My control program **on PC**

I have written a program to control the basic functions of the CBOX, with special attention to the parameters handling (I would like to fully implement an automatic check on the hand-modified parameters, but for the moment it is not complete).

When you use this program have in mind that if the CBOX is in the CPM mode there could be interferences between the expected replies (when you push a cmd command button) and the eventual position+status messages the CBOX eventually sends because it is in CPM mode.

To avoid such a situation, at the startup the program asks for the CBOX connected and ready (fig. 0), then send a 'S' command to stop the CPM mode. The CPM mode is re-entered if you START the Monitor: then all replies from the CBOX are captured by the monitor routine and logged on the CBOX Replies text box. STOPping the Monitor the CPM mode is disabled.

If you, for any reason, restart the CBOX but not the control program, it is suggested to send a cmd 'S' before to continue.

When at startup a connection with the CBOX is established, the control program reads all relevant informations displaying them on the main window (fig. 1). Parameters' values are displayed in the PARAMETERS READ and PARAMETERS SET frames.

In the PARAMETERS SET frame you can set the parameters and then write them to the controller clicking on the "cmd W" CommandButton. Clicking on "Set Defaults" restores all factory default values on the various frame fields. If you want to write them into the CBOX you must anyway click on "cmd W". You note as the two commands "Set Defaults" and "cmd W" will modify the CBOX parameters on the control program ("Set Defaults") and inside the CBOX ("cmd W"), so you will be asked by the control program to confirm the operation you choosed. (figs 6 and 7).

At any time, when the CBOX is ready to accept such a command, you can read-back the current parameter values by clicking on the "cmd L" in the PARAMETERS READ frame.

In the GOTO frame you can send a GOTO command writing the target angle and then clicking on "Execute". In the TextBox immediately below "Execute" is displayed the controller answer to the GOTO command: "WRONG" if there has been an invalid format, "CORRECT" if the format is correct. (figs 2a and 2b).

You can send a Fast-stop (click on "STOP!") or a Soft-stop.

Clicking on "START" (that becomes a red "STOP") in the POSITION MONITOR frame, a first '?' command is sent to acquire and display the current position and status, then a 'C' command enables the CPM mode, and a loop is started where the program waits for and displays the eventual data coming from the controller. To terminate the CPM mode click on "STOP" (that becomes "START") so an 'S' command is sent and the monitor program loop is terminated. In such a way you can monitor the rotation process starting it with the "Execute" button or through the front-panel controls, stopping it sending one of the two Stop commands. (figs 3, 4, 5).

Note that the program doesn't allow W commands when the Monitor is active.

For the calibration purpose a separate form is available. Click on "-Calibration- open form…" button to open it (fig. 8). All calibration-related commands have been implemented. Please see the CBOX operating manual about the calibration operations.

