Beijer ELECTRONICS

iX TxA

Service & Maintenance Manual

English

MAEN021, 2013-04

Foreword

All operator panels are developed to satisfy the demands of human-machine communication. Built-in functions such as displaying and controlling text, dynamic indication, time channels, alarm and recipe handling are included.

The operator panel works primarily in an object-oriented way, making it easy to understand and use. Configuration is carried out on a PC using the iX Developer configuration tool. The project can then be transferred and stored in the operator panel itself.

Various types of automation equipment such PLCs, servos or drives can be connected to the operator panels. In this manual, the term “the controller” refers to the connected equipment.

This manual explains how to install the operator panel. Please refer to the TxA installation manual and the iX Developer reference manual for further information.

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Order no: MAEN021

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Contents

1 Safety Precautions

Both the installer and the owner and/or operator of the operator panel must read and understand this installation manual.

1.1 General

- Read the safety precautions carefully.
- Check the delivery for transportation damage. If damage is found, notify the supplier as soon as possible.
- Do not use the operator panel in an environment with high explosive hazards.
- The supplier is not responsible for modified, altered or reconstructed equipment.
- Use only parts and accessories manufactured according to specifications of the supplier.
- Read the installation and operating instructions carefully before installing, using or repairing the operator panel.
- Never allow fluids, metal filings or wiring debris to enter any openings in the operator panel. This may cause fire or electrical shock.
- Only qualified personnel may operate the operator panel.
- Storing the operator panel where the temperature is lower/higher than recommended in this manual can cause the LCD display liquid to congeal/become isotopic.
- The LCD display liquid contains a powerful irritant. In case of skin contact, wash immediately with plenty of water. In case of eye contact, hold the eye open, flush with plenty of water and get medical attention.
- The figures in this manual serves an illustrative purpose. Because of the many variables associated with any particular installation, the supplier cannot assume responsibility for actual use based on the figures.
- The supplier neither guarantees that the operator panel is suitable for your particular application, nor assumes responsibility for your product design, installation or operation.
- It is recommended to turn on and shut down the operator panel at least once before installing any components/cards or before connecting the operator panel to external devices, like for example serial devices.

1.2 During Installation

- The operator panel is designed for stationary installation on a plane surface, where the following conditions are fulfilled:
  - no high explosive risks
  - no strong magnetic fields
  - no direct sunlight
  - no large, sudden temperature changes
- Install the product according to the accompanying installation instructions.
- Ground the product according to the accompanying installation instructions.
- Only qualified personnel may install the operator panel.
- Separate the high voltage, signal and supply cables.
- Make sure that the voltage and polarity of the power source is correct before connecting the product to the power outlet.

- Peripheral equipment must be appropriate for the application and location.

1.3 During Use

- Keep the operator panel clean.
- Emergency stop and other safety functions may not be controlled from the operator panel.
- Do not use too much force or sharp objects when touching the keys, touchscreen etc.

1.4 Service and Maintenance

- Only qualified personnel should carry out repairs.
- The agreed warranty applies.
- Before carrying out any cleaning or maintenance operations, disconnect the equipment from the electrical supply.
- Clean the display and surrounding front cover with a soft cloth and mild detergent.
- Replacing the battery incorrectly may result in explosion. Only use batteries recommended by the supplier. During the warranty period, the battery needs to be replaced by an authorized Beijer Electronics service center.

1.5 Dismantling and Scrapping

- The operator panel or parts thereof shall be recycled according to local regulations.
- The following components contain substances that might be hazardous to health and the environment: lithium battery, electrolytic capacitor and display.

2 References

Document	Description
MAxx015F	iX T4A Installation manual
MAxx016F	iX T7A Installation manual
MAxx017F	iX T10A Installation manual
MAxx118A	iX T7AM Installation manual
MAxx120A	iX T7AM + CiX CAN Module Installation manual

xx corresponds to the following language codes:

- en — English
- de — German
- es — Spanish
- fr — French
- it — Italian
- cn — Simplified Chinese
- tw — Traditional Chinese
- ptbr — Brazilian Portuguese

Installation procedures, technical data, as well cutout and outline dimensions are described in the Installation manuals. Please refer to the Installation manuals and iX Developer reference manual for further information.

