



CMC-TC ISDN Unit

DK 7320.830

Installation and operating instructions

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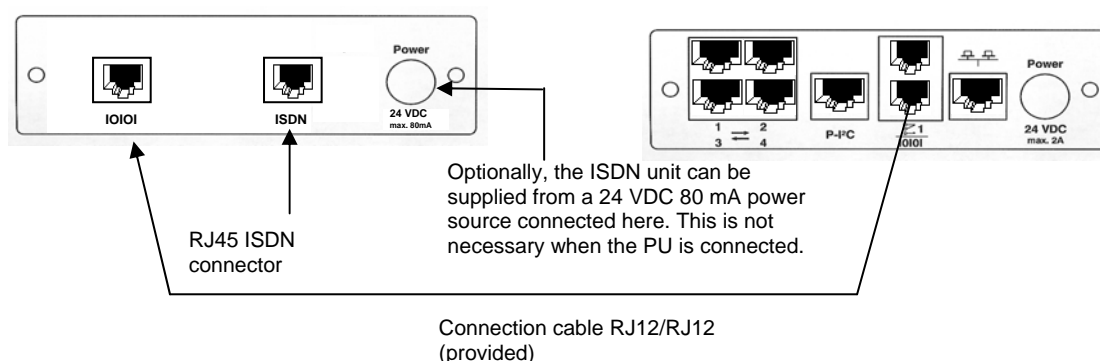
1. Description

Note:

For reasons of clarity these operating instructions cannot contain all detailed information, nor can they take into account every conceivable case of installation, operation and maintenance. Specifications subject to alterations at any time. The German wording shall apply in cases of doubt.

Accessories:
ISDN Unit 7320.830

Processing Unit:
PU 7320.100 as of software
version 1.21



The CMC-TC ISDN unit can be used to configure a redundant transmission path or, when no network infrastructure is available, for relaying alarm messages. The alarm signal is sent as SMS. The ISDN unit is connected to the serial interface on the processing unit 7320.100. The power supply is likewise achieved via the connection cable. The device functions only with ISDN (see "ISDN access – requirements"). Up to four destination call numbers may be set and allocated to the various events.

This variant of sending alarm messages can also be used in countries permitting SMS in fixed networks. Moreover, SMS can now be used over the fixed network to control switching outputs.

Power supply is via the processing unit.

Other functions, where offered by the provider:

- Fax
- e-mail:
- Voice mail

ISDN access – requirements:

- DSS1 (Euro-ISDN)
- Point-to-multipoint configuration (ISDN S₀ bus)

These minimum requirements must also be fulfilled when the ISDN unit is connected to a private branch exchange.

Important information:

- **NOTICE** Only one of the tools "ISDN unit", "GSM unit", or "display unit" may be connected to a PU.
- **NOTICE When the ISDN unit is used, the front interface (RS-232) on the processing unit is deactivated (e.g. Hyperterminal access). The system can then be configured only via Telnet or the web.**
- **When Hyperterminal was used before the ISDN unit is installed, the user must have logged off correctly.**
- **NOTICE** When the system is used outside of Germany, it must be reconfigured to the new circumstances over a telephone link. Our Centre will be pleased to assist you with further information.
- Tel.: +49 (0)2772 505 – 0
- Tel.: +49 (0)2772 505 – 2578
- **NOTICE** When more than sixteen unsent messages have accumulated in the SMS memory, all new outgoing messages will be deleted. These deleted messages can be viewed in the processing unit via the web or FTP.

Also required:

