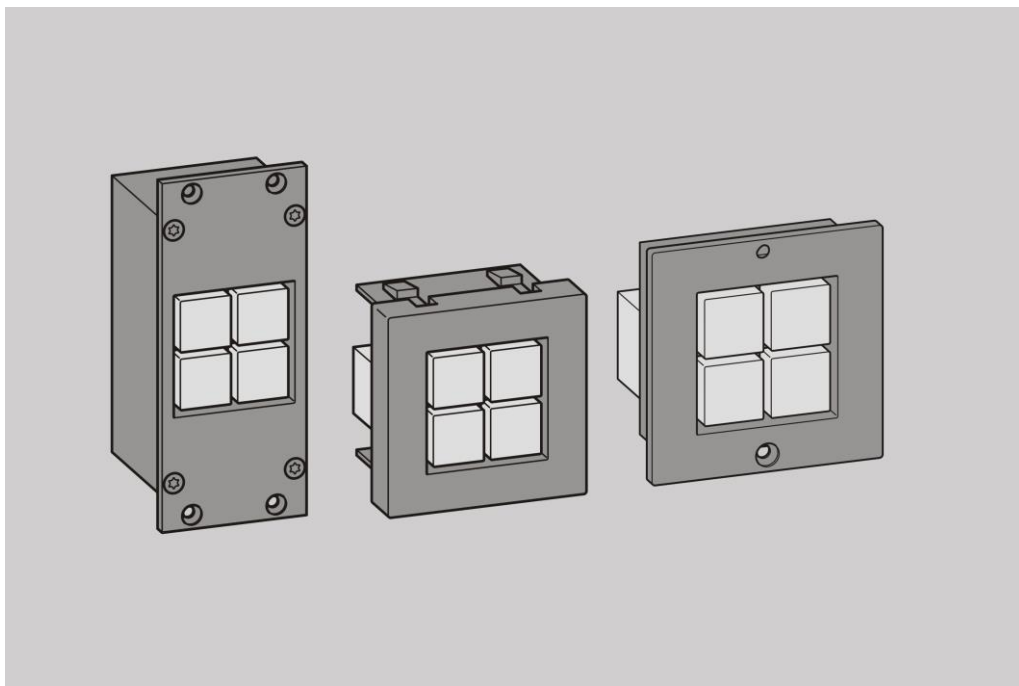


CARDINAL DVM Keypad Modules

SYSBOXX

SYSWALL45

SYSWALL50



Assembly and Configuration Instructions

English Translation of the Original Operating Instructions

2/2020

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Notices regarding these instructions and the manufacturer

These instructions will help you to use the "CARDINAL DVM Keypad Module" products safely. The "CARDINAL DVM Keypad Module" products are referred to as "product" in the following unless the functions require differentiation.

These instructions apply to the following products:

- SYSWALL45 quadruple keypad module
 - W45A-5554 anthracite
 - W45S-1054 silver
 - W45W-3454 pure white
- SYSWALL50 quadruple keypad module
 - W50M-2243 stainless steel
 - W50W-4443 white, high gloss
- SYSBOXX quadruple keypad module
 - SYC1-3421 RAL 7016
 - SYC1-3421-9006 RAL 9006
 - SYC1-3421-9010 RAL 9010

Keep these instructions available

These instructions are part of the product.


- ▶ Always keep the instructions on the product.
- ▶ Pass on the instructions if you sell the product or pass it on in any other way.

Design features of these instructions

Various elements of these instructions have fixed design features. As a result, you can easily differentiate the following elements:

Normal text

- First-level enumeration
 - Second-level enumeration
- ▶ Action steps

 Tips contain additional information.

Copyright

These instructions contain information that is subject to copyright. These instructions may not be copied, printed, filmed, processed, duplicated or distributed in any form, either in whole or in part, without the prior written permission of Sommer Cable GmbH.

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Manufacturer's address

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Safety

Intended use

The product is designed to control media devices (audio or video devices) with an RS232 interface at events and installations and in the broadcasting sector.

The product is intended for use in closed buildings.

Intended use also includes compliance with the accident prevention regulations and the statutory regulations and standards applicable at the place of use.

Intended use also comprises reading and understanding these instructions, as well as observing and following all information therein, especially the safety instructions.

Any other use is not deemed to be intended.

Basic safety instructions

Severe or fatal injuries due to electric shock are possible.

- ▶ Have the modification of the power supply unit carried out by an authorized electrician after consultation with the manufacturer.

Preventing material damage

Material damage due to use of the product under incorrect operating conditions

- ▶ Install the product in a dust-free environment.
- ▶ Install the product protected against moisture, vapors, splash water and wetness.
- ▶ Install the product in a place protected from direct sunlight.
- ▶ Do not install the product in the immediate vicinity of heat sources.
- ▶ Use the product at ambient temperatures between 0 °C and 35 °C.

Material damage due to electrostatic charge

The product contains components sensitive to electrostatic charge. These components may be damaged or destroyed by the effect of an electric field or by charge equalization when touched.

- ▶ Only store the product in a conductive ESD protection bag.
- ▶ Before touching the product, establish electrical equipotential bonding between yourself and your surroundings, e.g. using a wrist strap.

❶ ESD protection field equipment is available for the safe handling of electrostatically sensitive products.

❶ Further information about electrostatic sensitive products can be found in the EN 61340-5-1 and EN 61340-5-2 standards.

Personnel qualification

The instructions are intended for assembly and configuration personnel. The following knowledge is required by assembly and configuration personnel:

- Knowledge in computer, network and media technology
- Knowledge and experience in assembly and configuration

❗ The modification of the power supply unit configuration may only be carried out after consultation with the manufacturer and by persons with the additional qualification of "qualified electrician". Information on this topic is available from the manufacturer.

Design features of notices of material damage

ATTENTION!	
	These notices warn of a situation that could lead to material damage and limited functionality.

Description

Scope of delivery

Depending on the variant or order, the following parts are included in the scope of delivery:

SYSWALL keypad modules

- SYSWALL45/ 50 keypad module
- 4 × keycap, clear
- 1 × pre-perforated labeling sheet
- 2 × screw (M2) for SYSWALL50

SYSBOXX keypad modules

- SYC1 keypad module
- 4 × keycap, clear
- 1 × pre-perforated labeling sheet

Power supply unit

- Power supply unit DVM-TAST-PSU, 2 × plug-in screw terminal (3-pin, RM 3.5 mm)
- Schuko, IEC C5 mains cable 180 cm
- 2 × mounting bracket (SYFB01-MW)
- 4 × screw for mounting brackets (S-G2508)

Required accessories

Depending on the variant or order, the following accessories are required for mounting and connecting the product:

SYSWALL keypad modules

SYSWALL45

- Mounting frame W-MR-1 and/or W-MR-2 for installation in flush-mounted cavity boxes
- Desktop connection panel (SYSFRAME45) for the installation of the keypad module
- Trunking system with 45 mm rail (e.g. column housing W45S-Q62 or W45S-R70) for installation of the keypad module

SYSWALL50

- Mounting frame W-MR-1 and/or W-MR-2 for installation in flush-mounted cavity boxes
- Desktop connection panel (SYSFRAME50) for installation of the keypad module
- 2 × screw (M2)
- Screwdriver (TX6)

SYSBOXX keypad modules

- SYSBOXX system (SYSBOXX, SYSDESK, SYSFLOOR, SYSTRUNK, SYSBOARD) for the installation of the keypad module
- 4 × screw (M2.5)
- Screwdriver TX8

Power supply unit

- SYSBOXX system (SYSBOXX, SYSDESK, SYSFLOOR, SYSTRUNK, SYSBOARD) for the installation of the power supply unit
- 4 × screw (M2.5)
- Screwdriver TX8

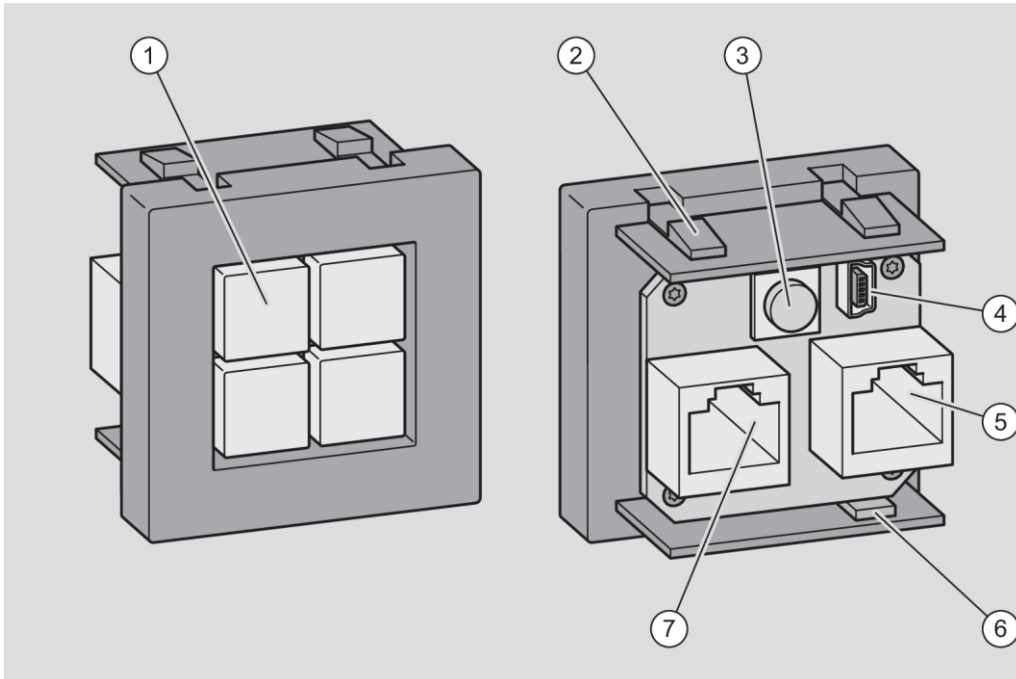
Network cable

- CAT5/CAT6/CAT7 network cable for connecting the power supply unit with keypad modules and for connecting keypad modules with each other