3 TxA Maintenance

3.1 Software

Maintenance of the TxA is similar to maintenance of the other iX Panel, with a few important differences, described in this document.

It is possible to update the TxA with new system software and to make service settings such as touch calibration, IP settings, self test etc. These actions are performed by following the procedures described below.

3.1.1 Entering Update Mode

In order to update the system software of the iX Panel, you first have to download the new image from the Beijer Electronics website to your PC.

Follow the steps below:

- Hold a finger anywhere on the touch screen when applying power to the panel. After a few seconds the following message is displayed:
  - **Enter update mode?**
  - **Release touch.**
- Release the finger from the screen. The following message is displayed:
  - **Touch screen to enter update mode**
- Touch the screen once with a finger to enter the update mode. Otherwise the panel will start in normal mode after 5 seconds.

Now the update screen is shown and the panel is ready for image update, according to the instructions on the screen.

Detailed information about the upgrade procedure is available in the iX Developer help file, in the Operator Panel Upgrade chapter.

3.1.2 Entering the Service Menu

Perform the following steps to enter the service menu:

- Apply power to the panel
- When the hourglass symbol disappears, press a finger on the screen and hold until the touch calibration screen displays the following message:
  - **Tap anywhere on screen or touch calibrate will start in 10 seconds.**
- Lift the finger and press once again to enter the service menu

Detailed information about the options in the service menu is available in the iX Developer help file, in the Service Menu chapter.

In addition to the descriptions in the iX Developer help file, the TxA service menu also includes a Debug Logging option. Debug logging is used for service purposes. Selecting this option makes it possible to enable/disable debug logging, and also copying the debug log to a USB memory stick.

3.2 Hardware

This chapter describes how to maintain the TxA operator panel hardware. The chapter includes general information, hardware tests and certificates, technical data, a hardware replacement guide, and a fault tracing section.

Note:
Please refer to the Installation manual for technical details

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3.2.1 General information

Before the operator panels are approved for market introduction, they are tested by independent authorities. The TxA operator panels are examined by several authorities before being approved for market introduction.

All operator panels are designed to fulfill CE, UL, and other standards.

The quality policy and environmental policy place demands on all suppliers and subcontractors.

3.2.2 Tests

The manufacturer performs extensive hardware testing before an operator panel is approved. Some tests are performed by external testing companies, such as the Swedish National Testing and Research Institute.

All operator panels are submitted to testing before leaving the manufacturer.

3.2.3 Replacement

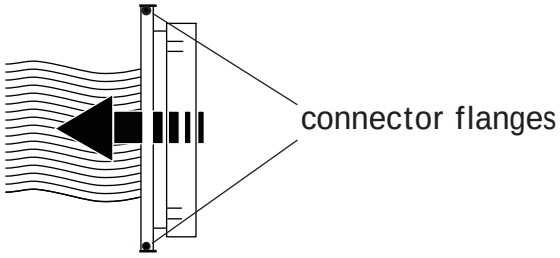
This section contains instructions on how to replace operator panel hardware.

Only components included in the latest bill of material and spare parts list are allowed.

3.2.4 Cables

Most of the operator panels use the same type of flex cable connectors.

To release the flex cables from the connector, gently push the two flanges on the cable connector towards the flex cable, or in some cases, a clip above the complete connector.



Caution:
The connectors must be unlocked on both sides before removing the cable, otherwise the flex cable may be damaged.

3.2.5 Replacing the Back Cover and/or CPU Card

The following is needed:

- A new back cover and/or CPU card
- A Torx TX10 screwdriver

Note:
Make sure to use adequate ESD protection.

Information about spare parts can be found in chapter *Available Spare Parts*.

Follow the steps below:

1. Power off the operator panel.
2. Remove the back cover (1) of the operator panel by removing the Torx M3 screws (3).

Caution:
Open the operator panel slowly, taking care of the flex cable that is connecting the Front Unit to the CPU card (5) that is mounted in the back cover (1).

