User's manual
CENTOR FIRST II

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1. Introduction

1.1. Presentation

Thank you for choosing the CENTOR FIRST II force gauge manufactured by ANDILOG Technologies to perform your measurements.

This instrument is the result of over 35 years of experience in force and torque measurement. It integrates the latest technologies available to offer you industrial level performance and measurement quality.

1.2. Recommendations before use

1.2.1. Battery

The Centor First is equipped with a learning battery management component. This component updates itself in real time according to the wear of the battery. It is possible that on the first few charge/discharge cycles the percentage of battery remaining is not very accurate. This accuracy improves after a few cycles and will update throughout the life cycle of the battery.

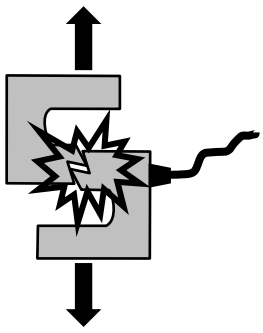
The battery life is 15 hours in normal operation. The force gauge must be charged when the battery is empty after normal use. If the force gauge is not used for a long period of time, it should be kept with a battery charge between 30 and 80% of its autonomy.

It is recommended to use the original power supply provided by Andilog to charge your instrument. The power supply must have the following characteristics: micro USB, 5V, 1A minimum.

Rechargeable batteries have a limited number of charge cycles and may need to be replaced. Battery life and number of charge cycles will vary depending on usage and settings.

1.2.2. Sensor

Never connect accessories or fixtures (hook, tray...) directly to the load cell. Use the extension rod supplied with your instrument.



Despite the overload protection provided by this instrument, the application of a force greater than the capacity of the load cell can damage the force gauge. The force gauge is equipped with an overload counter which allows to know the conditions of use of the device

It is important that the measured values are generally below 90% of the sensor's capacity. Constant use of the load cell beyond 90% of its capacity can result in premature wear of the load cell. When the force gauge is used on a motorized frame, it is necessary to program the frame to stop when the force approaches the maximum capacity of the sensor. This limit must take into account the fact that at a

high speed a frame does not stop immediately and the risks of damaging the sensor are important due to the inertia of the motor.

1.2.3. Building

The force gauge can be fixed on a frame using M5 screws. **The length of the screws used should not exceed 3mm inside the instrument.** Contact Andilog if you need more information or if you want an adapter to mount the instrument on a rack.

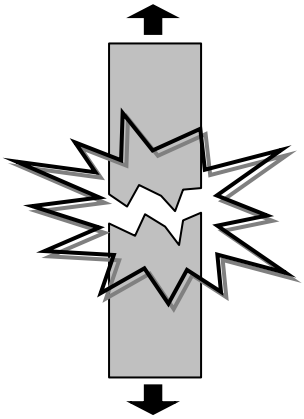
1.2.4. Precautions during testing

Most of the tests performed with Andilog Technologies instruments are destructive tests. The hazards associated with this type of testing require that our instruments be used by experienced and trained operators. Due to the nature and use of the equipment sold by Andilog, the purchaser's acceptance of Andilog Technologies' products constitutes acceptance of the risks and damages that may result from the use of Andilog's instruments.

1.2.5. Environmental conditions

- Operating temperature : 0 to 35° C
- Storage temperature: -20 to 45° C
- Relative humidity: 5% to 95%, non-condensing
- Maximum altitude of use : 3 000 m

1.2.6. Warranty



Subject to the conditions below, Andilog Technologies warrants to the purchaser that it will repair or replace at no charge new instruments sold subject to normal use and maintenance. This warranty applies if the purchaser detects a defect in workmanship or materials during a period of two (2) years from the date of shipment.

The conditions of application are:

- ANDILOG Technologies has been notified in writing of the defect before the end of the warranty period
- Products are shipped to Andilog Technologies with prior agreement from Andilog Technologies
- All transportation costs are paid by the buyer
- The products have been used and maintained under normal conditions of use

Any repair or replacement made by the seller outside the agreement of Andilog Technologies will void the warranty.

In no event shall Andilog Technologies be liable for any damages, business interruption, or loss of production due to the purchase, use, or failure of our products. And this even if Andilog Technologies has been informed of the possibility of such damages.