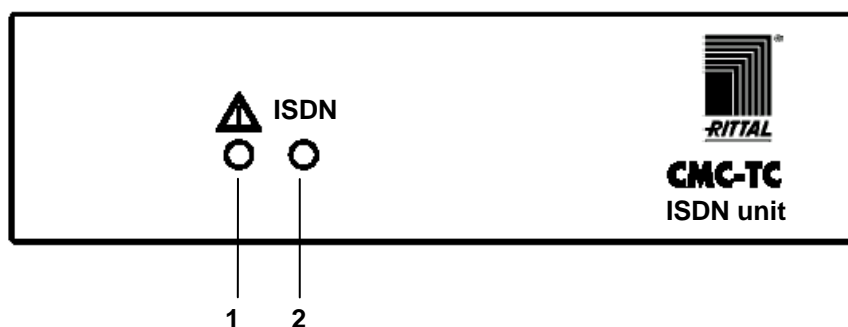
- Processing Unit 7320.100

2. Conditions of use / safety-related guidelines

- The CMC-TC ISDN unit must be used exclusively for the Rittal CMC-TC system.
- The following documents apply: the operating instructions / safety-related guidelines for the processing unit (7320.100) and these product-specific instructions. In particular, the conditions of use, safety-related guidelines and warranties listed in these documents must be observed.
- It is imperative that all leads are connected separately from cables carrying the supply voltage.
- The CMC-TC ISDN unit must be used exclusively within the specified environmental limits.
- The CMC-TC ISDN unit must not be opened. The unit does not contain any parts that need servicing.
- Before connecting the CMC-TC ISDN unit, make sure that it is suitable for the processing unit.
- Safety devices must not be deactivated.
- It is imperative that the CMC-TC ISDN unit does not come into direct contact with water (e.g. dew), oil, or aggressive substances.
- The unit must not be operated in environments subject to flammable gases or vapours. The unit must be installed in an enclosure/rack to protect it from water and dust.
- There must be no voltage across the CMC-TC system when the CMC-TC ISDN unit is connected to the PU.
- The CMC-TC ISDN unit must be properly installed in accordance with the separate installation instructions.

- The conditions of use / safety-related guidelines listed in the instructions must be observed.
- All warranty claims on the grounds of damage become void when this damage is incurred by failure to observe these instructions / conditions of use or the instructions for the processing unit 7320.100. Rittal assumes no liability for consequential damage!
- Rittal assumes no liability for any damage to property or bodily injury incurred by improper use or failure to observe the safety-related guidelines. Every warranty claim becomes void in such cases!

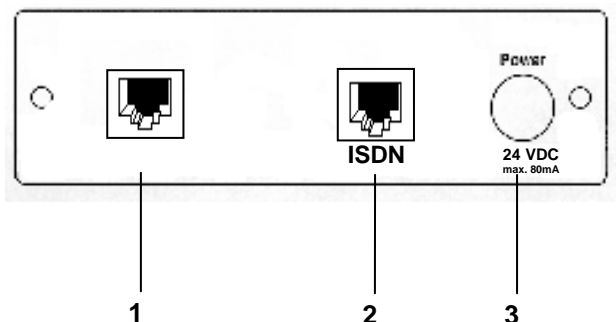
3. Description CMC-TC ISDN Unit 7320.830 front



The red/green duo LED (1) indicates the current status of the ISDN unit.
The green LED (2) indicates the connection status of the ISDN unit.

LED	Status	Meaning
1 (status LED red / green)	red	The ISDN unit is being initialised
	orange	The ISDN unit is sending or receiving an SMS
	green	The ISDN unit is ready
2 (ISDN LED green)	off	After activation the ISDN unit still has no ISDN access (no terminal endpoint identifier / TEI assigned)
	brief flash	The ISDN connector is in the nonoperative state (TEI assigned, Layer 1 of the ISDN connector is deactivated)
	slowly flashing ($\frac{1}{4}$ s ON, $\frac{3}{4}$ s OFF)	The ISDN connector is activated, but the ISDN unit has not connected (Layer 1 activated, Layer 2 pending)
	slowly flashing ($\frac{1}{2}$ s ON, $\frac{1}{2}$ s OFF)	The ISDN connector is activated, but the ISDN unit has not connected (Layer 1 activated and Layer 2 connected)
	quickly flashing (six times a second)	The ISDN unit is transferring an SMS or data

4. Description CMC-TC ISDN Unit 7320.830 rear



- 1 The provided RJ12/RJ12 connecting lead connects the ISDN unit to this RJ12 connector (RS-232 interface) on the processing unit. This connecting lead functions as the 24 VDC supply and transfers data to and from the processing unit.
- 2 The RJ45 ISDN connector is designed for connection to an ISDN connector.
- 3 The 24 VDC voltage connector is designed for future developments of the CMC-TC system and is not needed for running the processing unit.

5. Technical specifications

Maximum power consumption: 80 mA

Maximum connecting lead length: 4 m (processing unit to ISDN unit)

Rated voltage 24 VDC with supply link from the processing unit

Shock resistance 1 g

Operating temperature range: +5° C to +45° C

Protection category. IP 40

ISDN connector: DSS1 (Euro ISDN), multi-point interface

6. Commissioning

Warning: The following description applies to **software version 1.21** and higher for the processing unit (DK 7320.100) needed to operate the ISDN unit.

