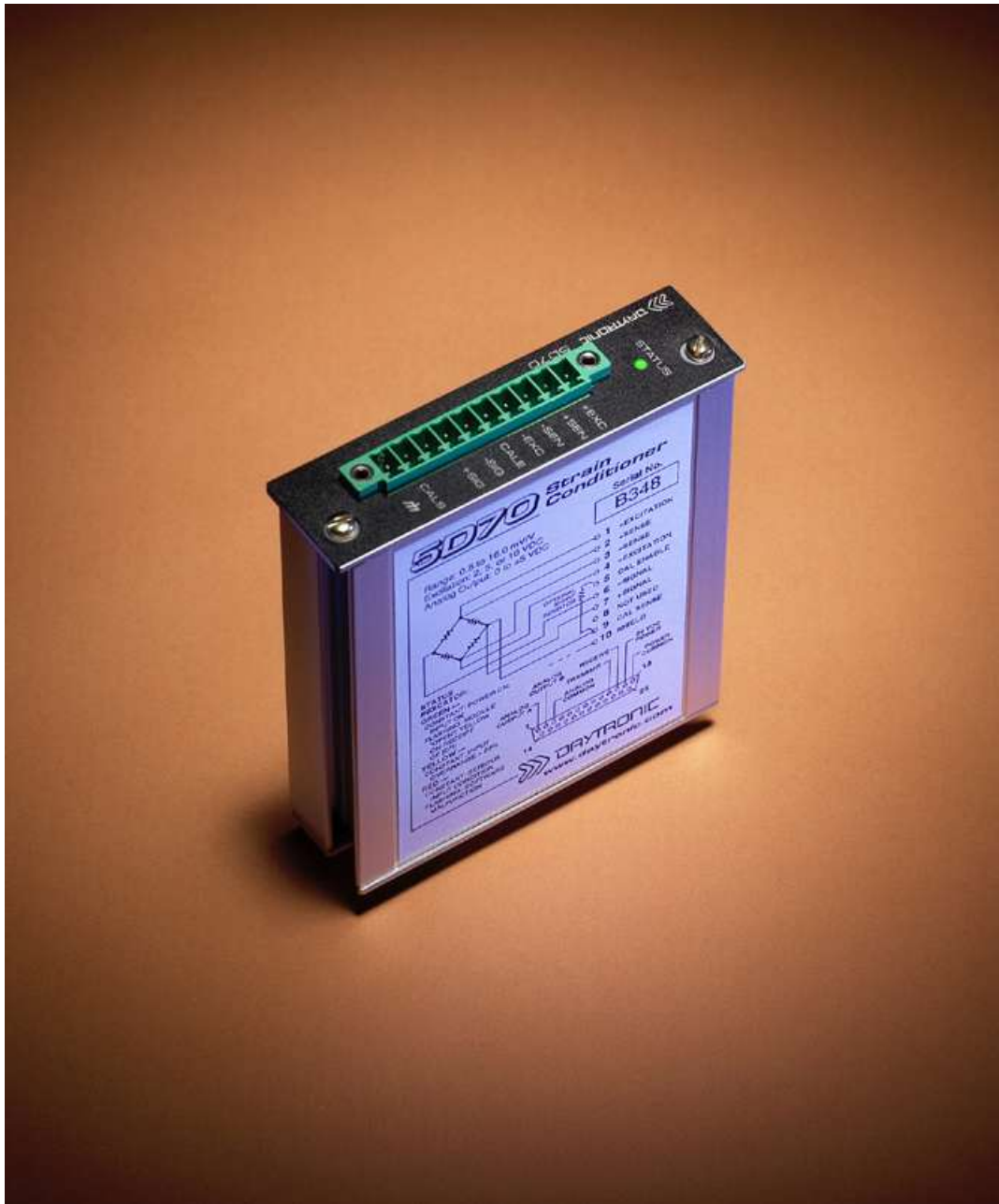


5D Windows Configurator

Instruction Manual



5D Windows Configurator

Introduction

The Windows configurator for 5D is a utility package that is sent out with every unit. It can also be downloaded from the web at no cost. It is a Windows based, pull down menu driven package. The main feature of the software package is to provide a step-by-step format for the configuration and calibration of the module.

Some of the other features of the program are Terminal emulation for the keyboard entry of Mnemonic commands, and File backup of configuration information. Any or all of these items may be useful in troubleshooting the module.

Installation

If you have downloaded the software from the web, you will need to unzip the file to a folder. Open the folder and run the program setup.exe, or if you are using the CD you need to run setup.exe located in the 5D-WCFG folder. The installation program runs, it will prompt you to select a destination for the program files. At this point you can select a destination different from the default, or press the button and let it install in the default location.

To launch the software program select the START button on your Desk Top. Select all programs and scroll down if needed to find the 5D Configurator Icon. Click on the Icon and run the configurator software. The software boots to the 5D home screen. (Fig.1).

