

**ernitec**

***SYSTEM*** **X**

**LON<sup>®</sup> Box X**

***I151SX-DOME***

***Installation***

***Manual***

2853-00020



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## Table of content

<b>Installation</b> .....	<b>Page 3</b>
Unpacking the LON Box .....	Page 3
Box installation .....	Page 3
Mains installation .....	Page 3
<b>Cable connections</b> .....	<b>Page 4</b>
LON .....	Page 4
RS485 Tx .....	Page 4
RS485 Rx/Tx .....	Page 4
RS232 .....	Page 4
<b>Ernitec Domes and Telemetry Receivers</b> .....	<b>Page 5</b>
BDR-5xx Telemetry Receivers .....	Page 5
Saturn 5" Dome .....	Page 6
Orion 5" Dome .....	Page 7
Astral 3" Mini Dome .....	Page 9
<b>3rd party Domes and Telemetry Receivers</b> .....	<b>Page 10</b>
<b>Panasonic</b> Combination Camera WV-CS850 .....	Page 10
<b>Dennard</b> Type 2050 Dome Camera .....	Page 13
<b>JVC</b> TK-C676 Dome Type Camera .....	Page 15
<b>Pelco</b> Spectra III Series Dome Drive .....	Page 17
<b>Service Pin</b> .....	<b>Page 19</b>
<b>Drilling Pattern</b> .....	<b>Page 19</b>
<b>Updating I151SX-DOME</b> .....	<b>Page 20</b>
<b>Ernitec Offices</b> .....	<b>Page 21</b>

## Validity

This manual covers the following LON® Boxes:

- LON® Box type I151SX-DOME

## Compatibility

This manual describes all possible features of the I151SX LON® Box. However, actual features supported, depends on the connected equipment.

## Approvals

All LON® Box types are CE certified and approved with respect to EN 50081-1, EN 50130-4 (EMC) and EN 60950 (LVD).

## Operation

The I151SX-DOME interface box is used as an interface for controlling Domes and Telemetry Receivers, not having a LON Network interface. A number of different protocols are supported by the I151SX-DOME.

## Setup

There are no setup functions in the LON® Box itself. All functions and settings are programmed using the *NodeManager S111SX* software.

## LON® Network

For details on the LON® Network, installation, cabling and termination, please see the *NodeManager S111SX Installation Manual*.

## Trademarks

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## Installation

### Unpacking the LON® Box

After unpacking the LON® Box, carefully check for any signs of damage. Any such damage should be reported to your supplier, before installation.

Check that the packing carton contains the following items:

- 1 pcs. SYSTEM X LON® Box.
- 1 pcs. LON® Box X Installation Manual (this manual)
- 1 pcs. screw kit.

### Box Installation

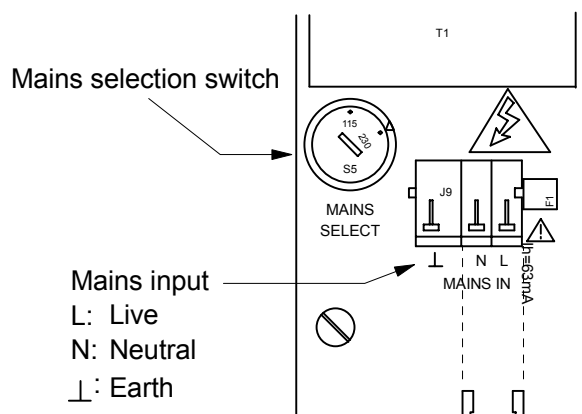
Choose a plane surface to prevent the box from being twisted and thereby becoming leaky. When installed outdoor the box should be oriented with the cable glands pointing downwards.

Drilling pattern is shown on the back of the box.

Box dimensions (excl. glands) are: 242 x 160 x 90mm (W x H x D).

### Mains installation

The LON® Box is with selectable 115 VAC or 230 VAC mains voltage. The mains voltage is selected by the mains voltage selection switch.



The LON® Box must be used with a 3-wire mains connection (2W+PE @ min. 0,75mm<sup>2</sup>).

Terminals marked with hazardous live symbol requires installation by an instructed person.

If permanently connected to mains, a readily accessible disconnect device shall be incorporated in the building installation wiring.

If pluggable connection to mains, the socket-outlet shall be installed near the equipment and shall be easily accessible.

Note: The unit is equipped with two PTC-fuses with automatic reset function. In case of malfunction always return the unit for repair. The references below are intended for information only.

