SerVision

Placing Security In YOUR Hands

CONNECTING PTZ CAMERAS TO SERVISION PRODUCTS

DISCOVERY *telecom*

Contents

Introduction

Some video cameras have built-in controls that can be used to change the way they aim and focus, called PTZ (pan, tilt, zoom) controls. These features can be activated remotely through SVG and IVG gateways.

This document explains how PTZ camera controls should be connected to the units and how the Gateway should be configured to activate the PTZ controls once they are connected. A list of supported PTZ protocols is also included.

COM Ports

PTZ controls are connected to SVG, IVG, MVG, UVG and HVG units through COM ports. Each SVG/IVG unit has two COM ports, located on its rear panel, as illustrated below;

SVG 400

SVG 1000

Com1

Com 2

Com1

Com 2

MVG 400

Figure 1 – COM Ports locations

Connection Types

By default, each of the COM ports supports a different type of connection: COM1 is configured for RS 232 connections and COM2 is configured for RS 485. Cameras must be connected to COM ports that are configured for the connection type they use.

Multiple Cameras

In the default configuration, only one RS 232 camera can be connected to an SVG unit, because each RS 232 camera must be plugged directly into a COM port. On the other hand, multiple RS 485 cameras can be connected to an SVG unit, because they can be linked to one another sequentially.

Converting COM2 to RS 232

SVG units with two COM ports that support RS 232 can be provided upon special request. This configuration makes it possible to connect two RS 232 cameras to the unit.

> Note: You can also reconfigure COM2 to support RS 232. For information about how to do this, please contact technical support.

Converting COM1 to RS 485

COM1 can be converted to RS 485 by means of an external converter (available from SerVision). This can be useful if you want to connect RS 485 cameras that use different control protocols to the SVG unit.

Connecting Cameras

A flat ribbon cable with a D-type 9-pin female connector is used to connect a camera to its appropriate COM port.

D-type 9-pin female connector

Flat ribbon cable

Figure 1 - Flat ribbon cable with D-type 9-pin female connector

Baud Rates

Before connecting the cameras, you need to specify the Baud rate for the communications protocol the cameras use. This value is already set in the IVG/SVG systems, and should be set in correspondence at each camera. Please use these values as the proper baud rates to the respective cameras:

Table 1 – Baud Rates

Camera	Baud Rate
MINTRON	9600
SMILECAM	19200
PELCO_D	2400
LILIN	9600
DMAX	9600
SAMSUNG	4800
ALEC	4800
KDT312	9600
PELCO_P	4800
DENNARD_BOTTOM_FLIP	9600
ELBEX	4800
VISCA	9600
PANASONIC	19200
LG	2400
LMW	9600

Connecting a PTZ Camera to SVG400

To connect a single PTZ camera to an SVG unit:

1. Connect the wires of the flat ribbon cable to the connector pins of the camera, as specified in Table 2.
2. Insert the D-type 9-pin connector into the appropriate COM port, as specified in Table 2.

Table 2 - Wire connections (SVG400)

Connection Type	Default COM Port	Connector Pin on Camera	Flat Cable Wire	Description
RS 232	COM1	2	3	RXD
		3	5	TXD
		5	9	GND
		1	1	TX -

SerVision Ltd.

Connection Type	Default COM Port	Connector Pin on Camera	Flat Cable Wire	Description
RS 485	COM2	1	1	TX -
		3*	5	TX +

* Some hardware may be 2 instead of 3, depending on HW type.

Connecting a PTZ Camera to SVG1000

To connect a single PTZ camera to an SVG unit:

1. Connect the wires of the flat ribbon cable to the connector pins of the camera, as specified in Table 3.
2. Insert the D-type 9-pin connector into the appropriate COM port, as specified in Table 3.

Table 3 - Wire connections (SVG1000)

Connection Type	Default COM Port	Connector Pin on Camera	Flat Cable Wire	Description
RS 232	COM1	2	3	RXD
		3	5	TXD
		5	9	GND
RS 485	COM2	1	1	TX -
		2	2	TX +

Connecting a PTZ Camera to IVG400

To connect a single PTZ camera to an IVG unit:

1. Connect the wires of the flat ribbon cable to the connector pins of the camera, as specified in Table 4.
2. Insert the D-type 9-pin connector into the appropriate COM port, as specified in Table 4.

