KEMRO
KEBA MACHINE AND
ROBOT CONTROL

# KETOP T100

## KVC - KETOP Virtual Channel Tutorial

## V 1.0

## Notes on This Manual

At various points in this manual you will see notes and precautionary warnings regarding possible hazards. The meaning of the symbols used is explained below.

**Failure to observe safety precautions identified by this symbol could result in personal injury and/or damage to machinery and equipment.**

**This symbol reminds you of the possible consequences of touching electrostatically sensitive components.**

***Notice***

*Notes on use of equipment and useful practical tips are identified by the "Notice" symbol. Notices do not contain any information that draws attention to potentially dangerous or harmful functions.*



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## History

| Modification from / to | Date | Modified pages | Description | Author |
|---|---|---|---|---|
| V1.0 | 15.02.02 | | First Release | sam |
| | | | | |

## Contents

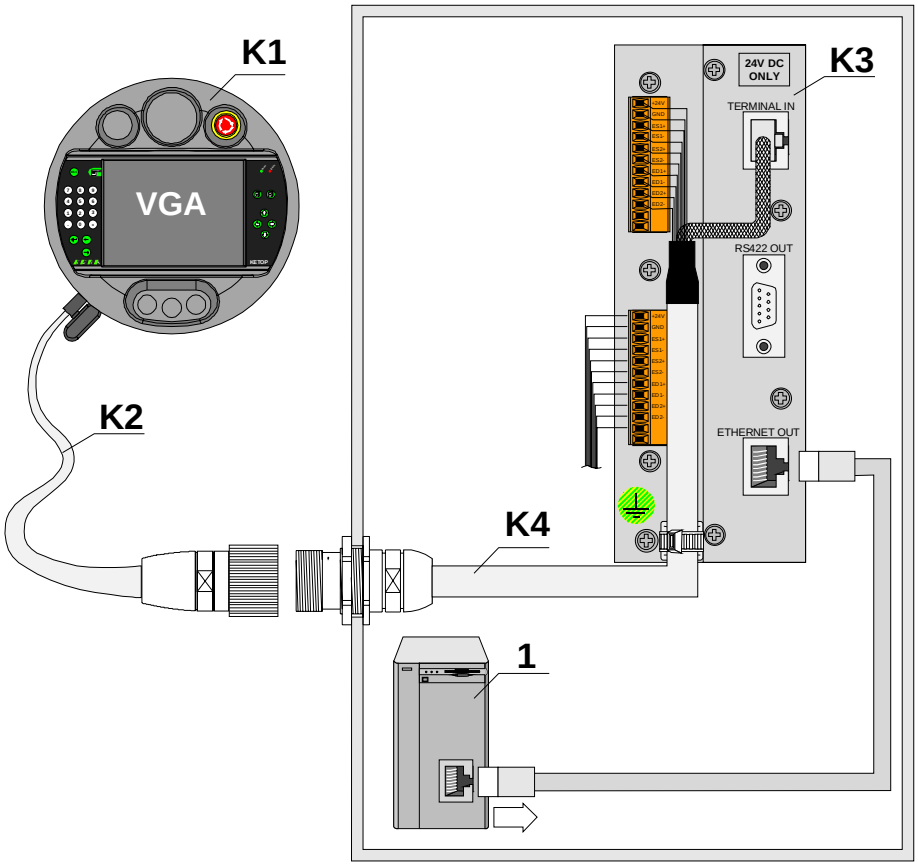
# 1 General Information

The KETOP Virtual Channel (KVC) is used as extension of a Terminal Server Client (TSC) application (see Tutorial „KETOP T100 – TSC“). Information that cannot be transmitted at all or cannot be transmitted in time via the TSC (such as values from the handwheel, the override potentiometer, membrane keys, etc.) can be transmitted to the server via the KVC.
Since the KVC is executed entirely independently of the TSC, the TSC functions can also be used as extension of other applications.

The application described here should only demonstrate the function of the KVC and should not be used during real operation. For that purpose, the functions of the KVC should be integrated in a separate C++ program (see User's Manual „KETOP T100“ p. 57ff).

# 2 Prerequisites

## Required Components




Overview of required components

The numbering of the components in this drawing is the same in the following tables.