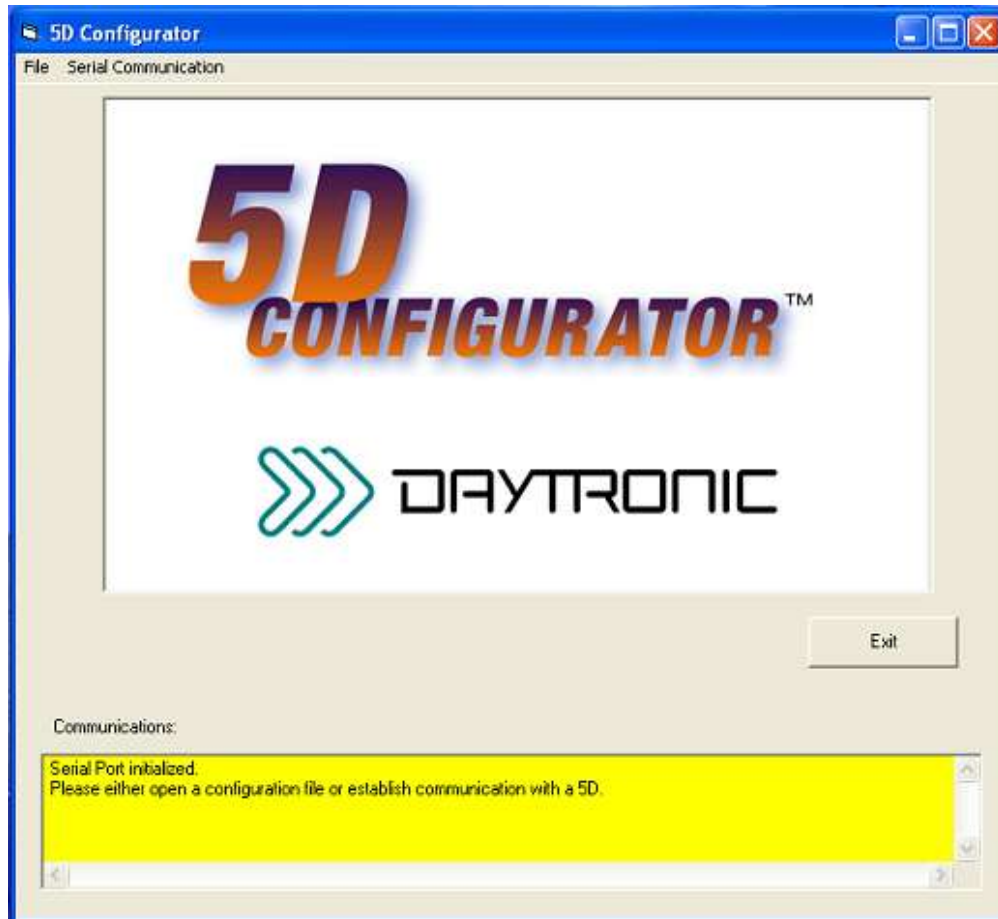


Fig. 1

Yellow Communications Field

This field reports all communication information and operator instructions. In the configuration screen, the yellow screen will report field information when the cursor lies in that field. In the calibration screen, calibration information and instructions will be displayed.

Pull Down Menus

Communication

From the pull down menu select the **Initialize Port** as shown in figure 2. Select the com port (Fig.3). You will use this for two way communication. There is no need to setup the communication protocols since they are fixed in the 5D module. Press DONE after selecting the Comm port.

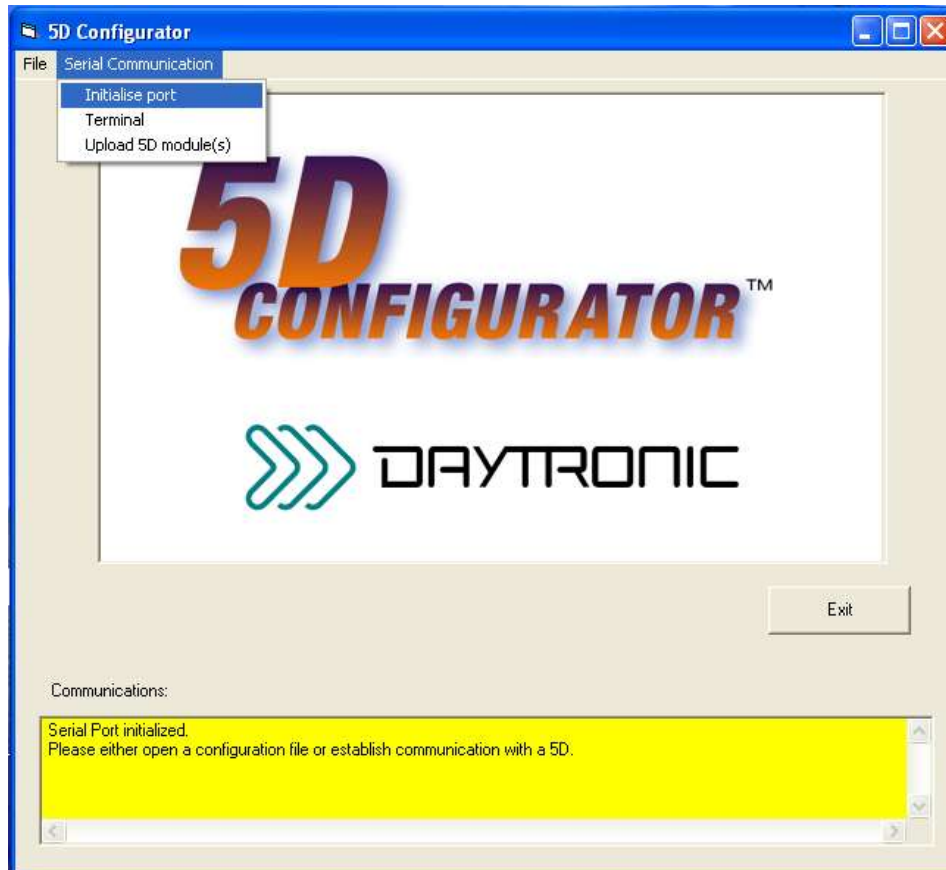


Fig.2

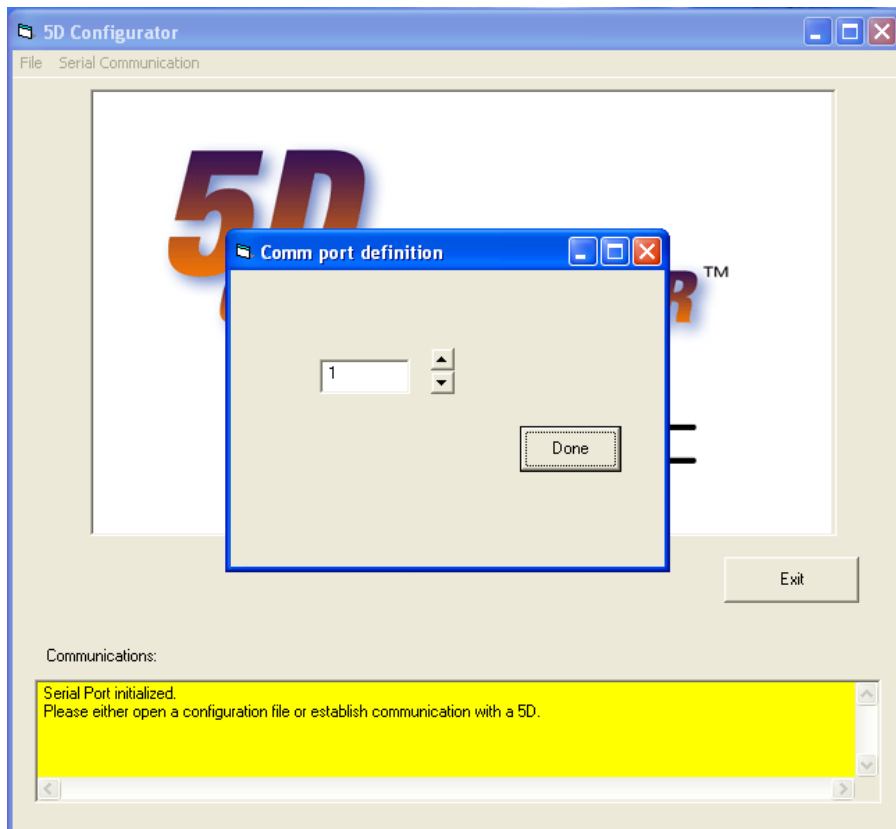


Fig.3

Upload Module Information

From the communication pull down menu select the **upload 5D module(s)** selection as in figure 4. Once you select upload the software will establish communication with the 5D module or modules and proceed to upload the configuration for each module. Figures 5 and 6 illustrate the upload of a single module and multiple modules respectively.

