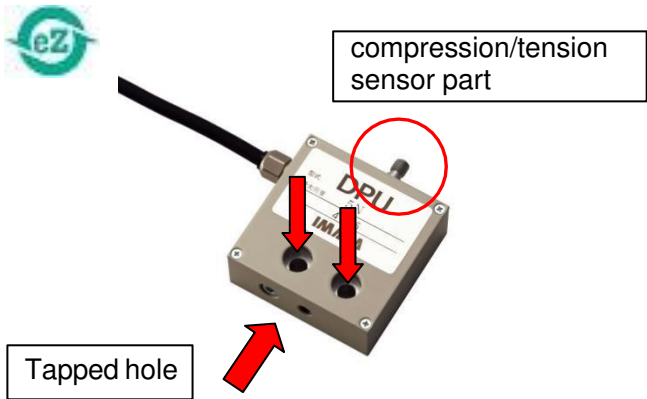
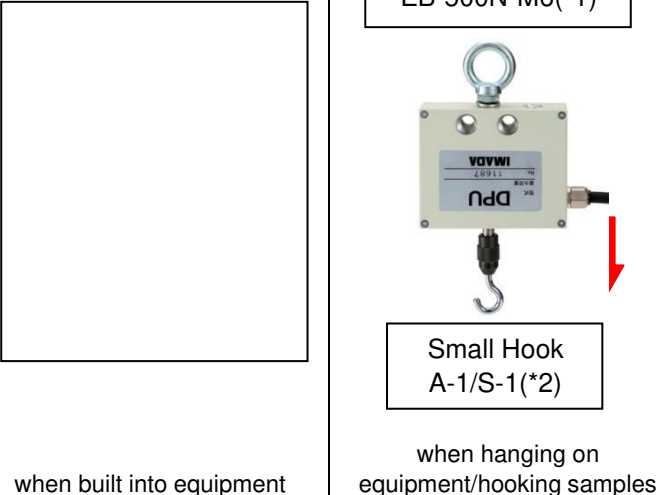
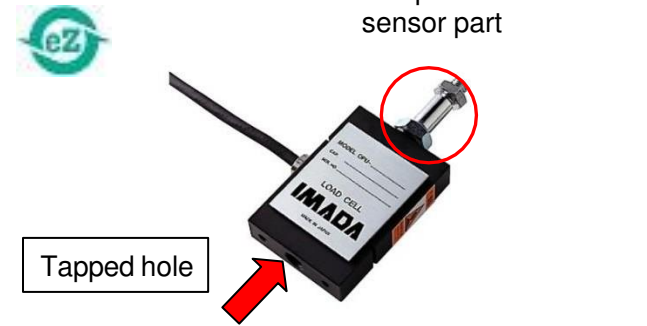
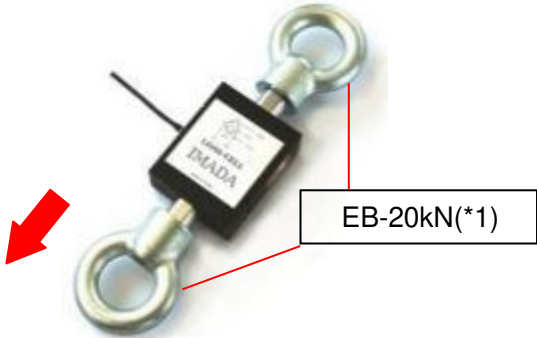


## Tension and Compression Load cell DPU series

- DPU series is a strain gauge type load cells for tension and compression testing.
- DPU series can be built in manufacturing line and equipment with ease.

DPU series	
Standard type	Test image
 <p>compression/tension sensor part</p> <p>Tapped hole</p> <p>(Capacity: 2 to 500N)</p>	 <p>EB-500N-M6(*1)</p> <p>Small Hook A-1/S-1(*2)</p> <p>when built into equipment</p> <p>when hanging on equipment/hooking samples</p>
High capacity type	Test image
 <p>compression/tension sensor part</p> <p>Tapped hole</p> <p>(Capacity: 1000N to 20kN)</p>	 <p>EB-20kN(*1)</p> <p>when hanging on equipment</p>

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

\*2 Small hook A-1/S-1 is included in separated sensor type force gauge ZTS-DPU/ZTA-DPU-2N to 5000N.