Fig.0: Initial dialog box

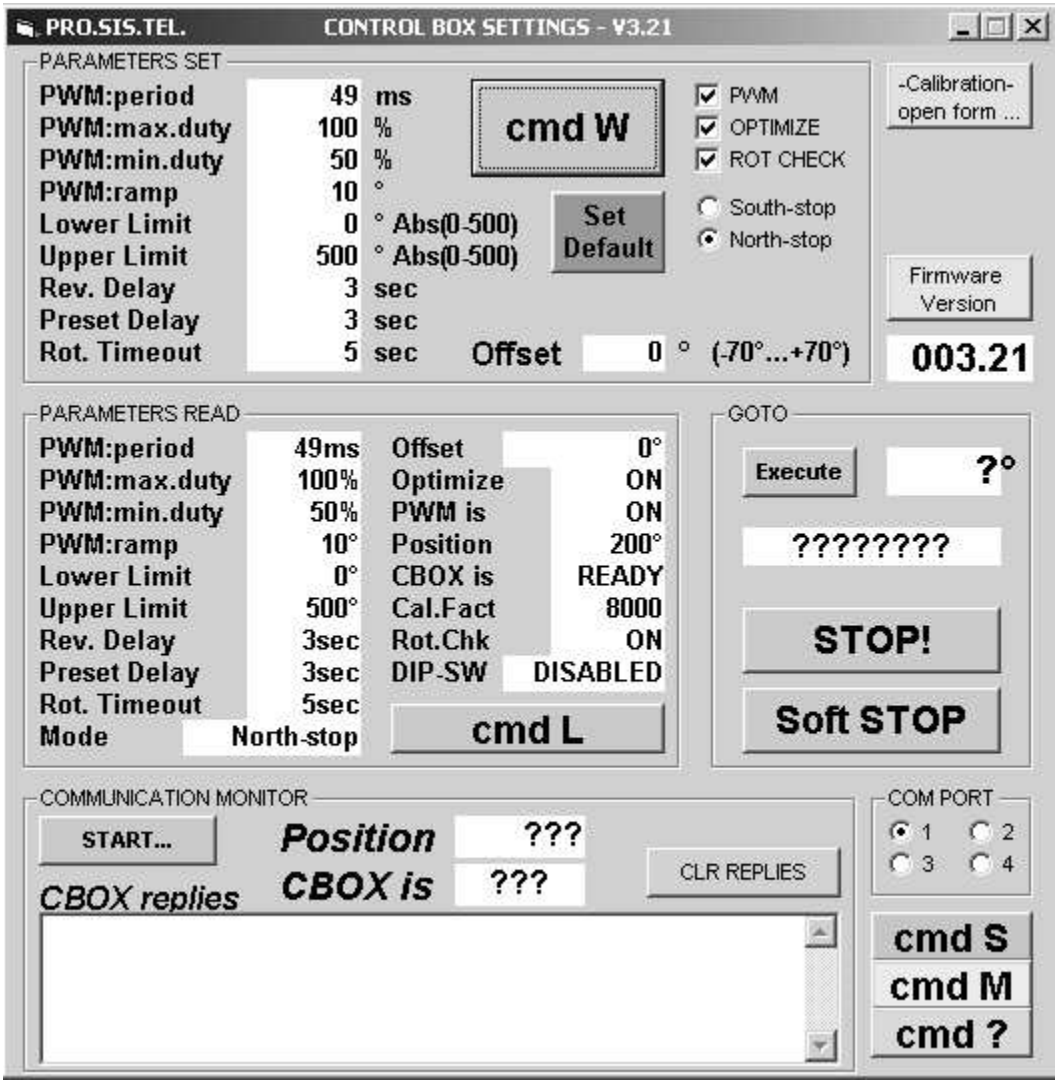

Fig.1: Startup window.

