

WTPT-1000 Wire Terminal Pull Tester

Operation Manual

**Warning**

Operators should wear protection such as a mask and gloves in case pieces or components break away from the unit under test.

Whether the unit is ON or OFF, DO NOT exceed the capacity of the sensor. NEVER exceed 120% of the rated capacity, or the sensor will be damaged. At 110% of the rated capacity the display will flash a warning.

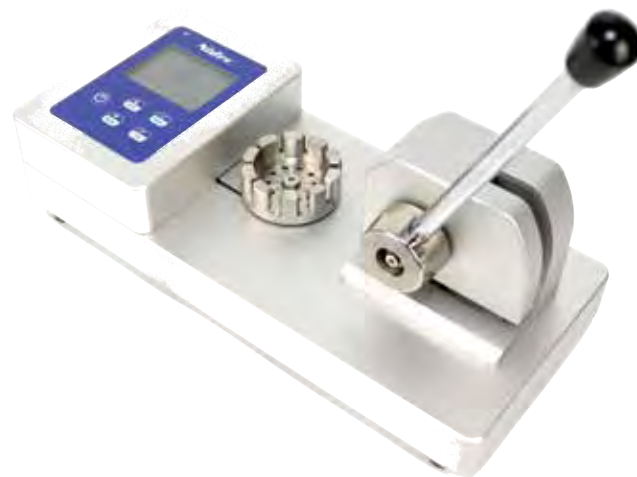
Measure in line with the cam apparatus only. DO NOT attempt to measure forces at an angle to the sensor – damage to sensor may result.

Do not attempt to repair or alter this instrument. Warranty will be voided and damage to the unit may result.

Use and store within the stated temperature and humidity ranges, or damage and failure may result.

Ensure during testing unit is used on flat, stable surface.

If not using this instrument for extended periods of time, remove the batteries to prevent potential battery leakage from causing product damage.



The WTPT-1000 Electrical Terminal Wire Tester is a compact, robust, highly accurate test instrument for testing wire terminal test strength. With its all-metal construction and easy clamp cam-loading mechanism, the WTPT enables quick, repetitive, long-term usage on production assembly lines. The $\pm 0.2\%$ F.S. accuracy combined with 0.01 lb/kg precise resolution produces superb performance for quality control and lab testing. Terminal wheel enables quick selection between 10 different diameter size wires from 0.03 to 0.25" (0.8-6.35 mm).

The WTPT provides long operation life and power flexibility with the ability to work from the internal rechargeable battery or included AC adapter. The analog bar graph on the backlit, LCD aids users by providing the resultant force's current position compared to the full-scale range.

The WTPT has four operations modes: Track, Peak, First Peak, Auto-Peak: Track for live readings, Peak which records the highest level over a test, First Peak which records a reading after a programmed decrease, Auto Peak which resets after a programmed period of time. Additional tolerance function, available in all modes, with programmable thresholds and pass/fail icons produces live test feedback allowing instant determination of the results.

Every tester comes standard with USB and RS-232 outputs. The WTPT's software enables the uploading of data and the additional statistical analysis with its auto-calculation of the selected values. These excellent features make the WTPT-1000 Electrical Terminal Wire Testers a versatile addition to the production, R & D and quality control departments.

SPECIFICATIONS

Measuring Capacity: 224.8 lbf (100 kgf)

Accuracy: $\pm 0.2\%$ of FS

Wire Size Dia. Range: 0.03 - 0.25 in; 0.8, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 5.0, 6.35 mm; AWG 30 - AWG 3

Minimum Sample Length: 5.5" (140 mm)

Maximum Elongation: 1.7" (44 mm)

Units of Measure: N, kgf, lbf, ozf

Measure Modes: Track, Peak, First Peak, Auto Peak

Overload Protection: 120% of Full Scale

Sampling Rate: 2 kHz (Track mode); 8 kHz (Peak Mode); 8 kHz (First Peak); 8 kHz (Auto Peak)