Commissioning

When several SMS terminals are operated on an ISDN bus, each of these SMS terminals (and therefore every ISDN unit as well) must be assigned its own call number for sending and receiving SMSs.

Note: The following must be observed before transferring SMSs over the fixed network.

(This is necessary only when an SMS command is to be sent to the ISDN unit. **Receiving SMS "alarm" messages does not require registration.**)

Registering at a network provider requires that an SMS is sent once only to this provider (for example for Deutsche Telekom: the text "ANMELD" is sent to the call number "8888"). See the section "**ISDN command**" below.

The following data must be entered before the ISDN unit is connected to the processing unit.

Mandatory data:

PIN GSM-Card	1471
Service Center GSM	+491710760000
ISDN MSN	+49/2772/570126
ISDN Command	
Unit Messages	<input checked="" type="radio"/> No <input type="radio"/> Yes
Phone Number 1	027725052490
Phone Number 2	01603683099
Phone Number 3	02772570126
Phone Number 4	
SMS-Info	ISDN unit o.k.

Accept Reset

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PIN GSM-Card

This field is not needed to configure the ISDN unit.

Service Centre GSM:

This field is not needed to configure the ISDN unit.

ISDN MSN:

The MSN (multiple subscriber number) is assigned by the network provider.

Also the country code and the local area code must be entered (separated by "/").

Example: +49/2772/570126

ISDN Command:

Before an SMS can be sent over the fixed network, the ISDN unit must be registered at an SMS centre. (This is necessary only when an SMS command is to be sent to the ISDN unit. **Receiving SMS "alarm" messages does not require registration.**)

The Deutsche Telekom SMS Centre requires an SMS containing the text "ANMELD" to be sent to the number 8888.

Enter "**8888 ANMELD**" in the "ISDN Command" field. The ISDN unit then sends this message to the SMS centre.

When the ISDN unit is not to receive SMS messages any longer or is to be operated at another connector, the "8888 ABMELD" command sent to Deutsche Telekom cancels the registration.

Unit Messages:

When this option is enabled, unit messages are also sent as SMSs (e.g. timeout, configuration change, etc.). This SMS is sent to all destination numbers.

SMS Phone Number

Here you can enter the destination call numbers that are to receive SMS messages sent by the ISDN unit.

Prefixing the destination call number by "F" (the letter F followed by a blank) causes the SMS to be sent over the fixed network.

Example: F 027725052578

When the destination call number is entered **without** the prefix "F", the SMS will be sent to an SMS centre in accordance with the respective mobile network protocol.

Example: 027725052578

The costs differ depending on whether an SMS is sent over the fixed network or via mobile network operators.

SMS-Info:

This shows the current status.

The ISDN unit can have the following statuses.

ISDN unit found	ISDN unit was found.
ISDN unit o.k.	ISDN unit was recognised and initialised, ISDN connector is OK.
MSN missing	No MSN was entered.
ISDN no Line	No ISDN network available (e.g. ISDN cable not connected).
no SMS unit found	No SMS unit connected.
SMS unit timeout	SMS unit disconnected from processing unit.
Receive SMS	SMS received.

Every sensor and every output can be assigned a list of destination call numbers that an SMS is sent to (every status change leads to an SMS message). This list can be created via the menu item "Sensor Units > Unit xyz > Sensor abc > Send SMS". Here you can enter a string consisting of a list of call numbers separated by the character "&" (e.g. "1&4" sends an SMS to the destination call numbers 1 and 4 when there is a change to the affected sensor status).

These entries can also be edited and readjusted after the first start-up.

Notes on first start-up

The ISDN unit must not be connected until all details have been stored in the PU. Please switch OFF the PU, connect the ISDN unit, and switch ON the power supply. The CMC-TC/PU software polls the interface regularly for the presence of a device. It may take up to a minute until the ISDN unit is found.

First, the ISDN unit is initialised (status LED lights up red). When the ISDN unit connects to the network for the first time, the ISDN LED flashes green (cf page 4).

Once the ISDN unit has been initialised, the system continually checks whether there has been a change to a sensor or output status. When this sensor has been assigned one or more destination call numbers, an SMS will be sent to these target addresses.