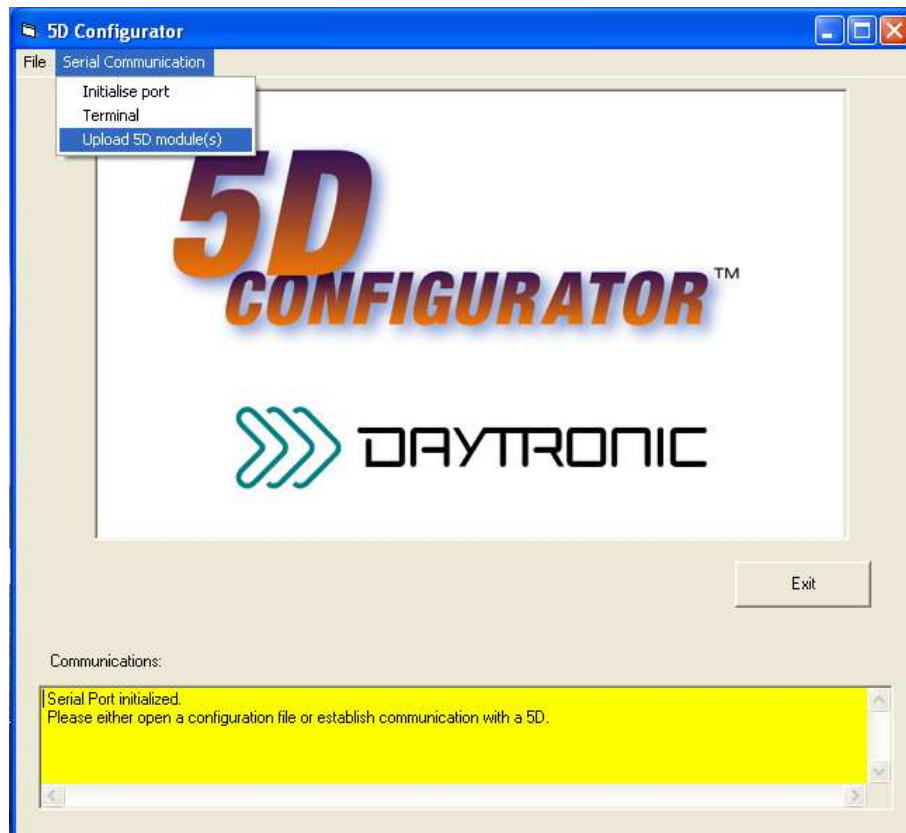


Fig.4

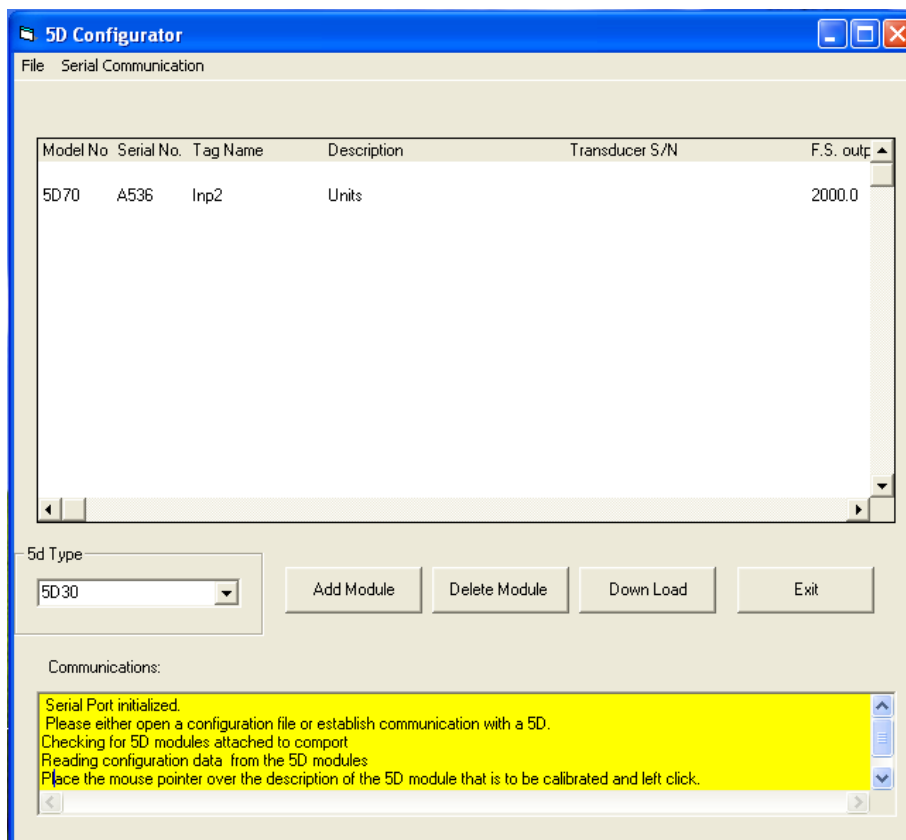


Fig.5

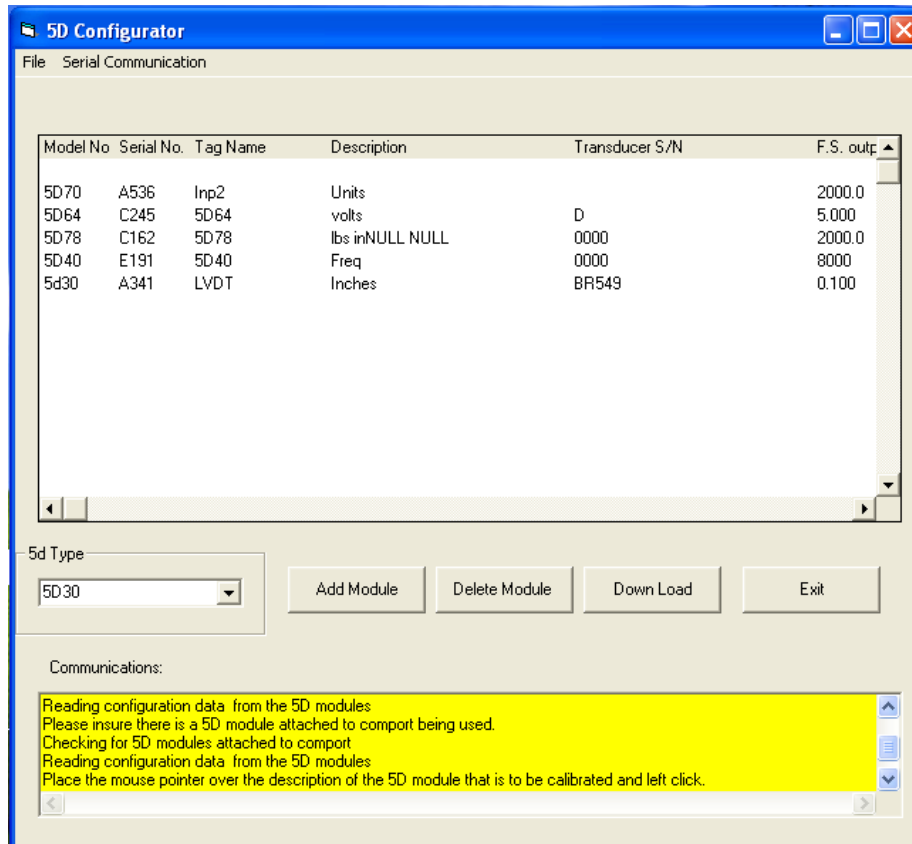


Fig.6

Configuration

To enter into the module configuration page, double click on the module you wish to configure, from those displayed in the window depicted in figure 5 or 6. Each type of module will have its own setup page as depicted in the following figures. At the top of each page the module type and serial number are displayed. There are three sections to the configuration page. The first is the setup information. Most important is the transducer information section. From this information a calculated calibration is performed and displayed in the **Calculated parameters** section. The third section is the **Current parameters** section. This displays the current calibration values that reside in the module. After the calibration values are downloaded and / or the two point calibration is completed, then the Current parameters will be changed.

5D70

Current 5D configuration

Module Type 5D70 5D maximum output is 5 Vdc Serial Number A536 Tag Name: 5D70

Description: DC Strain Engineering Units: Eng. Units

Transducer model/serial number: S/N Eng. Units

transducer Rated Full Scale Load: 2000.0 Eng. Units

Maximum Expected Transducer Load: 2000.0 Eng. Units

Transducer sensitivity: 3 mV/V

Zero Offset Compensation 5D Input: Eng. Units (0) Mv

Full scale negative transducer input: -2000.0 Eng. Units

Excitation: 10 Vdc

A output Analog filter: 20Hz

B output Analog filter: 20Hz

Calculated parameters:
RNG=4
2.08 - 3.11 mV/V
MSF=1.5000
MID=00.00
SYM=0.00

Current parameters:
RNG=2.08 - 3.11 mV/V
2.08 - 3.11 mV/V
MSF=1.5000
MID=00.00
SYM=0.00

Date last Calibrated: 5/7/2012

Finished downloading configuration

Buttons: Download, Cancel changes, Exit, Save, Two point calibration, Next 5D, Last 5D

Fig.7