Display: 160* 128 Dot matrix backlit LCD

Display Update Rate: 100ms

Resolution: 0.01 lbf, 0.1 N, 1 ozf, 0.01 kgf

Memory: 1000 data points

Output: USB, serial port RS-232, High and low limit NPN

Battery Indication: Battery icon flashes when low

Battery Life: Approx. 25 Hours continuous on full charge

Charger/Adapter: Universal USB charger, input 110 - 240 V ac 50/60 Hz

Power: 3.6 VDC 1600 mA Ni-MH battery pack

Operating Temperature: 14 to 104°F (-10 to 40°C)

Humidity Limit: 20 - 80% RH

Dimensions: 12.9 x 5.4 x 9.8" (327 x 136 x 249 mm)

Product Weight: 10.4 lb (4.7 kg)

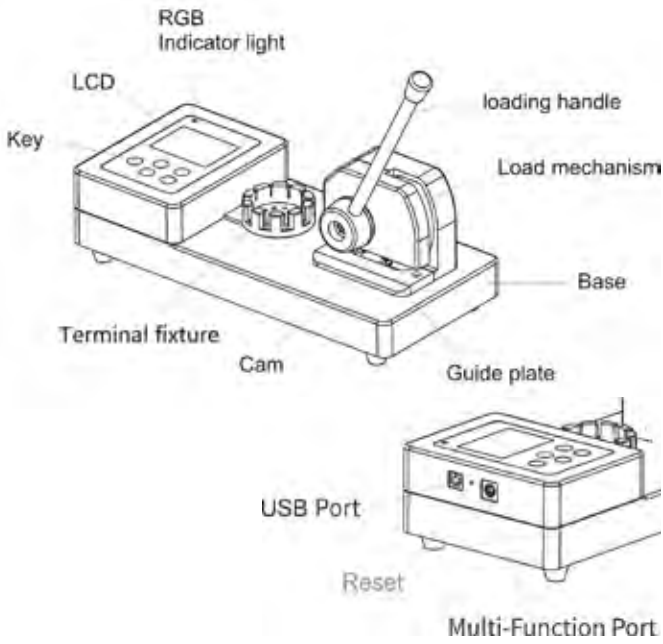
Package Weight: 12.8 lb (5.8 kg)

Warranty: 1 year

Certification: CE, RoHS

Included Accessories: USB cable, charger adapter, cal. cert.

Optional Accessories: RS-232 cable, printer cable

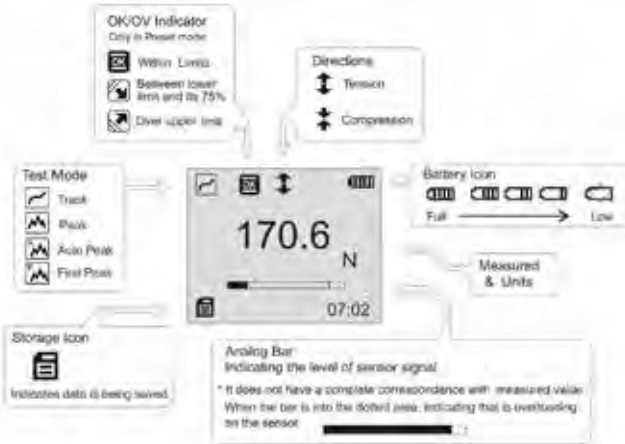


MODE DETAILS

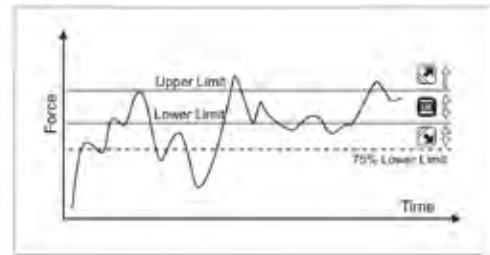
Press **MODE** can change the mode between Track, Peak.
 Recommend using peak mode for measurement.



