Tx1000

Tx1000 Matrix and Tx1000 Keypad

Installation Guide

STOP AND READ BEFORE INSTALLING!

As 3rd party protocols are not under the control of BBV, we cannot guarantee that this unit will provide the exact functionality required.

It is strongly recommended that operation is confirmed during prebuild testing before installing on site.

Please contact our customer support department if you have any questions/issues:

Tel: + 44 (0) 1323 842727

Email: support@bbvcctv.com

DISCLAIMER:

BBV are not liable for any errors within this manual. If you find an error, please let us know immediately.

Scan for a quick tour of the BBV website:

www.bbvcctv.com

Contents

Pre-installation checks and safety procedures

Unpacking - Inspect the packaging for signs of damage. If damage has occurred, advise the carrier and/or the suppliers immediately. Unpack the receiver carefully and check that all the items are present and correct (see checklist on box). If any item is missing contact the supplier.

Important safety precautions

Read & Retain Instructions - All relevant safety, installation and operating instructions should be read & retained before attempting to install, connect or operate the unit.

Water and Moisture - Do not expose the internal electronics of this unit to water or dampness.

Power Sources - This unit should be operated only from the supplied power supply.

Servicing - Servicing of the unit should only be undertaken by qualified service personnel.

Damage Requiring Service - Servicing by qualified personnel should be carried out under the following conditions:

(a) When the power-supply cord or plug is damaged;

(b) If liquid has been spilled, or objects have fallen into, the unit;

(c) If the internal electronics of the unit have been exposed to rain or water;

(d) If the unit does not operate normally by following the operating instructions.

(e) If the unit has been dropped or the enclosure is damaged;

Replacement Parts - If replacement parts are required, ensure that only replacement parts recommended by the product manufacturer are used.

Safety Check - Upon completion of any service or repairs to the unit, safety checks should be performed to ensure that the unit is in proper operating condition.

Coax Grounding - If an outside cable system is connected to the unit, be sure the cable system is grounded.

Pre-installation Checks - It is recommended that the unit be bench-tested prior to installation on the site.

Adhere to Safety Standards - All normal safety precautions as laid down by British Standards and the Health and Safety at Work Act should be observed.

WARNING

To prevent danger of fire or shock, do not expose the internal components of this equipment to rain or moisture.

Manual version history

Version	Update	Release Date
v10	Manual updates	25.9.18

Tx1000 Telemetry Transmitter – Introduction

The Tx1000 is a simple to use telemetry transmitter for multi-camera CCTV systems. They are easily installed into either a new or an existing system.

Up-the-coax telemetry allows upgrading of static cameras to PTZ without the need for additional cabling.

BBV RS422 telemetry is available as standard where up-the-coax telemetry is not suitable or not required. An optional 20mA twisted pair unit (Tx/MK2/TPO) can be retro-fitted to the Tx1000 for complete compatibility with existing Tx1000 sites.

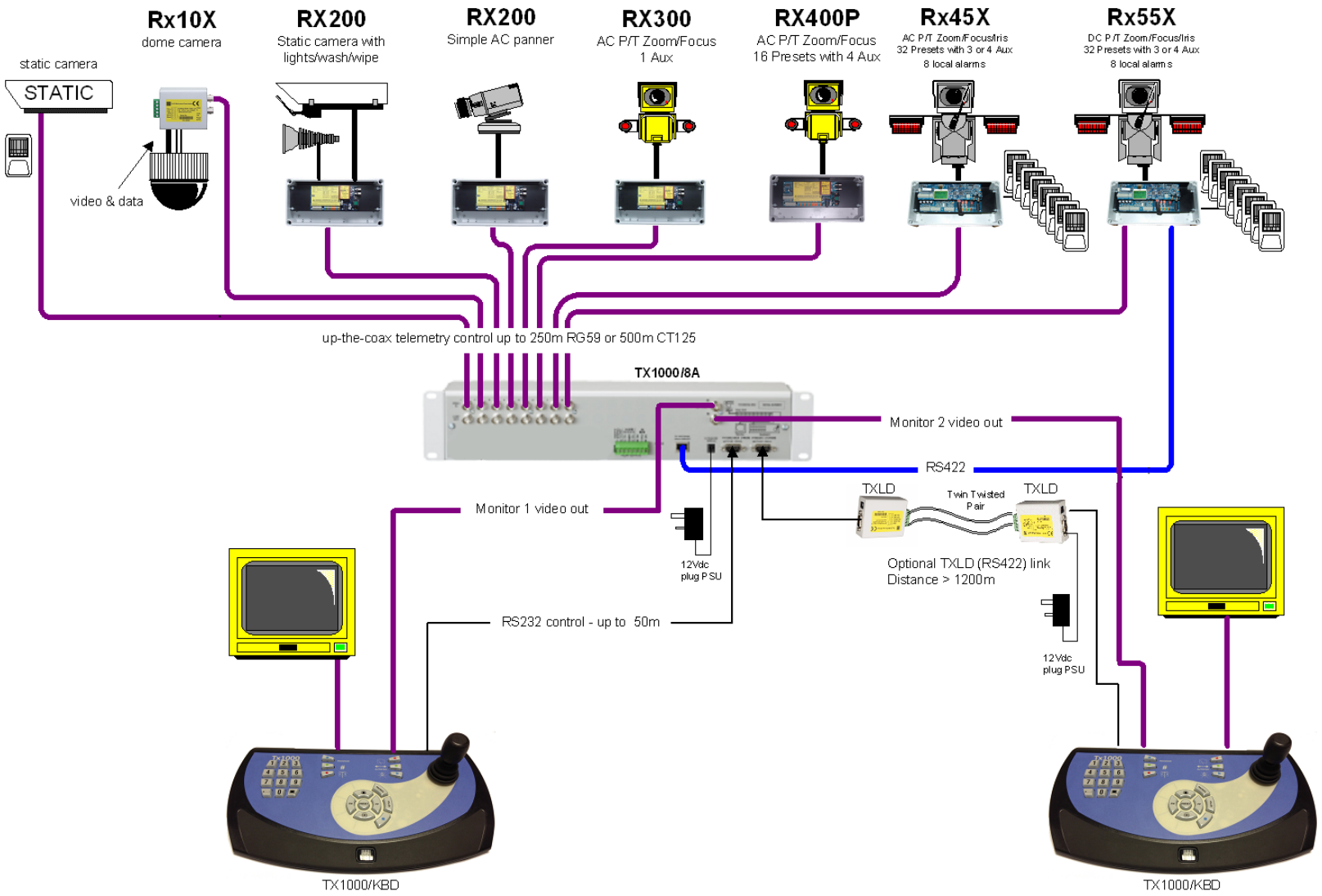
The transmitter is a two part design: the base unit, which is wall or rack mounting; and the keypad which is connected by a video cable and a bi-directional RS232 link running at 9600 baud, No parity, 8 data bits and 1 stop bit.

