BAXALL

Pyramid Universal Dome Interface
Installation Manual

PYR2MID

Please read this manual before operating the Pyramid system

IMPORTANT

The first few pages of these instructions contain important information on safety and product conformity. Please read, and ensure that you understand this information before continuing.

CONTENTS

PRODUCT SAFETY

⚠WARNING

- **Please follow these instructions as you install the equipment and keep them for future use.**
- **Installation is only to be carried out by competent, qualified and experienced personnel in accordance with the country of installation's National Wiring Regulations. Failure to do so can result in injury or death by electric shock.**
- **The module can operate from any +12V DC or 24V AC class 2 isolated power supply capable of providing 100mA.**
- **The module is susceptible to damage from Electrostatic Discharge (ESD). Take normal ESD precautions when handling your network card. ESD prevention kits are available from most electronics distributors.**
- **Do not exceed the voltage and temperature limits given in the specification.**
- **If you have any problems, contact Baxall Limited.**
- **There are no user serviceable parts in this equipment.**

ELECTROMAGNETIC COMPATIBILITY (EMC)

△CAUTION

- **This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**
- **This product is intended for use in general purpose CCTV applications in a residential, commercial or light industrial EMC environment. Refer to Baxall Limited before using the product in medical and/or intrinsically safe applications or in an industrial EMC environment.**
- **The product must be installed in accordance with good installation practice for EMC to enable the product to function as intended and to prevent EMC problems.**
- **Contact Baxall Technical Support to obtain a specification defining the acceptable levels of product degradation with regard to EMC immunity.**

MANUFACTURER'S DECLARATION OF CONFORMANCE

A "Declaration of Conformity" in accordance with the above EU standards has been made and is on file at Baxall Limited, Stockport, SK6 2SU, England.

The manufacturer declares, that the product supplied with this document is complaint with the provisions of the EMC Directive 89/336 EEC, the Low Voltage Directive LVD 73/23 EEC the CE Marking Directive 93/68 EEC and all associated amendments.

UNPACKING

Keep your packaging for use if your Universal Dome Interface is stored for an extended period or needs to be returned for any reason. The packaging should contain:-

- A Universal Dome Interface (PY-UDI-L, PY-UDI-H or PY-UDI-HR)
- An A4 Module Description Sheet (for installation details)
- These instructions
- Two identical barcodes

Check the product code on the serial number label. If you have an incorrect item or it is damaged then inform the suppliers and carriers immediately. If this is the case, do not attempt to use the equipment.

BARCODING

The Universal Dome Interface is supplied with two identical barcodes. Remove one and affix it to the module description sheet, remove the other and affix it to the module.

The barcode gives the unique 48-bit neuron ID to the module. This neuron ID is also stored inside the module and will be transmitted onto the network whenever the service pin on the front panel of the module is pressed. Before installation, make a careful note on your module description sheet of all your installation details and the proposed location of the module. Then during subsequent installation using the Windows 95/98™ installation tool the neuron ID can be entered.

We recommend that during a system installation you store all module description sheets in a ring-bound file, and keep them for reference after the installation is complete.

THE UNIVERSAL DOME INTERFACE

The Pyramid Universal Dome Interface (UDI) enables a range of dome products to be connected and controlled via the Pyramid network with a minimum of effort. The UDI can be configured to operate in a number of different dome protocols, and because of this it can translate commands from the Pyramid network to the correct format for the specific product.

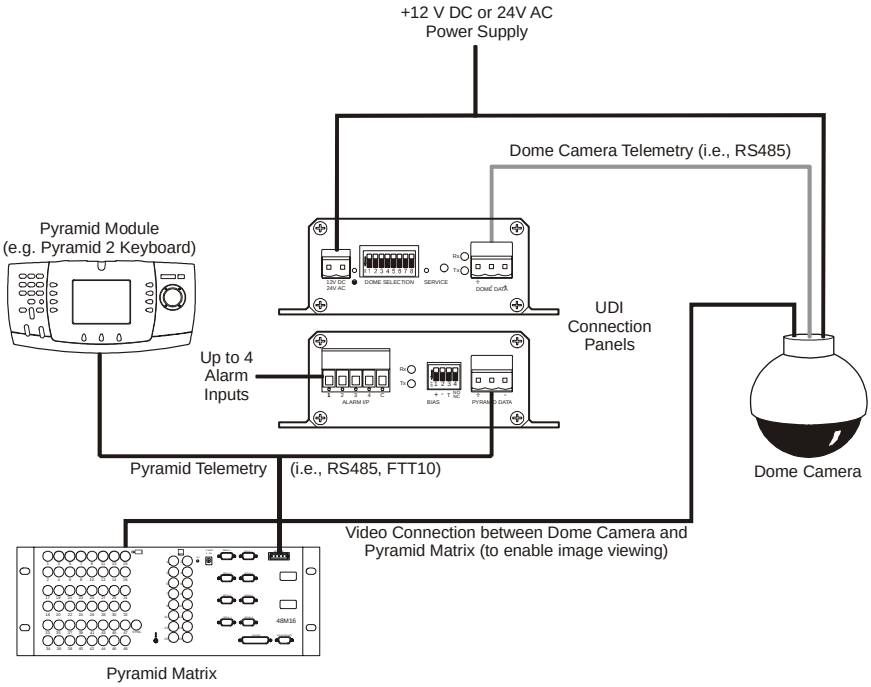
The UDI is compatible with domes manufactured by Baxall, AD/Sensormatic, Vista, Dennard, JVC, Mark Mercer, Panasonic, Pelco, Ultrak, Vicon and VCL. It is also compatible with Baxall CDR and CDH cameras.

Manufacturer	Models	UDI Software Version
Dennard	2050 Series	V2.08
JVC	TK-C675, TK-C676	V2.08
Mark Mercer	D150, D250, D500	V2.08
Panasonic	850 Series	V2.08
Pelco	Spectra II and III (D-Type Protocol)	V2.08
Ultrak	KD6, KD6Z	V1.03 or V2.08
VCL	Orbiter, Jupiter	V1.03 or V2.08
Vicon	Surveyor V7, Surveyor 2000	V1.03 or V2.08
Baxall	Pro Dome series	2.17
AD/Sensormatic	SpeedDome, DeltaDome, UltraDome series	2.17
Vista/Baxall	PowerDome/CDH and CDR Cameras	2.17

It is necessary to have a UDI for each individual dome camera that is added to the Pyramid network. Usually, the UDI will be located at the dome position. However, if a unidirectional transmission method is being used between the dome and UDI (i.e., a radio link), then the UDI can be located at the matrix location. The UDI is also flexible in that it can be operated from any +12V DC or 24V AC power supply capable of providing 100mA. Furthermore, the UDI is capable of receiving four alarm inputs, and these inputs can be configured as all normally-open or all normally-closed using a dip switch on the module.

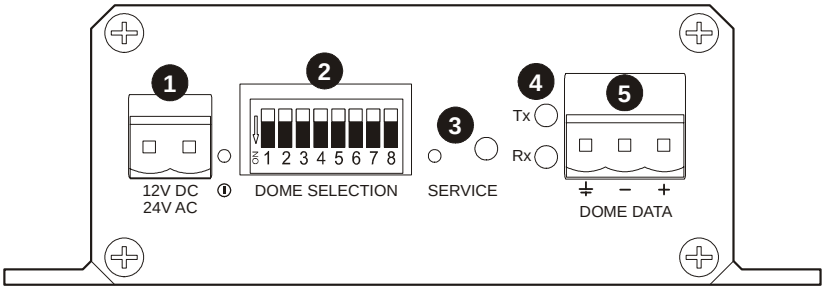
There are three variants of the UDI, based on the speed and type of Pyramid network they use. Other than this, there are no external or operating differences between the three variants. The PY-UDI-L runs on a low speed (9.8k b.p.s.) RS485 network while the PY-UDI-HR runs on a high speed (78k b.p.s.) RS485 network. The third variant, PY-UDI-H, runs on a high speed (78k b.p.s.) FTT10 network.

