

Standard Model Digital Force Gauge ZTS series

Feature 1 Clear display / Easy setting.

Feature 2 You can capture peak value precisely due to high sampling.

Feature 3 Easy data management on PC with included software, ZT-Logger.

Feature 4 Various functions to improve usability in different environment.



Included Software ZT-Logger



How to use

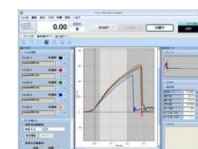
Simply handheld use



High repeatability with a test stand



Make graphs to analyze force transition

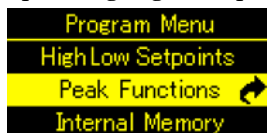


Press peak button once, so that it holds peak value.

Feature 1 Clear display / Easy setting

- Clear organic display has excellent readability and reduces misreading.

- Setting menu with multiple languages helps easy operation.



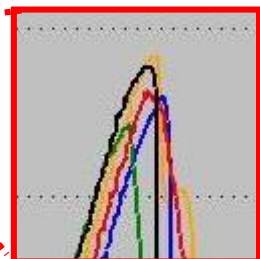
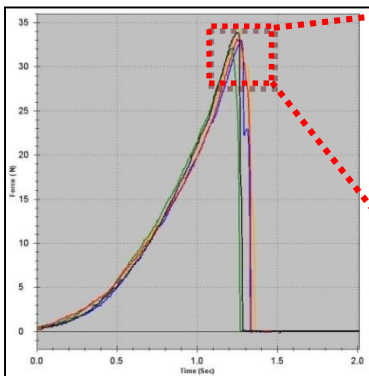
*Higher range of 2500N is different in shape

Feature 2 You can capture peak value precisely at high sampling.

It reduces missing load value due to high sampling speed (2000 data / sec.). Peak value can be accurately captured.

Breaking tests of the same sample

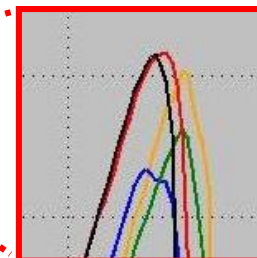
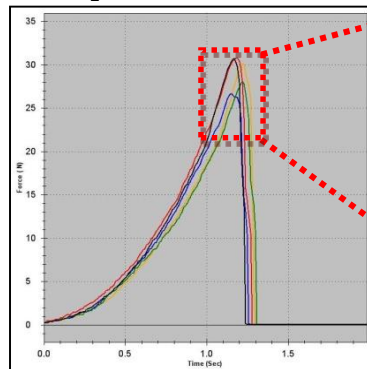
Sampling speed: 2000Hz
->High repeatability



Data measured at 2000Hz

Ave. of peak : 33.2N
Nearly the same value

Sampling speed: 100Hz
->Dispersion of the measured data



Data measured at 100Hz

Ave. of peak: 29.92N
Values vary. Ave. is lower.

*Depending on sample or testing conditions, you may not get the same result.

With optional software, Force Recorder, you can make graphs of force versus time.