The Description, Tag Name, Transducer model/serial number, and Engineering Units windows are customer generated information. They have no effect on the modules performance.

Transducer Rated Full Scale- Enter in the transducer full scale rating in engineering units, as stated by the manufacturer.

Maximum Expected Transducer Load- Enter in the maximum load you expect to achieve for a full scale output of the module (+/-5vdc or +/-10vdc).

Transducer Sensitivity- Enter in the manufacturers rated output sensitivity in terms of mv/volt. This information is available from the Manufacturers Data Sheet.

Zero Offset- Sets the preamplified offset. The value must be between +/-20% of the **Rated Full Scale Input Range**.

Full Scale Negative Transducer Input- Reflect the negative value of the **Maximum Expected Transducer Load**.

Excitation- For the 5D70 module you have three excitation levels of 2vdc, 5vdc or 10vdc.

A and B Output Analog Filter- Sets the low-pass cutoff frequencies used to filter the module's post-amplified output. If any of the 3 lowest filter settings are selected then both A&B must be the same.

The **Cancel changes** button restores prior calibration values. The **Save** button allows you to save the file to the PC. The **Exit** button ends the calibration session.

Once you have entered in all the configuration information you must download it to the module. Pressing the **Download** button will initiate the download of the configuration settings. The Two Point Calibration button is grayed out at this point. Once the download is complete the **Two Point Calibration** button will darken allowing you to perform a two point calibration.

To perform a two point calibration, press the **Two Point Calibration** button. The calibration screen comes up as in figure 8. From here press the **Start Calibration** button and follow the instructions in the yellow window to perform a dead weight or shunt calibration.

