User Manual

Trux 700

ÅKERSTRÖMS

CE

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Revision Notice

Revision	Section	Explanation
B	4.2 Installing Electrical Components	Revised section providing graphics and instructions for power supply connections.
C	Rear Cover	Revised contact information
C	4.4.5 Installing Bar Code Readers	Split into two sections, serial and Bluetooth.
D	Copyrights	Revised for 2009

Revision A, Initial Release, August 2008

Revision B, October 2008

Revision C, January 2009

Revision D, March 2009

Table of Contents

Illustrations

1 About this manual

This manual covers these topics related to installation, startup, operation, and maintenance of Åkerströms Trux AB, Tx700:

- Safety considerations
- General product information
- Product installation procedures
- Product use and maintenance
- Troubleshooting

The appendices provide this reference information: technical specifications; port signals; environmental considerations; fulfillment of EU and US compliance regulations; warranty, support, and service; and Åkerströms Trux AB addresses and phone numbers.

1.1 Who should read this manual

Use this manual if you are responsible for installing, setting in operation, maintaining, or repairing Trux Solutions; it provides information you need for mechanical and electrical installation of Åkerströms Trux AB, Tx700 and configuration of basic functions.

You must:

- Be very familiar with mechanical, electrical, and computer installations.
- Have experience with computers and knowledge of the operating system that will run on the computer.

The manual does not describe how to install and use the operating system or applications.

1.2 Notices

This manual describes the product's basic design and main procedures for installing, operating, and maintaining the product. Deviation might exist between information in this manual and the appearance and functions in the delivered product because of differences in hardware and software versions.

When product updates affect functions and security, recent, relevant, updated information is available from Åkerströms Trux AB.

1.3 How to use this manual

To . . .	**Read chapter . . .**
Prepare for electrical installation	2. Safety
Prepare for product installation	3. Product description
Install Åkerströms Tx700	4. Product installation
Operate Tx700	5. Using the product
Keep the product in good shape	6. Maintaining the product
Solve problems	7. Troubleshooting

1.3.1 Prerequisites

To perform some tasks listed above, you'll need:

- Åkerströms Trux AB or other manufacturers' documentation related to options and peripherals.
- Manufacturers' product documentation for the:
- Operating system and other applications
- Global positioning system (GPS)
- Global system for mobile communication (GSM)
- General packet radio service (GPRS)

1.3.2 Explanation of symbols

This manual contains these symbols, abbreviations, and terms:

Symbol	Heading	Description
	Warning!	Warns about risk of damage to people or property. Always follow the instructions provided in conjunction with this symbol.
	Note!	Calls your attention to problems that may arise if a measure is not taken or is taken incorrectly.

2 Safety

2.1 Assuring personal safety

Keep this information in mind:

Always exercise caution when working with electricity.

2.2 Product safety

2.2.1 Electrical supply

You must:

- Fit the computers with an external fuse before connecting to the recommended voltage
- Connect the computers to the recommended voltage; if they are connected to another voltage, then the product can be destroyed or its operation put at risk; see 4.2.1

Design the external electrical system so that voltage peaks do not occur in the electrical supply to the computer.

2.2.2 Humidity, moisture, cold, and heat

Install the product in an environment as described in Appendix I, Specifications. If environmental requirements are not met, the product can be destroyed or its function put at risk.

Never turn on the computer unless the environmental conditions are within the specified limits (see Appendix I, Specifications). For example, ensure that the computer is turned on before you drive into a cold storage unit.

2.2.3 Interference

Ensure that:

- Any nearby electrical cabling (mains supply) is run so that interference does not occur.
- The immediate environment meets requirements stated in the specified standards (see Appendix IV) with regard to interference.

2.2.4 Vibrations

Mount the computer so that any vibrations that are transmitted to it do not exceed the limits at which the computer was tested (see Appendix I, Specifications). If the vibrations exceed these limits, use rubber pads or other insulation.

3 Product description

3.1 Function and design

Åkerströms Trux AB designed and developed Tx700 for mounting on mobile or stationary units. Rugged design, intense screen brightness, and exceptional reliability make Tx700 suitable for demanding environments in which vehicles such as forklifts, forestry machines, and trucks operate.

Tx700 is based on a standard PC platform that enables use of most types of software adapted for Windows XP Professional or Windows XP Embedded.

Tx700 is a stand alone computer or a thin client that requires an application server.

The model is equipped with Pentium M or Celeron M processor, built-in hard disk, battery backup function, and UPS function that prevent the computer from being turned off during short power supply interruptions, to ensure that data is not lost.

Tx700 is available with several options and peripherals that are described in this manual.

3.2 Usage areas

Your operation can use Tx700 for mobile and fixed applications. Typical usage areas include:

- Computers mounted on forklifts that operate within a warehouse and communicate via a wireless network.
- Trucks that contain software for global positioning system (GPS) navigation, routes, maps, and picking lists.
- Forestry machines that contain software for GPS navigation, maps, and felling instructions.

3.3 Basic product structure

Position	See Figure 1 on the following page
1	Connection for external aerial
2	Power supply
3	COM2 (serial port 2)
4	COM1 (serial port 1)
5	Keyboard/mouse
6	RJ-45 10/100 LAN
7	1 x USB 2.0 (USB 1.1 CE)
8	Connection for multi purpose usage
9	Audio Out 3.5 mm
10	Mic In 3.5 mm

