

Tension/ Compression Load cell DPU series

Strain gauge type load cells for tension/compression testing.

They can be easily built on manufacture line and the like.

Basic model	For high capacity
Capacity: 2~500N	Capacity: 1000~20kN
Easy installation into equipment or external devices.	
◆Compatible compression/tension load cell ◆Being screwed ◆Rectangular parallelepiped shape	

*An indicator is required to read force values. Please refer to page 3 for the detail.→

[Usage]

Built-in	Hanging on equipment / hooking samples



*1 Hoisting attachment for load cells EB 500N-M6 is sold separately. Please refer to page 5 for detail.

*2 Small hook A-1/S-1 is sold separately.

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2016/11/29

[Specification]

Model	DPU-2N~500N	DPU-1000N~20kN
Photos		For high capacity 
Capacity	Please refer to the model list.	Please refer to the model list.
Rated output	1mV / V \pm 10% (2N, 5N is 0.9~1.25 mV/ V \pm 10%)	2mV/ V \pm 1%
Nonlinearity	0.12%R.O.	0.05%R.O.
Hysteresis	0.12%R.O.	0.05%R.O.
Recommended voltage (allowable applied voltage)	5V DC (12V DC)	10V DC(18V DC)
Safe overload rating	Please refer to the model list.	Please refer to the model list.
Working environment (allowable temperature)	0~+50 degree Celsius (-10~+60 degree Celsius)	-10~+70 degree Celsius (-20~+80 degree Celsius)
Temperature influence for 0 degree	0.02%/ degree Celsius	0.01%/ degree Celsius
Temperature influence for output	0.01%/ degree Celsius	0.01%/ degree Celsius
Weight	Approx. 325g	Approx. 800g DPU-10kN:Approx.1.7kg DPU-20kN:Approx.2.3kg
Cable	2m(with a connector)	3m(with a connector)
Dimension	Refer to dimensions.	Refer to dimensions.

[eZ-Connect series load cell specification]

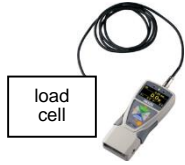

Model	eDPU-2N~500N	eDPU-1000N~20kN
Feature	Basic	For high capacity
Capacity	Please refer to the model list.	Please refer to the model list.
Accuracy	+/-0.2% F.S. or less	+/-0.2% F.S. or less
Safe overload rating	Please refer to the model list.	Please refer to the model list.
Working environment (allowable temperature)	0~+50 degree Celsius (-10~+60 degree Celsius)	-10~+70 degree Celsius (-20~+80 degree Celsius)
Weight	Approx. 325g	Approx. 800g DPU-10kN:Approx.1.7kg DPU-20kN:Approx.2.3kg
Cable	2m(with a connector)	3m(with a connector)
Dimension	Refer to the dimensions.	Refer to the dimensions.

*Please refer Page 5 for the detail of eZ-Connect series.

1. For those who have a specific measurement / purpose

[Connect to an amplifier]

- If you do not need to change load cells basically, we recommend the combination of a load cell and an indicator mentioned below.

Model	ZTA/ZTS Sensor separate type force gauge	FA Plus Desk top amplifier
Image		
Feature	<ul style="list-style-type: none"> ● You can operate it apart from a load cell. ● Easy data management on PC ● Various outputs for controlling external devices 	<ul style="list-style-type: none"> ● You can easily install on a desk or in equipment due to its box shape. ● The sampling rate is 2000Hz. ● You can change load cells if you adjust it.
When you want to change sensor	<ul style="list-style-type: none"> ▪ You do not basically change load cells. ▪ If you need to change load cells, adjustment and calibration are required. 	<ul style="list-style-type: none"> ▪ When you change load cells, you need to adjust and calibrate it.
Accuracy assurance	<ul style="list-style-type: none"> ▪ An inspection certificate by force data is attached. ▪ Please request us the calibration certificate if necessary. 	<ul style="list-style-type: none"> ▪ We offer an inspection certificate by force data only when you order the models below. ▪ We do not offer the inspection certificate when you order a FA Plus or a load cell separately. ▪ Please request us the calibration certificate if necessary.

Models of sensors combined with indicators (Sensor separate models)