**F1:** (BC Components, type 2322 660 66393)

$I_{hold} = 63mA$ ,  $I_{trip} = 95mA$ , Initial resistance = 120R

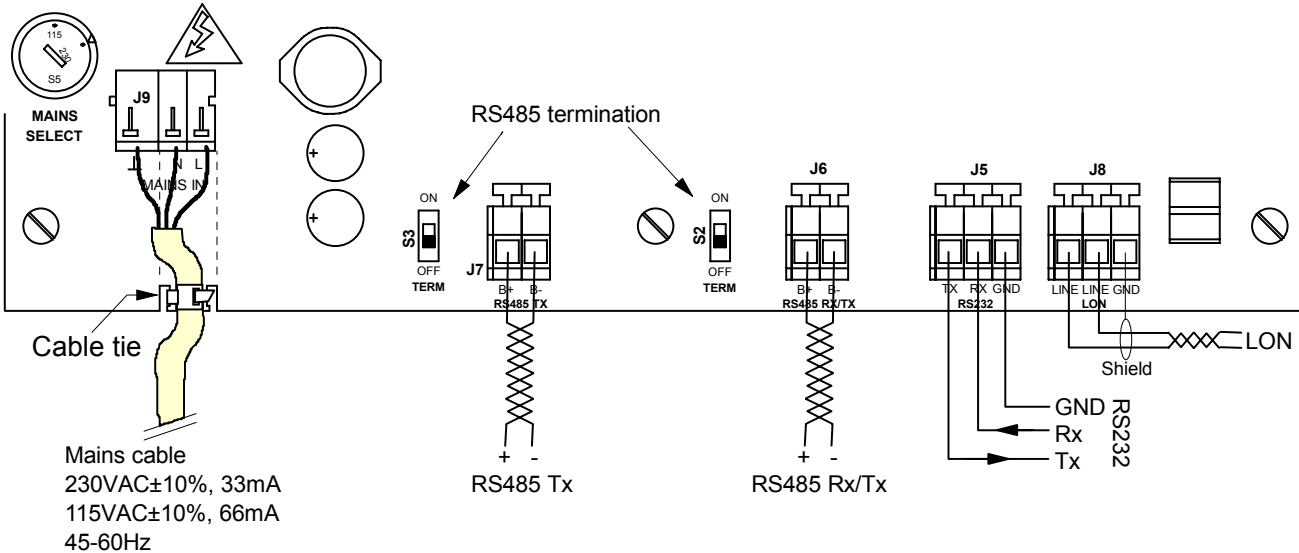
**F2:** (BOURNS, type MF-R075)

$I_{hold} = 750mA$ ,  $I_{trip} = 1.5A$ , Initial resistance = 0R18

## Cable connections

It is of utmost importance that all cable connections are carried out exactly as described, in order to avoid malfunction or damage to the LON<sup>®</sup>Box and/or the connected equipment.

All cables to and from the LON<sup>®</sup>Box are fed through the cable glands. Choose an appropriate size gland for the actual cable and tighten the glands when all cables are connected.



In order to fulfill safety standard EN 60950, all cables carrying mains voltage, must be secured to the PCB by means of e.g. a cable tie, as shown in the above drawing.

## LON<sup>®</sup>

For details on the LON<sup>®</sup> Network, installation, cabling and termination, please see the *NodeManager S111SX Installation Manual*.

To comply with EMC/EMI standard EN 50130-4, shielded LON<sup>®</sup> cable must be used.

Connection is polarity insensitive.

## RS485 Tx

Connect to the Dome, or Telemetry Receiver, using cable with the following specifications:

- Shielded, twisted pair cable.
- Approx. 100-120 ohm characteristic impedance.
- Wire gauge size thicker than AWG #22 (0.33 mm<sup>2</sup>).

For details on the specific Domes/Receivers, please see the following chapters.

## RS485 Rx/Tx

Not used in the I151SX-DOME.

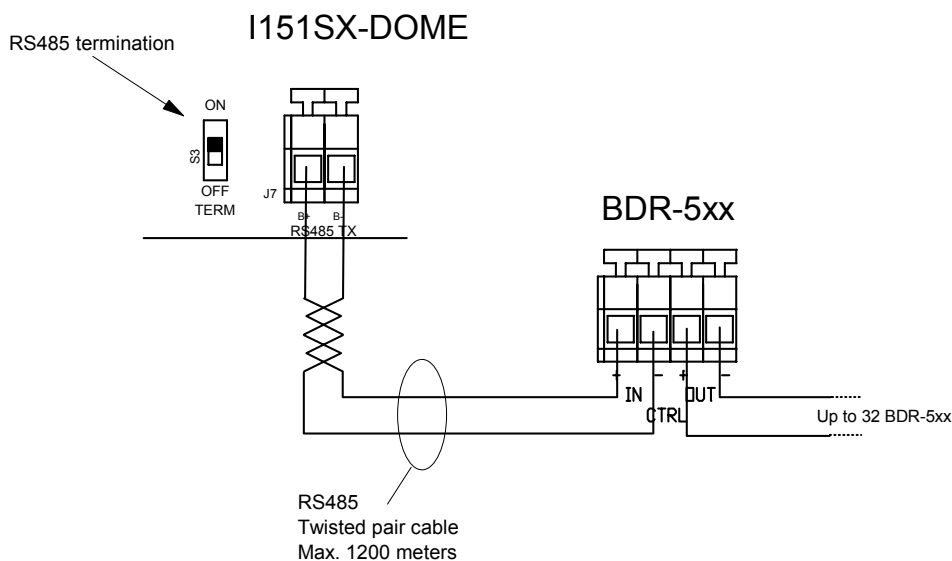
## RS232

Not used in the I151SX-DOME.

## Ernitec Domes and Telemetry Receivers

### BDR-5xx Telemetry Receivers

Up to 32 BDR-51x and BDR-55x Telemetry Receivers, can be connected to the RS485 output of the I151SX-DOME.



### Switch settings

On the I151SX-DOME, set the RS485 termination switch to ON.

Set the switches on the BDR-5xx to the following:

- Address (S1): Address number 0 on the BDR corresponds to address 0 in the SYSTEM X setup. Address number 1 on the camera corresponds to address 1 in the SYSTEM X setup, etc.
- RS485 termination: Each BDR-5xx has a built-in repeater, making RS485 termination unnecessary.

For details on the switch settings, please see the *BDR-5xx Installation Manual*.