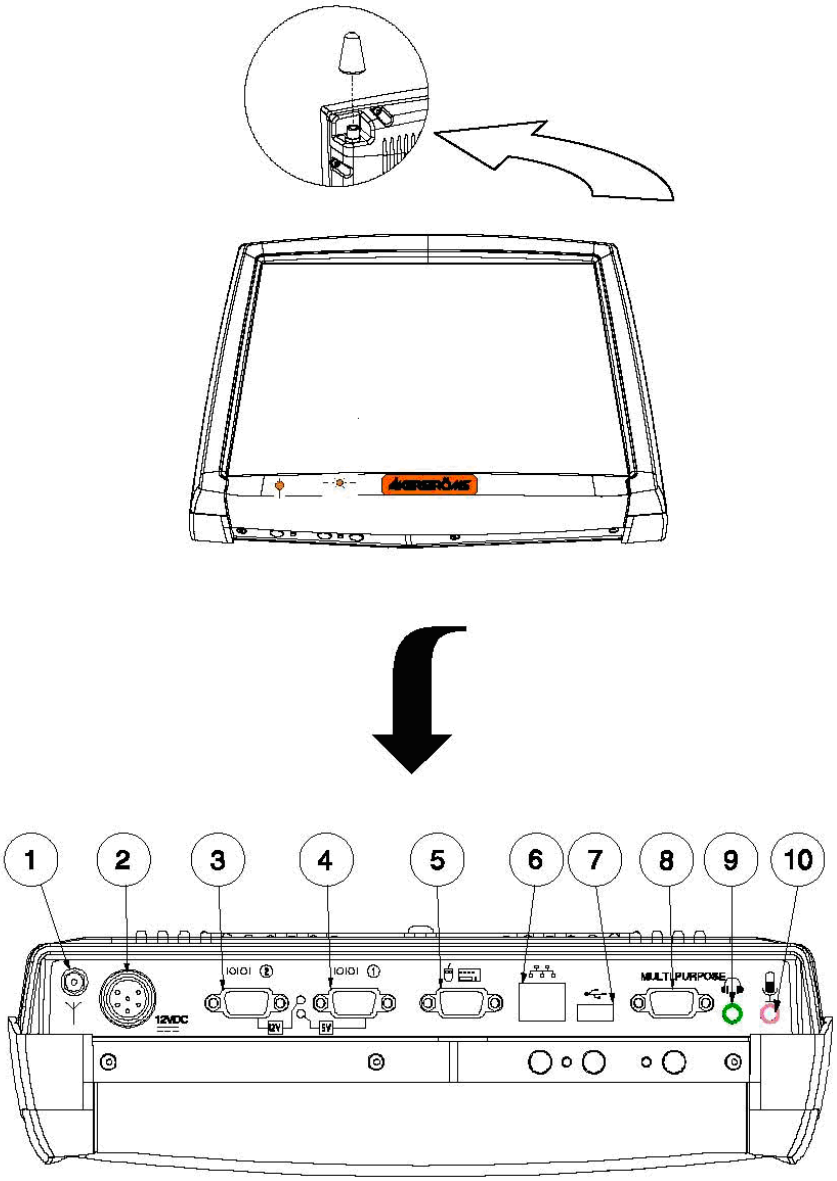


Figure 1 Basic product structure

3.4 Tx700 series

3.4.1 Tx700 Wireless Application Platform

Åkerströms Tx700 Wireless Application Platform is developed for companies that want total versatility and need powerful computers that enable several heavy applications to run simultaneously.

The Tx700 Wireless Application Platform comes in various configurations to meet your requirements. You select operating system (Windows XP Professional), processor and primary memory, based on the types and numbers of applications that you run at the same time.

3.4.2 Tx700 Wireless Client Terminal

Åkerströms Tx700 Wireless Client Terminal is developed for companies that have stringent safety demands and want genuine, robust, thin clients for running various client server applications.

The Tx700 Wireless Client Terminal is a robust client, adapted for client/server environments. It comes with Windows XP Embedded, which enables total control of the user environment. Users only have access to functions needed for doing their jobs.

3.4.3 Peripherals

You can order the peripherals listed below when (or after) you order the computer. The **Section** column lists the sections in this manual that describe how you should install the peripherals. For information on use, refer to the documentation that accompanies the product.

Go to www.lxe.com to display a complete list of peripherals or order the list from Åkerströms Trux AB.

Peripheral	Section
Keyboard	4.4.3
Mouse	4.4.3
Printer	4.4.4
Bar-code reader	4.4.5
GPS	4.4.6
GSM/GPRS-system	4.4.6
Audio Out	4.4.7
Mic In	4.4.8
Aerials	4.4.9

4 Product installation

4.1 Mounting the unit

Tx700 is intended to be mounted so that operators can easily perform tasks while in the vehicle.

When positioning the computer on the vehicle, carefully account for operators' working situations. An ergonomically correct installation, with an optimal field of vision, greatly facilitates the operators' work.

Before installation, ensure that all the environmental requirements are met. Appendix I, Specifications, lists these requirements.

4.1.1 Mounting Brackets

You can order several different types of brackets for the Tx700. The brackets have built-in shock absorption and can move in all directions. The arms come in three lengths, for 1,5" ball: 95 mm (3 ¾"), 154 mm (6"), 233 mm (9 $^{2}/_{14}$") and three lengths for 2,25" ball: 128 mm (5"), 213 mm (8 $^{2}/_{5}$"), 328 mm (13.").

Do not change the original screws that the brackets are mounted with. Screws that are too long can damage the computer's electronics.

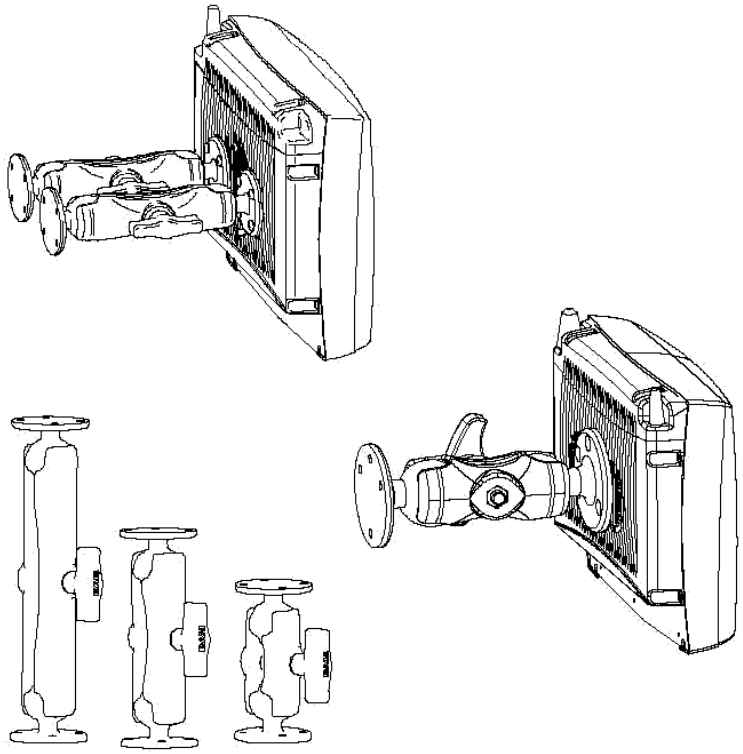
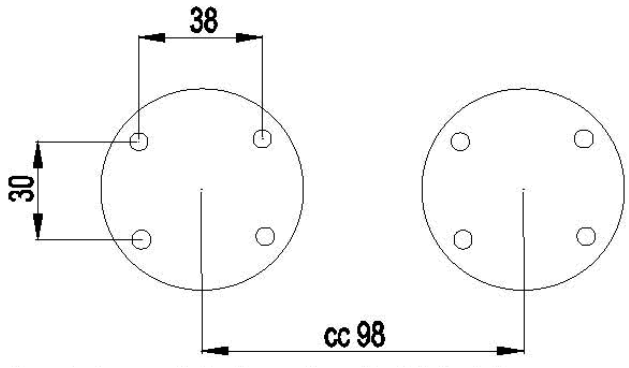