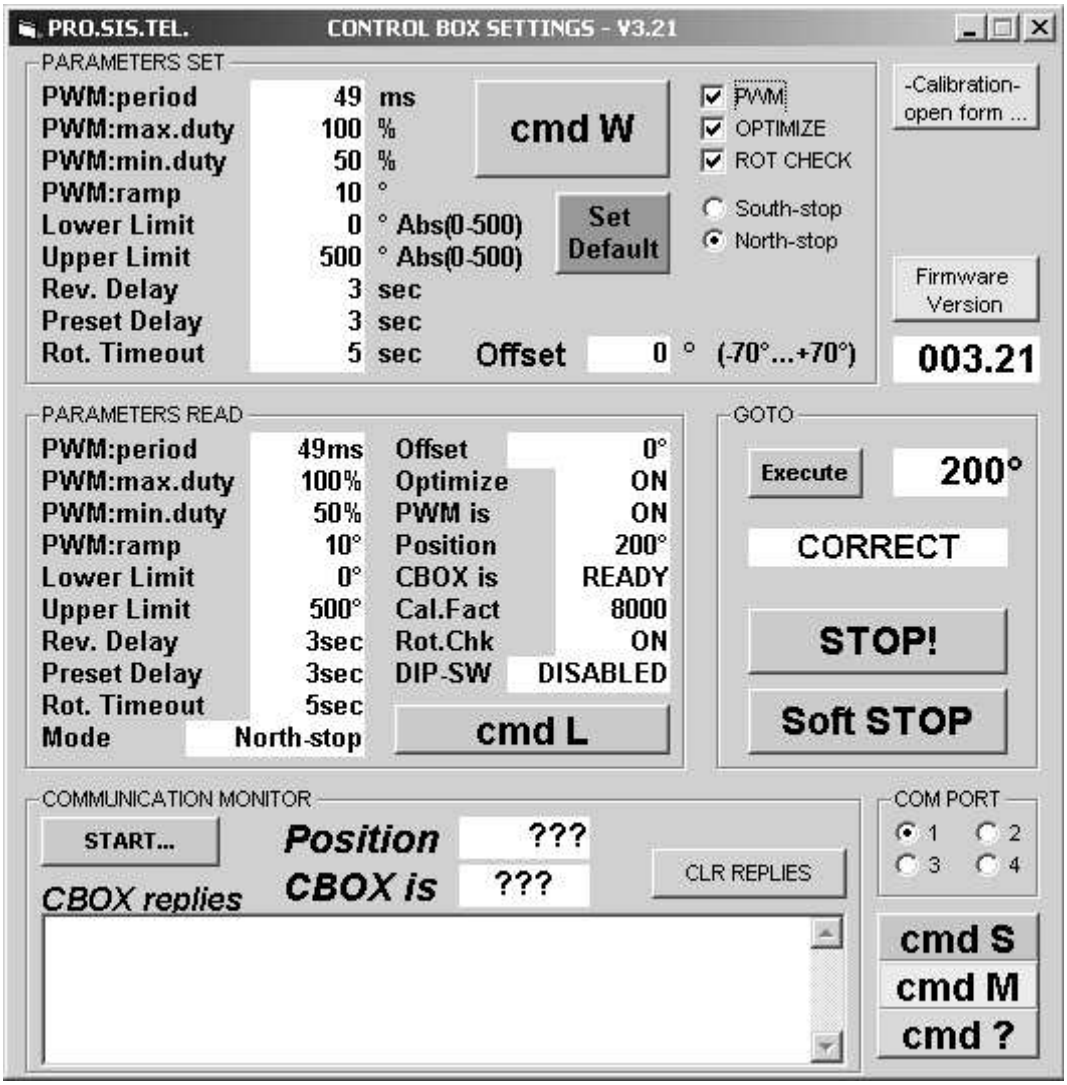

Fig.2a: GOTO (“Execute”) command issued,
Correct command

