High Functionality Model Digital Force Gauge ZTA series

Feature 1 Displacement I/O becomes possible, combined with a linear scale. *1
Feature 2 Continuous data can be saved in USB flash drive,
        and you can transfer data to PC later via USB flash drive.
Feature 3 ZTA has various indication methods of measured values.

* ZTA is advanced model of ZTS.   ZTA's special functions are mentioned in this page.
   For the common specifications of ZTS and ZTA, please refer to page 2 and 3.
*1 Must be combined with a test stand having a linear scale and a dedicated cable to input/output displacement.

*Higher range of 2500N is different in shape

Feature 1 Displacement I/O becomes possible.

You can input/output displacement as well as force when you combine with a test stand having a linear scale by a dedicated cable or DMK scale. *

You can combine ZTA with some other company's linear scales.   Please refer to page 4 for further information.

*   We recommend a dedicated unit for force-displacement measurement: FSA series.   FSA includes all necessary items such as force-displacement graphing software etc. Please refer to page 4 for more details.

Feature 2 Continuous data (1,50 or 100data / sec) can be saved in USB flash drive

You can save 1, 50 or 100 data / sec (selectable) at real time in USB flash drive in CSV format.   You can also transfer internal memory data to USB flash drive.

Even in the case when you cannot connect PC during measurement, you can save data in USB flash drive, and later transfer data to PC via the USB drive.
On PC you can draws the data into a graph with Excel.

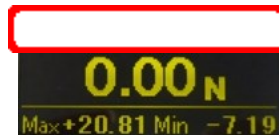## Feature 3 ZTA has various indication methods of measured values.

Max/Min value is indicated
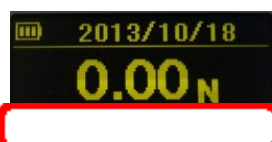
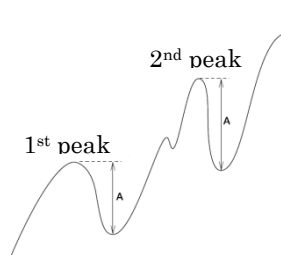Maximum/minimum value among internal memory data can be indicated

-> You can easily see the Max/Min/Ave values
   on its display

Average value is indicated

Average value among internal memory data can be indicated.

1st and 2nd peak values are detected

2nd peak

1st peak

You can set a certain load value (A), and it can capture 2 peak values right before the certain load value dropped.

-> Ideal for click tactile feedback such as
   camera's shutter button, and more.

IMADA CO.,LTD..
High functionality Model Digital Force gauge ZTA series
- ZT series improve measurement efficiency and reliability. -

FORCE MEASUREMENT
IMADA

Basic Performance and Functionality (Common with ZTS series)

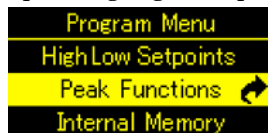| |
|---|
| Feature 1   Clear display / Easy setting. |
| Feature 2   You can capture peak value precisely due to high sampling. |
| Feature 3   Easy data management on PC with included software, ZT-Logger. |
| Feature 4   Various functions to improve usability in different environment. |
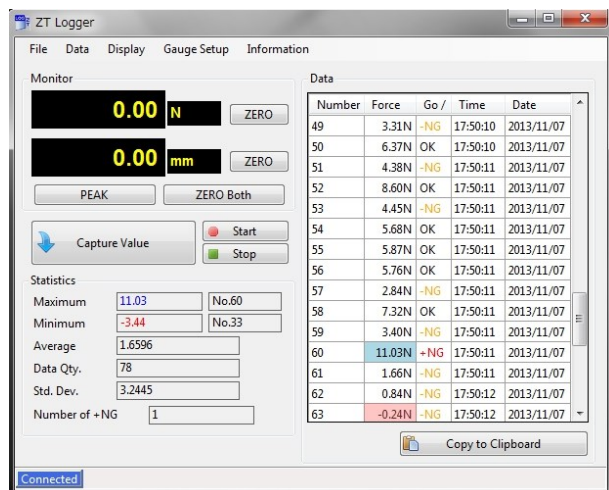
Included Software ZT-Logger (Please refer to page2.)