LCD SCREEN



Tolerance alarm on



MENU STRUCTURE

Menus	Submenus	Selections
Measurement	Unit	N, kgf, lbf, ozf
	Group	01-99
	Tolerance	Max, Min
	Test Mode	Track, Peak, AutoPeak, Firstpeak
	Peak Time	1-99s
	Alarm	On, Off
Memory	Storage Mode	Single, Auto
	Browse All	
	Browse Selected	
	Delete Selected	
	Delete All	
Printing	Print Recent	
	Print Selected	
	Print All	
	Print Diagram	
	Display Mode	Digital, Diagram
System	Power Off	1~99 minutes
	Backlight	ON, Off, 15s, 30s, 45s, 60s
	Key Tone	ON, Off
	Date/Time	
	Password	
	Key Setting	Print, storage
	Default Setting	
Language	English, Chinese, German	
Calibration		
Information	Model, SN, Version	

KEY FUNCTIONS



ON/OFF: Push for 1 second to power On or Off.



		Short Press	Long Press
Measuring	Track	Zeroing(tare)	-
	Peak	Update peak	Zeroing(tare)
Menus		Moves selection up Increases the value	-



Measuring: Changes the measure mode.
Menus: Moves selection down or move digit.



Measuring: Enter the menus.
Menus: Select or Enter.

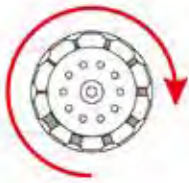


Measuring: Store data.
Menus: Back or quit.

OPERATION

Select the corresponding slot width based on the cable diameter.

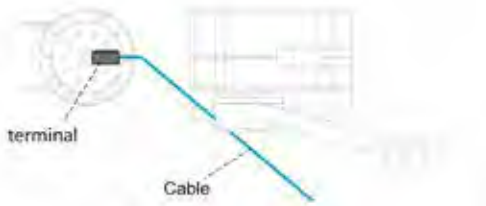
Rotating terminal fixture



Slot orientation

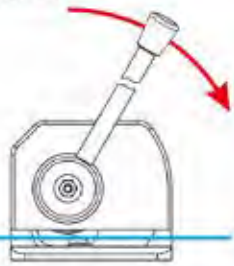


Install the terminal



CLAMPING WIRE CABLES

Rotate the handle clockwise to push the cam away. Insert the cable and release the handle to reset the cam to clamp the cable.



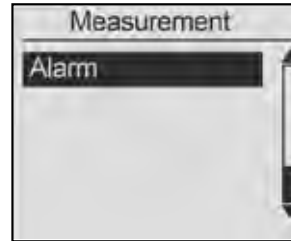
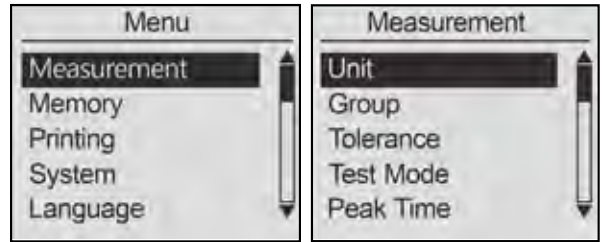
Loading

Rotate the handle counterclockwise to load.



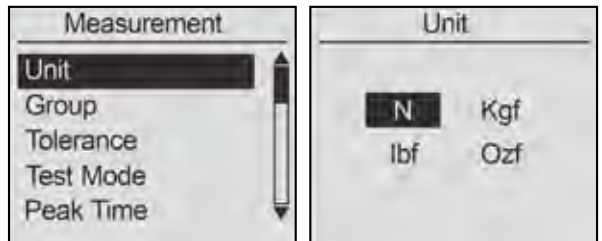
MEASUREMENT MENU

The Measurement menu contains six selectable items: Unit, Group, Tolerance, Test Mode, Peak Time, and Alarm.



Unit

The measuring unit can be selected under this menu. Touch "ZERO" or "MODE" keys to move to the next selection. Press "LOG" to cancel or touch "MENU" to confirm and exit.



