



TRANSCELL TECHNOLOGY, INC.



MODEL

LCT2 with Modbus TCP/IP

Digital Weight Transmitter / Junction Box

**Quick Start
Guide**

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OVERVIEW

This manual covers the following products:

<i>Model</i>	<i>Communication Protocol</i>	<i>Data Link Layer</i>
LCT2	Modbus TCP/IP	Ethernet

Introduction to LCT2

The LCT2 is a digital weight transmitter/intelligent junction box with advanced diagnostic and communication capabilities. Its primary function is to measure and sum four independent load cell signals and transmit this data serially Modbus TCP/IP protocol.

The LCT2 digital junction box is capable of the following operational modes:

1. Measure and transmit filtered weight data to a compatible host device
2. Measure and transmit ADC counts only to a compatible host device
3. Configuration/calibration

The LCT2 is designed to run off of an external 24 VDC power supply (not included).

The LCT2 utilizes an XPort device server which connects devices through a TCP data channel or through a Telnet connection to computers or to another device server. The XPort device server uses the Internet Protocol (IP) for network communications. It uses the Transmission Control Protocol (TCP) to assure that no data is lost or duplicated, and that everything sent to the connection arrives correctly at the target. Simply put, this is a Modbus RTU message transmitted with a TCP/IP wrapper and sent over a network instead of serial lines.

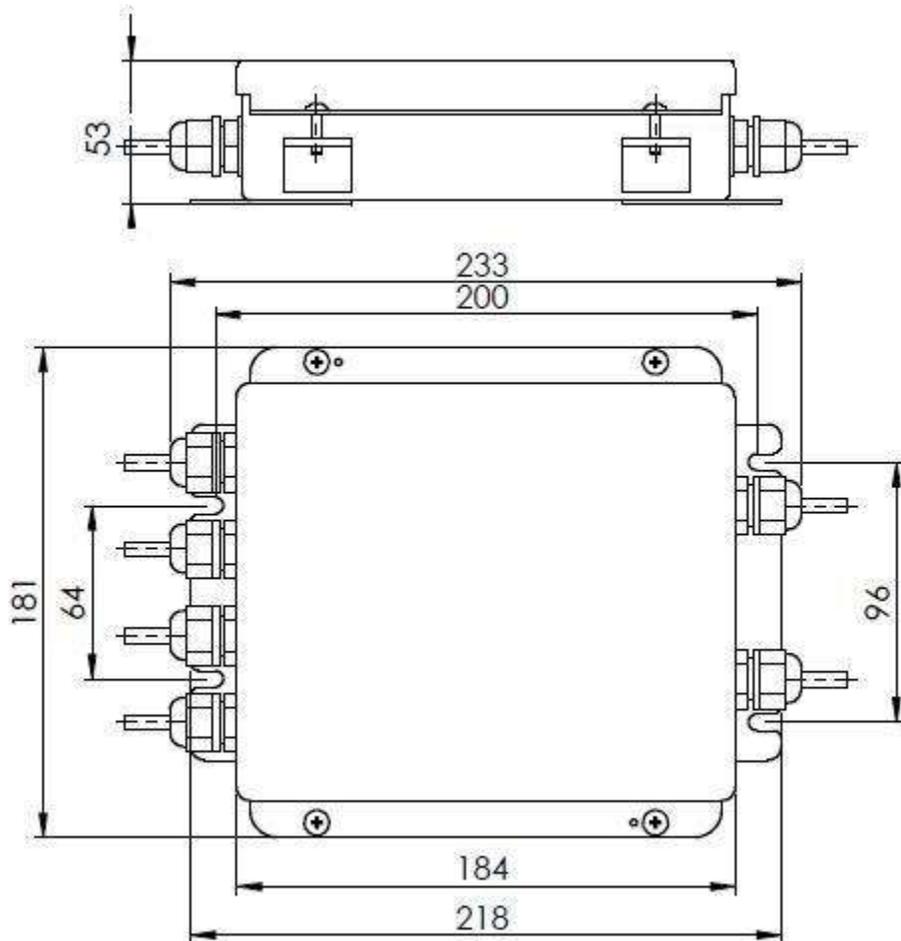
INSTALLATION

This section describes procedures for connecting load cell, power, and serial communications cables to the *LCT2* junction box.

Remember that the installer is ultimately responsible to assure that a particular installation will be and remain safe and operable under the specific conditions encountered.