Optional accessories

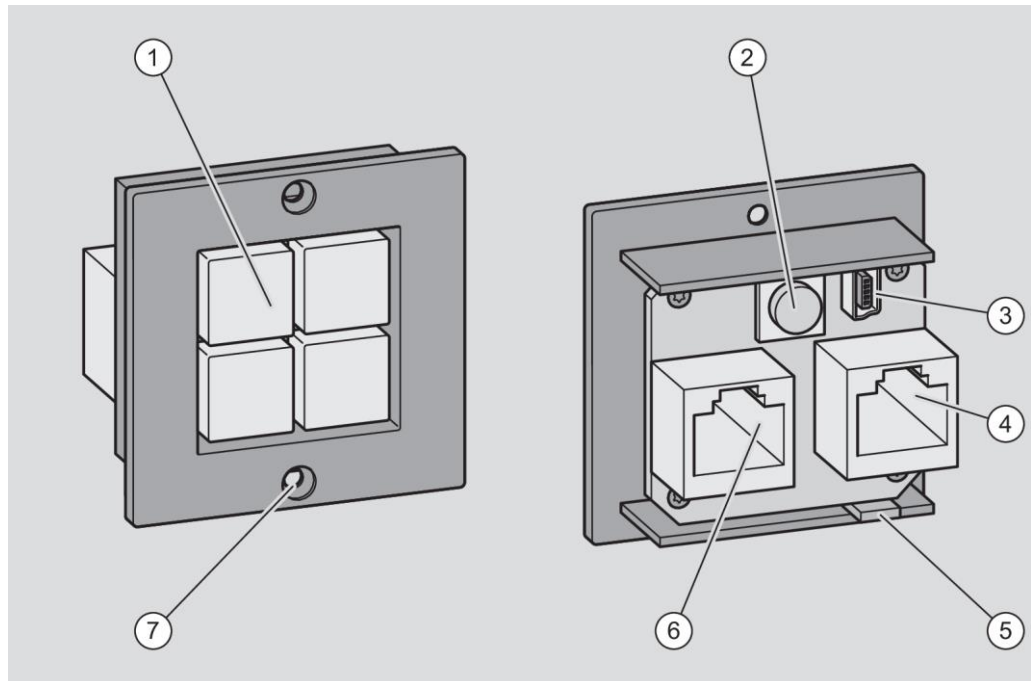
The following accessories are optionally available:

- Adapter cable “DVM-194-C4-xxx” for connecting the power supply unit to the device to be controlled
- Adapter cable “DVM-194-C5-xxx” for direct connection of the keypad module with the CARDINAL DVM HDBaseT built-in transmitters (e.g. DVM-194-HDBT-T or W45W-3455). Operation without a power supply unit is therefore possible.

SYSWALL45 keypad module

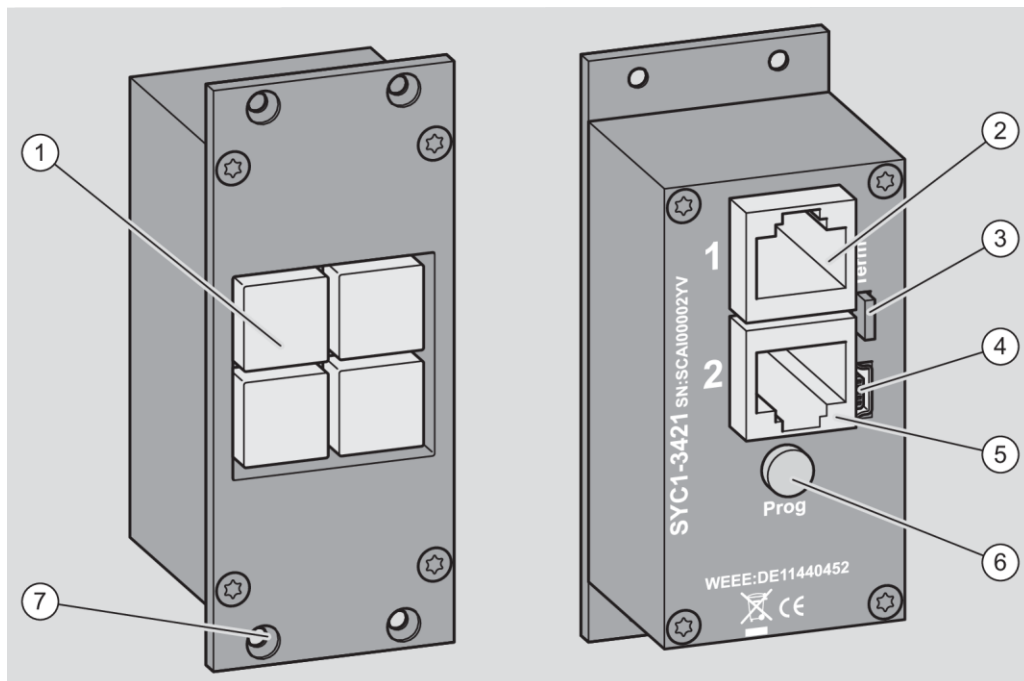
No.	Designation
1	Key for controlling third-party media device
2	Detent
3	Programming key with LED lighting
4	USB port (type Mini-B)
5	Port 2 (RJ45, output)
6	Jumper for termination
7	Port 1 (RJ45, input)

SYSWALL50 keypad module



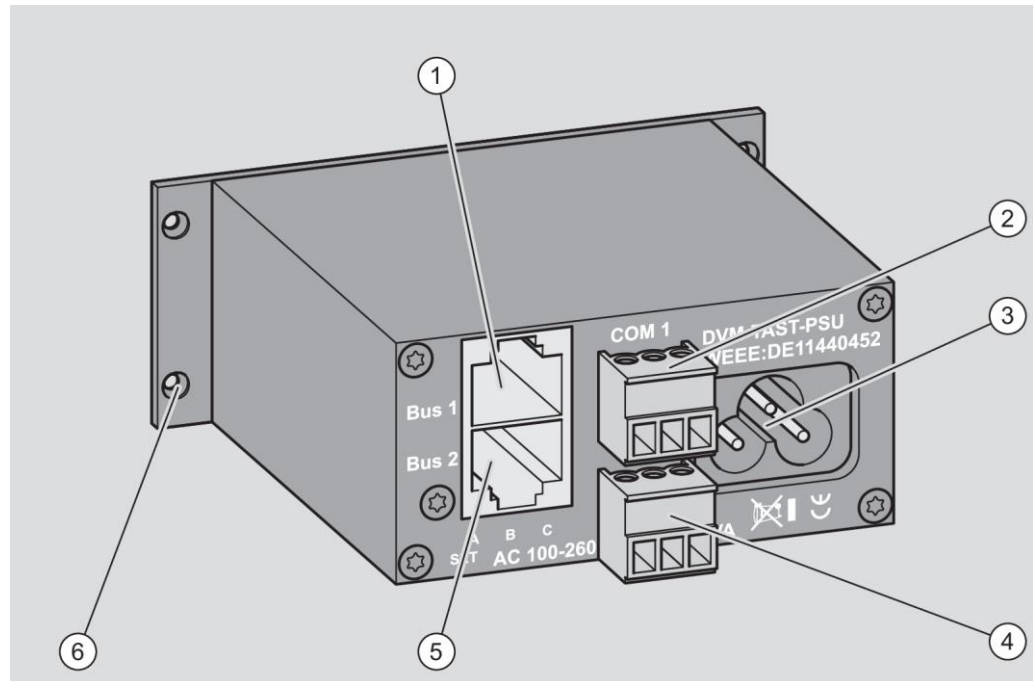
No.	Designation
1	Key for controlling third-party media device
2	Programming key
3	USB port (type Mini-B)
4	Port 2 (RJ45, output)
5	Jumper for termination
6	Port 1 (RJ45, input)
7	Hole for fastening to SYSWALL system

SYSBOXX keypad module



No.	Designation
1	Key for controlling third-party media device
2	Port 1 (RJ45, input)
3	Jumper for termination
4	Port 2 (RJ45, output)
5	USB port (type Mini-B)
6	Programming key with LED lighting
7	Hole for fastening to SYSBOXX system

Power supply unit



No.	Designation
1	BUS 1 connection
2	Plug-in screw terminal (COM 1), 3-pin
3	Mains cable connection
4	Plug-in screw terminal (COM 2), 3-pin
5	BUS 2 connection
6	Hole for fastening (to SYSBOXX system, desk or wall)

Task and function

Keypad modules

The keypad modules control individual functions of third-party media devices that have an RS232 interface. The desired control function is programmed using the “CARDINAL DVM Keypad Module System Configurator” software and transferred to the third-party media device via the RS232 interface by pressing a key on the module.

The keypad modules can be used in the following operating modes:

- Standalone operation
- Bus network operation

In standalone operation, only one keypad module (SYSBOXX or SYSWALL) can be integrated into the system. With this module, two third-party media devices can be controlled. The voltage supply and data communication are implemented using network cables. For this purpose, the keypad module has two ports (RJ45).

In bus network operation, up to 16 keypad modules (SYSBOXX or SYSWALL) can be integrated into the system. Only one third-party media device can be controlled in this operating mode. Both communication between the keypad modules and the voltage supply are provided via ports 1 and 2 (RJ45) with CAT6/CAT6A network cables. A modified RS485 protocol is used for communication between the keypad modules.

To connect the keypad module or bus network to the third-party media device to be controlled, the power supply unit has two 3-pin plug-in screw terminals (COM 1 and COM 2), via each of which a separate bus signal can be transmitted.

Power supply unit

The power supply unit supplies the keypad modules with the operating voltage and simultaneously transmits the signals to the third-party media device. It can be used in the following variants:

- Variant A (2 × power supply and 2 × serial connection, dual power supply unit)
- Variant B (1 × power supply and 1 × serial connection, repeater)
- Variant C (1 × power supply and 2 × serial connection, mixed mode)

❗ The delivery status of the power supply unit always corresponds to variant C. In order to use the power supply unit in variants A and B, the power supply unit must be modified. For this purpose, jumpers must be placed inside the power supply unit. The variant may only be modified by authorized electricians after consultation with the manufacturer. Further information on this topic is available from the manufacturer.

Information on the type plate

The type plate is glued to the power supply unit housing. It contains the following information:

- Type designation of the power supply unit
- EAN code
- Serial number
- Disposal symbol
- CE marking (The product complies with the standards listed in the enclosed declaration of conformity.)

Technical data

SYSWALL and SYSBOXX keypad modules	
Connections	2 ports (RJ45) USB port (type Mini-B, programming interface) Jumper for termination (2-pin)
Voltage supply	12 V via bus (RJ45 interface)
Power consumption (max.)	5 W
Temperature range (operation and storage)	0–40 °C/-20–70 °C
Humidity during operation	0–90% (non-condensing)
Weight	SYSBOXX: approx. 120 g SYSWALL45: approx. 75 g SYSWALL50: approx. 110 g
Dimensions W × H × D	SYSBOXX: 36 × 85 × 37 mm SYSWALL45: 45 × 45 × 37 mm SYSWALL50: 50 × 50 × 37 mm

Power supply unit	
Connections	2 ports (RJ45) 2 plug-in screw terminals (RM3.50), 3-pin
Voltage supply	90–250 V AC
Power consumption (max.)	22 W
Temperature range (operation and storage)	0–40 °C/-20–70 °C
Humidity (during operation)	0–90% (non-condensing)
Weight	Approx. 414 g
Dimensions W × H × D	36 × 85 × 72 mm

Storing and transporting the product

- ▶ Store the product in its original packaging.
- ▶ Transport the product in its original packaging.