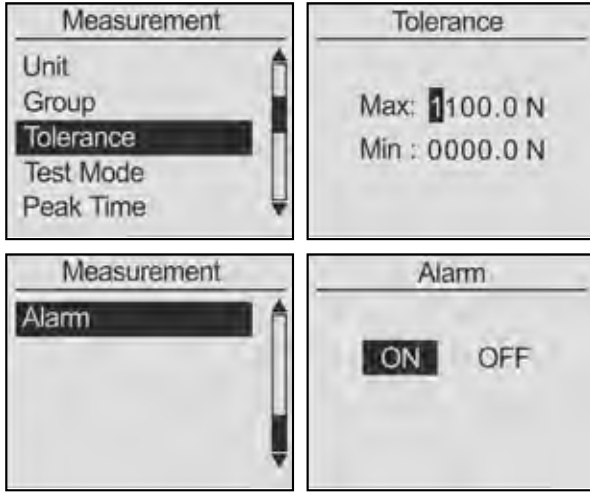
Group

When several test samples need to be measured, the samples can be coded into groups. The range is 01-99. When set to "00", becomes, "01" automatically. Press "ZERO" to adjust the value, touch "MODE" to shift to the next position. Touch "LOG" to cancel; press "MENU" to confirm and exit.



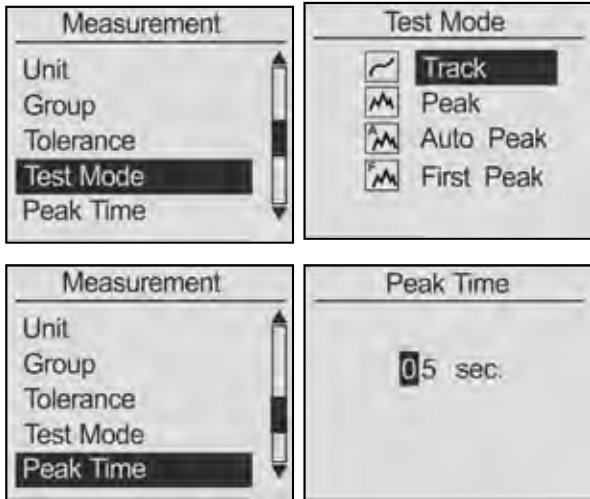
Tolerance

Program high and low limit values to enable ok/ov testing. The lower limit value cannot be greater than the upper limit value, and neither limit value can be greater than 110% of the rated capacity. Press “ZERO” to adjust the value, touch “MODE” to shift to the next position. Press “LOG” to cancel; touch “MENU” to confirm and exit. To activate the limit tolerances, must set to “ON” in the Alarm menu.



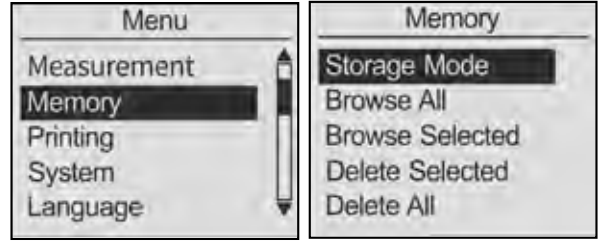
Test Mode

Change the mode of operation between the four modes. Press “ZERO” or “MODE” keys to select. Press “LOG” to cancel or “MENU” to confirm and exit. This adjustment can also be changed at the home screen display by simply pressing “MODE”. If choosing Auto Peak Mode to set a peak time capturing period, set this time in Peak Time setting menu. First Peak Mode will display a drop ratio menu (Figure -2). This drop ratio activates the first peak recording.



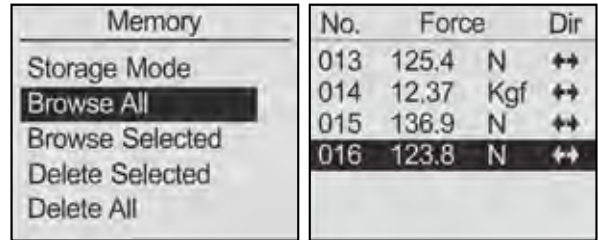
Memory

In the Memory menu, the user can browse, delete, or print the data.