In addition, the system checks whether an SMS has been received. On detection of an SMS this is examined and, when the syntax is correct, the corresponding action initiated. The system also checks whether the sender's phone number is on the list of destination call numbers. The action is initiated only when this is the case.

The ISDN connection to the switching centre is constantly checked. In the event of an error, the status LED lights up red.

7. Settings

7.1 Via Telnet

The menu "General configuration / SMS configuration" lets you enter the following values needed for the ISDN unit.

ISDN MSN:

The MSN (multiple subscriber number) is assigned by the network provider. Also the country code and the local area code must be entered (separated by "/").
Example: +49/2772/570126

ISDN Command:

Before an SMS can be sent over the fixed network, the ISDN unit must be registered at an SMS centre. (This is necessary only when an SMS command is to be sent to the ISDN unit. **Receiving SMS "alarm" messages does not require registration.**)

The Deutsche Telekom SMS Centre requires an SMS containing the text "ANMELD" to be sent to the number 8888.

Enter "**8888 ANMELD**" in the "ISDN Command" field. The ISDN unit then sends this message to the SMS centre.

The "8888 ABMELD" command cancels the registration.

SMS Unit Messages:

When this option is enabled, unit messages are also sent as SMSs (e.g. timeout, configuration change, etc.). This SMS is sent to all destination numbers.

SMS Phone Number

Here you can enter the destination call numbers that are to receive SMS messages sent by the ISDN unit.

Prefixing the destination call number by "F" (the letter F followed by a blank) causes the SMS to be sent over the fixed network.

Example: F 027725052578

When the destination call number is entered **without** the prefix "F", the SMS will be sent to an SMS centre in accordance with the respective mobile network protocol.

Example: 027725052578

The costs differ depending on whether an SMS is sent over the fixed network or via mobile network operators.

```

Telnet - 130.0.2.218
Verbinden Bearbeiten Terminal ?

SMS Configuration

1 PIN GSH-Card >1234<
2 SMS Service Number >+491710760000<
3 ISDN MSN >+49/2772/570126<
4 ISDN Command ><
> 5 SMS upon Unit Messages < >Yes<
6 SMS Phone Numbers

ESC=End

Send SMS upon Unit Messages (Timeout..)?

```

Fig. 1 Telnet configuration of ISDN parameters

```

Telnet - 130.0.2.218
Verbinden Bearbeiten Terminal ?

CNC Info

IP Address : 130.0.2.218 Subnetmask : 255.255.0.0
Router/Gateway : 0.0.0.0 MAC Address : 0010F0300002

Read Community : public Write Community: public

SysName : CNC TC Test
SysContact : info@rittal.de
SysLocation : FuE-IT Herborn

Software Version: V1.21 Hardware Version: V01.01
Firmware : V1.02
Serial Number : 00002 Manufacture Date: 7/2004

CNC-Info : OK
SMS-Info : ISDN unit o.k.

ESC=End

```

Fig. 2 View of ISDN info

The Telnet "Info Page" function lets you view the status of the ISDN unit (view: SMS-Info). The ISDN unit can adopt the following states:

- | | |
|----------------------------|---|
| - ISDN unit found | ISDN unit was found. |
| - ISDN unit o.k. | ISDN unit was recognised and initialised, ISDN network is OK. |
| - MSN missing | An MSN has not been entered (see section "Commissioning"). |
| - ISDN no Line | There is no ISDN network available (e.g. ISDN cable not connected). |
| - no SMS unit found | No SMS unit connected. |
| - SMS unit timeout | SMS unit disconnected from processing unit. |
| - Receive SMS | SMS received. |

```

Telnet - 190.0.2.218
Verbinden Bearbeiten Terminal ?

Temperature Sensor

1 Status >OK<
2 Value >24 C<
3 Setpoint High >65 C<
4 Setpoint Fan >35 C<
5 Setpoint Low >10 C<
6 Message Text >Temperature Sensor<
7 Alarm Relay >Enabled<
8 Beeper >Enabled<
9 Trap Receiver 1 >Enabled<
A Trap Receiver 2 >Enabled<
B Trap Receiver 3 >Enabled<
C Trap Receiver 4/Log >Enabled<
D Alarm Reset >Auto<
> E Send SMS < >1&3<

ESC=End
Index of Phone List, e.g. 1&2&4