The figure below shows a typical system layout when a UDI is connected:

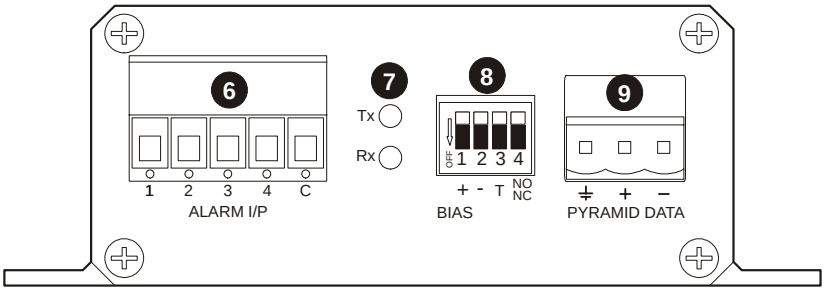


Typical UDI Layout

The two end panels of the Universal Dome Interface contain all the connectors and switches that are required to connect and configure the device. The panels also contain a number of receive and transmit LEDs which enable easy system diagnosis, and a service pin that is used when the UDI is addressed.



Dome Data End Panel of the UDI



Pyramid Data End Panel of the UDI

1 **Power Connection** - Connect the power supply to this 2-pin removable terminal block. This can be any +12V DC or 24V AC power supply capable of providing 100mA. The connection is polarity insensitive.

2 **Dome Selection Dip Switches** - It is necessary to set these dip switches so that the UDI knows which dome camera product is to be connected. The UDI is compatible with domes manufactured by Baxall, AD/Sensormatic, Dennard, JVC, Mark Mercer, Panasonic, Pelco, Ultrak, Vicon, Vista and VCL. Baxall CDR and CDH cameras are also supported.

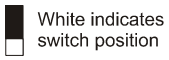
Consult the table below in order to set the dome selection dip switches for the product in use. The UDI will need to be powered off, then powered on again if a different protocol is selected.

Dome Manufacturer	Dip Switch Settings 1	2	3	4	5	6	7	8
Ultrak								
VCL								
Vicon								
Panasonic								
Dennard								
JVC								
Pelco								
Mark Mercer								
Baxall								
AD/Sensormatic								
Vista (or Baxall CDR/CDH)								

White indicates switch position

Dip switch number 6 is used to enable or disable the auto-iris function. If the auto-iris functionality is enabled (dip switch 6 **UP**), the iris level on the connected device will be readjusted for the lighting conditions every thirty seconds. If this functionality is disabled (dip switch 6 **DOWN**), iris adjustments will have to be made manually using a system keyboard.

Iris Setting	Dip Switch Settings 1	2	3	4	5	6	7	8
Auto-Iris Enabled								
Auto-Iris Disabled								



3 **Service Pin** - The service pin is used to address the UDI. When the service pin is pressed (use a small screwdriver to do this), the service pin LED will light and a unique identifier known as a neuron ID is transmitted to all other devices that are connected to the UDI. The purpose of this is to establish communication between the UDI and the other devices in the Pyramid network.

4 **Dome Data LEDs** - The LED labelled **Rx** lights to indicate when data is being sent from the dome camera to the UDI. The LED labelled **Tx** lights to indicate when data is being sent from the UDI to the dome camera. This allows for easy system diagnosis.

5 **Dome Data Connector** - This three-way terminal block is used to connect the UDI to the dome camera. At the UDI end, the connections are common. The dome camera is connected to the UDI using pins 2 and 3 (labelled **-** and **+**) and a ground connection should be made on pin 1.

The connections at the dome camera end are dependent on the type of dome camera in use. See the relevant section for more details about the connections that need to be made at the dome camera.

6 **Alarm Input Connector** - Up to four alarm inputs can be connected to the UDI using this terminal. Connect each alarm input to one of the four numbered pins, and make a common connection for each input to the pin labelled with a **C** (common).

When alarm inputs are connected to the UDI, they will use the address that is assigned to the UDI itself. For example, if the UDI is assigned camera address 21, the alarm inputs will be assigned to alarm input unit 21. Once the unit has been addressed and connected to the Pyramid network, the alarm inputs can be configured in the same way as a Pyramid Alarm Input Module. This would be done using the Pyramid Matrix menu system—for more details, see the **Pyramid Matrix Programming Manual**.

A UDI addressed between 127 to 144 will use the alarm input box references 1 to 18 respectively (see table below). For example, an alarm input from UDI 143 holds an alarm box input address of 17.

UDI address numbers	1	2	...	126	127	128	...	144
Alarm box address numbers	1	2	...	126	1	2	...	18

The state of the alarm inputs (i.e., all normally-open or all normally-closed) can also be configured using dip switch 4 on the four-way switch bank **8**. If the switch is in the **OFF** position (down) then all the alarm inputs are normally-closed. If the switch is in the **ON** position (up), then all the alarm inputs are normally-open.

7 **Pyramid Data LEDs** - The LED labelled **Tx** lights to indicate when data is being sent from the UDI to the Pyramid network. The LED labelled **Rx** lights to indicate when communication is taking place on the Pyramid network (not just to the UDI). This allows for easy system diagnosis.

8 **Biasing Switches** - Pyramid networks should be biased and terminated. Typically, biasing is applied to the first module of a network and termination is applied to the first and last modules. All other modules should be unbiased and unterminated. If it is necessary to apply biasing to the UDI, move both dip switch 1 and 2 into the **UP** position. To apply termination to the UDI, move dip switch 3 into the **UP** position.

Dip switch 4 is used to set the state (i.e., all normally-open or all normally-closed) of any alarm inputs that are connected to the UDI. See Alarm Input Connector **6** for more details.

Note
For connections to BT, Teleste and AMG fibre optic equipment, no biasing should be applied.

9 **Pyramid Data Connector** - This three-way terminal is used to connect the UDI to the Pyramid network. This can be either a RS485 or FTT10 network depending on the UDI variant in use. Connect the UDI to the network using pins 2 and 3 (labelled **+** and **-** to indicate polarity), and connect the cable screen to ground on pin 1 (labelled ⏚).

A good connection to the local ground plane is also required, and this should also be made to the Pyramid Data Connector on pin 1 (labelled ⏚). This is necessary to ensure compliance with ESD directives and to protect against transients on any connections.

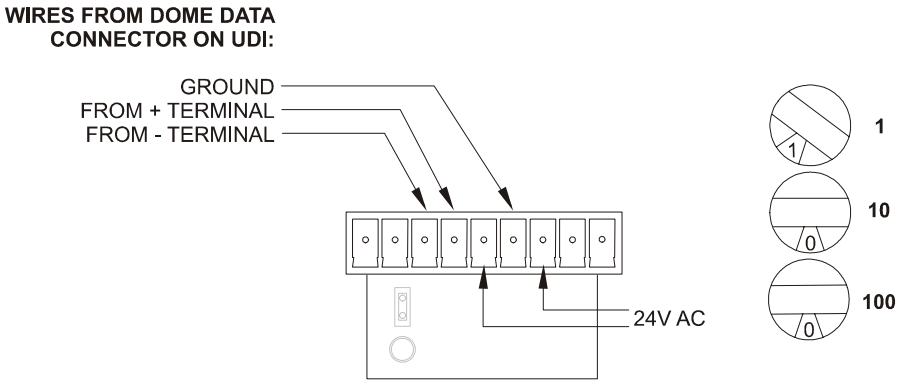
CONNECTING A BAXALL PRO DOME CAMERA

To connect a Baxall Pro Dome camera to the UDI, follow the steps below:

△CAUTION

When connecting the UDI to a dome, reference should also be made to documentation provided with the dome.