Table 4 - Wire connection (IVG)

Connection Type	Default COM Port	Connector Pin on Camera	Flat Cable Wire	Description
RS 485	COM2	6	2	TX -
		7	4	TX +

Connecting a PTZ Camera to MVG400, UVG400 or HVG400

To connect a single PTZ camera to an MVG, UVG or HVG unit:

The HVG-400,MVG-400, and UVG-400 all have a 9-pin female PTZ connector on the back panel.

In all units the connector supports both RS232 and RS485.

To connect an RS232 PTZ controller:

The RS232 controller cable should end with a female 9-pin RS232 connector.

- If you are only connecting the RS232 PTZ controller to the unit, and are not connecting any RS485 PTZ controllers, plug the 9-pin RS232 connector directly into the RS232/485 connector on the rear panel of the unit.

- If you are connecting one or more RS485 PTZ controllers to the unit, plug the 9-pin RS232 connector into the RS232/485 adapter supplied with the unit.

To connect an RS485 PTZ controller:

Each RS485 controller cable should end with two wires.

1. Use a wire connector to connect the wires to the RS485 connection wires of the adapter. Be sure to match the positive (+) wire of the controller cable to the positive (+ red) wire of the adapter, and the negative (-) wire of the controller cable to the negative (- grey) wire of the adapter (see figure 2).

Plug into RS232/485 serial port connector on MVG 400

RS485 connection wires

RS232 connector

Negative (-) wire for RS485 connector (grey)

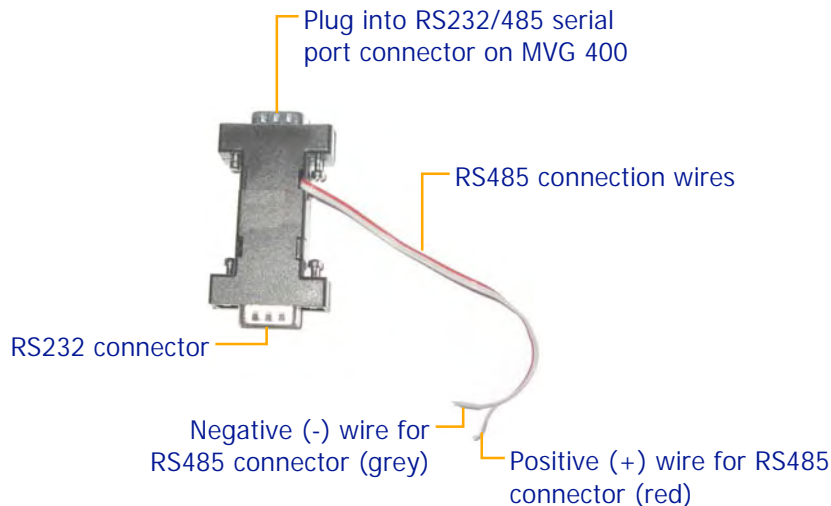Positive (+) wire for RS485 connector (red)

Figure 2: RS232/485 adapter

To connect multiple RS485 controllers to the adapter, insert the positive (+) wires of all of the controllers into one slot in the wire connector, and the negative (-) wires of all of the controllers into the other slot of the wire connector.

SerVision Ltd.

Figure 3: Wire connector

2.　　If multiple PTZ cameras are connected to the unit, each camera must have a different bus-ID and they must all support the same protocol (i.e. Pelco-D). For information about how to do this, refer to the camera documentation.

3.　　Connect the RS232/485 adapter to the RS232/485 serial port connector on the rear panel of the unit.

Sequential Connections

Cameras that use the RS 485 connection type can be connected to one another to create a *sequential connection*.　In the sequence, one of the cameras is connected to the COM port, and additional cameras are connected to it by connecting on to the other in a series.　Up to 256 cameras can be connected to a single SVG unit in this way.

Note: Only cameras that use the same control protocol can be connected together sequentially.　For example, two RS 485 cameras that use the Pelco-D protocol can be connected sequentially, but if one uses the Pelco-D protocol while the other uses the Pelco-P protocol, they cannot be connected sequentially.