The accuracy of our devices is guaranteed at the time of shipment at the value indicated in our documentation or offers.

If products are damaged during shipment, notify the carrier and Andilog Technologies immediately.

The warranty is void in case of accident, misuse or abuse.

Calibrations, overloaded sensors, consumable parts such as batteries are not covered by the warranty, unless the damage is due to a material or manufacturing defect

2. Handling

The usual functions (displaying force, displaying maximum, zeroing and changing units) are accessible by simply using the keys on the keyboard.

2.1. Battery Charging

Connect the AC adapter to the micro-USB connector on the left side of your force gauge. The green LED on the front panel lights up when the battery is charging. At the end of the charge, the LED goes out.

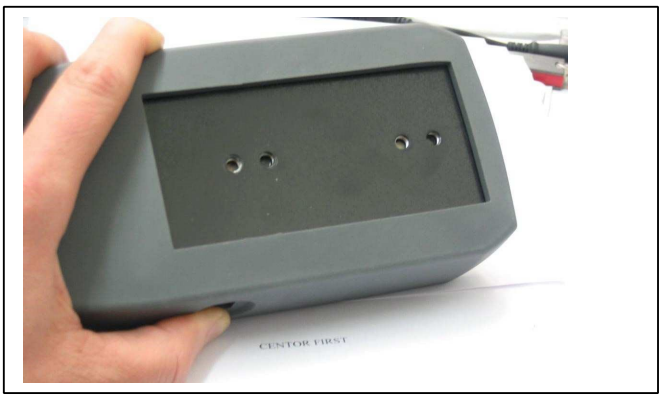
2.2. Accessories assembly

Attach the extension rod provided in the case to the load cell rod at the bottom of the force gauge. Tightening should be done by hand without applying much torque. Excessive torque or the use of pliers can damage the load cell. We recommend that you mount the accessories with the force gauge turned on to ensure that you are not applying a heavy load on the sensor when mounting the accessories.

2.3. Mounting on a frame

On the back of the force gauge are 2 x M5 threaded holes that can be used to mount the force gauge on an ANDILOG frame. Each ANDILOG frame is delivered with a special spacer and the fixing screws for this use.

If you wish to use another type of frame, make sure that the screws used are no longer than 3mm. Although the threaded holes are blind, the use of longer screws may destroy the components on the electronic board inside the instrument.



3. Using the CENTOR FIRST

3.1. Start-up

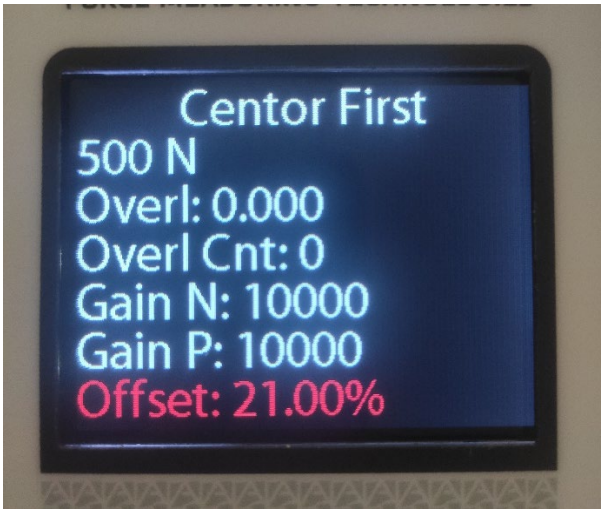
Please note that the Centor First II measures very small changes in force and may not read exactly zero if it is moved during its self-test procedure. When properly mounted and zeroed, the reading remains stable.

To switch on, press the key ⏻, a short self-test procedure displays the following screen

After the self-test, if the device is functional, the force gauge displays the measurement screen. It then displays 0 N. A tare is performed when the device is started.

If the applied force is greater than 20% of the maximum capacity, the force gauge displays a maintenance screen. At the bottom of this screen, the force applied in % is indicated. The unit is not usable if the force at startup is greater than 20%. It is then necessary to turn off the force gauge and remove the preload before turning it on again.

