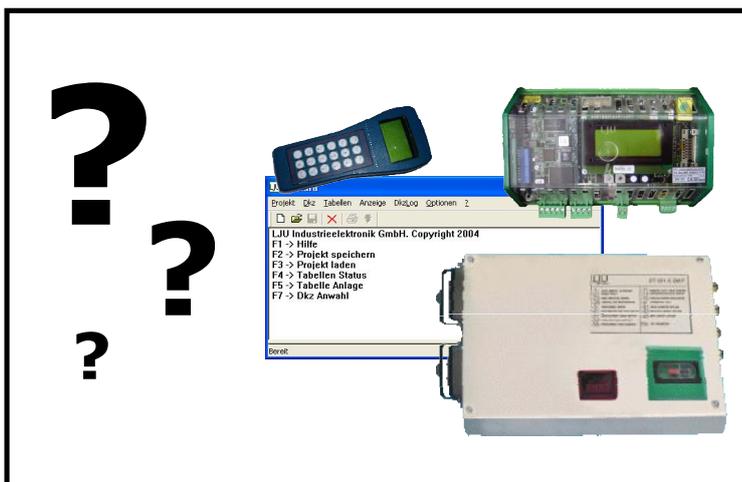


Service Help



General Instructions/help

for LJU component users



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The standard names, trade names, product names etc. used in this description may also be brand names even when not specially indicated and as such subject to the statutory stipulations.

February 2006

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1. GENERAL FACTS

LJU controller components contain sensible electronic assemblies, which can be damaged by inappropriate usage and handling or the functions may be restricted.

In order to rule out such cases, this documentation should give the user instructions and help for handling LJU components like for instance, replacing individual system components.

This documentation describes:

- the connection of a computer with LJU components
- the import of software and system tables into LJU components
- the exchange of components of the DKZ master
- the exchange of LJU trolley components



The power supply is to be disconnected before connecting or disconnecting the programming adaptor to/from the LJU components or replacing the LJU components!

2. CONNECTION OF LJU COMPONENT WITH COMPUTER

2.1 Connection of the MU 705 with the computer

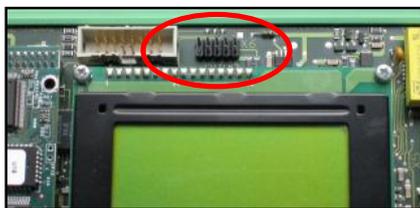
The MU705 is connected to the USB interface of a computer via the USB cable supplied with the MU705.



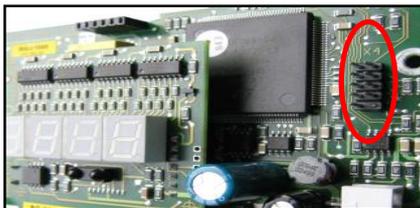
If the MU is connected properly to the computer, with the help of the MU705 utility software, all the information available in the MU705 can be easily and clearly managed, parameters, tables etc. can be processed in an uncomplicated manner and programs can be installed on the MU705. Thereby, the user can easily process huge data records in the MU705 itself.

2.2 Connection of controller/ DKZ with the computer

LJU control components are connected to the computer via the programming adaptor in order to import the required software. The programming adaptor is connected via an RS232 interface to the computer. The controller component is connected through a pillar plug connector.



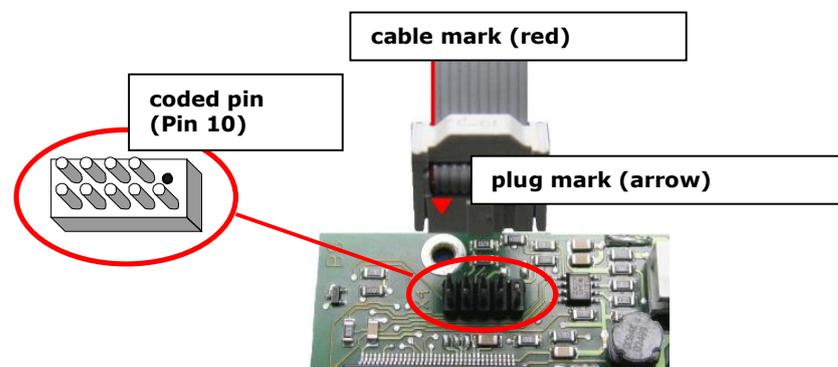
The programming adaptor is connected to the DKZ module or the master CPU of power module controllers at the programming input X6 of the module.



In controllers, the connection is made through the programming input, which can be referred from the controller documents (usually X4).