1. Remove the dome assembly from the base. Connect the wire from the from the UDI's Dome Data Connector to the nine-pin connector on the underside of the dome assembly:



Connecting and configuring a Baxall Pro Dome

2. Use the three rotary switches, labelled 1, 10 and 100, to set the dome address to **1**. To do this, set rotary switch 1 to **1**, and rotary switches 10 and 100 to **0**, as shown in the diagram above.
3. Reconnect the dome assembly to the base.

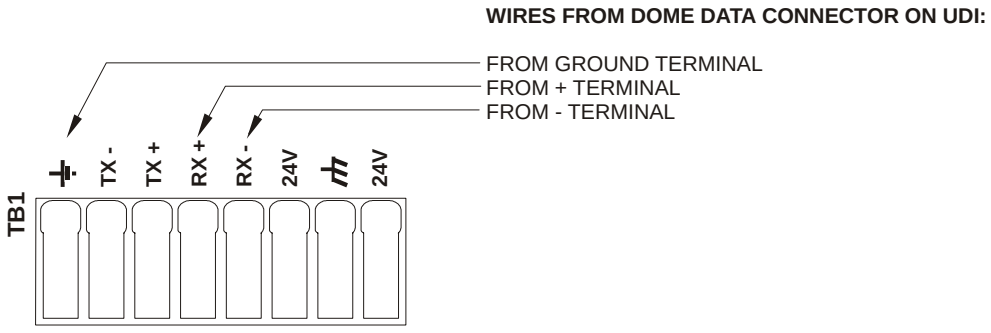
CONNECTING AN ULTRAK DOME CAMERA

To connect an Ultrak dome camera to the UDI, follow the steps below:

△CAUTION

When connecting the UDI to a dome, reference should also be made to documentation provided with the dome.

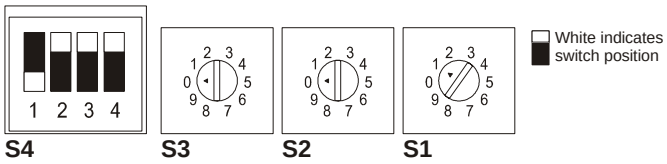
1. Remove the dome camera from its housing.
2. On the base inside the housing, connect the eight-way terminal block labelled **TB1** to the wire from the UDI's Dome Data Connector. Use the diagram below as a guide:



Connecting an Ultrak Dome to the UDI

CONNECTING AN ULTRAK DOME CAMERA

3. On the dome camera itself there is a PCB which includes three rotary switches. These rotary switches are labelled **S1**, **S2** and **S3**, and they should be used to set the dome address to **1**. To do this, set the first rotary switch (**S3**) to **0**, the second rotary switch (**S2**) to **0** and the third rotary switch (**S1**) to **1**, as shown below:



Configuring an Ultrak Dome

4. Next to the three rotary switches, there are four dip switches (**S4**) which are used to set the dome protocol. The dome protocol should be set to Maxpro. To do this for Ultrak firmware versions J and later, push the first switch **DOWN** and leave the remaining three switches **UP**, as shown in the diagram above.
5. Refit the dome camera into the housing.

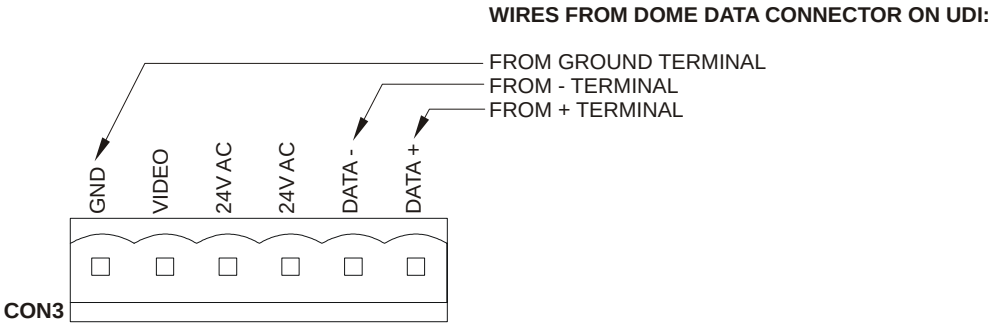
CONNECTING A VCL DOME CAMERA

To connect a VCL dome camera to the UDI, follow the steps below:

△CAUTION

When connecting the UDI to a dome, reference should also be made to documentation provided with the dome.

1. Unscrew the lid of the weatherproof box which contains the power supply unit for the dome camera.
2. Connect the six-way terminal block labelled **CON3** to the wire from the UDI's Dome Data Connector. Use the diagram below as a guide:



Connecting a VCL Dome to the UDI

3. Fix the lid back in place.
4. Remove the weatherproof screen from the dome camera itself to reveal the camera PCB.
5. Using the block of eight dip switches labelled **ADDRESS**, set the dome address to **1**. To do this, move the switch labelled **1** to the **ON** position and ensure the other seven switches are set to the **OFF** position, as shown below:

Configuring a VCL Dome

6. Refit the weatherproof screen to the dome camera.

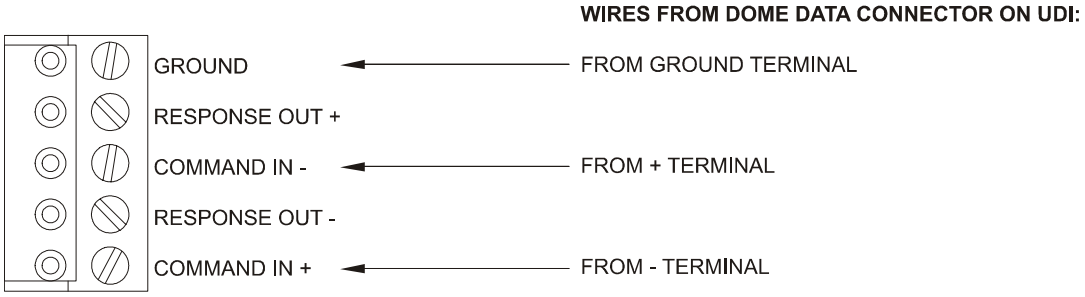
CONNECTING A VICON DOME CAMERA

To connect a Vicon dome camera to the UDI, follow the steps below:

△CAUTION

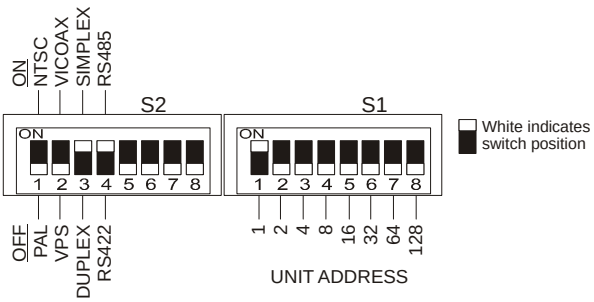
When connecting the UDI to a dome, reference should also be made to documentation provided with the dome.

1. Connect the five-way terminal block on the top of the Vicon dome camera to the wire from the UDI's Dome Data Connector. Use the diagram below as a guide:



Connecting a Vicon Dome to the UDI

2. On the top of the Vicon dome camera, locate the two blocks of dip switches labelled **S1** and **S2**.
3. On the block of dip switches labelled **S2**, turn the **RS485** and **Simplex** switches to the **ON** position as shown below:



Configuring a Vicon Dome

4. Using the block of dip switches labelled **S1**, set the dome address to **1**. To do this, move the switch labelled **1** to the **ON** position and ensure the other seven switches are set to the **OFF** position. Use the diagram above as a guide.

Note

To use Vicon dome cameras with the UDI, the baud rate of the dome should be set to 4800 baud. This is done automatically on most Vicon models, including the Surveyor 2000 which has an auto-detect baud rate feature.