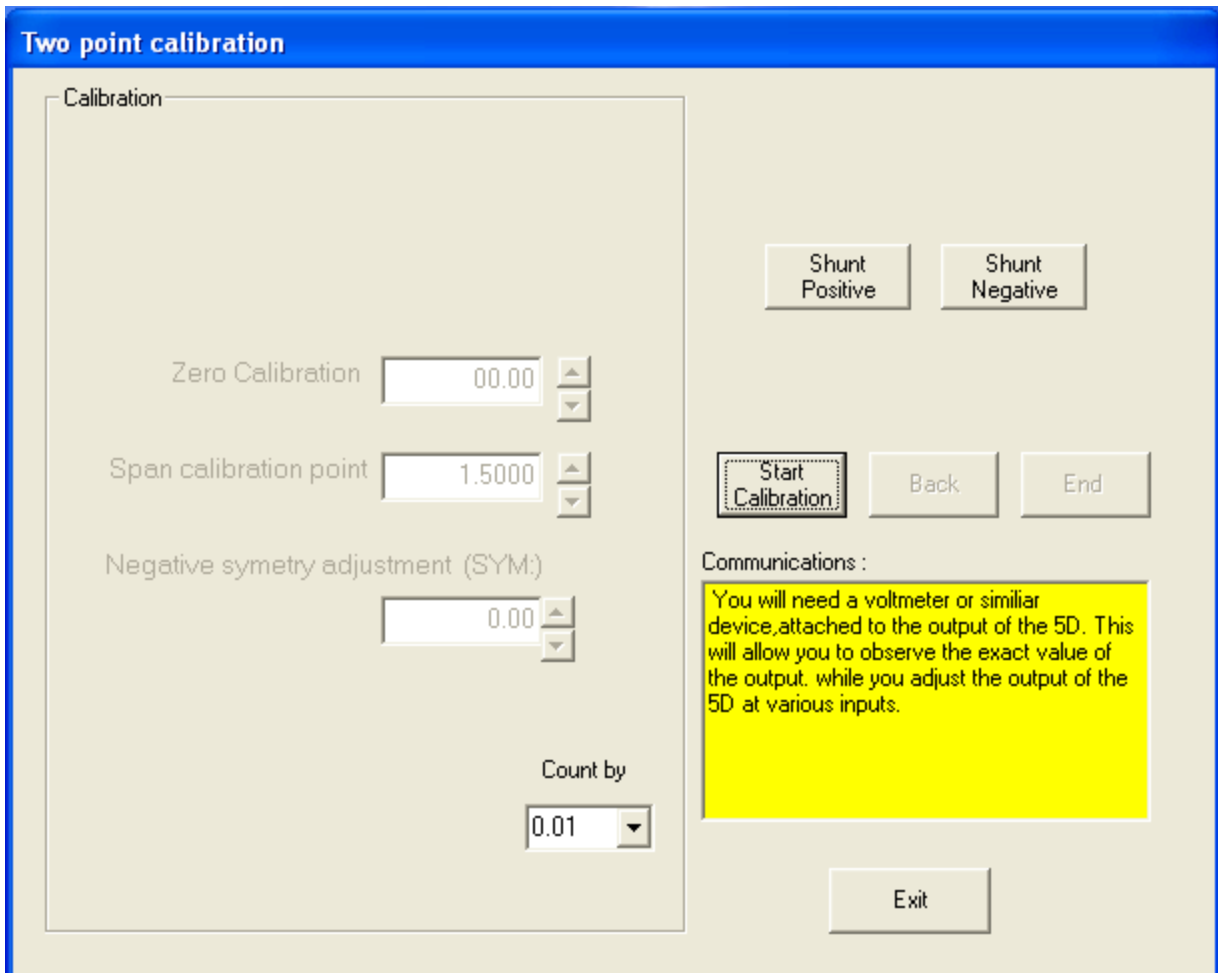


Fig.8

5D78

Current 5D configuration

Module Type 5D78 5D maximum output is 5 Vdc Serial Number C162 Tag Name: 5D78

Description: AC Strain Engineering Units: Torque

Transducer model/serial number: S/N Torque

Transducer Rated Full Scale Load: 1000 Torque

Maximum Expected Transducer Load: 1000 Torque

Transducer sensitivity: 2 in mV/V

Zero Offset Compensation 5D Input: Torque 0 Torque
 Mv

Full scale negative transducer input: -1000 Torque

Excitation frequency: 3.27 KHz

A output Analog filter: 0.2Hz

B output Analog filter: 0.2Hz

Buttons: Download, Cancel changes, Exit, Save, Two point calibration, **Next 5D**, Last 5D

Communications: Found 5D module

Calculated parameters:
RNG=3
1.56 - 2.07 mV/V
MSF=1.3333
MIO=00.00
SYM=0.00

Current parameters:
RNG= 3
1.56 - 2.07 mV/V
Msf= 1.3333
MIO= 00.00
SYM= 0.00

Date last Calibrated: 5/7/2012

Fig.9

The Description, Tag Name, Transducer model/serial number, and Engineering Units windows are customer generated information. They have no effect on the modules performance.

Transducer Rated Full Scale- Enter in the transducer full scale rating in engineering units, as stated by the manufacturer.

Maximum Expected Transducer Load- Enter in the maximum load you expect to achieve for a full scale output of the module (+/-5vdc or +/-10vdc).

Transducer Sensitivity- Enter in the manufacturers rated output sensitivity in terms of mv/volt. This information is available from the Manufacturers Data Sheet.

Zero Offset- Sets the preamplified offset. The value must be between +/-20% of the **Rated Full Scale Input Range**.

Full Scale Negative Transducer Input- Reflect the negative value of the **Maximum Expected Transducer Load**.

Excitation Frequency- Set the excitation frequency output of the 5D78. The three choices are 3.27 KHz, 5 KHz, and 10 KHz.

A and B Output Analog Filter- Sets the low-pass cutoff frequencies used to filter the module's post-amplified output. If any of the 3 lowest filter setting are selected then both A&B must be the same.

The **Cancel changes** button restores prior calibration values. The **Save** button allows you to save the file to the PC. The **Exit** button ends the calibration session.

Once you have entered in all the configuration information you must download it to the module. Pressing the **Download** button will initiate the download of the configuration settings. The Two Point Calibration button is grayed out at this point. Once the download is complete the **Two Point Calibration** button will darken allowing you to perform a two point calibration.

To perform a two point calibration, press the **Two Point Calibration** button. The calibration screen comes up as in figure 10. From here press the **Start Calibration** button and follow the instructions in the yellow window to perform a dead weight or shunt calibration.

Two point calibration

Calibration

Phase shift

Zero Calibration

Span calibration point

Negative symetry adjustment (SYM:)

Linearity adjustments

Positive (LNP:) Count by

Negative (LNN:)

Shunt Positive Shunt Negative

Start Calibration Back End

Communications :

You will need a voltmeter or similar device, attached to the output of the 5D. This will allow you to observe the exact value of the output, while you adjust the output of the 5D at various inputs.

Exit

Fig.10

5D40

Current 5D configuration

Module Type 5D40 5D maximum output is 5 Vdc Serial Number E191 Tag Name: 5D40

Description: [Empty] Freq: [Empty] Engineering Units: HERTZ Cal Mode: Frequency

Transducer model/serial number: [Empty] S/N: [Empty]

Maximum Expected Transducer Load: 8000 Hertz

Zero Offset Compensation 5D Input: Hertz 0 Hertz
 mv

Tracking Window Width: OFF Left click button to set tww to on: ON

Sensitivity: 250mV-10V

A output Analog filter: 2000Hz

B output Analog filter: 2000Hz

Calculated parameters:
RNG=A
6240 - 8319 Hz
MSF=1.3333
MOD=00.00
SEN=1

Current parameters:
RNG= A
6240 - 8319 Hz
Msf= 1.3333
MOD= 00.00
Sen= 1

Date last Calibrated: 5/7/2012

Communications:
Found 5D module

Buttons: Download, Cancel changes, Exit, Save, Two point calibration, Next 5D, Last 5D

Fig.11

The Description, Tag Name, and Transducer model/serial number windows are customer generated information. They have no effect on the modules performance. The Engineering Units window is fixed at Hertz or RPM depending on the Cal Mode selected.

Cal Mode- Choose between Frequency and RPM for the calibration mode.

Pulses per revolution or the number of gear teeth- Refer to figure 12, Enter the number of pulses per revolution expected from a shaft or gear.

Maximum Expected Transducer Load- Enter in the maximum load you expect to achieve for a full scale output of the module (+/-5vdc or +/-10vdc).

Zero Offset Compensation 5D input- Sets the preamplified offset. The value must be between +/-20% of the **Rated Full Scale Input Range**.

Tracking Window Width- Sets the width of the module's cycle-to-cycle tracking window between 1% and 9.9% of full scale.

Sensitivity- Sets the gain of the differential amplifier preceding the 5D40's Schmidt trigger to the desired input sensitivity.