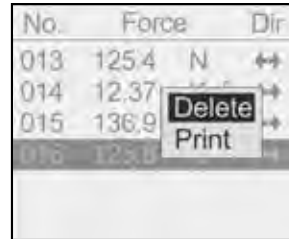


Storage Mode

Select Single to save the displayed value when “LOG” key is pressed. Single is active in all four modes. For continuous data storage, select Series. When a peak capture is achieved, this value will be saved.

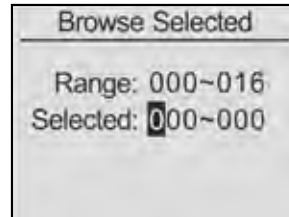


Touch “MENU” to see Delete or Print options. Touch “LOG” to go back.



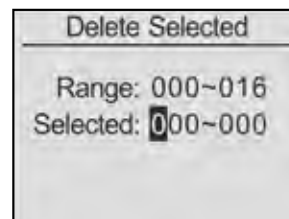
Browse Selected

User can choose the data to browse. The available range of data stored is shown. Touch “ZERO” to adjust the value. Press “MODE” to shift to the next position. Press “LOG” to cancel; touch “MENU” to confirm.



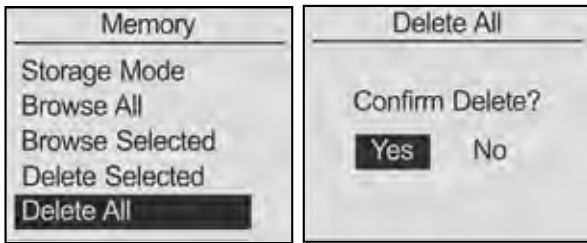
Delete Selected

Select the range of data to be deleted. Touch “ZERO” to adjust the value. Press “MODE” to shift to the next position. Touch “LOG” to cancel; touch “MENU” to confirm.



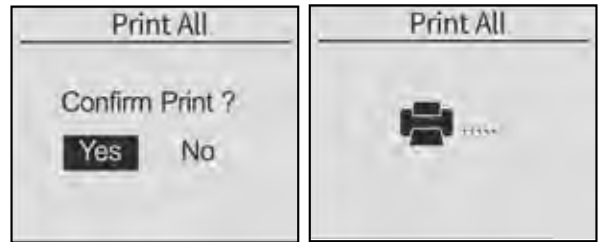
Delete All

In this menu, a prompt will appear. All data will be deleted by selecting "YES" and canceled by selecting "NO" or pressing "LOG".



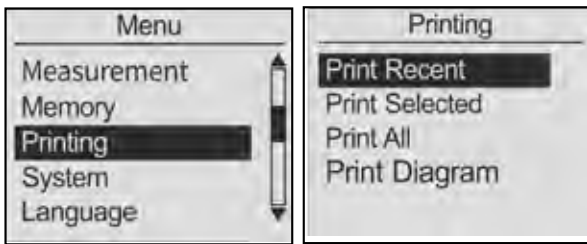
Print All

To print all data saved in memory, a prompt window will display. All data will be printed by selecting "YES". This operation will be canceled by selecting "NO" or touching "LOG".



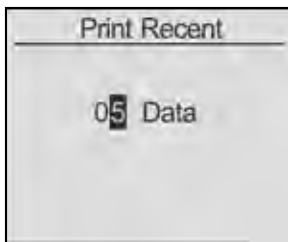
Printing

The Printing menu contains four selectable items: Print Recent, Print Selected, Print All and Print Diagram. The data saved in memory can be output to a printer through the serial port RS232 connection. (See RS232 for more information)



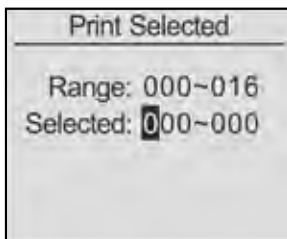
Print Recent

Print recently stored data in this menu. The range is 0~19. Touch "ZERO" to adjust the value. Touch "MODE" to shift to the next position. Press "LOG" to cancel. Press "MENU" to confirm.