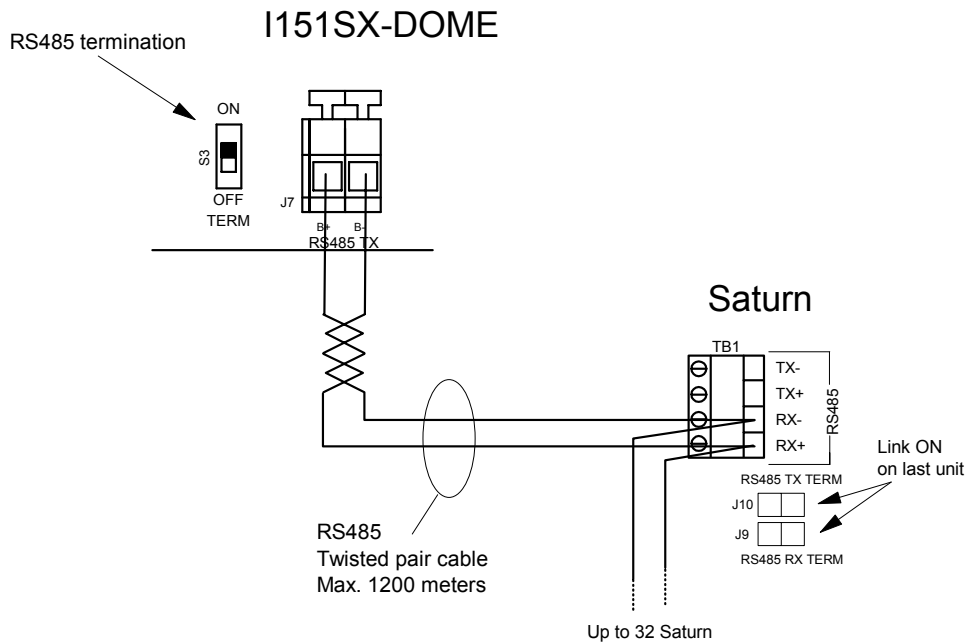
### Operation

Standard PTZ operation is described in the *K111DX SYSTEM X Keyboard manual*.

Programming is described in the *S111SX NodeManager Manual*.

## Saturn 5" Dome

Up to 32 Saturn Domes, can be connected to the RS485 output of the I151SX-DOME.



### Switch settings

On the I151SX-DOME, set the RS485 termination switch to ON.

Set the switches on the SATURN to the following:

- Address: Address number offset by one, i.e. address number 1 on the camera corresponds to address 0 in the SYSTEM X setup. Address number 2 on the camera corresponds to address 1 in the SYSTEM X setup, etc.
- RS485 termination: Set termination ON on the last camera connected on the RS485 bus. All other cameras should have RS485 termination OFF.

For details on the switch settings, please see the *Saturn Installation Instructions*.

### Operation

Standard PTZ operation is described in the *K111DX SYSTEM X Keyboard manual*.

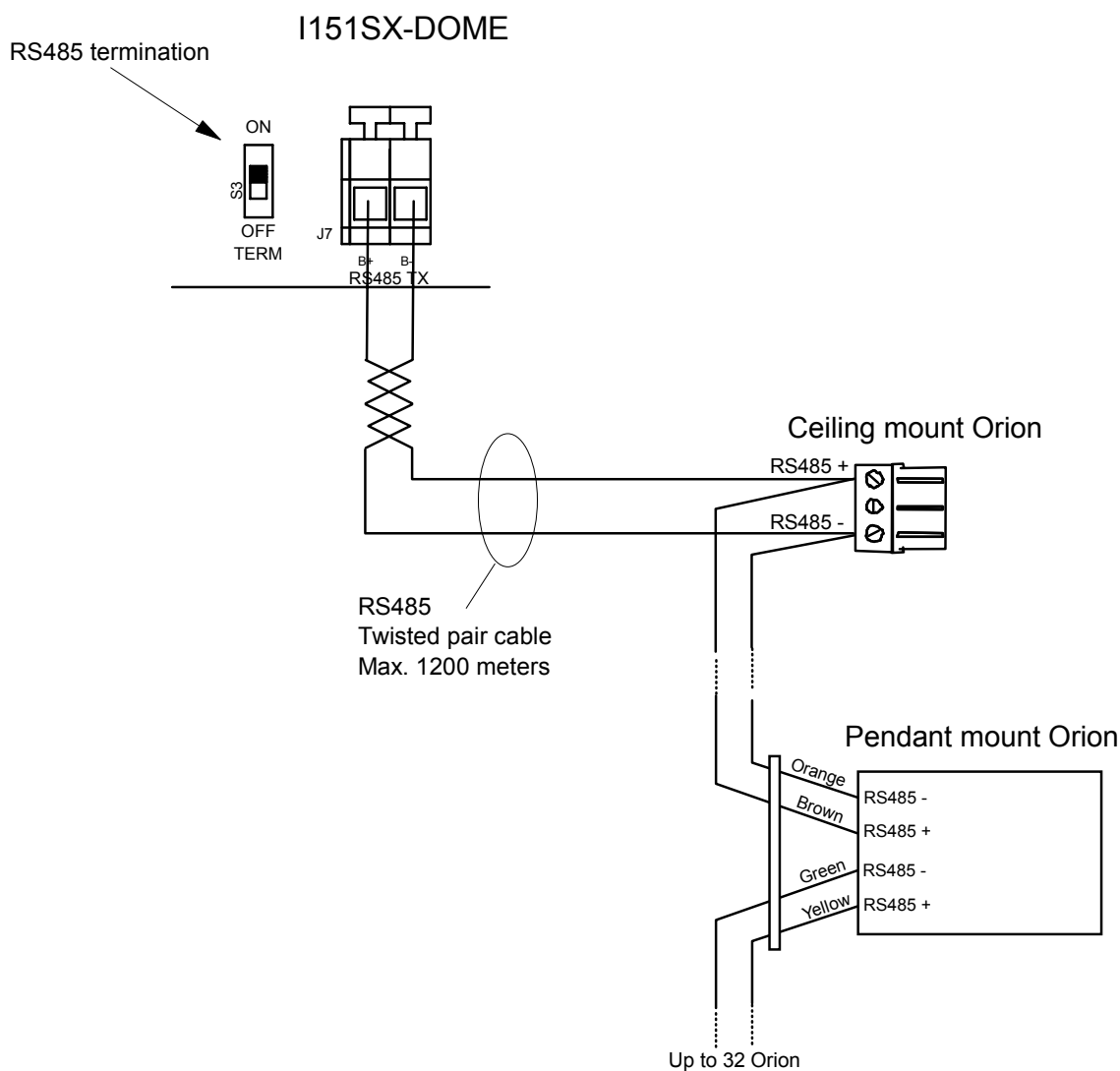
SYSTEM X programming is described in the *S111SX NodeManager Manual*.

