Installation and Operating Instructions

CMC-TC Display Unit II

(Computer Multi Control-Top Concept Display Unit II)

DK 7320.491
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RITTAL

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Introduction

The stable flow of information and production is the 'lifeline' of an enterprise. Loss of data, failure of function and production cause extensive, and in many cases life-threatening, damage. Consequently, a declared company goal is to achieve the largest possible safety and reliability.
Rittal supports you: By means of universal competence in effective prevention, comprehensive safety, and centralised organisation, i.e. teamwork for IT safety and reliability. This results in an optimum combination of enclosure monitoring, server administration, and climate control components.

The solution for the enclosure monitoring is Rittal CMC-TC. This concept covers the complete physical monitoring of the enclosure. The system is rounded by its modular structure.

Description

The device is used for the local optical display of the Rittal CMC-TC system. The Display Unit II is connected to a processing unit and displays the current status of the CMC-TC. If an alarm is issued, the message will be displayed in the display and the integrated alarm beeper will sound. In addition, the current values, such as temperature, current, etc., will be displayed appropriately for the monitoring application.

Features

The Rittal CMC-TC Display Unit II is an independent device. It has three keys and a LCD display on the front side. The display has a resolution of 122 x 32 pixels. Pushbuttons also located on the front side are used for the navigation. The Enter key can be used to confirm the changed settings. To acknowledge the alarm, the C key should be pressed for three seconds.
The rear side has a RJ12 slot connected to the processing unit using the supplied interconnecting cable. An additional power pack is not required because the display unit receives its power from the processing unit.
The Display Unit II can be attached with the supplied Velcro fasteners to the inner side of the side panel, to the punched sections or to the component shelves of the enclosure. The unit can also be attached using the DK 7320.440 or DK 7320.450 mounting units.

⚠ Safety Notes

General notes

Prior to the installation and the commissioning, the installation and operating instructions must be read carefully and observed. The installation and operating instructions contain basic information for the installation, for commissioning, and operation of the Rittal CMC-TC. Rittal cannot accept liability for personal injury and material damage resulting from non-observance of the safety notes in the installation and operating instructions. It is essential to observe not only the general safety notes given in this chapter, but also the special safety notes given in other chapters. Prior to installation, the installing technician must ensure himself of the completeness of the supplied components (see Scope of Supply, page 6), including the required accessories.
In particular, the specified network cables must be used, refer to the technical specifications (page 7).

Working on the Rittal CMC-TC Display Unit II

The general applicable electrical regulations of the country in which the unit is installed and operated must be observed, as also the national regulations for the prevention of accidents and internal rules (work, operating, and safety regulations) of the operating company. Prior to working on the unit, it must be disconnected from the power supply and protected against being switched on again. Original accessories and accessories authorised by the manufacturer ensure safety. The use of other parts will void the liability for consequences resulting from their use. Repair work on the unit may be done only by Rittal or by authorised personnel.

Operational reliability

The operational reliability of the unit is guaranteed only for its intended use. The limits listed in the specifications (see Technical Specifications, page 7) must not be exceeded under any circumstances. This applies, in particular, to the permitted ambient temperature range and the permitted IP protection category. For applications with a higher specified IP protection category, the Rittal CMC-TC must be installed in an enclosure of a higher IP protection category that complies with the specified protection category. The operation of the CMC-TC system in direct contact with water, aggressive media, or inflammable gases and fumes is prohibited.

Maintenance

The Rittal CMC-TC Display Unit II is a maintenance-free system. The housing does not need to be opened for installation or during operation. The opening of the housing or the accessory components will void any warranty and liability claims.

Cleaning

The Rittal CMC-TC Display Unit II can be cleaned using a moist cloth. The use of aggressive substances, such as white spirit, acids, etc., can damage the system.

Disposal

Because the CMC-TC Display Unit II consists principally of the housing and the PCB, the unit must be disposed of through electronic waste recycling when it is no longer required.

Service and Service Address

If you have any questions concerning technical or other issues related to our product range, RITTAL will be pleased to provide the required support. You can also contact us at the following address.

RITTAL GmbH & Co. KG
PM IT-Service
Auf dem Stützelberg

D-35745 Herborn
Germany

Phone: +49 (0)2772/505-0

http://www.cmc-tc.com

E-mail: **info@rittal.de**

Note: Please always specify the item number in the reference line.

Further information and the current operating instructions for the Rittal CMC-TC can be downloaded from the CMC-TC homepage.

