Angle USB Electronic Digital Torque Wrench
BT-ST-301D

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Features
1. 999 memory storage
2. Track & Peak Mode
3. Low battery display
4. Auto power off
5. Power supply
6. LED alarm flash indication
7. Buzzer alarm indication
8. AP function

Introduction of LCD panel

1. Light
Red LED Light- meets the Over 104% of Set scale.
Green LED Light- meets the 97%-104% of Set scale.
Yellow LED Light- meets the 90%-97% of Set scale.

2. LCD Display
CCW: indicates torque when using in counter-clockwise direction
P: peak mode
T: track mode
M: 999 memory storage locations
Set: when setting torque level
Ft-Lb • N.M • Kg-Cm • In-Lb: Unit of measurement

3. Keys
S: change unit and enter torque setting mode
+: value increase • enter memory mode
- : value decrease • enter USB mode
R: power on / reset / clear
P: change Peak/Track
Q: enter preset mode
4. **Power supply**  
As the picture shows, the wrench can be supplied by a/c adaptor. While the wrench connects with a/c adaptor, power supply change to another mode, meanwhile the battery stops providing electricity.

**Operating Instructions**

1. **Power On**  
Press “R” to power on, wrench enters Showing Torque Environment.

2. **Power Off**  
   2.1. **Auto Shut Off**  
       Auto shut off will occur after 2 minutes non-usage.  
   2.2. **Power Reset**  
       Press (R) for 3 seconds to reset torque wrench.

3. **Showing Torque Environment**  
After power on, you are in Showing Torque Environment. When you apply force to the wrench, the LCD display shows actual applied torque value. After applying forcing, the value flashes 5 times and returns back to “0” until next use.

4. **Preset Torque Setting**  
   4.1. **Floating Preset**  
       Step 1. Press the “S” key, enter setting mode.  
       Step 2. Press the “+” key to increase the torque value.  
       Step 3. Press the “-” key to decrease the torque value.  
       Step 4. After reaching the torque value you want, press the “S” key to set preset torque value into system and return to Showing Torque Environment.
4.2. **Preset Torque Value Selection**

4.2.1. **Torque mode**
Step 1. Press the “Q” key, LCD Display shows the preset torque value.
Step 2. Press “+” key to scroll up the preset numbers.
Step 3. Press “-” key to scroll down the preset number.
Step 4. After reaching the preset number you want, press the “Q” key to set preset number into the system and go back to Showing Torque Environment.

4.2.2. **Angle mode**
Step 1. Press the “Q” key, LCD Display shows the preset torque value and angle value alternately.
Step 2. Press “+” key to scroll up the preset numbers.
Step 3. Press “-” key to scroll down the preset number.
Step 4. After reaching the preset number you want, press the “Q” key to set preset number into the system and go back to Showing Angle Environment.

5. **Torque Unit Setting**
When the wrench is in Showing Torque Environment, press “S” for 1 second to select next unit. Follow the arrow on LCD display to select the unit you want, and then release “S” key.

**Available Torque units:** Ft-Lb • N.M. • Kg-Cm • In-Lb
6. **Angle Unit Mode**

When the wrench is showing Torque Environment, press “S” for 3 seconds to select the next unit. Follow the arrow on LCD display to select the Angle unit, and then release “S” key.

6.1. **Angle Display Mode**

Angle measurement is held until 5% of Full Scale or Set Scale torque is applied. Rotation is accumulated in angular degrees. When torque is released, the accumulated angle value will flash and the buzzer will sound.

6.2. **Angle Setting Mode**

Step 1. Press “+” key to increase the Angle value you want.
Step 2. Press “-” key to decrease the Angle value you want.

6.3. **Angle Return Zero**

In Angle Measurement mode, press “R” key to return to zero.

6.4. **Exit Angle Mode**

In Angle setting mode, press “S” for 3 seconds to exit Angle mode.

7. **Memory Mode - Searching Memorized Value**

Step 1. Press “+” for 3 seconds, the wrench enters the Memory Mode.
Step 2. Press “+” or “-” for searching memorized value.
Step 3. Press “S” to exit Memory Mode.
8. **Torque Mode Setting**
Press “P” to select Peak Mode or Track Mode

8.1. **Peak Mode**
When torque is applied, the peak torque value flashes 5 times and is saved into memory. Then LCD display will stay on the peak torque value until the next torque value is applied.

