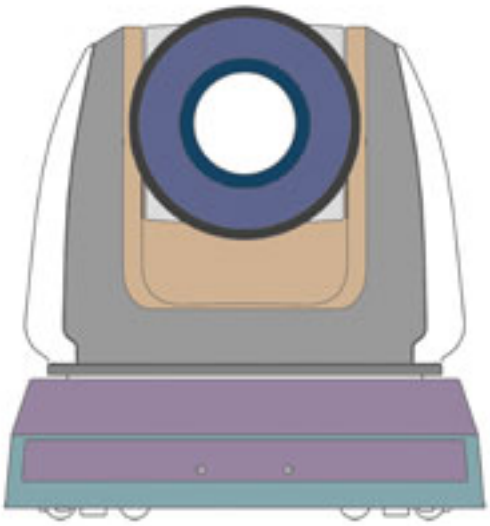
Generic VISCA Support

The "Generic VISCA" Device Core is still in beta (no stabil connection)and at this point mainly works as a development platform. Only few Actions are implemented (see "Actions" section) and can not at this point substitute fully developed VISCA Device Cores. The goal is to have a "catch all" Device Core for VISCA cameras.

Introduction

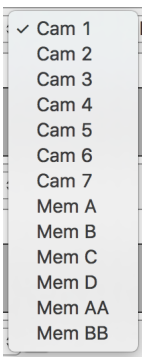
The generic VISCA support device core may be useful if a specific VISCA implementation for a given camera is not available yet. The generic support consists of a number of often used VISCA commands across cameras and should therefore generally speaking work with any VISCA camera. However, the support for individual value ranges (like iris, shutter speeds, gain etc) is absent and likewise pulling data from the camera to the controller in order to reflect that actual state on the camera is limited as well. Therefore, if it exists, you should use specific VISCA device cores rather than the generic one.



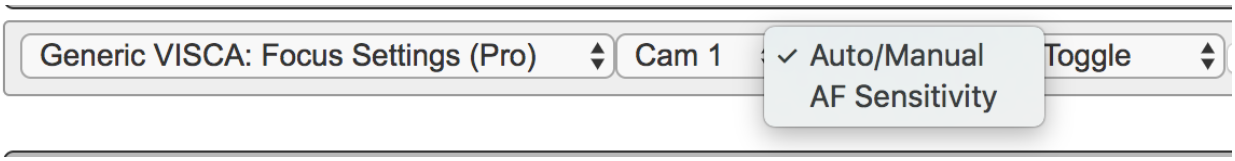
Shared features

Since all specific implementations are based on and adding to the generic implementation, it also makes sense to describe common principles that applies to all implementations here.

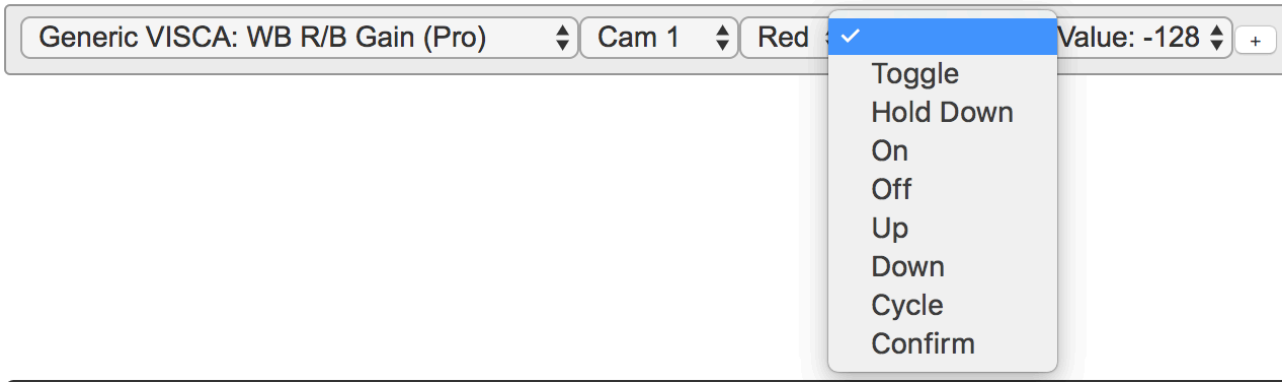
All actions will as their first parameter have the camera number. Cam 1-7 is straight forward. Mem A-D pulls the camera number from that particular memory bank and Mem AA is a multi camera memory bank that allows you to select more than one camera at a time.



