

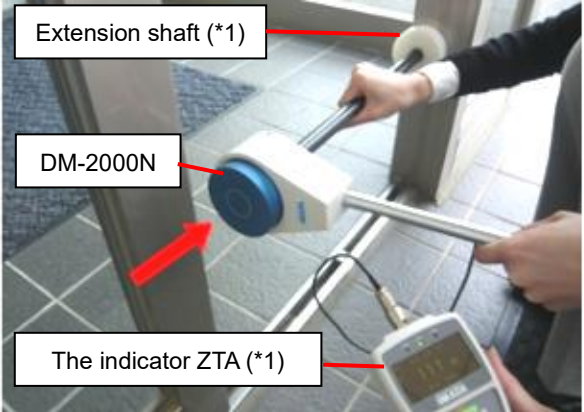

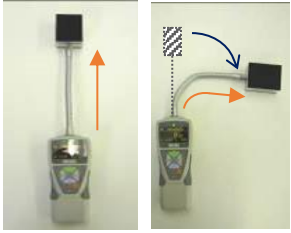


Load Cell for Automatic Doors DM-2000N

Load Cell for Doors and Windows SKM-1000N

- Designed to measure closing force of door or windows
- Simply place the sensor between door/window and its frame to perform the test
- Complies with JIS standards (only DM-2000N)

| | |
|---|--|
| Load cell for automatic doors DM-2000N | Load cell for doors and windows SKM-1000N |
|  |  |
| Measuring image | |
|  | <p>Put the load cell between door/window and its frame.</p>  |
| <p>*1 We also offer model including the extension shaft and other options.</p> | <p>The flexible arm can fix the sensor's direction.</p>  <p>You can easily fix sensor's position and direction due to its flexible arm.</p> |

| Fixture | Related Standard Reference |
|----------|---|
| DM-2000N | - JIS A4722: 2017 Power operated pedestrian doorsets-Safety (Corresponding part only) - BS EN 12453: 2017 [Industrial, commercial and garage doors and gates - safety in use power operated doors - requirements and test methods] (Corresponding part only) |

* An amplifier (indicator) is required to read values. Refer to "Available amplifiers (indicators)" on page 3 for details.

What is IP?

IP(International Protection) is a standard which is based on IEC Standard 529 for solid foreign materials, electric devices for water and cabinet.

IPxx

The second code
 (IP 0 to 8 for water penetration)
 The first code
 (IP 0 to 8 for human body and sold foreign materials)

IP65

Water projected in powerful jets (12.5 mm nozzle) against the enclosure from any direction shall have no harmful effects at least for 3 minutes 100 liter per minute.

No ingress of dust, complete protection against contact.


* Only SKM-1000N support the protection class of IP65 under IEC standard.

: eZ-Connect series

eZ-Connect is composed of an amplifier and load cells.

- Allow easy replacement of load cells without additional adjustment
- Suits different types of tests such as tension and torque, measuring from low load to high load etc.

Available load cells have a mark 

| Specification | | | |
|--|---|---|--|
| Model | DM-2000N | eDM-2000N  | SKM-1000N(*1) |
| Capacity | 2000N | 2000N | 1000N |
| Rated output | 0.75 to 2mV/V (1500 to 4000×10 ⁻⁶ distortion) +/- 1% | - | - |
| Nonlinearity | 1.0%R.O. | - | - |
| Hysteresis | 1.0%R.O. | - | - |
| Recommended voltage (Allowable voltage) | 1 to 5V AC or DC (7V AC or DC) | - (-) | - (-) |
| Safe overload rating | 150% | | - |
| Working environment (Allowable temperature) | 0 to +50 degrees (-10 to +60 degrees) | | 0 to +40 degrees (0 to +40 degrees) |
| Temperature influence for 0 point | 0.05%/degrees | - | - |
| Temperature influence for output | 0.05%/degrees | - | - |
| Weight | Approx. 1200g (Sensor weight) | | - |
| Cable | Approx. 2 m | | Approx. 200 mm (Flexible arm) |
| Dimension | Refer to Dimensions | | |
| International Protection | - | - | IP65 (*2) |

*1 The load cell cannot be separated from the indicator, therefore, no specification is stated as single sensor. Refer to separated sensor model on page 3 for further information.