A and B Output Analog Filter- Sets the low-pass cutoff frequencies used to filter the module's post-amplified output. If any of the 3 lowest filter setting are selected then both A&B must be the same.

Current 5D configuration

Module Type 5D40 5D maximum output is 5 Vdc Serial Number F196 Tag Name: 5D40

Description 5D40 Engineering Units RPM Cal Mode Rpm

Transducer model/serial number 0000

Pulses per revolution or the number of gear teeth 60

Maximum Expected Transducer Load 8000 RPM

Zero Offset Compensation 5D Input RPM mv 0 RPM

Tracking Window Width OFF Left click button to set tww to on

Sensitivity 250mV-10V

A output Analog filter 20Hz

B output Analog filter 20Hz

Download Cancel changes Exit Save Two point calibration

Communications:

Choose between RPM and Frequency calibration.

Calculated parameters:

RNG=A
6240 - 8319 Hz
MSF=1.3333
MOD=00.00
SEN=1

Current parameters:

Date last Calibrated 8/25/2010

Fig. 12

The **Cancel changes** button restores prior calibration values. The **Save** button allows you to save the file to the PC. The **Exit** button ends the calibration session.

Once you have entered in all the configuration information you must download to the module. Pressing the **Download** button will initiate the download of the configuration settings. The Two Point Calibration button is grayed out at this

point. Once the download is complete the **Two Point Calibration** button will darken allowing you to perform a two point calibration.

To perform a two point calibration, press the **Two Point Calibration** button. The calibration screen comes up as in figure 13. From here press the **Start Calibration** button and follow the instructions in the yellow window to perform a dead weight calibration.

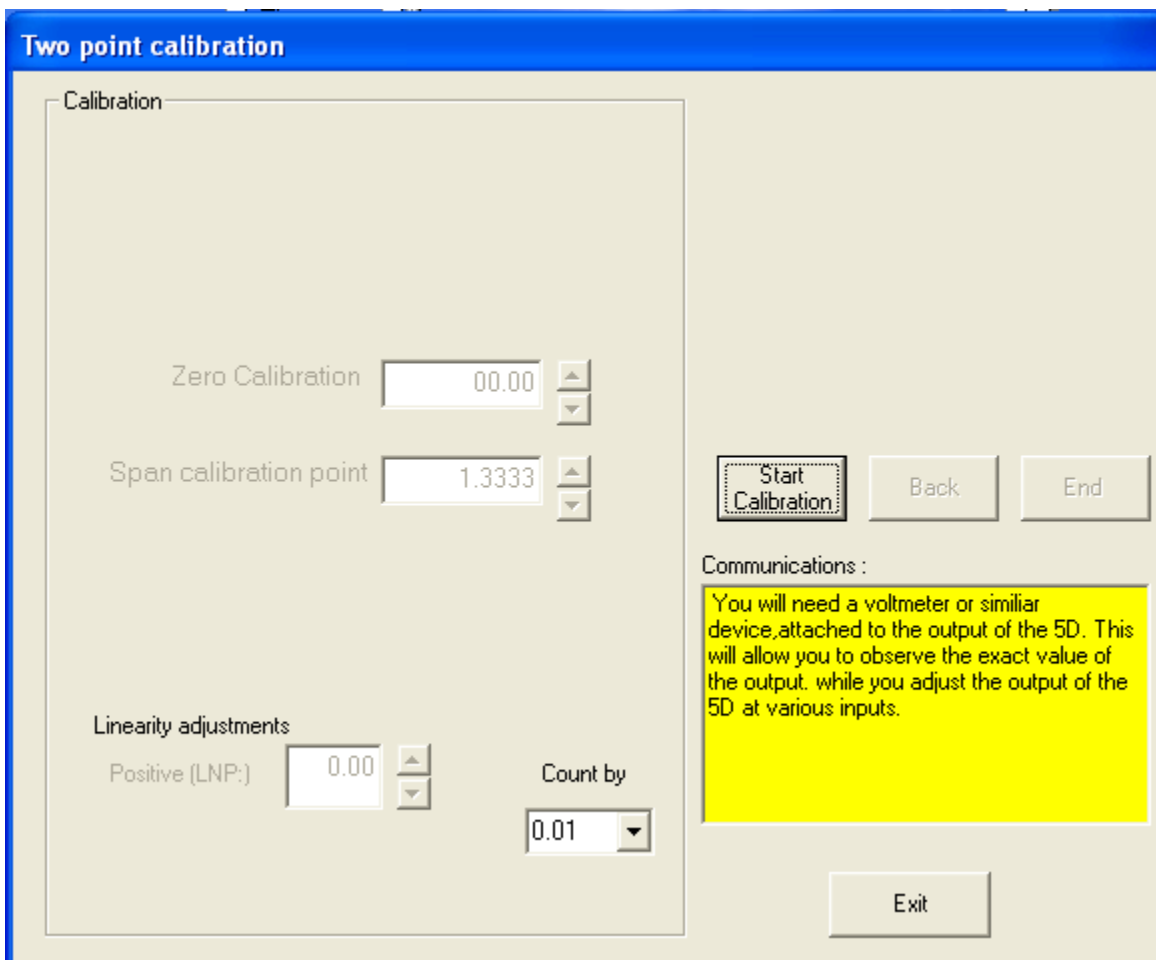


Fig.13

5D30

Current 5D configuration

Module Type 5d30 5D maximum output is 10 Vdc Serial Number A341 Tag Name: 5D30

Description LVDT Units inches

Transducer model/serial number S/N

Rated transducer Full Scale displacement 1.000 in inches

Maximum Expected Transducer Load 1.000 in inches

Transducer sensitivity 1.8 in mV/V/0.001 inches

Zero Offset Compensation 5D Input inches 0 inches
 Mv

Full scale negative transducer input -1.000 inches

Excitation frequency 5.00 KHz

A output Analog filter 20Hz

B output Analog filter 20Hz

Calculated parameters
RNG=A
1664 - 2599 mV/V
MSF=1.1250
MID=00.00
SYM=0.00

Current parameters
RNG=A
1664 - 2599 mV/V
Msf= 1.1250
MID= 00.00
SYM= 0.00

Download Cancel changes Exit Save Two point calibration Next 5D Last 5D

Communications:
Found 5D module

Date last Calibrated
5/7/2012

Fig.14

The Description, Tag Name, Transducer model/serial number, and Engineering Units windows are customer generated information. They have no effect on the modules performance.

Units- Select units of measurement in either inches or millimeters.

Rated Transducer Full Scale Displacement- Enter in the transducers full scale rating in engineering units, as stated by the manufacturer.

Maximum Expected Transducer Load- Enter in the maximum load you expect to achieve for a full scale output of the module (+/-5vdc or +/-10vdc).