How to use

Simply handheld use

High repeatability with a test stand

Make graphs to analyze force transition

Feature 1 Clear display / Easy setting

- Clear organic display has excellent readability and reduces misreading.

- Setting menu with multiple languages helps easy operation.

Program Menu
High Low Setpoints
Peak Functions
Internal Memory

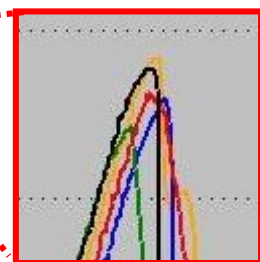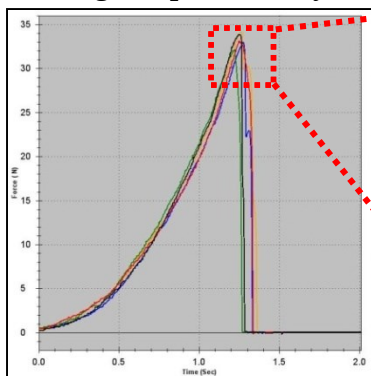*Higher range of 2500N is different in shape
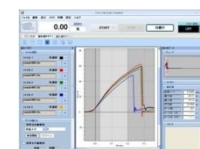
Press peak button once, so that it holds peak value.

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.
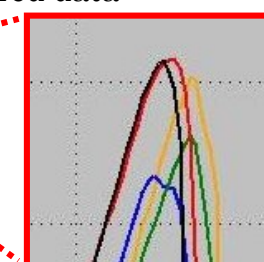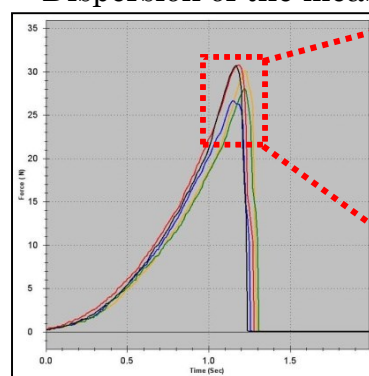
Breaking tests of the same sample

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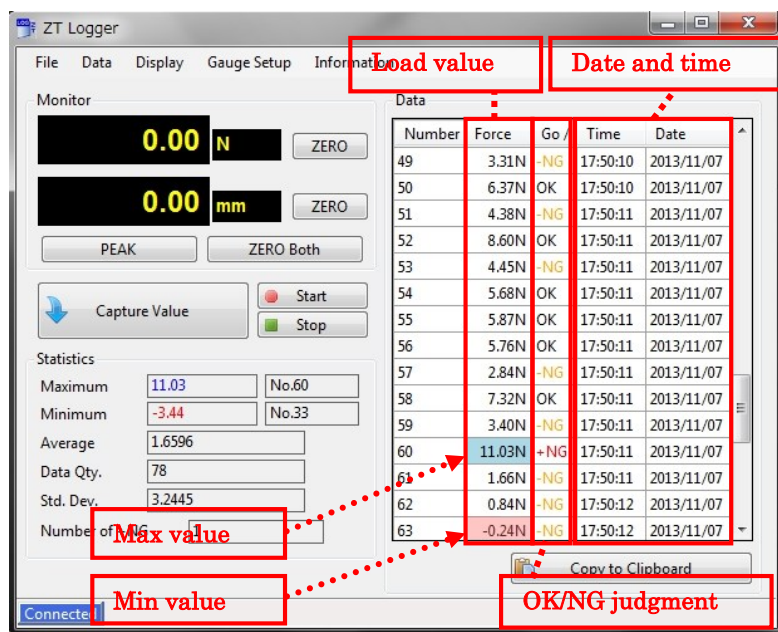For further information, go to "Related products" on page 5

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.

Load value / Date and time / Max value / Min value / OK/NG judgment

Print Preview

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

Feature 4 Various functions to improve usability in different measurement environment

Bar graph of force
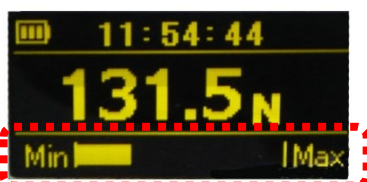
Force transition is clearly visible.

