

LCCU-21

Small USB Button Load Cell for Force Measurement



*Force
Measurement
Simplified!*

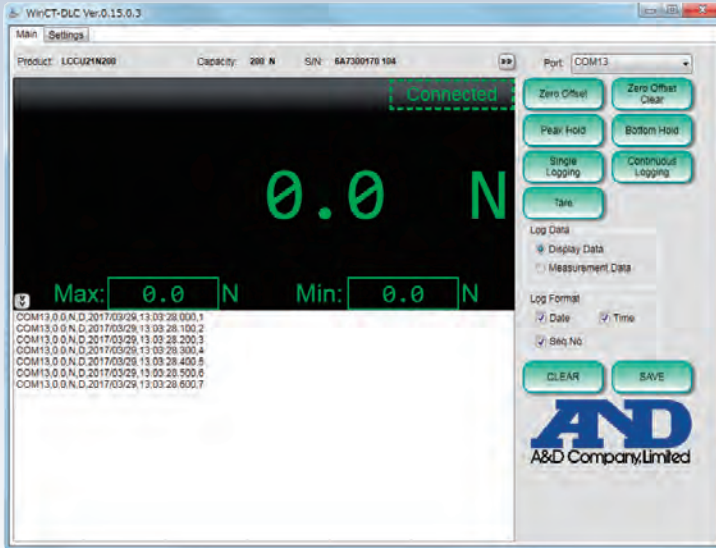
A&D
A&D Company, Limited
<http://www.aandd.jp>

...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

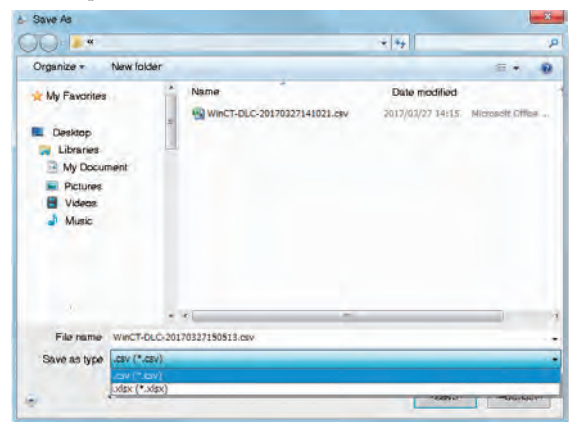
Functions

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

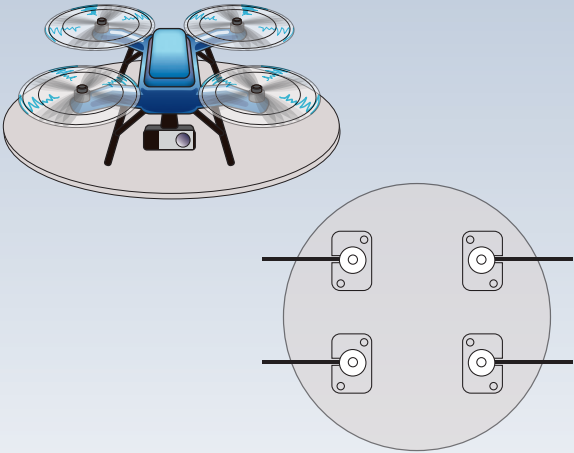
Save up to 1 million measurements to Excel



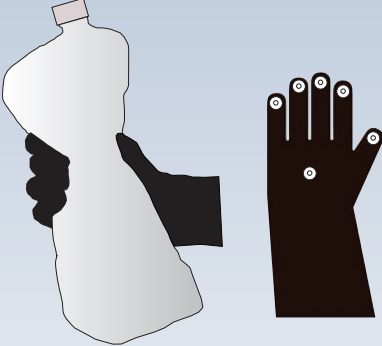
The xlsx file (Excel format save file) is split into groups of 300,000 pieces of data. (The file number is added to the end of the set file name for each group.)

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.

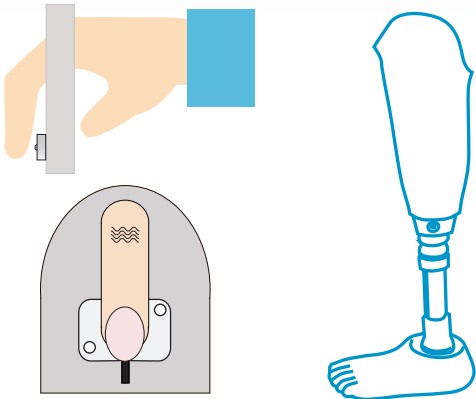
Application Examples



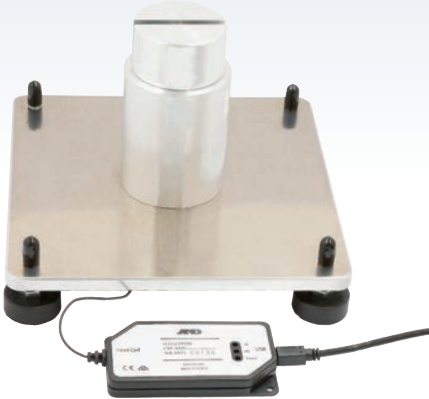
Drone balance measurement



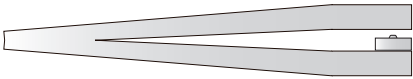
Measurement of force to crush plastic bottles



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.

| 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 | | | | | | | | | | |

Unit: mm

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



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