INTERFACE

ADVANCED FORCE MEASUREMENT

LCT-1 Ultimate

Load Cell Tester

Issue: 15-256 Revision A

User's Guide

www.interfaceforce.com

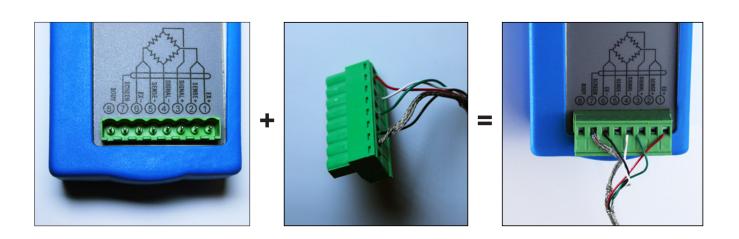# LCT-1 Ultimate

Specifications

• Insulation resistance { 5 GΩ at 10% accuracy (Min. >10 MΩ)}

• Input and output resistance: { 5 kΩ at 0.5 Ω resolution & ± 0.5 Ω accuracy}

• Sense resistance (for 6 wire L/C): up to 500 Ω at 0.1 Ω resolution

• Load cell output in percentage of full scale (input resistance > 175 Ω): ± 250% at 0.01% resolution and 0.1 % accuracy

• Gain adjustment: {0.1 to 5 mv/V in steps of 0.01} of accuracy

• High resistance test: 10Vdc

• 16 bit A/D conversion

• Bridge test: 1.25Vdc

How Do You Use It?
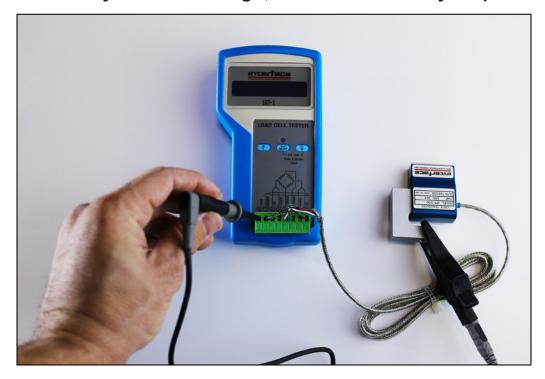### See how simple it is...

Main Features

• Industrial 8-pin screw connector

• Bridge resistance and integrity

• Very user freindly, full test within seconds

• Size: 150mm x 80mm x 28mm; Weight: 250g

• Check 4 or 6-wire Load Cell connecting at all rated gain output

• Rugged ABS enclosure with rubberized over case for drop protection

• Continuous signal reading for checking linearity and repeatability

• Insulation resistance (points to moisture or chemical ingress)

• Physical distortion (zero balance)

• Alphanumeric display: 16 x 2 lines

Interface Inc. • 7401 East Butherus Drive, Scottsdale, Arizona 85260 USA • Phone 480.948.5555 • Fax 480.948.1924
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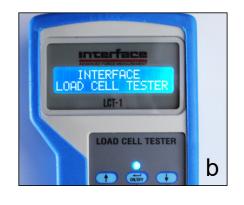# Follow the pin assignment and **connect** the Load Cell Cable to the connector:

In case you wish to check the isolation between
the L/C body and the bridge, connect the body to pin 8.

Important: Make sure NOT to connect the SCREEN (shield) and
BODY (PINs 7 & 8) at this stage!!

Now turn on the LCT by pressing and holding the
**ON/OFF key (↵) for two seconds (a). You will see the title
screen (b). After about six seconds, the following screen appears (c).**

a

b

c

In order to save battery, the backlit LCD display turns off if nothing is done for 15 seconds. To turn the display on, just push any arrow key that won't affect your settings or your current menu. To shut off the unit, press the Enter key (↵) for a few seconds, or leave it on. It will turn off automatically after a few minutes.

- -

**For inital calibration, press simultaneously the two right keys for just a second (a)
until you see the "Calibrating..." screen - which will display for three seconds (b).**

a

b

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Choose type of Load Cell

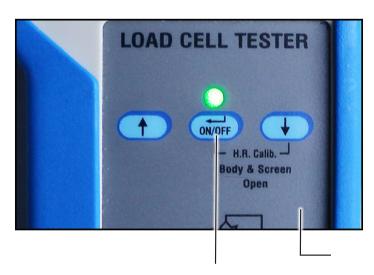| 4 wires		6 wires
	or	

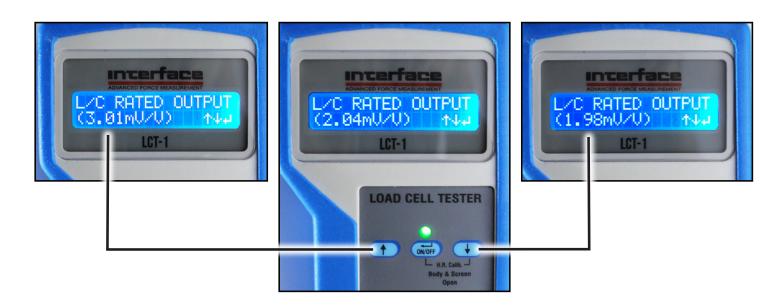## by pressing the up or down arrows.