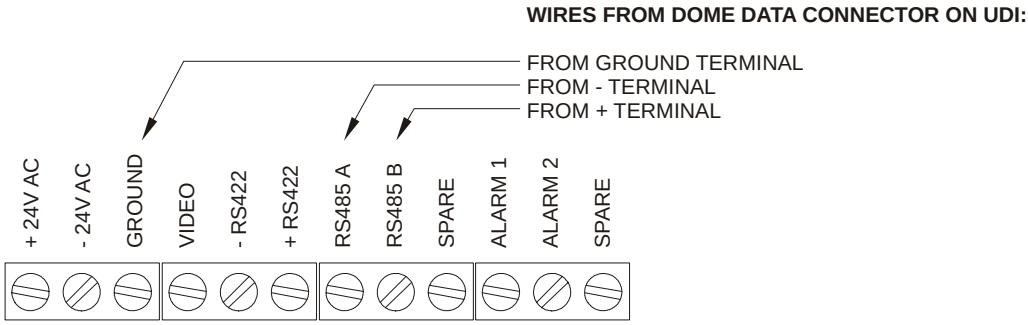
CONNECTING A MARK MERCER DOME CAMERA

To connect a Mark Mercer dome camera to the UDI, follow the steps below:

△CAUTION

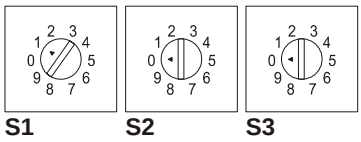
When connecting the UDI to a dome, reference should also be made to documentation provided with the dome.

1. Remove the top panel from the dome camera housing. The connections are made inside this top panel.
2. Inside the top panel, locate the twelve-way terminal block to which power, video, alarm and network connections are made. Connect the wire from the UDI's Dome Data Connector to the terminals marked **RS485A** and **RS485B** as shown below:



Connecting a Mark Mercer Dome to the UDI

3. Inside the top panel, there are three rotary switches. These rotary switches are labelled **S1**, **S2** and **S3**, and they should be used to set the dome address to **1**. To do this, set the first rotary switch (**S3**) to **0**, the second rotary switch (**S2**) to **0** and the third rotary switch (**S1**) to **1** as shown below:



Configuring an Mark Mercer Dome

4. Refit the top panel to the dome camera housing.

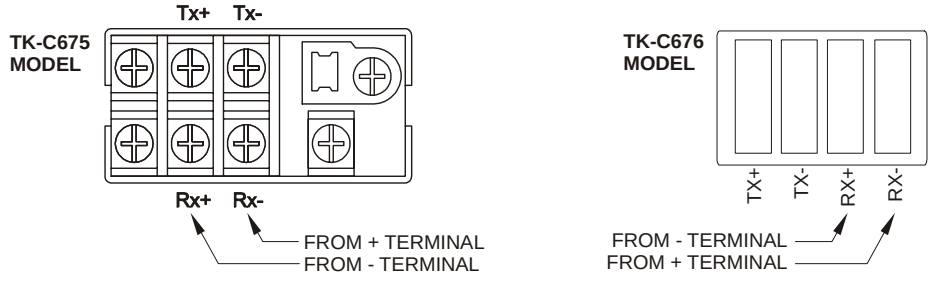
CONNECTING A JVC DOME CAMERA

To connect a JVC dome camera to the UDI, follow the steps below:

△CAUTION

When connecting the UDI to a dome, reference should also be made to documentation provided with the dome.

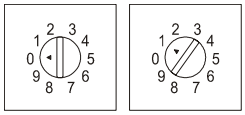
1. Locate the data connector on the top of the dome. The connector is slightly different for TK-C675 and TK-C676 models as shown below.
2. Connect the wire from the UDI's Dome Data Connector to the terminals marked **Rx+** and **Rx-** as shown in the diagram below. There is no need to connect the terminals marked **Tx+** and **Tx-** as the dome is to operate in simplex mode.



Connecting a JVC Dome to the UDI

CONNECTING A JVC DOME CAMERA

3. Locate the rotary address switches and the settings dip switch panel on the dome camera. On the TK-C675, they are located on the side of the dome camera, while on the TK-C676, they are located on the underside of the top panel.
4. Using the two rotary switches, set the dome address to **1**. To do this, set the right rotary switch to **1**, and the left rotary switch to **0** as shown in the diagram below:



Configuring an JVC Dome

5. Using switch 4 and 5 on the dip switch panel, set the dome camera to **Multidrop Simplex** mode. To do this, switch 4 should be set to the **ON** position and switch 5 should also be set to the **ON** position.

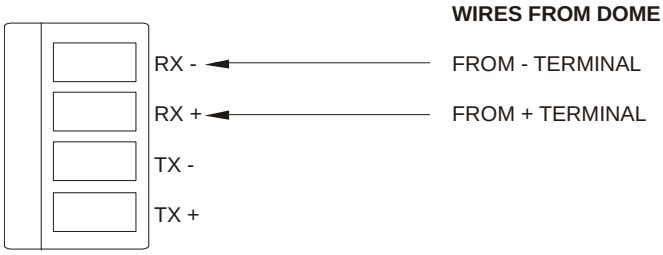
CONNECTING A PELCO DOME CAMERA

To connect a Pelco dome camera (Spectra II model) to the UDI, follow the steps below:

△CAUTION

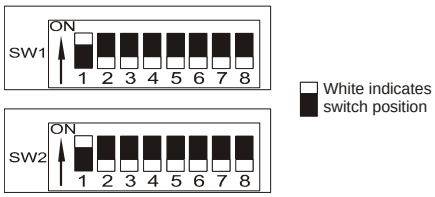
When connecting the UDI to a dome, reference should also be made to documentation provided with the dome.

1. Remove the lower dome and dome drive by aligning and pushing in the coloured tabs. The back box is now accessible.
2. Open the hinged door to the back box, by pushing the tab lock towards the wall of the unit. The dome PCB will be visible inside.
3. On the PCB, connect the four-way terminal block to the wire from the UDI's Dome Data Connector. Use the diagram below as a guide:



Connecting a Pelco Dome to the UDI

4. On the top of the dome drive, locate the two blocks of dip switches labelled **SW1 and SW2.**
5. Using the block of dip switches labelled **SW1**, set the dome to operate in D-type protocol at 2400 baud. To do this, move the switch labelled **2** into the **ON** position and ensure that the other switches are set to the **OFF** position, as shown below.



Configuring a Pelco Dome

6. Using the block of dip switches labelled **SW2**, set the dome address to **1**. To do this, move the switch labelled **1** into the **ON** position and ensure that the other switches are set to **OFF**, as shown in the diagram above.
7. Reassemble the dome camera.

Note

The location and numbering of the dip switches may differ between Pelco Spectra II and Spectra III dome cameras. However, the settings that should be used are consistent from product to product. Consult the Pelco documentation for more details.

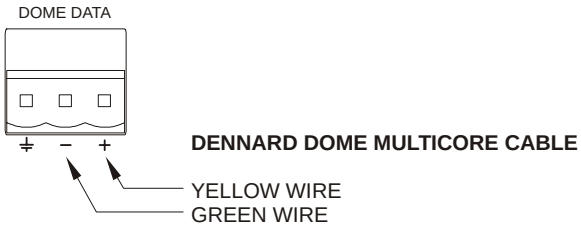
CONNECTING A DENNARD DOME CAMERA

Dennard dome cameras are supplied with a flying lead connector which is connected to the socket on the top of the dome housing. The flying lead connector is a multicore cable, and two of the wires are used specifically for network connections. To connect these wires to the UDI, follow the steps below:

△CAUTION

When connecting the UDI to a dome, reference should also be made to documentation provided with the dome.

1. Connect the yellow and green wires on the multicore cable to the UDI's Dome Data Connector. The green wire should be connected to the **-** terminal and the yellow wire to the **+** terminal as shown below:



Connecting a Dennard Dome to the UDI

2. To address the dome camera it is necessary to remove the protective parts of the dome. First, carefully remove the retaining screws and lift away the outer hemisphere.
3. Locate the two fixing screws and remove the inner shroud. The dome address switches should now be clearly visible on the lower PCB.
4. Using the switches, set the dome address to **1**. To do this, set both the blue switch and the yellow switch to the **0** position.
5. Refit the inner shroud and outer hemisphere, taking care to tighten the fixing screws.