Unpacking

Inspect the packaging for signs of damage. If damage has occurred, advise the carriers and/or the suppliers immediately. Unpack the transmitter carefully and check all the items are included:

Part Number	Description	Tx1000	Keypad	2x mounting brackets	4x M4 screws	PSU	Manual	Warranty Card
Tx1000/16	Telemetry transmitter for 16 cameras with 2 monitor outputs, with joystick KBD	X	X	X	X	X	X	X

Simple Tx1000 system



Technical Specification

Power Supply	12V dc 1000mA			
Inputs	Data input to base unit is RS232 via 9-pin D connector RS232 port allowing remote control from PC (9600, N, 8, 1)			
Outputs	BBV up the coax BBV RS422			
Features	2 keypads supported 2 monitor outputs 8 – 16 camera inputs Up-the-coax & RS422 telemetry supported Can be powered off 12V vehicle supply			
Installation	Base unit is 2U 19in rack mountable metalwork or wall mounted via the fixing brackets supplied			
Dimensions	**Width**	**Depth**	**Height**	**Weight**
Tx1000/KBD	370mm	220mm	120mm	1.05 kg
Base Units:				
Tx1000/16	427mm	55mm	90mm	4 kg

Layout of the Tx1000 keypad

Installing the Tx1000 Matrix & Keypad

1. Mount the base unit on the wall or in a rack.

2. Connect the keypad to 9 pin D connector to the relevant keypad socket on the Matrix:

   Monitor 1 – Keypad 1
   Monitor 2 – Keypad 2

3. Connect a BNC cable from output M1 to the keypad, and connect the other keypad BNC to the video monitor's video input. Make sure that the monitor is terminated, not Hi-Z.

4. If the keypad is remotely sited from the base unit, connect the 12Vdc plug mounted power supply to the keypad via the 2.1mm power connector.

5. Connect either a second video monitor, or the second keypad to Output 2. Note that even if both keypads are local to the main unit, the second keypad must be powered from its own 12Vdc power supply.

6. Connect the BNC cables from the cameras/receivers to the upper BNC sockets in each row, marked "VIDEO IN".

7. Connect any other equipment requiring the camera video signals to the lower BNC sockets marked "LOOP OUT". Note that the action of connecting to the video out socket removes the 75* termination.

8. If the user relay terminals are being used, connect these to the LOW VOLTAGE equipment of your choice.

PIN 6	Normally closed
PIN 7	Common
PIN 8	Normally open

9. Plug in the Matrix 12Vdc power supply.

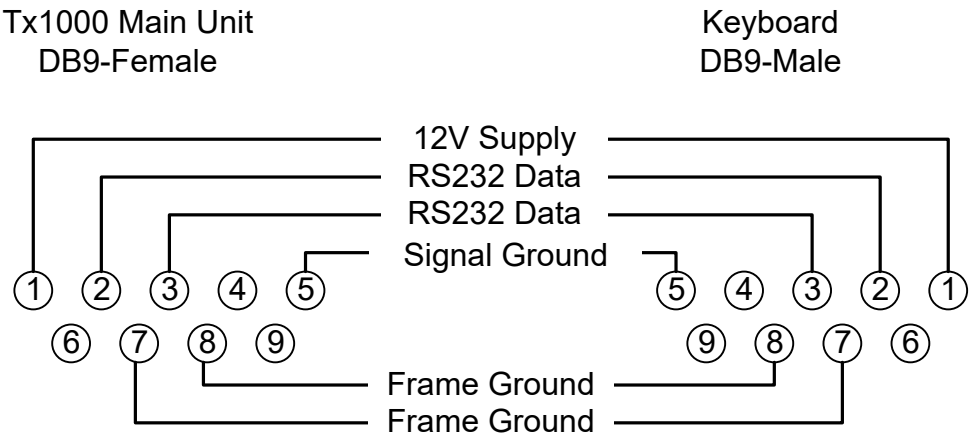
Status LED

The STATUS LED should flash and the monitors should show the video from Camera 1 on power up. If the LED is permanently ON or OFF, the unit is in a fault condition. Please contact BBV technical support on: 01323 444600.

Sitting the keypad remotely from the base unit

The keypad uses RS232 9600 baud, no parity, 1 stop bit to communicate with the Tx1000 Matrix. The keypad is full duplex will function normally up to 50m from the Matrix. Beyond this distance, any of the proprietary cable extenders may be used (e.g. modems, fibre optics, infra red/microwave links) without any difficulty.

Cable Connections



Keypad power requirements

Fully isolated 12Vdc power supply. The maximum current draw is 150mA.

Priority control between two keypad systems

Keypad one has priority over keypad two. If keypad one is only viewing but not operating any camera, then keypad two may move that same camera. After movement commands on keypad one, there is a 20 second lock out period before control is given to keypad two.

Text display on screen

Monitor 1:

Connect a coax cable from the M1 output on the matrix to the keypad, and connect the keypad to the monitor's video output using the other BNC on the keypad.

Monitor 2:

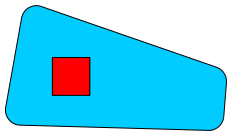
With one keypad - Connect as above, then connect a coax link from Monitor 1 to Monitor 2. This duplicates the text onto both screens.