Often, the second parameter specifies more closely what action is performed. For instance in the case below it defines whether the "Focus Settings" is "Auto/Manual" or "AF Sensitivity".



For almost all actions you will find a list of action modifiers like "Toggle", "Hold down" etc. These influences more specifically how an action is implemented. They do not always apply to all kinds of hardware components, for instance they mostly apply to binary triggers like buttons, but may also carry meaning for pulse inputs and so forth.



Finally there will often be a parameter combo with values (above it would be "Value: -128").

The following describes the general pattern followed in the implementation for each type of hardware interface component:

Binary Triggers

By default a binary trigger will set the value selected with the value combo box. If "Toggle" is selected, it will change between setting the value or setting the default/off value in case the value was already set. If "Hold Down" is selected, the value is set on the down-trigger but restored to the default/off value on the up-trigger. If "On" is selected, it corresponds to just setting the value (like "Blank"), while if "Off" is selected it corresponds to setting the default/off value. If "Up" or "Down" is selected, the value is changed one step up or down, and if "Cycle" is selected, the value is stepped up and rolled over to the lowest value when it reaches the top limit. In Up/Down/Cycle modes, the value combo is used to limit the range (see description for Pulse inputs below). "Confirm" mode is not available for binary triggers.

Pulse inputs

Pulses will change the value up or down. In case only two values exists (like "On" and "Off", "Auto" and "Manual" etc. or a range limited to two values) they will toggle between them on repeated pulses in either direction. With any range of values beyond that, pulses in either direction will not "roll over" unless "Cycle" or "Confirm" has been selected as option.

A short push on the encoder will generally toggle a "lock" mode (shown with an icon in the title bar) which prevents the value from being changed.

A long push (held down for more than a second), the value will reset to the first value in the value list (default/off value). However, if "Confirm" mode is used, the selected value will rather be set to the camera.

In many cases a combo box exists in the action configuration with values. If *anything else* than the first value listed in this box is selected, it will act as the largest value you can reach with pulses. In case the value range has negative values, the limit must be selected above zero and the limited range will center around zero (generally speaking - some short value lists that look numerical will only apply the limit in the top).

If "Confirm" mode is selected, the value is not changed immediately but requires to be confirmed by long push on the knob. If a pending value is not confirmed within 5 seconds, it will reset back to the current value.

Analog inputs (sliders)

(pending…)

Speed inputs (joysticks)

(pending…)

Button Colors

Highlighted button color follow whether the current value matches the value assigned to a binary trigger. Exceptions are when Up/Down/Cycle modes are selected in which case the button color is active only when pressed. The button may blink if multiple different values are found when multiple cameras are selected simultaneously.

Binary Outputs

Generally, the binary output follows whether a button is highlighted.

Displays

If values cannot be changed or are not available, they will either appear as two dashes ("- -") or as the value with a small stop-sign in the lower right corner.

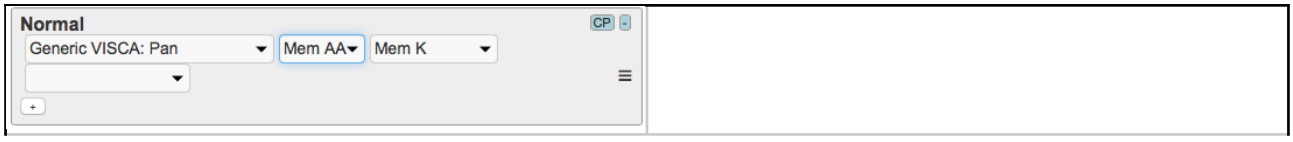
If multiple cameras are selected and their value matches up, the display will show the value they share, otherwise it will show "(MUL)". In case no camera is selected, the display will remain blank.

For binary triggers you will normally see a label that indicates what value is being set when the trigger is activated (labels are indicated with a thin line under the title). Exceptions are when Up/Down/Cycle modes are selected or if the action is applied to non-binary hardware interface components in which case the current value is shown (indicated by a solid title bar).

You may see an assortment of icons that indicates if toggle, hold down, up, down and cycle modes are selected for binary triggers. For encoders you may see an OK and question mark symbol when "Confirm" mode is used.

