



06-005B

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Extracting Parameters, Readings, Settings, and Data using HyperTerminal

I. PURPOSE:

The following procedure guides you through extracting various parameters and readings from Teledyne-API instruments through HyperTerminal.

It is important to capture these parameters before resetting memory, upgrading firmware, and for periodic monitoring for maintenance or troubleshooting.

Here is a list of commands:

? (displays the Firmware version Help screen and available commands)

t list all (front panel test parameters)

v list ! (VARs parameters: slope, offset, factory options, etc.)

d list (signal I/O parameters and readings)

d print (IDAS channel parameters in analyzers)

c print (sequences for calibrators)

c leveltable print (Dasibi dot command levels for M403, M700, M700E, M703E

calibrators with LEADS version firmware)

prnt (printout of MFC calibration tables for M700/ M700E calibrator mass flow controllers)

II. TOOLS and EQUIPMENT:

A computer with HyperTerminal program (HyperTerminal is on all Windows computers).

DB9 to DB9 Female to Female (straight through) RS-232 Serial Communications cable.

If your computer only has a USB serial port, you will need a USB to RS232 adapter

III. PARTS and MATERIALS:

N/A

III. REFERENCE:

Service Note 05-023 - APICOM and IDAS Procedure Tutorial

Service Note 02-039 - Downloading New Firmware into "E" Series Analyzers

IV. PROCEDURE:

1. The HyperTerminal baud rate must match the Analyzer / Calibrator baud rate.
2. Check the baud rate of the instrument.
 - a. Check baud rate on "E" series instrument by pressing SETUP – MORE – COMM – COM1 – SET to view the COM1 BAUD RATE.
 - b. Check the baud rate of the "A" series instrument by pressing SETUP – MORE – COMM – BAUD to view the COM BAUD RATE.
3. Connect computer to instrument directly with a RS-232 cable.
4. Open HyperTerminal and type a name for the connection (such as API Direct), and press OK. Depending on your version of Microsoft Windows, HyperTerminal is located at: Start / All Programs / Accessories / Communications / HyperTerminal (Windows XP).

5. Select Connect using COM1 (or your computers active serial / RS232 com port), and press OK. For USB to RS 232 adapters, usually the com port is higher than COM3, (example: COM4).
6. Use the bits per second dropdown and select the Baud rate from step 2.
7. Ensure Data bits = 8, Parity = None, Stop bits = 1, Flow control = Xon / Xoff.
8. Now press OK.

NOTE: If using multi-drop, any command issued needs to have the MACHINE ID included in the command. Examples: ? 0200 or t 0200 list (if 0200 is the machine ID set in VARS)

9. Type a question mark ? (or ? 200) (even if the ? character does not display on the screen) and press Enter (↵).
10. If the instrument does not respond with the help menu, go to the back of the instrument and observe the red / green LEDs on the back panel near the serial com ports. If only one LED is lit, change the position of the DCE/DTE switch on the back of the instrument, then both LEDs should be lit. Now type a question mark again (?) and Enter (↵), the help menu should display.

NOTE: If there is still no response, contact Teledyne-API customer technical service at 1-800-324-5190 or api-customerservice@teledyne.com. There may be some other things that need to be checked, such as a bad cable, other programs running that interfere, host computer problems, or an analyzer problem.

11. If typing characters do not display on the screen, press the "Control" key and the "T" key together (Ctrl + T) to turn on terminal mode, now typing will echo onto the screen.
12. Type t list all (note: there is a space in between t and list and all), and press Enter (↵).
13. The instrument will return with a list of all of the test parameters, just as if you pressed the test button many times on the front panel to view all of the parameters separately.
14. Now on the hyper terminal tool bar, select Transfer, then select Capture Text.
 - a. Select the File BROWSE button.
 - b. Navigate (by selecting the Save In: dropdown) to the folder that you wish to save the text file that will be created, or use the default location if desired.
 - c. Type a file name (example: M300 E s-n 334 2-17-06.txt) and press Save.
15. Press the Start button.
16. All keystrokes and text displays will now be recorded into the text file just created.
17. Type ?, and press Enter (↵). (help menu and commands, software version)
 - a. The available commands are listed in the help menu.
18. Type t list all, and press Enter (↵). (front panel test parameters).
19. Type v list !, and press Enter (↵). (VARS parameters: slope, offset, factory options, etc.) (NOTE: be sure to use the exclamation point " !" after "v list" – there should be over 70 parameters returned to the screen).
20. Type d list, and press Enter (↵). (signal I/O parameters and readings).
21. For analyzers, type d print, and press Enter (↵). (IDAS channel parameters).
22. For calibrators, type c print, and press Enter (↵). (sequences).
23. For M403 calibrators, or M700 and M700E calibrators with LEADS version of, type c leveltable print and press Enter (↵). (Dasibi dot command levels).

24. For M700 calibrator MFC tables, on the front panel of the calibrator press STBY – SETUP – MORE - DIAG (use 818 password) – ENTR - NEXT until....MFC CALIBRATION – ENTR - MFC1 – PRNT – EXIT - MFC2 - PRNT. (20 point calibration tables for mass flow controllers). This will output the tables to the HyperTerminal screen.
25. For M700E calibrator MFC tables, on the front panel of the calibrator press STBY – SETUP – MORE - DIAG (use 818 password) – ENTR - NEXT until....MFC CONFIGURATION – ENTR - DIL1 – EDIT - PRNT – EXIT – SET> - CAL1 – EDIT – PRNT – EXIT (if there are 3 MFC'S continue – SET> - CAL2 – EDIT – PRNT - EXIT. (20 point calibration tables for mass flow controllers). This will output the tables to the HyperTerminal screen.
26. Select Transfer, then select Capture Text, and then select Stop.
27. Select File and Save, (or Save As and select a convenient location such as your desk top). This saves the session file so re-connecting to the instrument will be easier next time. Now in the HyperTerminal start menu (or on your desk top) your saved session setup file (with baud rate and other connection information) will easily be recalled by opening this file to start your session.
28. Now navigate to the place where you saved the text file (with all of the collected data) and open the file to make sure everything is there. This file can be used as reference for different settings and to record historical data from the instrument. If just capturing test parameters for periodic monitoring of the front panel test parameters / readings – only perform t list all.
29. Close HyperTerminal if desired, disconnect RS 232 cable.