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
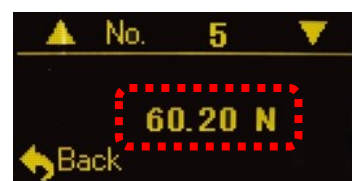
Peak values can be saved in ZTS itself.

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.

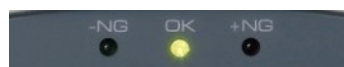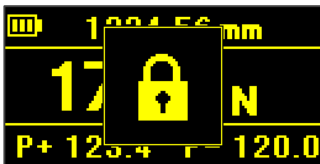| Setting LOCK	Saving measured Date and Time
Locking the current settings	Easy data management
It prevents unintentional changes of settings.	It has calendar and clock functions which enable saving measurement data with its time and date record.

When you connect ZTS to a motorized test stand (External equipment) with a dedicated cable, more useful functions can be activated:

For example… - 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).
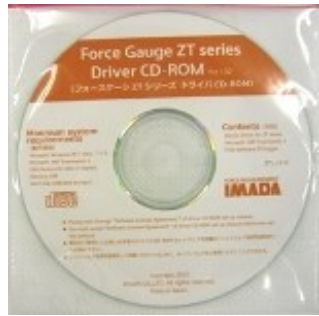
[Specifications of ZTA series]

Model	ZTA
Feature	Advanced model with various functions such as data saving in USB memory stick, displacement I/O and more.
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 (*3)
Battery	8 hours (2 hours charge) (*4)
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, 1st/2nd peak, Displacement detection at force peak value, Displacement zero reset at selected force, setting lock
Output	USB, RS232C, Mitutoyo digimatic (*5), 2 VDC analog output (D/A), Comparator 3 steps (-NG/OK/+NG), Overload alarm, Sub comparator 2 steps (output of large or small judgment), USB flash drive, Displacement.
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
Available linear scales (*6)	- Online driver output (a line receiver according to RS422/485 must be built in.) - Open collector output (Voltage drop between contacts must be smaller than 0.5V.)
Weight	From 2N to 1000N model: Approx.490g (*7) 2500N, 5000N: Approx.1100g (*7)
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, Adaptor for USB flash drive. (*8)

*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 Up to 100 data/sec. is saved in USB memory (selectable among 1, 50, and 100 /sec)

*4 The battery is more consumed when connected to USB flash drive or a linear scale.

*5 Not always available for Mitutoyo digimatic products.

*6 Some linear scales could not be available even if they meet the mentioned specifications.

*7 Weight is slightly different according to range.

*8 USB flash drive is not included.

[ZTA series models]

Model	Capacity	Display	Resolution	Thread	Included attachment
ZTA-2N	2N	2.000N (2000mN)	0.001N (1mN)	M6	A1 to A8
ZTA-5N	5N	5.000N (5000mN)	0.001N (1mN)		
ZTA-20N	20N	20.00N	0.01N		
ZTA-50N	50N	50.00N	0.01N		
ZTA-100N	100N	100.0N	0.1N		
ZTA-200N	200N	200.0N	0.1N		S1 to S8
ZTA-500N	500N	500.0N	0.1N		
ZTA-1000N	1000N	1000N (1.000kN)	1N (0.001kN)		RS1, S2 to S8
ZTA-2500N	2500N	2500N (2.500kN)	1N (0.001kN)	M10	B1 to B8
ZTA-5000N	5000N	5000N (5.000kN)	1N (0.001kN)		

[Included Accessories]

Data logger Simple software ZT-Logger	**Main functions** - Captures peak data (*1) - Captures continuous data (10 data /sec) (*1) - The recall of memory data (*1) - Saves data in CSV format **Operating environment (*2)** - 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 *1 Available data: Force, Displacement, Time *2 Please note that the software may not work in all environmental combinations.	
Graphing software Trial version Force Recorder Professional Trial Edition	◎You can try an optional graphing software for free for 30 days. **Main functions** - Force versus time graphing at 2000Hz at maximum - Overlaying graphs for comparing, editing functions such as comment writing. **Operating environment (*1)** - 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 ＊ 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.	