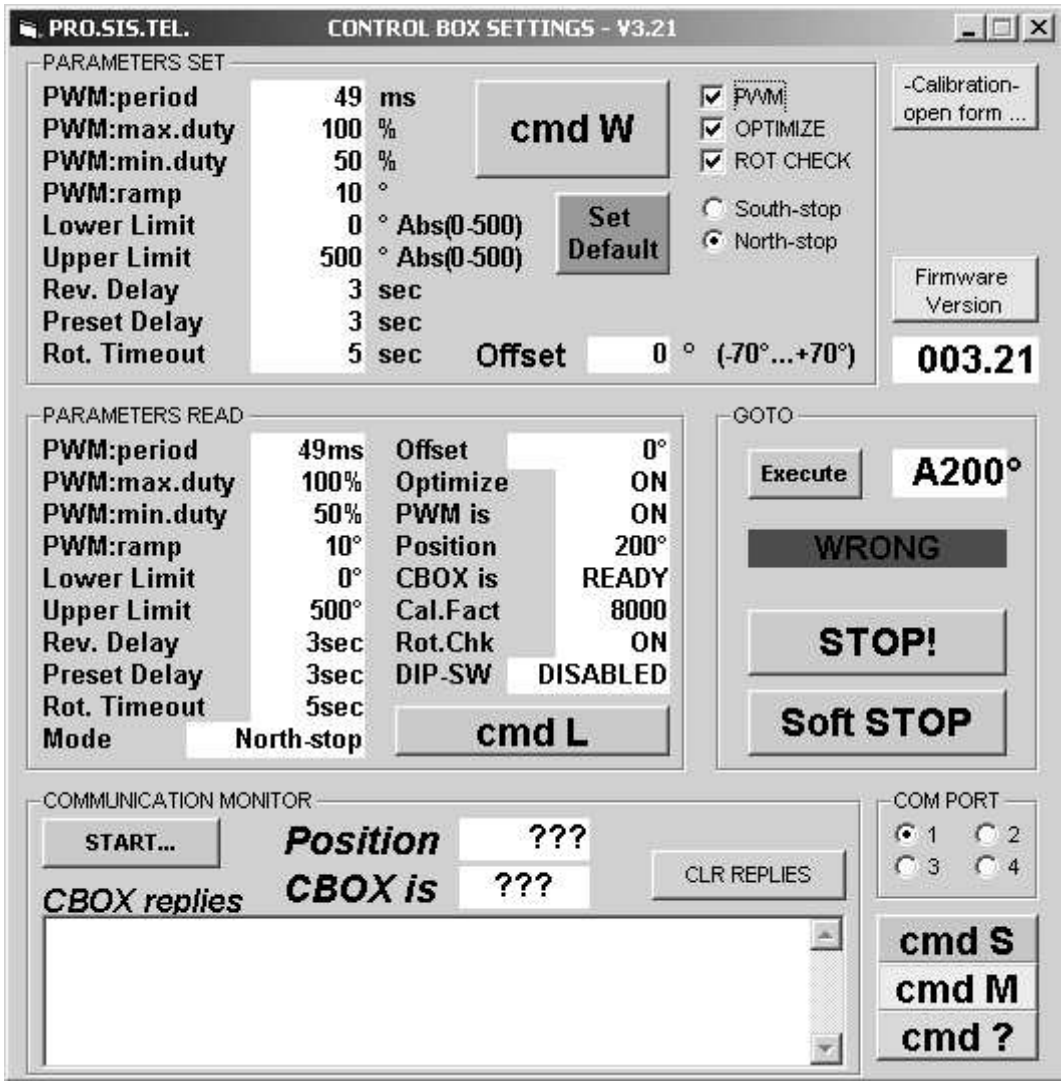

Fig.2b: GOTO (“Execute”) command issued,
Wrong syntax: note the “A” in the target angle field