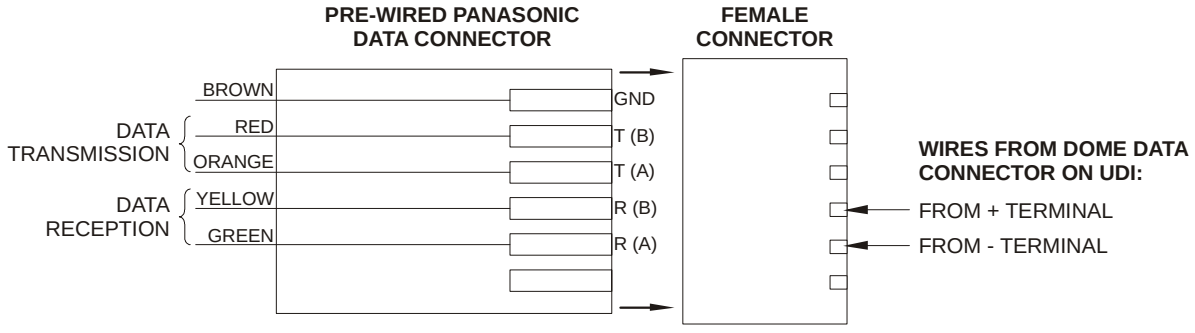
CONNECTING A PANASONIC DOME CAMERA

Panasonic dome cameras are fitted with a multiple connector lead. There are five connectors on the lead, and each connector is used for a different purpose (i.e., alarms, power, video, data). The wires from the UDI's Dome Data Connector are connected to the dome using the data connector of this lead. To make this connection, follow the steps below:

△CAUTION

When connecting the UDI to a dome, reference should also be made to documentation provided with the dome.

1. Wire a female data connector with the wires from the UDI's Dome Data Connector as shown below. The pre-wired male connector from the dome can then be inserted into the female connector to provide the data path between dome and UDI.



Connecting a Panasonic Dome to the UDI

2. On the top of the dome camera, there is a block of eight dip switches labelled **SW1**. Use these switches to set the dome address to **1**. To do this, move the switch labelled **8** into the **ON** position and ensure that the other switches are set to **OFF**.

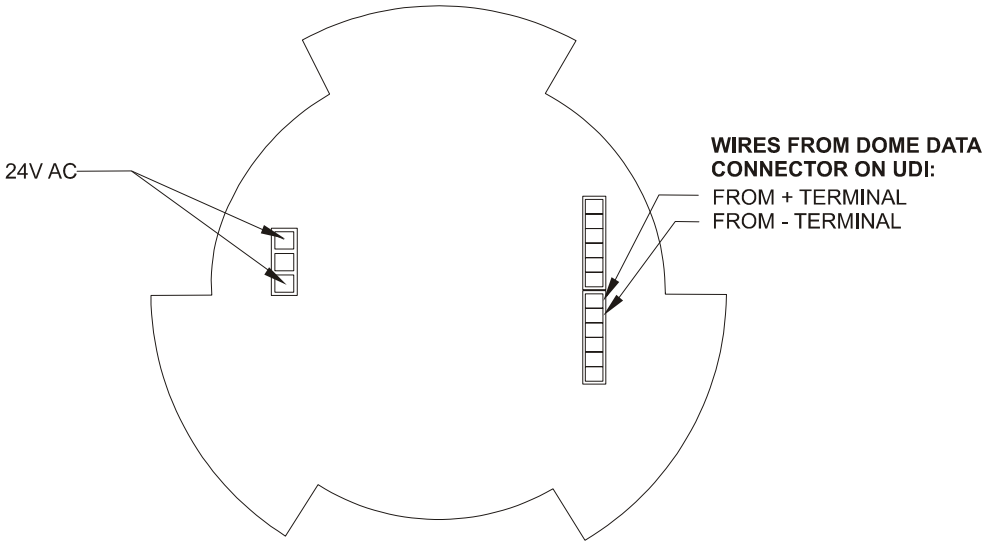
CONNECTING AN AD/SENSORMATIC DOME CAMERA

To connect a Sensormatic dome camera to the UDI, follow the steps below:

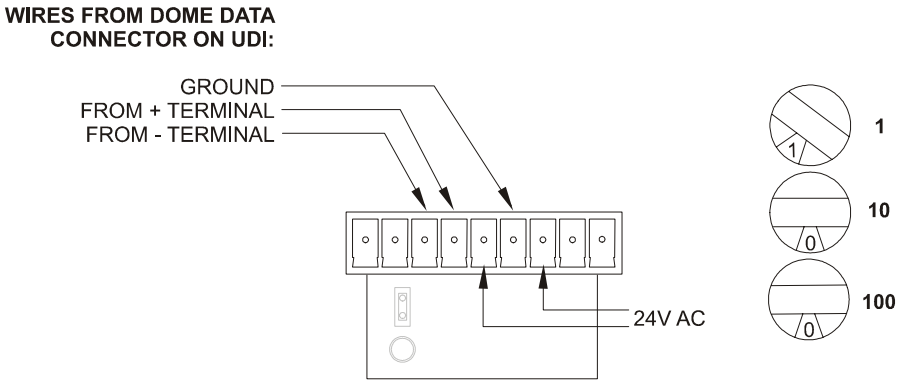
△CAUTION

When connecting the UDI to a dome, reference should also be made to documentation provided with the dome.

1. Remove the dome assembly from the base. The dome can be connected to the UDI in one of two ways. Connect the wires to either the I/O board fitted inside the base cover as shown in *A - Connecting a Sensormatic dome to the UDI,* or the nine pin connector located on the underside of the dome assembly as shown in *B - Connecting and Configuring a Sensormatic dome.*



A - Connecting a Sensormatic dome to the UDI



B - Connecting and configuring a Sensormatic dome

2. The three rotary switches labelled 1, 10 and 100, are used to set the dome address to **1**. To do this, set rotary switch 1 to **1**, and rotary switches 10 and 100 to **0**, as shown in *B - Connecting and Configuring a Sensormatic dome.*
3. Reconnect the dome assembly to the base.

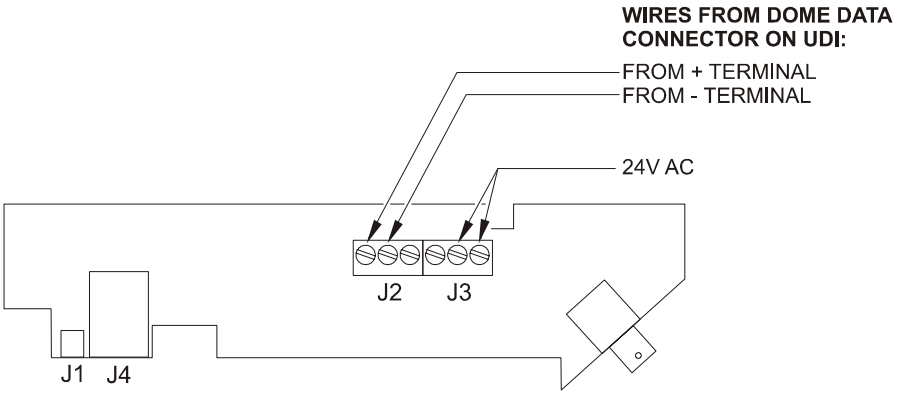
CONNECTING A VISTA DOME CAMERA

To connect a Vista dome camera to the UDI, follow the steps below:

△CAUTION

When connecting the UDI to a dome, reference should also be made to documentation provided with the dome.