Actions

This is a table of the generic VISCA actions implemented in this device core. The list is short currently as focus have been on implementing specific VISCA actions for the specific PTZ camera Device Cores.

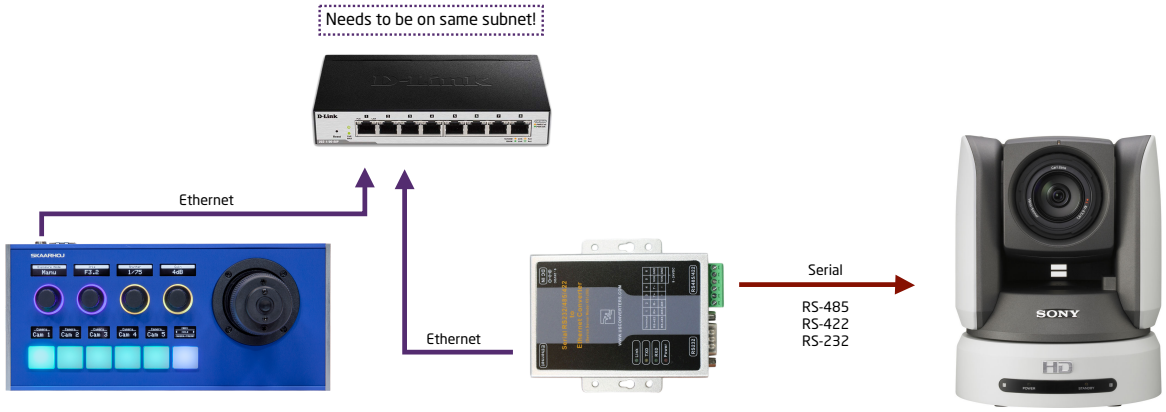



Normal
CP
Generic VISCA: Tilt
Mem AA
Mem K
Normal
CP
Generic VISCA: Zoom
Mem AA
Mem K
Normal
CP
Generic VISCA: Camera Select
Cam 1
Mem AA
Set/Add
Normal
INS
CP
Generic VISCA: Preset
Mem AA
Recall/Set
Preset: 1

Serial Control

If control of cameras is not possible directly via IP you can control via the various serial standars. Any serial control will happen though a Ethernet-Serial converter as we do not have direct serial outputs on our controllers. Below you will find various instructions for setting up Device Cores on your controller as well as settings on a serial converter and cabling. Please observe any rules for cabling for the serial standards - these will not be explicit explained in details in this documentations. Remember to use twisted-pair when applicable! Focus on the documentation is between the Ethernet-Serial converter and the first camera and less on daisy chaining additional cameras. For this we refer to the manuals of the camera manufactures.