Model			Capacity	Accuracy(*1)	Display	Resolution
ZTA	ZTS	FA Plus				
ZTA-DPU-2N	ZTS-DPU-2N	FAP-DPU-2N	2N	±0.2%F.S. or less	2.000N(2000mN)	0.001N(1mN)
ZTA-DPU-5N	ZTS-DPU-5N	FAP-DPU-5N	5N		5.000N(5000mN)	0.001N(1mN)
ZTA-DPU-10N	ZTS-DPU-10N	FAP-DPU-10N	10N		10.00N	0.01N
ZTA-DPU-20N	ZTS-DPU-20N	FAP-DPU-20N	20N		20.00N	0.01N
ZTA-DPU-50N	ZTS-DPU-50N	FAP-DPU-50N	50N		50.00N	0.01N
ZTA-DPU-100N	ZTS-DPU-100N	FAP-DPU-100N	100N		100.0N	0.1N
ZTA-DPU-200N	ZTS-DPU-200N	FAP-DPU-200N	200N		200.0N	0.1N
ZTA-DPU-500N	ZTS-DPU-500N	FAP-DPU-500N	500N		500.0N	0.1N
ZTA-DPU-1000N	ZTS-DPU-1000N	FAP-DPU-1000N	1000N		1000N(1.000kN)	1N(0.001kN)
ZTA-DPU-2000N	ZTS-DPU-2000N	FAP-DPU-2000N	2000N		2000N(2.000kN)	1N(0.001kN)
ZTA-DPU-5000N	ZTS-DPU-5000N	FAP-DPU-5000N	5000N		5000N(5.000kN)	1N(0.001kN)
ZTA-DPU-10kN	ZTS-DPU-10kN	FAP-DPU-10kN	10kN		10.00kN	0.01kN
ZTA-DPU-20kN	ZTS-DPU-20kN	FAP-DPU-20kN	20kN		20.00kN	0.01kN

*For further information about indicators, please refer to each specifications.

*1 Accuracy here is calculated after sensor is combined with an indicator.



[Load cell by itself]

■ If you need a load cell by itself, please refer to the models below.

Model	Capacity	Safe overload rating	Measuring thread	
DPU-2N	2N	150%	M6	
DPU-5N	5N			
DPU-10N	10N	200%		
DPU-20N	20N			
DPU-50N	50N			
DPU-100N	100N			
DPU-200N	200N			
DPU-500N	500N			
DPU-1000N	1000N	240%		M10
DPU-2000N	2000N			
DPU-5000N	5000N	120%		
DPU-10kN	10kN			
DPU-20kN	20kN	120%	N/A (*1)	

◎When you order a load cell without indicators, please choose one from 3 of connector types.

*Please feel free to contact us if the shape is not identified. +81-(0)532-33-3288

Connector shape	1	2	3
	 5 pin	 6 pin	Without Connector
Connect to	ZT series, FA Plus, etc.	Some discontinued IMADA products	For installing in equipment
*Please check the connector shape of your equipment to connect.			

*We cannot undertake that our load cell can be combined with your equipment. Even though you could combine it, we cannot guarantee accuracy of force value.

*1 DPU-10kN and DPU-20kN equip no measuring threads, however, they equip a female screw M18P1.5 Depth22. If necessary, we can offer DPU-10kN/20kN equipping a measuring thread optionally.

2. For those who have a wide range of measurement purposes

[eZT series (Sensor interchangeable model)]

■ If you need 2 or more different load cells, we recommend eZ-Connect series below since it can change load cells according to your purposes.


eZ-Connect load cell models

Amplifier Model	Load cell model	Capacity	Accuracy(*1)	Display	Resolution
eZT	eDPU-2N	2N	+/-0.4%F.S. or less	2.000N(2000mN)	0.001N(1mN)
	eDPU-5N	5N		5.000N(5000mN)	0.001N(1mN)
	eDPU-10N	10N		10.00N	0.01N
	eDPU-20N	20N		20.00N	0.01N
	eDPU-50N	50N		50.00N	0.01N
	eDPU-100N	100N		100.0N	0.1N
	eDPU-200N	200N		200.0N	0.1N
	eDPU-500N	500N		500.0N	0.1N
	eDPU-1000N	1000N		1000N(1.000kN)	1N(0.001kN)
	eDPU-2000N	2000N		2000N(2.000kN)	1N(0.001kN)
	eDPU-5000N	5000N		5000N(5.000kN)	1N(0.001kN)
	eDPU-10kN	10kN		10.00kN	0.01kN
	eDPU-20kN	20kN		20.00kN	0.01kN

* Please refer to the each amplifier specification for the detail.

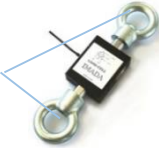
*1The accuracy is only available for combinations with eZT series.

Indicator eZ-T *Please combine a load cell exclusive for eZ-Connect.

Image	Feature	Accuracy
	<ul style="list-style-type: none"> No adjustment is needed when you change load cells. You can measure different force range. You can measure different types of force. You can reduce risks in operation 	<p>*Accuracy here is the total of load cell's accuracy (refer to each specifications) and indicator's one (+/- 0.2%F.S.).</p> <p>We offer higher accuracy models; ZT series (sensor separate type) and FA plus. For detail, please refer to page 3.</p>

[Related products]

- Hoisting attachment

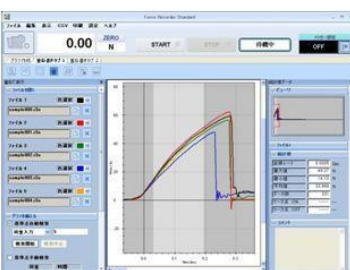
Image	Model	Detail	Feature
 <p>Hoisting attachment EB</p>	EB-500N-M6	For DPU-5N~500N	Designed to mount it on one or two side of the load cell to let through rope, hooks, shafts and the like.
	EB-2000N	For DPU-1000N/2000N	
	EB-20kN	For DPU-10kN/20kN	
	RE-20kN	For DPU-10kN/20kN	

* The photo is installing two EB-20kN to DPU for large force. *1 Please refer to the EB series specification for the detail.