```

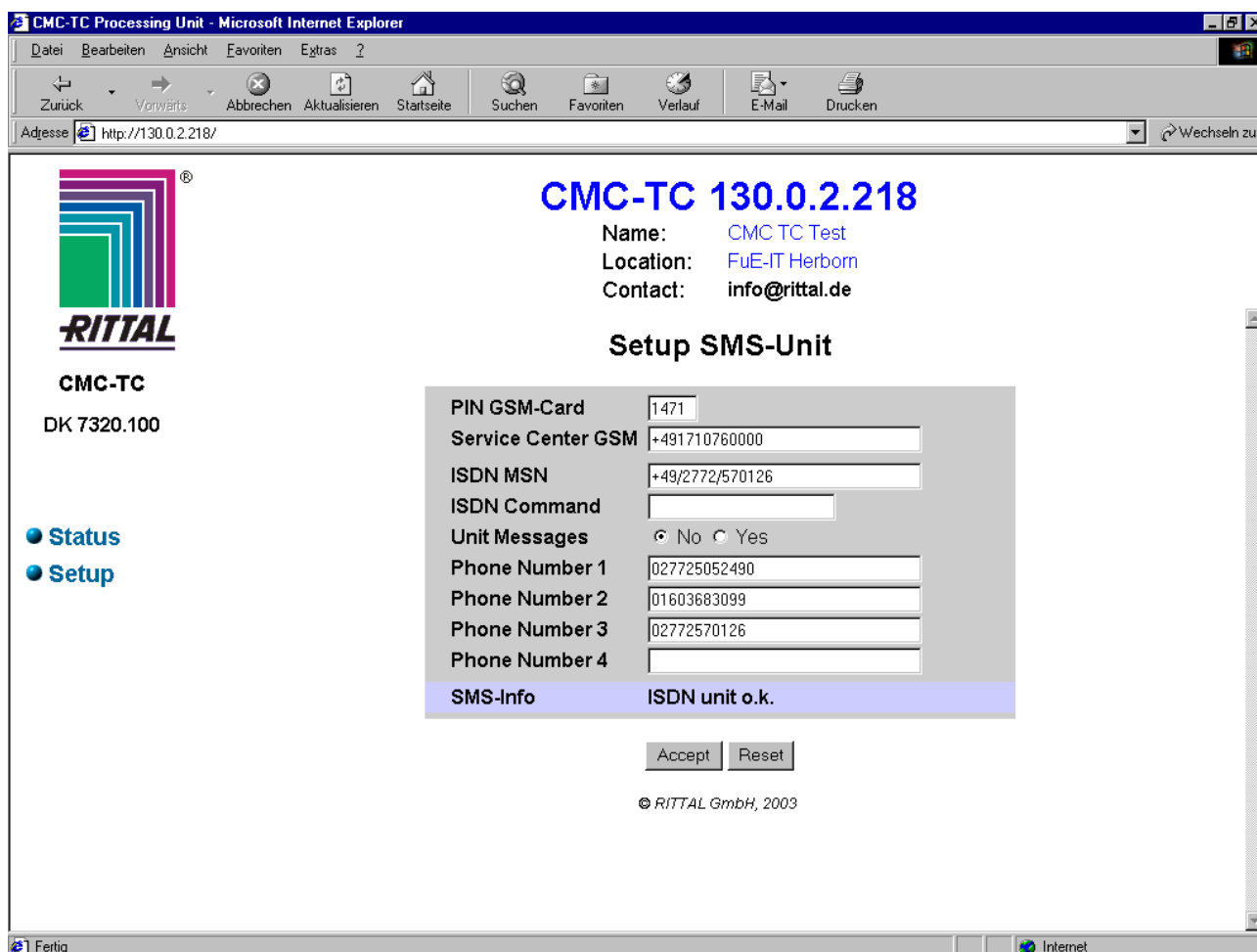
Fig. 3 Telnet configuration of sensor values

Every sensor or actuator can be configured to send one or more SMS messages when its status changes.

The relevant menu item is "Send SMS". The above example specifies that an SMS is to be sent to the destination call numbers 1 and 3. The destination call numbers must be separated with the character "&" and must not contain blanks.

7.2 Via browser

The menu “SMS Configuration” lets you configure the system, as described in the last section, via your web browser as well. The line “SMS-Info” shows the current status (see section “Via Telnet”).



