AT Series Automated Torque Tester

Product Hardware Specification

Read this document carefully before use and keep it for future reference.

Translated English version based on the Chinese hardware specification dated 2024-05-29.

Safety Precautions

Please read the following safety precautions to ensure safe and correct operation.

Before Use

- Before using this torque tester, read the user manual carefully.
- The company does not provide warranty coverage for failures or damage caused by modification, disassembly, or use not in accordance with the manual.

Precautions for Using the Torque Tester

- Do not exceed the maximum torque measurement range. Exceeding the rated range will reduce measurement accuracy. Severe overload, especially around 120% F.S., may cause permanent damage to the torque tester.
- Keep the workplace clean and orderly. Ensure that no foreign objects can be caught when an electric screwdriver or other tool is being measured.
- Except when inserted into the adapter socket, do not point the electric screwdriver bit toward any other direction.
- If any abnormal condition occurs, stop using the tester immediately and contact the manufacturer or distributor.
- Do not wear gloves during torque testing, to avoid slipping between the tool and the hand and affecting measurement accuracy and results.
- Keep the tester as level as possible during measurement to avoid affecting accuracy and results.
- Keep the rotation axis of the tool under test perpendicular to the plane of the torque tester as much as possible to avoid affecting accuracy and results.
- Do not use this tester for continuous-impact tools, such as pneumatic screwdrivers or impact wrenches.
- Use the supplied power adapter to power the torque tester.
- Do not store the torque tester in high-temperature or high-humidity environments, as this may reduce performance or cause damage.

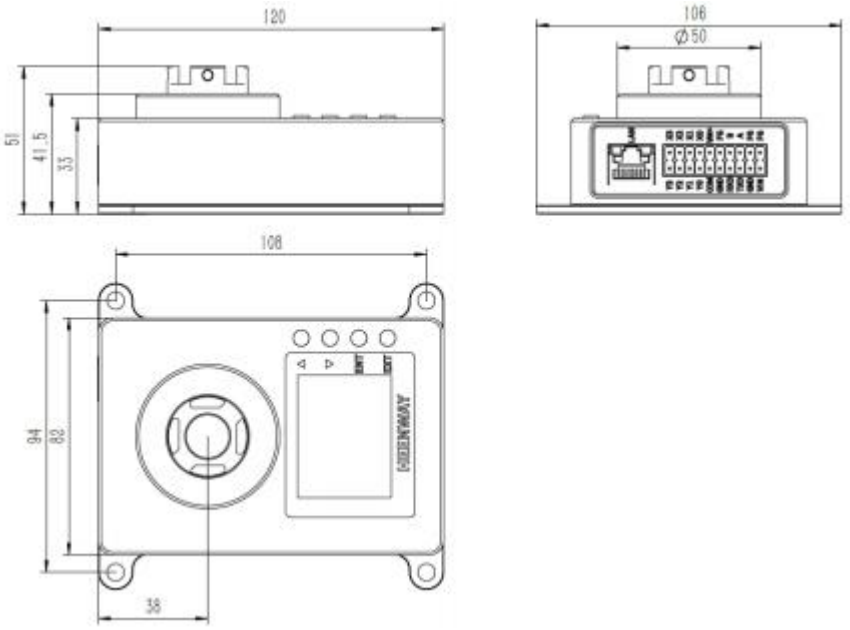
Product Introduction

Dimensions

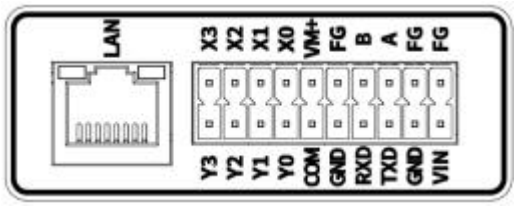
All models in this series have the same external dimensions.

The company reserves the right to change the technical specifications or appearance of the torque tester without prior notice.

Appearance and Outline Drawing



Outline drawing from the original Chinese specification.



Installation / wiring reference figure from the original Chinese specification.

Power Characteristics

Item	Specification
Rated voltage	DC12V
Rated current	160mA
Maximum power	3W

Input Specifications

All input ports are transistor NPN type.

Item	Specification
Input signal voltage	DC24V ±10%
Input signal current	7mA @ DC24V
Input ON current	≥4mA
Input OFF current	≤2mA
Input response time	Approx. 12ms
Input signal type	NPN open-collector transistor
Isolation	Optocoupler isolation

Output Specifications

All output ports are transistor output type.

Item	Specification
External power supply	DC5~30V
Isolation	Optocoupler isolation
Maximum load, resistive	1A
Maximum load, inductive	8W @ DC24V
Response time, OFF → ON	≤0.2ms
Response time, ON → OFF	≤0.2ms

Model Selection Table

Model	Range	Non-linearity
AT-02 / AT-02E	0.02~2kgf.cm	≤0.5%F.S
AT-08 / AT-08E	0.2~8kgf.cm	≤0.5%F.S
AT-50 / AT-50E	0.5~50kgf.cm	≤0.5%F.S
AT-100 / AT-100E	1~100kgf.cm	≤0.5%F.S

Note: Model suffix “E” indicates Ethernet communication support.

Port Definition

Name	Function
LAN	Ethernet Port 1
X0-X3	Digital IO input
VM+	Digital IO input common +
Y0-Y3	Digital IO output
COM	Digital IO output common -
A, B	RS485 communication port
GND, RXD, TXD	RS232 communication port
VIN, GND	Power input port
FG	Shield ground port

Note 1: The LAN port is available only on models with the suffix “E”.

When the test result is PASS, Y0 and COM are conductive. When the test result is FAIL, Y1 and COM are conductive.

Operation Instructions

Wiring Instructions

Connect the red power wire (+) to the VIN power input terminal, and connect the black/white power wire (-) to the GND power input terminal.

Preparation Before Measurement

- Fix the sensor on a horizontal surface.
- Make sure no torque is applied to the adapter connector, then power on the tester.
- During startup, make sure no torque is applied to the sensor until the tester has completed startup.

Packing List

No.	Name	Quantity	Unit
1	Torque tester main unit	1	set
2	Power adapter	1	pcs
3	Connector plug	1	pcs
4	User manual	1	copy
5	Certificate of conformity	1	pcs
6	Set screw	4	pcs
7	Calibration record	1	copy

Troubleshooting

If any functional abnormality occurs, troubleshoot according to the following table. If the fault cannot be resolved after checking, contact the company or distributor.

Fault	Possible Cause	Solution
Unable to power on	Power adapter damaged	Replace the power adapter
Unable to communicate	Incorrect parameter settings	Check related parameters such as address and baud rate

After-sales Service

Warranty Terms

This product is provided with warranty service from the date of purchase, based on the invoice date. The main unit is warranted for 1 year, accessories are warranted for 3 months, and lifetime repair service is available. Consumable parts are not covered by the warranty. Returns and refunds are available within 7 days from the date of purchase.

The following cases are not covered by warranty:

- Failure or damage caused by improper use.
- Improper storage, water ingress, or severe moisture exposure.
- Input voltage higher than the specified voltage.
- Damage caused by force majeure such as fire, typhoon, or earthquake.

Inspection and Calibration

This tester uses a resistance strain-gauge sensor and can maintain long-term accuracy. The torque tester meets the company’s accuracy standard at delivery. However, due to different operating conditions, long-

term use may reduce measurement accuracy. To ensure measurement accuracy, it is recommended to return the torque tester to the manufacturer for inspection at least once per year.