

TM

Installation Instructions

Manual 9 - Matrix

PY-32S, PY-48M16-H, PY-48M16-L

Use this manual in conjunction with :

- Manual 1 : Operating Instructions
- Manual 2 : Network Wiring

Please read this manual completely before installing your Matrix

BLANK

Product Safety

Please follow these instructions as you install your pyramid module and keep them for future use. If you have any problems contact your Baxall agent.

WARNING: Installation is only to be carried out by competent, qualified and experienced personnel

WARNING: Wire in accordance with your national wiring regulations. Failure to do so can result in injury or death by electric shock

WARNING: Use a class 2 isolated power supply for the 12V DC

This product must not be used for intrinsically safe or medical applications.

Definition : Mains - refers to the mains supply voltage labelled on your Matrix power supply

Product Reliability

CAUTION: Do not exceed the voltage and temperature limits given in the specification.

Product Safety and 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.

CAUTION : If you are using the PCB version of this product in way other than correctly installed in our Pyramid System weather-proof boxes, then it is your responsibility to meet EMC requirements.

This product is intended for use in general purpose CCTV applications in a residential, commercial or light industrial EMC environment, refer to Baxall Security before using the product in an industrial EMC environment.

The product must be installed in accordance with good installation practice to enable the product to function as intended and to prevent problems. Refer to your agent for installation guidance.

Contact your agent to obtain a specification defining the acceptable levels of product degradation with regard to EMC immunity.

MANUFACTURER'S DECLARATION OF CONFORMANCE

CAUTION : The declaration of conformance applies only to the boxed version and PCBs which are correctly installed in our Pyramid System weatherproof box.

The manufacturer declares that the product supplied with this manual is compliant with the essential protection requirements of the EMC directive 89/336 and the Low Voltage Directive LVD 73/23 EEC. Conforming to the requirements of standards EN 55022 for emissions and IEC801 parts 2, 3 and 4 for immunity and BS415 superseded by EN60950 for Electrical Equipment Safety.

Contents

1. Unpacking	6
2. These Instructions	6
3. The Matrices	7
4. Installation	8
4.1 Bar Coding	9
4.2 Setting the Slaves using the Master/Slave links	9
4.3 Connecting Video to an Single Matrix	10
4.4 Connecting Video to a Master/Slave system	10
4.5 Master/Slave control cable connection	11
4.6 Connecting the Network	12
4.7 Switching on the Power	12
4.8 Installing the Matrix using the Installation Tool	13
5. Multiplexer Connection	14
5.1 Baxall ZMX-9/16	14
5.2 DM Uniplex / Vista Norplex	15
6. VCR Connection	16
6.1 Mitsubishi 5600	16
7. Setting the Serial Ports	17
7.1 Setup in the menu system	17
7.2 Selecting the VCRs and MUXs	17
8. Maintenance	18
9. Technical Support	18
10. Specifications	19

1. Unpacking

This manual covers the following products:

Part Code	Description
PY-48M16-H	High speed (78k baud) FTT10 network Master Matrix (PY-MSM)
PY-48M16-2-H	High speed (78k baud) PY-COM network (RS485, RS422 or TTL) Master Matrix (PY-MSM)
PY-48M16-L	Low speed (9k8 baud) PY-COM network (RS485, RS422 or TTL) Master Matrix (PY-MSM)
PY-32S	Slave Matrix (network card not fitted or required)

Keep your packaging for use if your Matrix is stored for a time or needs to be returned for whatever reason. For each of the above the packaging should contain:-

- *Your Matrix, with or without network card (see above)*
- *A 5-way network terminal block*
- *A +12V DC class 2 power supply*
- *PY-32S only - a Slave cable*
- *A Module Description Sheet (for installation details)*
- *These Instructions*
- *Network Card Instructions*
- *Two identical bar-codes*

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 then do not attempt to use your Matrix.

2. These Instructions

These instructions allow you to install your Matrix, they do not contain any application information. If you are unsure about the usage of your Matrix then contact a CCTV installation company for advice.

3. The Matrices

Throughout these instructions a stand alone Matrix can be considered as a Master Matrix with no Slaves.

Each Master Matrix has 48 video inputs, 16 video outputs, 8 serial ports for control of VCRs and multiplexers, a Centronics™ parallel printer port, a network connector, a power connector and a screw-fitting earth terminal.

A PY-32S (Slave Matrix) does not have serial or printer ports.