Programming of the Saturn is described in the *Saturn Installation Instructions*.



## Orion 5" Dome

Up to 32 Orion Domes, can be connected to the RS485 output of the I151SX-DOME.



### Switch settings

On the I151SX-DOME, set the RS485 termination switch to ON.

Set the switches on the Orion to the following:

- Set switches exactly as described in the *Orion Installation Manual*.
- Address: Address number offset by one, i.e. address number 1 on the camera corresponds to address 0 in the SYSTEM X setup. Address number 2 on the camera corresponds to address 1 in the SYSTEM X setup, etc.
- RS485 termination:
  - Pendant mount Orion: On the last Orion on the RS485 bus, fit a 120 ohm resistor across the RS485 terminals.
  - Ceiling mount Orion: On the last Orion on the RS485 bus, set the RS485 line termination switch to position **T** (terminated).

For details on the switch settings, please see the *Orion Installation Manual*.

## Operation

Standard PTZ operation is described in the *K111DX SYSTEM X Keyboard manual*.

Programming of the Orion Dome is described in the *Orion Installation Manual*.

SYSTEM X programming is described in the *S111SX NodeManager Manual*.

The following are operations specific for the Orion Dome.

### Auto/IR mode



*Toggles between Auto and IR (b/w) mode.*

### Menu system

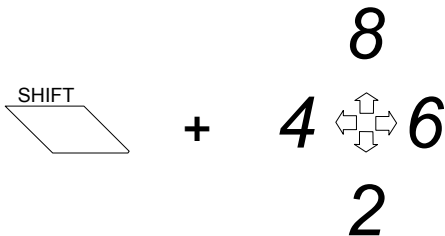
The following keys are used to navigate the menu system of the Orion Dome:

#### Access menu system



*Access menu system.*

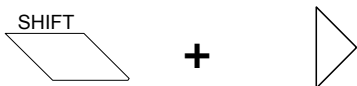
#### Navigate menu system



*UP / DOWN / RIGHT / LEFT*

*(The joystick can also be used)*

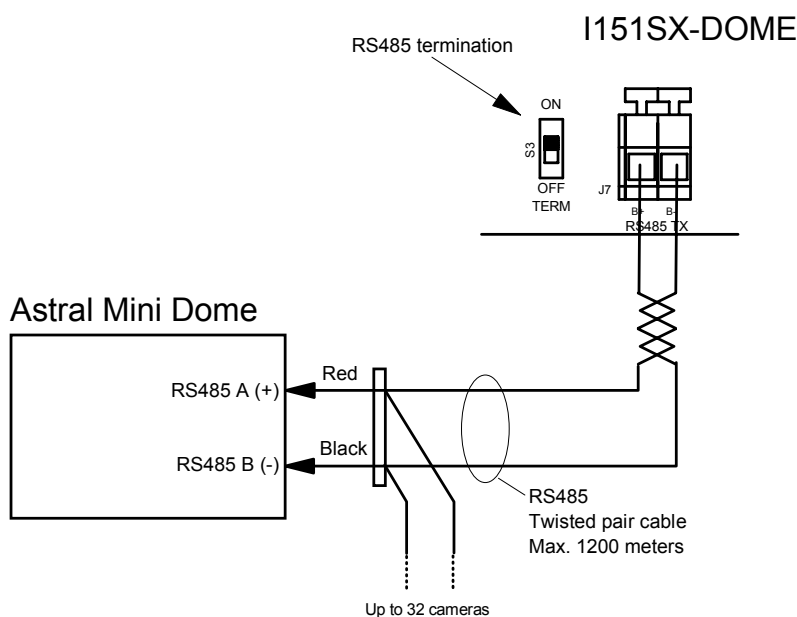
#### ENTER/Select



*Enter sub-menu, and/or select option.*

## Astral 3" Mini Dome

Up to 32 ASTRAL Domes, can be connected to the RS485 output of the I151SX-DOME.



### Switch settings

On the I151SX-DOME, set the RS485 termination switch to ON.