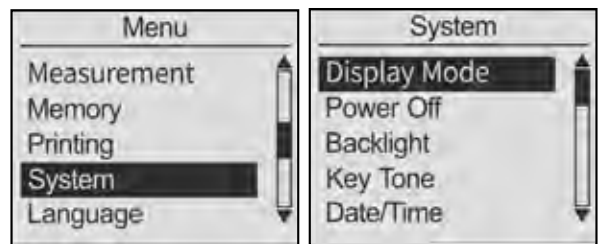
Print Selected

Select the data range to print. Touch "ZERO" to adjust the value, touch "MODE" to shift to the next position. Press "LOG" to cancel; touch "MENU" to confirm.



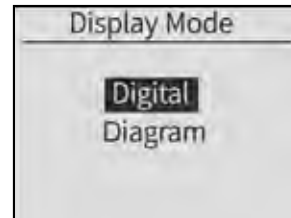
System

Under the System menu, nine parameters may be set.



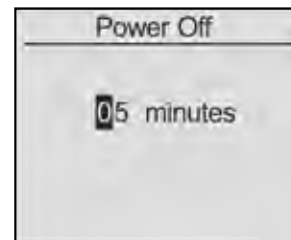
Display Mode

Two display modes may be selected: Digital and Graphic.



Power Off

To maximize battery life, the power can be set to shutdown after non-use. The time can be set in this menu. The range is 01-99 minutes. When set to "99" the gauge will never turn off. Touch "ZERO" to adjust the value, touch "MODE" to shift to the next position. Press "LOG" to cancel; Push "MENU" to confirm and exit.



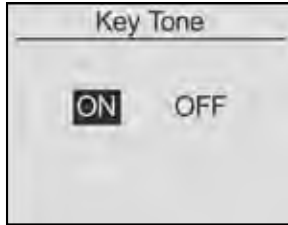
Backlight

The backlight can be set to ON, OFF or have a timed auto-off. Touch "ZERO" or "MODE" keys to shift to the next position. Press "LOG" to cancel. Press "MENU" to confirm and exit.



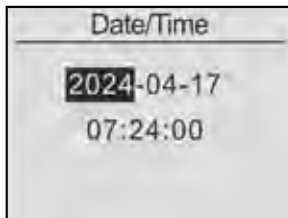
Key Tone

Turn the key sound ON or OFF. Touch "ZERO" or "MODE" keys to shift to the next position. Touch "LOG" to cancel; Press "MENU" to confirm and exit.



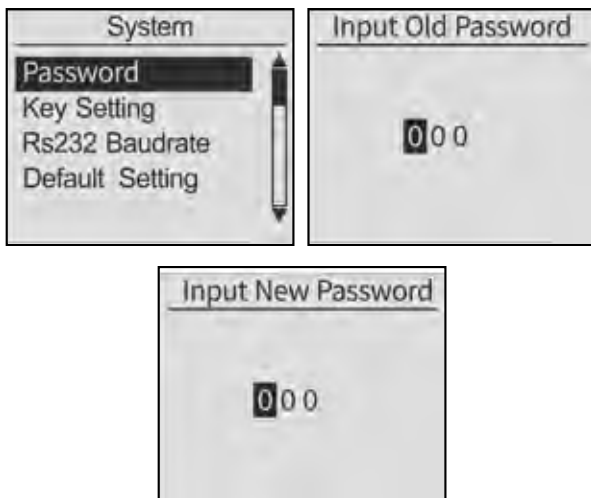
Date Time

The system time may be set under this menu. Touch "ZERO" to adjust the value. Press "MODE" to shift to the next position. Touch "LOG" to cancel. Press "MENU" to confirm and exit.

