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Warning

Events that may cause death or severe injury to personnel in case of misuse.

Design warning

- Prepare a safety circuit outside the TM201 so that the entire system functions safely if the TM201 fails or malfunctions.
- Be sure to contact our sales representative before use if the TM201 will be used in the following situations:
  - In an environment not described in the operation manual;
  - In a way that causes substantial effects on medical devices, transportation equipment, entertainment devices, safety devices, etc.

Installation warning

- Do not disassemble, repair or alter the TM201. Fire or electric shock may occur.
- Do not install the product in the following environments:
  - Locations with corrosive gases or combustible gases;
  - Locations over which water, oil, or chemicals splash.

Wiring warning

- Do not connect commercial power supply directly to the main unit. (Be sure to use the dedicated AC adapter included.)
- Do not connect AC adapters other than the dedicated adapter included for the TM201 to the power input connector.
- Be sure to check wiring and so on carefully before turning the power on.

Startup/maintenance warning

- Use power supply voltage within the rated range.
- Do not damage the power cords. Fire or electric shock may occur.
- Electric shock may occur inside the main unit when the cover is opened. Internal capacitors are charged even when power supply is cut off. Contact us for inspection and repair of internal parts.
- In case of smoke, abnormal smell or abnormal noise, unplug the adapter from the outlet and the USB cable from the PC immediately.

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Caution

Events that may cause injury to personnel or material damage in case of misuse.

Installation precautions

- Do not install the product in the following environments:
  - Locations where temperature or humidity exceeds specifications;
  - Locations subject to drastic temperature fluctuations or icing and condensing;
  - Outdoors or locations above 2,000m;
  - Locations exposed to direct sunlight;
  - Locations subject to dust accumulation;
  - Locations with poor ventilation;
  - Locations with excessive salt and metal powder;
  - Locations where the main unit is subject to direct vibration and shock.
- Perform adequate shielding if the product is used in the following locations:
  - Near power lines;
  - Locations subject to strong electric field and magnetic field;
  - Locations subject to noise such as static electricity and relays.
- Install the product as far away as possible from equipment generating high frequency, high voltage, large current, surge, etc. Perform wiring of cables separately from these power lines. Do not perform parallel wiring and identical wiring.
- Do not use the product if it is damaged.

Startup/maintenance precautions

- Be sure to have a time interval of five seconds or longer between turning the power on and off or between the USB cable plugging in and unplugging.
- Use only after warming up for 30 minutes or longer following the start of power supply.
- Protective performance of the TM201 may be lost if it is not used as specified.
- Cleaning
  - During cleaning, unplug the adapter from the outlet and the USB cable from the PC.
  - Do not wipe with a wet cloth, benzene, thinner, alcohol, etc. Doing so may cause discoloration or deformation of the TM201. When dirty, clean the product with a cloth soaked in diluted neutral detergent and squeezed and then wipe with a soft, dry cloth.

Transportation precautions

- Although the TM201 is considered to be sufficiently shock absorbing during delivery, reusing the same packaging materials may damage the product when a shock is encountered. When sending this product to us for repair and so on, pack it with sufficiently shock-absorbing materials.

Disposal precautions

- Dispose of as industrial waste.

■ **Conformity with EC directives**

The TM201 Torque Monitor is a CE-marked EC-Directive-conforming product (by the Council of the European Union).

- Low Voltage Directive;    EN62311:2008 (test distance: 10cm)

- EMC Directives;    EN61326-1, EN55011, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

Note) The AC adapter accompanying as standard does not comply with CE marking compliance. In case the AC adapter which complies with CE marking compliance is required, please specify when you order. Use shielded cables (for USB and UTM).

1. Outline

1-1. Main features of the TM201

- This is a simple torque monitor to check and fetch the data of the rotation torque meter in the UTM II series easily.
- In addition to torque, rotation speed and power can also be displayed on the PC.
- Up to 1000 files of waveform data from 0.1 to 1000 seconds can be fetched in CSV format on the PC.
- While fetching the waveform data, a level trigger function is available, which prompts fetching when a level change occurs in torque, rotation speed or power.
- Waveform data is displayed in graphs which are easy to check. Furthermore, the maximum, minimum and average values can also be displayed.

1-2. Package contents and accessories

The following items are included in the package box.  
Be sure to check the contents before use.

TM201 main unit...One unit    TM201 setup guide...One copy    Dedicated AC adapter for the TM201 (1.8m)...One piece

Cable for UTM II connection (2m) ...One piece (with connector)    miniB-PC USB cable (1.8m)...One piece

1-3. Dedicated PC application and operation manual

Download the dedicated PC application and operation manual from the UNIPULSE website. The operation manual can also be viewed in the dedicated PC application help. Refer to the operation manual for details of functions and usage. To download the manual, user registration (free) is required.

\* <https://www.unipulse.tokyo/en/product/tm201-2/>

From ■ Download at the bottom of this page, the operation manual and software can be downloaded.

Download	
Product catalogue(PDF)	GC2017(131 KB)
Operation manual(PDF)	TM201_Guide Rev.3.01(576 KB)
	TM201_Manual Rev.3.01(2 MB)
External dimation	DXF (ZIP)
	PDF
Support tools	
Software	Software for USB interfaces for TM201

1-4. Part names

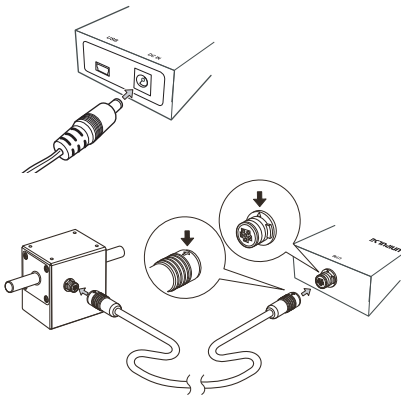
STATUS (green) lamp    ALM (red) lamp    UTMII connection connector    Power input connector    USB connector

2. Procedures for the first-time use

2-1. Connect the AC adapter and UTM II

■Connection of power input connector

The dedicated AC adapter for the TM201 is connected to the power input connector of the main unit.