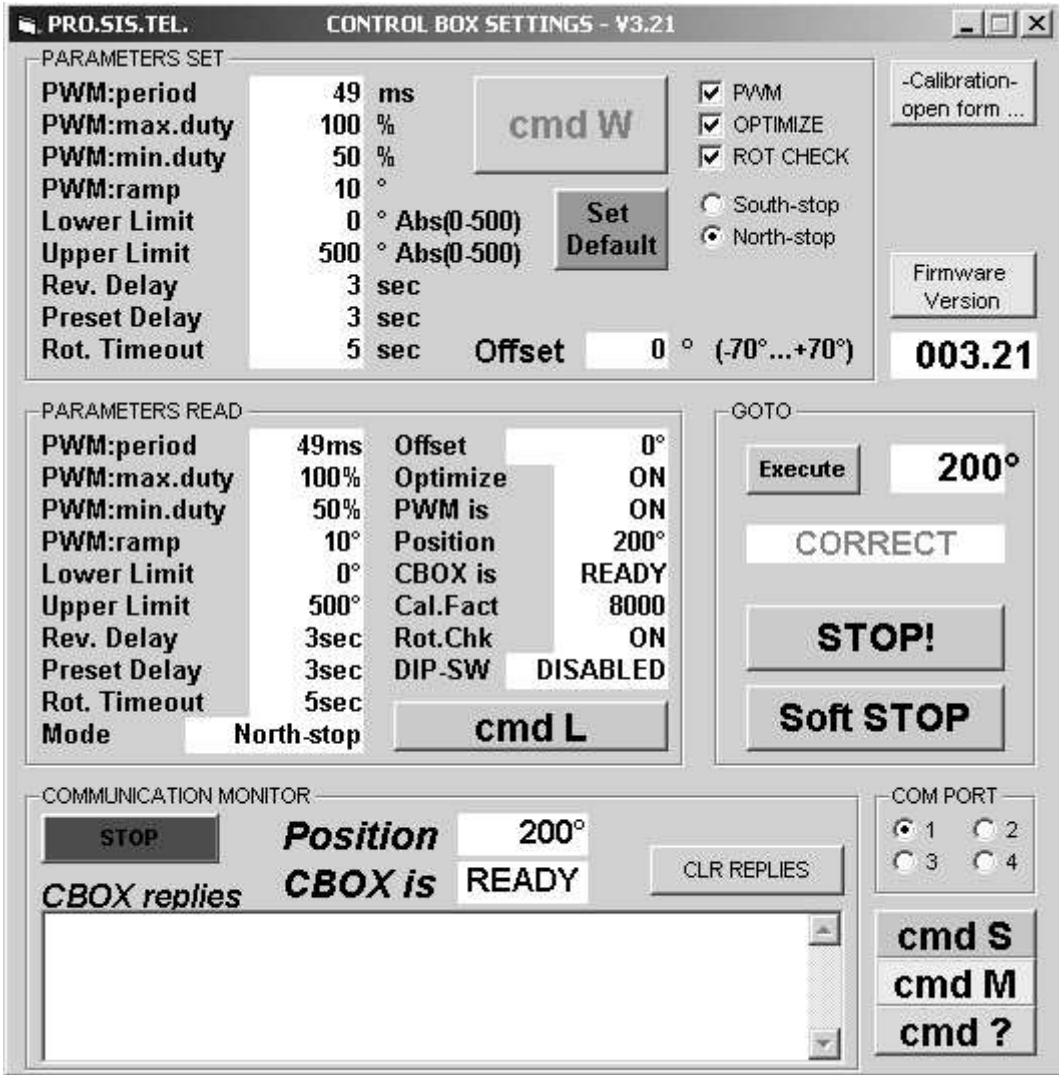

Fig.3: Monitor started

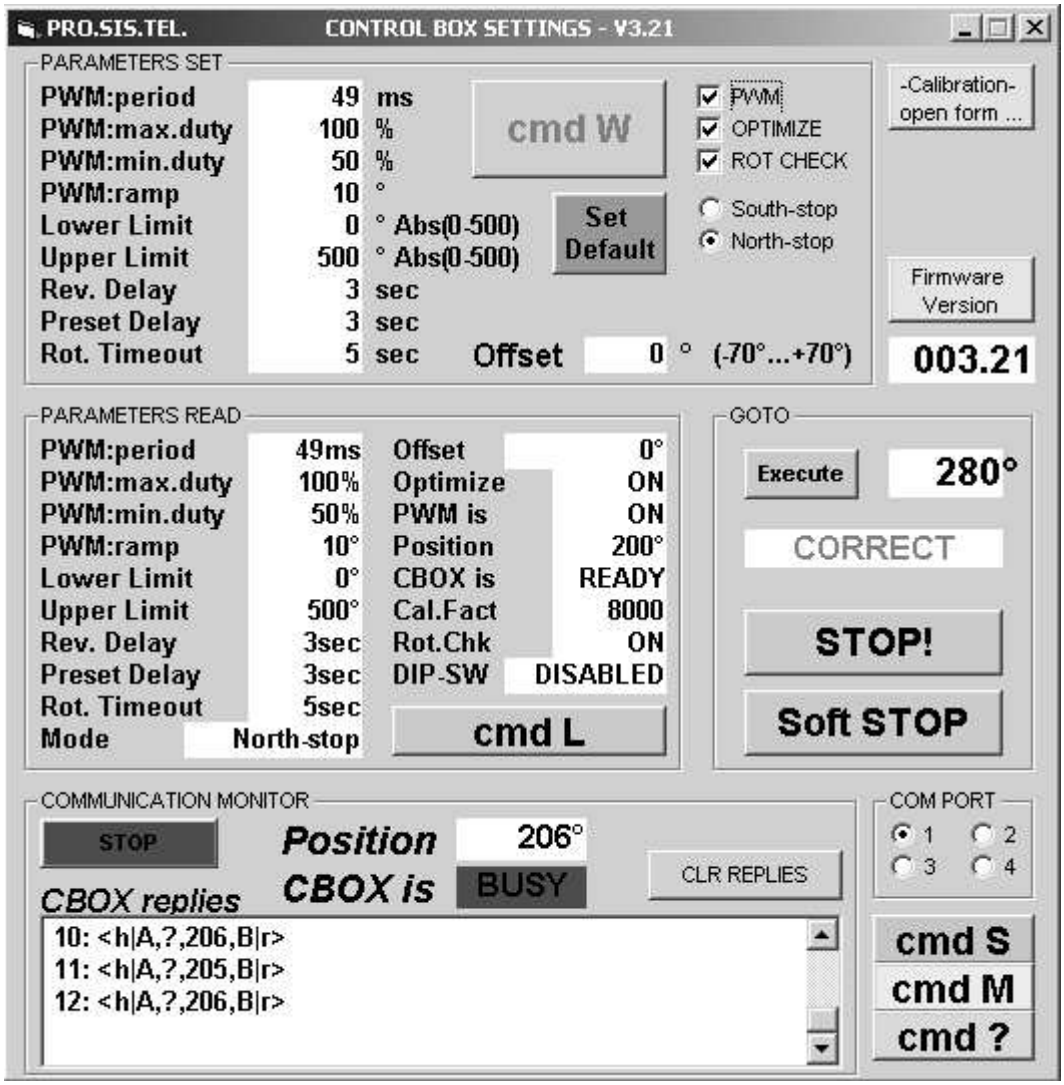

Fig.4: Rotation started (Execute button) with monitor active.

