

LCCU-21

Small USB Button Load Cell for Force Measurement



*Force
Measurement
Simplified!*

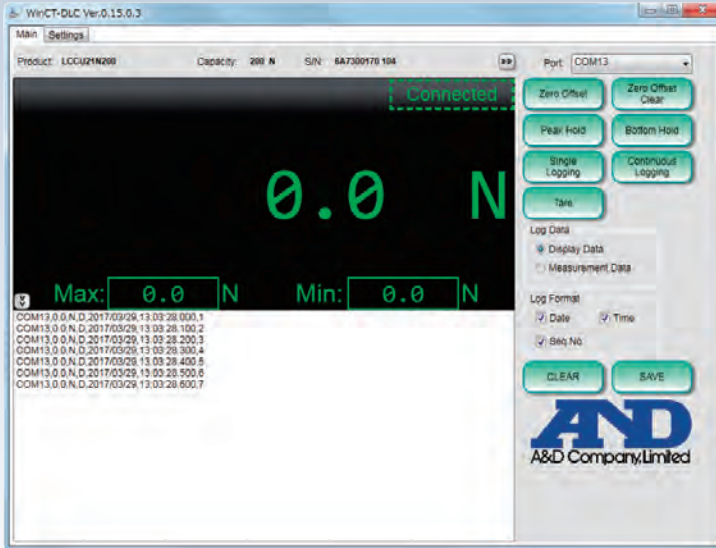
A&D
A&D Company, Limited
<http://www.aandd.jp>

...Clearly a Better Value

LCCU-21

Measurement and logging software WinCT-DLC

With one or more LCCU-21 Button Load Cells and a computer you can easily perform a variety of measurements by downloading the compressed “WinCT-DLC” file from the A&D website.



Data output rate 100 times/s (Initial setting : 10 times/s)

COM3, 1.0, N, D, 2017/03/29, 13:03:28.600, 7, P
 (1) (2) (3) (4) (5) (6) (7) (8)

- (1) COM Port number
- (2) Data based on the Log Data setting
- (3) The unit of the data value N : newton 1N = 0.102kgf = 0.225lbf
- (4) Log Data setting value
 D : Display data M : Measurement data
- (5) Date
- (6) The time to the millisecond
- (7) Data number
- (8) Running state of each function
 P : Peak hold B : Bottom hold T : Tare
 PT : Peak hold and tare BT : Bottom hold and tare

	A	B	C	D	E	F	G	H
1	COM3	0 N	D	2017/4/7	11:02:58.000	1	P	
2	COM3	0 N	D	2017/4/7	11:02:58.010	2	P	
3	COM3	0.3 N	D	2017/4/7	11:02:58.020	3	P	
4	COM3	0.5 N	D	2017/4/7	11:02:58.030	4	P	
5	COM3	0.8 N	D	2017/4/7	11:02:58.040	5	P	
6	COM3	1.2 N	D	2017/4/7	11:02:58.050	6	P	
7	COM3	2.2 N	D	2017/4/7	11:02:58.060	7	P	
8	COM3	2.2 N	D	2017/4/7	11:02:58.070	8	P	
9	COM3	2.2 N	D	2017/4/7	11:02:58.080	9	P	
10	COM3	2.2 N	D	2017/4/7	11:02:58.090	10	P	
11	COM3	2.2 N	D	2017/4/7	11:02:58.100	11	P	
12	COM3	2.2 N	D	2017/4/7	11:02:58.110	12	P	
13	COM3	2.2 N	D	2017/4/7	11:02:58.120	13	P	
14	COM3	2.2 N	D	2017/4/7	11:02:58.130	14	P	
15	COM3	2.2 N	D	2017/4/7	11:02:58.140	15	P	
16	COM3	2.2 N	D	2017/4/7	11:02:58.150	16	P	

Connect the LCCU-21 to a PC using USB cable provided and use the WinCT-DLC software to begin measurement immediately. Note 1, 2

WinCT-DLC allows measurements to be displayed in real time. Additionally, when saving data recorded with WinCT-DLC up to 1,040,000 data points can be saved in Excel format (xlsx) and even more data can be saved in CSV format. Note 3

By using USB-Hubs multiple LCCU-21 load cells can be connected to a single computer and used with multiple windows within WinCT-DLC. Theoretically up to 127 LCCU-21 load cells can be connected by using USB-Hubs. However, please note that if too many devices are connected the PC may freeze. Note 1

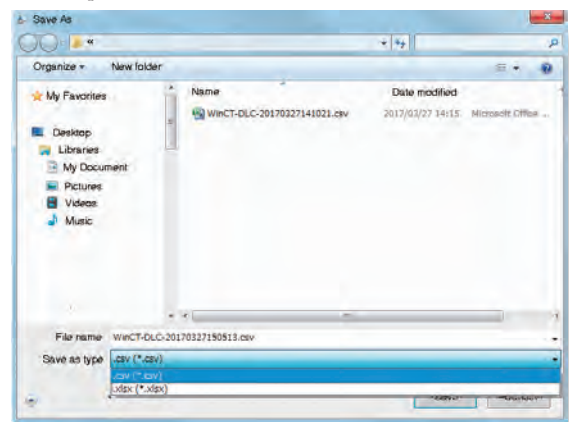
Functions

Zero Offset, Zero Offset Clear, Peak Hold, Bottom Hold, Single Logging, Continuous Logging, Tare

Recommended system requirements

- OS: Windows 7/8.1/10 64bit
- USB port: 1 port (USB2.0 or more)
- Memory: 4GB or more
- Hard disk: 20GB or more
- Remark: .NET framework 4.5 or later