For further information, go to "Related products" on page 5

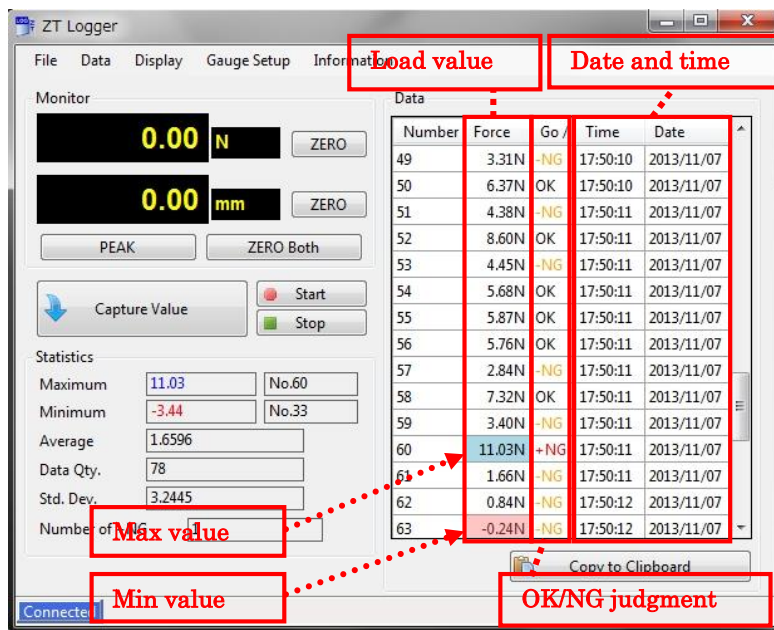
Feature 3 Easy and reliable data management on PC with included software, ZT-Logger.

Included data logger software, ZT-Logger can transfer data to PC by one click all at once.

- Displayed value at when you press SEND button
- Continuous data (10 data / sec)
(You can make a graph with Excel later)
- Data saved in internal memory

Merits to Use

- You can connect ZTS to PC via USB, easy setup.
- Date and time are automatically recorded when you transfer data. Data query in the future is easy.
- Maximum / minimum value, OK/NG judgment (+NG / -NG) are colored, so that you can clearly understand the test result.
- Easy printing, saving (format image on the right) and management of data.



| | | |
|---------------|---------|-------|
| Maximum | 11.82 | No.17 |
| Minimum | -15.2 | No.26 |
| Average | -0.7877 | |
| Data Qty. | 83 | |
| Std. Dev. | 4.6975 | |
| Number of -NG | 0 | |

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FORCE MEASUREMENT
IMADA
ZT-Logger 1.04

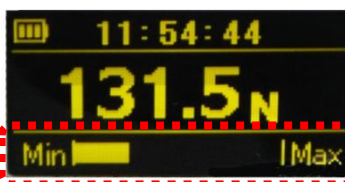
| Number | Force | Displacement | Go / No Go | Time | Date |
|--------|--------|--------------|------------|---------|------------|
| 1 | 0.00N | 0.00mm | OK | 8:58:15 | 2015/06/15 |
| 2 | 0.00N | 0.00mm | OK | 8:58:15 | 2015/06/15 |
| 3 | 0.01N | 0.00mm | OK | 8:58:15 | 2015/06/15 |
| 4 | 0.00N | 0.00mm | OK | 8:58:15 | 2015/06/15 |
| 5 | 0.00N | 0.00mm | OK | 8:58:15 | 2015/06/15 |
| 6 | 0.00N | 0.00mm | OK | 8:58:16 | 2015/06/15 |
| 7 | 0.00N | 0.00mm | OK | 8:58:16 | 2015/06/15 |
| 8 | 0.00N | 0.00mm | OK | 8:58:16 | 2015/06/15 |
| 9 | 0.00N | 0.00mm | OK | 8:58:16 | 2015/06/15 |
| 10 | 0.00N | 0.00mm | OK | 8:58:16 | 2015/06/15 |
| 11 | 0.01N | 0.00mm | OK | 8:58:16 | 2015/06/15 |
| 12 | 0.09N | 0.00mm | OK | 8:58:16 | 2015/06/15 |
| 13 | 0.74N | 0.00mm | OK | 8:58:16 | 2015/06/15 |
| 14 | 2.67N | 0.00mm | OK | 8:58:16 | 2015/06/15 |
| 15 | 5.88N | 0.00mm | OK | 8:58:16 | 2015/06/15 |
| 16 | 10.36N | 0.00mm | OK | 8:58:17 | 2015/06/15 |
| 17 | 11.82N | 0.00mm | OK | 8:58:17 | 2015/06/15 |

Print Preview

With optional software, Force Recorder, you can make graphs of force versus time.
For further information, go to "Related products" on page 5

Feature 4 Various functions to improve usability in different measurement environment

Bar graph of force



Force transition is clearly visible.