It is not included with load cell itself. (The supplied accessories will be different depending on the range.)


\* An amplifier (indicator) is required to read values. Refer to "Available amplifiers (indicators)" on page 2 for details.

### : eZ-Connect series




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

- Allows 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	DPU-2N to 500N	eDPU-2N to 500N	DPU-1000N to 20kN	eDPU-1000N to 20kN 
Features	Standard type	eZ-Connect series standard type	High capacity type	eZ-Connect series high capacity type
Capacity	Refer to each model list			
Rated output	1mV / V+/-10% (2N,5N is 0.9 to 1.25 mV / +/-10%)	-	2mV / V+/-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	Refer to [Load cell only]			
Working environment (allowable temperature)	0 to +50 degree Celsius (-10 degree to +60 degree Celsius)		-10 to +70 degree Celsius (-20 degree to +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 eDPU-10kN: Approx. 1.7kg eDPU-20kN: Approx. 2.3kg	
Cable	2m (with cable)		3m (with cable)	
Dimension	Refer to [Dimensions]			

- \* Refer to page 3 for the accuracy of combinations with the amplifier (indicator) under [Models of sensors combined with indicators (Separated sensor models)] and [eZ-Connect series (Sensor interchangeable model)].
- \* An amplifier (indicator) is required to read values. Refer to "Available amplifiers (indicators)" below for details.
- \* When ordering load cell without indicators, three 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	Handheld type ZTS series	Handheld type ZTA series	Desk type FA Plus2	Desk type eFA Plus2	Handheld type eZT
Image					
Feature	- Handheld use - Specific purpose - Higher accuracy	- Handheld use - Specific purpose - Higher accuracy - I/O displacement - Data saving to USB	- Desktop use - Specific purpose - Higher accuracy	- Desktop use - Load cell interchangeable (such as measurement of tension and torque, or low and high load)	- Handheld use - Load cell interchangeable (such as measurement of tension and torque, or low and high load)

- \* Refer to the specification sheet of each amplifier (indicator) for details.

**[Models of sensors combined with indicators (Separated sensor models)]**

Model			Capacity	Accuracy (*1)	Display	Resolution
ZTS	ZTA	FA Plus2				
ZTS-DPU-2N	ZTA-DPU-2N	FAP2-DPU-2N	2N	+/-0.2%F.S. or less	2.000N(2000mN)	0.001N(1mN)
ZTS-DPU-5N	ZTA-DPU-5N	FAP2-DPU-5N	5N		5.000N(5000mN)	0.001N(1mN)
ZTS-DPU-10N	ZTA-DPU-10N	FAP2-DPU-10N	10N		10.00N	0.01N
ZTS-DPU-20N	ZTA-DPU-20N	FAP2-DPU-20N	20N		20.00N	0.01N
ZTS-DPU-50N	ZTA-DPU-50N	FAP2-DPU-50N	50N		50.00N	0.01N
ZTS-DPU-100N	ZTA-DPU-100N	FAP2-DPU-100N	100N		100.0N	0.1N
ZTS-DPU-200N	ZTA-DPU-200N	FAP2-DPU-200N	200N		200.0N	0.1N
ZTS-DPU-500N	ZTA-DPU-500N	FAP2-DPU-500N	500N		500.0N	0.1N
ZTS-DPU-1000N	ZTA-DPU-1000N	FAP2-DPU-1000N	1000N		1000N(1.000kN)	1N(0.001kN)
ZTS-DPU-2000N	ZTA-DPU-2000N	FAP2-DPU-2000N	2000N		2000N(2.000kN)	1N(0.001kN)
ZTS-DPU-5000N	ZTA-DPU-5000N	FAP2-DPU-5000N	5000N		5000N(5.000kN)	1N(0.001kN)
ZTS-DPU-10kN	ZTA-DPU-10kN	FAP2-DPU-10kN	10kN		10.00kN	0.01kN
ZTS-DPU-20kN	ZTA-DPU-20kN	FAP2-DPU-20kN	20kN		20.00kN	0.01kN

\* Refer to each indicator specification for details.