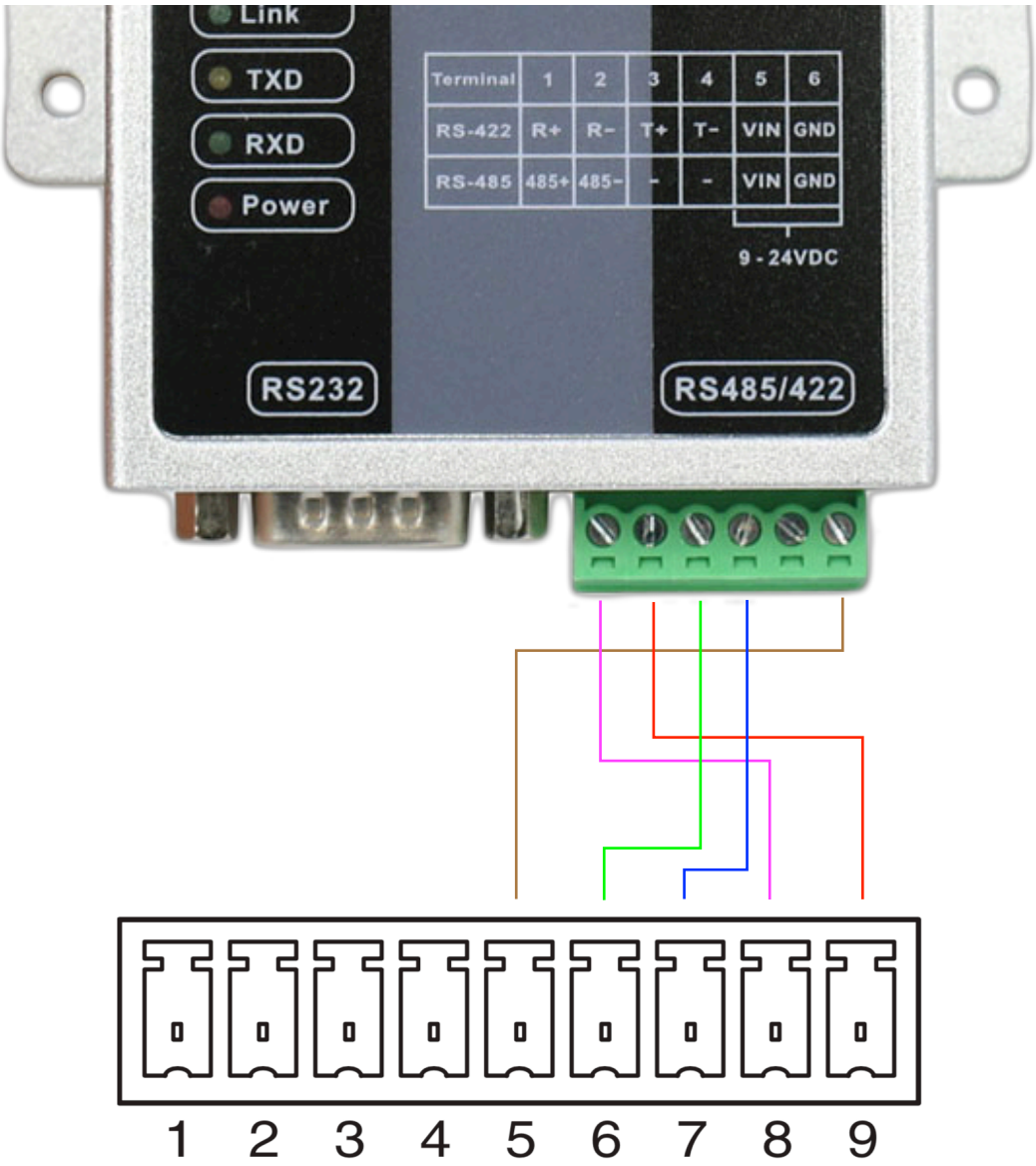
To communicate via serial (RS-422, RS-485 & RS-232) to cameras we suggest the Ethernet-Serial converter XS1200 from US Converters - http://www.usconverters.com/serial-rs232-device-server The instructions below are based on this Device. If you use a different device we cannot provide support as to cabling and connection details.



There is a quirk you should know about: The XS1200 only accepts a single TCP connection at a time and it will take some time to realise if a client disconnected silently before it allows a new connection. In essence this means if the SKAARHOJ controller was connected and is rebooted without disconnecting, the XS1200 Server may not realise this before after some time. Therefore you may need to powercycle it along with the SKAARHOJ controller to make sure it will accept a connection.