You can clearly see force transition, which is useful for overload (sensor break-down) prevention. *1

Overload (sensor break-down) warning *1



When load over its capacity is added, warning is indicated. Please stops measurement immediately when this indication show up.

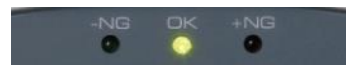
Internal memory



Peak values can be saved in ZTS itself.

1000 data at maximum can be saved, and you can see the data on its display.

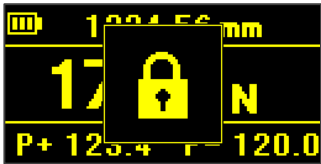

OK/NG judgment



LED light shows its judgment.

Alarm goes off when it detects +NG

You can set high/low points, and LED light tells you if measured value is between high and low points or not. Signal output is also possible and you can synchronize it with external equipment.

| | |
|--|--|
| <p>Setting LOCK</p>  <p>Locking the current settings</p> <p>It prevents unintentional changes of settings.</p> | <p>Saving measured Date and Time</p>  <p>Easy data management</p> <p>It has calendar and clock functions which enable saving measurement data with its time and date record.</p> |
| <p><u>When you connect ZTS to a motorized test stand (External equipment) with a dedicated cable, more useful functions can be activated:</u></p> <p>For example...</p> <ul style="list-style-type: none"> - Avoiding overload (sensor break-down) *2 - Operation control according to selected load values. | |

*1 It does NOT completely prevent overload. It may be overloaded before the warning indication shows up in the case when high load is added in a moment.

*2 A motorized test stand and a dedicated cable are necessary to activate this function.
We cannot assure the perfect prevention against overload (sensor break-down).

[Specifications of ZT series]

| Model | ZTS |
|----------------------------|--|
| Feature | Standard model with high functionality and usability. |
| Accuracy | +/-0.2%F.S./-1digit |
| Unit of measurement(*1) | N, kgf, lbf (*2) |
| Display | 4-digit Organic EL |
| Display update | 16 / sec |
| Sampling rate | 2000 data / sec at maximum |
| Battery | 8 hours (2 hours charge) |
| Safe overload rating | Approx.200%F.S. |
| Operating environment | Temperature: 0 to +40 degree Celsius, Humidity: 20 to 80%RH |
| Function | Customized display (header and footer), Peak hold (tension and compression), Internal 1000 points data memory, Comparator (judgment of OK or NG), Reversible display, Sign inversion, Zero clear timer, +NG alarm, Off timer (auto power off), Dumping, Time display, Setting lock |
| Output | USB, RS232C, Mitutoyo digimatic (*3), 2 VDC analog output (D/A), Comparator 3 steps (-NG/OK/+NG), Overload alarm |
| Overload warning | Approx.110%F.S. (Warning message and alarm) |
| External connecting switch | SEND (a point of contact holding), Zero reset, Peak ON/OFF setting |
| Weight | From 2N to 1000N model: Approx.490g (*4) 2500N, 5000N: Approx.1100g (*4) |
| Dimensions | Please refer to dimensions. |
| Accessory | AC adapter, Inspection certificate, CD driver (including simple software for data logging), Attachments (The set of attachments varies according to range.), USB cable, Carrying case. |

*1 These are the specifications for International model. Please note that this unit is different from Japanese domestic model and international one.

*2 [N indication] The indication of 2N and 5N models is mN or N. The indication of 1000N,2500N and 5000N model is N or kN.
[kgf indication] The indication of 2N and 5N models is gf.
[lbf indication] The indication of 2N and 5N models is ozf.



*3 Not always available for Mitutoyo digimatic products.

*4 Weight is slightly different according to range.