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

**[eZ-Connect series (Sensor interchangeable model)]**

Model	Capacity	Accuracy (*1)	Display	Resolution
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

\* Refer to each indicator specification for details.

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

**[Load cell only]**

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 (*1)
DPU-2000N	2000N	120%	
DPU-5000N	5000N		
DPU-10kN	10kN	120%	N/A (*2)
DPU-20kN	20kN		

\*1 Female screw M12 P1.75 is available by removing the measuring shaft.



\*2 DPU-10kN and DPU-20kN do not have measuring threads, they have an M18P1.5 Depth22 female screw.

If necessary, measuring thread option is available for DPU-10kN/20kN.

\* 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.

\* When ordering load cell only, choose the connector type from the table below and add the code to the end of model.

For example, when ordering DPU-500N with 5 pin, the product model is "DPU-500N-5P".

Code	-5P	-6P	-OC
Connector shape	 5 pin	 6 pin	Without Connector (Open end)
Connect to	ZTA/S series, FA Plus2, etc	Some discontinued IMADA products	For installing in equipment
*Check the connector shape of your equipment to connect.			

Cable Option			
	Code *1	Cable Length	Description
Extended Cable	-( )m	Max. 10m *2	It is an option to change the cable to extended cable which connects to the amplifier (indicator).
Flexible Cable	-BR( )m	Max. 10m	It is an option to change the cable to high flexible cable to reduce the risk of breakage during bending.










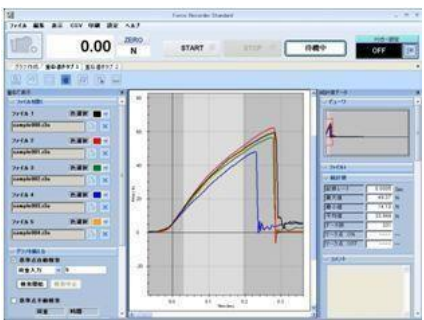
\*1 Put Cable Length before "m" of Code. The order increment of the optional cable length is every meter.

\*2 The cable length is the sum of the standard cable length and the extended cable one.

\* To maintain the signal quality, the cable length is limited.

\* When ordering cable option, add the cable option code before the connector shape code.

For example, when ordering DPU-5N-5P with 10m cable length, the product model is "DPU-5N-10m-5P".

Related Products		
Pen type load cell <b>PN-50N</b>	Coin shaped type load cell <b>LM series</b>	High accuracy coin shaped type load cell <b>LC series</b>
		
Pen-shaped to fit for measuring control force of small samples.	Coin size load cell for compression use.	High accuracy coin shaped load cell for compression.
Extra small type load cell <b>LMU series</b>	For automatic doors load cell <b>DM-2000N</b>	Small type load cell <b>LU series</b>
		
Extra small load cell for both tension and compression testing with 50N to 500N capacity.	Fit to measure automatic door closing force.	Small type load cell for both tension and compression testing with 50N to 2000N capacity.
Hoisting attachment for load cell <b>EB/RE series</b>	Option handle <b>LTH-T</b>	Option handle <b>LTH-C</b>
		
Hoisting attachment for load cell, it combines with DPU/LU/LMU series for tension testing.	Handle for DPU/eDPU series load cell to make handheld measurement easier.	Handle for DPU/eDPU series load cell to make handheld measurement easier.
Graphing Software: Force Recorder		
<div>  <ul style="list-style-type: none"> <li>- Plots graphs of force-time at real time via USB connection at 2000Hz</li> <li>- Comment function for keeping a note of testing conditions such as testing speed</li> <li>- Overlays up to 5 graphs (Standard, Professional edition)</li> <li>- Analyzes force-displacement relationships (Professional edition)</li> </ul> </div>		
* Refer to each specification sheet for further information.		

