Bruker ISIS Controller
Notes

October 10, 2013

The “ISIS Control.exe” program is used for the programming of the various servo names and positions. The “Bruker ISIS Controller.exe” program is the intended user interface for day to day control of the servos.

Servo Configuration using “ISIS Control.exe”

Use the “ISIS Control.exe” program for the purpose of defining the names for the various servos and the names for the various servo positions as well as for programming the various servo operating parameters (acceleration and locations).

To use this program, after it is started, make sure that “ISIS_0” is selected in the combo box located beneath the “Connect” button. Click on the “Connect” button. At this time the program will establish communication with the ISIS controller and populate all of the previously programmed servo settings. This would include the servo names as well and the individual servo positions and associated servo position names, and servo acceleration values.

If any of the “Servo Name” fields are empty, then when the “Bruker ISIS Controller” program is executed, access to those servos will be disabled.

If a “Servo Name” field is not empty, but all of the “Position Name” fields are empty, then when the “Bruker ISIS Controller” program is executed, the control of those servos will be performed via a scroll bar that allows the operator to randomly drive the servo to any location in its travel.

If one or more “Position Name” field is defined, then when the “Bruker ISIS Controller” program is executed the control of these servos will be performed via a combo box which presents to the operator all of the possible defined/programmed locations for each servo.

Shown below is an example of the “ISIS Control” interface.

In this example, Servo 0, 1, 2, and 3 have all eight available servo positions programmed and named and the servo names are defined as well. Servo 4 has five named programmed positions. Servo 5 has four named programmed positions. Servo 6 is named but has no named programmed positions. Servo 7 is not named.

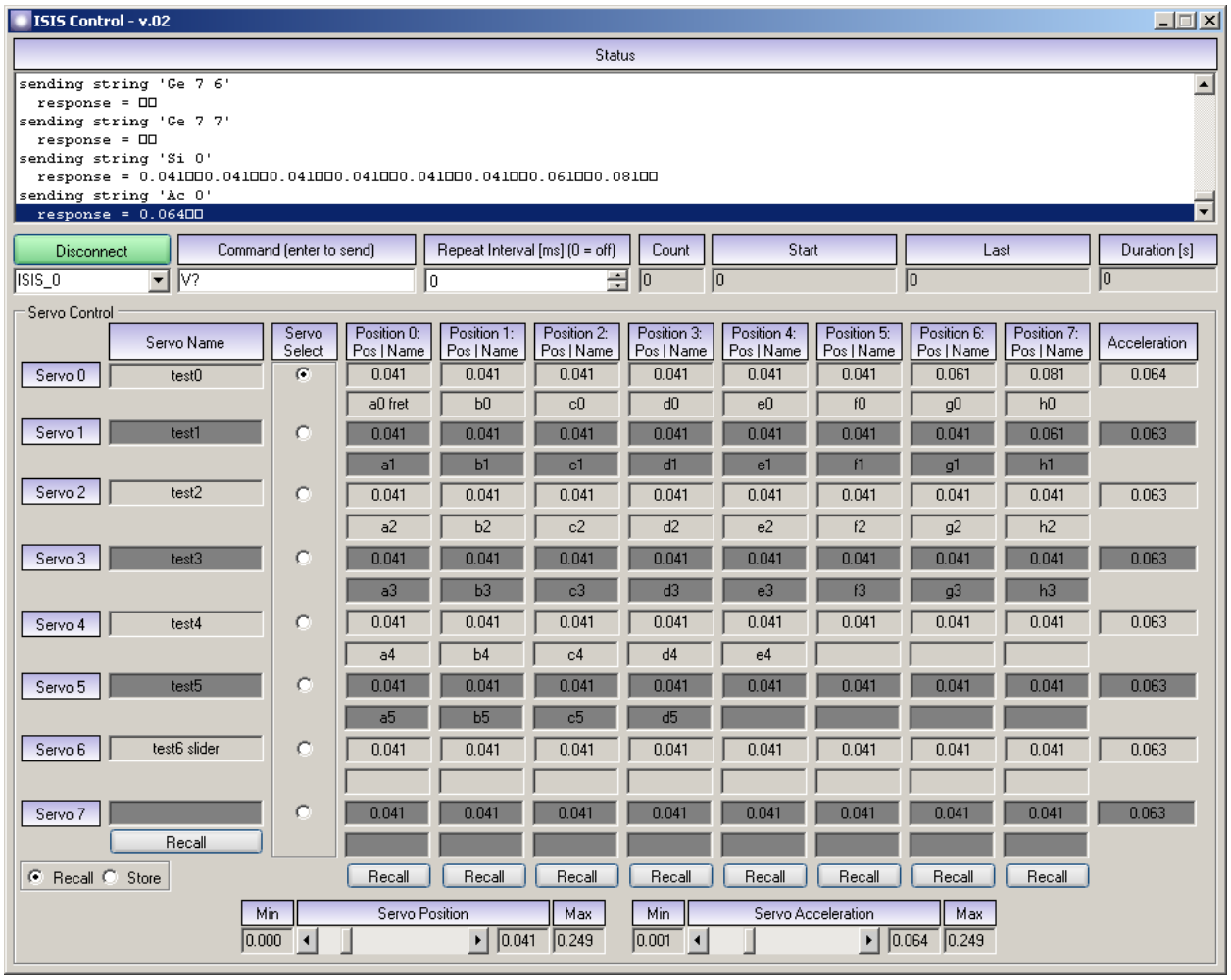

Figure 1

To use this program to define or program the names for the individual servos:

1. Simply enter the desired labels in the text boxes located in the “Servo Name” column.
2. Click on the “Store” radio button, this will change the text on the button located at the bottom of the “Servo Name” column from “Recall” to “Store”.
3. Click on this “Store” button to save the servo names.

The process for defining a name or label for an individual servo position is similar but includes some additional steps. This process applies to defining the name for an individual servo position or defining the location for an individual servo position.

1. Click on the “Recall” radio button so that the buttons located at the bottom of each of the servo “Position” columns display “Recall”.
2. In the “Servo Select” column, select the servo that you will be programming the position and/or name.
3. Click the “Recall” button at the bottom of the “Position” column for the position that you wish to define.
4. Define the desired position of the servo using the “Servo Position” slider.
5. Define the desired position “name” by entering it in the appropriate text field.

6. Click on the “Store” radio button so that the buttons located at the bottom of each of the servo “Position” columns display “Store”.
7. Click on the “Store” button at the bottom of the servo position column that you were just editing.
8. Repeat steps 1-7 above for each servo position that you wish to program/edit.
9. When programming positions for an individual servo, always use consecutive “positions” in the table.

Once the necessary servo programming has been completed, this program should be exited or terminated.

Servo Control using “Bruker ISIS Control.exe”

Use the “Bruker ISIS Control.exe” program for the purpose of manually selecting from the list of programmed servo positions for each servo, manually moving a servo through its range of travel, or to change multiple servo locations using the “Servo Configurations” option.

Shown below is the main interface for the “Bruker ISIS Control.exe” program using the configuration defined in the previous section (Figure 1).

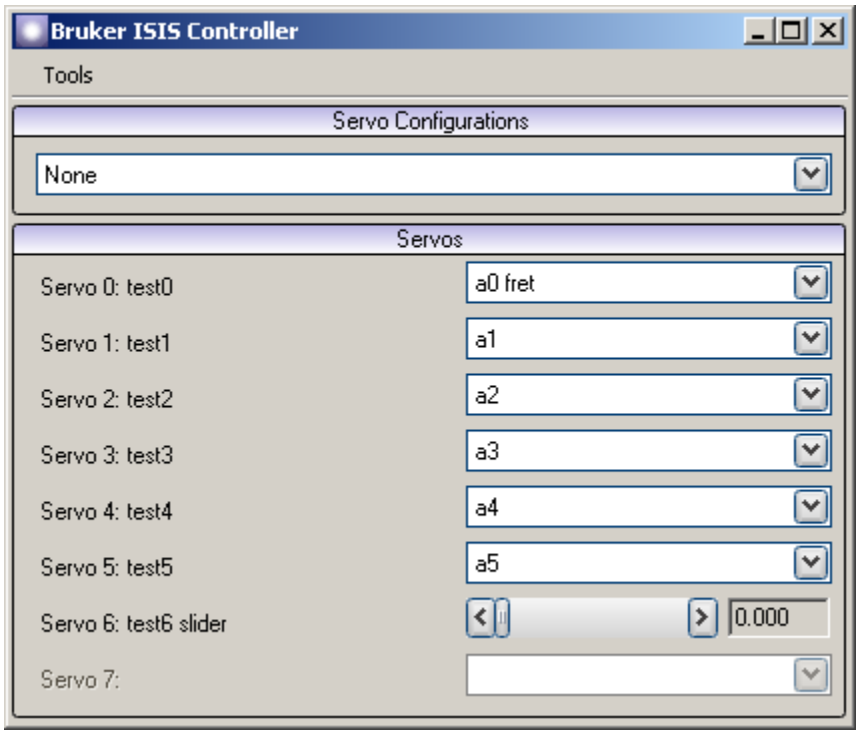

Figure 2

From the configuration shown in the previous section (Figure 1) you’ll see that Servos 0-5 have one or more programmed/named positions defined so in this dialog the controls for these servos will be combo boxes with the programmed positions for each servo listed. Servo 6 is named, but does not have any programmed/named positions defined so control of this servo is a slider that allows the operator to

move the servo through its entire range of motion. Servo 7 is not named so therefore access to that servo is disabled.

When the servo position names are being added to the combo box in the main dialog, they will stop being added when a blank/empty servo position name is encountered.