Scope of Supply

1 x CMC-TC Display Unit II
2 x self-adhesive Velcro tapes (90 mm x 15 mm)
1 x RJ12 interconnecting cable
1 x packaging

The following items are also required:

Accessories	Designation	Packs of	Required	DK Model no.
Power supply	24 V IEC power pack 100-230 VAC, UL approval, 3 A SELV	1	Yes, depending on the power supply	7320.425
	24 V IEC power pack 48 VDC	1		7320.435
Connection cable for power pack	IEC connector connection cable for Germany	1	Yes, once for the power pack	7200.210
	IEC connector connection cable for Great Britain	1		7200.211
	IEC connector connection cable for France/Belgium	1		7200.210
	IEC connector connection cable for Switzerland	1		7200.213
	IEC connector connection cable for USA/Canada FT1/VW1, UL approval	1		7200.214
	IEC connector and socket extension cable	1		7200.215
Installation	1 U mounting unit	1	Optional	7320.440
	1 U mounting module with strain relief	1		7320.450
Connection line	Supply connection cable to the CMC-TC system	1	Optional	7320.813
Control units	CMC-TC Processing Unit II	1	Yes	7320.100

Technical Specifications

Housing	Plastic covering with metal trim piece
Height	1 U, approx. 4.45 cm
Width	approx. 13.6 cm
Depth	approx. 12.9 cm
Weight	approx. 0.35 kg without packaging
Potential equalisation	Not required, because 24 VDC protective low voltage
Earthing	Not required, because 24 VDC protective low voltage
IP protection category	IP 40 to EN 60529
LED display	blue / white, 122 x 23 Pixels
Temperature range in operation	+5 ℃ to 45 ℃ / +41 ℉ to 113 ℉
Humidity range in operation	5% to 95% relative humidity, non-condensing
Storage temperature range	-20 ℃ to 60 ℃ / -4 ℉ to 140 ℉
Voltage connection:	
Power supply	1x, DC 24 V, max. current 3 A SELV
Fuses	Fine fuse: T 3 A, 250 V, UL approval
Power input	50 mA
Detector connection	1x, RJ12 sockets, shielded

Installation Instructions

The Rittal CMC-TC Display Unit II must be installed in an enclosure or housing system that provides additional protection from external influences. The cable lengths must not exceed the lengths given in the technical specifications in order to avoid losses due to unnecessary lengths of cables. Attention must be paid to maintaining the permitted ambient temperature and humidity ranges, as well as the IP protection category as required for the specific application. The appropriate information is contained in the technical specifications (page 7).
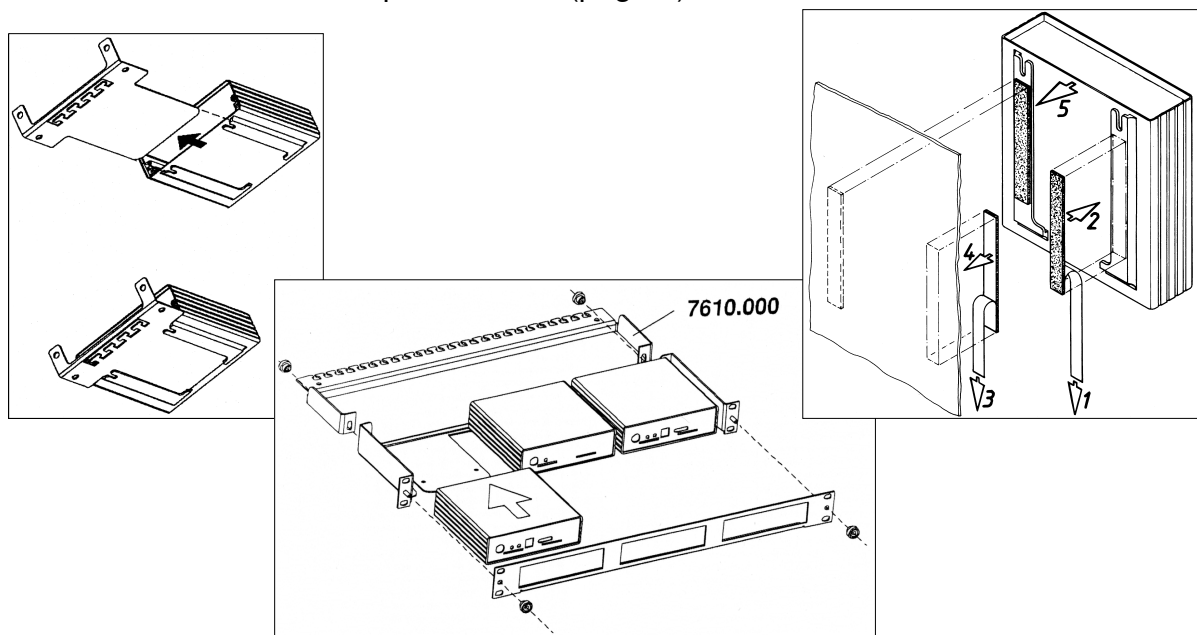
Electrical Connection