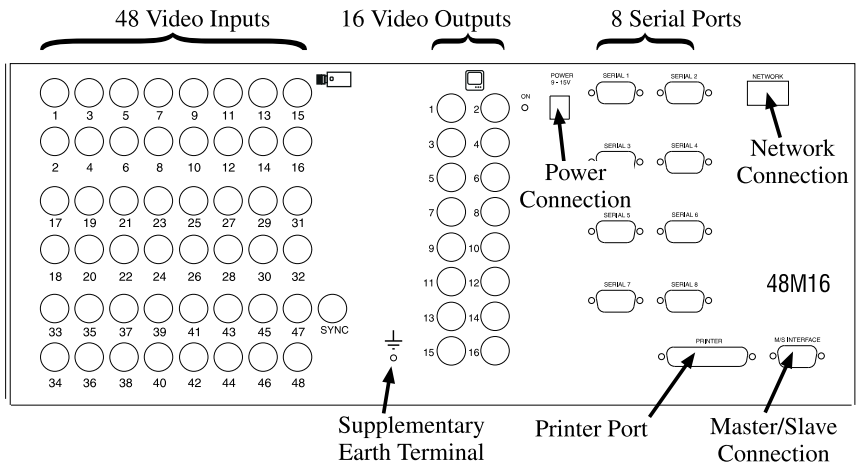


Figure 1. Matrix Connections (PY-48M16)

The Master/Slave feature allows a combination of up to 3 Slaves and a single Master to behave as if they were one 144 video-input, 16 video-output Matrix.

The purpose of a slave is to increase the number of video inputs into the master matrix. To do this it must be situated adjacent to the master matrix.

4. Installation

If you are installing a single Matrix and not a Master/Slave system then follow the instructions as if you were installing a Master with no Slaves.

Connecting a Master/Slave system consists of the following steps:

- 1) Change the jumper setting in the Slaves.
- 2) Connect the Video through the Slaves to the Master
- 3) Connect the Master/Slave interface cables (these are the control cables - the Slave matrices do not connect to the Echelon network)
- 4) Connect the network
- 5) Use the installation tool to initialise the matrices

The instructions are given in the following sections

4.1 Bar Coding

Each Master or Ordinary Matrix (not Slave matrices) is supplied with two identical bar-codes. The bar code gives the unique 48-bit module address.

Make a careful note on your module description sheet of all your installation details and the location of the module. Then during subsequent installation using the Windows™ Installation Tool the bar-code module address and description can be entered.

The module address can also be obtained using the installation tool utilities program by pressing the module address switch (figure 4). This switch, which is included on every Pyramid module, forces the module to broadcast its module address onto the network.

We recommend that during a system installation you store the module description sheets in a ring-bound file. Keep them safe for referring to when you are using the installation tool to configure the system.

4.2 Setting the Slaves using the Master/Slave links

Jumper settings are required to tell each Slave the order in which it is connected

The Slave matrices are arranged in order. To decide the order read section 4.4.

Note that the master/slave cable is short by design and cannot be extended under any circumstances.

- Decide the order in which you want to connect your slaves. then see Appendix A on page 20 to configure them.

4.3 Connecting Video to an Single Matrix

All video connections must be via 75 ohm BNC connectors and video coaxial cable.

Referring to Figure 1,

- Connect your cameras to video inputs 1 to 48.
- Connect video outputs 1 to 16 to your monitors or other equipment.

4.4 Connecting Video to a Master/Slave system

All video connections must be via 75 ohm BNC connectors and video coaxial cable. The matrices should have been configured as their relevant Slave numbers according to section 4.2.

On figure 6 each block represents 16 BNC to BNC connections.

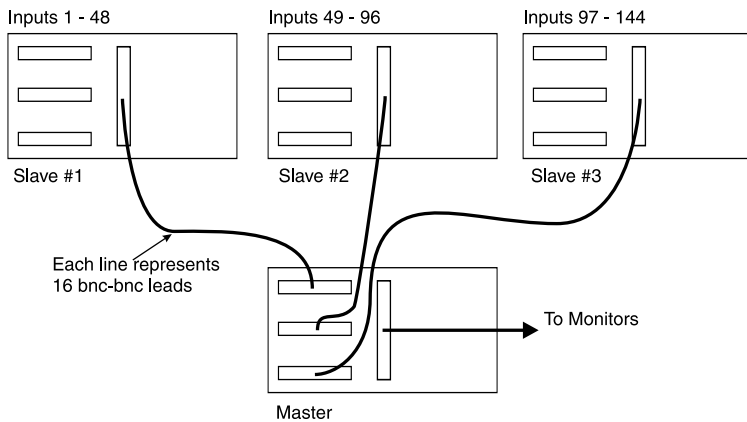


Figure 2

You can connect 1, 2 or 3 slaves:

- Connect the slave 1 monitor outputs 1 to 16 to camera inputs 1 to 16 respectively on the master.
- Connect the slave 2 monitor outputs 1 to 16 to camera inputs 17 to 32 respectively on the master.
- Connect the slave 3 monitor outputs 1 to 16 to camera inputs 33 to 48 respectively on the master.

The outputs from the slaves must be connected in numeric order so that they have a one to one correspondence with the inputs on the master, do not change the numeric sequence.

Note : The remaining inputs on the master can be used.

Note that the slaves are numbered first when it comes to selecting the cameras (see the table below).

- Connect your video inputs to the video inputs on the slave and spare video inputs on the master.

The numbering of the inputs for camera selection purposes varies according to how many slaves are connected. The table below gives the numbering

Table : Camera numbering for master/slave systems

Configuration	1st slave	2nd slave	3rd slave	Master
Master only				1 to 48
Master + 1 slave	1 to 48			49 to 80
Master + 2 slaves	1 to 48	49 to 96		97 to 112
Master + 3 slaves	1 to 48	49 to 96	97 to 144	none

4.5 Master/Slave control cable connection

If you are installing a single Matrix then go to the next section.

If you are installing a Master/Slave system then the next step is to connect the matrices together using the control cable which is supplied with each Slave.

- Connect the control cable from the M/S Interface on the Master Matrix to serial port 3 on Slave#1
- Connect your Master and Slaves according to figure 7 using the cable provided with each Slave Matrix.



Figure 3. Slave Matrix Connection

4.6 Connecting the Network

See Manual 2 - Network Wiring

The network plug provided has five terminals. Figure 8 shows the network connections.

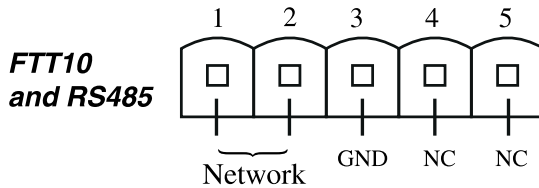


Figure 4. Network Connections

- Connect your Master Matrix to the network.
- Connect the cable screen to GND on pin 3.

4.7 Switching on the Power

Each Matrix has a typical power consumption of 9 watts and requires a class 2 isolated supply between 9V DC and 15V DC.

WARNING: Only use the power supply specifically provided by Baxall for a Pyramid Matrix.

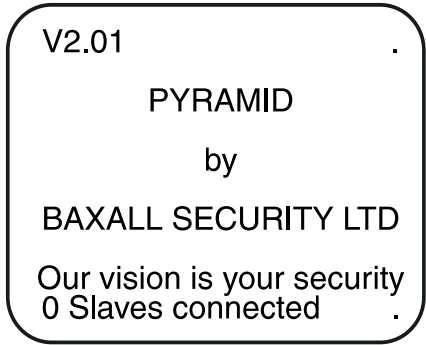
- Connect your matrices to the power supplies provided.

If your power is correctly connected then the power LED lights.

To power a Master/Slave system

- Connect power to the Slave matrices before you power the Master Matrix

Upon power-up the monitors should display the following screen for 30 seconds:



Note: The number following the V is the software version

After 30 seconds the Pyramid reverts to normal operating mode and displays:

camera 1 on monitor 1,
camera 2 on monitor 2,
. . .
camera 16 on monitor 16.

If any cameras are not connected then the monitors will display Video Loss { . camera number . . } in their place.

Monitor 1 displays the names of all the Video Loss Cameras in order.

4.8 Installing the Matrix using the Installation Tool

For the Matrix to operate in a Pyramid System it is necessary to use the Installation Tool to 'bind' it to the network.

The process of binding informs each of the modules on the network of the presence of the other modules so that they can work together.

More binding details are given in the Installation Tool instructions.

NOTE : If you change any of the alarm response settings or the alarm input configuration you must re-bind all the receivers for them to operate correctly.

5. Multiplexer Connection

5.1 Baxall ZMX-9/16

CAUTION : Disconnect the power from all units before connecting the serial ports.

