



ATDA-8000 Series Torque Data Analyzers

User Guide



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Unit Specifications



Dimensions	Width: 7", Height: 5", Depth: 1"
Weight	1 Lb
Power Requirements	Main Power 100-240VAC, 50-60hz from supplied charger
Operating Temperature Range	0° to 50° C
Data Communication	Serial

SAFETY REQUIREMENTS

READ AND SAVE THESE INSTRUCTIONS

WARNING!

- Ensure that owner/operator has read all Safety Requirements and User Manuals prior to operating.
- To avoid electric shock, which may result in personal injury and/or death, electrical supply must meet the electrical requirements.
- Do not operate power tools in explosive atmospheres, such as the presence of flammable liquids, gases or dust.
- To avoid electric shock, which may result in personal injury and/or death, electrical connections must be properly grounded.
- To avoid electric shock, which may result in personal injury and/or death, electrical wiring between the device, electrical supply and any peripheral equipment must be routed in a secure manner.
- Switch device to the "OFF" position and disconnect from any power supply prior to servicing. Lock Out/Tag Out procedures should be followed.
- To avoid electric shock, which may result in personal injury and/or death, cords should be kept from heat, sharp edges, or any other potentially hazardous conditions.

- When operating a power tool outdoors, use an extension cord suitable for outdoor use.
- Keep out of reach of children.

DANGER!

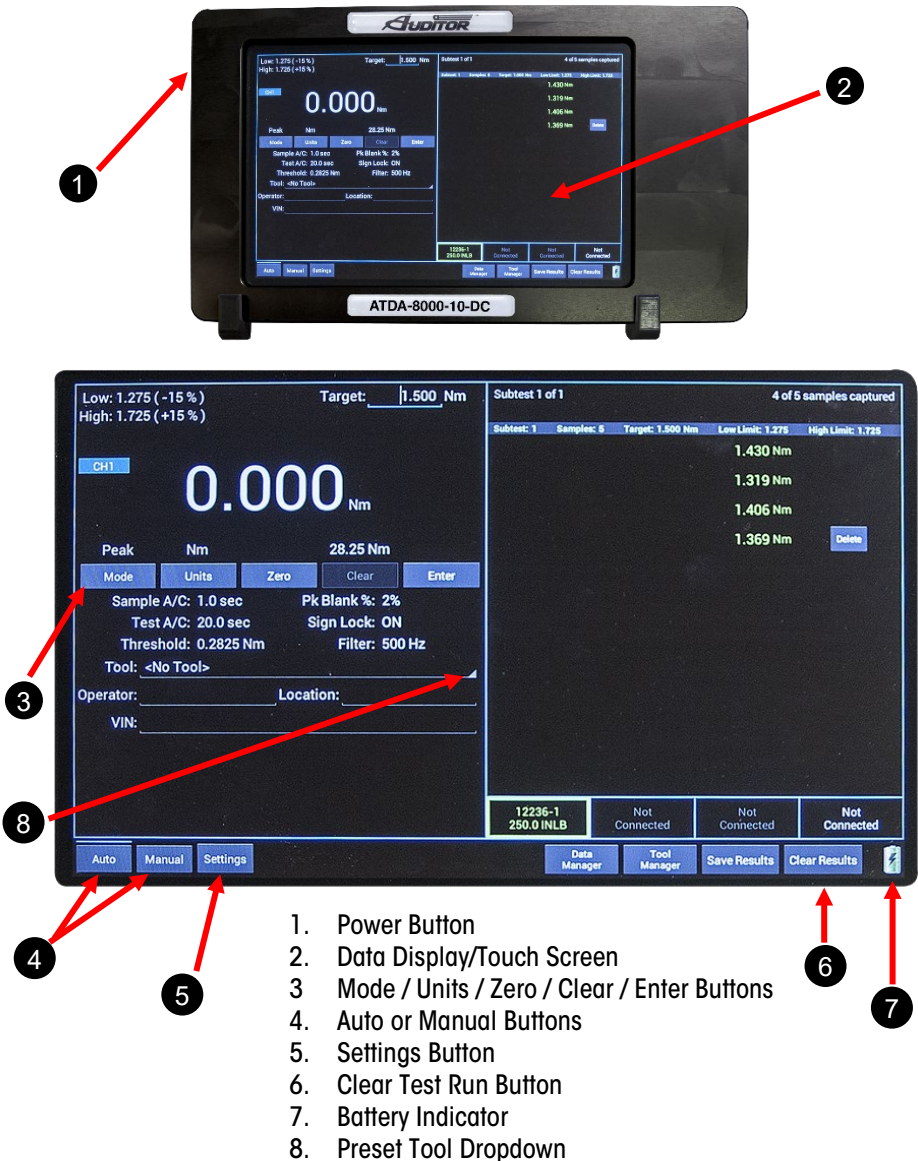
- Contact with water, solvents, or other liquid substances may result in personal injury and/or death.
- Do not operate equipment under the influence of drugs, alcohol or circumstances in which you are not fully alert.
- Use safety equipment. Always wear eye protection.
- Ensure the switch is in the off-position before plugging in.
- Remove any adjusting key or wrench before turning the power tool on.
- Do not wear loose clothing or jewelry. Keep hair, clothing and gloves away from moving parts.