1. Remove the dome from the mounting bracket to expose the connectors.
2. Connect the wire from the UDI's Dome Data Connector, using the diagram below as a guide:



Connecting a Vista PowerDome to the UDI

3. Refit the dome camera to the mounting bracket.
4. The dip switches on the camera can be accessed without removing the camera from the casing. Set dip switch number 1 to ON and all others to OFF, as shown below:

Configuring an Vista PowerDome

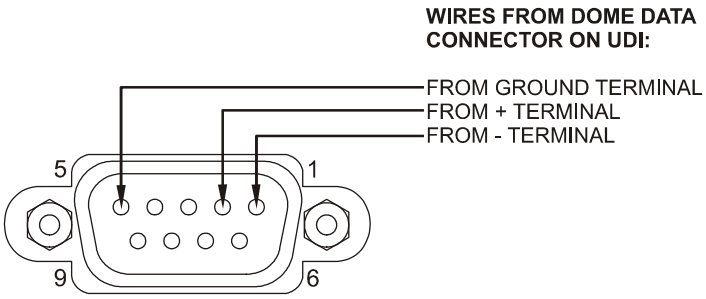
CONNECTING A BAXALL CDR OR CDH CAMERA

To connect a Baxall CDR or CDH camera to the UDI, follow the steps below:

△CAUTION

When connecting the UDI to a CDR or CDH camera, reference should also be made to documentation provided with the camera.

1. Connect the D-type Comms I/O Connector on the rear of the camera to the wire from the UDI's Dome Data Connector. Use the diagram below to connect to pins 1, 2 and 5 of the Comms I/O Connector:



Connecting a CDH or CDR Camera to the UDI

2. Referring to the relevant camera manual, use the camera menu system to set the communication protocol to **Baxall**, the baud rate to **9600** and the camera address to **00001**.

ADDRESSING A UDI WITH THE PYRAMID 1 KEYBOARD

A UDI can also be addressed using the Pyramid 1 Keyboard. Follow the steps below:

1. Connect up a Pyramid Mk1 Keyboard to the UDI. This can be done directly by connecting the network card on the keyboard to the Pyramid Data Connection on the UDI, or remotely through the Pyramid network in the normal way.
2. Using the keyboard, insert the Installers Card and log on with the PIN number 1892.
3. Press the key sequence “100” and then the **Function** key.

   The left hand side of the keyboard display will show “Fn 0100” to indicate that self binding mode has been invoked.
4. Repeatedly press the **List Down** key, until the LCD display shows the option “Replace RX”.
5. Once this option is displayed, select soft key number 1 marked “Yes”.

   At this point, the keyboard is now waiting for the UDI to identify itself using the service PIN.
6. Press the service pin on the UDI.

   The UDI’s neuron ID is transmitted onto the network and the keyboard display will show the text “Receiver Identified”.
7. Type in the node ID you require this UDI to be configured to, and then press the **Camera Select** key.

   After a short delay, the keyboard will then display the message “Subnet Node Calculated”.
8. After 10 seconds, the keyboard will then log itself out automatically.

Troubleshooting

Q I pressed the service PIN on the UDI, but the keyboard did not show the “Receiver Identified” message.

A No data is coming through, check the data cabling between the UDI and the keyboard.

Q I got to stage 7, but the Subnet Node Calculated message remained on the keyboard screen and the keyboard did not log off.

A Data is only being transmitted in one direction. Check to see if the data cable has been connected to the correct side of the communications card, or if one side of the twisted pair has become disconnected.

Note

The UDI can also be addressed and installed using the Pyramid Installation Tool. This software allows remote configuration of the Pyramid system using a PC. See the **Pyramid Installation Tool Operating Manual** for more details.

ADDRESSING A UDI WITH THE PYRAMID 2 KEYBOARD

Each UDI that is connected to the Pyramid system must be assigned a unique address called a node ID, and an operator with installer privileges can do this using the Pyramid 2 Keyboard.

Configuration of the UDI requires its service button to be pressed (located on the Dome Data end panel of the module), and this may be a two man operation if the UDI is located remotely from the keyboard. For this reason, it is easier to address a UDI before it is added to the network, and this can be done using a special mode of the Pyramid keyboard called Self-Bind (also known as Fn 100). Self-binding mode is commonly used when configuring telemetry receivers, or when cameras need to be controlled in a system without a CCTV matrix.

During the self-binding process, the installer can set up the network address, which includes the node ID—the number that is entered on a keyboard to indicate which device is to be controlled (e.g., Camera receiver number **4**). Once the network address has been configured, the UDI and its associated dome camera can be attached to the network and controlled through the Pyramid matrix.

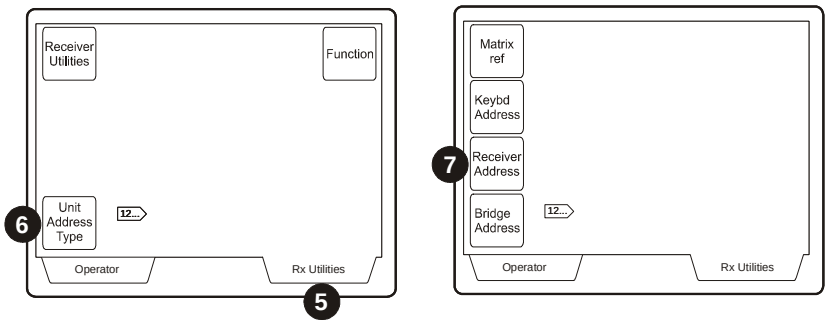
To address a UDI in self-binding mode, follow the steps below:

1. Connect up a Pyramid 2 Keyboard to the UDI. This can be done directly by connecting the network card on the keyboard to the Pyramid Data Connection on the UDI, or remotely through the Pyramid network in the normal way.
2. Log onto the Pyramid 2 Keyboard using the installer password. The **Installer Logon** screen is displayed, where you can log on with the PIN number 1892.
3. Press the **Function 100** soft-key. The **Direct Access** screen is displayed.
4. Press the **Receiver** soft-key.
5. Press the **Rx Utilities** screen key.
6. Press the **Unit Address Type** soft-key.

   The **Addressing** screen is displayed.

ADDRESSING A UDI WITH THE PYRAMID 2 KEYBOARD

7. Press the **Receiver Address** soft-key. The keyboard LCD displays a message asking the operator to press the service pin.



Addressing a UDI

8. So that the keyboard can identify the UDI, press its service pin. On the UDI, the service pin is a small button inside an access hole. Use a small screwdriver to press the service pin.

   When the service pin is pressed, the UDI's neuron ID is transmitted to all other devices on the Pyramid network, or in the case of self-bind mode, to the keyboard. The neuron ID is a unique identifier which is used to establish communication between the UDI and all other devices. Once the UDI has been identified by the keyboard, it can be assigned a node ID.
9. The keyboard LCD displays a message asking the operator to enter the new node ID. The node ID is the visible part of a network address, as it is the number that an operator enters on a keyboard to indicate the device that is to be controlled (e.g., Camera receiver number **3**).

   Use the number keys to enter the node ID.
10. Press the **Receiver Address** soft-key again to confirm the node ID.

    The keyboard LCD displays a message confirming the address.

RECEIVER PROGRAMMING

In the same way that it is used to program Pyramid AC and DC receivers, the Pyramid 2 Keyboard can be used to carry out more advanced UDI programming (e.g., presets, preset patrols, random patrols). For more details on how to do this, see the **Pyramid 2 Keyboard Operating Manual**. A copy of the manual is supplied with the Pyramid 2 Keyboard, and can also obtained from the Baxall website at **www.baxall.com**, or from Baxall Technical Support.

UDI programming can also be achieved using the Pyramid 1 Keyboard. Instructions on how to do this can be obtained from Baxall.

Note
The number of presets that can be programmed to the UDI are limited by the storage capacity of the dome products in use.

DOME OPERATIONS AVAILABLE WITH THE PYRAMID 2 KEYBOARD

Once a dome has been connected to the Pyramid system using a UDI, a Pyramid 2 Keyboard in that network can control the core functions of the dome. The dome is selected in the same way as an AC or DC receiver—select a monitor, enter the camera address and then press the ⏎ key. Images from the dome camera will be displayed on the selected monitor, and the standard keyboard PTZ operations will be available. These core functions (e.g., pan, tilt, zoom, focus) are transparent from product to product.