For example, for a force gauge with a capacity of 500N, the force applied to the sensor must not exceed 100N at start-up.



All settings are saved in memory when the force gauge is turned off. The force gauge will operate with the same settings when it is turned back on (unit, display order).

3.2. Extinguishing

To turn off the Centor First II, press and hold the ⏻ button until the instrument turns off (5 seconds).

3.3. Measurement screen

Battery indicator: varies between 0% and 100% to indicate the battery life. When the battery is new, the autonomy is about 15 hours in continuous use. When the battery percentage reaches 0% the force gauge turns off.

Capacity display: indicates the capacity of the sensor installed in the instrument.

Bar graph: The bar graph shows the operator how much force is being applied relative to the maximum capacity of the load cell. When a compression force is applied, the bar graph fills up. When a tensile force is applied, the bar graph fills in downwards.

Measurement display :

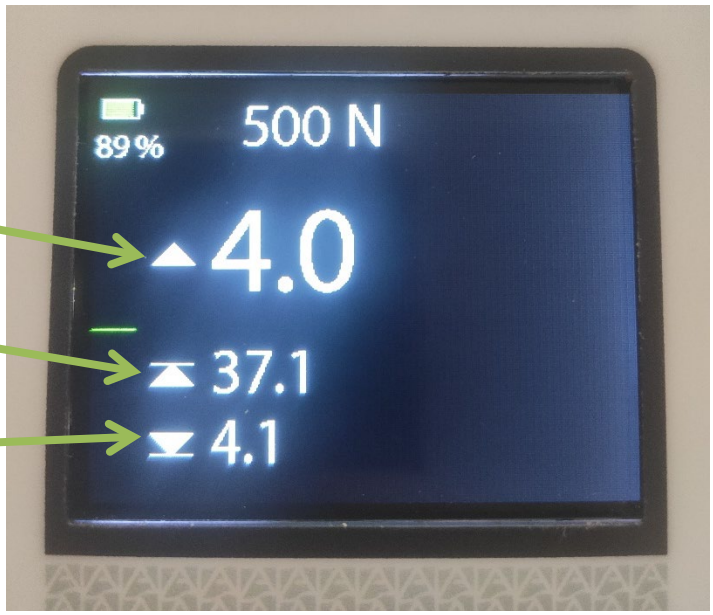
A force applied in tension will be preceded by the symbol ▼

A force applied in compression will be preceded by the symbol ▲

Indicates the direction of the measurement (tension or compression). Force measured in instantaneous

Maximum traction from the tare

Maximum compression from tare



The display order can be changed by pressing the 

3.3.1. Do the Zero

During tests, it is often necessary to reset the display to zero (e.g. to tare an accessory). Press the **green 0** key. The display then shows 0.

3.3.2. Change the unit of measurement

You can choose from the following units: N, kg, lb and daN. To change the unit display, press the **U** key. Each successive press will select the next unit until you return to the starting unit. The Centor First II will automatically convert the display and capacity to the new chosen unit and display the corresponding unit symbol.

The number of decimal points displayed changes according to the unit chosen.