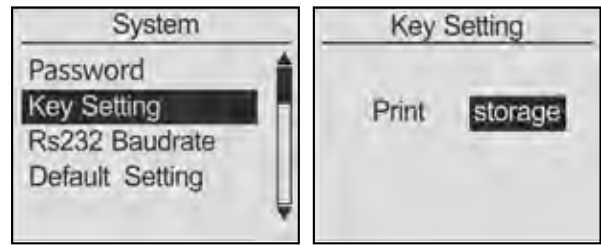


Password

The system password can be changed. The default System password is "123". First, enter the old password, then enter the new password and confirm the new password. Touch "ZERO" to adjust the value. Press "MODE" to shift to the next position. Touch "LOG" to cancel; Push "MENU" to confirm and exit.



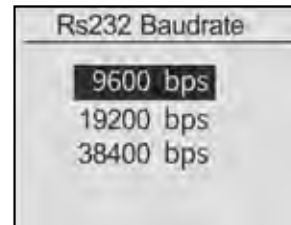
Key Setting



Set the default function of the "LOG" key from the home screen. The function can be set to print or store the current displayed value. Press "ZERO" or "MODE" to select the proper setting. Press "LOG" to cancel; touch "MENU" to confirm and exit. The default value is set to Storage

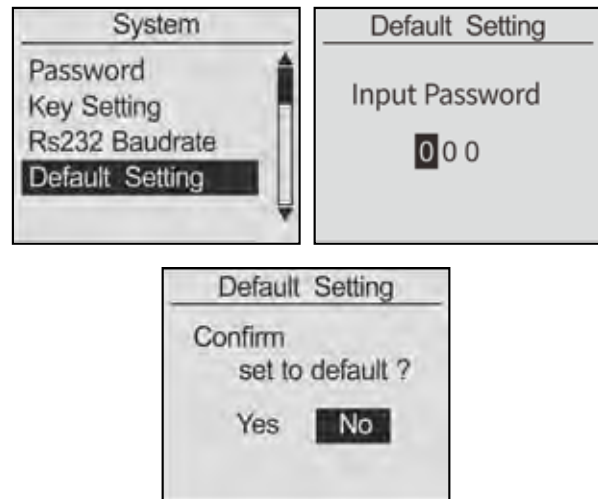
RS232 Baudrate

Adjust Baudrate to available bits per second selection.



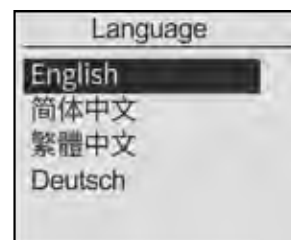
Default

When experiencing undetermined issues, the terminal tester can be restored back to the original factory settings. Only perform this operation when all other troubleshooting tactics have been attempted.



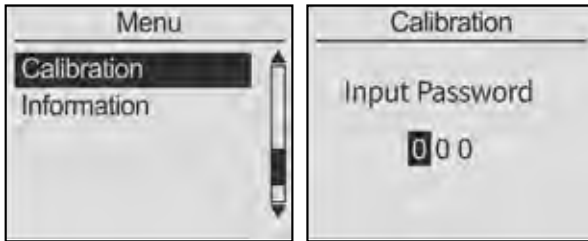
Language

Select between English, German and Chinese

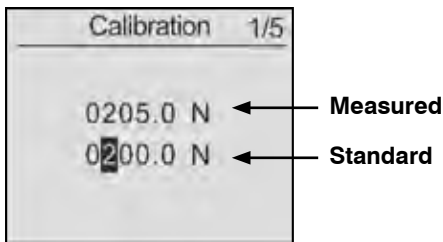


Calibration

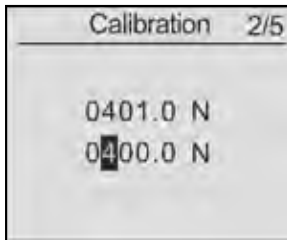
Users can field-calibrate the gauge. First, enter the system password (Default is 123) by pressing the “ZERO” and “MODE” keys. Then press “MENU” to confirm.