Attention:
Prior to making the electrical connection of the Rittal CMC-TC Display Unit II, the safety notes (page 4) must be observed.
The Rittal CMC-TC may be operated only with protective earth conductor. The PE conductor connection is made by plugging in the C13 IEC connection cable. This requires that the IEC connection cable is connected on the mains-side with the PE conductor.
The electric supply voltage and frequency must correspond to the rated values. Refer to the technical specifications (page 7).
Prior to working on the Rittal CMC-TC system, it must be made voltage-free and protected against being switched on again.

Power supply

The Display Unit II is supplied with power from the Processing Unit II using the RJ12 interconnecting cable. This means that you do not require any additional power pack.

Establishing the connection between the Processing Unit and Display Unit II

For this purpose, use the RJ12 interconnecting cable contained in the scope of supply. This cable is inserted in the RJ12 socket of the Display Unit II and to the IOIOI connection of the Processing Unit II as shown in the figure below.
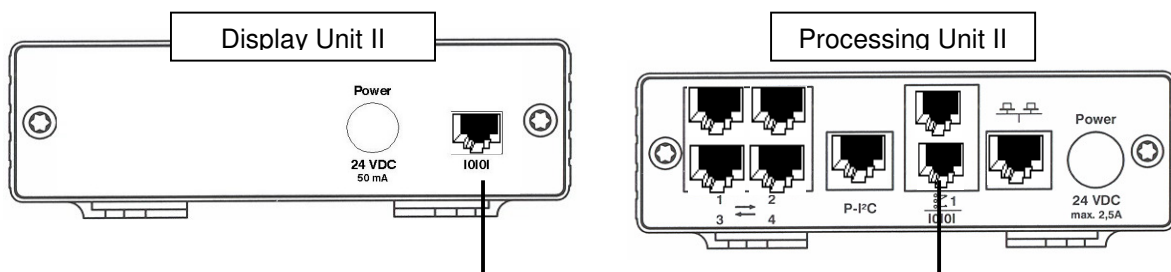
⚠️ **Note:**
Please note that you can only connect one unit to the IOIOI connection of the Processing Unit II. Namely, either one Display Unit II, ISDN unit or GSM unit.

Bedienung der Display Unit II

The display has a backlit LCD display with 122 x 23 pixel resolution. Three keys are provided for its operation.
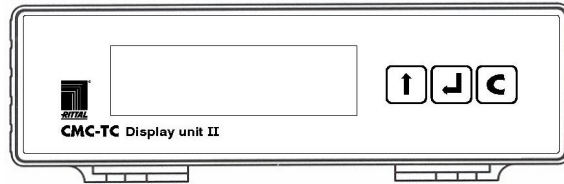
⬆	This key has the "Change" designation and is used to change or increment the values in the input menu.
↵	This key has the "Enter" designation and is used to start menus and to call and terminate input functions.
C	This key has the "Clear" designation and is used to acknowledge alarm messages. One of its functions is also to close the input menus. If you press the key for longer than 2 seconds, the "Configuration change" message on the processing unit can also be confirmed.

The display will be automatically recognised by the CMC-TC Processing Unit after it is switched on.
If no login is performed from the Hyperterminal interface within 60 seconds, a switch back to the display will be made.

Display during normal operation

The software version of the display unit will first be displayed when the display unit is connected to the operating voltage.

```
CMC-TC / DU V2.01
(c) 2006 b y R i t t a l
```
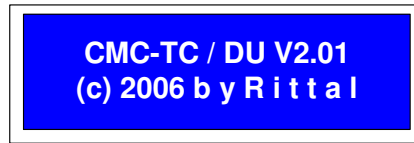
Once the display unit has been recognised by the processing unit, the following messages will be displayed.

```
CMC-TC-PU
-      main menu
```