POWER TOOL USE AND CARE

- Do not force the power tool. Use the correct power tool for your application.
- Do not use the power tool if the power switch does not turn it on and off.

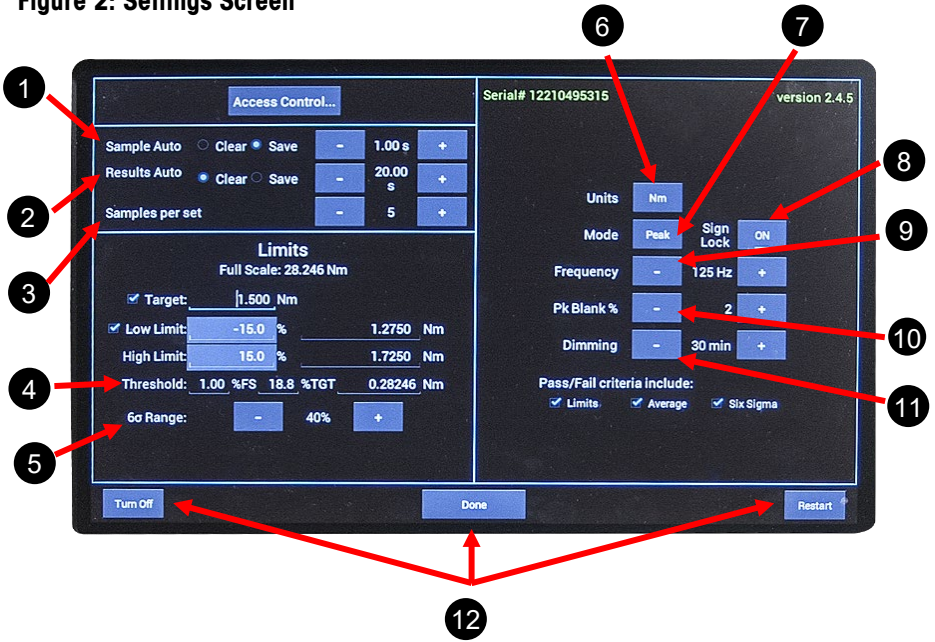
SCREEN AND BUTTON DIAGRAM

Figure 1: Main Screen



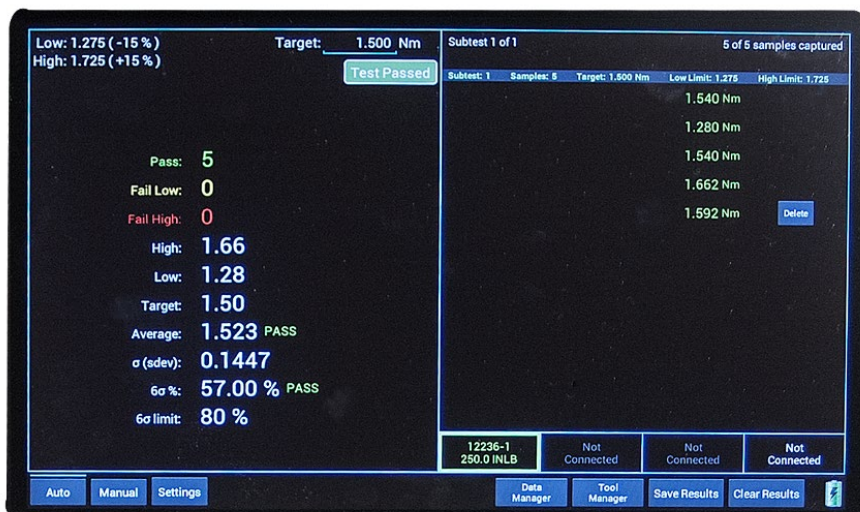
Main Screen illustrates Target, Sample Reading, Mode, Engineering Unit, Full Scale value of Transducer(s), Sample Auto Clear setting, Peak Blanking setting, Test Results Auto Clear setting, Low Limit setting, Sign lock setting, High Limit setting, Frequency Response setting, Number of Samples Captured and Battery Indicator

Figure 2: Settings Screen



- | | |
|-------------------------------|---------------------------------------|
| 1. Sample Auto Clear Setting | 7. Mode Setting |
| 2. Results Auto Clear Setting | 8. Sign Lock |
| 3. Samples Per Set | 9. Frequency Setting |
| 4. Threshold Setting | 10. Peak Blank % Setting |
| 5. 6 Sigma % Adjustment | 11. Display Dimming Timer |
| 6. Engineering Units Setting | 12. Turn Off / Done / Restart Buttons |

Figure 3: Results Screen



Results Screen illustrates Target Torque Value, Test PASS/FAIL, High/Low/Average, Standard Deviation and Six Sigma percentage, Recorded samples and indicates Pass/Fail

BASIC FUNCTIONS

The ATDA-8000 has three screens: Main Screen, Results Screen, and Settings Screen. Prior to using the instrument you should enter the **SETTINGS SCREEN** and program the operation of the instrument.