Transducer Sensitivity- Enter in the manufacturers rated output sensitivity in terms of mv/volt/units of measurement. This information is available from the Manufacturers Data Sheet.

Zero Offset- Sets the preamplified offset. The value must be between $\pm 20\%$ of the **Rated Full Scale Input Range**.

Full Scale Negative Transducer Input- Reflect the negative value of the **Maximum Expected Transducer Load**.

Excitation Frequency- Set the excitation frequency output of the 5D78. The three choices are 3.27 KHz, 5 KHz, and 10 KHz.

A and B Output Analog Filter- Sets the low-pass cutoff frequencies used to filter the module's post-amplified output. If any of the 3 lowest filter settings are selected then both A&B must be the same.

The **Cancel changes** button restores prior calibration values. The **Save** button allows you to save the file to the PC. The **Exit** button ends the calibration session.

Once you have entered in all the configuration information you must download to the module. Pressing the **Download** button will initiate the download of the configuration settings. The Two Point Calibration button is grayed out at this point. Once the download is complete the **Two Point Calibration** button will darken allowing you to perform a two point calibration.

To perform a two point calibration, press the **Two Point Calibration** button. The calibration screen comes up as in figure 10. From here press the **Start Calibration** button and follow the instructions in the yellow window to perform a dead weight or shunt calibration.

Two point calibration

Calibration

Phase shift

Zero Calibration

Span calibration point

Negative symmetry adjustment (SYM:)

Linearity adjustments

Positive (LNP:) Count by

Negative (LNN:)

Start Calibration Back End

Communications :

You will need a voltmeter or similar device, attached to the output of the 5D. This will allow you to observe the exact value of the output, while you adjust the output of the 5D at various inputs.

Exit

Fig.15

5D64

The screenshot displays the 'Current 5D configuration' window for a 5D64 module. At the top, it shows 'Module Type 5D64', '5D maximum output is 5 Vdc', 'Serial Number C245', and 'Tag Name: 5D64'. The 'Description' field contains 'Analog voltage'. Below this, there are fields for 'Transducer model/serial number' (S/N), 'Engineering Units' (Volts), and 'Cal Mode' (Volts). A 'Calculated parameters' box on the right lists: RNG=D, 4.16 - 5.19 VDC, MSF=1.2500, MID=00.00, and SYM=0.05. Further down, there are fields for 'Maximum Expected Transducer Load' (5.000 Volts), 'Zero Offset Compensation 5D Input' (0 Volts), and 'Full scale negative input to 5d64' (-10.000 Volts). Two 'Analog filter' dropdowns for 'A output' and 'B output' are both set to '200Hz'. A row of buttons includes 'Download', 'Cancel changes', 'Exit', 'Save', 'Two point calibration', 'Next 5D', and 'Last 5D'. At the bottom, a 'Communications' section shows a yellow-highlighted message: 'Found 5D module'. The 'Date last Calibrated' is 5/7/2012.

Fig.16

The Description, Tag Name, Transducer model/serial number, and Engineering Units windows are customer generated information. They have no effect on the modules performance.

Cal Mode- Cal mode selection to read volts directly, Transducer @volts Full Scale (Fig.17) or Transducer @volts/Engineering units (Fig.18).

Transducer Rated Full Scale Load- Enter in the transducer full scale rating in engineering units, as stated by the manufacturer.

Maximum Expected Transducer Load- Enter in the maximum load you expect to achieve for a full scale output of the module (+/-5vdc or +/-10vdc).

Transducer Sensitivity in Volts- (Figure 17) Enter in the manufacturers rated output sensitivity in terms of volts. This information is available from the Manufacturers Data Sheet.

Zero Offset- Sets the preamplified offset. The value must be between $\pm 20\%$ of the **Rated Full Scale Input Range**.

Full Scale Negative Transducer Input- Reflect the negative value of the **Maximum Expected Transducer Load**.

A and B Output Analog Filter- Sets the low-pass cutoff frequencies used to filter the module's post-amplified output. If any of the 3 lowest filter setting are selected then both A&B must be the same.

Current 5D configuration

Module Type 5D64 5D maximum output is 5 Vdc Serial Number C245 Tag Name: 5D64

Description Analog voltage Engineering Units lbs Cal Mode Transducer@Volts F.S.

Transducer model/serial number S/N

transducer Rated Full Scale Load 3000 lbs

Maximum Expected Transducer Load 3000 lbs

Transducer sensitivity in Volts 10.000 Volts

Zero Offset Compensation 5D Input lbs 0 lbs
 mV

Full scale negative input to 5d64 -3000 lbs

A output Analog filter 200Hz

B output Analog filter 200Hz

Calculated parameters
RNG=F
7.8 - 10.39 VDC
MSF=1.3333
MID=00.00
SYM=0.00

Current parameters
RNG=7.8 - 10.39 VDC
4.16 - 5.19 VDC
MSF=1.3333
MID=00.00
SYM=0.00

Download Cancel changes Exit Save Two point calibration

Communications:
Finished downloading configuration

Date last Calibrated 5/10/2012

Fig. 17

Cal Mode selected for Transducer @ Volts F.S.

Fig. 18

Cal Mode selection for Transducer @ Volts/Engineering units

The **Cancel changes** button restores prior calibration values. The **Save** button allows you to save the file to the PC. The **Exit** button ends the calibration session.

Once you have entered in all the configuration information you must download to the module. Pressing the **Download** button will initiate the download of the configuration settings. The Two Point Calibration button is grayed out at this point. Once the download is complete the **Two Point Calibration** button will darken allowing you to perform a two point calibration.

To perform a two point calibration, press the **Two Point Calibration** button. The calibration screen comes up as in figure 19. From here press the **Start Calibration** button and follow the instructions in the yellow window to perform a dead weight calibration.

Two point calibration

Calibration

Zero Calibration

Span calibration point

Negative symmetry adjustment (SYM:)

Linearity adjustments

Positive (LNP:) Count by

Negative (LNN:)

Start Calibration **Back** **End**

Communications :

You will need a voltmeter or similar device, attached to the output of the 5D. This will allow you to observe the exact value of the output, while you adjust the output of the 5D at various inputs.

Exit

Fig. 19

Terminal

From the communication pull down menu select **Terminal** as shown in Figure 20.