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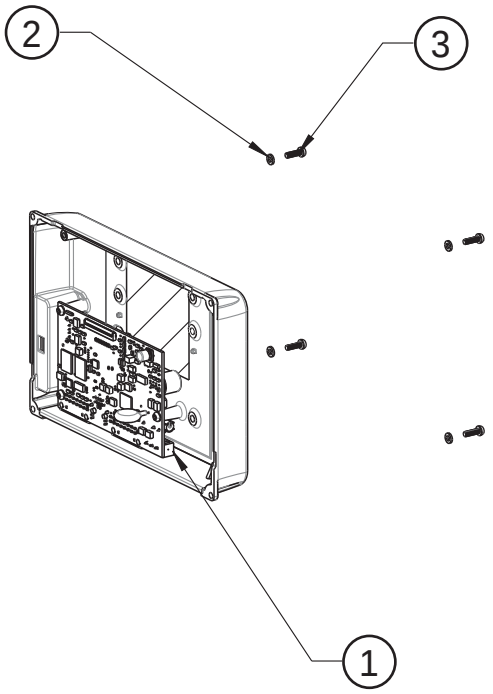
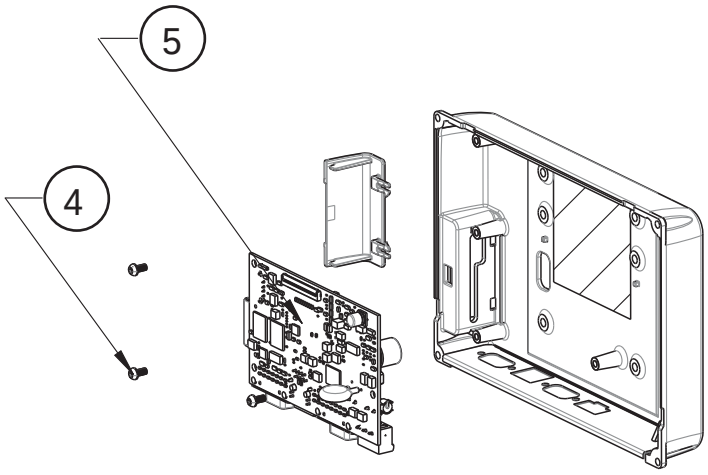
3. Disconnect the display cable according to the instructions in chapter *Cables*.



1. Back cover
2. Toothed washer
3. Torx M3 Screw

4. Remove the Torx M3 screws (3) from the CPU card (5), and then remove the CPU card (5).

Note:
It is not necessary to remove the connector plate.



4. Torx M3 Screw
5. CPU card

5. Assemble the CPU card (5) to the new back cover (1).
6. Connect the flex cable from the front unit to the CPU card (5).
7. Screw the Front and the back cover (1) together.
8. Power up the unit and run a selftest.

3.2.6 Replacing the Display/Display Cable

The following is needed:

- A new display— including front adapter board, display frame and a new display cable
- A Torx TX10 screwdriver
- Phillips screwdriver

Note:
Make sure to use adequate ESD protection.

Information about spare parts can be found in chapter *Available Spare Parts*.

Follow the steps below:

1. Power off the operator panel.
2. Follow the instructions in chapter *Replacing the Back Cover and/or CPU Card* to remove the back cover.
3. Unlock the flex cable connector and disconnect the flex cable from the CPU board.

Note:
The connector must be unlocked on both sides before removing the cable.