Settings Screen/Menu

Access Control...

Sample Auto Clear Save - 1.00 s +

Results Auto Clear Save - 20.00 s +

Samples per set - 5 +

Limits
Full Scale: 28.246 Nm

Target: 1.500 Nm

Low Limit: -15.0 % 1.2750 Nm

High Limit: 15.0 % 1.7250 Nm

Threshold: 1.00 %FS 18.8 %TGT 0.28246 Nm

6σ Range: - 40% +

Serial# 12210495315 version 2.4.5

Units Nm

Mode Peak Sign Lock ON

Frequency - 125 Hz +

Pk Blank % - 2 +

Dimming - 30 min +

Pass/Fail criteria include:
 Limits Average Six Sigma

Turn Off Done Restart

The following are your screen selection choices in the **SETTINGS SCREEN**:

Sample Auto Clear

Timer to either auto clear samples or auto save samples. If left **Off**, the user will be required to manually clear the readings by pressing the **Enter** button on the Main screen.

Results Auto Clear

Timer to either auto clear complete sample set or auto save complete sample set. If left **Off**, the user will be required to manually clear the readings by pressing the **Clear Test Run** button at the bottom of the display in the Main screen.

Samples per set

Sets number of samples to be taken per

audit. Choose how many torque samples per test by pressing the **+** or **-** buttons. You may choose a maximum of 18.

Target

Sets Target/Nominal torque setting. After entering the values press **Save** to store them.