Next, press the Enter key (↵)

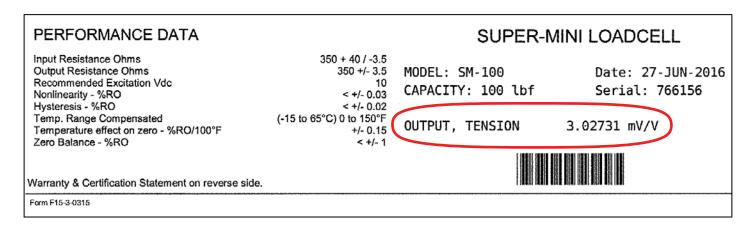Now you may connect the SCREEN and BODY (pins 7 & 8)

Choose L/C gain by pressing the up or down arrows, changing the number by increments of hundreths (or by speeding through tenths if you hold the button down).

In case of the absence of such a certificate, you may stay with the default gain of 2mv/v.

Note: L/C details can be found on the Calibration Certificate that came with the load cell.

PERFORMANCE DATA   SUPER-MINI LOADCELL

Input Resistance Ohms	350 + 40 / -3.5
Output Resistance Ohms	350 +/- 3.5
Recommended Excitation Vdc	10
Nonlinearity - %RO	< +/- 0.03
Hysteresis - %RO	< +/- 0.02
Temp. Range Compensated	(-15 to 65°C) 0 to 150°F
Temperature effect on zero - %RO/100°F	+/- 0.15
Zero Balance - %RO	< +/- 1

MODEL: SM-100   Date: 27-JUN-2016
CAPACITY: 100 lbf   Serial: 766156

OUTPUT, TENSION   3.02731 mV/V

Warranty & Certification Statement on reverse side.

Form F15-3-0315

Initiating the LCT test

i

Press the Enter key (↵)

ii

Press the Enter key (↵) again for LCT...

iii

Test in progress...

LED is blinking...

iv

The unit will display "END OF TEST" when complete

Scrolling through the results

Press the up key to scroll results...

1

As you go through, press the up key whenever you want in order to scroll to the next result until you see this screen again.

Bridge Input and Output Resistance Results

2a

In case of a suspicious reading, the LED turns red.

2b

Signal output of load cell rated output

(in percentage)

3

Note: When Load Cell is not loaded, the output should be around 0% (zero balance). Reference the loadcell specification for acceptable zero balance range.

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Insulation resistance testing:
Shield to Bridge

4a

Display: Shield to Brdg > 5000MΩ — LCT-1

4b

Display: Shield to Brdg < 10MΩ — LCT-1

Note: LED turns red in case of low insulation resistance

Insulation resistance testing:
Body to Bridge

5

Display: Body to Brdg > 5000MΩ — LCT-1

Insulation resistance testing:
Shield to Body

6

Display: Shield to Body > 5000MΩ — LCT-1

End of results

7

Display: Press↑ to SCROLL Press↵ to START — LCT-1

To scroll again, press the up arrow.

For a new test press the Enter key (↵)

The LCT-Ultimate can also continuously display the load cell signal in percentage of L/C full capacity.

Display: Press ↵ for LCT Press ↓ for GAIN — LCT-1

Just push the down arrow key after entering load cell parameters.

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Applying different weights to check the linearity

In this mode, the LED flickers different colors

Signal output when scale is empty

Model LCT-1 Ultimate is being calibrated with Model SM-100 (shown above)

and the max weight is set for 100lbf (45,400gf). For Model SM-100, the

maximum zero balance is ±1.0% FS. When Model SM-100 (pictured above)

was measured, the zero balance was actually +0.25%.

Applying different weights to check the linearity
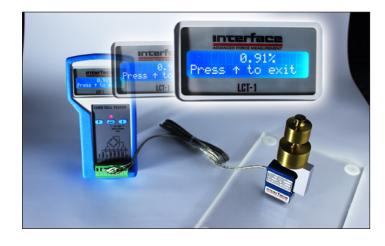
LED continues to flicker different colors

Apply *100g* onto 45.4kg L/C, calculating the reading to be *0.47%*

(*100g* / 45400g) x 100 = *0.22%*

♦

0.25% + *0.22%* = **0.47%**

Apply *300g* onto 45.4kg L/C, calculating the reading to be *0.91%*

(*300g* / 45400g) x 100 = *0.66%*

♦

0.25% + *0.66%* = **0.91%**

Applying *800g* calculates the reading to 2.01%, and so on...

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Warranty

The LCT-1 Ultimate is warranted against defective material and workmanship for a period of (1) one year from the date of dispatch. If the Interface, Inc. product you purchase appears to have a defect in material or workmanship or fails during normal use within the period, please contact your Distributor, who will assist you in resolving the problem. If it is necessary to return the product request an RMA # and include a note stating name, company, address, phone number and a detailed description of the problem. Also, please indicate if it is a warranty repair. The sender is responsible for shipping charges, freight insurance and proper packaging to prevent breakage in transit.

The warranty does not apply to defects resulting from action of the buyer such as mishandling, improper interfacing, operation outside of design limits, improper repair or unauthorised modification. No other warranties are expressed or implied. Interface, Inc. specifically disclaims any implied warranties of merchantability or fitness for a specific purpose. The remedies outlined above are the buyer's only remedies. Interface, Inc. will not be liable for direct, indirect, specInterface, Inc. will not be liable for direct, indirect, special, incideacntal or consequential damages whether based on the contract, tort or other legal theory.

In the interests of continued product development, Interface, Inc. reserves the right to alter product specifications without prior notice.

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