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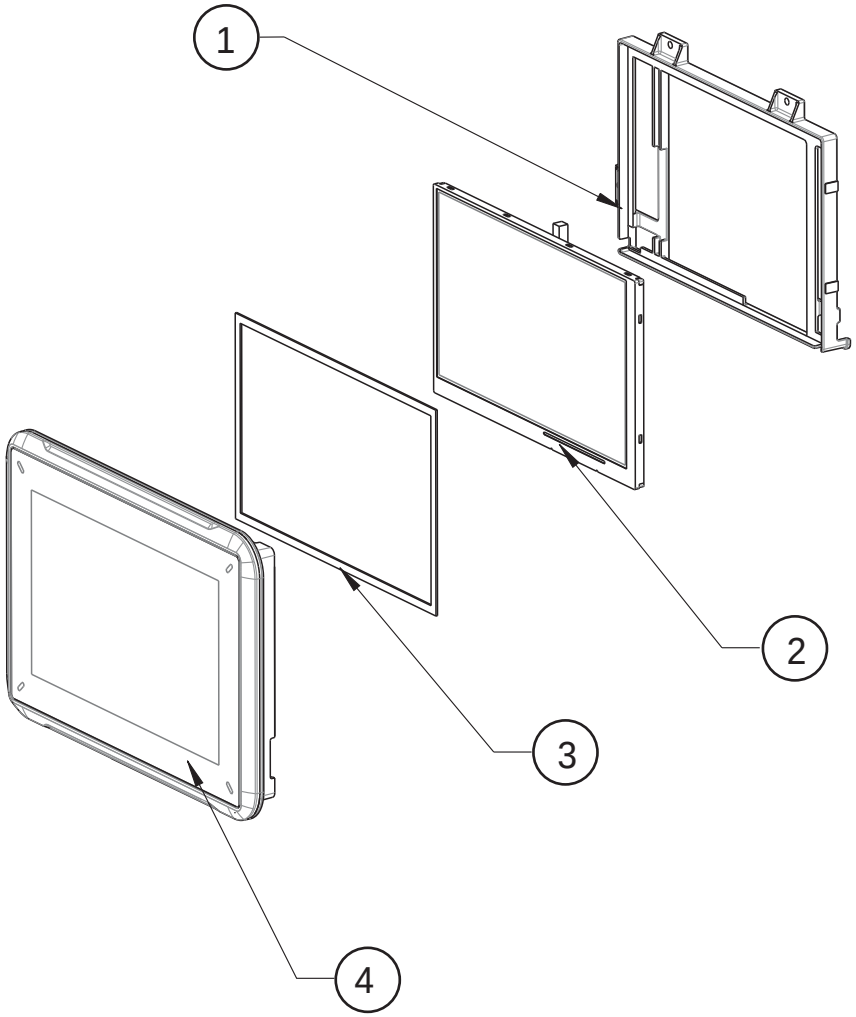
4. Disconnect the LED flex cable from the Front Adapter Board.

5. Unscrew the display frame (1) and remove the old display (2).



1. Display Frame
2. Display
3. Display Gasket
4. Front Frame

6. Assemble the new display (2).

Caution:
Take care that the display gasket (3) between the front frame (4) and display (2) is in the correct position, and that it is not damaged.

3.2.7 Replacing the Complete Front Assembly

The following is needed:

- A new front assembly
- A Torx TX10 screwdriver

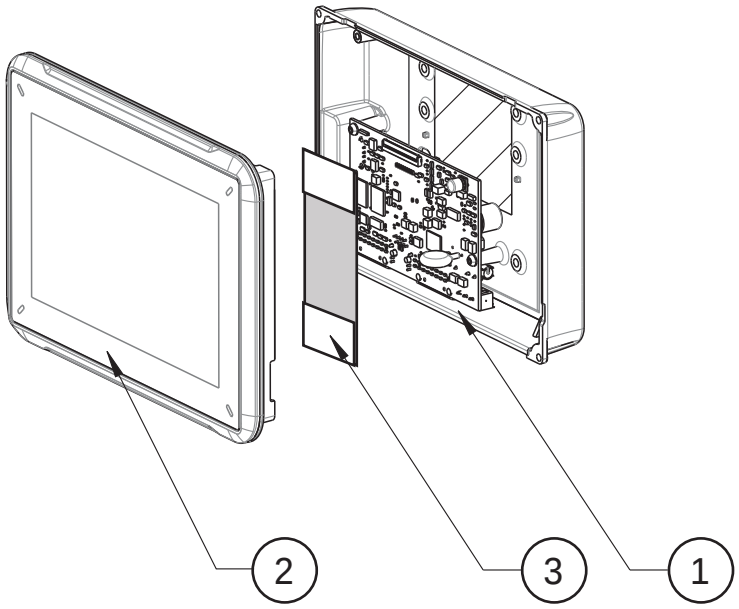
Note:
Make sure to use adequate ESD protection.