Set the switches on the ASTRAL to the following:

- Baud rate (SW2): 2400 baud.
- Protocol (SW2): Ernitec protocol.
- Address (SW1): Address number 1 on the Astral corresponds to address 1 in the SYSTEM X setup. Address number 2 on the Astral corresponds to address 2 in the SYSTEM X setup, etc.
- RS485 termination: Set termination ON on the last camera connected on the RS485 bus. All other cameras should have RS485 termination OFF.

For details on the switch settings, please see the *ASTRAL Installation Manual*.

### Operation

Standard PTZ operation is described in the *K111DX SYSTEM X Keyboard manual*.

SYSTEM X programming is described in the *S111SX NodeManager Manual*.

The following are operations specific for the Astral Mini Dome.

#### Pattern recording

To start Pattern Recording, **call** [preset 115].

The Dome will now remember the next 2 minutes of pan/tilt operation, including pauses.

To stop Pattern Recording, **save** [preset 115].

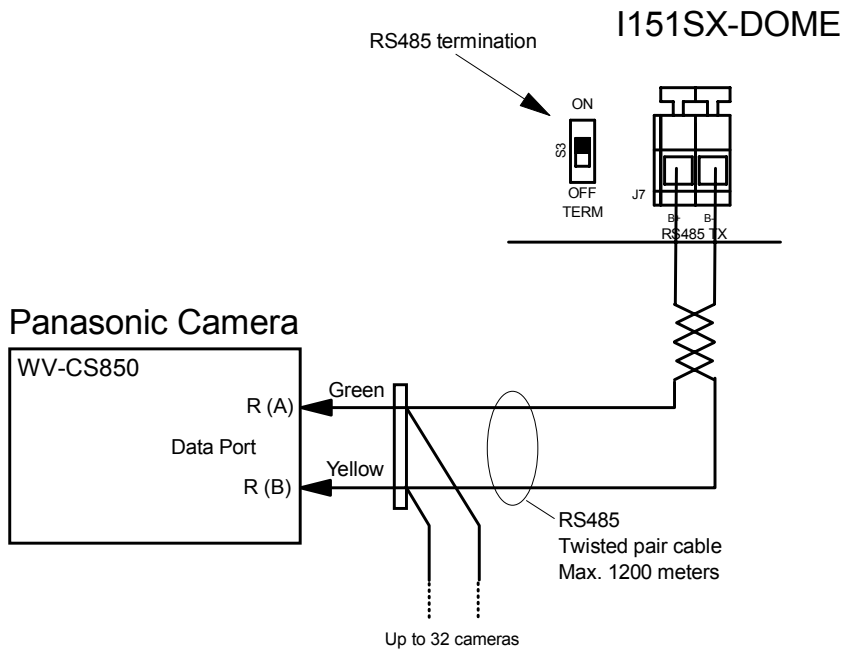
#### Pattern playback

To replay the stored pattern, **call** [preset 111].

## 3rd party Domes and Telemetry Receivers

### Panasonic Combination Camera WV-CS850

Up to 32 Combination Cameras can be connected to the RS485 output of the I151SX-DOME.



### Switch settings

On the I151SX-DOME, set the RS485 termination switch to ON.

Set the switches on the Panasonic Camera to the following:

- Baud rate: 9600 baud.
- RS485: Full duplex.
- Address: Unit number (address) offset by one, i.e. unit number 1 on the camera corresponds to address 0 in the SYSTEM X setup. Unit number 2 on the camera corresponds to address 1 in the SYSTEM X setup, etc.
- RS485 termination: Set termination ON on the last camera connected on the RS485 bus. All other cameras should have RS485 termination OFF.

For details on the switch settings, please see the *WV-CS850 Operating Instructions*.

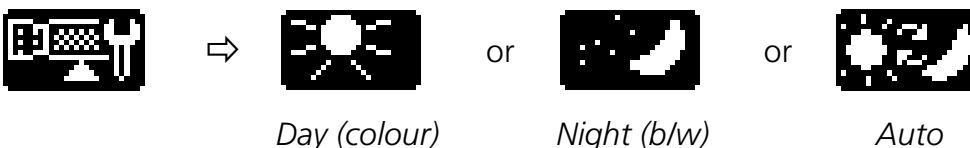
### Operation

Standard PTZ operation is described in the *K111DX SYSTEM X Keyboard manual*.

SYSTEM X programming is described in the *S111SX NodeManager Manual*.

The following are operations specific for the Panasonic Combination Camera.

### Day/Night/Auto mode



## Menu system

The following keys are used to navigate the menu system of the Panasonic Combination Camera:

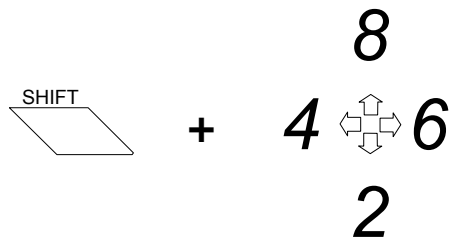
### Access menu system

MENU



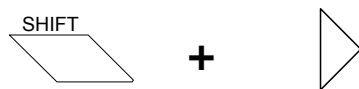
*Access menu system.*

### Navigate



*UP / DOWN / RIGHT / LEFT*

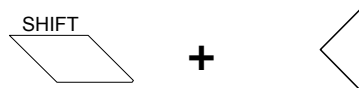
### ENTER/Select



*Enter sub-menu, and/or select option.*

*Corresponds to the **SET** key on the Panasonic WV-CU550B controller.*

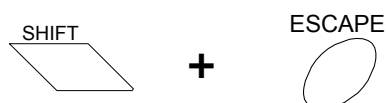
### Enter Special2 sub-menu



*Enter Special2 menu.*

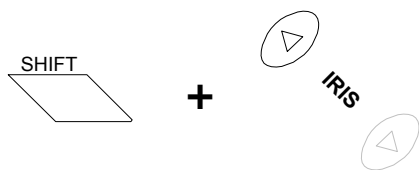
*Corresponds to the **F2** key on the Panasonic WV-CU550B controller.*