### PC (if combined with TSC)

| Part | Designation | M-No. |
|---|---|---|
| 1 | ● NT4.0 Terminal Server Edition or<br>● Windows 2000 Server or Advanced Server with activated terminal services<br>● Processor: Pentium (min. 300 MHz recommended)<br>● Memory: 64 MB RAM (128 MB RAM recommended)<br>● Hard disk: 1 GB free<br>● Ethernet card | - |

## PC (standalone)

| Part | Designation | M-No. |
|---|---|---|
| 1 | ● MS Windows 98/NT/2000<br>● Prozessor: Pentium (min. 90 MHz recommended)<br>● Memory: 64 MB RAM<br>● Hard disk: 5 MB free<br>● Ethernet card | - |

## KEBA Components

| Part | Designation | M-No. |
|---|---|---|
| K1 | e.g.: KETOP T100 VGA<br>with Virtual Channel (already installed) | KETOP T100-008-xxx |
| K2 | Connection Cable (e.g. 50 m) | KETOP TT 050 |
| K3 | Connection Box | KETOP CB 111 |
| K4 | Intermediate Cable (e.g. 4 m) | KETOP IC 040 |

## Network

| Part | Designation | M-No. |
|---|---|---|
| - | ● Direct connection (cross linked cable) between server and KETOP or via a hub<br>● 10 MBit | - |

# 3 Installation of KETOP Virtual Channel on PC

This tutorial assumes that the computer and the network are already configured correctly. Therefore it only describes the KVC-specific configurations.

- For the installation, only the downloaded files must be unpacked with Winzip and stored in the requested path on the PC. (e.g. c:\Programs\KVC).

# 4 Preparation of KETOP

Since the KETOP Virtual Channel software is already installed on the KETOP T100, the device must only be configured correctly.

## Hardware configuration

Unless the device has already been operated with the Ethernet connection, check and, if necessary, adjust the cable connections in the device.

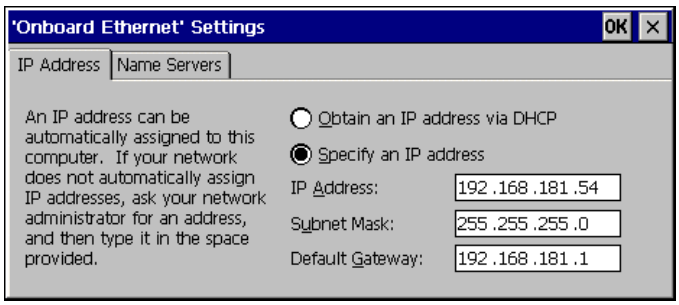
- Open the cable entrance area on the rear side of the KETOP T100:
- Plug the RJ45 connector of the connecting cable into the socket provided for Ethernet.
- Connect your network or your network card of the PC to the “Ethernet out” socket of the connecting box using a hub or a cross link cable.

## Software configuration

On the Ketop, the settings for the network card must be adapted to the configuration of the server.

- Plug in the device and turn it on.
- Call the network settings via
  Start / Control Panel / Network / Onboard Ethernet.
- Set DHCP or the fixed IP address.

  Example with fixed IP address:

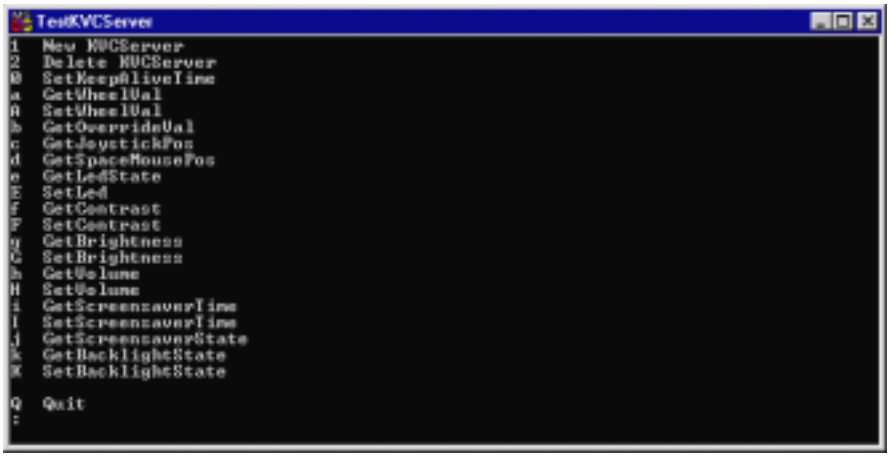



- Modifications of the network settings must be stored in the Registry (by calling Registry Backup via 'Start / Programs / KETOP'). To activate the modifications, i.e. to initialize the network controller with the new data, reboot the KETOP.