Information about spare parts can be found in chapter *Available Spare Parts*.

Follow the steps below:

1. Power off the operator panel.
2. Follow the instructions in chapter *Replacing the Back Cover and/or CPU Card* to remove the back cover (1).
3. Attach the new front assembly (2).
4. Re-assemble the unit.

Note:
Make sure that the display cable (3) fits correct and tight on both sides (Front and CPU) according to the instructions in chapter Cables.



1. Back cover
2. Front assembly
3. Display cable

3.2.8 Battery

The panels listed below use a rechargeable battery. All other panels use a BR 2032 battery.

Panels with part numbers 630000101, 630000201 and 630000301:

When connecting the operator panel to the power outlet for the first time, make sure not to interrupt power for a minimum of 48 hours in order to charge the battery completely. After that, the battery may be charged partly during a shorter period of time.

3.2.9 Selftest and Software Update after hardware change

It is important and recommended that the panel is tested after a change of hardware has been made.

To do so, a software update has to be made and after that the selftest program with the connected test-plugs has to be performed.

Note:
Please refer to chapter *Software* and the iX Developer online help.

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4 Fault Tracing

The following fault tracing list can be used to identify faults in the operator panel.

Problem	Solution
The operator panel is not working properly. Power LED is off.	1. Is the power voltage correct? 2. Does the power supply deliver enough current? 3. Check the fuse.
The operator panel is not communicating with the controller.	1. Check the communication cable between the units. 2. Check that the operator panel has a controller driver downloaded. 3. Check that the correct controller driver is used. 4. Check the communication ports on the CPU board.
The operator panel is working but the backlight is off.	1. Check the backlight dimming. 2. Check that the backlight is connected to the Front Adapter board.
The operator panel is not working, the backlight is off but the power LED is on.	1. Check the backlight dimming. 2. Check the CPU board for burned components. 3. Download new firmware to the operator panel.
The operator panel does not include the latest firmware.	1. Check the versions included with the operator panel. 2. Make sure that a copy of the project is saved to the computer. 3. Download an updated image with the Image Loader and follow the directions.
The touch screen is malfunctioning or is not responding at all.	1. Re-calibrate the touch screen. 2. Check that the flex cable is correctly fitted. 3. Replace the Front of the operator panel.
Lines in display has wrong color or the display picture is shifted.	1. Make sure the display cable is correctly fitted. 2. Make sure the display cable is not folded or damaged in any way. 3. Replace the display cable

5 Available Spare Parts

Part number	Description	Panel type
100–0104	T4A Complete Front assembly including front cover, touch and overlay	T4A
100–0105	T4A Display assembly including display and front PCB	T4A
100–0106	T4A CPU assembly including CPU card, connector plate and screws	T4A
100–0107	TxA External parts	T4A, T7A, T7AM, T10A
100–0108	T7A Complete Front assembly including front cover, touch and overlay	T7A
100–0109	T7A Display assembly including display and front PCB	T7A
100–0110	T7A CPU assembly including CPU card, connector plate and screws	T7A
100–0111	T10A Complete front assembly including front cover, touch and overlay	T10A
100–0112	T10A Display assembly including display and front PCB	T10A
100–0113	T10A CPU assembly including CPU card, connector plate and screws	T10A
100–0265	T4A SoftControl T4A CPU Assembly including CPU card, connector plate and screws	T4A SC
100–0266	T4A SoftControl T7A CPU Assembly including CPU card, connector plate and screws	T7A SC
100–0267	T4A SoftControl T10A CPU Assembly including CPU card, connector plate and screws	T10A SC
100–0268	T7AM Display assembly including display and front PCB	T7AM
100–0270	T7AM Complete Front assembly black including front cover, touch and overlay	T7AM
100–0271	T7AM CPU assembly including CPU card, connector plate and screws	T7AM