Unpacking the product and checking the scope of delivery

ATTENTION!	
	<p>The product contains components sensitive to electrostatic charge. These components may be damaged or destroyed by the effect of an electric field or by charge equalization when touched.</p> <ul style="list-style-type: none">▶ Before touching the product, establish electrical equipotential bonding between yourself and your surroundings, e.g. using a wrist strap.▶ Remove the product from the packaging.

- ▶ Remove the parts of the product from the original packaging.
- ▶ Keep the original packaging for later storage or possible return.
- ▶ Check whether all parts of the product were delivered; for more information, see page 8.
- ▶ Check that the parts are in perfect condition.
- ▶ Contact the manufacturer if parts are missing or damaged.

Installing the product

ATTENTION!	
	<p>Material damage may be caused by using the product under incorrect operating conditions.</p> <ul style="list-style-type: none"> ▶ Install the product in a dust-free environment. ▶ Install the product protected against moisture, vapors, splash water and wetness. ▶ Install the product in a place protected from direct sunlight. ▶ Do not install the product in the immediate vicinity of heat sources. ▶ Use the product at ambient temperatures between 0 °C and 35 °C.

Installing SYSWALL45 keypad modules

The SYSWALL45 keypad modules can be installed in the following:

- Flush-mounted cavity boxes in combination with mounting frames W-MR-1 and/or W-MR-2
- Desktop connection panel (SYSFRAME45)
- Trunking systems with 45 mm rail

Installing SYSWALL45 keypad modules in a flush-mounted cavity box

To install a SYSWALL45 keypad module in a flush-mounted cavity box, proceed as follows:

- ▶ Attach the corresponding mounting frame to the flush-mounted cavity box.
- ▶ Attach the mounting frame to the flush-mounted cavity box.
- ▶ Insert the keypad module into the flush-mounted cavity box and press until the detent engages audibly.
- ▶ If necessary, attach the keycaps included in the scope of delivery with the corresponding labels to the keypad module (see page 25).

Inserting SYSWALL45 into a desktop connection panel (SYSFRAME45) or trunking system with a rail

To install a SYSWALL45 keypad module in a desktop connection panel (SYSFRAME45) and/or a rail trunking system, proceed as follows:

- ▶ Insert the keypad module into the corresponding system and press until the detent engages audibly.
- ▶ If necessary, attach the keycaps included in the scope of delivery with the corresponding labels to the keypad module; (see page 25).

Installing SYSWALL50 keypad modules

The SYSWALL50 keypad modules can be installed in the following:

- Flush-mounted cavity boxes in combination with mounting frames W-MR-1 and/or W-MR-2
- Desktop connection panel (SYSFRAME50)

Installing SYSWALL50 keypad modules in a flush-mounted cavity box

The following tool and materials are required for mounting:

- Two screws (M2)
- Screwdriver TX6

To install a SYSWALL50 keypad module in a flush-mounted cavity box, proceed as follows:

- ▶ Attach the corresponding mounting frame to the flush-mounted cavity box.
- ▶ Attach the frame to the flush-mounted cavity box.
- ▶ Place the keypad module in front of the mounting frame.
- ▶ Tighten the screws with the TX6 screwdriver.
- ▶ If necessary, attach the keycaps included in the scope of delivery with the corresponding labels to the keypad module (see page 25).

Installing SYSWALL50 keypad modules in a desktop connection panel (SYSFRAME50)

To install a SYSWALL50 keypad module in a desktop connection panel (SYSFRAME50), proceed as follows:

- ▶ Insert the keypad module into the desktop connection panel (SYSFRAME50).
- ▶ Fasten the keypad module to the desktop connection panel (SYSFRAME50) with two screws (M2).
- ▶ Tighten the screws with the TX6 screwdriver.
- ▶ If necessary, attach the keycaps included in the scope of delivery with the corresponding labels to the keypad module (see page 25).

Installing SYSBOXX keypad modules

The SYSBOXX keypad module can be installed in the following:

- SYSBOXX
- SYSDesk (desktop connection panel)
- SYSFLOOR (installation frame for floor tank)
- SYSTRUNK (trunking column profile)
- SYSBOARD (wall connection panel)

The following tool and materials are required for mounting:

- Four M2.5 screws
- Screwdriver TX8

To install a SYSBOXX keypad module in a SYSBOXX system, proceed as follows:

- ▶ Insert the keypad module into the corresponding system.
- ▶ Fasten the keypad module with four screws (M2.5). In the process, tighten the screws with the TX8 screwdriver.
- ▶ If necessary, attach the keycaps included in the scope of delivery with the corresponding labels to the keypad module (see page 25).

Installing the power supply unit

The power supply unit can be installed in the following:

- SYSBOXX system or
- separately (e.g. on a desk or wall)

The following tool and materials are required for mounting:

- Four screws (M2.5)
- Screwdriver TX8
- Mounting bracket (for individual assembly)

Installing the power supply unit in a SYSBOXX system

The power supply unit can be installed in the following:

- SYSBOXX
- SYSDESK (desktop connection panel)
- SYSFLOOR (installation frame for floor tank)
- SYSBOARD (wall connection panel)

ATTENTION!

Material damage may be caused by supplying power to the power supply unit during installation.

- ▶ Before installation, make sure that the power supply unit is not connected to the power supply.

To mount the power supply unit on a SYSBOXX system, proceed as follows:

- ▶ Insert the power supply unit into the SYSBOXX system.
- ▶ Fasten the power supply unit to the housing with four screws (M2.5).
- ▶ Tighten the screws with the TX8 screwdriver.

Installing the power supply unit separately

ATTENTION!

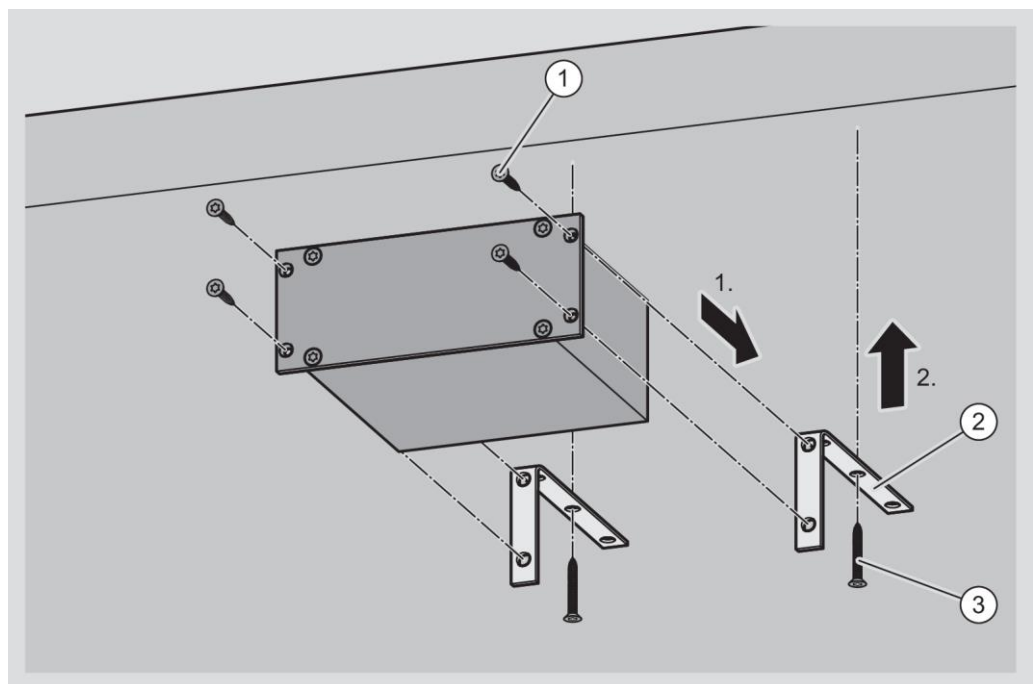
Material damage may be caused by supplying power to the power supply unit during installation.

- Before installation, make sure that the power supply unit is not connected to the power supply.

You can also mount the power supply unit separately (under/on the desk or on the wall). To do so, proceed as follows:

- Attach the supplied mounting brackets (2) to the power supply unit housing as shown below.
- Fasten the two mounting brackets (2) to the power supply unit housing with two screws (1) each. In the process, tighten the screws with the TX8 screwdriver.
- Fasten the power supply unit with the mounting brackets to the desk with two suitable screws (3). In the process, tighten the screws with the TX8 screwdriver.

The following illustration shows individual mounting under the desk.



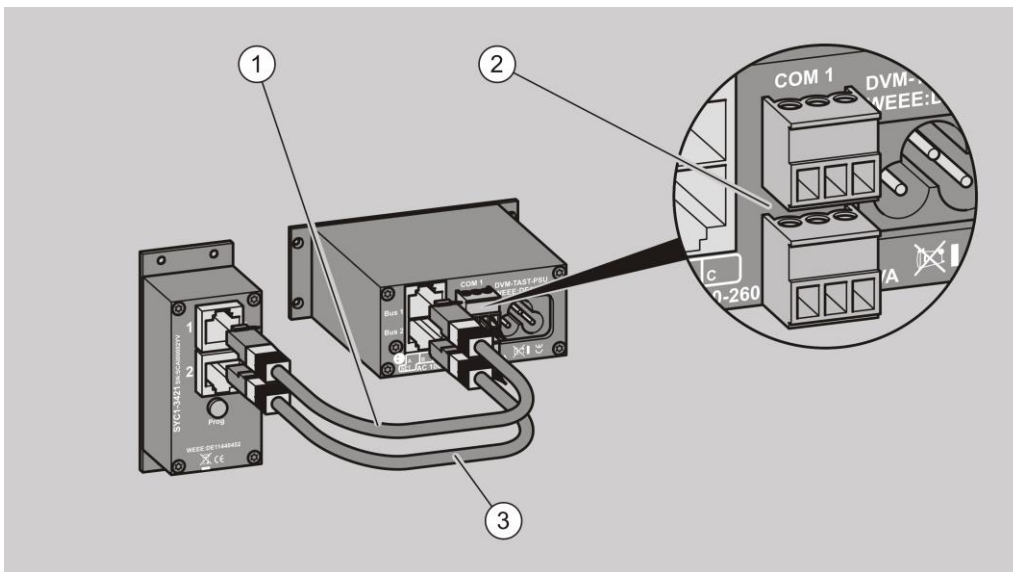
Connecting the product

Connecting the keypad module for standalone operation

In standalone operation, only one keypad module (SYSBOXX or SYSWALL) can be integrated into the system. With this module, two third-party media devices can be controlled. To connect the keypad module to the power supply unit, proceed as follows:

- ▶ Insert the plugs of the network cable (1) into port 1 of the keypad module and into the “BUS 1” port of the power supply unit.
- ▶ Insert the plugs of the network cable (3) into port 2 of the keypad module and into the “BUS 2” port of the power supply unit.

