them programmable. The camera allows 4 cruise sequences
- **PAN** - Yes It means the continuous movement of horizontal 360 ° rotation
- **SCAN** - It is understood the continuous movement DESTRASINISTRA between two end positions
- **PATTERN** - Similar to the TOUR The camera, however, does not follow in sequence the various presets, but a custom continuous movement by the registered user

in phase of programming. There camera allows to store 4 custom sequences.

terminology that must be tested the real correspondence between the commands imparted by the console and the reaction of the camera.

All these automatic movements are set in the camera configuration that is described in the next chapter. To activate these automatic movements you can make use of the system presets that are listed in the table above. Some keyboards or DVRs also have specific buttons for SCAN activation, etc. CRUISE But we are aware that there is no specific approval in the use of



CONFIGURATION

In the configuration menu you can set all the operating parameters of the camera and its movement.

Access the menu




To access the configuration menu, just call from the console:

PRESET 95 system.

Typically it is necessary first of all select the camera address that you want to program, then type 95 and then press CALL or PREVIEW or PRESET (see manual of the console on how to invoke a keyboard presets).

Some keyboards have an OSD or MENU button to immediately open the camera's setup menu.

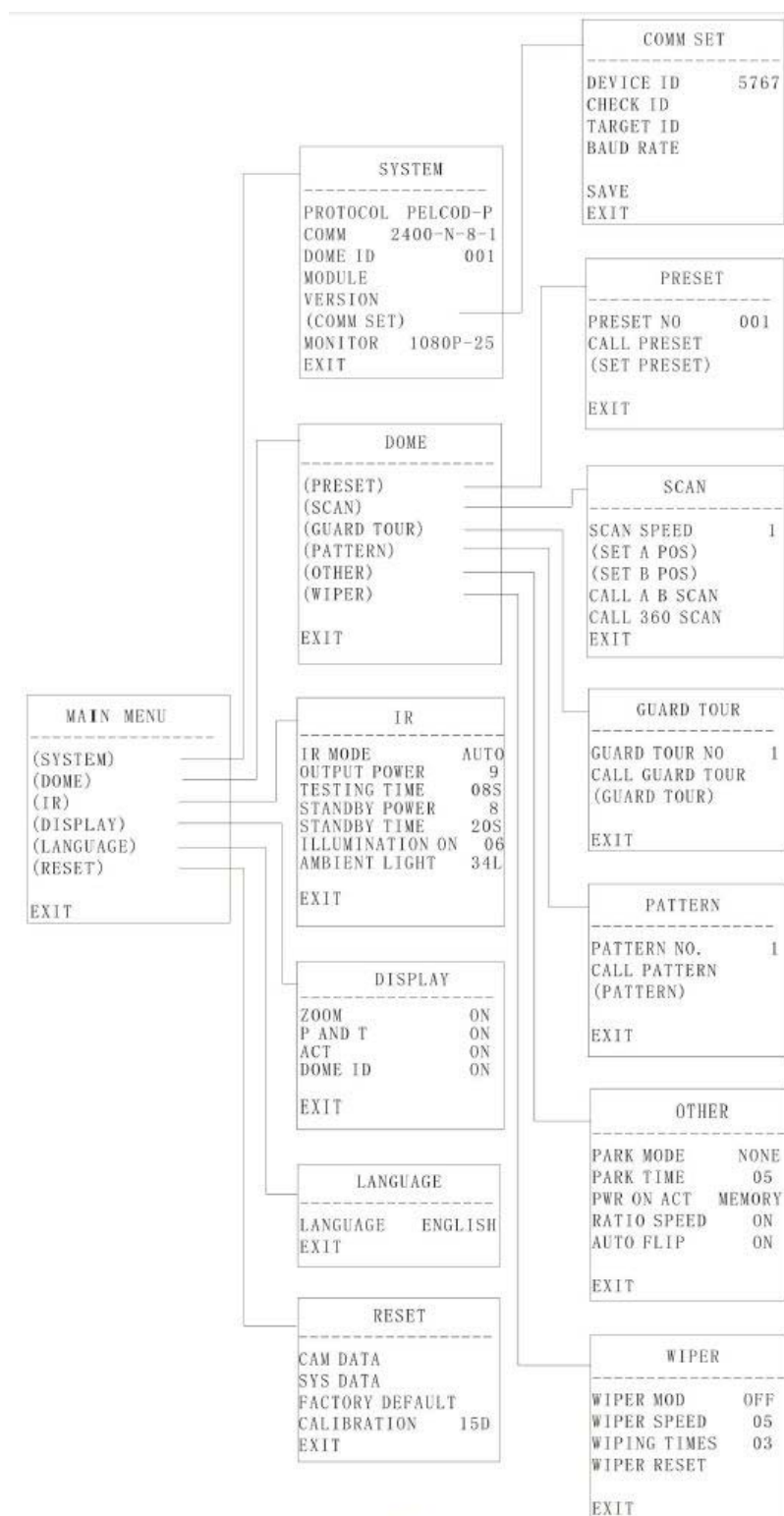
In the menu it is carried out by acting on the joystick and the IRIS button as indicated in the table:

	Call preset 95 to access the configuration menu
	Move the joystick up and down to select the various menu items
	Move the joystick left and right to select an option

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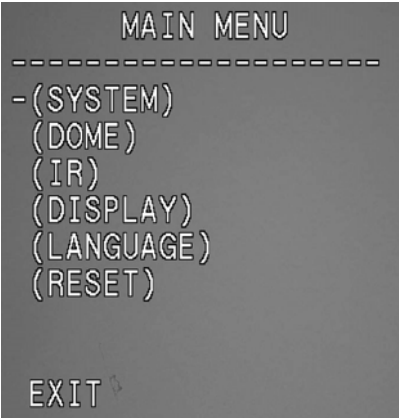
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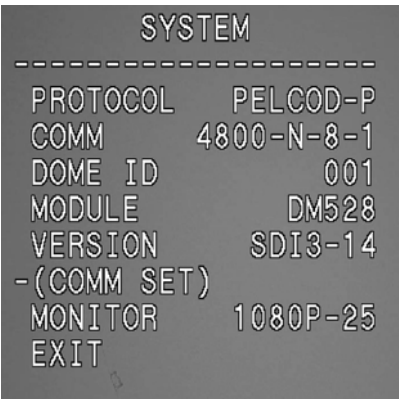
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System

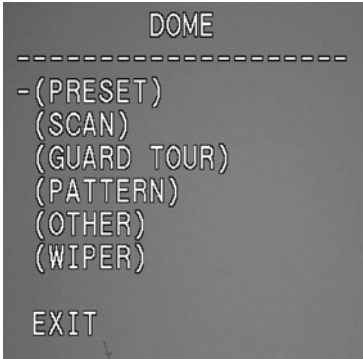
The first menu item gives you all the camera information including the selected communication parameters

with microswitches (you see chapters earlier).



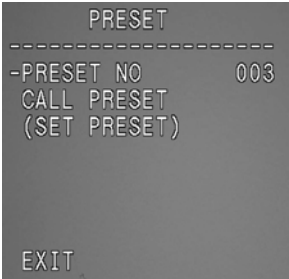
Dome

In this section we define the movements of the camera.



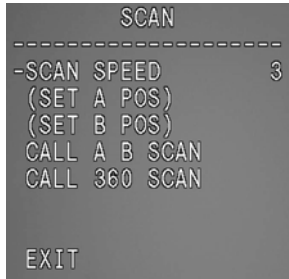
- PRESET - The camera can handle up to 220 presets. A preset

it's a distinguished default location from a XY position and a certain level of zoom. Select the number of presets and then Set Preset for scgeliere log into setting. Press CALL PRESET to



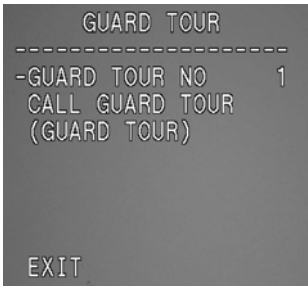
call back the presets set to. Note that some presets (those with more above) described system features are not available for the user's programming.

- SCAN - The scan is the horizontal excursion of the camera between two end points. In this section Yes It defines the rotation vlocità (SCAN SPEED), and they set the limit positions SX and DX. The CALL AB SCAN command activates the scanning between limit switches.