With two keypads – Connect a coax cable from the M2 output on the matrix to the keypad, and connect the keypad to the monitor's video output using the other BNC on the keypad.

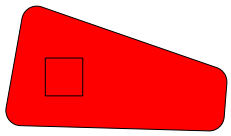
Disabling/Enabling the program key

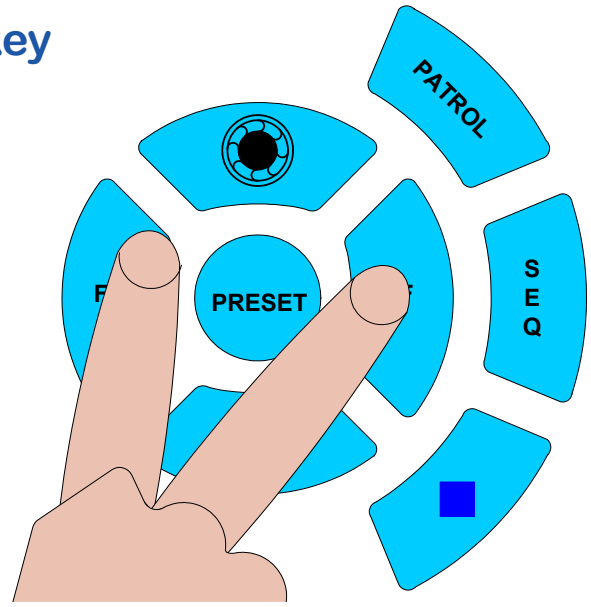
To enable/disable the programming key, press and hold the focus far and focus near buttons and apply power to the keyboard.

If the following key is blue, the programming is enabled.



If the following key is red, the programming is disabled.

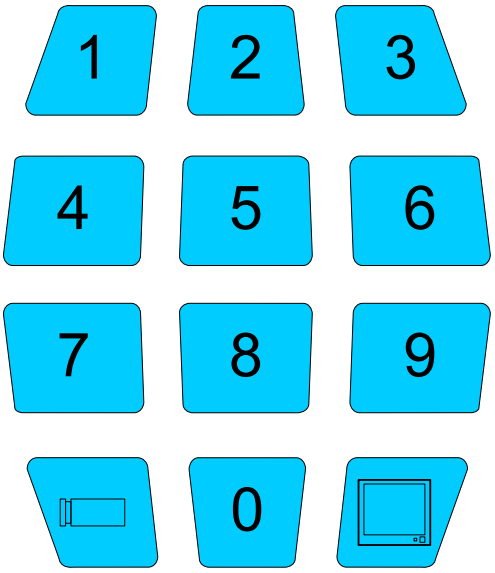




If nothing is pressed, the keyboard will return to normal operation after approximately 5 seconds.

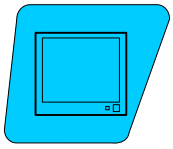
Camera Selection

A camera may be selected onto the controlled monitor by pressing the number(s) of the camera you want, followed by the cam button.

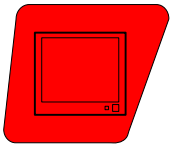


Monitor Selection

The monitor key will illuminate red when you have got the second monitor output selected.



Mon 1 Selected



Mon 2 Selected

Pressing the monitor key toggles between monitor 1 and monitor 2.

Activating the Sequence

Pressing the sequence key will start the camera sequence on the monitor that is currently selected.

The on screen display changes from CAM XX to SEQ XX to indicate that the sequence is running. To stop the sequence, select a camera on the monitor.

Programming the Sequence

Holding down the sequence key causes the sequence to run through the list of cameras at the rate of one per second, allowing the operator to quickly determine which cameras are being sequenced. All cameras are included by default.

To add/remove a camera from the Sequence, hold the Sequence key and press the relevant camera key.

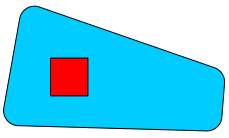
This will add/remove the camera from the Sequence.

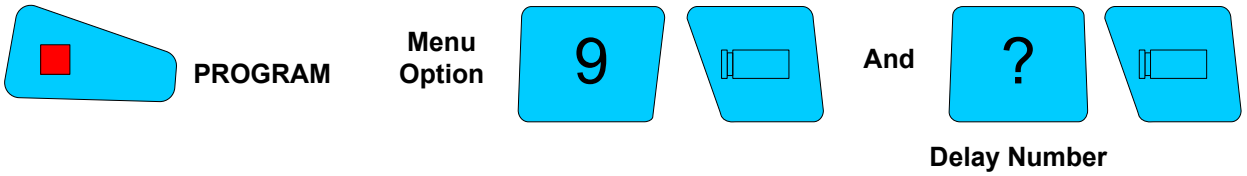
Setting the Sequence delay

Determine the delay you wish to set from the table below:

Key Number	Time delay (seconds)	Key Number	Time delay (seconds)
1	5	9	45
2	10	10	50
3	15	11	55
4	20	12	60
5	25	13	65
6	30	14	70
7	35	15	75
8	40	16	80

Press the key in the diagram (shown to the right) to enter the menu and press ‘9’ followed by the cam key. The on screen prompt “Seq Delay” appears, inviting the operator to enter a number from the table above followed by the cam button, to set the time delay.

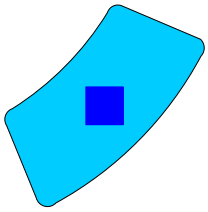




After entering the delay value, the screen clears.

Square key

The key in the diagram (shown to the right) activates a relay in the base unit.