Figure 2 Different types of Tx700 brackets

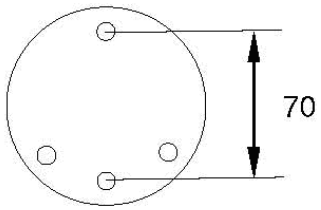
1 Check that the planned location of the computer meets ergonometric and field-of-vision requirement.

2 Ensure there is sufficient space underneath the computer so that service can be performed. There must be space to connect and disconnect the wires from the ports.

3 Mark the positions of the holes on the mounting surface. See Figure 3 below.



Location of holes for 1,5” ball



3 + 1 hole, 08 mm

Location of holes for 2,25” ball

Figure 3 Templates for RAM Ball

4 Drill holes for the attachment screws.

5 Firmly fasten the computer’s bracket onto the mounting surface with the screws.

4.2 Installing electrical components

Always exercise caution when working with electricity.

4.2.1 Connecting electrical cables to power sources

The Tx700 comes with a four-meter, four- wired power cable; brown for positive and white for negative, and 2 conductors; yellow and green, to enable the screen black-out function.

If the black out screen function is not used, see section 4.2.2. If the black out function is used, see section 4.2.3.

Connect the brown part of this cable to positive and the white part to negative on the DC/DC converter power source, and fuse it according to these specifications shown below:

Specifications for electrical supply

Always observe input voltage range specified on the DC to DC power supply and the optional screen blackout box.

Voltage	12 VDC ± 10% always use insulated DC/DC transformers
Power	50 W
Fuse	5 A (slow blow fuse) 3 A (for optional screen blackout box. Fuses ARE NOT supplied by Åkerströms.

Then connect the power cable to the computer's power supply outlet; see Figure 4.

Never connect power to pins 5 or 6, which are for the screen's black-out function described in section 4.2.3.

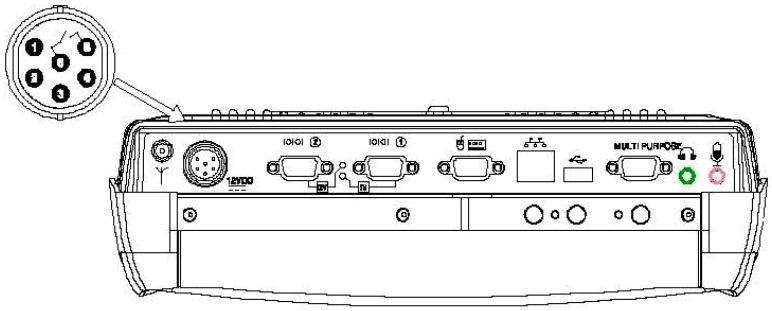


Figure 4 Connection for power supply

For proper and safe installation, the input power cable must be connected to a fused circuit on the vehicle. This fused circuit requires a user supplied 5 Amp maximum time delay (slow blow) high interrupting rating fuse. If the supply connection is made directly to the battery, the fuse should be installed in the positive lead within 5 inches of the battery positive (+) terminal.

⚠	*For installation by trained service personnel only.*
⚠	*Risk of ignition or explosion. Explosive gas mixture may be vented from battery. Work only in well ventilated area. Avoid creating arcs and sparks at battery terminals.*

How To: Connect Vehicle Electrical Connection

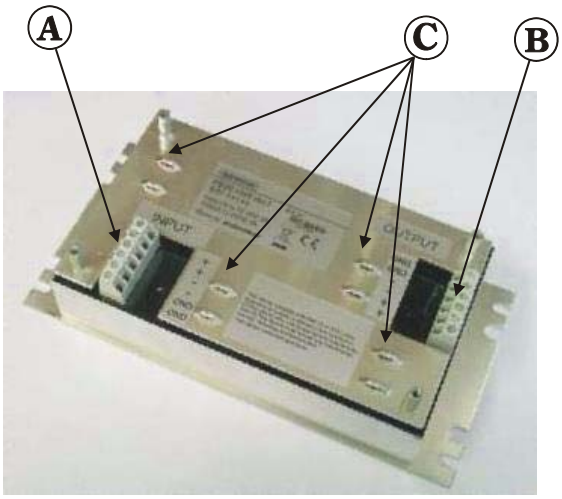
1. Please review section 4.2.2 (without blackout screen box) or section 4.2.3 (with blackout screen box) before beginning power cable install.
2. The Tx700 must be powered off.
3. Begin by connecting the power cable to the Tx700. Work from the Tx700 with the last connection being to the vehicle's power source.
4. Route the cable from the Tx700 to the DC to DC converter and, optionally, the blackout screen box. Cut the cable to length and strip the wire ends. If the blackout screen box is not used, do not strip the green and yellow wires.

   Route the power cable the shortest way possible. The cable is rated for a maximum temperature of 105°C (221°F). When routing this cable it should be protected from physical damage and from surfaces that might exceed this temperature.

   Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate.

   Note: If the vehicle is equipped with a panel containing Silicon Controller Rectifiers (SCR's), avoid routing the power cable in close proximity to these devices.

   Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.
5. Remove the lid from the DC to DC converter. Attach the stripped wire ends to the DC to DC converter.



A	DC Input
B	DC Output
C	Looms to secure wiring

The input and output blocks each have two + and two – minus connectors. Either connector in the block can be used to connect the matching polarity wire.

Use the looms and wire ties to secure all wiring then reattach the cover with the screws.

6. If the blackout screen box is used, attach the stripped wire ends to the box. Refer to section 4.2.3 and the label on the blackout screen box for proper wiring connection.

7. Connect the DC to DC converter to the vehicle's electrical system.
8. While observing the fuse requirements specified above, connect the power cable as close as possible to the actual battery terminals of the vehicle. When available, always connect to unswitched terminals in vehicle fuse panel, after providing proper fusing.