### Return



*Exits to the previous menu.*

### Reset to factory default



*SHIFT+Iris Open.*

*Reset to factory default.*

*Only works in Special2 menu.*

### Exit menu system

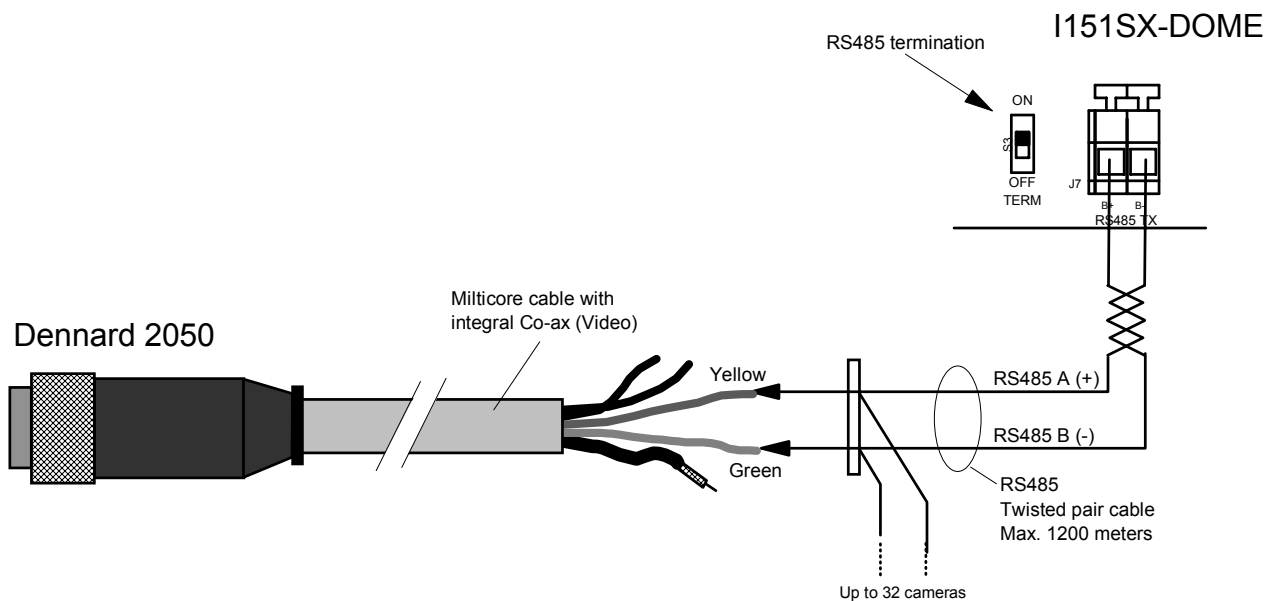


*Exit menu system.*

For full details on programming, please see the *Panasonic WV-CS850 Combination Camera Operating Instructions*.

## Dennard Type 2050 Dome Camera

Up to 32 Dome Cameras can be connected to the RS485 output of the I151SX-DOME.



### Switch settings

On the I151SX-DOME, set the RS485 termination switch to ON.

Set the switches on the Dennard Dome Camera to the following:

- Address: Unit number (address) offset by one, i.e. unit number 1 on the camera corresponds to address 0 in the SYSTEM X setup. Unit number 2 on the camera corresponds to address 1 in the SYSTEM X setup, etc.
- RS485 termination: On the last Dome on the RS485 bus, fit a 120 ohm resistor across the RS485 terminals.

For details on the switch settings, please see the *Dennard Type 2050 Product Guide*.

### Operation

Standard PTZ operation is described in the *K111DX SYSTEM X Keyboard manual*.

SYSTEM X programming is described in the *S111SX NodeManager Manual*.

The following are operations specific for the Dennard Dome Camera.

### Menu system

The following keys are used to navigate the menu system of the Dennard Dome Camera:

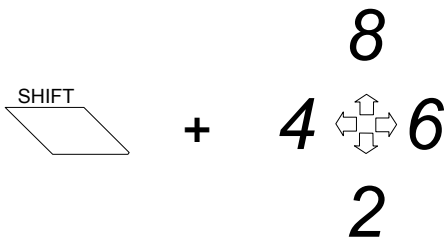
#### Access menu system

MENU



Access menu system.