BusIDs

When cameras are connected sequentially, each camera in the sequence must have a unique *BusID*.　For example, if there are three cameras in a sequence, they would be given the BusIDs "0", "1" and "2".

BusIDs are set using dip-switches on the camera.　Please consult the camera vendor's instructions for information about how to do this on the camera model you are using.

Connecting the Cameras in the Sequence

To connect a number of RS 485 cameras sequentially, use flat ribbon cable as follows:

Connect the first camera to the SVG as described above.

Connect the next camera to the first camera such that connector pin 1 on the first camera is connected to connector pin 1 on the second camera, and connector pin 3 on the first camera is connected to connector pin 3 on the second camera (see Figure 2).

SerVision Ltd.

Repeat the previous step for each additional camera that you want to include in the sequence; connect each camera to the camera before it in the sequence (see Figure 2).
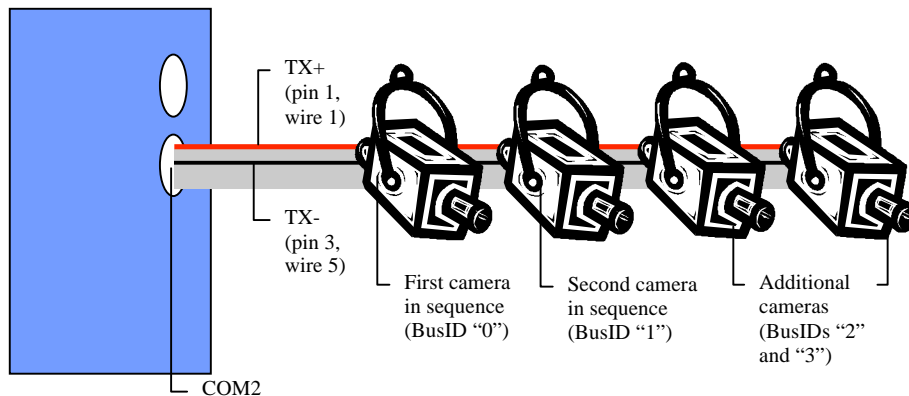

Figure 2 – Sequential connection of RS 485 cameras

Web Configuration

Once a camera is connected to the appropriate COM port, either directly or as part of a sequence, you must activate the connection through the Web configuration. To do this:
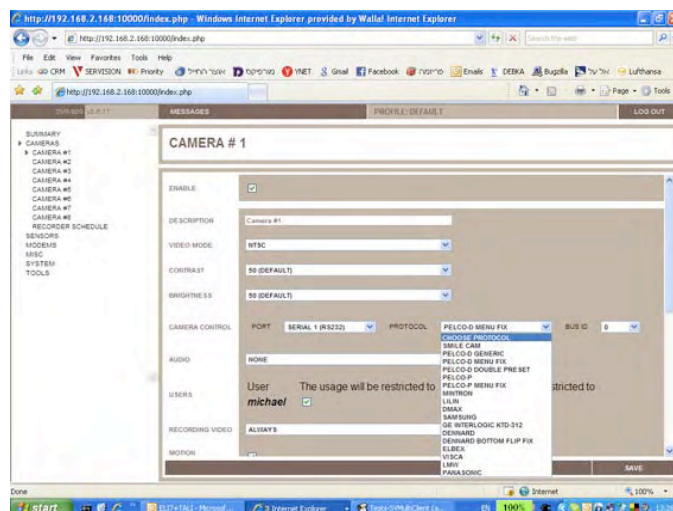
For the SVG/IVG Series:

In the Web, under Camera Control:

> Select Camera.
> Under Camera Control, select the COM port.
> Under Protocol, select the control protocol of the camera.
> If the camera is part of a sequence, under Camera BusID, type the BusID of the camera.

SerVision Ltd.

For the MVG/UVG/HVG Series:

In the Web, under Camera Control:

       Select Camera.

       Under Camera Control, mark Enabled, select the COM port.

       Under Protocol, select the control protocol of the camera.

       Under Camera BusID, type the BusID of the camera and the Baud Rate

SerVision Ltd.