Low/High Limit

Sets limits either in percentage of target or in specific numeric limits. Limits can be enabled or left off. If they are **OFF**, turn them on by pressing the **OFF** box and the box will change to %. By pressing the space to the left of the % symbol, the number pad will pop up allowing user to

enter the +/- % that the tool will be tested by. Press **Save** after entering values.

Units

Various engineering units, cycle from INOZ, INLB, FTLB, Nm, CNm, gfcM, KgfcM and kgfm. The check box ensures that as engineering units are changed, the Target and Limits are also updated.

Mode Setting

By selecting the proper **Operating Mode** the user can properly take torque readings from a variety of manual and powered tools.

- **Peak**

This mode will provide a display of the maximum torque value achieved by the tool during operation. This mode is used for all continuous drive tools and click-type torque wrenches.

- **1st Peak**

This mode will detect and display the "first peak" achieved by click wrenches and cam-over screwdrivers.

- **Pulse**

This mode will display the maximum torque value achieved by discontinuous drive tools such as pulse tools and impacting tools.

- **Track**

This mode will display torque in real-time as it is applied to the connected transducer. Track mode is used primarily for calibration of the unit or identifying the condition of the transducer. In Track Mode with no torque on the transducer, the display should show zero.

Sign Lock

Setting allows the user to select the rotation direction in which a torque will be

captured. With Sign Lock **ON**, the initial direction is set as the default direction; a negative torque value indicates a reading taken in the counter-clockwise direction and a positive reading indicates a reading taken in the clockwise direction. Any readings taken in the non-selected direction will be measured, but not captured / displayed as a peak value.

With Sign Lock turned **OFF**, peak values in both the clockwise and counter-clockwise directions will be captured and displayed. Since most torque rundowns are conducted and readings are taken in the clockwise direction, the user may find it beneficial to turn this feature **ON**.

Frequency

Sets Frequency filter setting the analyzer uses in monitoring the transducer signal. For testing Continuous drive power tools, 500hz is recommended. For testing Discontinuous drive tools 1000Hz is recommended. Consult the specific tool manufacturer for any other tool types.

Peak Blank

Determines the minimum threshold at which a torque peak is captured. It is entered as a percentage of the full scale value of the transducer which is connected to the ATDA-8000 and can be displayed in values from 2 – 50% of transducer full scale.

Dimming

Sets display timer

After choosing the settings of the unit select the **Done** button and the unit will return to the run mode with enabled settings. You can also Restart or Turn Off the unit.

This unit is designed to operate semi automatically. Once the settings are complete, the user merely selects Done, the system will cycle to the Main Screen and the user can start taking readings. The readings will clear (or be cleared by the user) and be stored in a set. Once all

readings in the set are stored, the unit will process the readings, providing the user with High, Low, Average, Standard Deviation and percentage of Six Sigma.

OPERATING INSTRUCTIONS

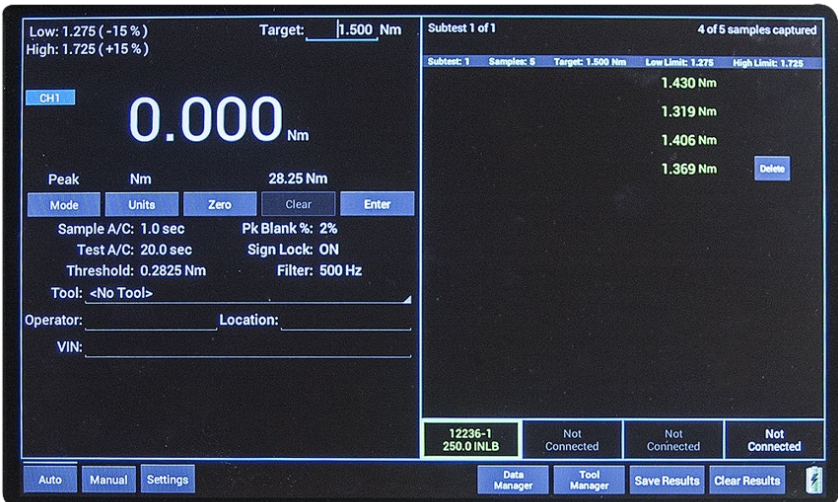
Using the Auditor™ Torque Data Analyzer (ATDA-8000)

