Automated Torque Tester

User Manual

Version V1.0.2

Translated English version based on the Chinese user manual.

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1. System Overview

Basic components: UI interface, RS232 & RS485 communication, and network communication.

Measurement settings: torque start value, upper/lower limits, torque unit, display time, and related settings.

Communication settings: baud rate, Modbus-RTU, TCP/IP, and related configurations.

2. Operation Panel

Key	Function
△	Page-up key. Used to select parameter setting items and adjust parameter values. Press and hold for fast adjustment.
▽	Page-down key. Used to select parameter setting items and adjust parameter values. Press and hold for fast adjustment.
ENT	Confirm key. Used to enter the settings interface and confirm parameter settings.
EXT	Exit key. Returns to the previous menu.

3. Page Description

3.1 Main Interface

The main interface displays the product model, communication ID, torque value, unit, and measurement result.

3.2 Settings Interface

Press and hold the ENT key on the main interface to enter the settings page. Use the page-up/page-down keys to select the corresponding setting item.

3.2.1 Start Torque Value Setting

Function: After the start torque value is set, the actual torque value must be greater than or equal to the start torque before it can be displayed on the main interface.

Select “Start Torque”, short-press “ENT” to enter the start torque value setting. Use the page-up/page-down keys to adjust the parameter value, then short-press “ENT” to confirm and exit.

The start torque value must be greater than the minimum measurable value of the torque tester before it can be displayed.

3.2.2 Torque Upper and Lower Limit Setting

Function: Sets the automatic judgment range for the measurement result. If the measurement result is between the upper and lower limits, the result displays “PASS” and Y0 and COM are conductive. Otherwise, the result displays “FAIL” and Y1 and COM are conductive.

Select “Torque Upper Limit” or “Torque Lower Limit”, short-press “ENT” to enter the upper/lower limit setting. Use the page-up/page-down keys to adjust the value, then short-press “ENT” to confirm and exit.

3.2.3 Display Time Setting

Function: Sets how long the maximum torque value remains displayed on the main interface. After this time expires, the value is automatically cleared.

Select “Display Time”, short-press “ENT” to enter the display time setting. Use the page-up/page-down keys to adjust the value, then short-press “ENT” to confirm and exit.

3.2.4 Unit Setting

Function: Switches the system measurement unit.

Select “Unit Setting”, short-press “ENT” to enter the unit setting. Use the page-up/page-down keys to adjust the value, then short-press “ENT” to confirm and exit.

The system supports four measurement units: kgf.cm, N.m, mN.m, and lbf.in.

3.2.5 Lock Time Setting

Function: Sets the peak acquisition interval. The default value is 517ms. Keep the default setting.

3.2.6 Differential Setting

Function: Sets the peak acquisition torque difference. The default value is 0. Keep the default setting.

3.2.7 RS485 Communication Setting

Function: Sets RS485 communication parameters. RS485 supports the standard Modbus RTU protocol.

Select “485 Setting”, short-press “ENT” to enter the 485 setting page. Select the corresponding parameter field, short-press “ENT” to enter the setting, use the page-up/page-down keys to adjust the value, then short-press “ENT” to confirm and exit.

The device must be powered off and restarted after parameter changes for the settings to take effect.

3.2.8 RS232 Setting

Function: Sets RS232 communication parameters. RS232 uses ASCII-coded automatic output.

Select “232 Setting”, short-press “ENT” to enter the 232 setting page. Select the corresponding parameter field, short-press “ENT” to enter the setting, use the page-up/page-down keys to adjust the value, then short-press “ENT” to confirm and exit.

Value output modes: “Peak” for peak output mode; “Continue” for continuous output mode.

The device must be powered off and restarted after parameter changes for the settings to take effect.

3.2.9 Language Setting

Function: Sets the system display language. The setting takes effect after the device is powered off and restarted.

Select “Language Setting”, short-press “ENT” to enter the language setting page.

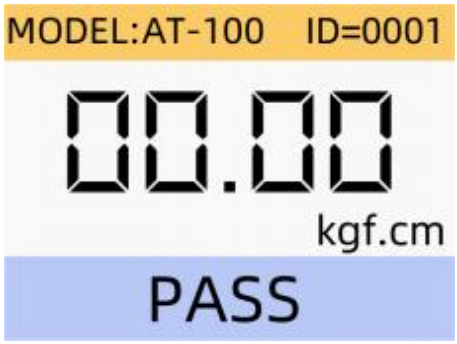
3.2.10 Device Information

Function: Queries device-related information.

Select “Device Information”, short-press “ENT” to enter the device information page.

Operation Interface Figures

The following figures are taken directly from the original Chinese manual. Menu wording on screenshots may remain in Chinese, but the operating steps are translated in the surrounding English text.



Main interface / measurement display

Settings interface

Parameter selection screen

Start torque setting

Torque upper/lower limit setting

Display time setting

Unit setting

Lock time setting

Differential setting

RS485 setting

RS232 setting

Language setting

Device information

Optional parameter range screen

Optional parameter range screen

Optional parameter range screen

Optional parameter range screen

Optional parameter range screen

4. Appendix A: Optional Parameter Ranges

Function Group	Parameter	Parameter Range
Torque parameters	Display time	0~9s
Torque parameters	Unit setting	kgf.cm, N.m, mN.m, lbf.in
System setting	Language	CHS: Simplified Chinese; ENG: English
RS485	Baud rate	115200, 38400, 19200, 9600
RS485	Data bits	8, 9
RS485	Stop bits	1, 1.5, 2
RS485	Parity	None, Odd, Even
RS485	Communication ID	1~99
RS232	Baud rate	115200, 38400, 19200, 9600
RS232	Data bits	8, 9
RS232	Stop bits	1, 1.5, 2
RS232	Parity	None, Odd, Even
RS232	Output mode	Peak: peak value; Continue: continuous output

5. Revision History

Version	Revision	Date	Author
V1.0.0	Initial version	2023-06-27	David
V1.0.1	Modified RS232 peak setting image	2023-11-14	David
V1.0.2	Modified outline drawing	2024-03-21	David