All sensor values (analogue or digital) that have been selected in the menu will be displayed alternately. For example:
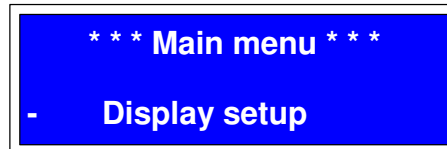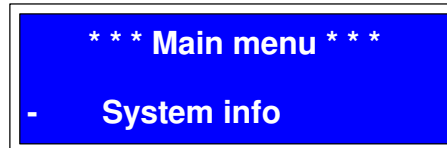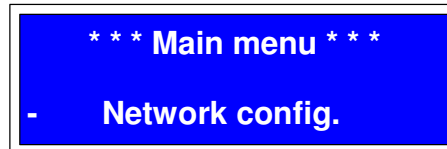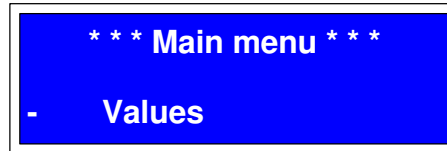
```
Temperatursensor
37 °C
```

```
Spannungswächter 1
215 V
```
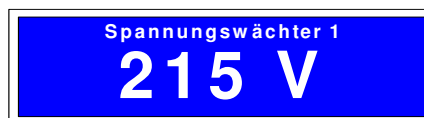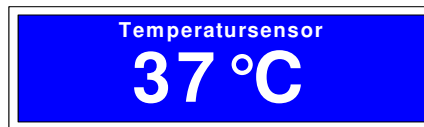
[↑] switches to the main menu.

Main menu

The following menu items are displayed successively in the main menu.
[↑] switches to the new menu item. [↵] selects the selected menu item.

```
* * * Main menu * * *

-      Values
```

```
* * * Main menu * * *

-      Network config.
```

```
* * * Main menu * * *

-      System info
```

```
* * * Main menu * * *

-      Display setup
```

```
* * * Main menu * * *

-      Logout display
```

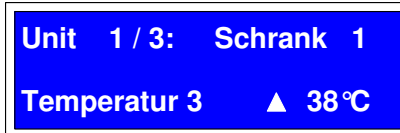[C] closes the menu and returns to normal operation.

"Values" submenu

This menu item can be used to display the status of all detectors and outputs connected to the processing unit.
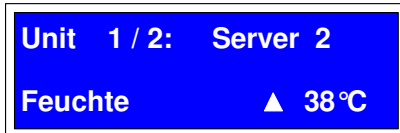
⬆ continues with the next detector or output.

The following information will be displayed for each detector or output
- Number of the detector unit and connection
- Name of the detector unit
- Detector name
- Measured value or status of the detector or output

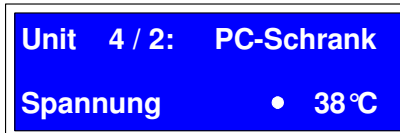| Unit   1 / 3:   Schrank   1 |
|---|
| Temperatur 3   ▲ 38℃ |

Unit   1 / 2:   Server 2
Feuchte   ▲ 38℃

The following icons prefixed to the measured value have the following meanings:

Icon ▲   : measured value larger than "Setpoint high"
Icon △   : measured value larger than "Setpoint warning"
Icon ▼   : measured value smaller than "Setpoint low"

⏎ preselects the associated detector or output for the display in normal operation. This is indicated by a dot in front of the measured value.

Unit   4 / 2:   PC-Schrank
Spannung   ● 38℃

C closes the menu and returns to the main menu.

"Network Configuration" submenu

This submenu is used to make the network settings of the Ethernet interface. These settings are required for commissioning the CMC-TC processing unit. The following settings can be made.

```
┌─────────────────────────────┐
│        Edit  IP  address     │
│                              │
│     1 3 0 . 0 0 0 . 0 0 2 . 2 2 0 │
└─────────────────────────────┘
```

```
┌─────────────────────────────┐
│         Edit   Netmask       │
│                              │
│     2 5 5 . 2 5 5 . 0 0 0 . 0 0 0 │
└─────────────────────────────┘
```

```
┌─────────────────────────────┐
│        Gateway  address      │
│                              │
│     0 0 0 . 0 0 0 . 0 0 0 . 0 0 0 │
└─────────────────────────────┘
```

```
┌─────────────────────────────┐
│         Enable  DHCP         │
│                              │
│        enable  /  disable    │
└─────────────────────────────┘
```

[↑] selects the next subitem. [↵] starts the input of the selected menu item. If the input has been started, the first octet of the IP address (or subnet mask or gateway) flashes. [↑] sets this octet between 0 – 255. [↵] confirms the setting and switches to the next octet. Once all octets have been entered, [↵] closes the input. [↵] switches the DHCP setting between "disable" and "enable". [C] closes the menu and returns to the main menu.

Warning: If a network setting has been changed, a reboot of the Processing Unit will be performed in this case and the new network settings will be accepted.