When this program starts, each of the "named" servos that also have programmed/named positions will be automatically positioned to the first location in the list of programmed positions. For servos that are "named" but do not have any programmed positions, the servo will be automatically positioned at the minimum travel location.

In addition to the ability to manually control each servo, there is a separate combo box located at the top of the dialog in the "Servo Configurations" section that allows the operator to change multiple servo locations with one selection. To use this feature start by clicking on the menu option "Tools -> Servo Configuration….". This will pop up the following dialog.

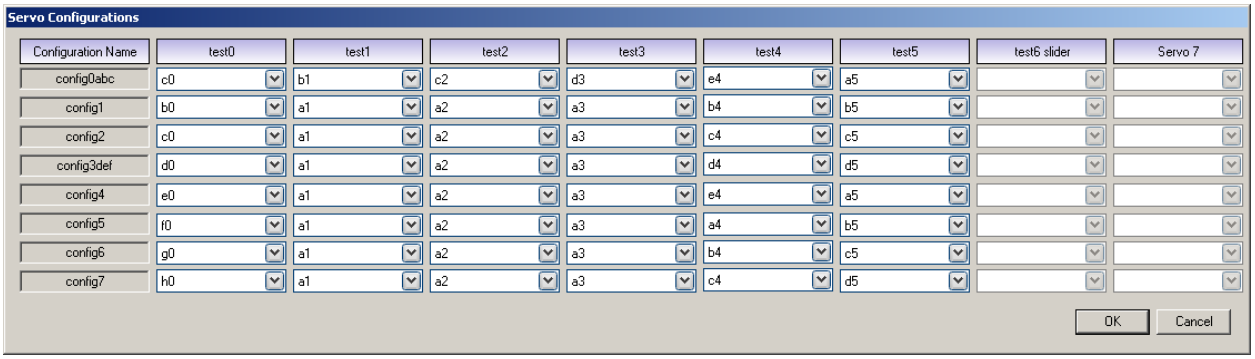

Figure 3

Please note that this is a "modal" dialog which means that while it is open, the operator is not allowed to modify any of the controls in the main dialog.

Located along the left hand side under the "Configuration Name" column there are eight text boxes, one for each of the eight available servo configurations. Use this field to enter the desired name for the particular servo grouping. If this field is blank/empty, then this servo configuration will not appear in the list of available servo configurations in the main dialog. Servo configurations should be defined consecutively. For example, do not leave the name for the third configuration empty and then name the fourth servo configuration. When the servo configurations are being added to the combo box in the main dialog, they will stop being added when a blank/empty servo configuration name is encountered.

Clicking on the "OK" button will save the servo configuration and close the dialog. Clicking on the "Cancel" button will revert the servo configurations back to what they were when the dialog was opened and then close the dialog.

Back in the main dialog window, when one of the defined servo configurations is selected, all servos will be moved to the specified locations.

Command Line Options:

As mentioned earlier, when the “Bruker ISIS Controller” program starts, each of the “named” servos that also have programmed/named positions will be automatically positioned to the first location in the list of programmed positions. For servos that are “named” but do not have any programmed positions, the servo will be automatically positioned at the minimum travel location.

It might be the case that the operator wishes to start the program but to be able to indicate a servo configuration to automatically load or individual servo positioning to use. This can be accomplished using the available command line arguments.

There are three command line options available; -sc (-ServoConfiguration), -sp (-ServoPosition), and –sm (-ServoMotor).

When “–sc” is used, the operator must also specify the name of the servo configuration that they wish to automatically load. Using the servo configurations shown in Figure 3, if the operator included “-sc config0abc” when starting “Bruker ISIS Controller”, after the program starts and the initial servo locations are set as outlined, then the specified servo configuration would automatically be set with no additional interaction by the operator.

When “-sp” is used, the operator must also specify the servo number (0-7) and the desired servo position (0-7). Using the servo configurations shown in Figure 3, if the operator included “-sp 0 4” when starting “Bruker ISIS Controller”, after the program starts and the initial servo locations are set as outlined, then the specified servo (i.e. 0) will be moved to the specified position (i.e. 4).

When “-sm” is used, the operator must also specify the servo number (0-7) and the desired servo motor position (0.0 – 0.249). Using the servo configurations shown in Figure 3, if the operator included “-sm 6 0.125” when starting “Bruker ISIS Controller”, after the program starts and the initial servo locations are set as outlined, then the specified servo (i.e. 6) will be moved to the specified motor position (i.e. 0.125).

Multiple commands may be included in the command line.

Additionally, if the “Bruker ISIS Controller” program is already running and another application attempts to execute it, the program will prevent a second copy from running. In this same vein, if the program is already running and another application attempts to execute it and that attempt includes one or more of the defined command line options, a second copy of the program will not be created, but the current copy will process the command line options. This feature allows other programs to control servo placement if that capability is desired.