RS-422

Example with Sony BRC-Z700



VISCA RS-422

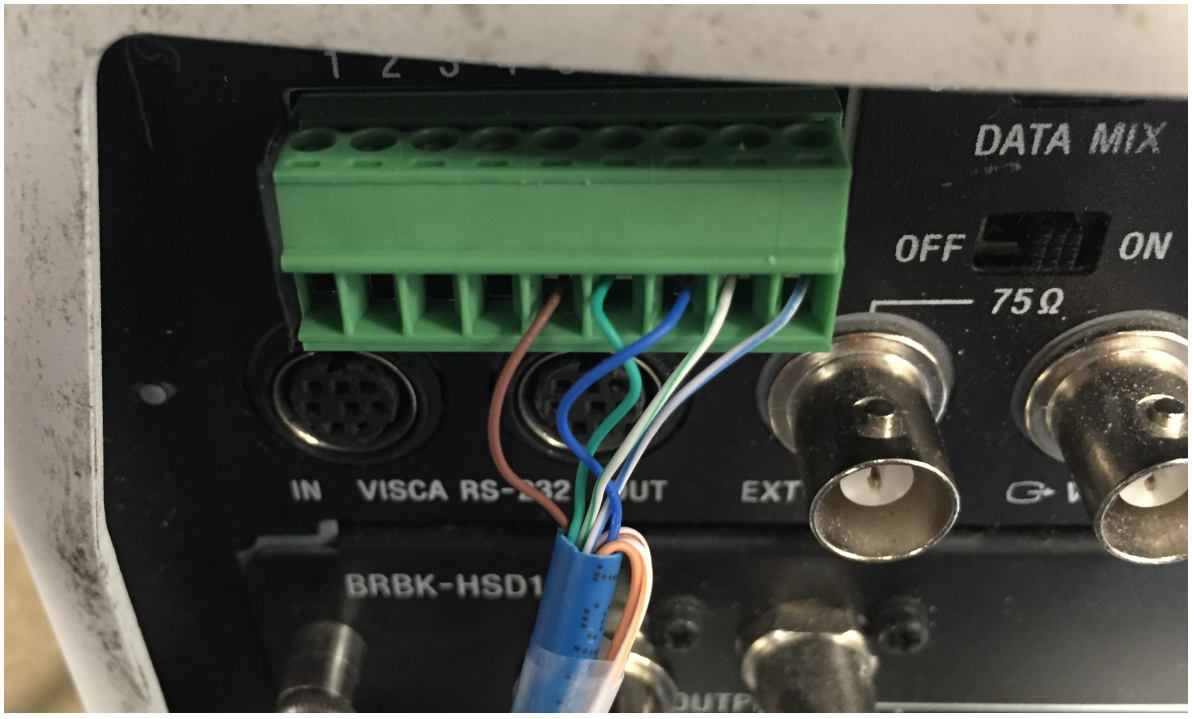
XS1200

Pin No.	Function
1	R +
2	R -
3	T +
4	T -
5	VIN
6	GND

BRC-Z700

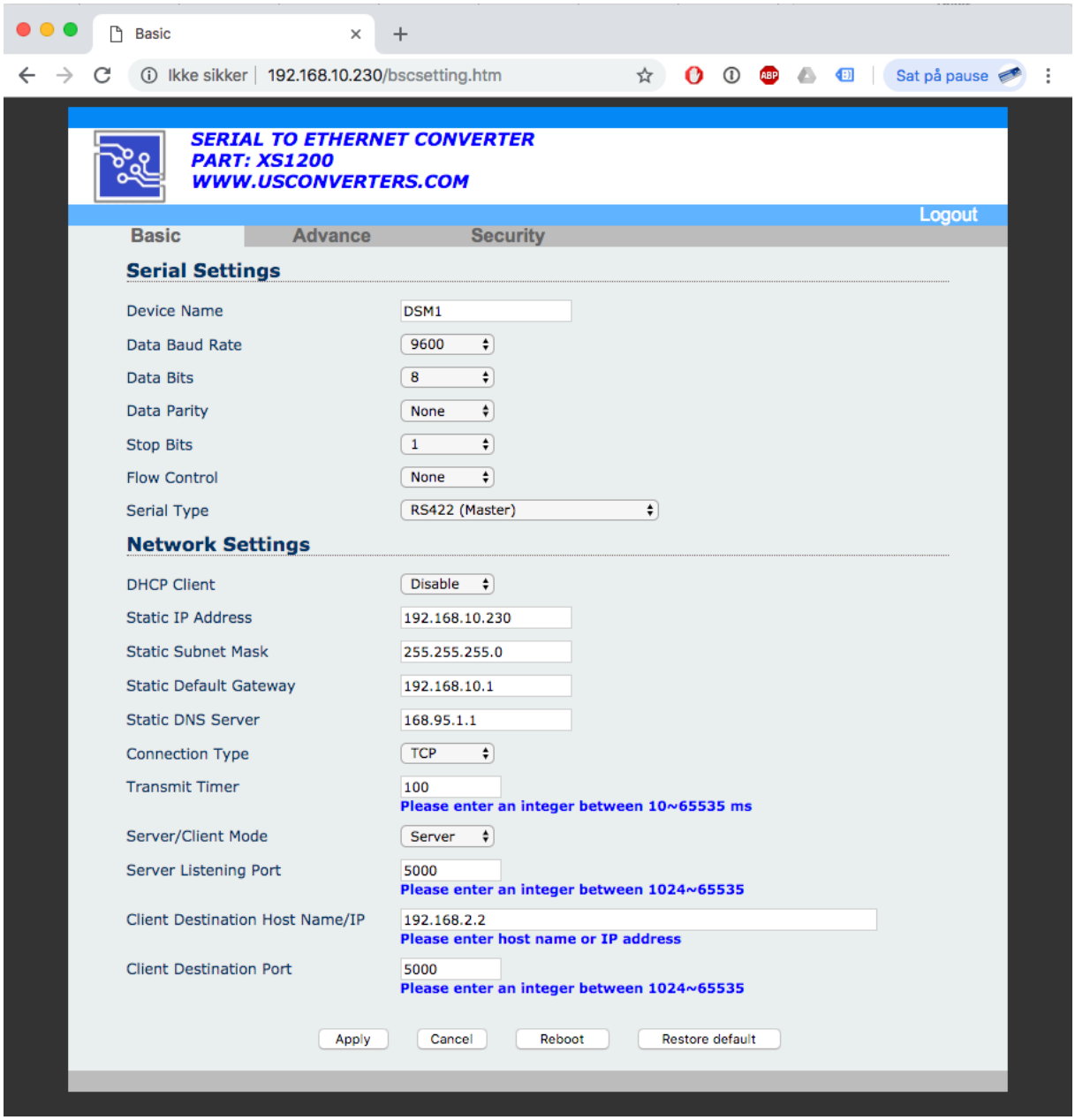
Pin No.	Function
1	RXD Out -
2	RXD OUT +
3	TXD OUT -
4	TXD OUT +
5	GND
6	RXD IN -
7	RXD IN +
8	TXD IN-
9	TXD IN +