The programming inputs (10-pole pillar strips) of the controller components are coded (pin 10). The pillar plug and the ribbon cable of the programming adaptor are marked. The plug is plugged with the marks away from the coded pin (pin 10).



3. SOFTWARE

3.1 Install Bios trolley controller/ DKZ software

Used software: ST10 Flasher Tool

Source: www.st.com

1. Start Setup.exe and follow the installation instructions.

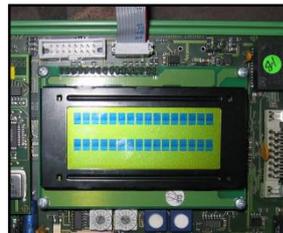
2. Switch off controller or disconnect DKZ from the power supply and plug in the programming adaptor plug.



3. Switch jumper of the programming adaptor to 'ON'.



4. Switch on controller again or connect DKZ to the power supply. If the plug is connected properly, then a random value appears in the display of the controller or two black strips appear in the display of the DKZ module.

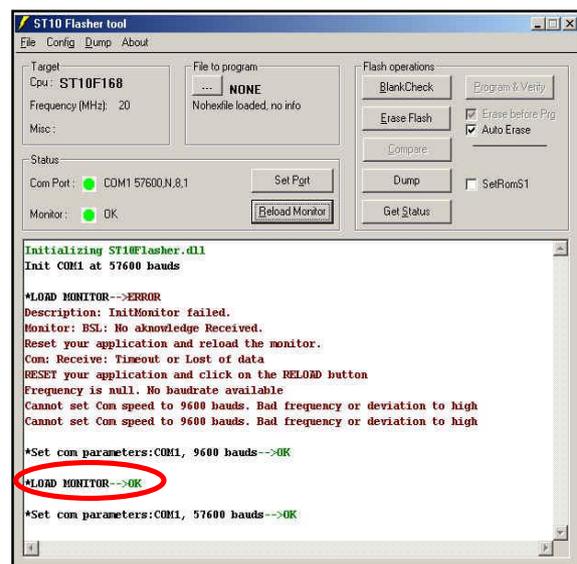


5. Start the program ST10 flasher and acknowledge the displayed error message by clicking on 'OK'.

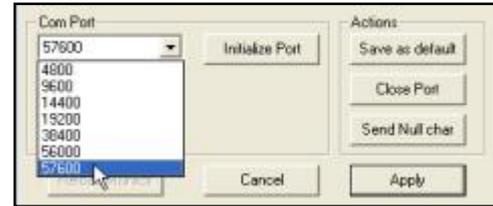
6. Click on the 'Set Port' button and select the serial interface to which the programming adaptor is connected.

7. Switch off and switch on the power supply.

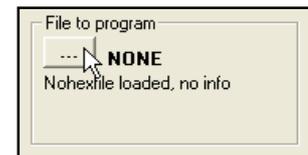
8. Click the 'Reload Monitor' button. If the connection is ok, this is confirmed by the message "**LOAD MONITOR à OK**" in the lower part.



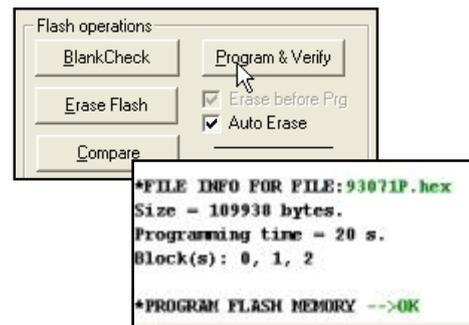
9. Setting the transmission rate:
Click on the *'Set Port'* button and select a Baud rate of 57600 Bit/s. In order to accept the set Baud rate, click on the *'Initialize Port'* button. If the settings are correct and have been correctly accepted, this is displayed via the message **"Set com parameters: COM1, 57600 bauds à OK"** in the lower part of the program window.



10. Selection of the software to be imported:
Click the *'File to program'* button, select and add the file to be imported with the extension *'.hex'*.



11. The programming process is started by a single click on the *'Program & Verify'* button. If the programming was completed successfully, this is indicated by the message **"PROGRAM FLASH MEMORY à OK"** in the lower part of the program window.



12. Switch off controller or disconnect DKZ from the power supply, remove programming plug and switch on the power again.
13. Programming completed.

3.2 Install user software (trolley controller)

3.2.1 Install the user software with PC

Used software: MiniMon
Source: www.perschl.at

1. Start Setup.exe and follow the installation instructions.

Create a folder with the name *'CPU_164'* in the C drive and copy the files with the extensions *'.scm'* and *'.h86'* into this folder.