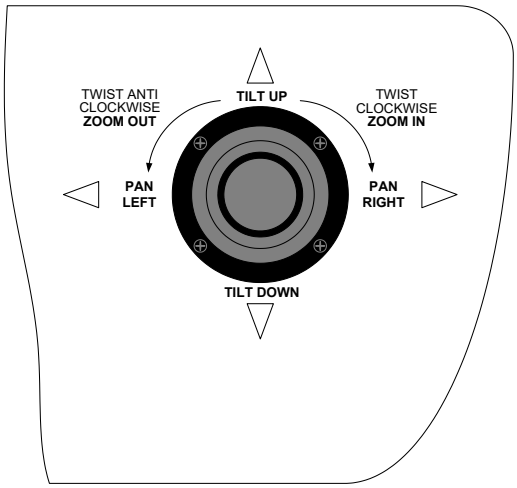


Pressing the key causes triangle relay contacts to changeover; releasing the key causes the contacts to revert to original position. This relay may be used by the installer to activate a panic record facility on a VCR, or to activate a video printer, etc. These contacts are low voltage, low current only.

DO NOT CONNECT THESE CONTACTS TO MAINS POTENTIALS.
USE LOW VOLTAGE ONLY.

Keypad Functions

The keypads should not be connected or disconnected from a “live” working unit, as this may damage the RS232 components.



Pan, Tilt and Zoom Action

Move the joystick in the relevant direction for pan and tilt.

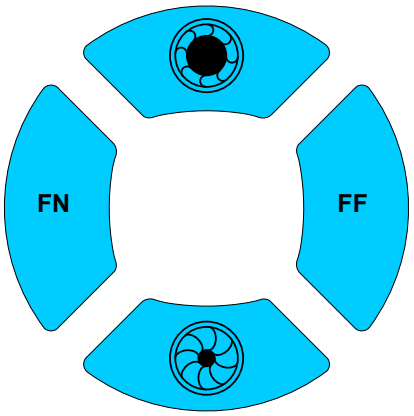
Twist joystick clockwise to Zoom In, Counter clockwise to zoom out.

Lens Action

There are four lens function switches on the Tx1000 keypad. These are Iris Open, Iris Close, Focus Near and Focus Far.

Zoom In & Zoom Out are controlled via the joystick. Press and hold or twist until the desired picture is obtained.

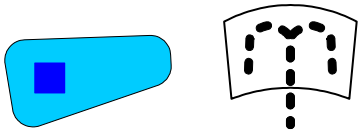
Note: If the action is activated for longer than one second, High Speed Lens Action is activated. Inching is achieved by quick activations of the desired Action.



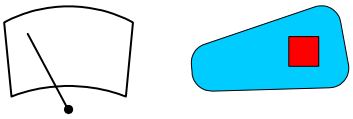
Auxiliary function switches

There are four auxiliary function switches on the Tx1000 keypad:

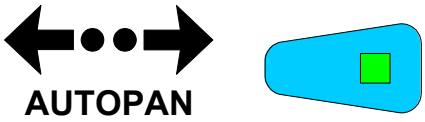
Wash – Press and hold for washer motor to run.



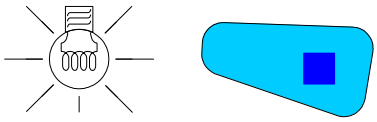
Wipe – Latching output, press on / press off. Illuminated red when active.



Autopan – Press and autopan motor starts. Pressing Left or Right stops Autopan. Illuminated red when active.

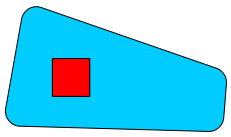


Lights – Latching output, press on / press off. This button will turn red when active.



Self Test

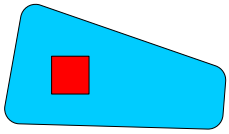
To activate the self test feature for any particular camera receiver, first select that receiver, then press the key in the diagram (shown to the right), and then the 2 key followed by the camera button.



The screen text will clear and Self Test will be activated. See the RX Series Telemetry Receiver Installation Handbook for more details.

Iris Level Program

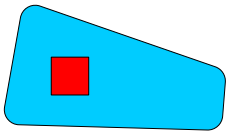
To preset the aperture of the iris, press 'Iris Open' or 'Iris Close' until the desired level is reached, then press the key in the diagram (shown to the right) and press 3 and then the camera button'.

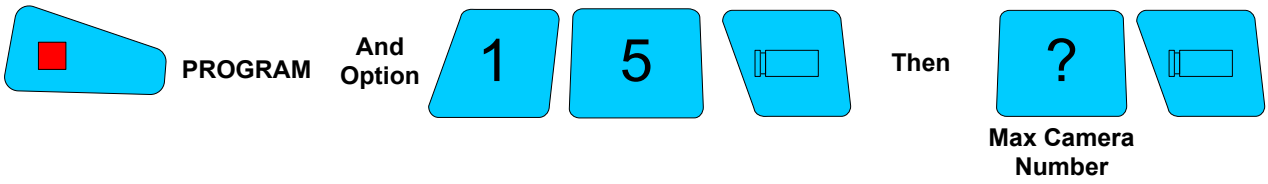


Note: After adjustment, there is a 15 second period, in which to program the iris setting. After this, the iris reverts to its default setting.

Maximum Camera Number

To set the Maximum camera number, press the key in the diagram (shown to the right), then enter 15 and then the camera button followed by the maximum number of cameras connected to the system and then the camera button again.



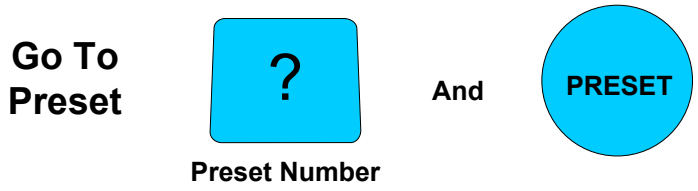


Setting the maximum camera number will prevent the Tx1000 from patrolling through unused cameras on a patrol.

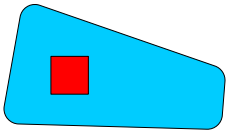
Please note: The remainder of this manual refers to features found only on receivers that support presets: Rx10X, Rx400P, Rx45X, Rx55X.