   ATTENTION: ***For uninterrupted power, electrical supply connections should not be made at any point after the ignition switch of the vehicle.***

9. If used, connect the wiring for the blackout screen box.
10. Use proper electrical and mechanical fastening means for terminating the cable. Properly sized "crimp" type electrical terminals are an accepted method of termination. Please select electrical connectors sized for use with 18AWG (1mm^2) conductors.
11. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate outer cable jacket.

4.2.2 DC to DC Converter

Connect the brown part of this cable to positive and the white part to negative on the power source (DC/DC converter), and fuse it as shown below:

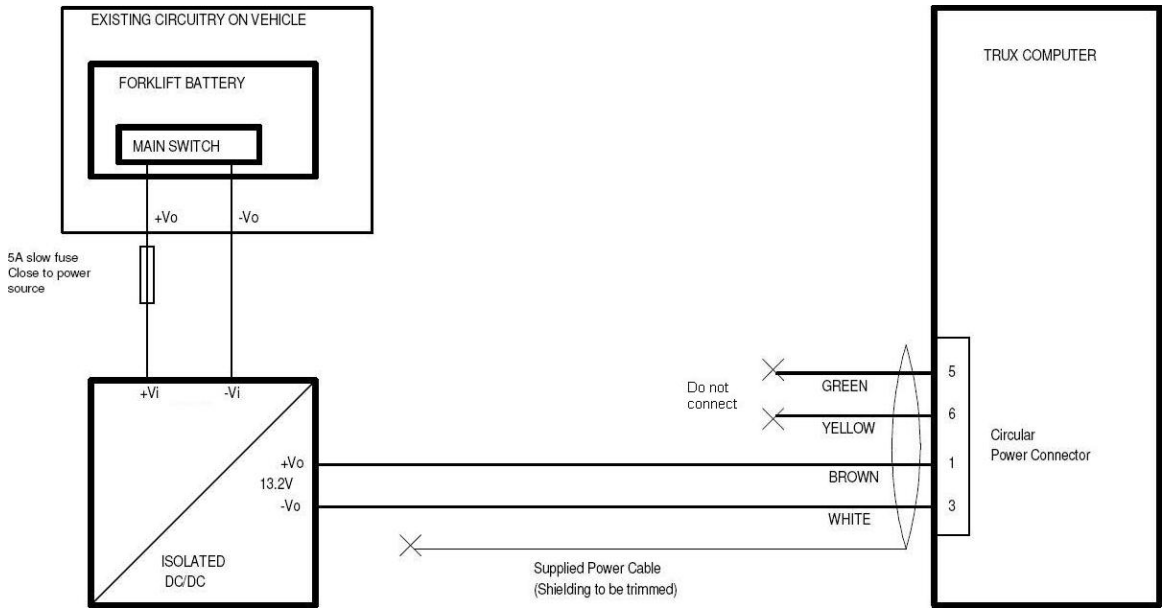


Figure 5 Wiring Diagram, Without Blackout Screen Box

4.2.3 DC to DC Converter with Blackout Screen Box

The power supply chassis connector contains two pins that are dedicated to dimming the screen for example when the vehicle is set in motion (when the gas pedal is pressed). The screen then lights up when the vehicle stops (when the gas pedal is released).

Connect pins 5 (green conductor) and 6 (yellow conductor) to the vehicle's gas pedal relay via a galvanically (electrically) isolated, open/close relay contact.

If the screen's black-out function is not selected and installed, isolate the end of the green and yellow parts in the open end of the cable.

You can set this function in the Trux Computer Manager application.

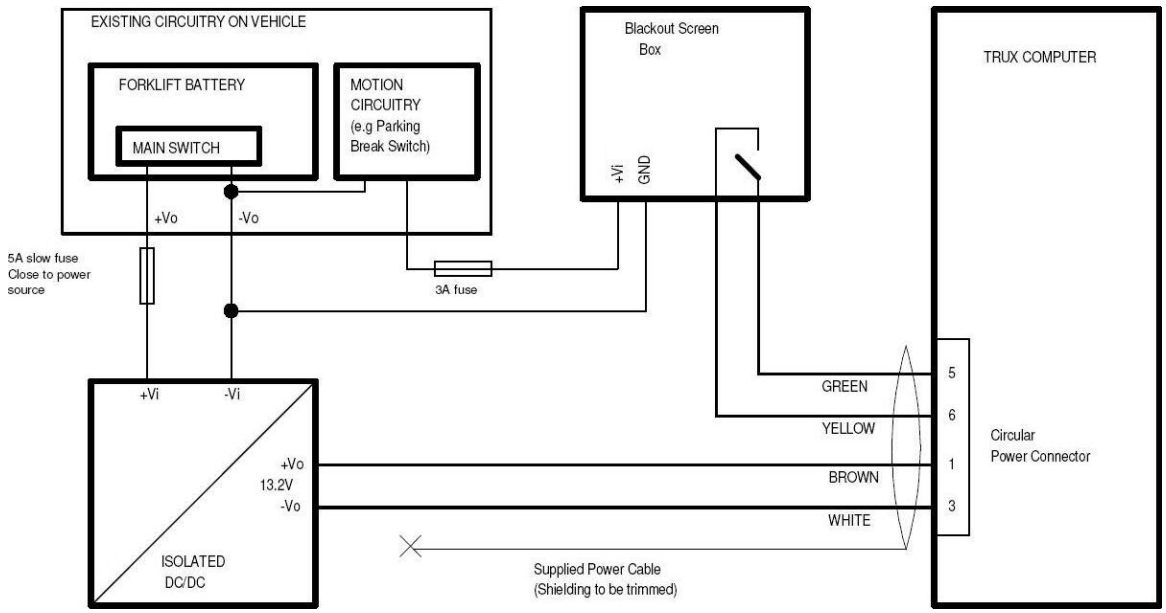


Figure 6 Wiring Diagram, With Blackout Screen Box

4.3 Settings

The Trux Computer Manager application is used to configure many options such as:

- Configuring the UPS function
- Settings for Startup and Shutdown
- Power for peripherals
- Blackout screen function
- Sound
- Defroster

Please refer to the Trux Configuration Guide, available on the documentation CD, for details on using the Trux Computer Manager.

Only experienced (IT) personnel should use the Trux Computer Manager because incorrect settings could produce undesired results in Tx700's behavior.