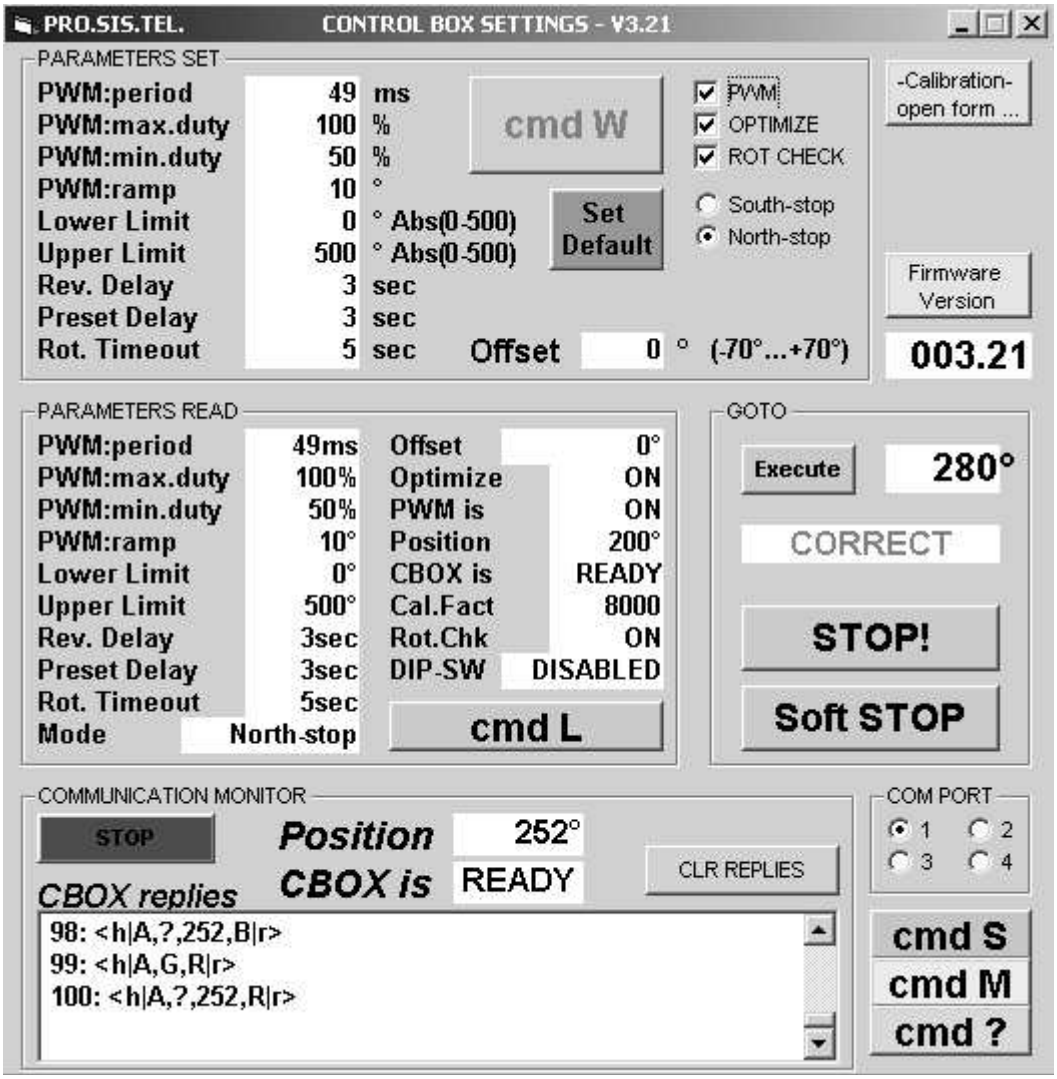

Fig.5:
STOP command issued and executed.
Note the CBOX replies #98 (the position when the STOP has been issued), #99 (the STOP acknoledge), #100 (the STOP has been executed)