[ZTS series models]

| Model | Capacity | Display | Resolution | Thread | Included attachment |
|-----------|----------|-----------------|--------------|----------|---------------------|
| ZTS-2N | 2N | 2.000N (2000mN) | 0.001N (1mN) | M6 | A1 to A8 |
| ZTS-5N | 5N | 5.000N (5000mN) | 0.001N (1mN) | | |
| ZTS-20N | 20N | 20.00N | 0.01N | | |
| ZTS-50N | 50N | 50.00N | 0.01N | | |
| ZTS-100N | 100N | 100.0N | 0.1N | | S1 to S8 |
| ZTS-200N | 200N | 200.0N | 0.1N | | |
| ZTS-500N | 500N | 500.0N | 0.1N | | M10 |
| ZTS-1000N | 1000N | 1000N (1.000kN) | 1N (0.001kN) | B1 to B8 | |
| ZTS-2500N | 2500N | 2500N (2.500kN) | 1N (0.001kN) | | |
| ZTS-5000N | 5000N | 5000N (5.000kN) | 1N (0.001kN) | | |

[Included Accessories]

| | | |
|---|---|---|
| <p>Data logger Simple software ZT-Logger</p> | <p>Main functions</p> <ul style="list-style-type: none"> - Captures peak data (*1) - Captures continuous data (10 data /sec) (*1) - The recall of memory data (*1) - Saves data in CSV format <p>Operating environment (*2)</p> <ul style="list-style-type: none"> - OS: Windows XP/Vista/7/8/8.1 (32bit/64bit of 7/8/8.1) - CPU: more than 1GHz - Memory: more than 1GB - Hard disk : more than 2GB - .NET Framework4 later <p>*1 Available data: Force / Time *2 Please note that the software may not work in all environmental combinations.</p> |  |
| <p>Graphing software Trial version Force Recorder Professional Trial Edition</p> | <p>◎You can try an optional graphing software for free for 30 days.</p> <p>Main functions</p> <ul style="list-style-type: none"> - Force versus time graphing at 2000Hz at maximum - Overlaying graphs for comparing, editing functions such as comment writing. <p>Operating environment (*1)</p> <ul style="list-style-type: none"> - OS: Windows XP/Vista/7/8/8.1 (32bit/64bit of 7/8/8.1) - CPU: more than 1GHz - Memory: more than 2GB - Hard disk: more than 10GB - .NET Framework4 later <p>* Some functions are not available in trial version. Please refer to the specifications of Force Recorder series for more details. *1 Please note that the software may not work in all environmental combinations.</p> |  |

| | | |
|------------|---|---|
| Attachment | <p>Accessory attachment</p> <p>>> Please refer to ZT series Range above.</p> <p>*The set of attachments varies according to range.</p> <p>*For more information, please refer to Standard attachment specifications.</p> | <p>Accessory attachments' shape. (an excerpt)</p> <p>S-1 Small hook S-2 Disk shaped S-3 Conical shaped S-6 Extension rod S-7 Large hook</p> |
|------------|---|---|

[Option]

| Option | Details | Model |
|----------------------------------|---|-------|
| Analog voltage (Sensor raw data) | <p>To output sensor data as fast analog voltage without conversion.</p> <p>*The speed is higher than D/A (standard), but there are demerits at the same time that zero reset is not possible, and there are may be signal noise.</p> <p>*CB-118 cable is necessary.</p> | -AN |

* With CB-108, you can output analog voltage from standard ZTS series.





[Application of Force Gauge]



ZT series enable...

1. Controlling external equipment according to load value. (e.g. To stop or change operation of machine at a selected load value.)
 2. Adding a certain load value. (e.g. To maintain sample pressed at a chosen load value.)
 3. Producing inspection device synchronized with work process. (e.g. To improving efficiency of inspection process.)
 4. Finding inferior goods earlier with OK/NG judgment function.(e.g. To do quality control thoroughly)
- >> Please contact us or our distributor in your country for further information.