Link
TXD
RXD
Power
Terminal 1 2 3 4 5 6
RS-422 R+ R- T+ T- VIN GND
RS-485 485+ 485- - - VIN GND
9 - 24VDC
RS232
RS485/422


DATA MIX
OFF ON
75Ω
IN VISCA RS-232 OUT EXT
BRBK-HSD1

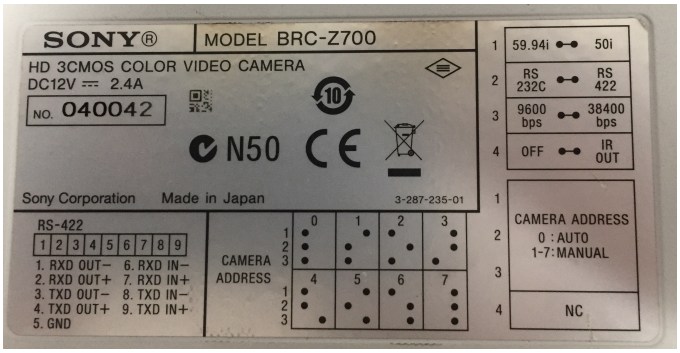
The same cabling is applicable for Lumens VC-A50P and NewTek NDI-HX PTZ1.

Below you will find screenshots of how to configure the XS1200 converter (found of the web interface of the XS1200).



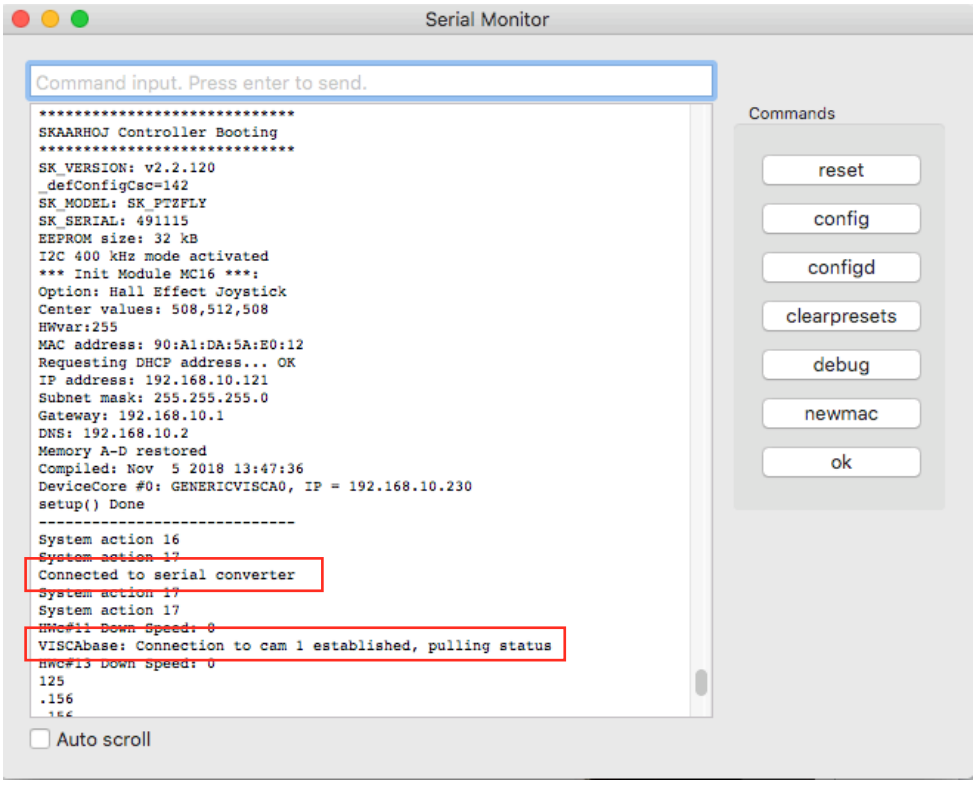
Make sure to set up an IP address in your range here. This is the IP address you must also set up inside the SKAARHOJ controller for the Device Core! Here it is set to 192.168.10.230 and corresponding subnet mask. Set Serial Type to RS422 (Master) and set Data Baud Rate to match jumper settings on your camera.