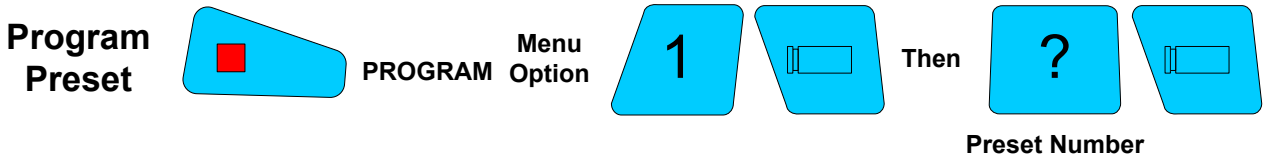
Presets

To select a programmed preset, enter the number of the preset you would like to move to and then press the preset button.

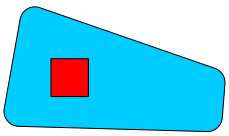


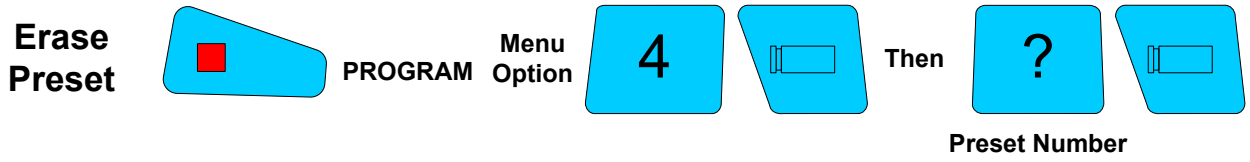
To programme a preset, first position the camera using the Up/ Down and Left/Right arrows. Then set Zoom and Focus. When satisfied with the position and the quality of the picture press the button in the diagram (shown to the right) and select Option 1 with the 1 key followed by the camera button. When the on screen display changes to “Program Preset”, enter the number of the preset you wish to program and then the camera button.





To erase a preset, press the key to gain access to the menu. Select Option 4 with the 4 key followed by the camera button and when the display changes to “Erase Preset”, select the number of the preset to be erased and then the camera button.





Patrol Settings

There are two preset patrols that can be started by the Tx1000.

To activate: Press either Key 1 or Key 2 followed by the Patrol key. 1 + Patrol will run the first patrol, 2 + Patrol will run the second.

Their function is to enable a string of presets to be selected in turn, switching between presets after a fixed period of time (default 30 seconds).

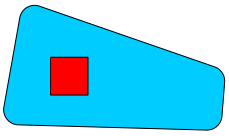
These patrols can be stopped at any time by moving the joystick, when selected the camera on which patrol is running is selected.

To Programme a Patrol

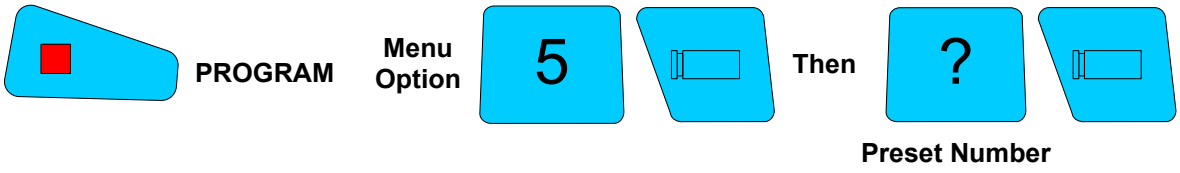
There is no separate patrol-programming function with the BBV Tx1000 keypad. Once a preset has been programmed, it is automatically included in Patrols 1 and 2.

To Remove a Preset from a Patrol

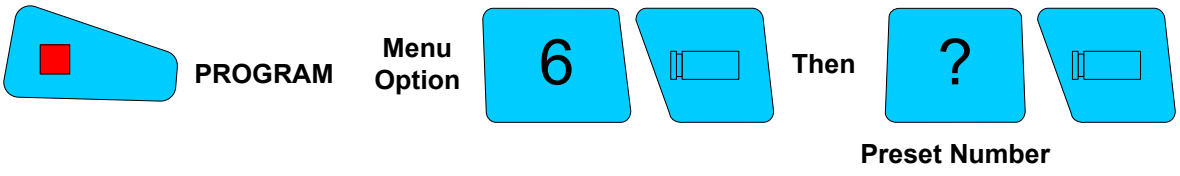
1. Select the receiver on which the patrol is to run.
2. Press the button in the diagram (shown to the right) to gain access to the menu, then press 5 + camera button to remove a preset from Patrol 1 or 6 + camera button to remove from Patrol 2, followed by the preset number to be removed and again the camera button.



To remove a Preset from Patrol 1:



To remove a Preset from Patrol 2:

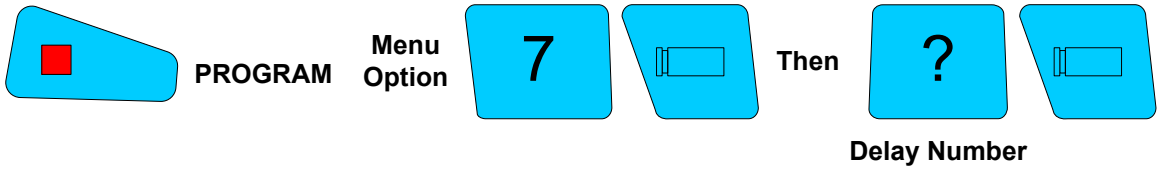


To Programme a Time Period for a Patrol

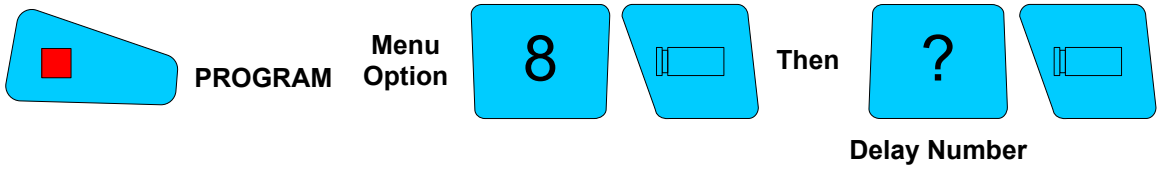
First, determine the time delay required from the table below:

Key Number	Time delay (seconds)	Key Number	Time delay (seconds)
1	Random 0 - 100 seconds	9	96
2	12	10	108
3	24	11	120
4	36	12	132
5	48	13	144
6	60	14	156
7	72	15	168
8	84	16	180

Setting a delay for Patrol 1:



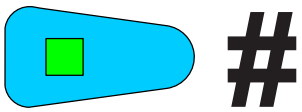
Setting a delay for Patrol 2:

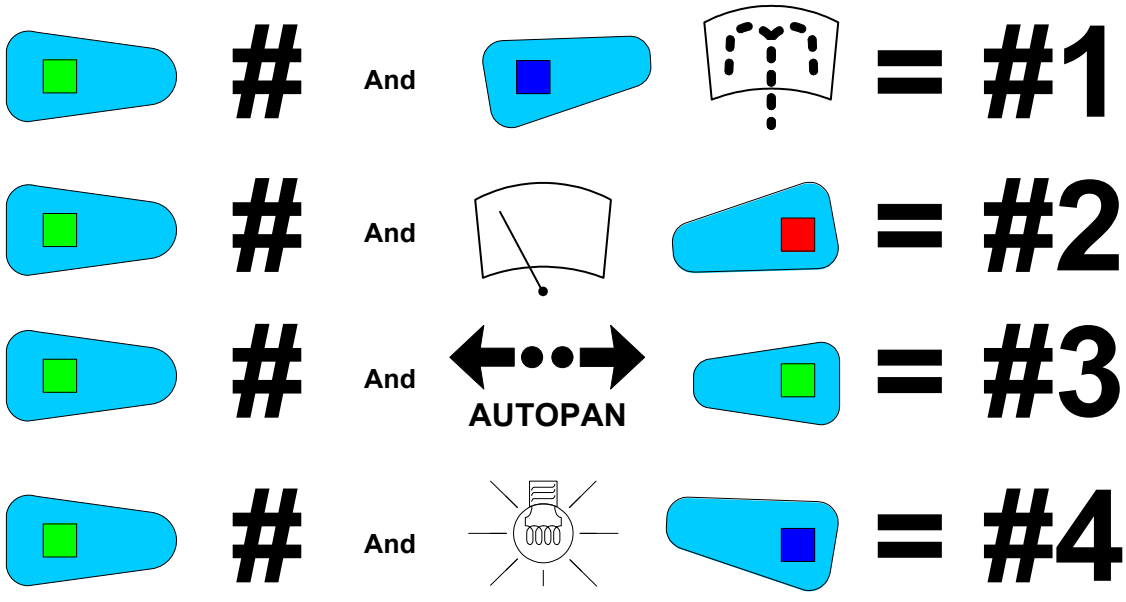


Spare outputs – Control of special receiver functions

Four additional spare functions are provided which are used to carry out advanced programming depending on the type of receiver and/or dome used. Please refer to the receiver's manual for details.

The additional functions are activated by pressing the # button (in the diagram to the right) and one of the auxiliary keys simultaneously. An on screen display confirms which output has been activated.