8.2. **Track Mode**
When torque is applied, the actual torque value flashes 5 times and is saved into memory. Then the LCD display will go back to “0” automatically and wait for the next torque to be applied.

9. **Overload**
When forcing torque is over than the maximum value, the 110% LED red light will flash and the LCD display shows “FULL”. Please press “R” to reset wrench.

10. **USB Mode**
Press “-” for 3 seconds, display will show “On” for USB mode. Use USB cable to connect with PC, then user can work AP interface to communicate with. To leave USB mode, press and hold “-“for 3 seconds, display will show “Off”.

![Touch Panel Image]
AP Interface Instructions

**AP SETUP**

1. Start Windows and click “USB” to setup PL-2303 Driver Installer.

![Figure 1-1](image)

2. Confirm the installation by clicking “Next”

![Figure 1-2](image)
3. Complete the installation by clicking “Finish” then the PL-2303 Driver Installer is complete.

Figure 1-3

4. Click on “Net 3.5” and to update your computer system.

Figure 1-4
5. Confirm the installation by clicking “Install” and wait for the installation to begin.

Figure 1-5

Figure 1-6
6. Complete the installation by clicking “Exit”, Net 3.5 has successfully installed on the computer system.

7. Click on “DMC-ETTA+” to Install the DMC Installer.
8. Confirm the installation by clicking “Next”.

Figure 1-9

9. Confirm the install location by clicking “Next”.

Figure 1-10
10. Confirm the installation by clicking “Next”.

![Confirm Installation](image1)

**Figure 1-11**

11. Complete the installation by clicking “Close”.

![Installation Complete](image2)

**Figure 1-12**
12. DMC-ETTA+.exe has successfully installed on your computer system and an icon is now on your desktop.

![DMC-ETTA+](image)

Figure 1-13

**Operation Flow**

**1. TORQUE WRENCH INFORMATION**

![Tool Information](image)

Figure 2-1

1.1. Click on “Wrench” for TORQUE WRENCH Information
1.2. Click on drop down menu “English” to select language.
2. PRESET INFORMATION

Figure 2.2

2.1. Click “Load”. To load the TORQUE WRENCH data information from the wrench to the table.
2.2. Click “Save” to transfer Set data information to the TORQUE WRENCH.

3. EEPROM INFORMATION

3.1. Click “Load”. To load the TORQUE WRENCH data information from the wrench to the table.
3.2. Click “Erase” to clear TORQUE WRENCH EEPROM data on PC.
3.3. Click “EXCEL” to export information to an Excel file.
4. REAL TIME

4.1. Click “StartReal” for real time TORQUE WRENCH information.
4.2. Click “Exit” to Exit form.

![Real Time Screen]

Figure 2-4

ERROR MESSAGES

1. No Device

1.1. Setup with the PL-2303 Driver Installer. 1.2. Link to the Wrench by USB.
1.2. Link to the Wrench by USB.
2. No USB Mode

2.1. Press “-“ for 3 seconds to change to USB mode.

3. Memory is Empty

3.1. TORQUE WRENCH EEPROM is empty

**TORQUE AND ACCURANCY SCALE**

<table>
<thead>
<tr>
<th>Model</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETTA+</td>
<td>CW +/-2% • CCW +/-2% of reading, 10% to 100% of full scale CW +/-4% • CCW +/-6% of reading, below 10% of full scale Angle Accuracy +/- 1% of reading +/- 1°, Angle Velocity 10°/sec ~180°/sec</td>
</tr>
</tbody>
</table>

**CAUTION**

1. Use the wrench following the ISO6789 and ANSI specification. Use the Wrench for its intended purpose only.
2. Operation Temperature 5°C to 42°C (41°F to 108°F).
3. Storage Temperature -20°C to 50°C (-4°F to 122°F).
4. Environment Humidity up to 90% non-condensing.
5. PL-2303.exe install shield for windows 2K/XP/VISTA