BA01387R/09/EN/02.22-00
71601912
2022-12-22
Valid as of version
ENU000A, V2.04.xx

Products   Solutions   Services

Operating Instructions
Memograph M, RSG45

Advanced Data Manager
Additional Instructions: Telealarm option for alarm messages

Endress+Hauser

People for Process Automation

Table of contents

1   General description of the function

> **NOTICE**
>
> **This manual contains an additional description for a special software option.**
> These additional instructions are not intended as a substitute for the Operating Instructions!
> ▶ Detailed information can be found in the Operating Instructions and the additional documentation.

Available for all device versions via:
- Internet: www.endress.com/deviceviewer
- Smartphone/tablet: Endress+Hauser Operations App

1.1   Prerequisites and software history

The **Telealarm** option is supported as of Field Data Manager (FDM) software version V1.25.0.0. The current version of the software is included in the delivery. For installation instructions, see the Operating Instructions.

Overview of device software history:

Unit software Version / date	Software modifications	FDM analysis software version	Version of OPC server	Operating Instructions
V2.00.00 / 09.2015	Telealarm option added	V1.25.0 and higher	V5.00.03 and higher	BA01387R/09/01.15
V2.04.06 / 10.2022	Bug fixes	V1.6.3 and higher	V5.00.07 and higher	BA01387R/09/EN /02.22-00

1.2   Description of the telealarm function (message transmission)

The device should send the following information when certain events occur:
- SMS (only using GSM modem)
- E-mail (only by Ethernet)
- SMS and e-mail simultaneously (only using Ethernet and GSM modem or GPRS/UMTS modem)

This SMS/message/e-mail contains the following data:
- Date/time of event in the time format configured at the device
- The device name (device tag) entered
- A unique message ID generated by the device (only for SMS messages if the **Confirm message** function is active)
- The message as text

The events can be:
- Set point violations (a message at the start of the set point violation)
- Switching of digital inputs or math channels (for the **State** result)

ℹ️ If several events occur at the same time, they are sent one after the other. This can result in a delay in delivering the message (no real-time alarm).
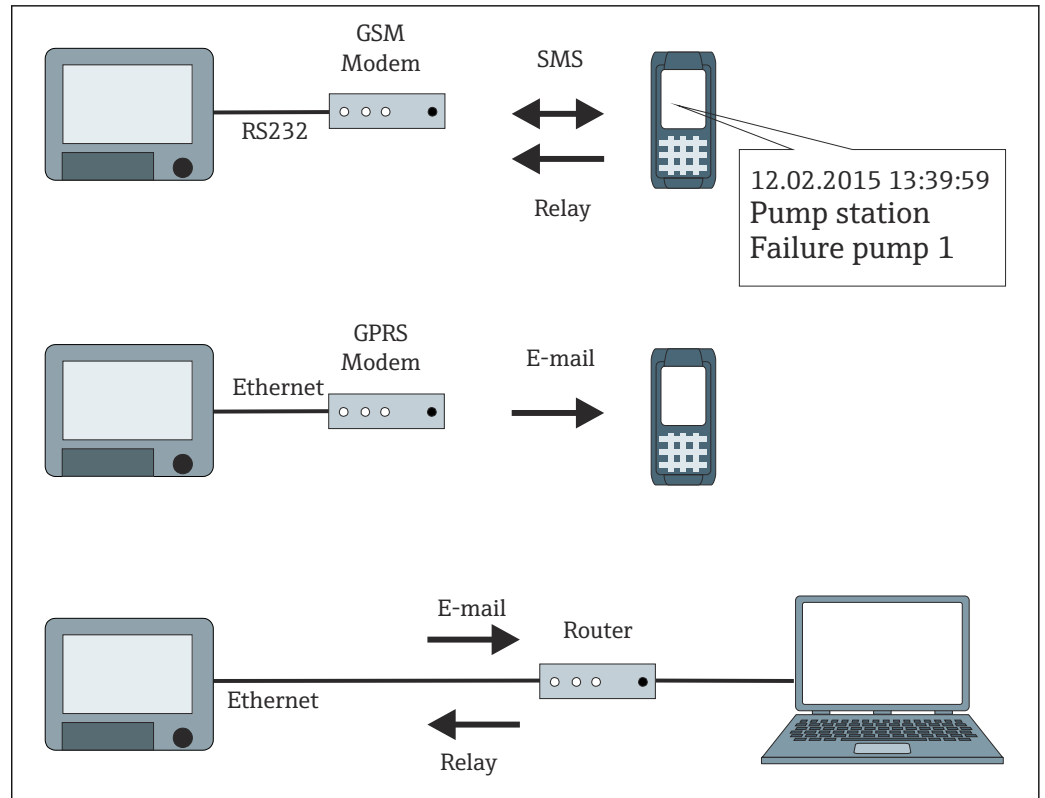
🖻 *1   Different options for sending telealarm messages*

1.3   Alarm statistics

The following data are determined via the signal analysis cycles:
• How often was the set point violated (frequency)?
• How long was the set point violated in total (in operating hours format 0000h00:00)?