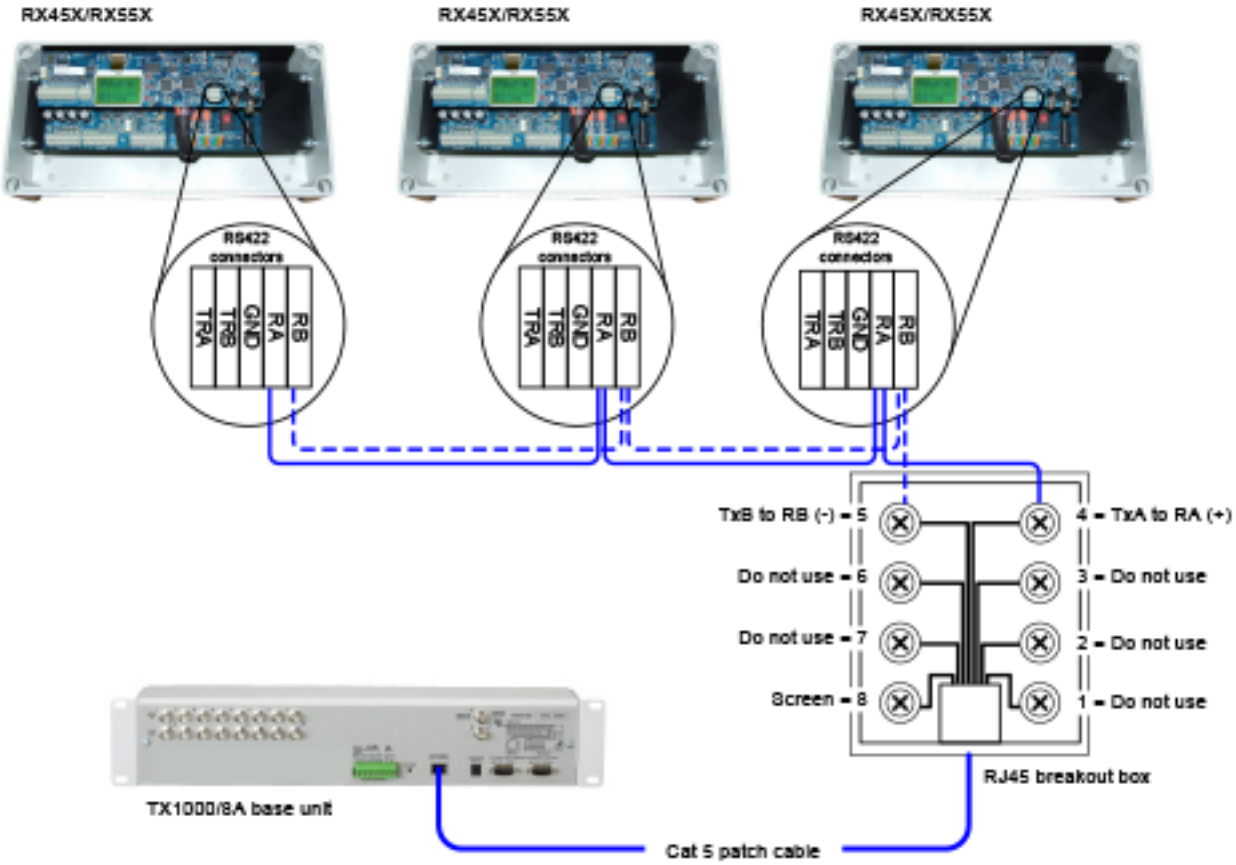




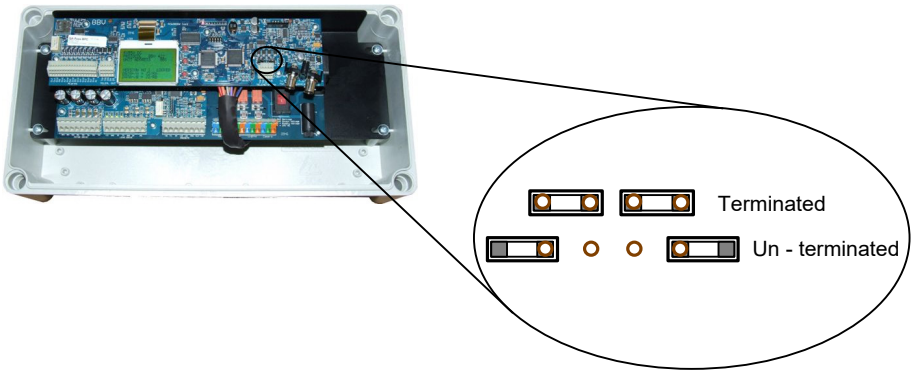
The # key will illuminate red when pressed.

RS422 Telemetry

The Tx1000 matrix has a single RJ45 connector that is used to control BBV RS422 telemetry receivers or a range of 3rd party receivers and dome cameras via a STARCARD/CONVERTER. It is recommended that a RJ45 breakout box and CAT5 patch cable are used to connect the telemetry connector.



When daisy chaining the RS422 telemetry ensure that the end of line receiver has RS422 terminated and intermediate receivers are not terminated.

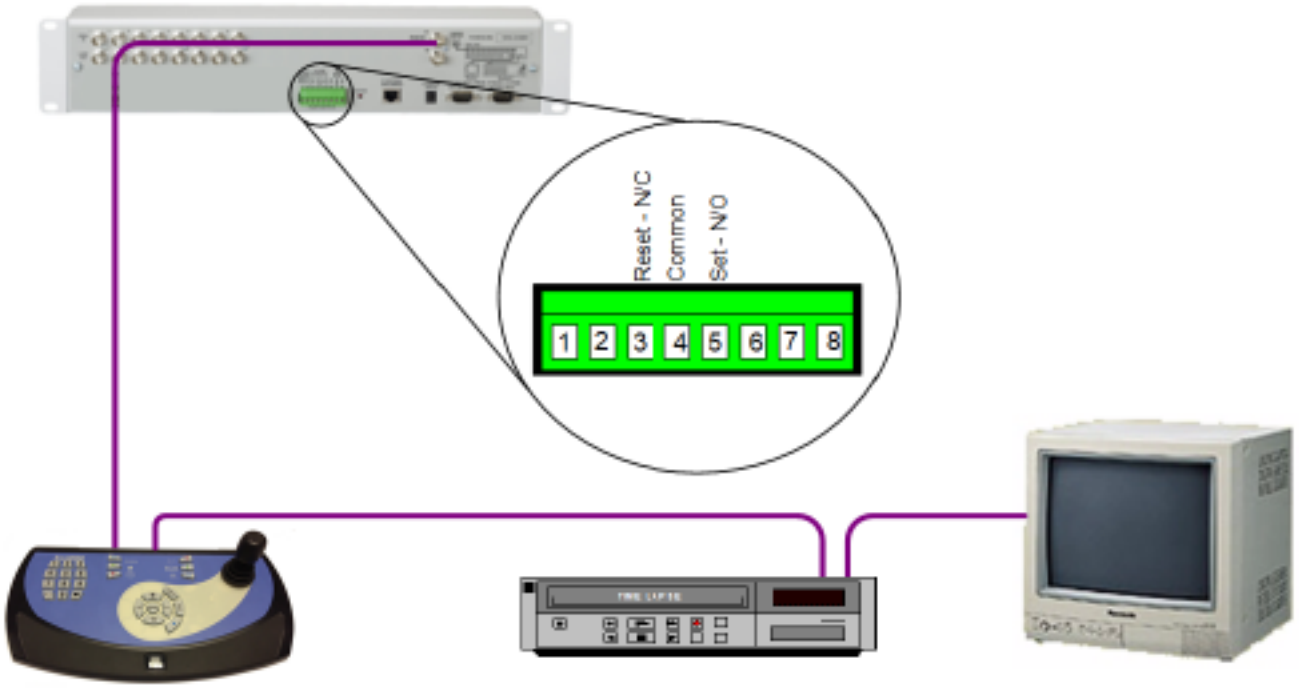


If the system is to be star wired then a BBV STARCARD can be used which provides 8 individual RS422 outputs.

A STARCARD/CONVERTER can be used to allow control of a range of 3rd party domes and telemetry receivers with 8 x RS422 outputs.

Tx1000 Series Alarm Output

The Tx1000 matrix has a single RJ45 connector that is used to control BBV RS422 telemetry receivers or a range of 3rd party receivers and dome cameras via a STARCARD/CONVERTER. It is recommended that a RJ45 breakout box and CAT5 patch cable are used to connect the telemetry connector.



DO NOT CONNECT MAINS POTENTIALS TO THESE CONTACTS USE LOW VOLTAGE ONLY!