A number of special operations (e.g. vector scans, learnt tours, colour/mono flip) may also be available depending on the type of dome in use. Use the commands detailed in The Dome PTZ Quick Reference Table to access these.

If a dome camera has a built-in menu system, it can be accessed through the UDI. To do this, use the **128 Preset** function to put the UDI into Menu mode. However, if an operator enters the menu system using this function and later exits it without first taking the UDI out of Menu mode, PTZ operation will be disabled. To enable PTZ operation once more, it is necessary to exit Menu mode—this is achieved by invoking the **128 Preset** function again.

Read the following dome-specific sections, referring to the tables at the back of this manual. Read these instructions in conjunction with the manual supplied with the dome product itself.

The procedure for programming presets can be found in the **Pyramid 2 Keyboard Operating Manual**.

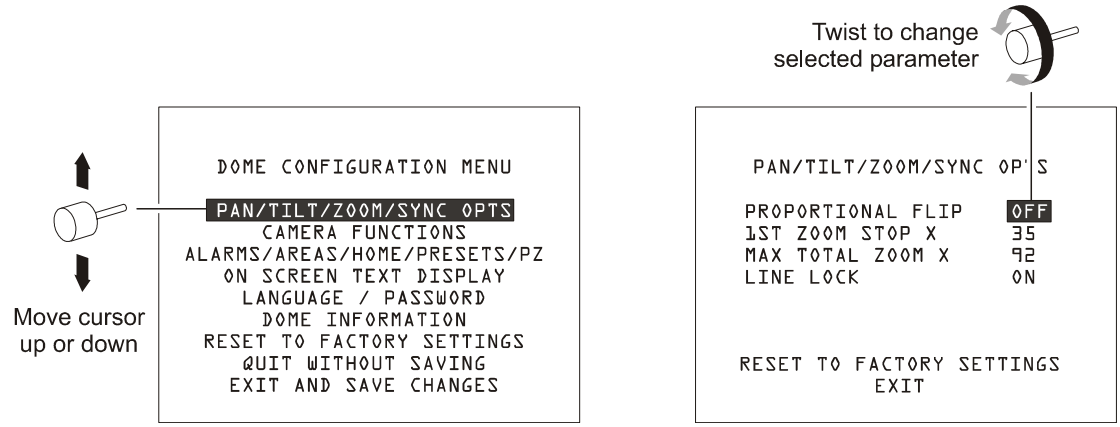
Baxall ProDome

The UDI enables the user to use the dome camera's menu system (when installed).

To enter the dome camera menu system use the keyboard to:

1. Select a monitor on which to view the menus by pressing the monitor number (soft-keys **1** to **9**) followed by the **monitor** soft-key.
2. Select a dome camera by pressing the camera number (soft-keys **1** to **9**) followed by the **camera** soft-key.
3. Recall **preset 128** to enter the menu system.

   To navigate the dome camera menu system:
   - Use joystick **up/down** movements to choose menu items and menu parameters.
   - Use joystick **left/right** movements to move cursor left/right one character.
   - Use joystick **clockwise/counterclockwise** movements, or the **Zoom IN** / **Zoom OUT** key to change selected parameters.
   - Press the **Focus FAR** / **Focus NEAR** key to select menu items or parameters.



4. Once amendments are complete, exit the menu system by selecting:
   - **Quit Without Saving** - this will exit the dome menu without saving any changes.
   - **Exit and Save Changes** - this will save any changes and exit the dome menu.

Ultrak

The on-screen menu system can be accessed by entering **128 Preset** on the keyboard. Numeric entries can then be used to select each line of a menu or sub-menu. For example, to select line 1 in a menu, press the number **1** key followed by the **Preset** soft-key.

Whilst in the menu system it should be noted that:

- Numeric entries are enabled using presets 1-10 (10 being 0).
- **Zoom In** (twist joystick clockwise) is used as the Enter function.
- **Zoom Out** (twist joystick anti-clockwise) is used as the Escape function.
- The **Aux 1** soft-key is used to toggle between Menu and PTZ mode. This is useful in the Preshot menu (accessed using **Preset 126**) where it is necessary to enter PTZ mode without exiting the menus.
- In the Vector Scan menu (accessed using **Preset 125**), the joystick can be used to move between entries in the table.

To leave the menu system, return to the Main menu using the Zoom Out function and from here, use **128 Preset** to exit the menus on the dome and on the UDI. If the menu system is exited incorrectly, the pan, tilt and zoom functions may not be available. If this is the case, simply enter 128 preset and control will be made available.

Dennard, JVC, Panasonic

The menu systems on Dennard, JVC and Panasonic dome cameras are operated using similar keyboard functions:

- Use the **Preset 128** function to enter and exit Menu mode.
- The **Aux 1** soft-key is used to toggle between Menu and PTZ mode.
- Move the joystick up and down to navigate up and down menus and move it left and right to change menu values.
- **Zoom In** (twist joystick clockwise) is used as the Enter function (i.e. to select menu items and to confirm values).
- **Zoom Out** (twist joystick anti-clockwise) is used as the Escape function on JVC cameras, while the **Iris Open** key is used as the Escape function on Panasonic cameras.

- When in Menu mode on a Panasonic dome camera, it is possible to enter the Special menu by pressing the **Iris Close** key.
- After programming a preset on a Dennard Dome camera, press the **Iris Open** key to re-enable PTZ fuctionality.
- On a JVC Dome camera, if the menu is exited by using the joystick, PTZ functionality will freeze. To overcome this, re-enter the menu system by twisting the joystick anti-clockwise. Exit the menu system correctly by invoking **Preset 128**.
- When entering text characters on a JVC Dome camera, ensure that Aux 1 is active (on) and twist the joystick clockwise to enter characters.

Vicon

The Pyramid 2 Keyboard can be used to operate a Vicon dome camera menu system as follows:

- Use the **Preset 128** function to enter and exit Menu mode.
- The **Aux 1** soft-key is used to toggle between Menu and PTZ mode.
- Move the joystick up and down to navigate up and down menus, and move it left and right to change menu values.
- **Zoom In** (twist joystick clockwise) is used as the Enter function (i.e. to select menu items and to confirm values).
- The **Focus Near** key is used as the Escape function.

Pelco

The Pyramid 2 Keyboard can be used to operate a Pelco dome camera menu system as follows:

- Use the **Preset 128** function to enter and exit Menu mode.
- The **Aux 1** soft-key is used to toggle between Menu and PTZ mode.
- Move the joystick up and down to navigate up and down menus and also to select menu values.
- The **Iris Open** key is used as the Enter function (i.e. to select menu items and to confirm values).

Sensormatic UltraDome II, III, IV, V, VI and AD DeltaDome II and III

The Pyramid 2 Keyboard can be used to operate a Sensormatic/AD dome camera menu system as follows:

- Recall **Preset 128** to enter the domes menu system.
- The **Focus Near** key is used to make selections.
- Move the joystick to navigate the menu system and selection lists.
- Use the **Zoom** collar of the joystick to cycle entries in the selected field.

VCL, Mark Mercer

VCL and Mark Mercer dome cameras do not have a menu system.

Vista PowerDome

The Pyramid 2 Keyboard can be used to operate the menu system of a Vista PowerDome as follows:

- Recall preset 128 to enter the menu system.
- Enter the code 1 [preset], 2 [preset], 3 [preset], 4 [preset].
- The joystick is used to navigate the menu system and selection grids.
- Twist the zoom collar of the joystick clockwise to enter selections.
- Twist the zoom collar of the joystick anti-clockwise to escape.
- Enter Preset 128 to re-enable the joystick.

Baxall CDR and CDH Cameras

The Pyramid 2 Keyboard can be used to operate the menu system on a Baxall CDR or CDH camera as follows:

- Recall preset 128 to enter the menu system.
- Move the joystick up and down to navigate up and down menus, and move it left and right to change menu values.
- **Zoom In** (twist joystick clockwise) is used as the Enter function (i.e. to select menu items and to confirm values).