- Cables (Contact us for information of FAP.)

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-908	Open end connection cable	Output cable for loose wire 37 pin (Useful for connection with unique equipment.)

- Data analysis software Force Recorder (For ZTS/ZTA/eZT)




Image	Feature
	<ul style="list-style-type: none"> - You can draw graphs of force-displacement at real time via USB connection at 2000Hz. - 5 graphs at maximum can be overlaid. (Standard / Professional only) - You can write memo on each graph. For instance, you may write down testing conditions such as testing speed, attachment etc. <p>* 3 models (Light/Standard/Professional) are available.</p>

- Other load cells (We offer wide range of load cells to fit your measurement needs.)

Coin shaped type LM series	High accuracy coin shaped type LC series	Extra small type LMU series	Pen type PN-50N	For automatic doors DM-2000N
				
Coin size load cell for compression.	High accuracy coin shaped load cell for compression.	Sensor diameter is only 18mm	Pen-shaped to fit for measuring control force of small samples.	Fit to measure automatic door closing force.

*Please refer to each load cell specification for the detail.

- Option handle

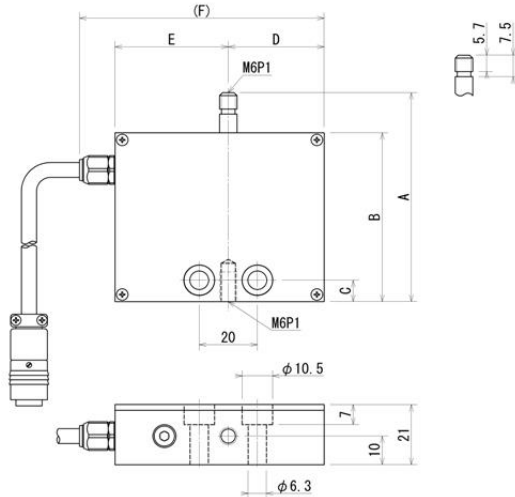
LTH-T	LTH-C	Usage
		 <p>Handle for DPU/eDPU to make handheld-measurement easier.</p>

Do you have any requests like mentioned below?

☞ You need flexible cable. ☞ You need to extend the length of cable.
We can custom design and manufacture to meet your particular requirements.
Please contact us for detail. Our service gr: +81-(0)532-33-3288

[Dimensions]

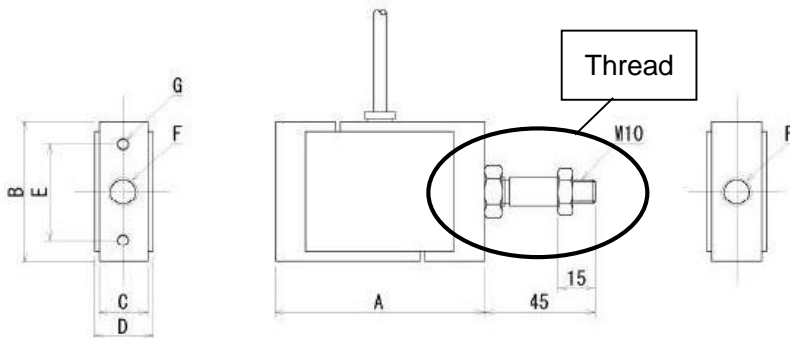
DPU-2N~500N



Model	A	B	C	D	E
DPU-2N	71	57	12	26	32
DPU-5N	71	57	12	26	32
DPU-10N	71	57	12	26	32
DPU-20N	73	59	7.5	33	39
DPU-50N	73	59	7.5	33	39
DPU-100N	73	59	7.5	33	39
DPU-200N	73	59	7.5	33	39
DPU-500N	73	59	7.5	33	39

*eDPU series connector is different dimensions.

DPU-1000N~20kN



Model	A	B	C	D	E	F	G	Note
DPU-1000N	85	58	20	26	40	M12 P1.75 Depth 15	M5 Depth 8	With a thread
DPU-2000N	85	58	20	26	40	M12 P1.75 Depth 15	M5 Depth 8	With a thread
DPU-5000N	85	58	20	26	40	M12 P1.75 Depth 15	M5 Depth 8	With a thread
DPU-10kN	105	78	32	38	60	M18 P1.5 Depth 22	M6 Depth 10	No thread
DPU-20kN	110	88	36	42	60	M18 P1.5 Depth 22	M6 Depth 10	No thread

[Caution]

- This product is designed for force measurement only. Do not use it for other purposes.
- Please pay close attention for installation.
 - Never apply impact load especially on the sensing direction.
 - Do not apply bending or torsion stress to a sensing part.
- Do not use under the environment such as high temperature, high humidity, near water, dusty place, and rapid temperature changes.
- The contents may be changed without notice in advance.
- Please note that a load cell's capacity differs slightly depending on a selected unit of the indicators. Please contact us for detail.

Please feel free to contact us (+81-(0)-532-33-3288) for your measurement.