1. Plug the 100 – 240 VAC Charger into DC Power Supply port.
2. Plug the Charger into a 100 – 240 VAC power outlet using the appropriate plug end.
3. **Prior to turning unit on**, connect the transducer to an Auditor™ supplied cable (*ICBL-8000DIG*) via any open USB port on the ATDA-8000.
4. To turn the ATDA 8000 on/off, press the **“ON/OFF”** button (*Figure 1*).
5. The Charging Mode Indicator will illuminate as you are charging and show status.
6. *The ATDA must be used with the power supply / charger and transducer connected. Due to the power demands of the transducers and peripherals the system should always be used with AC power supply connected.*

Basic Navigation and Use of the Keypad

The functions of the Auditor™ ATDA 8000 can be accessed by using the button associated with the text on the display screen.

Main Screen/Menu



In the MAIN SCREEN you have four choices: Auto, Manual, Settings, and Clear Test Run. By selecting Manual the system will be put into a quick check mode and will not have the ability to save readings to the results screen.

By selecting the Auto button, the saving samples and Autoclear functions will be activated. After a test run is completed the test data can be cleared manually or by using the Results Auto Clear timer to automatically clear results.

Each of the following buttons can be used to execute a command:

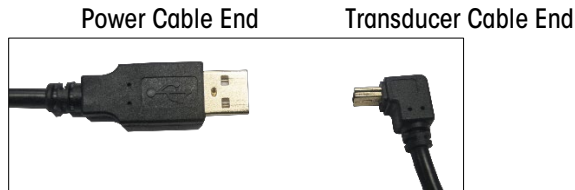
- Select **Auto** or **Manual** mode
- **Auto** Mode allows user to
 - Clear readings
 - Zero the display/transducer
 - Enter readings into Samples Captured screen
- **Manual** Mode allows user to
 - Select torque mode
 - Select engineering units
 - Zero display/transducer
 - Clear readings
- **Settings** enters the settings screen/menu

TRANSDUCERS

The **ATDA 8000** can be used with a variety of **Auditor™** external transducers supplied by AIMCO. The line of **Auditor™** “Intelligent” and industry-standard transducers is manufactured with the proper connector-style for ease of use with the **ATDA 8000**. For assistance with this please contact your AIMCO Distributor or authorized AIMCO Sales Representative at 1-800-852-1368.

Connecting a Transducer

Align the connector right side up and firmly press the connector into the port. Tighten the retaining bars to prevent cable from disengaging from transducer or instrument.



Setting up the Transducer

The Auditor Torque Data Analyzer will recognize the transducer and report the full-scale in the display.

Most transducers can be made to allow the Auditor Torque Data Analyzer to self-recognize the transducer simply when a connection is made. For assistance with this, please contact your AIMCO Distributor or authorized AIMCO Sales Representative at 1-800-852-1368 for a transducer upgrade quotation.

Torque Measurement Cable

Cable #ICBL-8000DIG connects from the ATDA-8000 series analyzer to AISI / AISF Transducers.