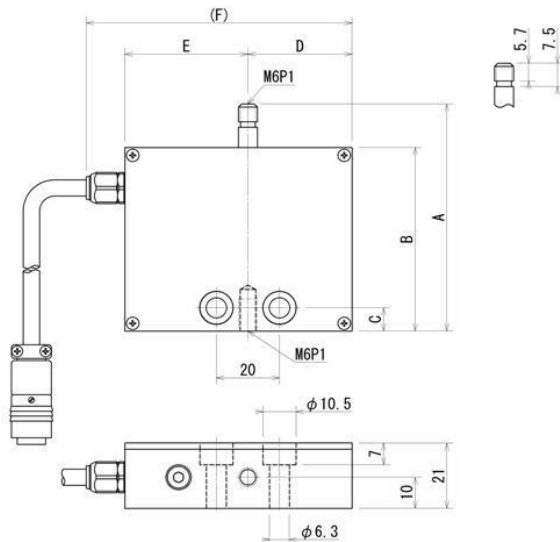
\* The image is Force Recorder Standard.

Related Adaptor		
Model	Mountable load cell	Purpose
CA-6T6	From DPU-2N to DPU-500N	For converting the M6 female screw to M6 measuring shaft (male screw). Enabled to mount the M6 attachment to the DPU load cell.
CA-12T10	From DPU-1000N to DPU-5000N	For converting the M12 female screw to M10 measuring shaft (male screw). Enabled to mount the M10 attachment to the DPU load cell.
CA-18T18	From DPU-10kN to DPU-20kN	For converting the M18 female screw to M18 measuring shaft (male screw). Enabled to mount the M18 custom attachment to the DPU load cell.

\* Refer to the specification sheet of CA series for more details.

## [Dimensions]

### DPU-2N to 500N

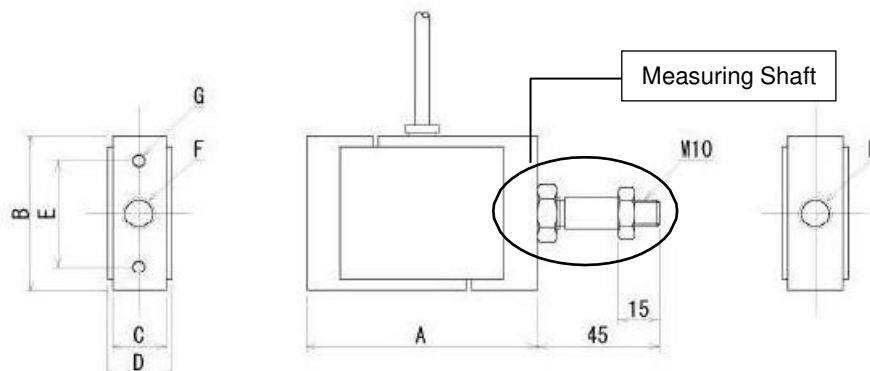


Model	A	B	C	D	E	(F)
DPU-2N	71	57	12	26	32	(70)
DPU-5N	71	57	12	26	32	(70)
DPU-10N	71	57	12	26	32	(70)
DPU-20N	73	59	7.5	33	39	(84)
DPU-50N	73	59	7.5	33	39	(84)
DPU-100N	73	59	7.5	33	39	(84)
DPU-200N	73	59	7.5	33	39	(84)
DPU-500N	73	59	7.5	33	39	(84)

\* eDPU series connector has different dimensions.

Unit: mm

### DPU-1000N to 20kN



Unit: mm

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	Without thread
DPU-20kN	110	88	36	42	60	M18 P1.5 Depth 22	M6 Depth 10	Without thread

\* eDPU series connector has different dimensions.

IMADA CO., LTD  
Tension/ Compression Load cell DPU series

**[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.**

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