	BAXALL (PRO DOME Series)	ULTRAK (KD6, KD6Z)	VICON (SURVEYOR V7 & 2000)	VCL (ORBITER, JUPITER)	DENNARD (2050 SERIES)	JVC (TK-C675, TK-C676)	MARK MERCER (D150, D250, D500)	PANASONIC (850 SERIES)	PELCO (SPECTRA II AND III)	SENSORMATIC	VISTA (POWERDOME)
PRESETS	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note	See note
81											
82											
83											
84											
85											
86											
87											
88											
89											
111	Continuous Pattern 1	Recall Vector Scan 1	Recall Tour 1				Recall Tour 0			Continuous Pattern 1	Recall preset tour 1
112	Continuous Pattern 2	Recall Vector Scan 2	Recall Tour 2				Recall Tour 1			Continuous Pattern 2	Recall preset tour 2
113	Continuous Pattern 3	Recall Vector Scan 3	Recall Tour 3				Recall Tour 2			Continuous Pattern 3	Recall preset tour 3
114		Recall Vector Scan 4	Recall Tour 4				Recall Tour 3				Recall preset tour 4
115		Recall Vector Scan 5	Recall Tour 5				Recall One-Pass Patrol 0				
116		Recall Vector Scan 6					Recall One-Pass Patrol 1				
117		Recall Vector Scan 7					Recall One-Pass Patrol 2				
118		Recall Learnt Tour 1				Recall Learnt Tour 1		Recall Learnt Tour	Recall Program Pattern		Recall Learnt Tour 1
119		Recall Learnt Tour 2	Auto Tour 1			Recall Learnt Tour 2					Recall Learnt Tour 2
120		Recall Learnt Tour 3	Auto Tour 2			Recall Learnt Tour 3					Recall Learnt Tour 3
121	180° Flip			180° Flip		180° Flip		180° Flip	180° Flip	180° Flip	180° Flip
122	Engage auto-focus, auto-iris									Engage auto-focus, auto-iris	
123	Toggle Colour/IR mode	Colour/Mono Flip		Colour/Mono Flip						Toggle Colour/IR mode	Colour/IR mode
124		Access Sector Menu			Access Menu 4		Auto U-Turn On/Off				
125	Program Pattern 1, Save	Access Vector Scan Menu			Access Menu 3		Digital Zoom On/Off			Program Pattern 1, Save	
126	Program Pattern 2, Save	Access Preshot Menu			Access Menu 2					Program Pattern 2, Save	
127	Program Pattern 3, Save	Program Learnt Tour 1				Access/Exit Main Menu		Program Tour Start/Stop	Program Pattern	Program Pattern 3, Save	Program Learnt Tour 1
128	Enter dome menu system	Access/Exit Main Menu	Access/Exit Main Menu		Access/Exit Main Menu			Access/Exit Main Menu		Enter dome menu system	Enter Menu system
AUX 3				Colour/Mono Flip							Colour/IR mode
AUX 4				180° Flip			180° Flip	180° Flip	180° Flip		180° Flip

Dome PTZ Operation Quick-Reference Table

Note: See Dome vendor's specification for preset availability (maximum 100 presets). Some dome variants may not support all features listed.

PY2-KBD OPERATION	BAXALL (PRO DOME Series)	ULTRAK (KD6, KD6Z)	VICON (SURVEYOR V7 & 2000)	DENNARD (2050 SERIES)	JVC (TK-C675, TK-C676)	PANASONIC (850 SERIES)	PELCO (SPECTRA II AND III)	SENSORMATIC	VISTA (POWERDOME)
AUX 1		When in Menu mode, toggle between menu and PTZ commands	When in Menu mode, toggle between menu and PTZ commands						
TILT UP	Menu Up	Menu Up (where used)	Menu Cursor Up	Menu Cursor Up	Menu Cursor Up	Menu Cursor Up	Menu Cursor Up	Menu Up	Menu Up
TILT DOWN	Menu Down	Menu Down (where used)	Menu Cursor Down	Menu Cursor Down	Menu Cursor Down	Menu Cursor Down)	Menu Cursor Down	Menu Down	Menu Down
PAN LEFT	Menu Left (where used)	Menu Left (where used)	Menu Left (i.e., change value in menu)	Menu Left (i.e., change value in menu)	Menu Left (i.e., change value in menu)	Menu Left (i.e., change value in menu)		Menu Left (where used)	Menu Left (and Enter Menu)
PAN RIGHT	Menu Right (where used)	Menu Right (where used)	Menu Right (i.e., change value in menu)	Menu Right (i.e., change value in menu)	Menu Right (i.e., change value in menu)	Menu Right (i.e., change value in menu)		Menu Right (where used)	Menu Right (and Escape Menu)
ZOOM IN	Cycle field options	Enter (i.e., confirm change to menu value)	Enter (i.e., confirm change to menu value)	Enter (i.e., confirm change to menu value)	Enter (i.e., confirm change to menu value)	Enter (i.e., confirm change to menu value)		Cycle field options	Enter
ZOOM OUT	Cycle field options	Escape (i.e., move back one menu)			Escape (i.e., move back one menu)			Cycle field options	Escape
FOCUS NEAR	'Select' key	Menu privacy	Escape (i.e., move back one menu)					'Select' key	
FOCUS FAR		Menu vector							
IRIS OPEN		Menu save				Escape (i.e., move back one menu)	Enter (i.e., confirm change to menu value)		Enter
IRIS CLOSE		Menu delete	Menu delete			Enter Special Menu			Escape
PRESETS 1-9		Numeric 1-9 (can also be used to select menu items by their numeric line)							Numeric 1-9 (can also be used to select menu items by their numeric line)
PRESET 10		Numeric 0							
PRESET 65-90		Alpha A-Z (see ascii chart)							
PRESET 97-122		Alpha a-z (see ascii chart)							

Dome Menu Operation Quick-Reference Table

Note: VCL and Mark Mercer dome cameras have no menu functions

Character	Preset Number	Character	Preset Number
A	65	a	97
B	66	b	98
C	67	c	99
D	68	d	100
E	69	e	101
F	70	f	102
G	71	g	103
H	72	h	104
I	73	i	105
J	74	j	106
K	75	k	107
L	76	l	108
M	77	m	109
N	78	n	110
O	79	o	111
P	80	p	112
Q	81	q	113
R	82	r	114
S	83	s	115
T	84	t	116
U	85	u	117
V	86	v	118
W	87	w	119
X	88	x	120
Y	89	y	121
Z	90	z	122
<SPACE>	32		

Ascii Table for Ultrak Domes

SPECIFICATIONS

Physical

Size:	130mm (L) x 115mm (W) x 37 mm (H)
Weight:	265g
Colour:	Black
Temperature:	0^{O} to 50^{O}C
Power Consumption:	12V DC or 24V AC drawing a maximumof 150mA

Usage

- Enables a range of dome products to be connected and controlled via the Pyramid network with a minimum of effort. This is because the UDI can be configured to operate in a number of different dome protocols, and it can then translate commands from Pyramid data to the correct format for the specific dome product.

Features

- Dome protocol selection via eight-way dip switch bank—can currently be used with Dennard, JVC, Mark Mercer, Panasonic, Pelco, Ultrak, VCL, Baxall, AD/Sensormatic, Vista and Vicon dome cameras. Also supports Baxall CDR and CDH cameras.
- Four alarm inputs (configurable as normally open or normally closed inputs)
- Network biasing and termination via a four-way dip switch bank
- Can be powered by 12V DC or 24V AC Class 2 Power Supply (no earth) capable of providing 100mA.
- Service pin for ease of installation
- Full Tx/Rx LED indication
- Access to dome menu systems through Pyramid system
- Dome PTZ control through Pyramid system, including focus, preset and patrol functions

Network

- Available in RS485 (9.8k b.p.s. or 78k b.p.s.) and FTT10 (78k b.p.s.) variants

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