*2 IP65 is only approved for the load cell itself. The amplifier (indicator) and the connector parts are not secured.

* See page 3 for the accuracy of combinations with the amplifier (indicator) under [Models of sensors combined with indicators (Sensor separate models)] and [eZ-Connect series (Sensor interchangeable model)].

* An amplifier (indicator) is required to read values. Refer to "Available amplifiers (indicators)" on page 3 for details.

* When ordering load cell without indicators, 3 connector types are available. See [Load cell only] on page 4 for details.

The load cells are not guaranteed either for the operability with your own amplifier (indicator) or for the accuracy as a result of such use.

| Available Amplifiers (Indicators) | | | | | |
|-----------------------------------|---|---|--|--|---|
| Type | Separated Sensor Model | | | eZ-Connect series Sensor Interchangeable Amplifier | |
| Indicator | Handy type ZTS series | Handy type ZTA series | Desk type FA Plus2 | Desk type eFA Plus2 | Handy type eZT |
| Image |  | |  | |  |
| Feature | <ul style="list-style-type: none"> - Handheld use - Specific purpose - Higher accuracy | <ul style="list-style-type: none"> - Handheld use - Specific purpose - Higher accuracy - I/O displacement - Data saving to USB | <ul style="list-style-type: none"> - Desktop use - Specific purpose - Higher accuracy | <ul style="list-style-type: none"> - Desktop use - Load cell interchangeable (such as measurement of tension and torque, or low and high load) | <ul style="list-style-type: none"> - Handheld use - Load cell interchangeable (such as measurement of tension and torque, or low and high load) |

* Refer to the specification sheet of each indicator for details.

* SKM-1000N is not applicable to FA Plus2.

[Models of sensors combined with indicators (Sensor separate models)]

| Model | | | Capacity | Accuracy *1 | Display | Resolution |
|---------------|---------------|---------------|----------|-------------------------|--------------------|-----------------|
| ZTA | ZTS | FA Plus2 | | | | |
| ZTA-DM-2000N | ZTS-DM-2000N | FAP2-DM-2000N | 2000N | +/- 2.0%F.S. or less | 2000N (2.000kN) | 1N (0.001kN) |
| ZTA-SKM-1000N | ZTS-SKM-1000N | -(*)2 | 1000N | +/- 1.0%F.S. or less | 1000N (1.000kN) | 1N (0.001kN) |

* Refer to each indicator specification for details.

*1 It is the accuracy of the sensor and the indicator combined.

*2 SKM-1000N is not applicable to FA Plus2.

[eZ-Connect series (Sensor interchangeable model)] * SKM-1000N is not support eZ Connect function.

| | |
|--|--|
| Model | eDM-2000N |
| Capacity | 2000N |
| Accuracy *1 | ±2.2%F.S. or less |
| Safe overload rating | 150% |
| Working environment (allowable temperature) | 0 degrees to +50 degrees (-10 degrees to +60 degrees) |
| Weight | Approx. 1200g (Sensor only) |
| Cable | Approx. 2 m |
| Dimension | Refer to [Dimensions] |



* Refer to each indicator specification for details.

*1 It is the accuracy of the sensor and indicators of eZ-connect series combined.