The alarm statistics function is switched off in the default settings. The alarm statistics are generated for every active signal analysis (same run time).

In the case of externally controlled signal analysis, alarm statistics are not generated for the time the analysis is not active.

The alarm statistics are only generated for **analog** set points (upper, lower, inband/outband or gradient). No statistics are generated for **set points at counter**.

To determine the frequency, the device only reacts to the Low → High flank. If the set point is already violated at the time the analysis is started, the frequency value is NOT increased.

Example: Set point constantly violated from 08:59:50 to 09:01:10, analysis cycle 1 minute:

Time span	Frequency	Duration
08:59:00 – 08:59:59	1	10 s
09:00:00 – 09:00:59	0	60 s
09:01:00 – 09:01:59	0	11 s

1.4   Safety and dangers

The device's operating system is equipped with protective mechanisms that can protect the device software against typical threats from the outside.

The manufacturer does not accept any responsibility for the timely transmission of alarms. External factors such as the network availability of providers or a network disruption (Ethernet) can prevent an alarm from being forwarded.

2 Device configuration, application setup

2.1 General programming guidelines

1. First install and configure the device as described in the Operating Instructions BA01338R. Observe all the safety instructions!

2. Initialize the modem in the main menu under **Diagnostics → Initialize modem** (see the Operating Instructions).

3. Check the network availability, see Section 2.6.6 → 🖺 19 of this manual.

4. Make the additional settings needed for the telealarm (see the next section).

5. Test the telealarm function, see Section 2.6.8 → 🖺 19 and Section 2.6.9 → 🖺 19 of this manual.

6. Configure the display, for example select the display mode. See from Section 11 of the Operating Instructions BA01338R.
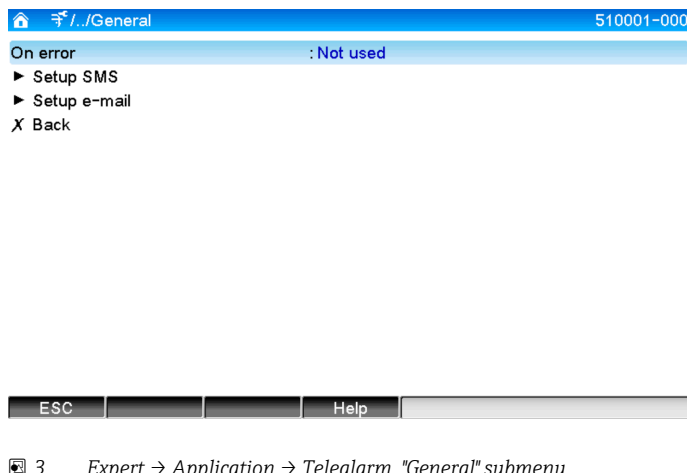
2.2 Setup → Application → Telealarm

Settings for alarms via a modem connected to the device or by e-mail.

ℹ️ Depending on the selected function, the device's user interface is adapted so that each time only required parameters have to be checked/set.
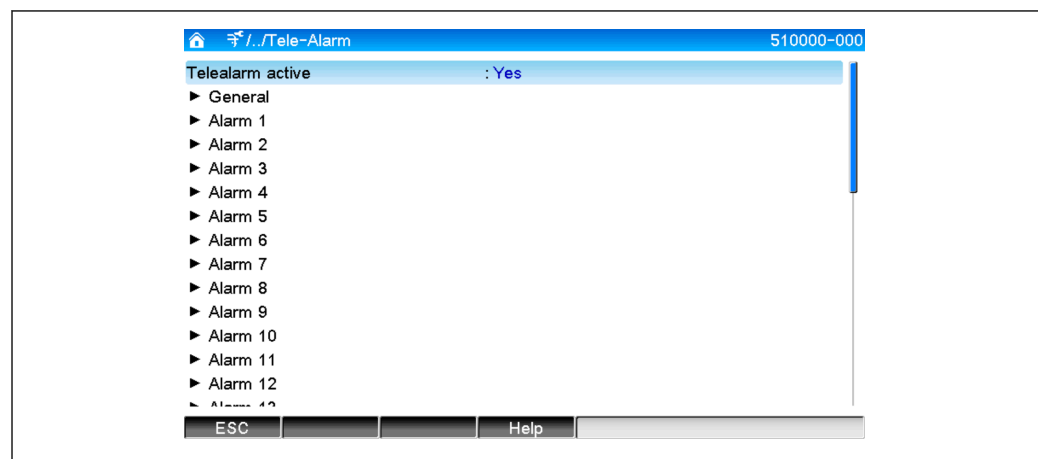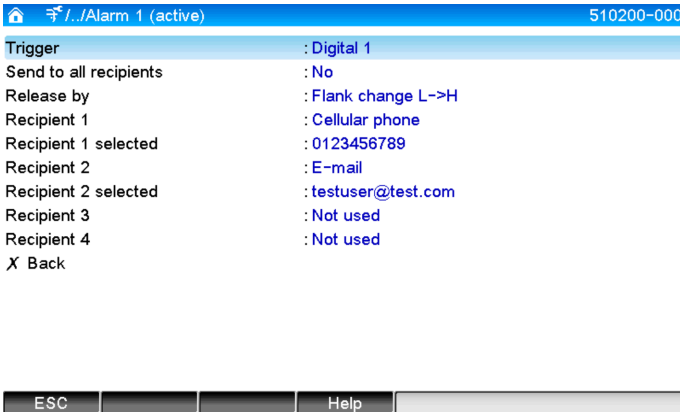