**Navigate**



*UP / DOWN / RIGHT / LEFT*

**ENTER/Select**



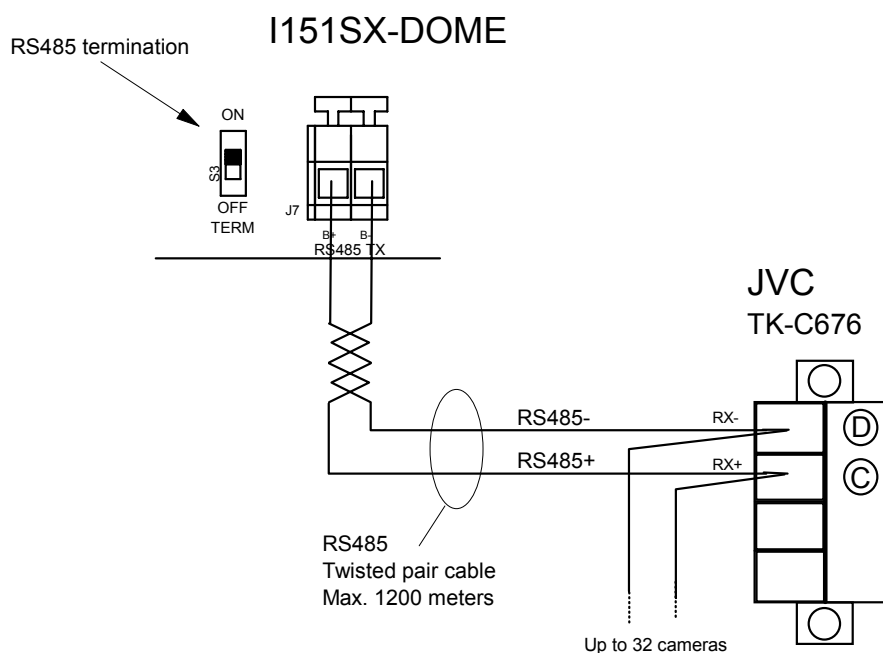
*Enter sub-menu, and/or select option.*

For full details on programming, please see the *Dennard Type 2050 Dome Camera Menu System manual*.



## JVC TK-C676 Dome Camera

Up to 32 Dome Cameras can be connected to the RS485 output of the I151SX-DOME.



### Switch settings

On the I151SX-DOME, set the RS485 termination switch to ON.

Set the switches on the Panasonic Camera to the following:

- Protocol (1) (SW4): ON (Daisy-chain), OFF (point-to-point).
- Protocol (2) (SW5): ON (simplex).
- Address: Machine ID (address) offset by one, i.e. Machine ID 1 on the camera corresponds to address 0 in the SYSTEM X setup. Machine ID 2 on the camera corresponds to address 1 in the SYSTEM X setup, etc.
- Rx TERM (SW8): Set the termination switch OFF (terminated) on the last camera connected on the RS485 bus. All other cameras should have the switch ON.

For details on the switch settings, please see the *TK-C676 Instructions*.

### Operation

Standard PTZ operation is described in the *K111DX SYSTEM X Keyboard manual*.

SYSTEM X programming is described in the *S111SX NodeManager Manual*.

The following are operations specific for the JVC Dome Camera.

### Menu system

The following keys are used to navigate the menu system of the JVC Combination Camera:

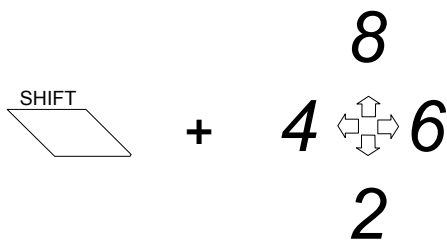
#### Access menu system

MENU



Access menu system.

## Navigate



*UP / DOWN / RIGHT / LEFT*

## ENTER/Select



*Enter sub-menu, and/or select option.*

*Corresponds to the **SET** key on the JVC RM-P2580 controller.*

## Return



*Exits to the previous menu.*

## Exit menu system

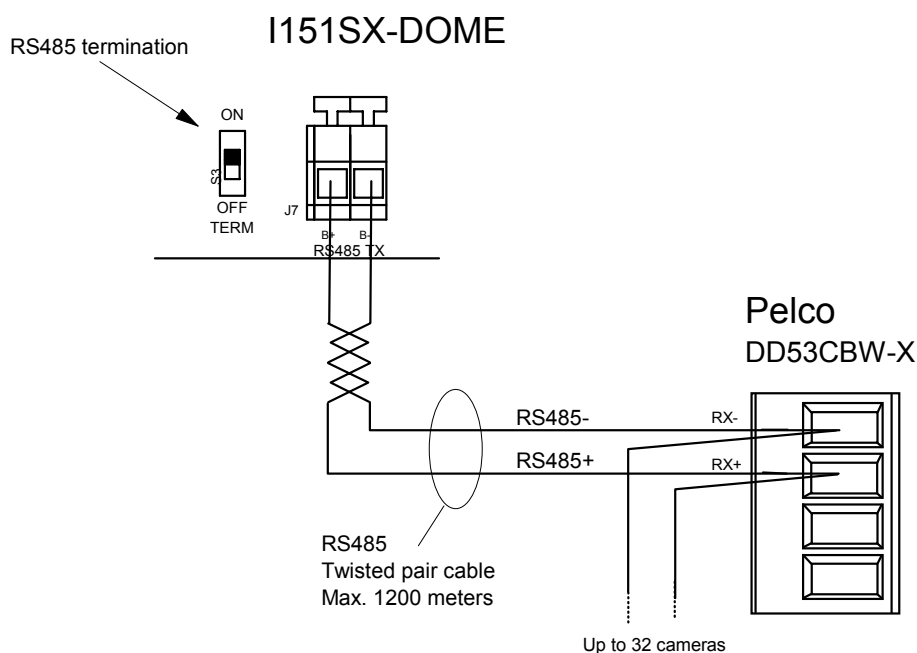


*Exit menu system.*

For full details on programming, please see the *JVC TK-C676 Dome Type Camera Instructions*.

## Pelco Spectra III Series Dome Drive (DD53CBW-X)

Up to 32 Domes can be connected to the RS485 output of the I151SX-DOME.



### Switch settings

On the I151SX-DOME, set the RS485 termination switch to ON.