- Switch off the controller and plug in the programming adaptor plug.



- Switch the programming adaptor jumper to 'OFF'.

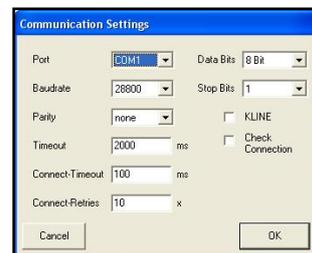


- Switch on the controller again. If the plug is inserted properly, then "P - - -" appears in the display.

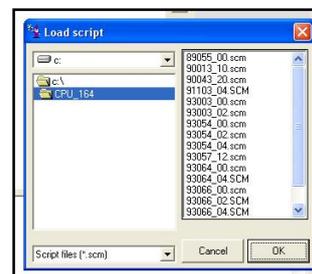


- Start 'MiniMon' and configure the serial interface through the menu item 'Settings à Interface' (required only when the program is started for the first time).

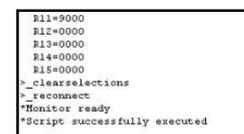
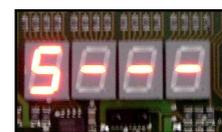
Baud rate: 28800 recommended



- Select the script file (file extension .scm) for the software to be programmed from the path C:\CPU_164 via the menu item 'Script Execute' and confirm the selection with OK.



The script file starts and begins the programming of the controller. During the programming process, the display "S - - -" as well as status messages are displayed in MiniMon.



- The successful programming of the controller is confirmed in MiniMon by the message "Script successfully executed" as well as by the display of "P - - -" in the controller.



- Switch off controller, remove programming plug and switch on power supply again.

- Programming completed.

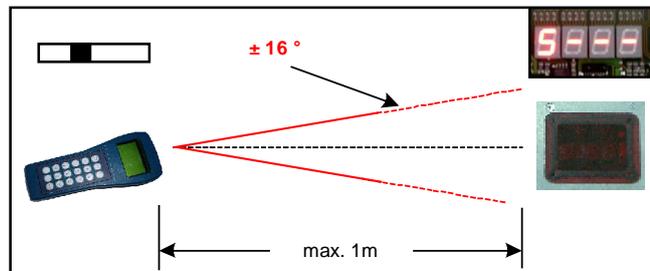
3.2.2 Install the user software with MU 705



A password provided by LJU is required to download the user software.

1. Download the user software to be imported (.hex) into the MU with the help of the MU 705 utility (refer to special operating instructions).
2. Enter password via the MU menu '*Programs (7) à Password(2)*' and confirm with '*Set*'.
3. Select .hex file in the MU menu '*Programs(7) à Prog. manager(1)*' using the arrow buttons.
4. Stop the trolley to be updated.

5. Transfer selected .hex file using the F1 button [Download]. A progress display is visible in the MU display during the download. The trolley reports the active download by displaying "**S - - -**". Please ensure that the IR transmitter of the MU is directed towards the display of the trolley controller.



6. The successful programming is confirmed by the display of "**PEnd**" in the controller.



7. Finally, switch off and switch on the trolley controller. The trolley is read for operation again.

If an incompatible user software has been transmitted to the trolley, then this is displayed by a "**U - - -**" in the display of the trolley controller, once it is switched on again.

3.3 System tables of the DKZ uploads and downloads

Used software:

DKZPara

Source:

LJU Automatisierungstechnik GmbH



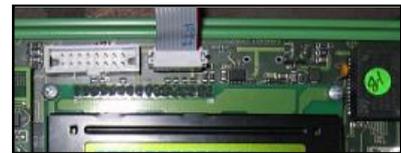
This section explains only the importing of system tables into the DKZ. A detailed description of system tables contains the operating instructions for the LJU parameterization software.

1. Start Setup.exe, follow the instructions on the screen and start the program.

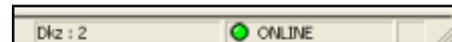
2. Switch the programming adaptor jumper to 'OFF'.



3. Disconnect DKZ from the power supply. Connect programming adaptor plug in the DKZ module to X6 and once again connect the DKZ to the power supply.



4. Press F3 button to open the desired project with the corresponding system tables.
5. Press F7 button and input the number of the DKZ to which the PC is connected. If all the settings are correct and the DKZ is properly connected to the PC, then this is confirmed by a message in the program window.



6. The program synchronizes the tables stored in the PC with the tables in the DKZ; the result of the synchronization is displayed in the program. *'DKZ x: Synctest: Tables are identical !'*
7. The desired action can now be selected through the menu item 'Dkz'.