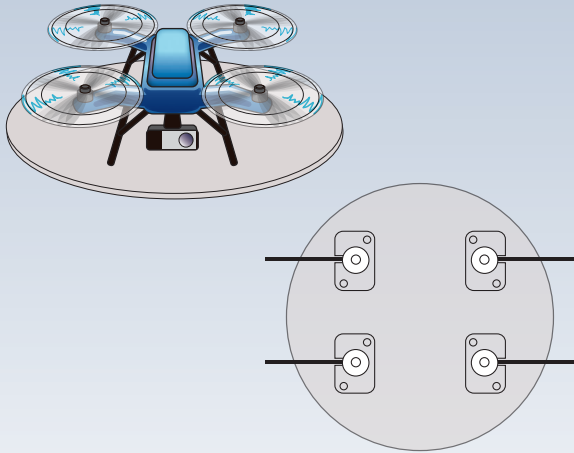
Save up to 1 million measurements to Excel



The xlsx file (Excel format save file) is split into groups of 300,000 pieces of data. (The file number is added to the end of the set file name for each group.)

Note 1 : Computers with insufficient CPU power or RAM memory may not be able to record data correctly.
 Note 2 : When recording data with WinCT-DLC, close other applications and do not touch the keyboard and mouse more than necessary while recording data.
 Use caution as if your computer goes to sleep or the display turns off, there may be problems with device communication and measurement.
 Note 3 : Up to 1 million measurements can be recorded to an Excel spreadsheet (Excel 2007 or newer). Only up to 65536 measurements can be saved to Excel 97 / 2000 / 2003.
 Note 4 : WinCT-DLC can operate on 32 bit operating systems. However, when run on computers with insufficient RAM or slower CPUs operation may stop during measurement.

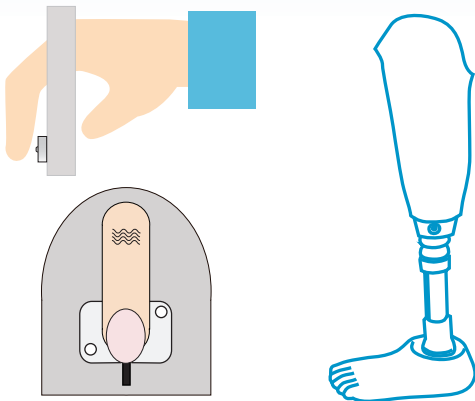
Application Examples



Drawn balance measurement



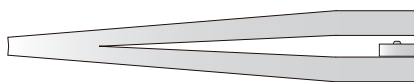
Measurement of force to crush plastic bottles



Attach button load cell to rehabilitation equipment to measure the bending force of legs, arms, finger joints.



Measurement of grip strength to remove lids from jars



Bite force measurement

- Measurement of load distribution of beds, etc.
- Press pressure measurement
- Bike chain tension measurement
- Spring compression force measurement
- High frequency welding machine pressing force measurement
- Robot joint force measurement
- Measurement of bending force of joints for rehabilitation
- Measurement of force to push buttons
- Repulsive force (elasticity) of cushioning material
- Packaging strength
- Piston force
- Balance measurement
- Crush measurement

Specifications

Model No.		LCCU21N100	LCCU21N200	LCCU21N500	LCCU21KN001
Rated capacities		100N (10.20kg)	200N (20.39kg)	500N (50.99kg)	1kN (102.0kg)
Rated output		100.00 ± 0.50 (0.5%)	200.00 ± 1.00 (0.5%)	500.00 ± 2.50 (0.5%)	1000.0 ± 5.0 (0.5%)
Combined error		0.5% of R.O.			
Power	Supply voltage	DC5V (USB bus power)			
	Average current consumption *1	Less than 50mA			
Zero balance		±2% of R.O.			
Temperature effect on zero		0.6% of R.O. / 10°C			
Temperature effect on span		0.6% of LOAD / 10°C			
Compensated temperature range		0°C to 70°C			
Permissible temperature range		-10°C to 80°C			
Maximum safe overload		150% of R.C.			
A/D conversion rate		100 times / s			
Digital filter		Select from None, 0.7, 1.0, 1.4, 2.0, 2.8, 4.0, 5.6, 8.0, 11.0 Hz (default value: 1.0Hz)			
Resonance frequency *1, *2		45kHz	55kHz	30kHz	35kHz
Cables		From load cell to case: ø2mm, 2m length		USB cable (accessory): ø4mm, 1.5m length	
Dustproof / waterproof *1, *2		IP64 compliant			
Weight *3		Approx. 50g		Approx. 55g	
Communications standard		Conformant to USB Ver. 2.0 Full Speed			
USB connector		Micro-B type			
Communication settings	Baud rate	38400 bps			
	Character bit length	8 bit			
	Parity	Even			
	Stop bit length	1 bit			
	Terminator	CR LF			
	Code	ASCII			

*1: Reference value *2: Load cell only *3: Main unit (load cell, cable, plastic case)

Software for measurement

By using the "WinCT-DLC" software for measurement, the measurement data can be easily confirmed on a computer. "WinCT-DLC" can be downloaded from A&D's website (<http://www.aandd.jp>).



Main unit (load cell, cable and plastic case)
Mounting holder, USB cable

External dimensions
(Number) : Reference value. Unit: mm

Model No.	A	B	C	D	E	F	G	H	I	J
LCCU21N100	φ10	18	4	3.6	1.6	SR3	16	8	28	20
LCCU21N200										
LCCU21N500	φ16	24	7	6	3	SR6	22	14	32	24
LCCU21KN001										

Appearance and/or specifications subject to change for improvement without notice.



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