Installation of LCT2

Find a suitable location for the digital junction box and use the mounting tabs to mount the unit to a wall or table. The junction box may be mounted vertically or horizontally. Use this handy guide for mounting the box to a wall or table:

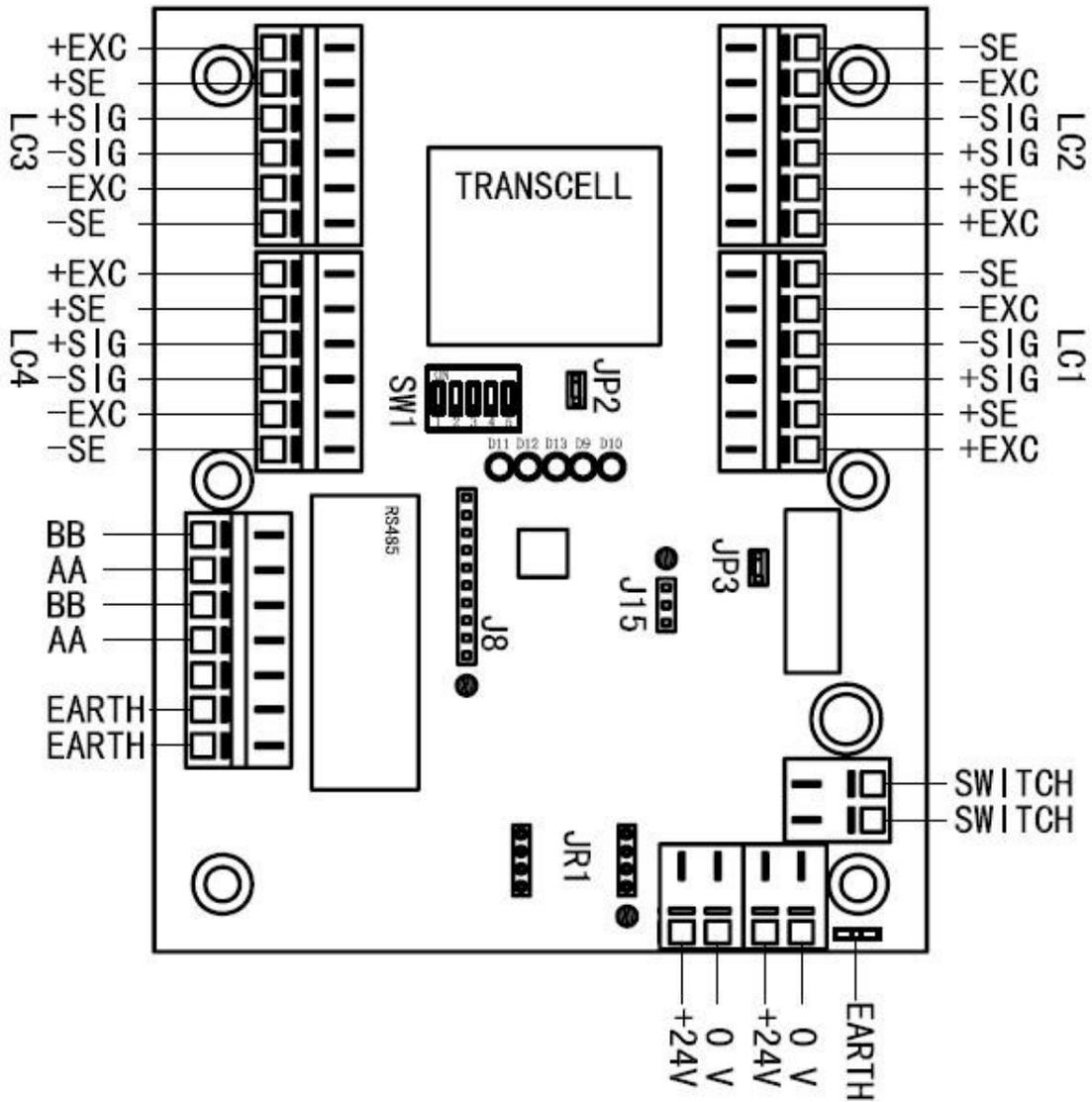


CONNECTIONS

The top cover must first be removed to make the appropriate connections to the weigh platform, power supply and Master (Client) device. To remove the top cover, simply remove the four (4) screws that secure it to the enclosure and set aside.

Caution! Disconnect power source from junction box prior to removing top cover.

Caution! Strip each wire back 10 mm, tin and crimp onto studs before inserting into the spring loaded terminals.



CONNECTING THE LOAD CELLS

The LCT2 contains four connection terminals on the main board – one for each load cell. The designations are LC1, LC2, LC3 and LC4.

Connect your load cell cable (not included) to the appropriate terminal on the main board.