Set the switches on the Pelco Dome to the following:

- Protocol: The I151SX-DOME uses the D-type protocol. The protocol is automatically detected by the Pelco Dome.
- Baud rate (SW3): 9600 baud.
- Address (SW1): Address 1 on the dome corresponds to address 1 in the SYSTEM X setup. Address 2 on the dome corresponds to address 2 in the SYSTEM X setup, etc.
- Termination (SW2): Set the termination switch ON (terminated) on the last camera connected on the RS485 bus. All other cameras should have the switch OFF.

For details on the switch settings, please see the *Spectra III Series Instructions*.

### Operation

Standard PTZ operation is described in the *K111DX SYSTEM X Keyboard manual*.

SYSTEM X programming is described in the *S111SX NodeManager Manual*.

The following are operations specific for the Pelco Dome Drive.

#### Day/Night mode



## Menu system

The following keys are used to navigate the menu system of the Pelco Dome:

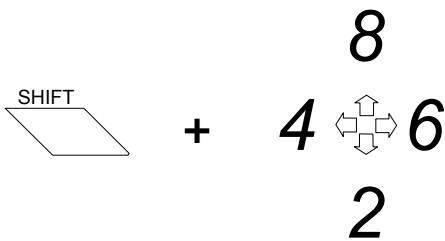
### Access menu system

MENU



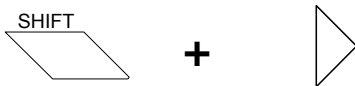
*Access menu system.*

### Navigate



*UP / DOWN / RIGHT / LEFT  
(The joystick can also be used)*

### ENTER/Select



*Enter sub-menu, and/or select option.*

For full details on programming, please see the *Pelco Spectra III Programming Manual*.

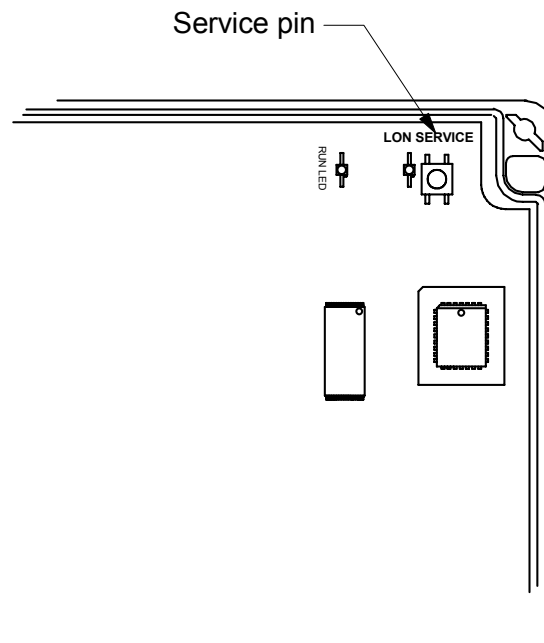
## Service pin

When the LON<sup>®</sup> Box is connected to the LON<sup>®</sup> Network, the service pin must be pressed for the *NodeManger* software to identify the LON<sup>®</sup> Box. Use a small screwdriver, or similar, to press the service pin. The yellow LED next to the service pin will light up shortly, when the service pin is pressed.

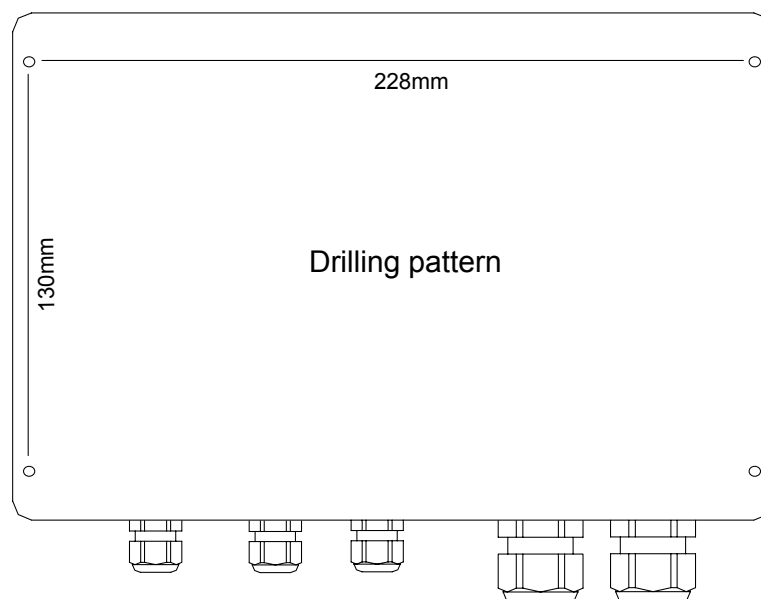
Make sure that the *NodeManger* software is running, and online, prior to pressing the service pin.

It is of out most importance to keep track of the order in which service pins are pressed on the various SYSTEM X units.

Please see the *S111SX NodeManger Manual* for full details on the function, and importance, of the service pin.



## Drilling Pattern



## Updating I151SX-DOME

As new Dome/Telemetry protocols are constantly added, it may be needed to update the I151SX-DOME, to interface to a new supported Dome/Telemetry Receiver.

Updating the I151SX-DOME with new software is simple, and is done using the *NodeManager Configuration Plugin*.

It is not needed to access the I151SX-DOME box, for updating. Everything is done remotely using the NodeManager program.

For full details, please see the *S111SX NodeManager Manual*.

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