The plug-in screw terminals (2) COM 1 and COM 2 are available for connecting the third-party media devices.



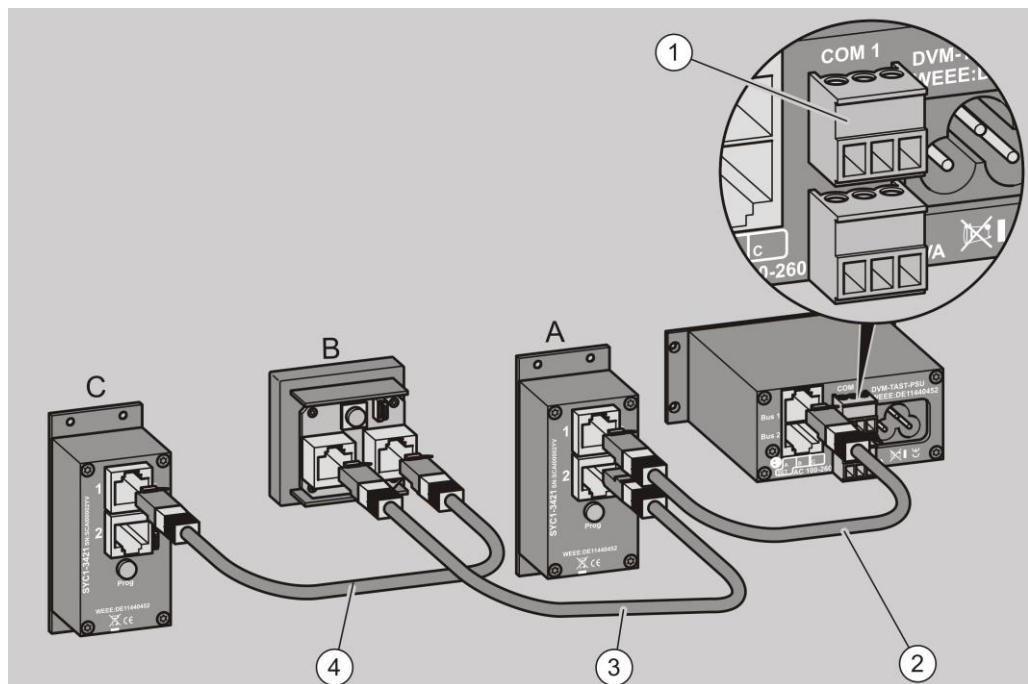
- ❗ The keypad module in “standalone” mode can also be optionally connected to the “CARDINAL DVM HDBaseT transmitter” using the “DVM-194-C5” adapter cable. In this case, the HDBaseT transmitter supplies the keypad module with the required operating voltage. In this constellation, only one serial interface (COM 2) is available.

Connecting the keypad modules for bus network operation

You can integrate up to 16 keypad modules into the system for bus network operation. The keypad modules can communicate via a central serial interface (COM 1) on the power supply unit. To do so, you must connect the keypad modules to the power supply unit and to each other using the network cables. A bus network contains one master and up to 15 slave modules. To connect the keypad module, proceed as follows:

- Insert the plugs of the network cable (2) into the “BUS 1” port of the power supply unit and into port 1 of the master module (A).
- Insert the plugs of the network cable (3) into port 2 of the master module (A) and into port 1 of the first slave module (B).
- Insert the plugs of the network cable (4) into port 2 of the first slave module (B) and into port 1 of the second slave module (C).
- If necessary, repeat the procedure when connecting other slave modules.

The plug-in screw terminal COM 1 (1) is available for connecting the third-party media device.



- ❗ The cable length of the bus network depends on the cross-section and should not exceed 25 m (for AWG24). If longer distances have to be bridged, an additional power supply unit can be used as a repeater (variant B). The power supply unit may be modified by a qualified electrician after consultation with the manufacturer. Further information on this topic is available from the manufacturer.

- ① The keypad modules in “bus network” mode can also be optionally connected to the “CARDINAL DVM HDBaseT transmitter” using the “DVM-194-C5” adapter cable. In this case, the HDBaseT transmitter supplies up to two slave modules with the required operating voltage. The master module is connected to the HDBaseT transmitter using the “DVM-C” adapter cable. The two slave modules are connected to each other by a network cable. Further information on this topic is available from the manufacturer.

Attaching keycaps to the keypad module

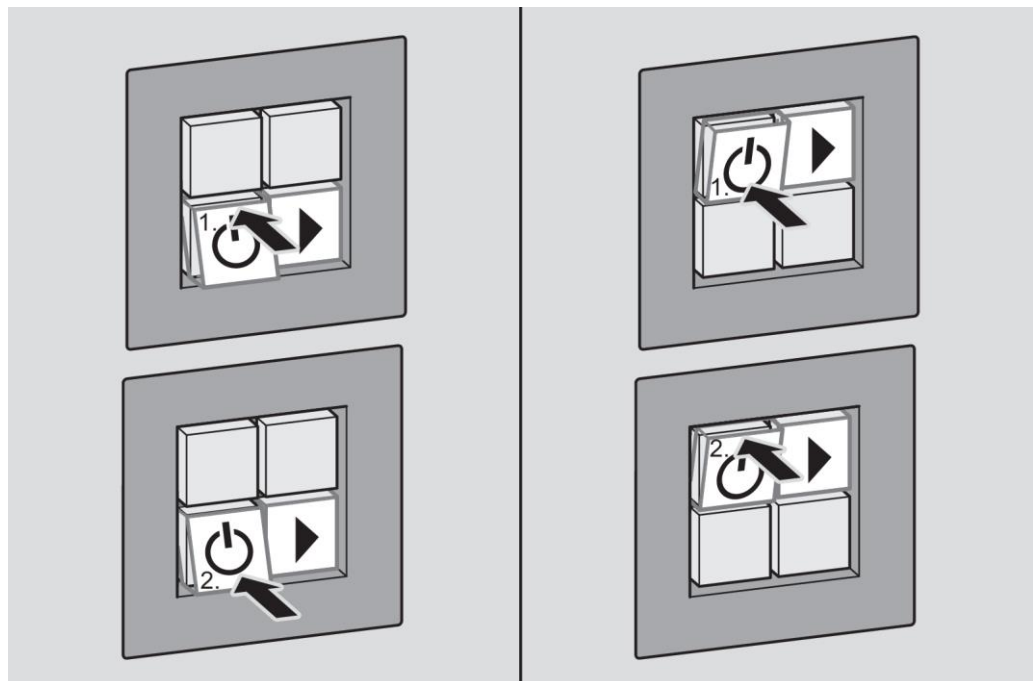
ATTENTION!

Damage to the keycaps may be caused by incorrect insertion or removal.

- ▶ Insert the keycaps only according to these instructions.
- ▶ Have the keycaps removed by the manufacturer only.

You can attach the keycaps with labels before or after mounting on the keypad module. To do so, proceed as follows:

- ▶ Insert the appropriate label into the keycap.
- ▶ Insert the keycap into the keypad module (1) with the inner edge first as shown.
- ▶ Carefully push in the outer edge of the keycap (2).
- ▶ Repeat the procedure to insert the other keycaps.



Configuring the product

Preparing installation

Before you configure the product, the following activities must be performed:

- Installation of the “CARDINAL DVM Keypad Module System Configurator” software
- Installation of the “STMicroelectronics Virtual COM Port” driver

System requirements

MS operating system:

- WINDOWS 7 SP1
- WINDOWS 8
- WINDOWS 8.1
- WINDOWS 10

Downloading the software

To download the software, proceed as follows:

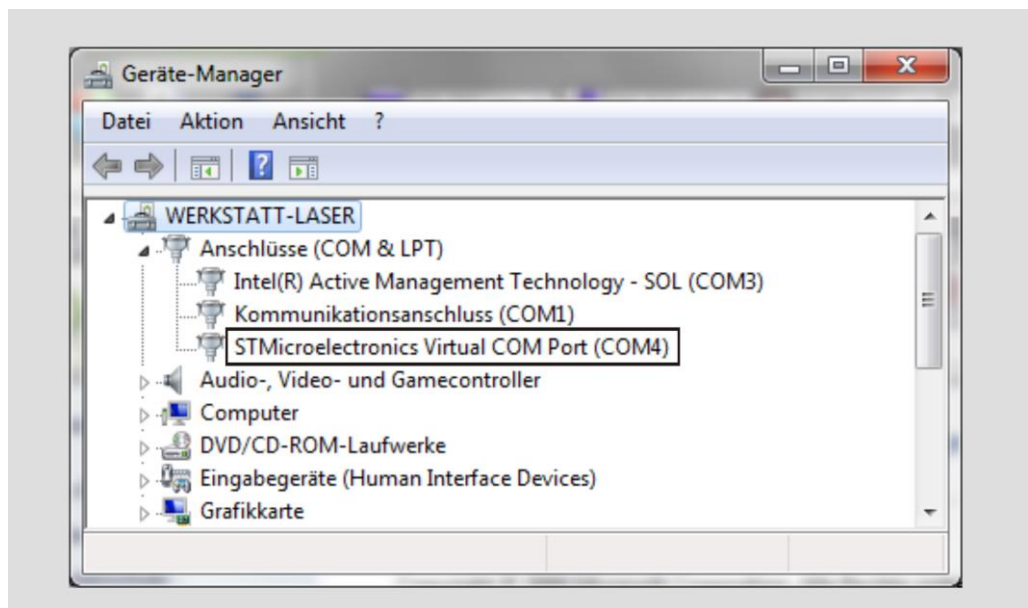
- ▶ Call the Internet page of the manufacturer.
- ▶ Switch to the product page. To do so, type in the article number under “Search”.
- ▶ To download the current version of the “CARDINAL DVM Keypad Module System Configurator” software, follow the instructions on the screen.
- ▶ Install the software on your computer. In the process, follow the instructions on the screen.