# 5 Establishing the Connection

Once the KVC server software is installed on the PC and the connection between the KETOP and the PC is established, the connection of the KVC clients with the server can be established.

- Start the test application "TestKVCServer.exe" in the directory KVC.



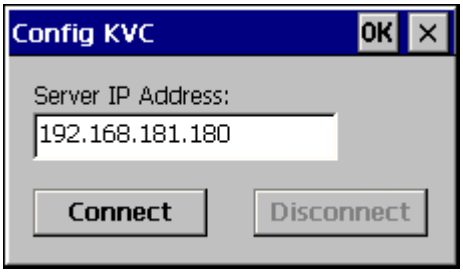

- Start the KVC server by entering "1"
  The following message appears:


- Start the KVC client on the KETOP by calling the KETOP Virtual Channel via 'Start / Programs / KETOP'.

In the first moments, the connection cannot be established because no address has been specified for the server yet, and the message "Error: cannot connect to server" appears.

- Click on the icon for KCV:


In the window that follows you can enter the IP address of the KVC server:




- After entering the IP address, select Connect to establish the connection.

In case of a successful connection, the colour of the icon in the Start bar will change to green.

On the server side, the data on the display show that the connection has been established (see following screen).


During the operation on the KETOP, all modifications are transmitted to the server, such as actuation of handwheel, override potentiometer and membrane keys.
By entering "?" on the server, you can call the menu with all available commands.
By entering different letters or numbers and pressing Enter on the server, you can check and modify the state of the KETOP on the server side.


For example:

- Enter "i" to check the set time of the screensaver.
- Enter "I" and then "15" to actively set the screensaver time.
- Enter "i" to check the set time of the screensaver once again as a confirmation.
- Enter "g" to check the set background lighting "g"

### Finish the program

To finish the program on the KETOP side, double-click on the icon in the task bar and select Disconnect. On the server, enter "Q".

# 6 Important Notes for Locating Errors

## TCP/IP Connection (server side)

To check the TCP/IP settings, open a DOS window:

► (Start -> Programs -> Accessories -> Command Prompt)

### a) ipconfig

This command enables checking the IP settings of your own computer. Depending on the configuration of your computer, the following data may appear:

```
c:>ipconfig

Windows 2000 IP Configuration

Ethernet adapter Local Area Connection:

        Connection-specific DNS Suffix  . :
        IP Address. . . . . . . . . . . . : 192.168.181.54
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . :
```

### b) ping

This command enables checking the connection to another computer or the existence of another computer. Depending on the configuration of your computer, the following data may appear:

```
C:>ping 192.168.181.54


Pinging 192.168.181.54 with 32 bytes of data:

Reply from 192.168.181.54: bytes=32 time<10ms TTL=128
Reply from 192.168.181.54: bytes=32 time<10ms TTL=128
Reply from 192.168.181.54: bytes=32 time<10ms TTL=128
Reply from 192.168.181.54: bytes=32 time<10ms TTL=128

Ping statistics for 192.168.181.54:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms
```

If the message "`Request timed out.`" appears instead the selected computer does not exist or cannot be reached.

The message "`Destination host unreachable.`" appears if the target address is out of the valid range of the Subnet Mask.

(The target address may only differ from the own address at the positions to which 0 is assigned in the Subnet Mask. (bitwise comparison))

## TCP/IP Connection (KETOP side)

On the KETOP the program vxUtil in the Windows directory can be used to check the network settings and the connection to the server.

- With Info (symbol "I"), the current settings of the network adapter (under CELAN1) can be called.
- With Ping (symbol "2 tennis rackets"), the server (=host) can be requested to respond. For that purpose, the IP address of the server must be entered.