Load Cell Terminal Blocks (LC1-LC4)

Marking	Function
+EXC	+ Excitation
+SE	+ Sense
+SIG	+ Signal
- SIG	- Signal
-EXC	- Excitation
-SE	- Sense

Caution! If connecting less than four load cells to the LCT-2, then the +SIG and -SIG terminals **must be shunted with a jumper wire** on each unused load cell input terminal

CONNECTING TO THE NETWORK

The Xport device server is provided on a piggyback board plugged into the JR1 socket. A standard RJ-45 modular connector is provided for connection to your network.

CONNECTING THE POWER SUPPLY (not included)

The LCT2 requires an external 24V DC power supply. The connection terminals (+24V, 0V and EARTH) are self-explanatory.

Two sets of terminals are provided for purposes of daisy chaining multiple LCT2 boxes together on the same power bus.

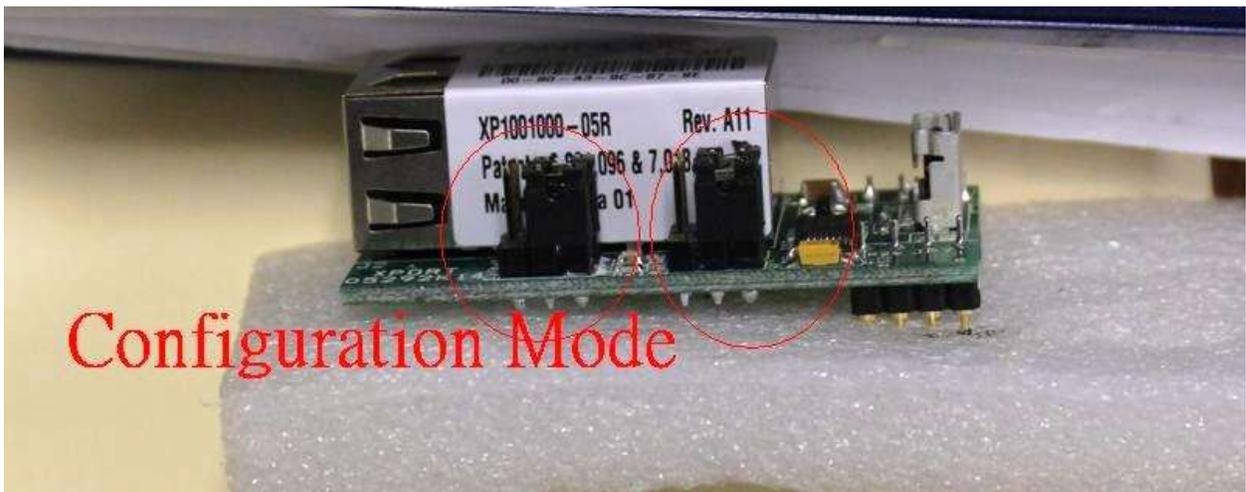
CONFIGURATION

Step One

Configure the Xport device server located inside of the LCT2 to join your network.

NOTE: reference Chapters 5 and 6 of the [XPort User Guide](#) for more details

1. Locate the XPort device server module on the main PCBA of the LCT-2.
It will be plugged into the socket labeled JR1.
2. Locate the four jumpers on the XPort device server module
3. Position all four jumpers as shown in the photograph below, i.e. towards the USB port:



4. Connect the XPort device server module to a windows PC using the supplied USB cable
5. USB drivers will automatically be installed; if not then click [here](#) to download the drivers for your operating system (in this case you must install manually)
6. Use Device Manager on Windows to check for 'Silicone Labs CP210x USB to UART Bridge (COM3) listing under 'Ports'
Device Manager can be accessed via Control Panel
If not COM3 that's okay, just make a note of which COM port has been assigned ...
7. Run HyperTerminal (provided on memory stick)
For Name, type 'Any' and press ENTER key
8. On 'Connect To', select COM3 (or the one you saw in Device Manager)
9. On 'Communication Settings' make sure it's set to the following:
Baud: 9600
Parity: None
Data Bits: 8
Stop Bits: 1
Flow Control: None (off)

10. Click Apply, then OK
11. Press and hold lower case 'x' on your computer keyboard while powering up the LCT-2 with the 24 V power supply
12. As soon as the following information appears on the HyperTerminal screen, release the 'x' key

```
MAC address 00204A7980E1
Software version V6.8.0.1 (120517) XPTEXE
AES library version 1.8.2.1
```