[Related products]

| Graphing Software: Force Recorder | |
|--|---|
| <p>※This image is from Standard ver.</p> | <p>Main functions</p> <ul style="list-style-type: none"> - You can make graphs at real time via USB connection at 2000Hz. - 5 graphs at maximum can be overlaid. (Available in Standard model only) - You can write memo on each graph. You may write down testing conditions such as testing speed. <p>* 2 models available to suit your needs: Light, and Standard * Please refer to each specification for further information</p> |

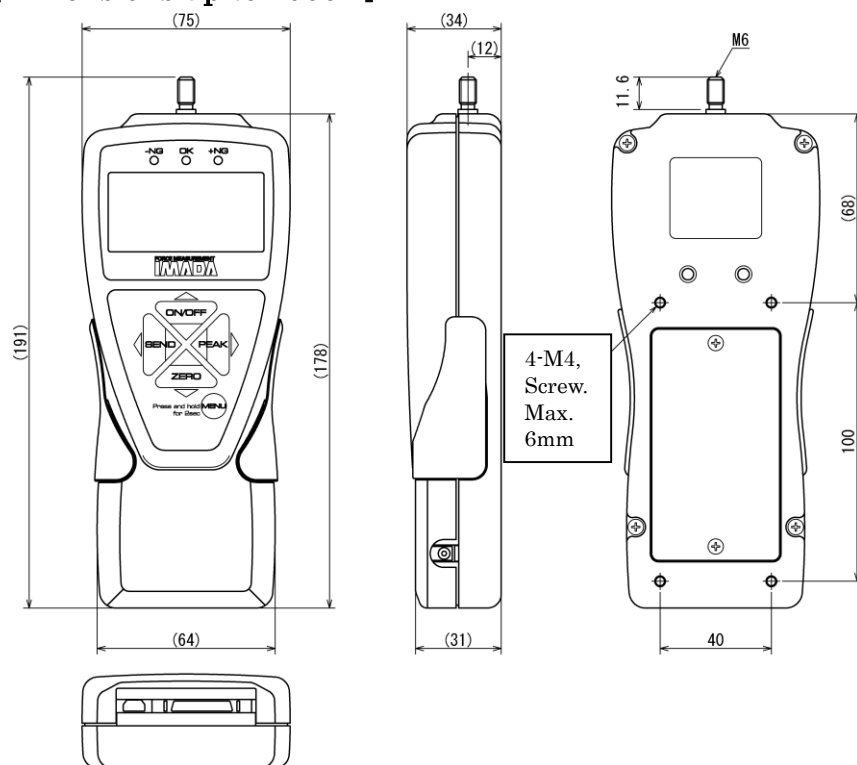
| Force gauge: ZTA series | Printer: DP-1VR | Handle: FOH-1 | Battery: BP-308 |
|---|---|--|---|
|  |  |  |  |
| High functionality model. It has more useful functions than ZTS series. | Prints indicated values and data in internal memory. *CB-308 cable is necessary. | You can grip handles firmly so that it becomes easier to apply high load force steadily. | Battery for replacement. |

| | |
|--|---|
|  | Sensor-separate force gauge ZTS/ZTA series |
| | External sensor (load cell), separated from the amplifier <ul style="list-style-type: none"> - Broad line-up of sensors enables installing into facilities and suitable measuring under special environments. - High accuracy and repeatability* |
|  | eZ-Connect series Sensor-interchangeable Amplifier eZT |
| | eZT is an amplifier which enables to connect to various eZ-Connect load cells of your choice. <ul style="list-style-type: none"> - Useful for different types of measurement; small and large force values, or compression and torque. <p>*The amplifier and the load cell are not calibrated (actual loading calibration) together therefore the inspection certificate is not included. Please calibrate them or ask us for calibration service. *The accuracy of load cell is dependent on the model. Please refer to each specification sheet for details.</p> |