3.3.3. Change the display order

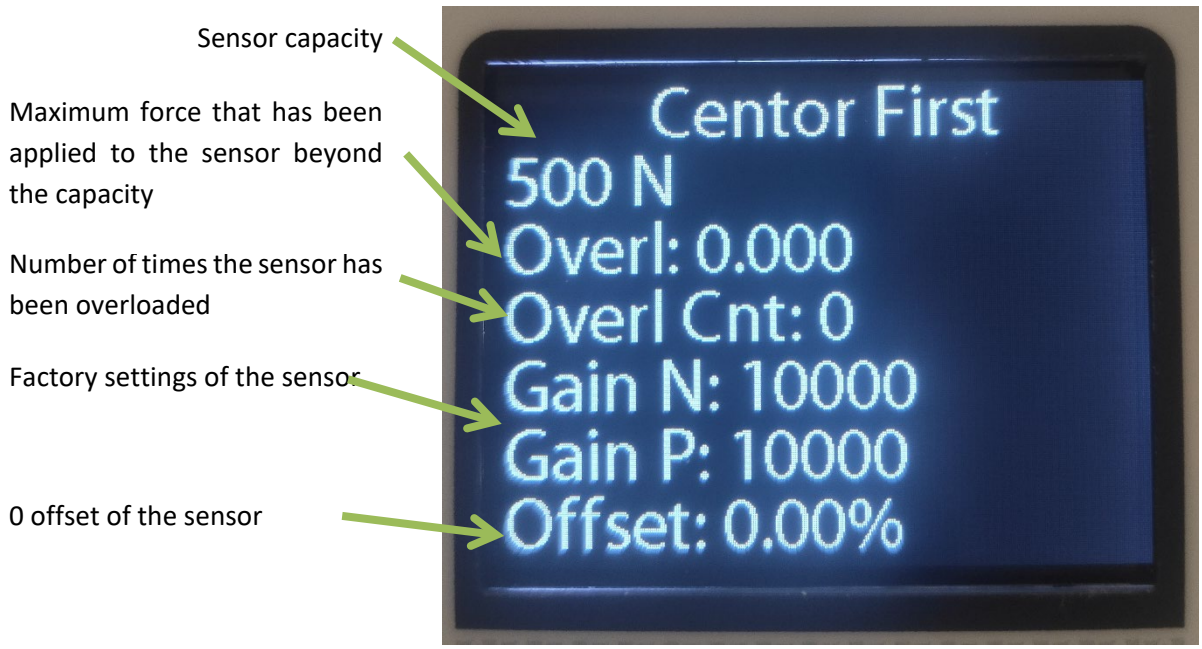
The force gauge detects and stores the maximum in tension and compression. Press the key  . The display order of the different values will shift upwards. The top line will then move to the bottom. Each press of this key changes the display. The Centor First II remembers the display order when it is turned off.

3.3.4. Auto-off

The automatic shutdown saves the battery charge. The force gauge is automatically switched off after 15 minutes without pressing any key.

3.3.5. Maintenance screen

A long press on the U button displays a maintenance screen. This screen provides information about the sensor and its status.



4. Maintenance and troubleshooting

4.1. Main faults and solutions

Problem	Solution
My device turns itself off.	1. Check that the battery percentage is not at 0%. Put the device on charge 2. The Centor First II will automatically shut off after 15 minutes if no button is pressed.
My device is blocked, the force does not vary anymore.	Turn off and restart your instrument using the on/off key.
My device does not display the measurement screen but an information page with Offset in red.	If the offset value is greater than 20%, the device cannot measure. Turn off your device and remove the load applied to the sensor. Then turn on your device. If no load is applied to the sensor, then the sensor is deformed. You must then return your device to us for replacement of the sensor.

4.2. Technical specifications

Reference	Capacity	Resolution
CNR FT 10	10 N	0.002 N
CNR FT 25	25 N	0.005 N
CNR FT 50	50N	0.01 N
CNR FT 100	100 N	0.02 N
CNR FT 250	250 N	0.05 N
CNR FT 500	500N	0.1 N

Characteristic	Capacity
Accuracy	0.25 % of capacity
Autonomy	15 hours
Power supply	MicroUSB, 5V, 1A
Net weight	520 g
Units	N, daN, kg, lb
Sensor sampling frequency	1,000 Hz

4.3. EC declaration of conformity

The company Andilog Technologies certifies that the following products:

- Dynamomètres Centor First II
- Dynamomètres Centor First R II
- Dynamomètres Centor Easy II
- Dynamomètres Centor Easy R II
- Couplemètres Centor Easy II
- Couplemètres Anditork First II
- Couplemètres Anditork Easy II
- Ergokit First II
- Ergokit Easy II

Manufactured by:

Andilog Technologies SAS
Immeuble les Bouleaux
ZA de Couperigne
13127 Vitrolles
France

Conform to:

- Requirements of the Electromagnetic Compatibility Directive 2014/30/EU when tested against standard EN 61326-1:2013.

As derivative products of:

Centor Easy II

Tested by:

LGAI Technological Center, S.A. (APPLUS)
Campus de la UAB. Ronda de la Font del Carme, s/n. 08193 Bellaterra (Barcelona) (Spain)

Signature of Authorized Person

Date
06/03/2024

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Matthieu LEGRAND

Title
Operating manager