■Connection of UTMII

The connection with UTMII can be easily performed with the dedicated cable included. Both ends of the connector have the same shape, and the cable is connected straight. Since the cable has no directionality, either side of the connector may be connected to UTMII and TM201.

Connect UTMII while paying attention to the direction of the arrow on the connector.

■Connection to the outlet

After connecting to UTMII, the AC adapter is connected to the outlet. Input power is AC100 to 240V (-15%, +10%), free power supply. Frequency is 50/60Hz.

2-2. Install the USB driver and the dedicated PC application

Please make sure to install USB drive and PC application prior to connecting TM201 to the PC for the first time.

■PC operating environment

OS	Windows7	CPU	Core i3 2GHz or above
Display	800×600 pixel or above	Memory	2GB or above
USB port	One or more free ports	Hard disk	15GB free space or more
USB driver	Virtual COM Port (VCP) Drivers (made by FTDI Limited)		

■USB driver installation

Online network to perform automatic installation of driver.

Please go online network.

The driver automatically downloaded and installed via the network when TM201 connected to PC with the USB cable.

In case of failing driver installation or not starting of PC application software, you delete the USB driver and reconnect to PC. Please try again.

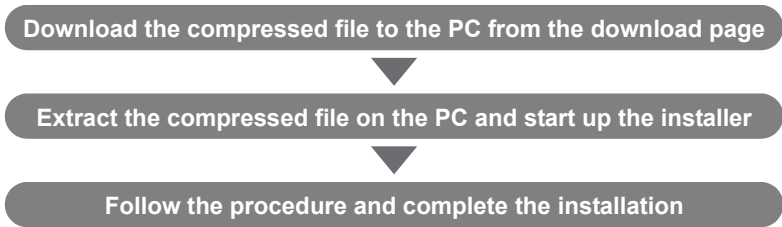
If it doesn't automatically perform installation, see the homepage of FTDI.

Guide	<a href="http://www.ftdichip.com/Support/Documents/InstallGuides.htm">http://www.ftdichip.com/Support/Documents/InstallGuides.htm</a>
Driver	<a href="http://www.ftdichip.com/Drivers/VCP.htm">http://www.ftdichip.com/Drivers/VCP.htm</a>

■Installation of the dedicated PC application

Download and install the dedicated PC application from the UNIPULSE website. To download the application, user registration (free) is required.

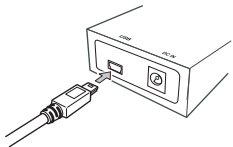
\* <https://www.unipulse.tokyo/en/product/tm201-2/>



2-3. Connect the TM201 to the PC with the USB cable and start up the PC application

■Connection of the USB cable

The USB cable included enables easy connection to the PC. Once the USB cable is connected, the TM201 turns on due to power supply from the USB cable, and ALM (red) lamp or STATUS (green) lamp operates.



■Check of virtual COM port

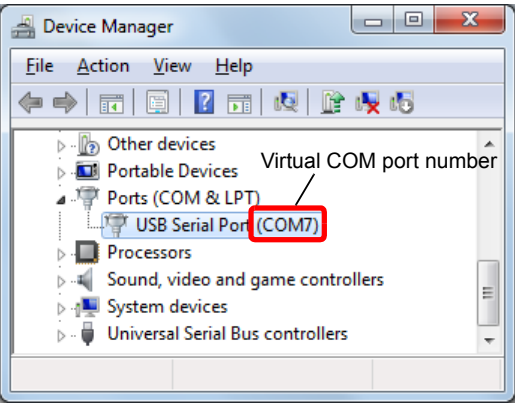
Check the virtual COM port number to which the TM201 is connected from the Device Manager of the PC.

The device manager is located inside the control panel.



Key points

If the COM port number of the TM201 cannot be determined due to multiple USB Serial Ports and so on, unplug the USB cable once and confirm that one COM port is removed from the list of ports (COM and LPT). When the USB cable is reconnected to the previous connector, the number of COM ports displayed in the list increases. This number represents the COM port number of the TM201.



■Startup of PC application

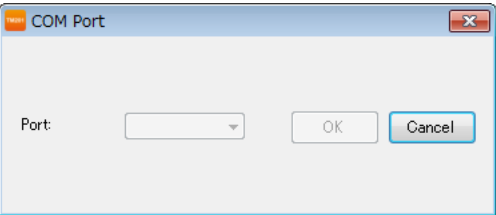
Double-click the shortcut of the TM201 on the desktop or click "UNIPULSE"→"TM201"→TM201 from the Start menu.



■Specification of COM port

Select the virtual COM port checked in the Device Manager of the PC on the start screen, click the "OK" button, and the PC application starts up.

Once the PC application starts up, the ALM lamp of the TM201 lights off. If the lamp is a slow flash, check that power is supplied from the AC adapter, and if the lamp lights on, check that the virtual COM port of the TM201 has been properly selected in the PC application.



\* If the number of valid COM ports is one, the PC application starts up without displaying this selection screen.

2-4. Set the sensor type in the calibration tab of the PC application and perform calibration

Once set, the torque and rotation speed can be checked in the waveform tab of the PC application.

\* Refer to the operation manual for details of functions and usage.

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