CMC-TC 130.0.2.218

Name: CMC TC Test
Location: FuE-IT Herborn
Contact: info@rittal.de

Setup SMS-Unit

CMC-TC
DK 7320.100

● Status
● Setup

PIN GSM-Card	1471
Service Center GSM	+491710760000
ISDN MSN	+49/2772/570126
ISDN Command	
Unit Messages	<input checked="" type="radio"/> No <input type="radio"/> Yes
Phone Number 1	027725052490
Phone Number 2	01603683099
Phone Number 3	02772570126
Phone Number 4	
SMS-Info	ISDN unit o.k.

Accept Reset

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Fig. 4 Web browser configuration of ISDN unit

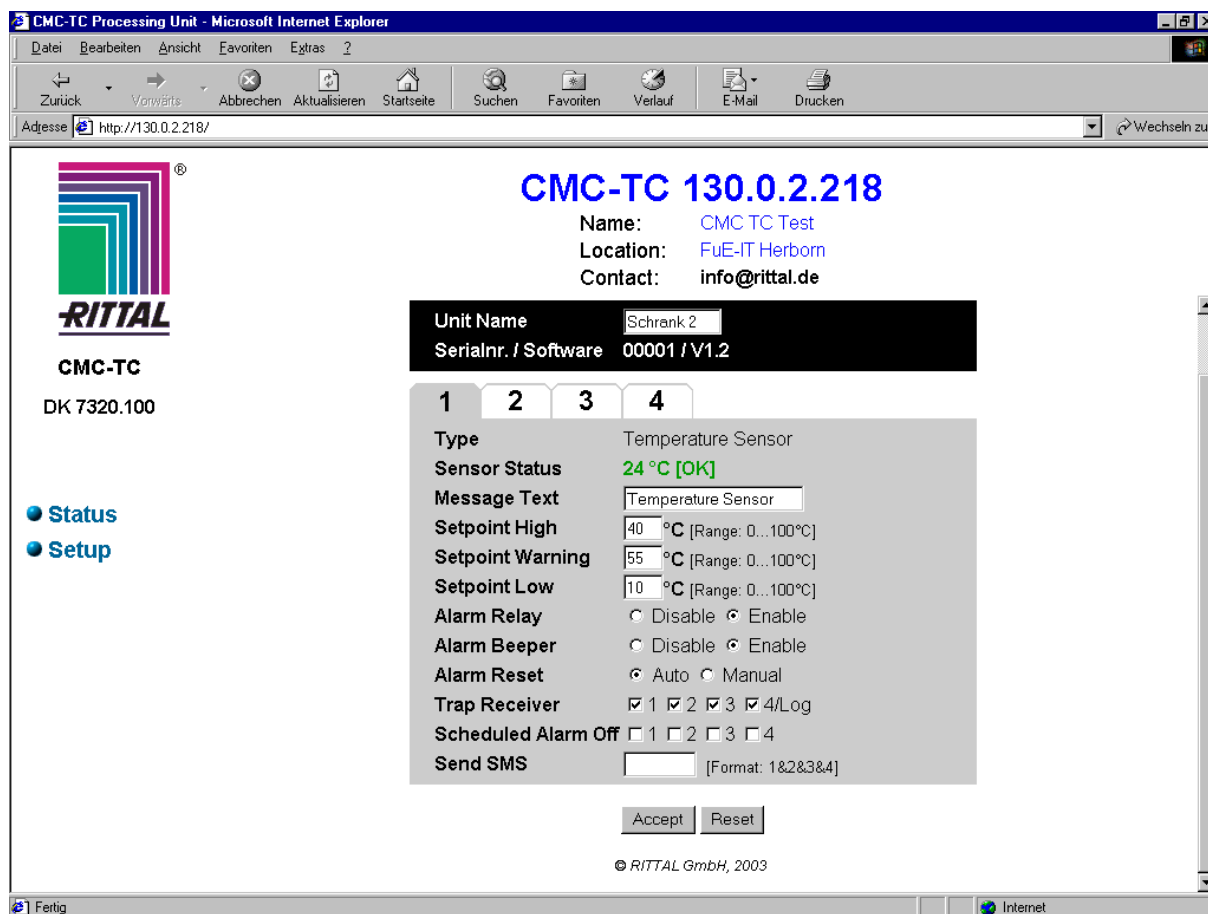


Fig. 5 Web browser configuration of sensors

This browser window lets you configure the destination call number(s) an SMS is to be sent to on a status change (the input format is 1&2&3&4 for all four destination call numbers).