To connect a ZMX-IT multiplexer to the Matrix Serial port:

- Wire the RS232 lead according to figure 9.
- Connect the female plug to a serial port on your Matrix
- Connect the Male plug to the RS232 connector on your ZMX-IT
- Connect the Monitor A BNC on your ZMX-IT to a video input on your Matrix.

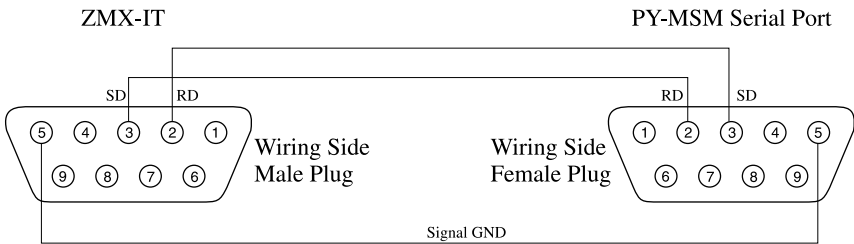


Figure 5. RS232 Lead Wiring

- Install your ZMX-IT according to its own instructions

Note: Keep a record of the connection numbers for future reference.

- See section 7 for detail on how to configure the serial ports.

5.2 DM Uniplex / Vista Norplex

CAUTION : Disconnect the power from all units before connecting the serial ports.

To connect a Uniplex/Norplex multiplexer to the Matrix Serial port :

- Wire the RS232 lead according to figure 10.
- Connect the female plug to a serial port on your Matrix
- Connect the Male plug to AUX3 on your Uniplex or Norplex
- Connect the Monitor A BNC on your multiplexer to a video input on your Matrix

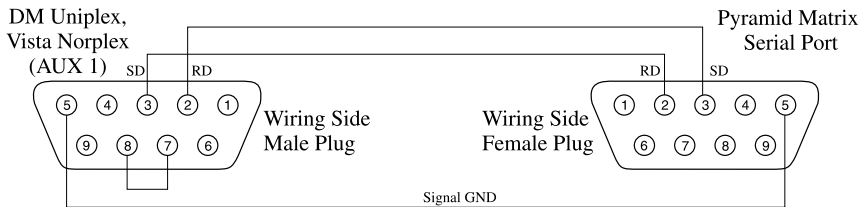


Figure 6. RS232 Lead Wiring

- Install your multiplexer according to its own instructions.

Note: Keep a record of the connection numbers for future reference.

- See section 7 for detail on how to configure the serial ports.

6. VCR Connection

6.1 Mitsubishi 5600

CAUTION : Disconnect the power from all units before connecting the serial ports.

CAUTION: These connections apply to the Mitsubishi 5600BRSA VCRs. Earlier versions of Mitsubishi VCRs (e.g. 5600BRS) may require different connections. Contact technical support for advise.

To install a VCR on the Matrix serial port

- Wire the connecting lead according to figure 11.
- Connect the 9-way connector to a serial port on your Matrix
- Connect the 25-way connector to your VCR
- Connect a video source to your VCR and connect the output from your VCR to a video input.
- Install your VCR according to the instructions provided with it

Note: Keep a record of the connection numbers for future reference.

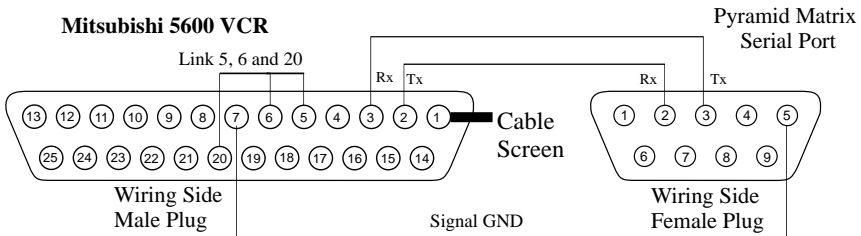


Figure 7. RS232 Lead Wiring

- See section 7 for detail on how to configure the serial ports.

7. Setting the Serial Ports

7.1 Setup in the menu system

The menu system is accessed from the keyboard. To access the menu system:

- Insert your smartcard and enter your PIN number
- Select a monitor on which to view the menus
- Press the LIST UP key to the right of the LCD display

The LCD should now read:

System Setup?

Yes

- Press softkey 1 and the menus should be displayed.

If you are installing the MUX or VCR using the system setup menus then configure the serial port in the SERIAL PORT CONFIG menu and configure the video inputs in the VIDEO SOURCE CONFIG menu.