4.4 Installing peripherals

Åkerströms Trux AB offers peripherals that facilitate use of Tx700. If you order peripherals with the computer, then all drivers are pre-installed. If you order them later or from a supplier other than Åkerströms Trux AB, you might have to install the drivers; if so, refer to the peripheral's documentation.

4.4.1 Ports for connection of peripherals

Position	see figure below
1	Connection for external aerial
2	Power supply
3	COM2 (serial port 2) Yellow light indicates 12V out from pin 9
4	COM1 (serial port 1) Green light indicates 5V out from pin 9
5	Keyboard/mouse
6	RJ-45 10/100 LAN
7	1 x USB 2.0
8	Connection for multi purpose usage
9	Audio Out 3.5 mm
10	Mic In 3.5 mm

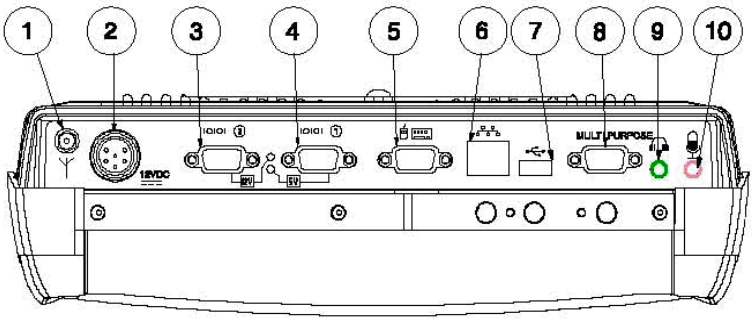


Figure 7 Ports for connecting peripherals

The following section describes function and use of the ports.

After peripherals are connected, the cables are to be assembling by cable straps.

4.4.2 Supplying power to peripherals

Some peripherals require power from the computer's COM or Multi Purpose port, for example a bar-code reader or an illuminated keyboard.

You can configure the Tx700 as follows:

- 12 V power is supplied from pin 9 on the COM 2 port.
- 5 V power is supplied from pin 9 on the COM 1 port.
- 12 V power is supplied from pin 5 on the Multi purpose port (see Appendix II, Port signals).

Peripherals, with maximum power consumption of 300 mA, can then be supplied from these ports.

Use the Trux Computer Manager to configure activation of the power supply. Please refer to the Trux Configuration Guide, available on the documentation CD, for details on using the Trux Computer Manager.

4.4.3 Connecting keyboards and pointing devices

Tx700 supports USB and PS/2-compatible keyboards and mice.

Connect keyboards and pointing devices to the computer's keyboard port; see Figure 7, pos. 5. Note that some require an adapter and others must be configured. Follow the instructions for the type of keyboard that you have.

PS/2-compatible keyboards and mice

1. Connect the PS/2 adapter (included) to the keyboard port on the computer; see Figure 7, position #5.
2. Connect the PS/2 connections from the keyboard to the adapter.

4.4.4 Installing printers

You can install printers via the:

- COM port; see Figure 7, pos. 3 or 4
- USB port; see Figure 7, pos. 7

For more information, refer to the printer's documentation.

4.4.5 Installing serial bar code readers

Use this installation procedure for all serial bar code readers that Åkerströms Trux AB supplies for Tx700:

1. Connect the barcode reader to the COM port; see Figure 7, position #3 or #4.
2. Activate the power supply on the COM port according to the instructions in the Trux Computer. Please refer to the Trux Configuration Guide, available on the documentation CD, for details on using the Trux Computer Manager. .

To convert the signals from the scanner to keystrokes, you can use the FreeFloat WLinq software. WLinq listens for signals at the COM port and converts these to the corresponding key that is sent to the active application.

WLinq comes with all bar code readers from Åkerströms Trux AB. You can also order WLinq separately.

4.4.6 Installing Bluetooth bar code readers

Use this installation procedure for Bluetooth® bar code readers supported by the Tx700.

1. Power on the Bluetooth scanner.
2. Use the Bluetooth Device Wizard in the Microsoft Windows Control Panel to discover and manager the Bluetooth scanner connection.
3. Do not use the ComponentSoft wedge software (provided with the LXE 8650 Bluetooth Ring Scanners) on the Tx700.

For more details on the Bluetooth option, please refer to the Trux Configuration Guide, available on the documentation CD.

4.4.7 Connecting GPS and GSM/GPRS products

You connect GPS and GSM/GPRS products to the computer's COM port; these products usually require power supply from the computer.

1. Connect the GPS or GSM/GPRS product to the COM port; see Figure 7, position #3 or #4.
2. Activate the power supply on the COM port according to the instructions in the Trux Computer Manager. Please refer to the Trux Configuration Guide, available on the documentation CD, for details on using the Trux Computer Manager.

For information about how to configure GPS and GSM/GPRS products, see the manufacturers' documentation.

4.4.8 Audio Out

Audio Out is a standard earphone outlet, Ø 3.5 mm.

4.4.9 Mic In

Mic In is a standard microphone inlet, Ø 3.5 mm.

4.4.10 Installing aerials

The computer must be fitted with one or two aerials if you ordered the Tx700 with a wireless network.

To be valid, network cards for wireless networks, which are not supplied by Åkerströms Trux AB, must meet the Radio & Telecom Terminal Equipment (R&TTE) directive for certification; see Appendix IV.

Ariel

1 Mount the aerial on the top of the computer; see Figure 8

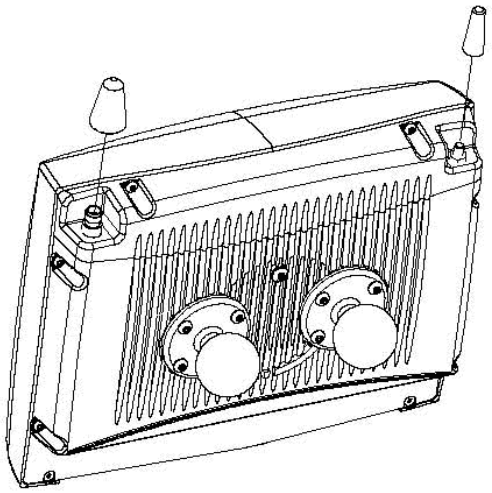


Figure 8 Aerial Outlets

5 Using the product

5.1 Operating the computer

5.1.1 Starting the computer

To turn on the computer:

- Press the on/off button on the computer's lower side, see pos 1 in Figure 9, or
- Click on the screen if:
  - You specified this setting using the Trux Computer Manager. Please refer to the Trux Configuration Guide, available on the documentation CD, for details on using the Trux Computer Manager
  - The computer is equipped with an integrated touch screen

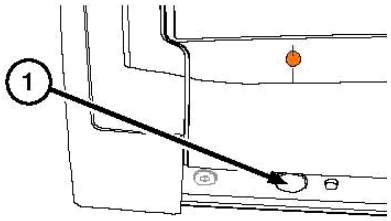


Figure 9 On/Off Button

5.1.2 Turning off the computer

To turn off the computer:

- Press the on/off button on the computer's left side, see pos 1 in Figure 9, or
- Select the appropriate object on the operating system's interface

Note: Some operating systems can also be put on standby by selecting the appropriate object.