[Sensor Model]

| Model | Capacity |
|------------------|----------|
| DM-2000N | 2000N |
| SKM-1000N | 1000N |

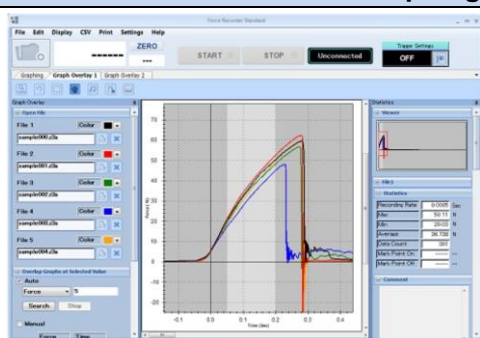
* When ordering load cell only, choose the connector type from the table below.

| Code | -5P | -6P | -OP |
|-----------------|--|--|---------------------------------|
| Connector shape |  5 pin |  6 pin | Without Connector (Open end) |
| Connect to | ZT series, FA Plus2, etc | Some discontinued IMADA products | For installing in equipment |
| | *Please check the connector shape of your equipment to connect. | | |
| | *Please check the connector shape of your equipment to connect. | | |

* Add the code to the end of model. For example, when ordering DM-2000N with 5 pin, the product model is “DM-2000N-5P”.

| Related products | | |
|--|--|---|
| Optional Handle for A Fire Door Closing Measurement HDC-1 | Load cell for Two-wheeler Handbrakes PK1-500N | Load cell for Vehicle Foot Pedals PK2-1500N |
|  |  |  |
| HDC-1 is optional handle for a fire door closing measurement. It achieves stable support for safe and repeatable testing by pushing the device against a door. | Load cell PK1-500N is for force testing of two-wheeler handbrakes with 500N capacity. It is easy to mount to the two-wheeler handbrakes lever with the specially designed shape. | Load cell PK2-1500N is for force testing of automotive's foot pedals with 1500N capacity. It is easy to mount to the vehicle foot pedals with the specially designed shape to test the its operability. |

Graphing Software: Force Recorder



*The image is Force Recorder Standard.

- You can make graphs of force-displacement at real time via USB connection at 2000Hz.
- You can write memo on each graph. You may write down testing conditions such as testing speed.
- 5 graphs at maximum can be overlaid. (Standard, Professional edition)
- It allows analysis of torque-angle relationships. (Professional edition)

*Please refer to each specification sheet for further information.

Custom-made Order

Extend the length of a cable

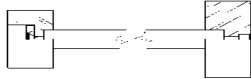
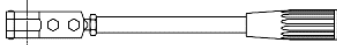
Enables to extend the length of a cable for gauge-PC connection or load cell-amplifier connection

Enhance flexibility of a cable

Offer high-flex cable to reduce risks of disconnection

* Contact us for details such as the available cable length.

[DM-2000N Optional]

| Extension Shaft | | | |
|--|--|--------------------------------|----------------|
| * You can select the suitable model according to the distance specified in JIS A4722 | | | |
| Model | DM-ETM-200 | DM-ETM-300 | DM-ETM-500 |
| Distance between door and wall (vertical door frame) | 200 mm or less | 200 mm or more, 500 mm or less | 500 mm or more |
| Length combined with load cell | 200 mm | 300 mm | 500 mm |
| Detail | Diameter of the contact part: $\phi 80\text{mm}$ Material of the contact part: hard resin | | |
| Image |  | | |
| Handle for Extensin Shaft | | | |
| Model | DM-ETM-001 | | |
| Purpose | This handle can be mounted on any position of the extension shaft. You can hold the sensor easily and stably. | | |
| Length | 300 mm | | |
| Image |  | | |

[DM-2000N unit models]