8. SMS mode

8.1 Sending SMSs

Every sensor and output can be configured to send an SMS when its status changes. The sensors and outputs can be configured via the Telnet menu ("Sensor Units > Unit xyz > Sensor abc > Send SMS") or your web browser. Every sensor / output must be assigned a specially formatted string, e.g. 1&2&4 means that the SMS is sent to the destination call numbers 1, 2, and 4.

The sent SMS has the following structure:

```
date/time
system ID and name
unit name and number
sensor/output name
status report (e.g. "Alarm too high/low", etc.)
```

Example:

28/02/2002 14:33 'CMC-TC Development Enclosure 1 (01): Temperature sensor: too high'

This SMS is sent to one or more destination call numbers. These can be for mobile phones or any fixed network subscribers. When no SMS terminal has been registered at the fixed network connector, a special service (D1-Service) provides a digital voice to read out the SMS by telephone.

Please note that the processing unit can store maximum sixteen unsent SMS messages. SMS messages are sent in the order they are received. Bear in mind that each SMS takes about fifteen seconds to send. When more than sixteen SMS messages are pending, all further outgoing SMS messages will be deleted.

8.2 Receiving SMSs

When sending an SMS from a mobile phone to the ISDN unit, note the following:

The SMS service centre entered in the mobile phone must know whether an SMS terminal has been registered for the destination call number. This is the case

- when the mobile network provider is also the ISDN network provider (e.g. T-Mobile and Deutsche Telekom)
- for providers operating both an SMS service centre in the GSM network and a fixed network SMS centre (e.g. AnnyWay / Dr. Materna)

This is generally not the case for mobile communications providers that, in addition to the network provider, operate their own SMS service centre (e.g. Debitel).

When the SMS service centre does not know that the SMS is to be sent to an SMS terminal in the fixed network, the SMS is delivered as voice mail and cannot therefore be evaluated by the ISDN unit.

Further details can be taken from the following table.

The ISDN unit can send SMS messages to mobile phones independently of the mobile network and provider.

Sending SMSs from a mobile phone to the ISDN unit

	Mobile phone in T-D1 network, contract with network provider	Mobile phone in T-D1 network, contract with service provider	Mobile phone in Vodafone-D2 network	Mobile phone in e-Plus network	Mobile phone in O2 network
Fixed network access registered at Deutsche Telekom AG, SMS terminal (ISDN unit) at Deutsche Telekom	Use default SMS Centre (+491710760000)	Enter T-D1 SMS Centre (+491710760000) in mobile phone	Only voice mail is possible	Currently only voice mail is possible	Currently only voice mail is possible
* Fixed network access registered at Deutsche Telekom AG or other fixed network provider, SMS terminal (ISDN unit) at AnnyWay	* Enter AnnyWay SMS Centre (+491722270333) in mobile phone	* Enter AnnyWay SMS Centre (+491722270333) in mobile phone	* Send an SMS once from the ISDN unit to the mobile phone * Enter for AnnyWay SMS Centre (+491722270333) in mobile phone	Currently only voice mail is possible	Currently only voice mail is possible

* **NOTICE:** When the system is to use AnnyWay, the system must be reconfigured over a telephone link. Our Centre will be pleased to assist you with further information.

Tel.: +49 (0)2772 505 – 0

Tel.: +49 (0)2772 505 – 2578

The processing unit constantly checks whether the ISDN unit has received an SMS. If so, the SMS is analysed and the corresponding action initiated. The SMS must have a certain format if the CMC-TC is to act on it. In addition, the sender's telephone number is compared with the four numbers on the target telephone list. The command is executed only when the **sender's number** is on the list.

Note:

For safety reasons, the fan cannot be deactivated by SMS.

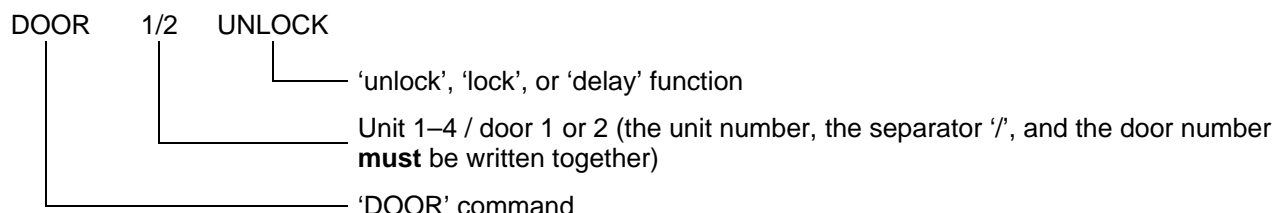
The "Fan On" command remains unchanged.