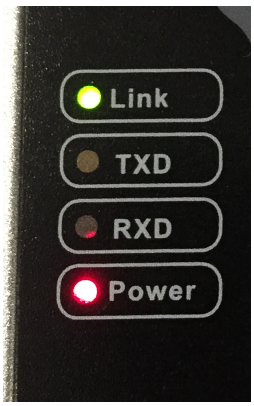
Settings like communication baud rate, serial protocol selection and camera address are typically set on the camera it self with dip switches. Make sure these match the configuration.



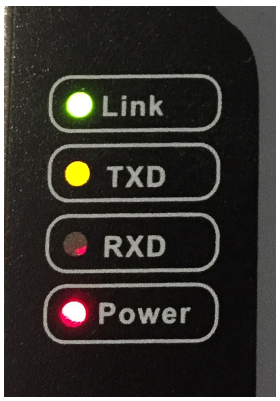
When there is communication between the SKAARHOJ Controller, the XS1200 and the camera you will find the Link, TXD and RXD diodes on the XS1200 blinking.

When the SKAARHOJ controller have connected to the XS1200 you will see the message “Connected to serial converter” in the Serial Monitor. When initial connected to the camera is established the serial monitor will report “VISCAbase: Connection to cam 1 established, pulling status”

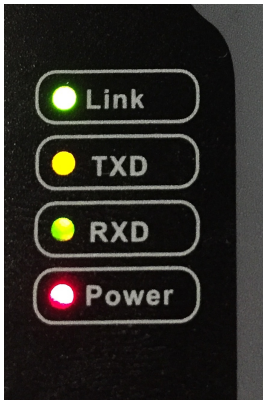




If just the Link diode is blinking the XS1200 have network activity from a network switch but is not communicating with SKAARHOJ controller.



If the Link and TXD diode is blinking there is network activity *and* connection between the XS1200 and a SKAARHOJ controller have been established.