In first place, turn off the computer via the operating system, in second place by the button. All to secure the data storage.

5.2 Working with the touch screen

The Tx700 is equipped with a pressure- sensitive touch screen. Rather than using mice for pointing devices, users select objects by touching the screen with a stylus or a finger.

Always use the accompanying stylus to point, drag, or tap the screen. Never use sharp, pointed objects. Click with the stylus on the screen.

5.2.1 Using the stylus to select screen objects

To select an object on the interface, gently tap the screen:

- One time to click.
- Two times in rapid succession to double-click.
- Tap on the mouse symbol in the system tray, down in the right corner, than the next click will be a right click.

5.2.2 Adjusting screen brightness

To	Use
Increase or decrease the screen's brightness	The buttons on the lower side of the computer. Increase (1) or Decrease (2) on the lower side of the computer.

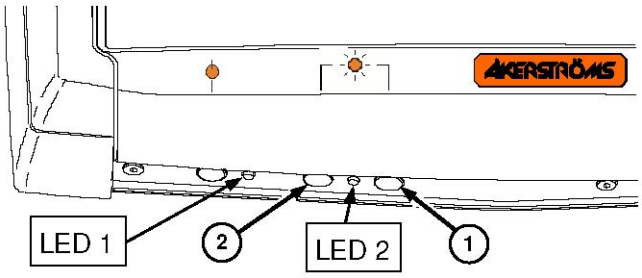


Figure 10 Increase or Decrease button, LED's

Turn off the screen's background lighting	Both buttons on the lower side of the computer; press them simultaneously
Restore the screen	One of the buttons on the lower side or the stylus (tap lightly)

5.2.3 LED indications

See the LED´s location in Figure 10.

LED at Main Switch indicates Operating Mode

Function	LED 1
Off and not powered	Off (no light)
Off but powered	Green flash very slow
Operating normally	Green on
Suspend	Green flashing slow
Black-out Screen	Green flashing fast
Over voltage shutdown	Red on
Over temperature	Red flashing

LED at brightness controls indicates UPS Mode

Function	LED 2
UPS battery powered	Green flashing fast
UPS battery charging	Green on or flashing slow
UPS battery charged	Off (no light)

6 Maintaining the product

6.1 Cleaning the screen

Clean the screen when necessary. Use a soft, slightly damp cloth. If required, use a cleaning solution that is intended for computer screens.

Never use strong cleaning or solvent solutions when you clean the screen.

6.2 Checking connections

Check regularly that all connections are firmly in place and that all cables are securely fastened.

6.3 Service

To secure operation of the unit, various types of support agreements are available for Tx700. Contact Åkerströms Trux AB for more information.

7 Troubleshooting

Perform the following troubleshooting procedures before contacting Åkerströms Trux AB regarding problems with Tx700:

7.1 Problems with the computer

7.1.1 The computer will not start

If nothing happens when the  button is pressed, ensure that the:

- Power supply is connected.
- Fuse is intact.
- DC/DC converter delivers correct voltage.

7.1.2 The screen is blank

If the computer is on but the screen is blank or is only faintly lit, ensure that the:

- Screen black-out (dim) function is not active.
- Screen's brightness is not set too low; adjust the on the lower side of the computer. 

7.2 Problems with peripherals

If a peripheral:

- Does not work, always check all contacts and connections first.
- Requires a power supply, ensure that the power supply for peripherals is activated in the Trux Computer Manager. Please refer to the Trux Configuration Guide, available on the documentation CD, for details on using the Trux Computer Manager

7.2.1 Keyboard/mouse

Restart the computer and, if possible, test by using another keyboard.

7.2.2 Communication

If communication problems arise with a wireless network and GPS and GSM/GPRS products, you can test coverage in two ways:

- Check the computer's software for indications of poor coverage (normally indicated by an icon in the systray).
- Put another computer in the same location as the one with the problem to see if it has the same problem.

Appendix

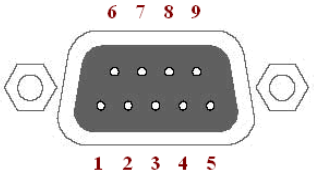
I Specifications

	Wireless Application platform	Wireless Client Terminal
Processor/RA M	Intel Pentium M 1,4GHz, 512 MB Intel Celeron M 1,0 GHz, 512 MB Intel Celeron M 600MHz, 512 MB	Intel Celeron M 1,0 GHz, 512 MB Intel Celeron M 600MHz, 512 MB
Storage	40 GB IDE ATA hard disk 4 GB Compact Flash	1 GB Compact Flash (XPE) 64 MB Compact Flash (CE)
Screen	12,1" TFT Flat Panel SVGA (800x600) Maximum brightness 400 cd/m2 Contrast Ratio 500:1 12,1" TFT Flat Panel, XGA (1024x768) Maximum brightness: 320 cd/m2 Contrast Ratio 550:1	
Graphics card	Intel Extreme Graphics 2, maximum 32 MB RAM	
Ports	2 PC card, type II 1 PS/2 keyboard/mouse port 2 serial ports (COM1) and (COM2) 1 USB 2.0 port (USB 1.1 for CE) 1 Multi Purpose connector 1 RJ-45 Ethernet 10/100 1 Audio Out (Head Set) 1 Mic In (microphone)	
Cooling	Passive cooling	
Power supply	12 VDC ± 10%, Integrated Li-ION battery Integrated battery charger	
Dimensions	307 x 248 x 75 mm (12.1 x 9.8 x 3.0 inches)	
Weight	3,7 Kg (8.16 lb)	
Options	Wireless network, Flash disk, Bluetooth, Defroster, Hardened Touch panel.	
Peripherals	DC/DC power supply	
Operating system	Windows XP Professional	Windows XP Embedded
Power Consumption	**Operation:** 2.5 A (typical); 4 A (maximum) **Standby**: 0.7 A (typical); 1.0 A (maximum)	
Temperature limits	**Start-up:** -20º – 50º C (-4º – 122º F) non-condensing **Operation:** -30º – 50º C (-22º – 122º F) non-condensing **Storage:** -20º – 50º C (-4º – 122º F) non-condensing	
Vibrations	The unit has been tested according to: EN 60068-2-6 (1995): Sweep 5–200 Hz with 2 g rms acceleration amplitude in 1 hour per axis (x, y, z).	
Shocks	The unit has been tested according to: EN 60068-2-9 (1993) 5000 shocks at an acceleration of 30g in 6 directions (x, y, z pos, and neg.).	