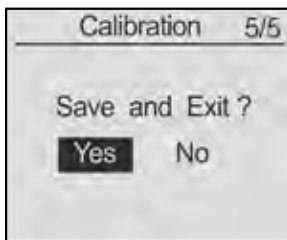
Mount the unit in a position to allow addition of a standard weight. A bracket may be required and is offered by Nidec. If a bracket is added, tare this load by pressing “ZERO”. Load a standard force. Wait a moment for the force to stabilize.



The current measured value should equal the standard force applied. If the values do not match, press “ZERO” and the “MODE” keys to correct the measured value. Press “MENU” to enter the next calibration point.



After any of the calibration points have been completed, touch “LOG” to exit the calibration mode. Then save the calibration or discard by pressing “Yes” or “No”. After completing the calibration of the 5th point, the confirmation window will automatically ask to “Save and Exit” by selecting “Yes” or “No”.



Information

Information includes the model, version of the software and the serial number.



Charging

The WTPT is supplied with a set of 3 Nickel Metal Hydride AAA rechargeable batteries, which are supplied fully charged to allow immediate use. Users need to recharge batteries when a low battery icon flashes. Users should connect the gauge and the charger using the USB cable. Then connect the charger to an AC socket to start charging. Laptops and other USB devices can also charge the gauge. A fully charged battery pack will provide approximately 25 hours of constant use.

Rechargeable battery pack:

- Type: Ni-MH 3.6VDC 1600 mAH rechargeable batteries
- Charging time: approx. 3~4 hours
- Battery life: approx. charge and discharge 500 times

Communication

USB

Series WTPT is designed in accordance with USB2.0 standard protocol. The USB Port can be connected to a charger with the USB cable for charging the internal Ni-MH battery and can be connected to a computer for uploading the measured values. Connect the gauge and the computer with the USB cable, then open the computer software. Upload the values. Please refer to the software manual for additional information.

USB-B Female Socket: USB 2.0
Used for connecting to PC or other USB host equipments.



Pin	Description	Pin	Description
1	VBUS Recharge V+	3	D-
2	D+	4	GND Recharge GND

RS-232

The RS232 serial port is used to connect a printer to print the memory data.

RS-232 specifications are as follows:

- Data transmission: serial interface
- Synchronization: asynchronous
- Signal Level: RS-232 level, logic 1:-5v, logic 0: +5v
- Hardware Flow Control: None
- Data word length: 8 bits
- Stop bit: 1bit
- Parity: None
- Baud rate: 38400

MD8 Socket: RS232 and setpoint output

Used for connecting to printer or connecting to RS232 equipment and setpoint output(alarm signals)



Pin	Description	Pin	Description
1	RS232 Transm(TX)	5	Reserved
2	RS232 Receiv(RX)	6	Output COM-
3	RS232 Ground	7	Output B+
4	Output A+	8	Reserved

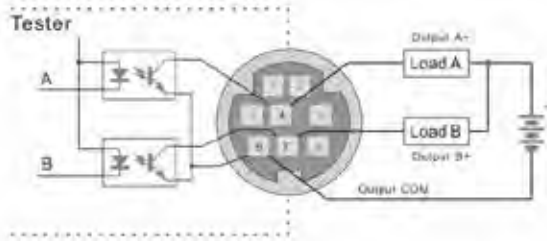
DB-9 male



Pin2 RX
Pin3 TX
Pin5 GND

Comparison Output

Comparison Output internal circuit shown.



When the measured value is less than the lower limit tolerance value, the "pc2" operates, 7pin and 6pin line conduction. When the measured value is more than the upper limit tolerance value or 110% of the rated capacity, the "pc1" operates, 4pin and 6pin line conduction.

Maximum Permissible Voltage
 pin 7 to pin 6, pin 4 to pin 6: 35V;
 pin 6 to pin 7, pin 6 to pin 4: 6V.

A-1 Dimensions

Unit: mm