Key Number	Time delay (seconds)	Key Number	Time delay (seconds)
1	5	9	45
2	10	10	50
3	15	11	55
4	20	12	60
5	25	13	65
6	30	14	70
7	35	15	75
8	40	16	80

Receivers with local alarms

The Rx10X/AL dome interface has 4 local alarm inputs and the Rx45X and Rx55X have 8 local alarm inputs. All have a single normally closed relay output that opens momentarily when a local alarm is activated. This output can be wired to an alarm input on the Tx1000 or an alarm system.

A receiver local alarm will cause the relevant preset position to be automatically selected without the intervention of a telemetry transmitter (see the receiver installation guide). If the transmitter also generates a preset command, then the receiver's preset will be overridden. To overcome this during alarm programming use preset 16 which will prevent the Tx1000 from sending a preset command for this particular alarm input.

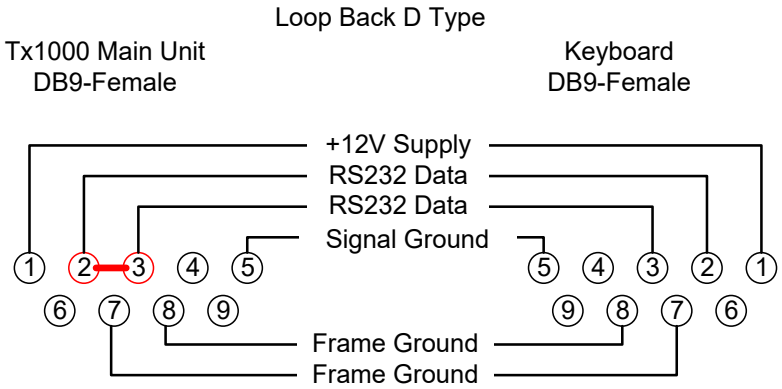
The standard preset receivers can be programmed to go to a preset position 1 - 15 during an alarm.

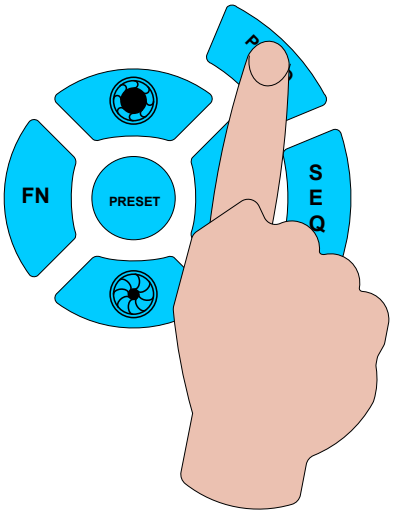
Useful Keystrokes:

Hold # and press 1 + 0 + camera button to make the software version number, number of watchdogs and number of resets appear on screen.

Self Test on the Keypad

The keypad supports a self test for in the field testing. This will enable the services engineer to confirm the functionality on the Tx1000/KBD in the field. To perform this test you will need to make a Loop Back D Type test cable. This is done by shorting pins 2 and 3 on the matrix side, as shown below.

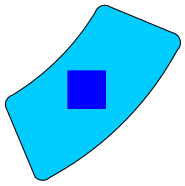


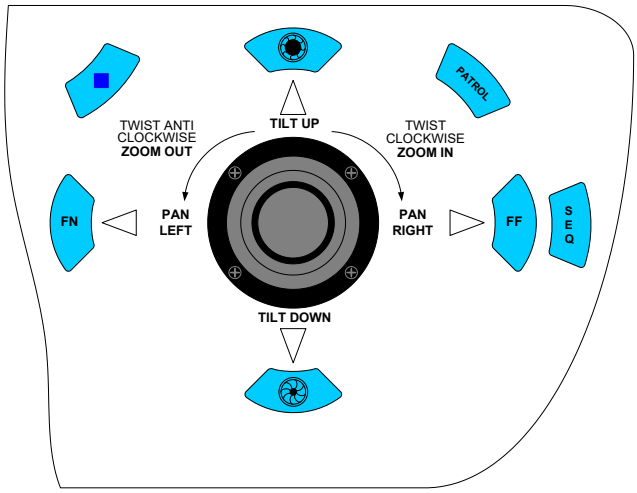


To enter the self test mode, press and hold the Patrol key and apply power to the keyboard.

When the power is applied you will see the function keys glow pink. You can test each individual button by pressing it. As a button is pressed it will beep and it will turn white, if this happens we know the key is okay. If the Loop Back cable is not fitted or the port is faulty the back light will not go out.

The key in the diagram (to the right) should be left until last as it will enter the keyboard into the joystick test mode. Once in this mode, when you move the joystick in the different direction you will see the respective keys illuminate. Once you have done testing the unit, please remove all power and re apply to put the keyboard into normal operation.





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BBV Product List

All of the BBV products are available to view and purchase online: www.bbvcctv.com

Tx1000 MK2

The Tx1000 MK2 series combines a video switch with the simplicity of installation associated with coax controlled systems.

Tx1500

The Tx1500 series combines a state-of-the-art-video matrix with the simplicity of installation associated with coax controlled systems.

FBM

Available with up to 64 monitor outputs and 512 video channels.

Starcard

The Starcard provides a simple and cost-effective solution in the installation of RS485/422 telemetry systems.

Starcard Converter

The Starcard Converter is designed to provide simple and cost effective RS485/422 protocol conversion.

BBV Product List

All of the BBV products are available to view and purchase online: www.bbvcctv.com

Coax Converter 1

This is a direct replacement for the old Rx10X. Multi Protocol Dome Interface Receiver 12-24Vac/dc. A simple solution to control one of a variety of 3rd Party Dome Cameras.

ASGARD HD Decoder

The Asgard HD Decoder is a 30fps, 1080p standalone unit, which facilitates the streaming of camera images from one or more media servers, without the need of a PC.

Rx25X

The Rx25X Multiple Protocol Auxiliary Relay Receiver is designed to offer a simple, cost effective solution to activate an auxiliary output.

Rx55X/WBX

Advanced Multiple Protocol DC Receiver.

Innovative solutions designed for you

BBV

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