Download: Tables PC à DKZ

Upload: Tables DKZ à PC

8. Status reports are displayed in the program window during the download or upload. The successful transmission is indicated by the message *'Synctest: Tables are identical !'*.
9. Finally, disconnect the DKZ from the power supply, remove the programming adaptor plug and switch on the power supply again.

4. HARDWARE

4.1 Data concentrator (iDB/ SB Master)



A DKZ (iDB/ SB Master) has a modular structure and consists of various components, which are assembled into one controller unit depending on the area of the installation. The individual modules are combined with each another by simply interconnecting them and installed on the DIN top hat rails. A DKZ thus consists of the data concentrator module with the related, necessary field bus connection, at least one modem module for the data loop and the IKB modules necessary for the connection of external peripherals or for communication with the adjacent DKZs.

4.1.1 Replace DKZ module

1. Make a note of the number of trolleys that are announced in the DKZ.
2. Disconnect the DKZ module from the power supply.
3. Disconnect plug connectors and field bus plugs from the DKZ module.

4. Dismantle DKZ module by pushing it away from the other modules and unfastening the top hat rail clamps.



5. Install new DKZ module and restore all the plug connections.

6. Set the DKZ number using the addressing switch. (hexadecimal setting).



7. If necessary (e.g. in ModBus Plus), set the field bus address on the field bus PCB via the DIP switch. (Accept settings from the project documents or from the dismantled module).

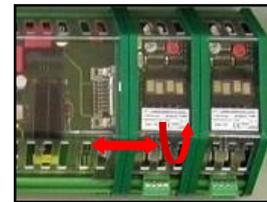
8. Connect the DKZ module to the power supply.

9. If necessary, import DKZ software as described in [chapter 3.1](#).

10. Download system tables of the DKZ, as described in [chapter 3.3](#).
11. Announce trolleys in DKZ. Start the Auto announce mode in the Announce menu (trolley entr). After annunciating trolleys the number of trolleys must be the same like 4.1.1 p1.

4.1.2 Replace IKB module

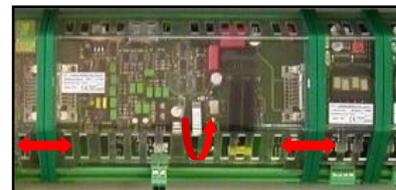
1. Disconnect the DKZ module from the power supply.
2. Remove plug from the IKB module.
3. Dismantle IKB module by pushing it away from the other modules and unfastening the top hat rail clamps.
4. Install new IKB module. And restore all plug connections.
5. Reconnect the DKZ module to the power supply.



IKB modules do not require any software modification and are addressed automatically. However, please note that the connection sequence is adhered to and unassigned IKB modules are not removed.

4.1.3 Replace modem module

1. Disconnect the DKZ module from the power supply.
2. Remove plug from the modem module.
3. Dismantle modem module by pushing it away from the other modules and unfastening the top hat rail clamps.
4. Install new modem module. And restore all plug connections.



In case of iDB modem modules, accept the component setting (4-pole DIL switch) of the dismantled modem or match the compensation.

5. Reconnect the DKZ module to the power supply.

4.2 Trolley components

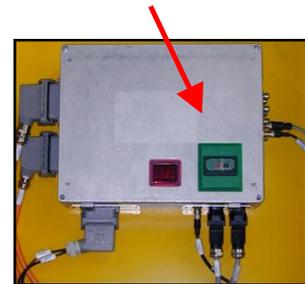


Replacing of trolley components can change the position information of the trolley.

Stop the following trolley before replacing any trolley component! Use the sequence stop or stop the following trolley by the PLC!

4.2.1 Replace trolley controller

1. Switch off the trolley controller on the power safety switch.
2. Disconnect all cable connections from the trolley controller.
3. Loosen the fastening screws and replace the trolley controller.
4. Restore all cable connections as per the wiring diagram.
5. Switch on the trolley controller.
6. If necessary, download the user software into the trolley controller, as described in [chapter 3.2](#).



7. Transfer all the necessary data like trolley number, parameters, tables (e.g. lift, drive, distance), release code, etc. to the trolley controller with the help of the MU.



- Parameter/Code: Parameter [1] à Write data [1]
- Trolley number: Destination / Number à Number [2]
- Tables: Tables [4] à *Table* [...] à Write [1]

8. In Railbus systems!

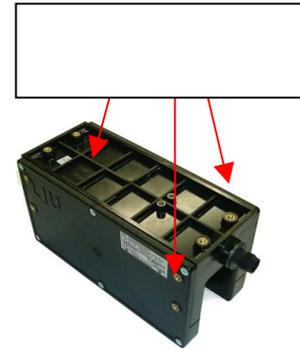
New initialization of the actual trolley position must be initiated by the PLC. (acycl. services – note plant description)



Settings of the individual parameters and tables are to be taken from the software description of the trolley controller. When a Prodat is used, the trolley number need not be entered.