Installing the driver

To install the driver, proceed as follows:

- ▶ Call the Internet page of the manufacturer.
- ▶ Switch to the product page.
- ▶ To download the “STMicroelectronics Virtual COM Port” driver, follow the instructions on the screen.
- ▶ Install the driver on your computer.
- ▶ In the process, follow the instructions on the screen.
- ▶ After installing the driver, connect the respective keypad module (standalone or master) to the computer via the USB port using a USB cable.

If the driver has been installed correctly, it will be displayed in the Windows Device Manager as follows:



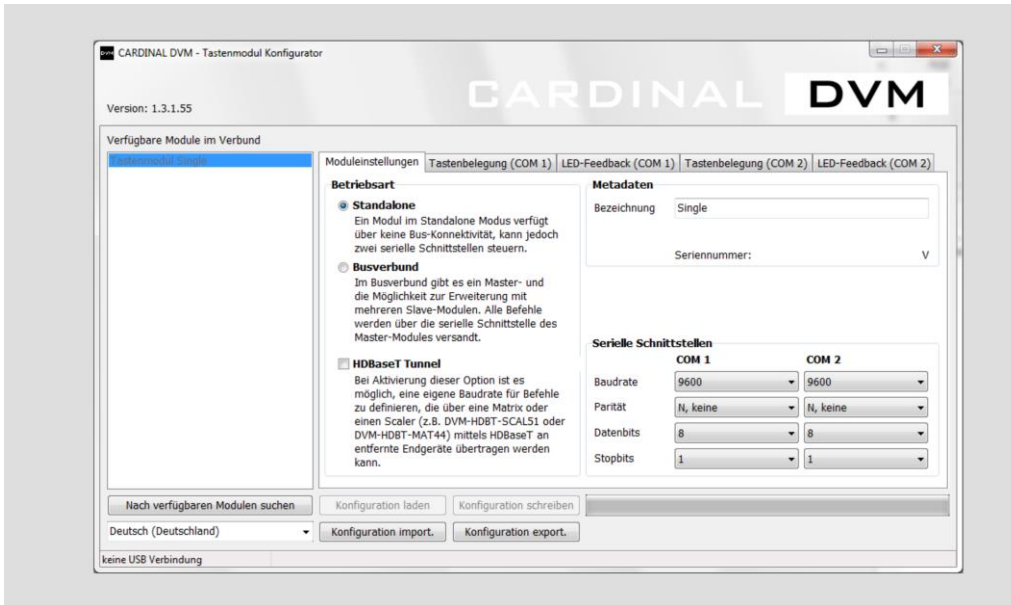
If the “STMicroelectronics Virtual COM Port” driver is not displayed as shown, the function is not available and the software cannot recognize the connected keypad module (see page 45).

Creating the configuration for keypad modules

To create a configuration, proceed as follows:

- Open the "CARDINAL DVM Keypad Module System Configurator" software on your computer.

The main screen is displayed with the following options:



Module settings
[Moduleinstellungen]:

Selecting operating modes:
Standalone
Bus network [Busverbund]
HDBaseT tunnel (optional) in connection with the
HDBaseT transmitter

Key assignment
[Tastenbelegung]
(COM 1, COM 2):

Set the key function. The COM 2 interface is only
available in standalone mode with HDBaseT tunnel
activated.

LED feedback [LED-
Feedback]
(COM 1, COM 2):

Independent LED control

Serial interfaces
[Serielle Schnittstellen]
(COM 1, COM 2):

In this section, the connection parameters (such as baud
rate, parity, data bits, stop bits) relevant for RS232 serial
communication are set.

Load configuration
[Konfiguration laden]:

Button for loading the configuration currently on the
keypad module from the keypad module to the computer.
It can then be edited or exported. The button becomes
active when the keypad module is connected to a
computer via COM port.

Write configuration
[Konfiguration
schreiben]:

Button for writing the configuration currently on the
software from the software to the keypad module

Configuration import
[Konfiguration import.]:

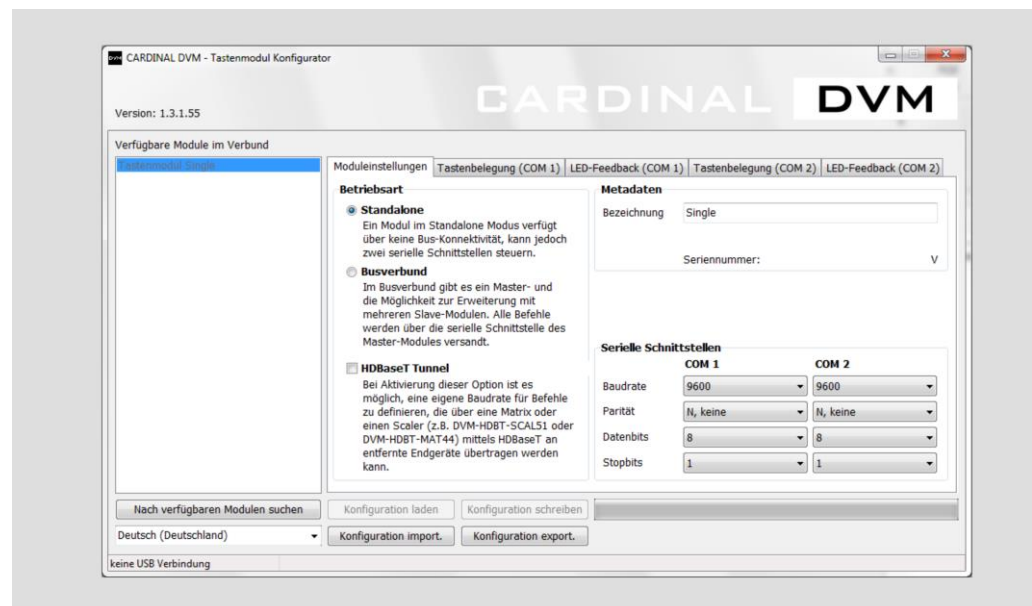
Button for importing an existing configuration that was
previously saved from the keypad module into the
software

Configuration export [Konfiguration export.]:	Button for exporting and saving a configuration made in the software or loaded from a keypad module
Available modules in bus network [Verfügbare Module im Verbund]:	Here you can select the available keypad modules.
Search for available modules [Nach verfügbaren Module suchen]:	Here you can search for available keypad modules.
No USB connection [keine USB-Verbindung]:	Display for inactive connection via COM port. If the keypad module is connected to the computer via a COM port, the display changes to "Connected via COMx" [verbunden über COMx].

Creating the configuration for standalone operation

To create the configuration for standalone operation, proceed as follows:

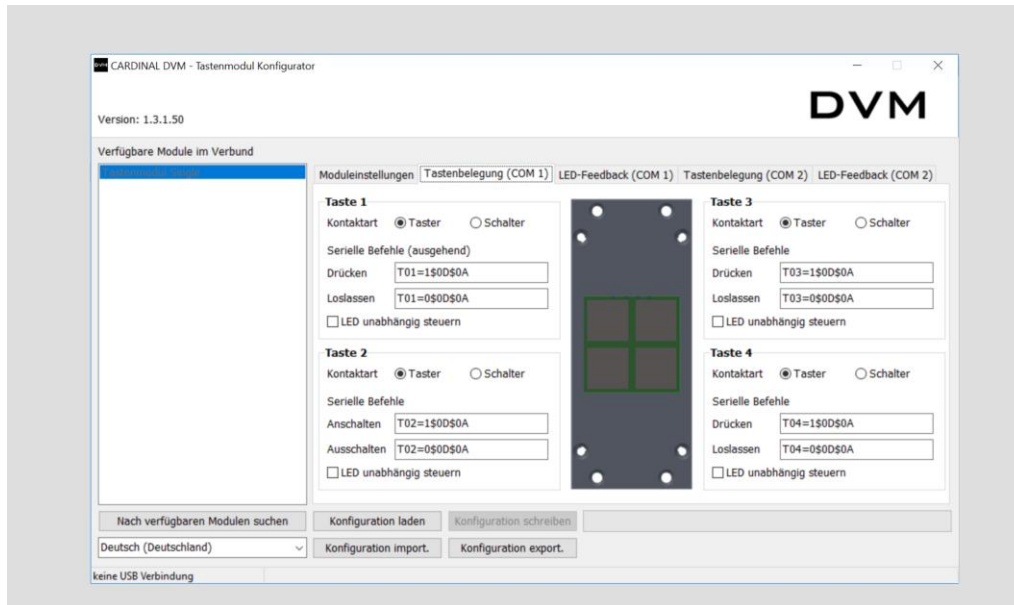
- Make sure "Standalone" operation is selected on the "Module Settings" [Moduleinstellungen] screen page as shown below.
- In the "Metadata" [Metadaten] field, enter information such as the operating mode, desktop connection panel, etc.
- In the "Serial interface" [Serielle Schnittstellen] fields, enter the respective connection parameters for COM 1 according to the manual of the third-party media device to be controlled.
- Repeat the procedure when entering the connection parameters on the "COM 2" screen page.



To set the function of the keys, proceed as follows:

► Click “Key assignment COM 1” [Tastenbelegung COM 1].

The following screen page is displayed:



Contact type
[Kontaktart]:

Button [Taster]:

The key functions as a button. If the LED is not independently controlled, it is switched on when pressed and the command stored when pressed is sent. When the key is released, the LED is switched off and the command stored at release is sent.

Switch [Schalter]:

The key functions as a switch. If the LED is not independently controlled, it is switched on when first pressed and the command stored at “Switch-on” [Anschalten] is sent. When pressed a second time, the LED is switched off and the command stored at “Switch-off” [Ausschalten] is sent.