"System Information" submenu

The following information for the CMC-TC Processing Unit can be displayed in this submenu.

```
┌─────────────────────────────┐
│  HW :  V3.01   SW :  V2.15  │
│                             │
│  Serialnr . :   1 2 6 4 7   │
└─────────────────────────────┘

┌─────────────────────────────┐
│       Systemname :          │
│                             │
│       CMC-TC PU II          │
└─────────────────────────────┘

┌─────────────────────────────┐
│      Systemlocation :       │
│                             │
│       Rittal Herborn        │
└─────────────────────────────┘

┌─────────────────────────────┐
│      Systemcontact :        │
│                             │
│  Administrator              │
└─────────────────────────────┘
```

⬆ scrolls the display information. The values for "System name", "System location" and "System contact" can be entered from the terminal menu or the web browser. C closes the menu and returns to the main menu.

Untermenü „Display Setup"

The following settings for the display unit can be made in this submenu.

```
        Alarm  beeper   ?

        enable  /  disable
```

This setting enables the internal beeper in the display unit. This means an acoustical signal will be sounded should an alarm be issued.

```
        LED  backlight  ?

        off  /  Alarm  /  on
```
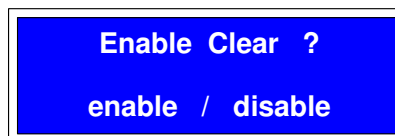
This setting specifies the backlight function.
Off: Switched off in normal operation; switched on when the key is pressed
Alarm: Flashing if an alarm is issued; switched on when the key is pressed
On: Always activated

```
        Enable  Clear   ?

        enable  /  disable
```

Releases the [C] key in an alarm situation, i.e. if the acoustical alarm is active, it can be cleared with the [C] key.

```
        L E D  brightness   ?

               0 8
```
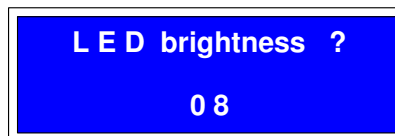
This function sets the brightness of the backlighting:
"0"   Background blue; text white (dark)
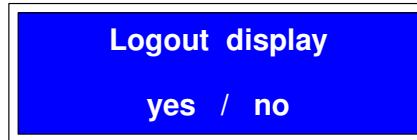"7"   Background blue; text white (bright)
"8"   Background white; text blue (dark)
"15"   Background white; text blue (bright)

[↵] selects the next subitem. [↑] changes the setting of the selected menu item.
[C] closes the menu and returns to the main menu.

"Logout Display" submenu (only applies to Processing Unit I)

<div style="text-align: center;">

Logout display

yes / no

</div>

⬆️ switches between "yes" and "no". If the "yes" setting is confirmed with ↵, a logout will be performed and confirmed with the following message.

<div style="text-align: center;">
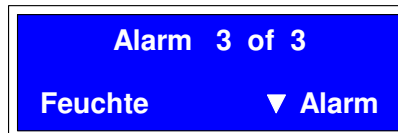
logged out . . .

</div>
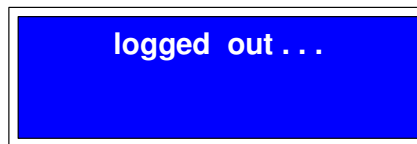
C closes the menu and returns to the main menu.

If no login is performed from the Hyperterminal interface within 60 seconds, a switch back to the display will be made.
If a login is performed on the display unit, ensure that a logout is made before the Hyperterminal is closed. After the logout, an automatic return will be made to the display unit. Alternatively, a "Console timeout" can also be entered so that a logout will be performed automatically.

Alarm displays

If one or more alarm messages are present, they will be displayed on the display as follows. ⏎ displays the individual alarm messages successively.

```
┌─────────────────────────────┐
│       Alarm  1  of  3       │
│                             │
│   Temperatur 1     ▼12℃     │
└─────────────────────────────┘
```

```
┌─────────────────────────────┐
│       Alarm   2  of  3      │
│                             │
│ Bewegungsmeld      Alarm    │
└─────────────────────────────┘
```

```
┌─────────────────────────────┐
│       Alarm   3  of  3      │
│                             │
│  Feuchte          ▼ Alarm   │
└─────────────────────────────┘
```
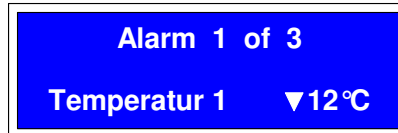
The maximum number of alarm messages is displayed in the top line. The meaning of the icon prefixed to the measured values is the same as that used for the "Values" display (also refer the Values Submenu section).
If the alarm beeper has been enabled, the beeper of the display unit will be activated for each new occurrence of an error.   C acknowledges the alarm and resets the beeper.