Press Enter for Setup Mode

13. **Press Enter within 5 seconds(!)**; the configuration settings display, followed by the Change Setup menu.

```
Change Setup:
```

```
0 Server
1 Channel 1
3 E-mail
5 Expert
6 Security
7 Defaults
8 Exit without save
9 Save and exit
```

Your choice? _

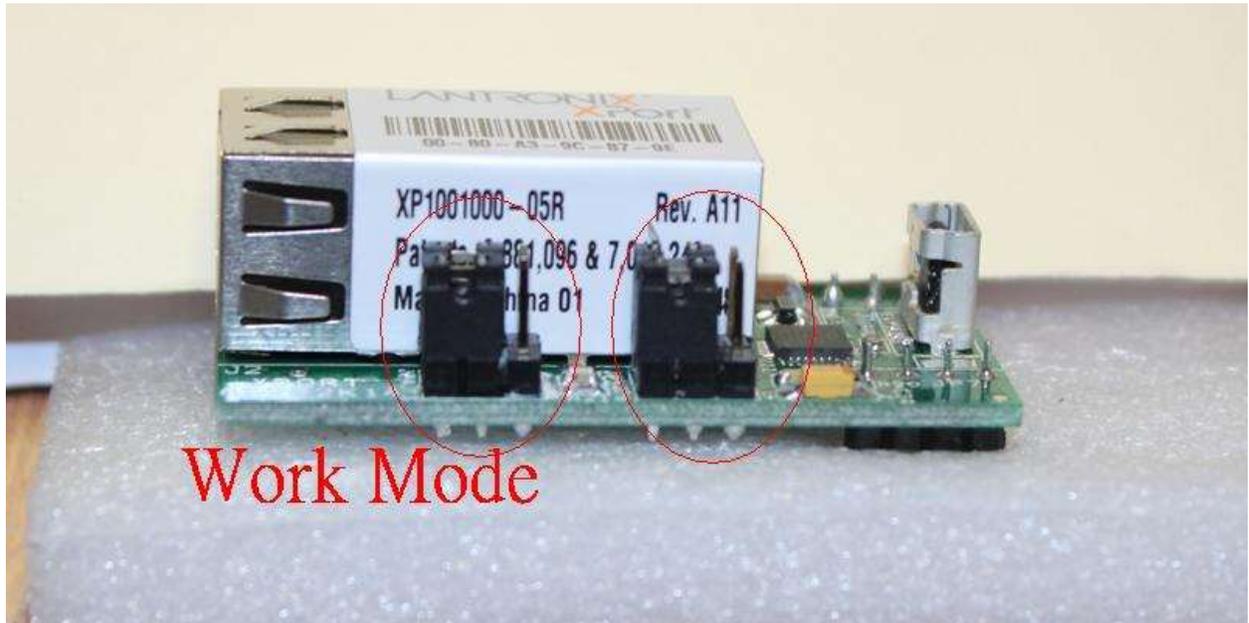
14. Press '0' and then ENTER key to configure the server ...
enter in the data corresponding to your network ... for example ...

```
IP Address: (172) .(019) .(212) .(060)
Set Gateway IP Address (Y) ?
Gateway IP addr (172) .(019) .(000) .(001)
Netmask: Number of Bits for Host Part (0=default) (16)
Set DNS Server IP addr (N) ?
Change Telnet/Web Manager password (N) ?
```

15. Back at the Change Setup menu, press '9' and then ENTER (to save and exit).
16. Wait 30 seconds
17. Unplug the 24V power supply to the LCT-2
18. Unplug the USB cable

Continued =>

19. Position all four jumpers as shown in the photograph below, i.e. away from the USB port:



20. Close HyperTerminal

The XPort device server module is now configured.

Step Two

The LCT2 can be configured, calibrated and run in various test modes using a free PC utility called TCPIP.EXE.

A complete instruction guide for this software can be found in the separate document entitled Instructions to run the TCPIP Test Software.

SYSTEM CALIBRATION

The LCT2 supports several robust calibration modes including single point span, multi-point span and digital corner balancing.

Refer to the separate document entitled Instructions to run the TCPIP Test Software.

MODBUS TCP/IP COMMANDS

The LCT2 is packed with several robust Modbus TCP/IP commands including read combined weight, read individual channel weight, read ADC (each channel), configure individual channels, calibration, etc.

For a complete command set, refer to the separate document entitled [4CHJBOX-Modbus protocol-TCPIP mode-4](#).

Transcell Tech Support: (847) 419-9180

Limited 12-month Warranty

This product is warranted by Transcell Technology against manufacturing defects in material and workmanship under normal use for twelve (12) months from the date of purchase. For complete warranty details and service information, please contact us at the address below.

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