4.2.2 Replace PLA 14 (optical scanner)

1. Switch off the trolley controller.
2. Disconnect cable connection by unplugging the M12 plug from the PLA.
3. Dismantle PLA 14 by loosening the fastening screws.



4. Assemble new PLA 14.



Note the drive direction



Align the markings on the PLA centered above the code.



- **Align the PLA parallel to the code rail**
- **Code rails runs centered through the PLA**

5. Reconnect the M12 plug.
6. Switch on the trolley controller again.

4.2.3 Replace PDE 112

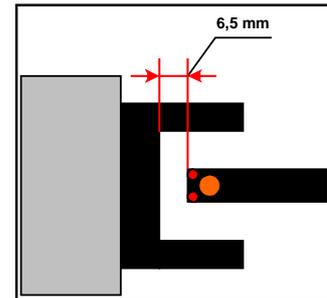
1. Switch off the trolley controller.
2. Disconnect cable connections by unplugging the two M12 plugs from the PDE.
3. Dismantle the PDE 112 by loosening the four fastening screws on the underside of the PDE.
4. Assemble new PDE 112.



- Note the drive direction. (sticker readable, connections in the drive direction rear, markings of the PLA in the drive direction front)



- **Ensure distance between PLA and code rail (6.5mm)!**
- **Align the PDE parallel to the code rail**
- **Code rails runs centered through the PLA**



5. Reconnect both the M12 plugs.
6. Switch on the trolley controller again.

4.2.4 Replace power pickup

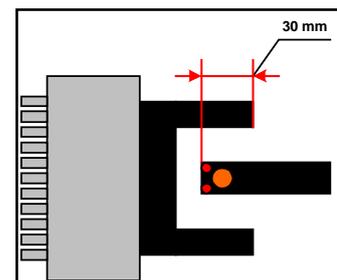
1. Switch off the trolley controller.
2. Disconnect cable connection by unplugging the Harting plug from the power pickup.
3. Dismantle power pickup by loosening the four fastening screws on the underside.
4. Assemble new power pickup.



- preferred installation position (Harting plug in drive direction rear)



- **Ensure embedding depth of the code rail in the pickup (30mm)!**
- **Align pickup parallel to the code rail**
- **Code rails runs centered through the power pickup**



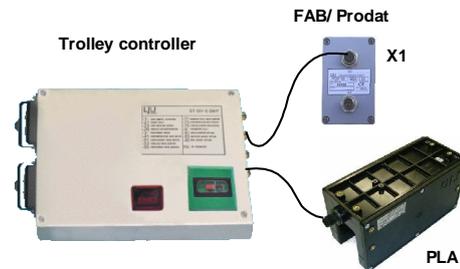
5. Reconnect Harting plug.
6. Switch off the trolley controller.

4.2.5 Install FAB/ Prodat

The FAB/ Prodat can be installed in two variations.

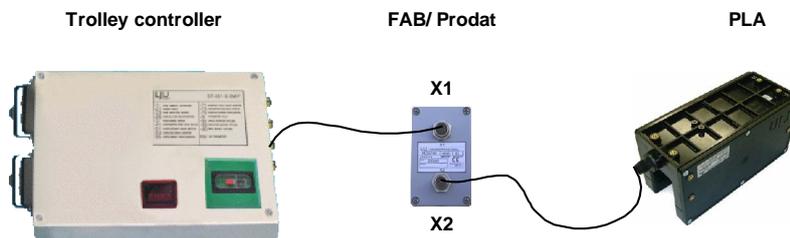
Variation 1: separate Installation of the FAB/ Prodat

To install the FAB/ Prodat connect X1 of the FAB/ Prodat to the input of the trolley controller (can be referred from the controller document).



Variation 2: implement the FAB/ Prodat in the PLA connection

To install the FAB/ Prodat connect the PLA input of the trolley controller (can be referred from the controller document) to X1 of the FAB/ Prodat and the PLA to X2.



Change trolley number:

1. Open FAB/ Prodat (4 screws)
2. Set the trolley number using the addressing switch (hexadecimal setting)

Example:

Trolley number 109
109dec à **6D**hex

à high nibble = 6
 à low nibble = D

3. Close FAB/ Prodat