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

[Option]

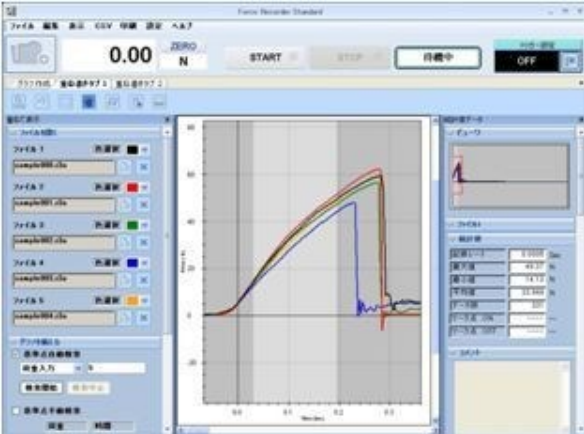| Option	Details	Model
Analog voltage (Sensor raw data)	To output sensor data as fast analog voltage without conversion. *The speed is higher than D/A (standard), but there are demerits at the same time that zero reset is not possible, and there are may be signal noise. *CB-118 cable is necessary.	-AN

* 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 Professional

Main functions

- You can make graphs of force-displacement at real time via USB connection at 2000Hz.
- 5 graphs at maximum can be overlaid.
- You can write memo on each graph. You may write down testing conditions such as testing speed.

* Please refer to each specification for further information.

Force- displacement measuring unit FSA series

1 **4**
2
3
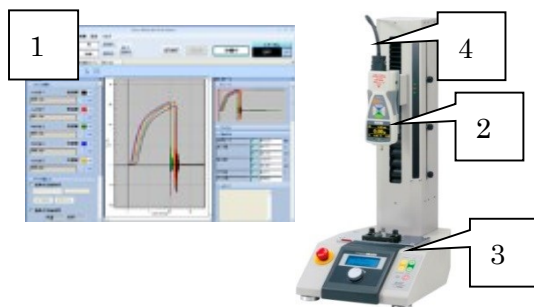
Unit to draw force-displacement curve
1. Software Force Recorder (Professional)
2. Digital force gauge ZTA series
3. Test stand with a linear scale
4. Cable

Please refer to FSA series specifications for more details.

FSA-1KE series

Force gauge: ZTS series	Printer: DP-1VR	Linear scale: DMK series	Battery: BP-308
ZTS has the same benefit in performance but reduced functionality.	Prints indicated values and data in internal memory. *CB-308 cable is necessary.	Using with a ZTA series to valid force-displacement measurement with your facility.	Battery for replacement.

	Sensor-separate force gauge ZTS/ZTA series
	External sensor (load cell), separated from the amplifier
	- 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. - Useful for different types of measurement; small and large force values, or compression and torque. *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.

[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-718	Test stand connection cable for displacement measurement (For MX2-FA)	To connect to a test stand having length meter to enable force-displacement measurement.
CB-728	Test stand connection cable for displacement measurement (For EMX-FA)	To connect to a test stand having length meter to enable force-displacement measurement.
CB-908	Open end connection cable	Output cable for loose wire 37 pin (Useful for connection with unique equipment.)