“Serial commands
(outgoing)” [Serielle
Befehle (ausgehend)]
command guide:

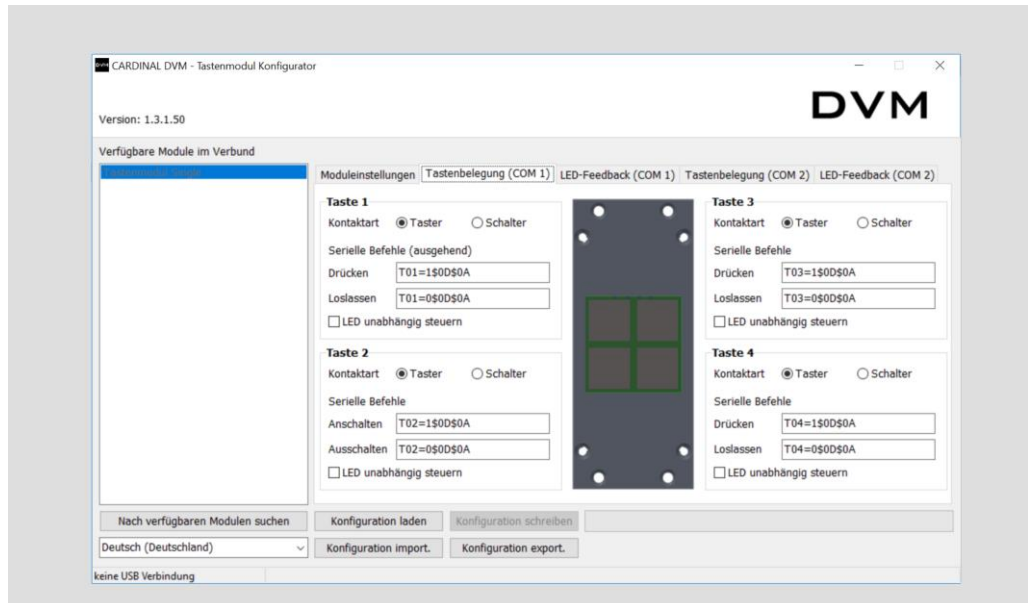
You can enter the serial commands [Serielle Befehle] here. These commands are output via the COM 1 interface when the key is pressed.

Independent LED
control [LED
unabhängig steuern]:

If this option is activated, the behavior of the LED is not linked to the contact type of the corresponding button, but rather to the commands from the “LED feedback” [LED-Feedback] tab.

You can set the function of the keys individually on the "Key assignment" [Key assignment] screen page. To do so, proceed as follows:

- In the "Key assignment COM 1" [Tastenbelegung COM 1] section, select the contact type of the respective key.
- Enter the serial commands for the respective key in the corresponding fields (for more information, see page 33).
- If necessary, repeat the procedure on the "Key assignment COM 2" [Tastenbelegung COM 2] screen page.



If the LED is to be controlled, e.g. by a higher-level system, proceed as follows:

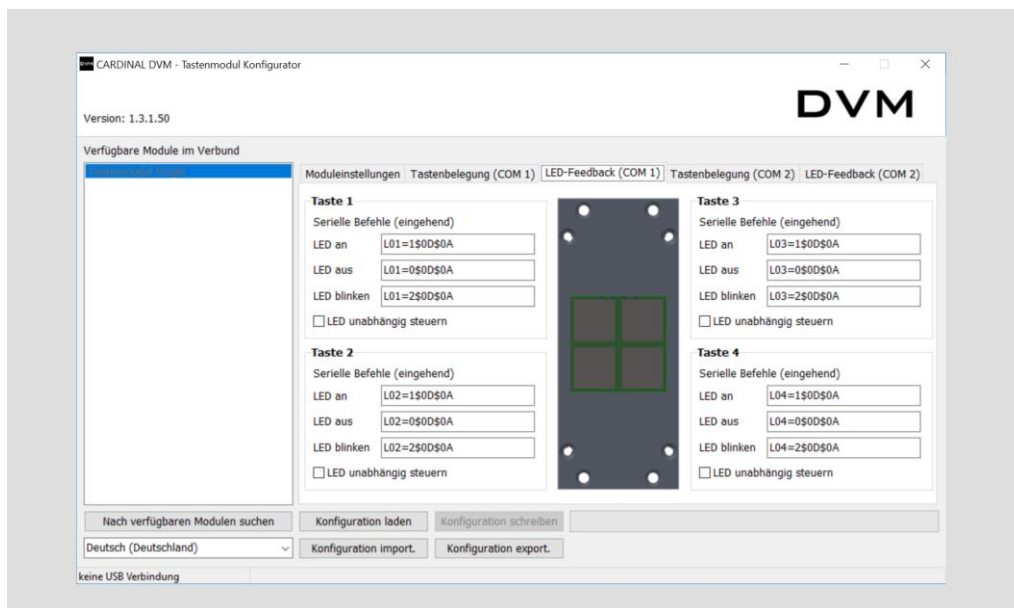
- Click “LED feedback COM 1” [LED-Feedback COM 1].

The “LED feedback COM 1” [LED-Feedback COM 1] screen is opened as shown.

- Enter the serial commands for the respective key in the corresponding fields.

The entry scheme for the serial commands is the same as described in the “Serial commands (outgoing)” [Serielle Befehle (ausgehend)] command guides section, page 33.

- If necessary, repeat the procedure on the “LED feedback COM 2” [LED-Feedback COM 2] screen page.



LED ON/OFF/flashing
[LED an/aus/blinken]:

The input buffer of the serial interface is compared with the entries in the fields. If there is a match, the corresponding LED action is executed.

“Serial commands
(incoming)” [Serielle
Befehle (eingeht)]
command guide:

The serial commands can be set on this screen page. These commands are output via the COM 1 interface when the key is pressed.

Independent LED
control [LED
unabhängig steuern]:

If this option is activated, the behavior of the LED is not linked to the contact type of the corresponding button, but to the commands from the “LED feedback” [LED-Feedback] tab.

Entering the “Serial commands (outgoing)” [Serielle Befehle ausgehend] command guide

These serial commands are output via the COM 1 interface when the key is pressed. The commands are formatted as follows:

- The entry is made in ASCII format.
- The hexadecimal characters can be included in the string preceded by the dollar sign “\$” and followed by two characters in the string.
- To include a dollar sign “\$” in a string, the character is doubled.

The following table shows an example.

Entry	Result
Hello World	Hello World
Hello\$20World	Hello World
Hello\$\$World	Hello\$World
Hello World\$31\$32\$3345	Hello World12345

\$20 = space character

\$31 = “1”

A reference table for the hexadecimal characters can be found on the following web page: <https://www.torsten-horn.de/techdocs/ascii.htm>

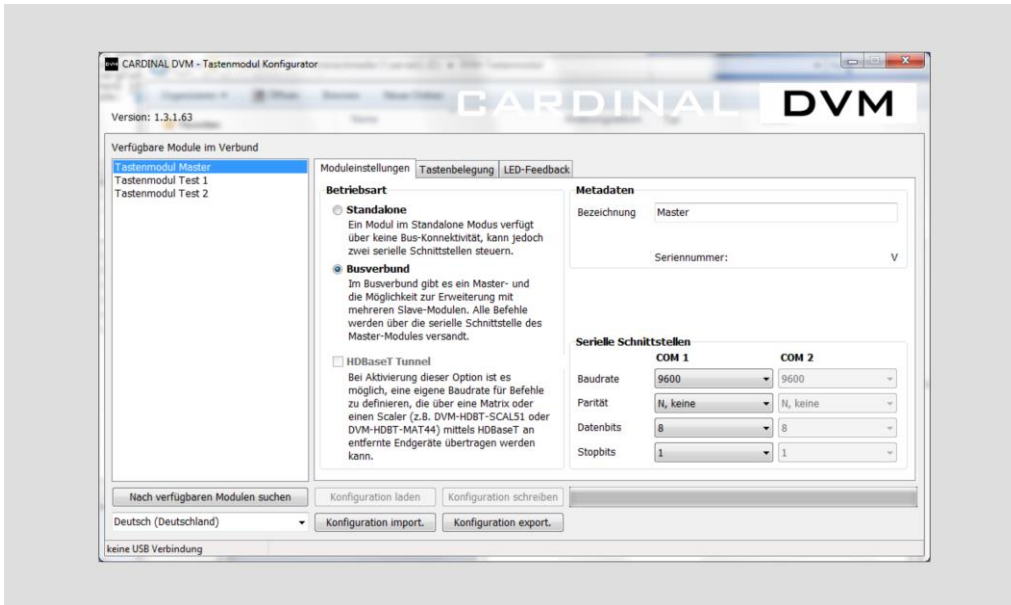
- ❗ The pre-entered commands serve only as examples. They can be completely overwritten. “T0x=” and “L0x=” are also shown as examples.
- ❗ Many third-party media devices require checksums, for example, that must be calculated. To verify the commands, it helps to test them by sending them directly to the third-party media device with a terminal software program such as “Docklight”.

Creating a configuration for the bus network

To create a configuration for the bus network, proceed as follows:

- On the start screen, click the “Bus network” [Busverbund] operating mode.

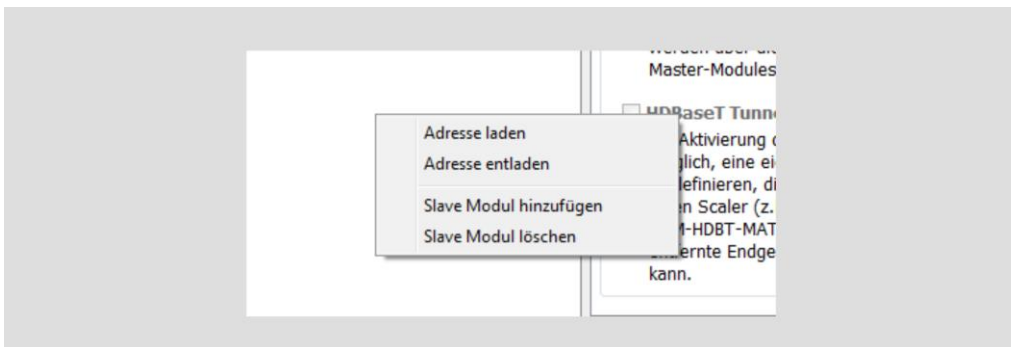
The screen page with the modules available in the network (e.g. master module) is displayed.



To add a slave module, proceed as follows:

- Right-click any point in the white field on the start screen.

The following selection menu opens:



- Select the “Add slave module” [Slave Modul hinzufügen] menu item.
- Give the slave module a name and confirm the entry.
- Repeat the procedure when adding other slave modules.

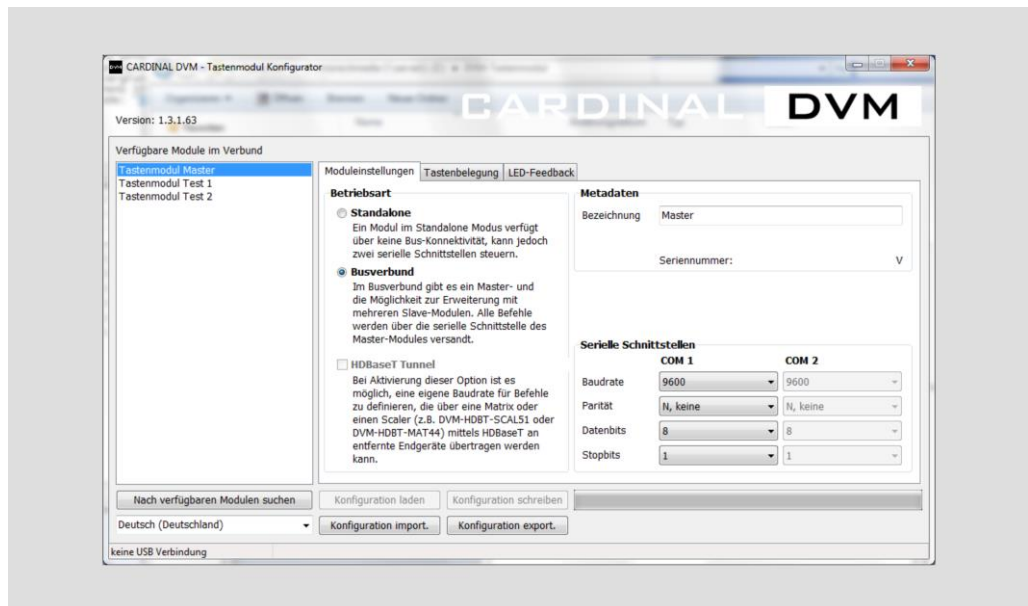
You can add up to 15 slave modules.