The CMC-TC PU recognises the following commands:

a) Door control:

This initiates the 'unlock', 'lock', and 'delay' functions.

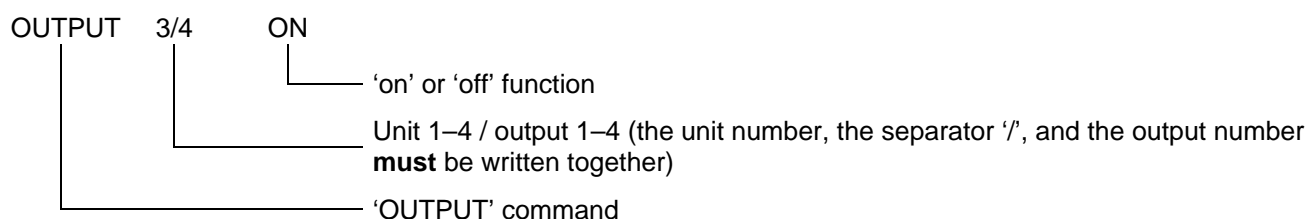
Example SMS structure (the following command opens door 2 on access unit 1 at port 1 of the PU).



Commands are case-insensitive. Single words can be separated with blanks (with the exception of 'unit/door').

b) Outputs (universal output / power switch)

The CMC-TC outputs can be activated and deactivated with the 'on' and 'off' functions. Example SMS structure (the following command switches ON output 4 of IO unit 3 at port 3 of the PU):

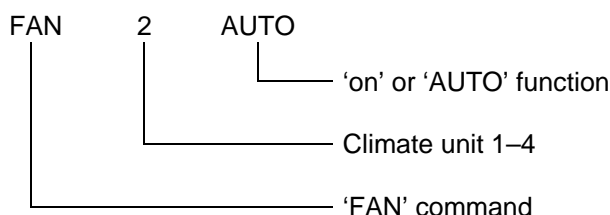


Commands are case-insensitive. Single words can be separated with blanks (with the exception of 'unit/output').

c) Fan control:

The fan of a climate unit can be controlled with the 'on' and 'auto' functions.

Example SMS structure (the following command switches the climate unit fan at port 2 of the PU to auto fan control by the climate unit).



Commands are case-insensitive. Single words can be separated with blanks.

Note:

For safety reasons, the fan cannot be deactivated by SMS.

d) Resetting the alarm:

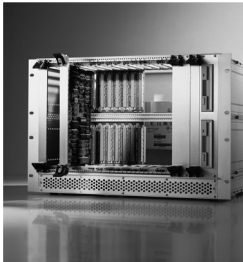
The 'CLEAR' command can be used to confirm a pending alarm. Commands are case-insensitive.



Schaltschrank-Systeme
Industrial Enclosures
Coffrets et armoires électriques
Kastsystemen
Apparatskåpssystem
Armadi per quadri di comando
Sistemas de armarios
インダストリアル エンクロージャー



Stromverteilung
Power Distribution
Distribution de courant
Stroomverdeling
Strömfördelning
Distribuzione di corrente
Distribución de corriente
分電・配電システム



Elektronik-Aufbau-Systeme
Electronic Packaging
Electronique
Electronic Packaging Systems
Electronic Packaging
Contenitori per elettronica
Sistemas para la electrónica
エレクトロニクス パッケージシステム



System-Klimatisierung
System Climate Control
Climatisation
Systeemklimatisering
Systemklimatisering
Soluzioni di climatizzazione
Climatización de sistemas
温度管理システム



IT-Solutions
IT Solutions
Solutions IT
IT-Solutions
IT-lösningar
Soluzioni per IT
Soluciones TI
ITソリューション



Communication Systems
Communication Systems
Armoires outdoor
Outdoor-behuizingen
Communication Systems
Soluzioni outdoor
Sistemas de comunicación
コミュニケーションシステム