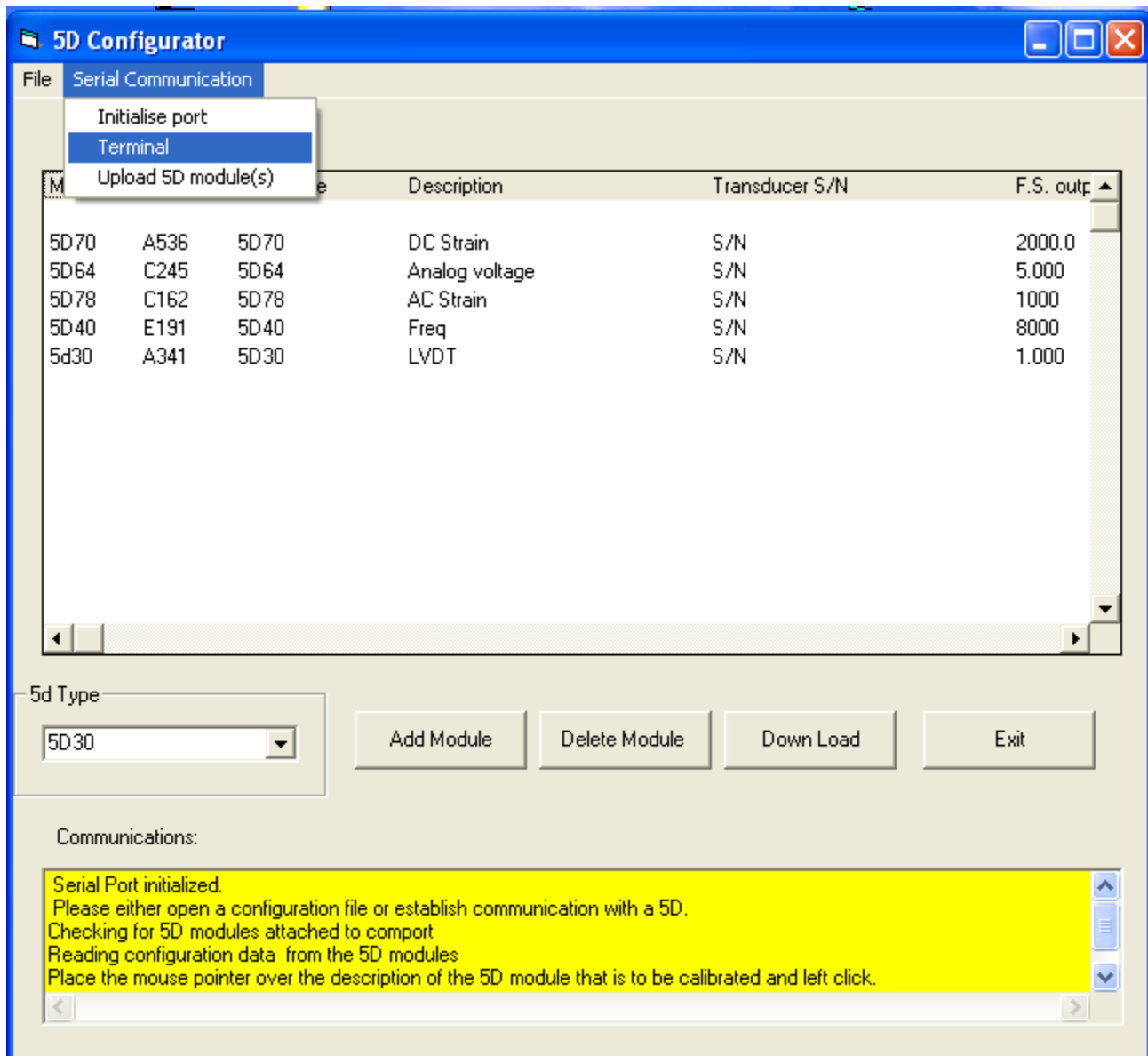


Fig. 20

The following display will appear with a flashing cursor in the upper left hand corner.

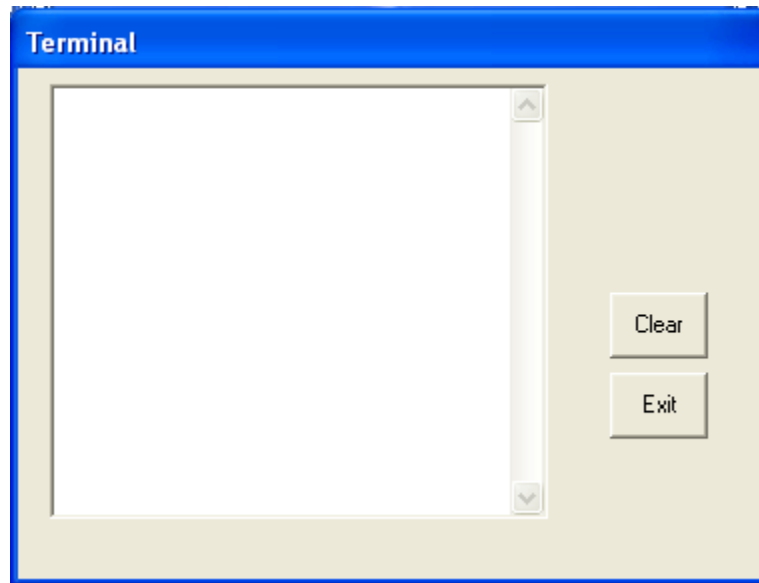


Fig.21

Refer to the command summary in the appropriate 5D manual for all the Mnemonic commands and response syntax. Figure 22 shows the issuance of the QID command and subsequent response of A536 which is the serial number of the attached 5D.

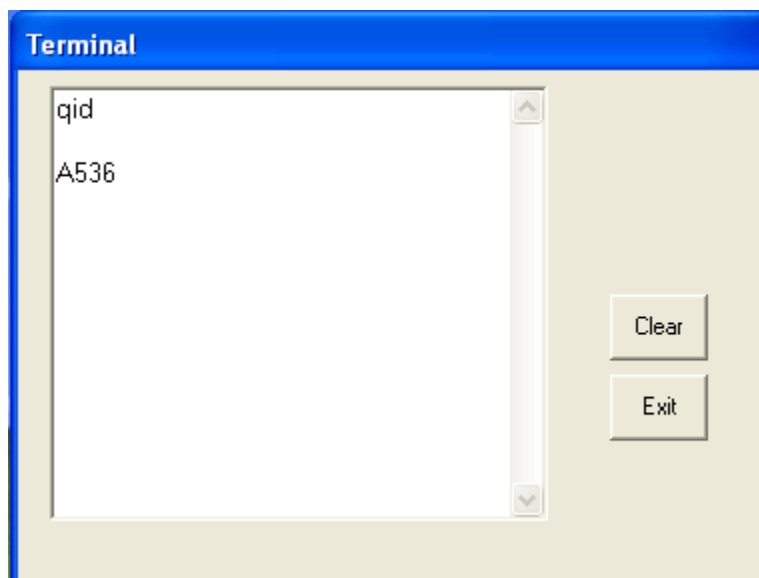


Fig. 22