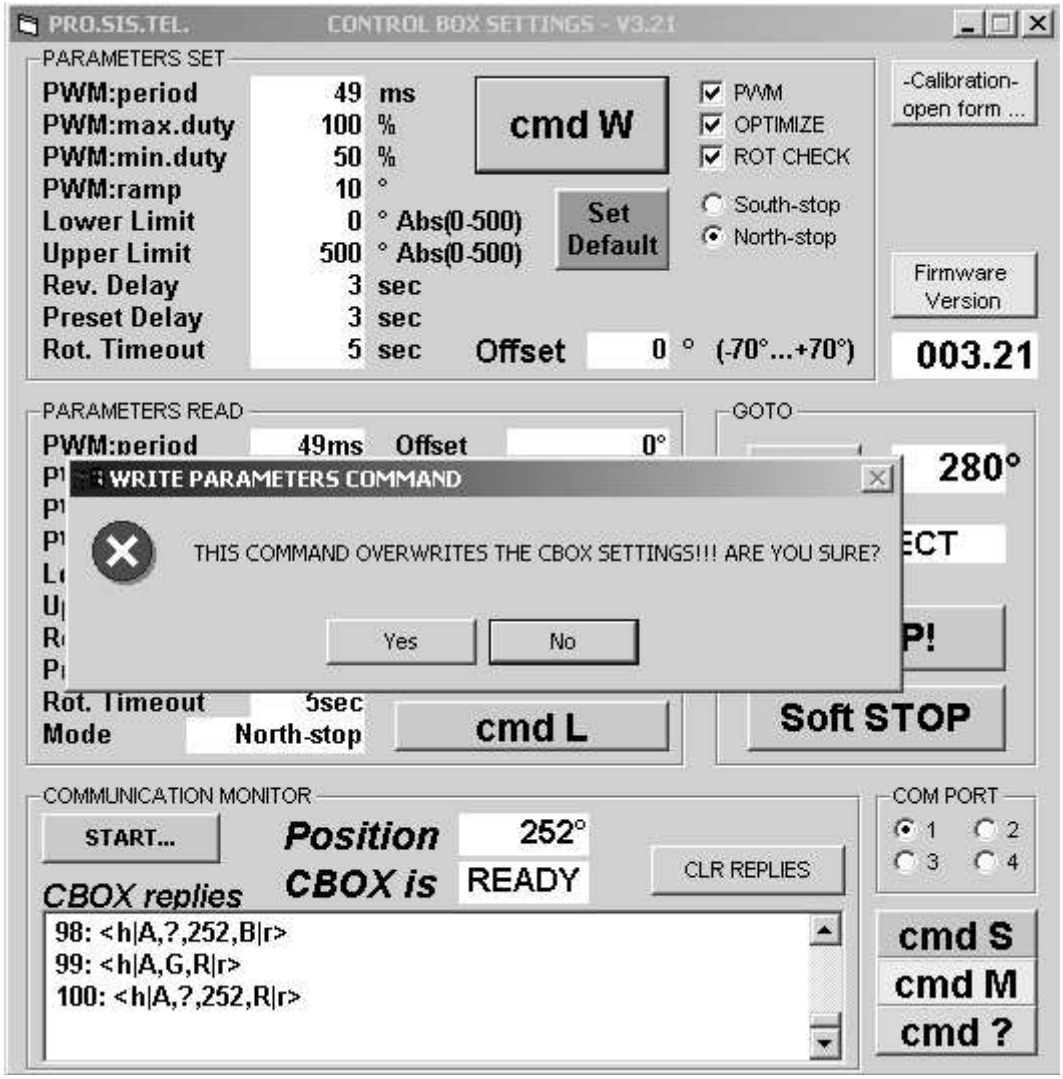

Fig.6:
“cmd W” attempt: the dialog box appears
the default answer is NO

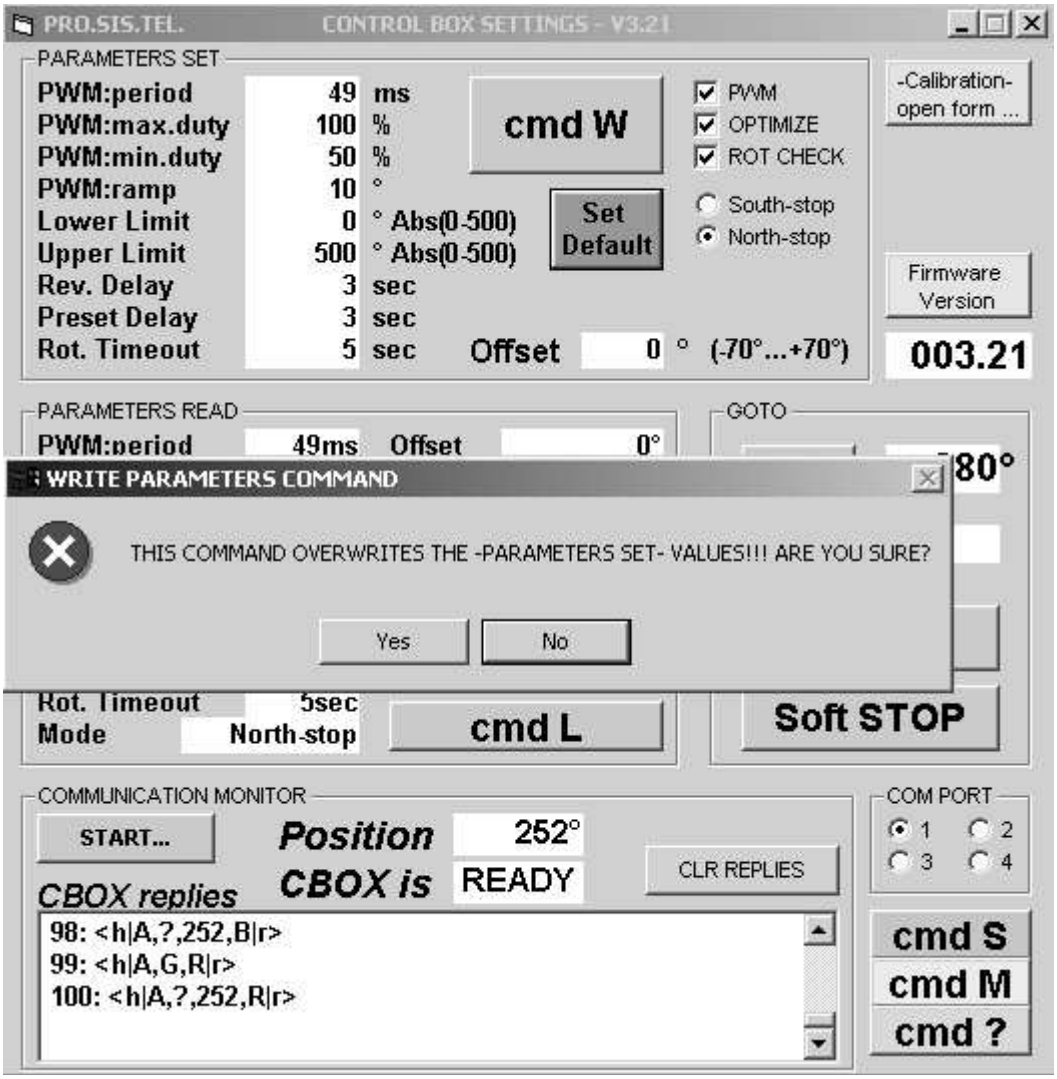

Fig.7:
“Set Default” attempt: the dialog box appears
the default answer is NO

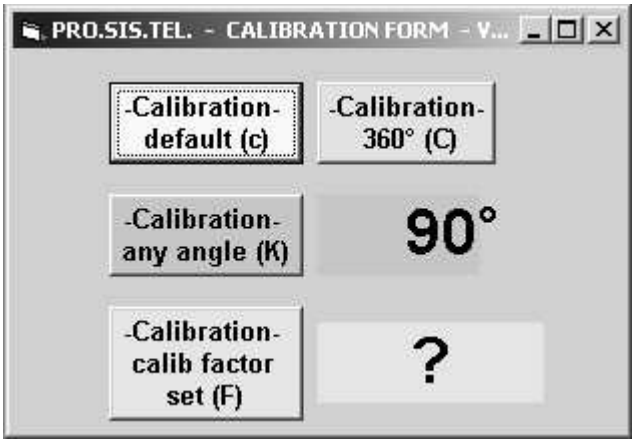

Fig.8:
Calibration form