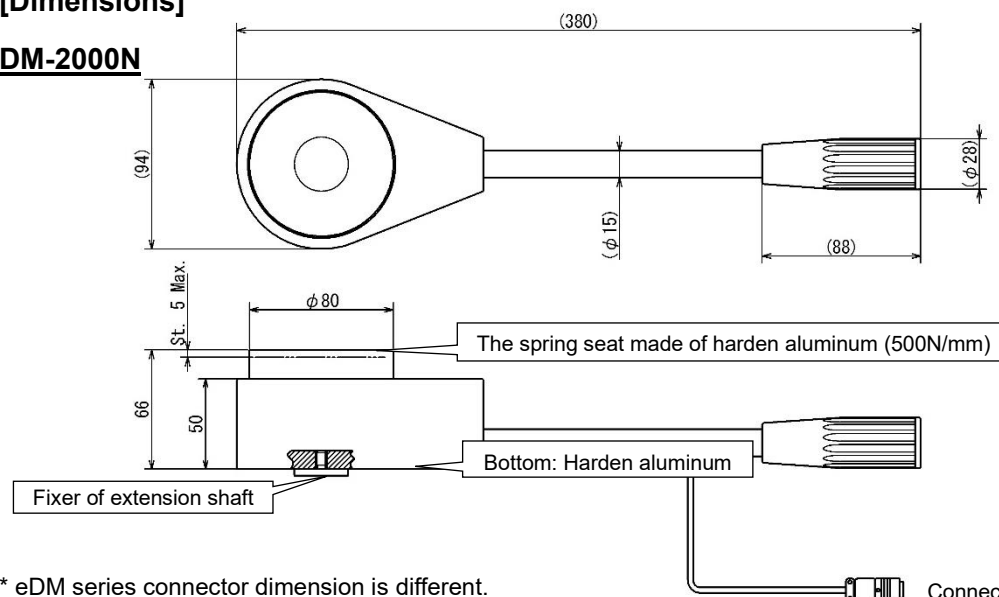
*Highly stable measurement is possible due to the supplied extension shaft and handle.

| | Order with ZTS series | Order with ZTA series |
|--|--|-----------------------|
| Model | ZTS-RDM-2000N | ZTA-RDM-2000N |
| Product configuration of the unit | ZTS-DM-2000N | ZTA-DM-2000N |
| | -Extension shaft DM-ETM-200 -Extension shaft DM-ETM-300 -Extension shaft DM-ETM-500 -Handle for extension shaft DM-ETM-001(*) -Graphing software Force Recorder Standard | |

* This handle is mounted on the middle part of extension shaft, enabling you to hold the sensor easily.

[Dimensions]

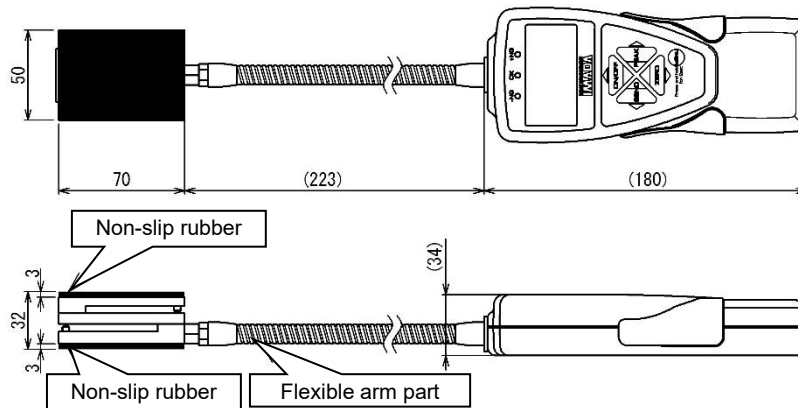
DM-2000N



* eDM series connector dimension is different.

Unit: mm

SKM-1000N (ZTS-SKM-1000N)



Unit: mm

[Cautions]

- Information in this document is subject to change without prior notice.
- This document is product descriptions and handling precautions, and do not guarantee various characteristics or safety.
- This product is designed for force measurement purpose only.
- Do not copy and use this content without authorization.
- Do not apply force more than its capacity or from incorrect direction to the measuring shaft.
- Do not use this product in the environments including fierce temperature changes, high temperature, high humidity, near water, dusty place.

IMADA CO., LTD.

99, Jinnoshinden-Cho, Aza, Kanowari, Toyohashi,
Aichi 441-8077, JAPAN
Tel: +81-(0)532-33-3288
Fax: +81-(0)532-33-3866
E-mail: info@forcegauge.net
Website: <http://www.forcegauge.net/en/>



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