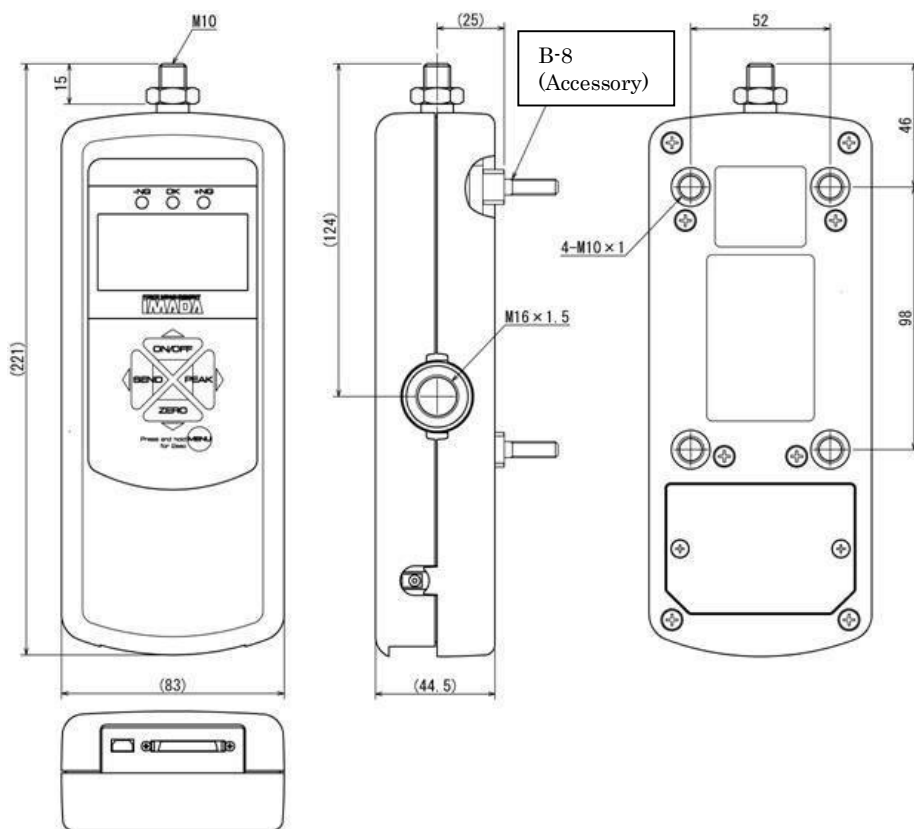
[Related Cable]

| Model | Explanation | Purpose of use |
|--------|---------------------------------------|--|
| CB-108 | Analog cable | To connect to a multi meter, oscilloscope. |
| CB-118 | Analog cable (For -AN option) | To connect to a multi meter, oscilloscope. |
| CB-208 | RS232C cable | To connect to a PC having its own system |
| CB-308 | Digimatic cable | To connect to a printer DP-1VR |
| CB-508 | Test stand option cable (For MX) | To connect to a test stand to enable force control or overload prevention functions. |
| CB-518 | Test stand option cable (For MX2,EMX) | To connect to a test stand to enable force control or overload prevention functions. |
| CB-908 | Open end connection cable | Output cable for loose wire 37 pin (Useful for connection with unique equipment.) |

[Dimensions up to 1000N]



[Dimensions from 2500N up to 5000N]



[Calibration Certificate]

- We offer calibration certificate with extra charge.
- We also offer calibration services according to ISO/IEC17025: 2005
- * Please contact us or our distributor in your country for further information.

[Cautions]

- The contents may be changed without previous notice.
- All of products are designed for measurement purpose only.
- Do not copy and use this content without authority.
- Please note if you add load over capacity, or add force from side or torsion, its sensor would be broken down.
- Please note that the capacity is dependent on the displayed unit. Please contact us for details.

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