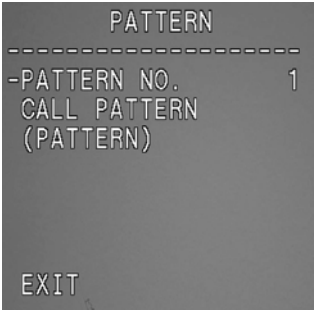
The SCAN command CALL 360 active scanning 360 ° panoramic.

- GUARD TOUR - The tour is the sequence display of different presets. There camera can he manage up to 4 tour. Choose the number of tour and then setting up in GUARD TOUR section where is possible define the sequence presets and the dwell time on each preset. With the CALL command

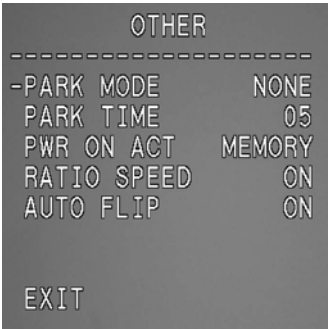




- PATTERN - There camera can be record up to 4 Pattern, namely recorded sequence movements. Choose the Pattern number and then record in section (PATTERN) using the recall the presets for 1 to save there recording. With the CALL command starts the selected pattern.



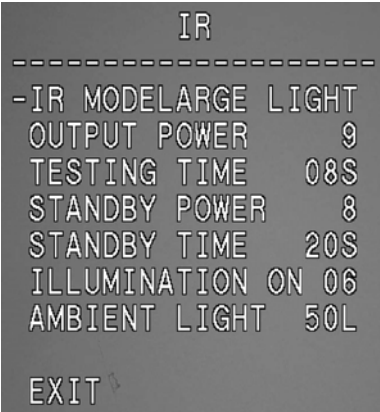
- OTHER - This section includes ii parameters PARK MODE (defines which action fulfill commands after a period of absence), PARK TIME (defines after how time to inactivity activate the default action, PWR ON ACT (Defines what action to perform on startup), SPEED RATIO (movement speed of the camera related to the level of zoom) AUTOFLIP (180 ° rotation of the camera to follow the target beyond the vertical).



- EXIT - Exits section

IR

In this section setting certain options concerning the IR illumination of the camera.



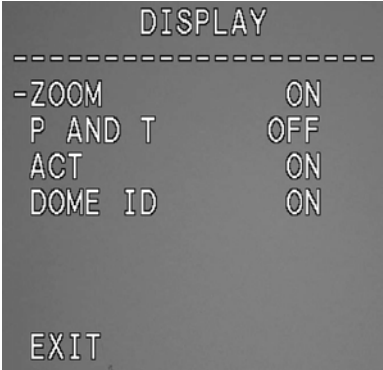
- IR MODE - This item is normally left to AUTO to enable the automatic switching of

illuminators to the transition from day to night mode. E', however, can also force the continuous power of the IR (MANUAL) or prevent entirely the ignition (OFF)

- OUTPUT POWER - Allows you to adjust the power of the LEDs 1 to 9. The default is 9, but it is possible to reduce this value when the camera is used for close-ups where the too powerful illuminator would tend to dazzle the image.
- TESTING TIME - Determines how many seconds the camera goni will check ambient light to define the passage sightsee / night.
- STANDBY POWER - Allows set up a IR reduced power with respect to the normal to be used in stand-by, ie in the absence of operator commands. The function serves for energy saving.
- STANDBY TIME - Time of absence necessary commands to switch to standby mode IR (see above)
- ILLUMINATION ON - Defines the threshold power of the illuminators (adjustable from 1 to 25)
- AMBIENT LIGHT - E 'an informative parameter that indicates the ambient brightness (from 0 to 50). It is updated every time you access the OSD.

Display

This section allows to establish the overlays on the image.



- ZOOM - Overlay the zoom level
- P AND T - Superimposing of the position data
- ACT - Overlay of the action in progress
- DOME ID - Overlay camera name

Reset

This section allows you to restore the factory settings.



TECHNICAL DATA

updated tables

http://www.dseitalia.it/dati_telecamere_HD-SDI.htm