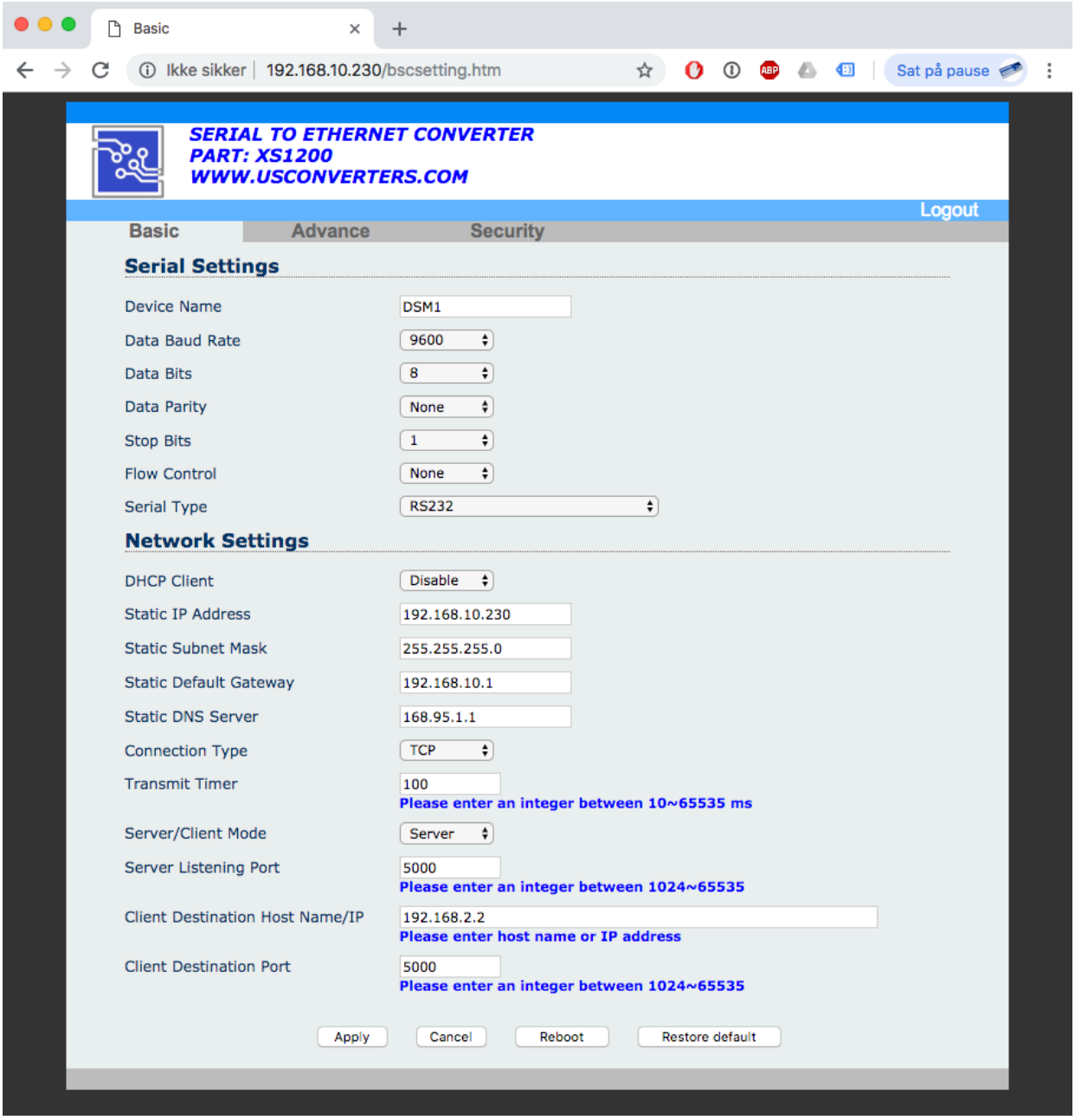


If Link, TXD and RXD diodes are blinking there is network activity, connection between the XS1200/SKAARHOJ controller *and* signal between the XS1200 and camera.

RS-232

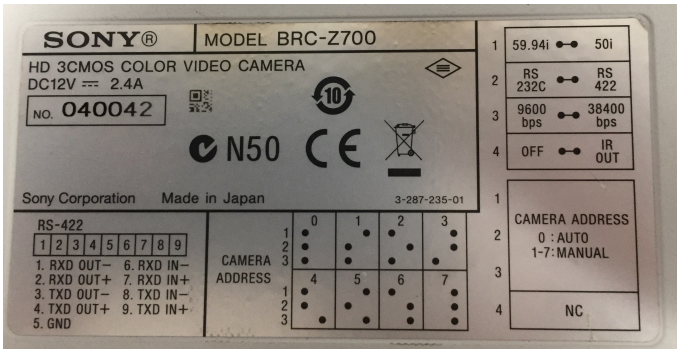
Below examples of adapter cables to be used with the XS1200 and RS232.

Below you will find screenshots of how to configure the XS1200 converter (found of the web interface of the XS1200).



Make sure to set up an IP address in your range here. This is the IP address you must also set up inside the SKAARHOJ controller for the Device Core! Here it is set to 192.168.10.230 and corresponding subnet mask. Set Serial Type to RS232 and set Data Baud Rate to match jumper settings on your camera.

Settings like communication baud rate, serial protocol selection and camera address are typically set on the camera it self with dip switches. Make sure these match the configuration.



See the RS422 section for description of diodes on the XS1200 and connection confirmation from the Serial Monitor.

RS-485

Coming soon!