After adding the required slave modules, you can create the configurations for the master and slave modules independently of each other. The procedure for creating the configuration for the master and slave modules is identical.

- Here, left-click to select the required keypad module (e.g. master).

The “Master module” [Master-Modul] menu item is highlighted in blue.

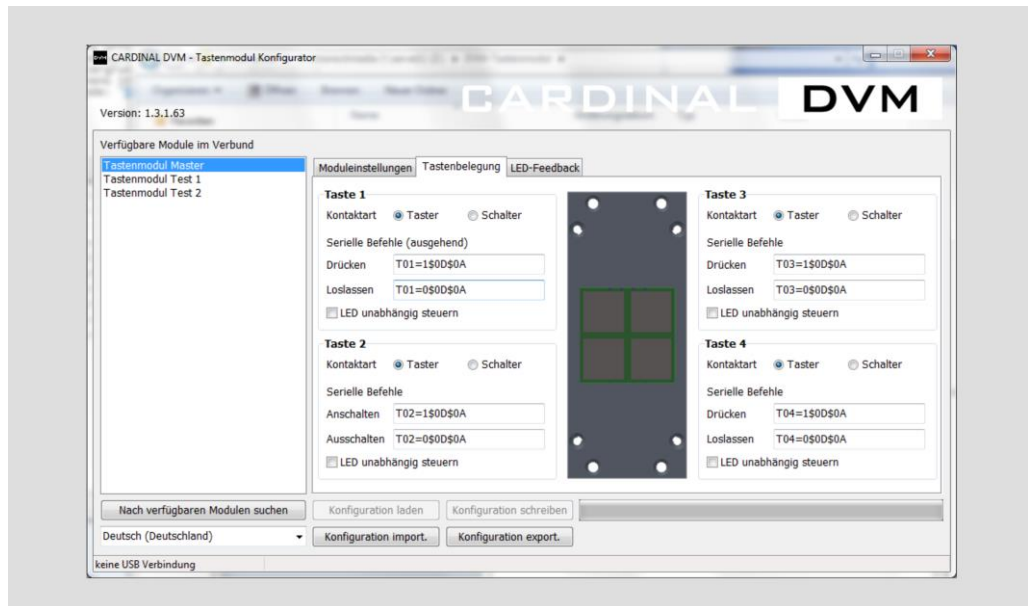
- In the “Metadata” [Metadaten] field, enter information such as the operating mode, number of the desktop connection panel, etc.
- In the “Serial interface” [Serielle Schnittstellen] fields, enter the respective connection parameters for COM 1 according to the manual of the third-party media device to be controlled.



To set the function of the keys, proceed as follows:

- Click the “Key assignment [Tastenbelegung] option.

The following screen page is displayed:



Contact type
[Kontaktart]:

Button [Taster]:

The key functions as a button. If the LED is not independently controlled, it is switched on when pressed and the command stored when pressed is sent. When the key is released, the LED is switched off and the command stored at release is sent.

Switch [Schalter]:

The key functions as a switch. If the LED is not independently controlled, it is switched on when first pressed and the command stored at "Switch-on" [Anschalten] is sent. When pressed a second time, the LED is switched off and the command stored at "Switch-off" [Ausschalten] is sent.

"Serial commands
(outgoing)" [Serielle
Befehle (ausgehend)]
command guide:

You can enter the serial commands [Serielle Befehle] here. These commands are output via the COM 1 interface when the key is pressed.

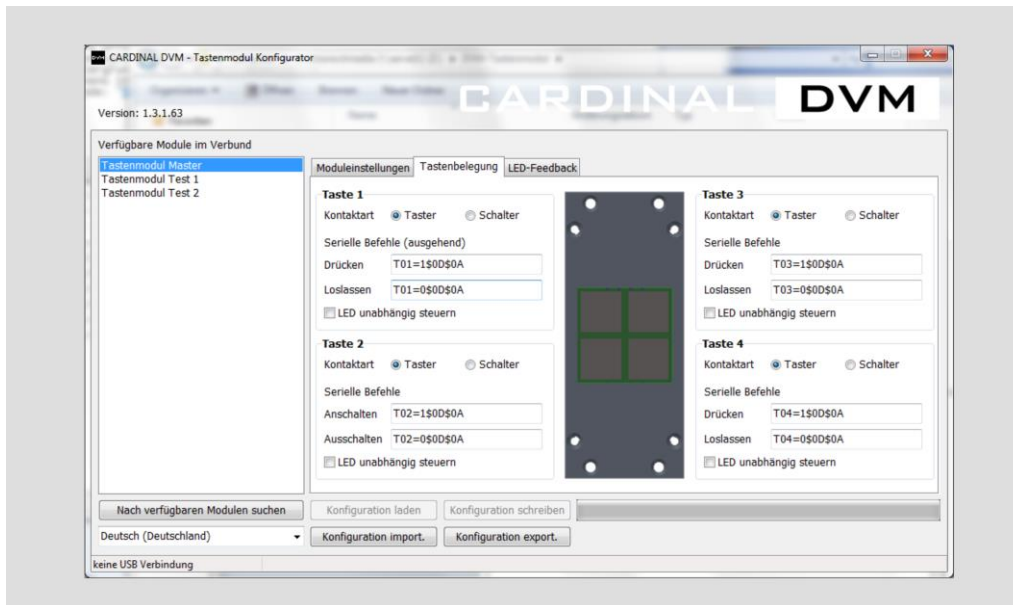
Independent LED
control [LED
unabhängig steuern]:

If this option is activated, the behavior of the LED is not linked to the contact type of the corresponding button, but rather to the commands from the "LED feedback" [LED-Feedback] tab.

You can set the function of the keys individually here. To do so, proceed as follows:

- ▶ Select the contact type [Kontaktart] of the respective key.
- ▶ Enter the serial commands for the respective key in the corresponding fields.

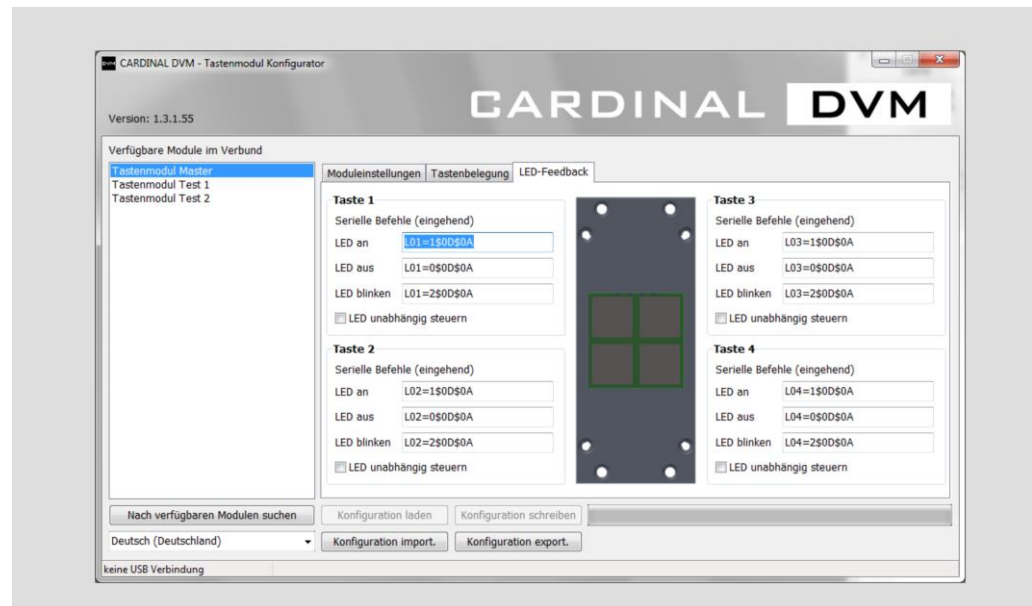
For more information, see section *Entering the “Serial commands (outgoing)” [Serielle Befehle ausgehend] command guide*, page 33.



If the LED is to be controlled, e.g. by a higher-level system, proceed as follows:

- Click the “LED feedback” [LED-Feedback] option.

The “LED feedback” [LED-Feedback] screen is opened as follows.



LED ON/OFF/flashing
[LED an/aus/blinken]:

The input buffer of the serial interface is compared with the entries in the fields. If there is a match, the corresponding LED action is executed.

“Serial commands
(incoming)” [Serielle
Befehle (eingehend)]
command guide:

The serial commands can be set on this screen page. These commands are output via the COM 1 interface when the key is pressed.

Independent LED
control [LED
unabhängig steuern]

If this option is activated, the behavior of the LED is not linked to the contact type of the corresponding button, but to the commands from the “LED feedback” [LED-Feedback] tab.

- Activate the “Independent LED control” [LED unabhängig steuern] option.
- Enter the serial commands for the respective key in the corresponding fields (for more information, see page 33).

Removing a slave module

If you want to remove a slave module from the bus network, proceed as follows:

- ▶ Left-click the slave module to be deleted.

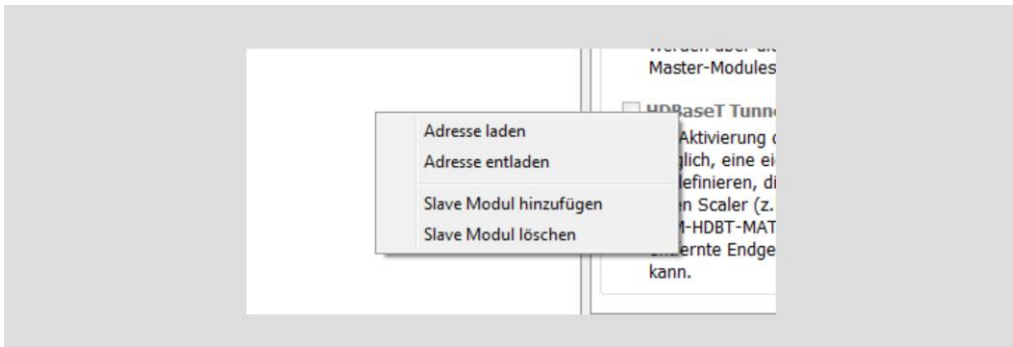
The selected keypad module is highlighted in color.