II Port signals

Keyboard/Mouse

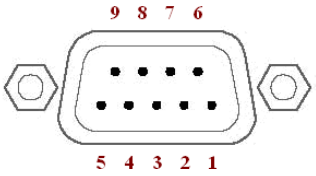
9-Pin Dsub
(see Pos. 5, Figure 7)



Pin	Signal	Type	Purpose
1	-	Reserved	Do not connect
2	MS_DATA	Input/output	Mouse data
3	MS_CLK	Input/output	Mouse clock
4	VCC	Power output	+5 V power supply
5	GND		
6	+12VKB	Power output	+12 V power supply
7	KB_DATA	Input/output	Keyboard data
8	KB_CLK	Input/output	Keyboard clock
9	-	Reserved	Do not connect

Serial (COM1)

9-Pin Dsub
(see Pos. 4, Figure 7)

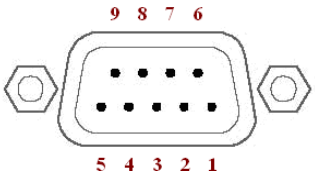


Pin	Signal	Type	Purpose
1	DCD	RS232 input	COM1 handshake
2	RXD	RS232 input	COM1 receive data
3	TXD	RS232 output	COM1 transmit data
4	DTR	RS232 output	COM1 handshake
5	GND		
6	DSR	RS232 input	COM1 handshake
7	RTS	RS232 output	COM1 handshake
8	CTS	RS232 input	COM1 handshake
9	RI (EXTPWR) [1]	RS232 input	COM1 power supply 5 VDC

[1] Power supply 5VDC output for external utilities as bar code reader, activated in the Trux Computer Manager application.

Serial (COM2)

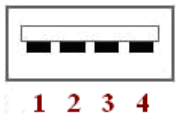
9-Pin Dsub
(see Pos. 3, Figure 7)



Pin	Signal	Type	Purpose
1	DCD	RS232 input	COM2 handshake
2	RXD	RS232 input	COM2 receive data
3	TXD	RS232 output	COM2 transmit data
4	DTR	RS232 output	COM2 handshake
5	GND		
6	DSR	RS232 input	COM2 handshake
7	RTS	RS232 output	COM2 handshake
8	CTS	RS232 input	COM2 handshake
9	RI (EXTPWR) [2]	RS232 input	COM2 power supply 12VDC

USB

USB
(see Pos. 7, Figure 7)

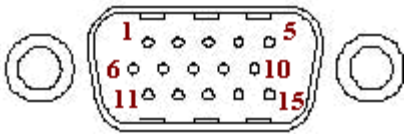


Pin	Signal	Type	Purpose
1	VCC	USB power	+5V power supply
2	USB0	Input/output	USB differential negative
3	USB0+	Input/output	USB differential positive
4	GND		

[2] Power supply 12VDC output for external utilities as barcode reader, activated in the Trux Computer Manager application.

Multi Purpose

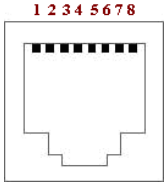
15-Pin D-sub
(see Pos. 8, Figure 7)



Pin	Signal	Type	Purpose
1	VCC 5	5 V Power	+5 V Power Supply
2	RXD	RS232 Input	COM 4 Receive data
3	TXD	RS232 Output	COM 4 Transmitting data
4		Reserved	
5	+12V	Power Supply [3]	+12 V Power Supply
6	USB +	Input/Output	USB data +
7	USB	Input/Output	USB data
8	GND		
9		Reserved	Not used
10	GND		
11	GND		
12	RTS	RS232 Outlet	COM4 Handshake
13	CTS	RS232 Inlet	COM4 Handshake
14		Reserved	Not used
15		Reserved	Not used

RJ-45 LAN

8-Pin Modular
(see Pos. 6, Figure 7)



Pin	Name	Description
1	TX+	Send data + (pair 2)
2	TX–	Send data (pair 2)
3	RX+	Receive data + (pair 3)
4	Not used	(pair 1)
5	Not used	(pair 1)
6	RX–	Receive data – (pair 3)
7	Not used	(pair 4)
8	Not used	(pair 4)

[3] Power supply 12VDC output for external utilities, activated in the Trux Computer Manager application.

III Technical recommendation

To make sure that all software and hardware will be fully functional the image needs to be created from a factory default Tx700 computer, meaning either new out of the box or reinstalled from a recovery media supplied by Åkerströms Trux AB.

The recovery media can be ordered from Åkerströms Trux AB as a stand alone product.

From a factory default Tx700 computer you can do your own customizations and finally create an image to be used to prepare other units based on the same hardware.

In order to achieve a successful image creation for the Tx700 it is important to follow these steps.

1 IMPORTANT! First it is very important to make sure that the boot order in BIOS is set to boot from diskette/USB boot media/(Compact Flash) otherwise the computer will start and we will not be able to make an image of the system in the wanted state. The master is only a master image until it is started. As soon as it is started it can not be used as a master image anymore.

2 Boot the system with diskette/USB boot media/Compact Flash with support for USB mass storage or network.

3 Attach a USB mass storage device or a network share containing the image software e.g. Norton Ghost, as well as enough space for storing the image.

4 Run the image software and make an image of the disk. The image should be stored in a safe place.

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License costs, update responsibility, functionality, interoperability of the customer image are under the responsibility of the customer. Åkerströms is not responsible to any consequence costs due to faulty, illegal or accidentally related issues to the customer image creation.

IV Environmental care information

Thanks to its low energy consumption, the use of Tx700 has a minimal effect on the environment. However, the computer should still be turned off or put on standby when it is not in use, to avoid the unnecessary consumption of energy.