7.2 Selecting the VCRs and MUXs

Once the serial ports are set-up VCRs and MUXs are numbered for selection by order of ports:

Port	Device	VCR Number	MUX Number
1	Mitsubishi 5600	1	
2	Mitsubishi 5600	2	
3	DM Uniplex		1
4	ZMX9/16		2
5	n/c		
6	Mitsubishi 5600	3	
7	n/c		
8	Mitsubishi 5600		3

To select a VCR or MUX:

- Press the number followed by the VCR or MUX key

To de-select a MUX

- Press the **F** key.

8. Maintenance

Once your Matrix is correctly installed and commissioned it requires no routine maintenance.

9. Technical Support

If need technical support for any reason then you should always have the following information to hand.

- The instructions (scan through them and ensure you have not missed anything.)
- The matrix software version number (see section 4.7 for how to obtain this.)
- The keyboard software version number (displayed when you first insert your smartcard).
- Any other information which may be relevant such as site plans, module-description-sheets and the instructions for any associated equipment.

A contact phone number should be provided in the Installer Details section of the matrix menu system.

10. Specifications

Features (PY-48M16-H, PY-48M16-L)

48 video inputs, 16 video outputs, 8 serial control ports,
printer port, power and network connectors
Bar-coding for ease of installation
On-screen menus for system setup
Control of VCRs and Multiplexers
Up to 3 Slave matrices giving 144 video inputs, 16 video outputs

Features (PY-32S)

Adds 32 video inputs to a master matrix.

Network

Optional FTT10 (PY-48M16-H), RS485 (PY-48M16-L, PY-48M16-2-H)

Video

Video 1V pk-pk composite via BNC connectors
Video loss alarm

Serial Ports

8 serial ports (RS232 9-pin male D-type) for control of VCRs and Multiplexers
Master/Slave interface port (cable supplied with PY-32S)

Printer port

Centronics parallel port. Printer port for logging / audit printing.
25 way female D-type (for standard PC printer cable)

Power

Supply 9V to 15V DC, 1A class 2 isolated
Consumption 9W (12V DC)

Physical

Weight : 4.5 kg
Dimensions : 483 x 178 x 42 mm (19", 4U rack mounting)
Case : mild steel with access hinge, graphite grey with blue lettering

Temperature Specification

Operational temperature limits:-
-10°C to +50°C at 10% to 80% relative humidity (non-condensing)
Storage temperature limits:-
-20°C to +60°C at 10% to 95% relative humidity (non-condensing)

Appendix A - Configuring your Slave Matrices

To configure Slave matrices, it is necessary to open your matrices and define the slave number. The procedure is detailed below:

Note : This operation is best done before you connect the cables.

CAUTION : Take normal ESD (Electro-Static-Discharge) precautions during this procedure to prevent damage to your Matrix.

- Ensure that your Matrix is switched off
- Remove the securing screws, keep the screws safe, (figure 2) and fold down the hinged Matrix door (the top, as shown in figure 2, moves towards you)

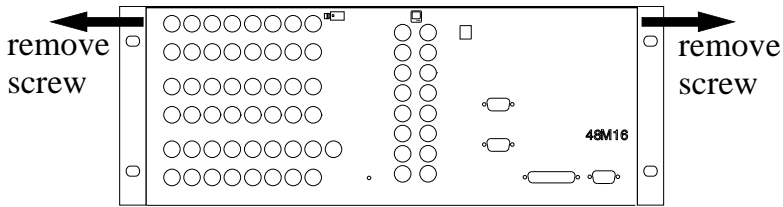


Figure A

- Arrange the jumpers in your Slave Matrix (see figure B for location) according to figure C.

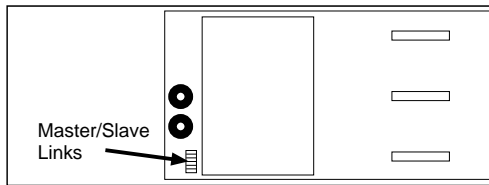


Figure B

Keep a record of which Matrix is which to save opening them at a later date.



Figure C. Jumper settings in the master and slaves

- Close and fasten your matrices.

NOTES

NOTES

NOTES

Baxall Security Limited.

Stockport, England

Visit our Web site: <http://www.baxall.com>

Baxall Security Ltd. Reserve the right to make changes to the product and specification of the product without prior notice to the customer.