- ▶ Now right-click the selected slave module again.

The selection menu appears.

- ▶ Click the “Delete slave module” [Slave-Modul löschen] menu item.

The slave keypad module is removed from the bus network.



Commissioning keypad modules

Before commissioning keypad modules, proceed as follows:

- ▶ Make sure the right driver version is loaded. To be certain, check it in the Windows Device Manager.
- ▶ Make sure you have entered a complete configuration.

To commission the keypad modules, you must carry out the following activities:

- Establish a USB connection
- Transfer (write) the configuration to the keypad module
- Address the slave modules

Establishing a USB connection

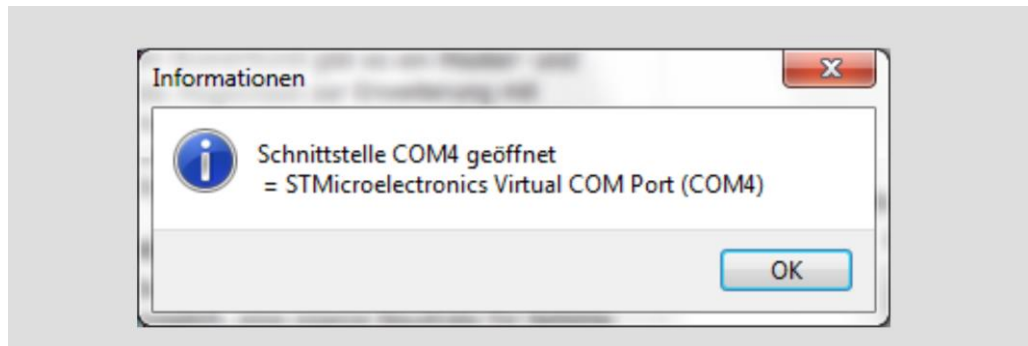
To establish a USB connection with the keypad module (standalone or master), proceed as follows.

- ▶ Connect the power supply unit to a power supply using the mains cable.

When the keypad module is supplied with power, the programming key flashes green.

- ▶ Connect the corresponding keypad module (standalone or master) to the computer via the USB port using the USB cable.
- ▶ If necessary, wait until the computer has recognized the keypad module.
- ▶ Click the "Search for available modules" [Nach verfügbaren Modulen suchen] button.

If a connected keypad module is found, the interface found is displayed and the connection is established. You will hear a signal tone. The following window is displayed:



The footer shows you the active connection: "Connected via COMx" [verbunden über COMx].

- ▶ If the connection is not established successfully, check the above points.
- ▶ Repeat the procedure.

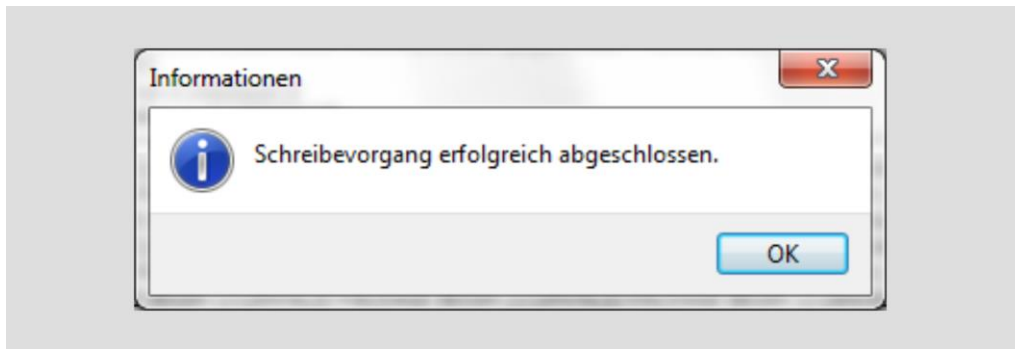
For more information, also see the *Troubleshooting* section, page 45.

Transferring (writing) the configuration to the keypad module

When you have completely created the configuration for a keypad module (standalone or master), you can transfer (write) it from the software to the keypad module. Proceed as follows:

- ▶ Make sure that the keypad module (standalone or master) is connected to the power supply.
- ▶ Click the “Write configuration” [Konfiguration schreiben] button.

The configuration is transferred and the following window is displayed:



- ▶ Briefly disconnect the keypad module from the power supply unit.

The keypad module restarts.

After the restart of the keypad module, the configuration is active.

Addressing slave modules

After the configuration has been successfully written to the master module and the master module has been restarted, you must address the slave modules. To address them, the configuration currently on the master module must be loaded into the software. To do so, proceed as follows:

- Reconnect the master module to the power supply unit.
- Click the "Search for available modules" [Nach verfügbaren Modulen suchen] button.
- Click the "Load configuration" [Konfiguration laden] button.

The configuration is now loaded in the software.

- First compare if the configuration in the master module corresponds to the configuration you have created.

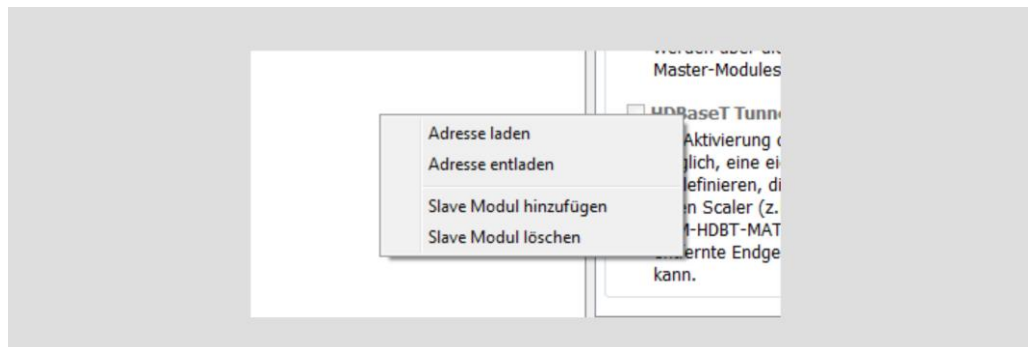
The slave modules must now be addressed.

- Make sure that the keypad modules in the bus network are connected correctly; (see page 23).
- Make sure the programming key flashes green for all slave modules.
- Now left-click the required slave module.

The desired slave module is selected and highlighted in blue.

- Now right-click it.

The following selection menu appears.



- Select the "Load address" [Adresse laden] menu item.

The programming keys of all slave modules in the bus network start flashing green quickly.

- Within five seconds, press the programming key of the required slave module (e.g. slave module 1, 2, 3 ... 15).

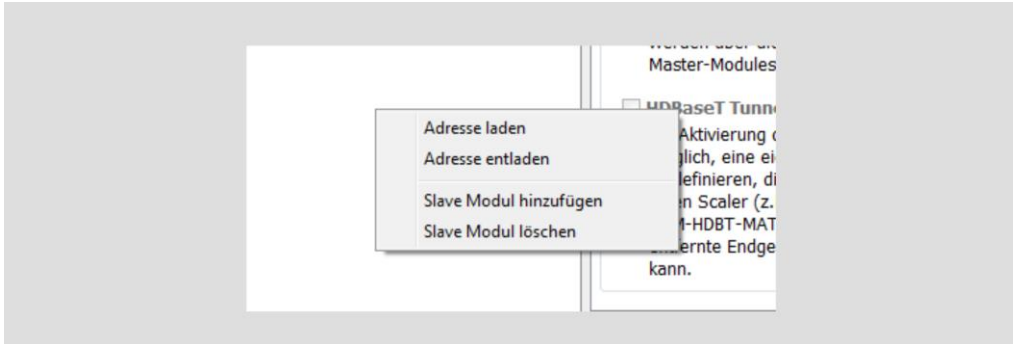
The address is now loaded in the slave module.

Deleting the address of a slave module

To delete the address of a slave module, proceed as follows:

- ▶ Make sure that the keypad modules in the bus network are correctly cabled (see page 23).
- ▶ Make sure the programming key flashes green for all modules.
- ▶ Now left-click the required slave module.
- ▶ The desired slave module is selected and highlighted in blue. .
- ▶ Now right-click the slave module.

The following selection menu appears.



- ▶ Select the “Unload address” [Adresse entladen] menu item.

The programming keys of all slave modules in the bus network start flashing green quickly.

- ▶ Within five seconds, press the programming key of the required slave module.

The address of the slave module is reset to “0” (standalone operation).

Concluding the configuration

If you have successfully completed the configuration of the keypad modules, proceed as follows:

- ▶ In standalone operation, connect one or two third-party media devices to the power supply unit via the plug-in screw terminals (COM 1 and COM 2).
- ▶ In bus network operation, connect one third-party media device to the power supply unit via the plug-in screw terminal (COM 1).
- ▶ Perform a function test depending on the configuration.

Troubleshooting

Problem	Possible cause	Remedy
The software cannot find an available module, even though it is displayed in the Windows Device Manager.	Keypad modules not connected to power supply unit	► Make sure that the keypad module is connected to the power supply unit and that the power supply unit is connected to the power supply.
	Incorrect driver present	► In the Windows Device Manager, make sure that the STMicroelectronics Virtual COM Port driver is used (see page 27).
	Command output in hexadecimal format not working as required	► Make sure that your entries in the command fields correspond to the specifications (see page 33).

Dismantling the product

To dismantle the product, proceed as follows:

- ▶ Disconnect the mains plug.
- ▶ Remove the network cable from the keypad module.
- ▶ To disassemble the product, proceed in the reverse order of installation.

For more information, see the *Installing the product* section as of page 18.

Disposing of the product

At the end of its service life, you must dispose of the product and its accessories in an environmentally friendly manner.

- ▶ Return the product to the manufacturer in its original packaging.
- ▶ Alternatively, dispose of the product with an approved waste disposal company.
- ▶ Observe and comply with the applicable regulations.
- ▶ In case of doubt, contact your city or municipal administration.



Warranty declarations

Sommer Cable GmbH grants a manufacturer's warranty of two years from the date of purchase (proof of purchase receipt) on all parts included in the scope of delivery within the scope of legal regulations. Improper handling or incorrect use shall exempt liability for defects.