Auditor™ Stationary Transducers



Transducer	Max Torque		Weight		W X H X D		Square Drive in
	Nm	in-lb/ft-lb	kg	lb	mm	in	
AISI-200025	2.8	25	1.13	2.5	79 x 95 x 83	3.13 x 3.75 x 3.25	1/4
AISI-200100	11.3	100	1.13	2.5	79 x 95 x 83	3.13 x 3.75 x 3.25	1/4
AISI-200500	56.5	500	1.13	2.5	79 x 95 x 83	3.13 x 3.75 x 3.25	3/8
AISF-200100	135.6	1,200/100	2.25	5	100 x 65	4 x 3	1/2
AISF-200250	339	3,000/250	2.25	5	100 x 65	4 x 3	1/2
AISF-201000	1350	12,000/1,000	2.8	6	100 x 65	4 x 3	1

Rundown Kits



HDS Series



HD Series



HDE Series

Auditor Transducers require the use of rundown kits. Please see details related to ARDIA and ARDFA rundown fixtures.

Model*	Description	Recommended Torque Range		Square Drive (IN)
		In-Lb	Nm	
ARDIA-10(HD)(HDE)(HDS)	Rundown Fixture	1.0 - 10	.13 - 1.13	1/4
ARDIA-25(HD)(HDE)(HDS)	Rundown Fixture	2.5 - 25	.28 - 2.8	1/4
ARDIA-100(HD)(HDE)(HDS)	Rundown Fixture	10.0 - 100	1.3 - 11.3	1/4
ARDIA-250(HD)(HDE)(HDS)	Rundown Fixture	25.0 - 250	2.8 - 28.25	3/8
ARDIA-500(HD)(HDE)(HDS)	Rundown Fixture	50.0 - 500	5.6 - 56.5	3/8
ARDFA-100(HD)(HDE)(HDS)	Rundown Fixture	10 - 100	13.6 - 136	1/2
ARDFA-150(HD)(HDE)(HDS)	Rundown Fixture	15 - 150	20.4 - 204	1/2
ARDFA-250(HD)(HDE)(HDS)	Rundown Fixture	25 - 250	34.0 - 340	1/2
ARDFA-600(HD)(HDE)(HDS)	Rundown Fixture	60 - 600	81.6 - 816	3/4
ARDFA-100(HD)(HDE)(HDS)	Rundown Fixture	10 - 100	13.6 - 136	1/2

* Add "HD" to part numbers for wear resistant models. Add "HDS" to part numbers for fully encapsulated wear resistant models.

* Add "HDE" to part numbers for partial encapsulated wear resistant models.

AUDITOR TOOL MANAGER / DATA MANAGER SOFTWARE

Auditor™ Tool Manager Software

Tool Manager Software is included with the purchase of ATDA 8000 Series torque testers and is imbedded into the unit. Create a database of tools and store test results with this easy-to-use software integrator to/from tester to PC.

The screenshot displays the Auditor Tool Manager software interface. On the left, a table lists tools:

Tool Name	SN	Capacity	Asset #	Type	Action
SHELDON 1	SN: 123	2 Nm	ASSET: 456	Torque	Delete
SHELDON 2	SN: 456	4 Nm	ASSET: 789	Torque	Delete

The right side shows the 'Tool Details' for 'SHELDON 2':


Tool Name: SHELDON 2 Type: Torque
Serial #: 456 Asset #: 789
Capacity: 4 Nm
CAL Date: 2/4/2015 CAL Due: 2/4/2016
Model: 523 Manufacturer: AIMCO

Below are 'Tester Settings' and 'Test Points':

Tester Settings:
Peak Mode: Peak
Units: Nm
AutoSave: 1.0
Filter Freq: 500 Hz
Blanking: 10%

Test Points:
Target Low Limit High Limit
5 4.000 Nm -5%/3.800 +5%/4.200

Buttons at the bottom: Clear Form, Save Tool, Back / Cancel

Tool Set up is easy with touchscreen access to type Tool Name, Serial #, Asset #, Capacity, Model and Manufacturer information. Type of Tool and Capacity (Engineering Units) have selections from drop down boxes when  triangle is touched. Once details are entered, touch 'Save Tool' button to save data.