[Dimensions up to 1000N]
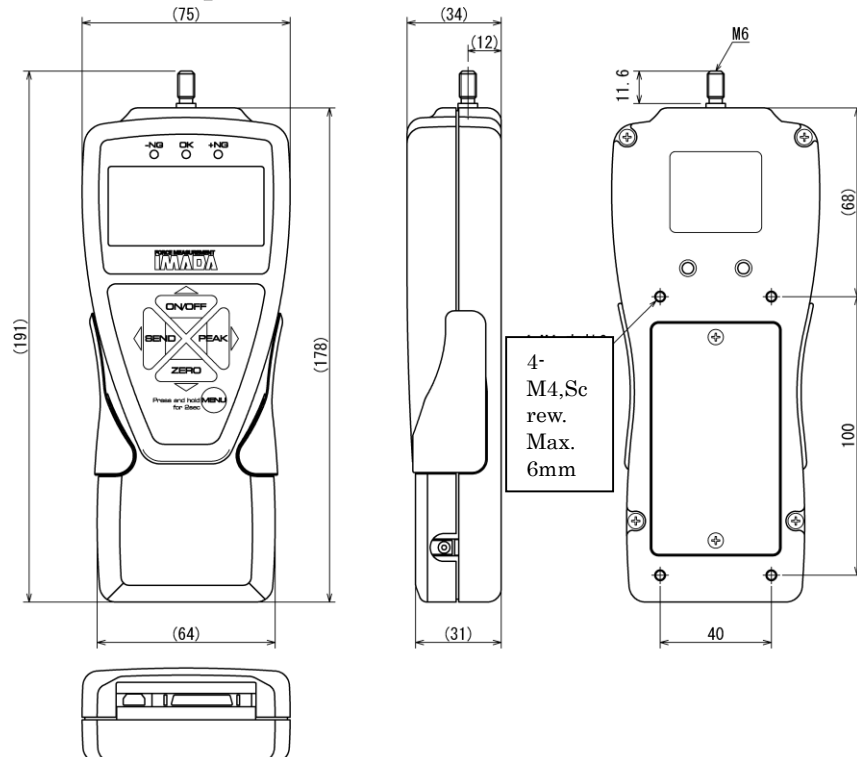
[Dimensions from 2500N up to 5000N]
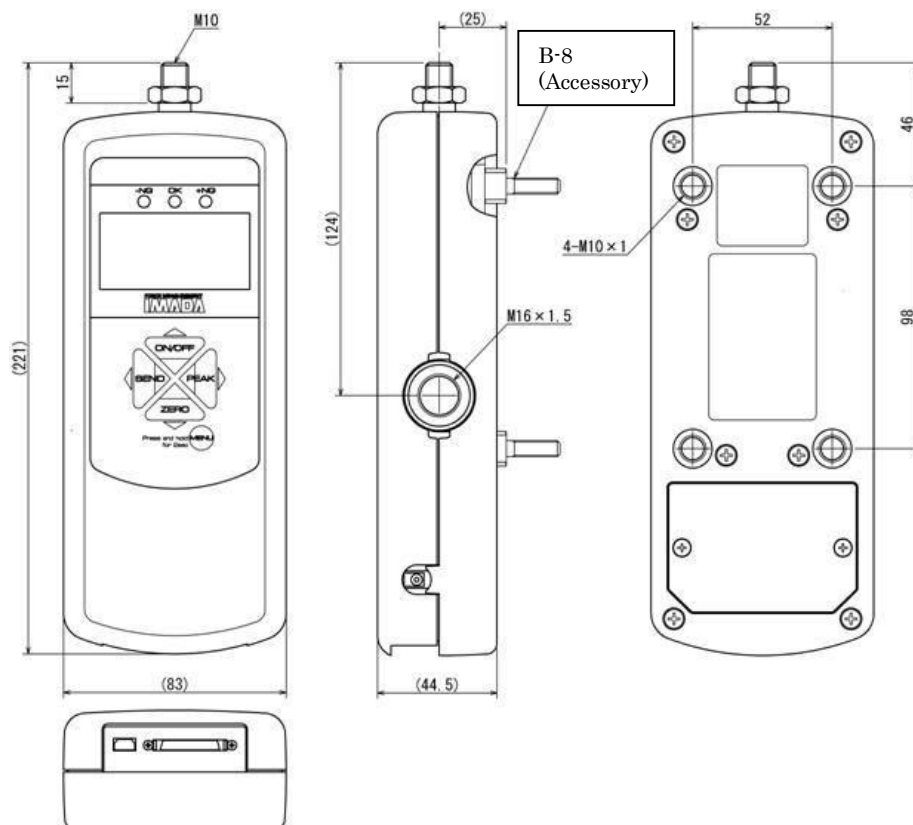
[Calibration Certificate]

- 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.