Information on recycling

Since the computer contains materials that can harm the environment if handled improperly, a disused computer should always be taken to a recycling depot for electronic waste.

Åkerströms Trux AB is happy to take back disused computers and will ensure that they are recycled in accordance with sound environmental practice. Contact Åkerströms Trux AB for more information.

Product contents that can be harmful to the environment

If the computer is sent in for recycling anywhere else than Åkerströms Trux AB, that organisation should be informed of the following contents:

- Li-ION batteries (there is one battery for operations and one back-up battery on the motherboard)
- Circuit boards and circuits
- Screen (LCD and glass)
- Metal casing
- Cables

V Certification

The product complies with the harmonized European standards and technical specifications listed below:

Standard

EN 61000-6-4:2001
En 61000-6-2:2001
FCC part 15 Subpart B

Reference

Test report no.

56505 – 050584

The products are CE marked in 2005.

Additionally all models in Tx700 are CB certified and complies with the standard below.

Standard

IEC 60950-1:2001 (1st Edition)
En 61000-6-2:2001

Incl.: Group-and national differences for the CENELEC countries and national differences for US and Canada according to CB Bulletin 109A / USCA 05 I.

Reference

Test report no.

611755-01

FCC Information:

This device complies with FCC Rules, part 15. Operation is subject to the following conditions:

1. This device may not cause harmful interference
   and
2. This device must accept any interference that may be received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning: Changes or modifications to this device not expressly approved by LXE, Inc., could void the user's authority to operate this equipment.

EMC Directive Requirements:

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Industry Canada:

This Class A digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada. Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le Règlement sur le brouillage radioélectrique édits par le ministère des Communications du Canada.

RF Safety Notice:

Caution: 

This device is intended to transmit RF energy. For protection against RF exposure to humans and in accordance with FCC rules and Industry Canada rules, this transmitter should be installed such that a minimum separation distance of at least 20 cm (7.8 in.) is maintained between the antenna and the general population. This device is not to be co-located with other transmitters.

Important: This symbol is placed on the product to remind users to dispose of Waste Electrical and Electronic Equipment (WEEE) appropriately, per Directive 2002-96-EC. In most areas, this product can be recycled, reclaimed and re-used when properly discarded. Do not discard labeled units with trash. For information about proper disposal, contact LXE through your local sales representative, or visit www.lxe.com.

Lithium Battery Safety Statement

Caution:
Lithium battery inside. Danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by battery manufacturer. (US)

Attention:
Contient une pile de lithium. Risque d'explosion dans le cas où la pile ne serait pas correctement remplacée. Remplacer uniquement avec une pile semblable ou equivalente au type de pile recommandé par le fabricant. (FR)

Forsigtig:
Indeholder lithiumbattterier. Risiko for eksplosion, hvis batteriet udskiftes forkert. Må kun udskiftes med samme eller tilsvarende type, som anbefalet af fabikanten. (DK)

Varoitus:
Tämä tuote käyttää laservaloa. Skannerissa on jokin seuraavista tarroista. Lue Huomio-kohta. (FI)

Vorsicht:
Enthält Lithium-Batterie. Bei unsachgemäßem Ersatz besteht Explosionsgefahr. Nur durch gleichen oder vom Hersteller empfohlenen Typ ersetzen. (DE)

Attenzione:
Batteria al litio. Pericolo di esplosione qualora la batteria venga sostituita in maniera scorretta. Sostituire solo con lo stesso tipo o equivalente consigliato per il fabbricante. (IT)

Atenção:
Contém pilha de lítio. Há perigo de explosão no caso de uma substituição incorreta. Substitua somente pelo mesmo tipo, ou equivalente, recomendado pelo fabricante. (PT)

Varning:
Innehåller litiumbatteri. Fara för explosion om batteriet är felaktigt placerat eller av fel typ. Använd endast samma eller motsvarande typ batterier rekommenderade av tillverkaren. (SE)

Advarsel:
Innmontert Lithium batteri. Eksplosjonsfare ved feil montering av batteri. Benytt kun batteri anbefalt av produsent. (NO)

Cuidado:
Pila de litio adentro. Peligro de explosión si la pila se reemplaza incorrectamente. Reemplace solamente con el mismo tipo o equivalente recomendado por el fabricante. (ES)

Oppassen:
Bevat Lithium-batterij. Incorrrecte plaatsing van batterij kan leiden tot explosiegevaar. Alleen vervangen door hetzelfde of door fabrikant aanbevolen gelijkwaardig type. (NL)

VI Warranty, support and service

Warranty

The functioning of a Tx700 is under warranty for one year from date of delivery.

The warranty presupposes that the product was used in a way that can be considered normal and that all the requirements in this manual are met.

If modifications are made to the computer without the consent of Åkerströms Trux AB, the warranty will no longer apply.

Support

To secure operation of the unit, various types of support agreements are available for Tx700. Contact Åkerströms Trux AB for more information.

Always start by reading section 7, Troubleshooting, if there is something that does not work satisfactorily.

If the problem cannot be solved, check with the person in charge at your company to see whether there are support agreements for your Tx700. Then contact Åkerströms Trux AB.

Åkerströms Trux AB can offer support for only the Windows XP Professional and Windows XP Embedded operating systems.

Service

After repairs or service, the computer will be returned with the operating system and software in the same condition as when it was sent to Åkerströms Trux AB, if possible. Otherwise, it will be returned with the original configuration, unless agreements are reached.

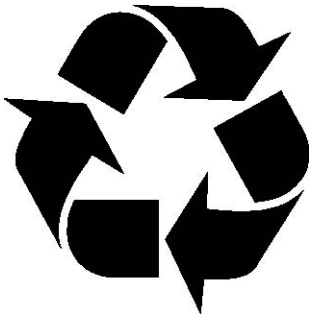
VII Batteries

CAUTION:

Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

DISCHARGED BATTERY

Disposal of a Li-Ion battery poses a smaller threat to the environment when compared to other battery types. However, all used Li-Ion batteries should be immediately sent to a qualified battery collection centre for recycling.



Old batteries shall be returned for recycling.

Contact your local LXE representative or:

LXE Headquarters (United States)

800-664-4593 (Sales)

770-447-4224 (General)

info@lxe.com

Repair and customer service

770-449-0154 (

877-493-0947

lxehelp@lxe.com

LXE International Headquarters

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LXE International Service Center

+31 346 21 70 60

support@lxe.com