This screenshot shows the same Auditor Tool Manager software interface as above, but with a virtual QWERTY keyboard overlaid at the bottom. The 'Tool Details' section is now filled with data:

Tool Name: _____ Type: Torque
Serial #: TA4455 Asset #: 23
Capacity: 18 FTLB
CAL Date: 2/16/2015 CAL Due: 6/16/2015
Model: UAT-50 Manufacturer: AIMCO

Tester Settings:
Peak Mode: Peak
Units: FTLB
AutoSave: 1.0
Filter Freq: 600 Hz
Blanking: 2%

Test Points:
Target Low Limit High Limit
85 18.00 INLB -10%/16.20 +10%/19.80

The virtual keyboard includes a numeric keypad (0-9), a QWERTY layout, and function keys like 'sym', 'back', and 'del'.

To create Test Points, touch the **'Create'** button to display the Create Test Point Screen:



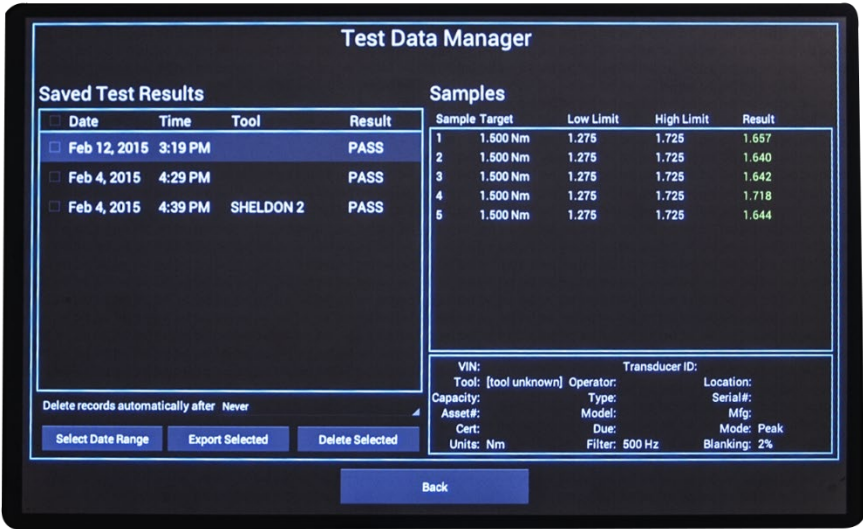
Touch screen to enter Target, Low/High Limit either in percentage of target or in specific numeric limits as well as air pressure.

There are a wide range of additional, very specialized functions that the ATDA-8000 series systems can accommodate. Hydraulic tools, measurement of pressure observed through a pressure transducer and more can be audited with these products.

Specific needs and training for these higher level functions/capabilities require specialized hardware. Please consult your authorized AIMCO Auditor™ representative to receive further details.

Auditor™ Data Manager Software

Auditor Data Manager Software is included with the purchase ATDA-8000 series torque analyzers. This software is imbedded into the unit. The View Data tab allows you to look at the collected data. This data can be exported to Excel as a .csv file and displayed by Excel charts. When selecting a test run - the average, range, sigma, Cp, and CpK values are listed.



To export data:

- Click Audit Manager to open.
- Connect USB data stick to any open USB slot on the ATDA-8000 series analyzer.
- Look to bottom right corner of the ATDA-8000 screen. USB symbol should show to the left of the battery condition symbol indicating the USB stick has successfully mounted to the device.
- Select desired data to be exported by either
 - Selecting specific audit
 - Selecting date range
 - Selecting all data
- Press Export Selected Data.
- Dialog box will display indicating successful transfer of data to the connected USB stick
- USB stick may now be removed and taken to a PC for download and archiving.



AIMCO CORPORATE HEADQUARTERS

10000 SE Pine Street
Portland, Oregon 97216
Phone: (503) 254-6600
Toll Free: 1-800-852-1368

AIMCO CORPORATION DE MEXICO SA DE CV

Ave. Cristobal Colon 14529
Chihuahua, Chihuahua. 31125
Mexico
Phone: (01-614) 380-1010

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