🖾 2   Expert → Application → Telealarm

"Application → Telealarm" menu items	Configurable parameters (factory settings are highlighted in bold)	Direct access code
"General" submenu	General settings for telealarm operation. ⊠ 3 Expert → Application → Telealarm, "General" submenu	
	Telealarm active No: Telealarm function is switched off. Yes: Telealarm function is switched on. Picklist: **No**, Yes	510000-000
	On error Switches a relay if all attempts to send an SMS or e-mail have failed. Switches a relay if none of the recipients could be notified by SMS or e-mail. **Note:** The relay is reset once the message has been successfully sent. Picklist: **Not used**, Relay x (xx-xx)	510001-000
	"Setup SMS" menu Settings that are required if alarms are to be sent by SMS.	
	Number of trials Number of dial attempts. If no connection is established, several attempts are made to make a connection (up to the number of times configured here). User input: 1 to 99 Factory setting: **3**	510010-000
	Pause between calls Wait time until next call after an unsuccessful connection attempt. User input: 1 to 999 seconds Factory setting: **60 s**	510011-000
	Priority Specify which action should have higher priority. Here you can specify whether the process of sending an SMS should interrupt measured value read-out currently in progress (priority: send SMS) or whether the device should wait to send the SMS until the read-out process is finished (priority: read out data). Picklist: **Send SMS**, Read out data	510012-000
	PIN number In general, the GSM terminal has to be enabled again with the PIN number after a power off event. Enter the PIN number of your SIM card here. 0000 deactivates the PIN prompt. Text entry: 4-digit Factory setting: **0000** **Note:** An invalid PIN number can cause the SIM card to be locked. This means that SMS messages cannot be received or sent.	510013-000

"Application → Telealarm" menu items	Configurable parameters (factory settings are highlighted in bold)		Direct access code
		SMS service no. If the device is connected to a GSM modem, the SMS message can be transmitted directly using the SMS service number. The number can be obtained from the mobile provider. **Note:** The service number must be entered with the country code (e.g. +49... for Germany). The service number is generally stored on the SIM card and the user does not have to enter any number. Text entry: max. 22-digit	510014-000
		Confirm message Configure whether telealarm messages should be confirmed by SMS. **Note:** The operating item **Send to all recipients** (see **Alarm x** menu) must be set to **No** to be able to use this function. Picklist: **No**, Yes	510015-000
		Confirm timeout (only for **Confirm message - Yes**) Configure how long the recipient of the message has to confirm the alarm message by SMS. If the recipient does not confirm the message in time, a message is sent to the next recipient (if defined). User input: 1 to 9999 minutes Factory setting: **10 minutes** **Note:** To be able to acknowledge receipt of the SMS, the recipient has to send the unique message ID they received by SMS back to the device. This is done in 2 different ways (depends on cellular phone): 1. Select **Reply**, and enter the ID (e.g. **ID=12345678**) manually in the SMS 2. Select **Forward** and select the telephone number from the address book. A valid message ID must be sent back to the device before the SMS is considered to be **sent successfully**.	510016-000
		Additional call The device can also call the telephone number to which the SMS has already been sent. The call is ended automatically when the receiving party picks up. The attempt to make a call is aborted after 60 seconds if the receiving party on the other end does not pick up. **Note:** Not every cellular phone/provider supports this function (**Data call** must be supported). **Note:** The function only makes sense if the recipient has a cellular phone without calling line identification restriction (CLIR)! Picklist: **No**, Yes	510017-000
		Check SMS received Specify whether the device should cyclically check whether new SMS messages have been received (remote request/remote control). **Note:** If this function is active, existing data connections are automatically terminated! This function must be set to **No** if a GPRS modem is connected! Picklist: **No**, Yes	510018-000
	"Setup e-mail (sender)" submenu	Settings that are required if alarms are to be sent by e-mail. **Note:** e-mails can only be sent by Ethernet!	

"Application → Telealarm" menu items	Configurable parameters (factory settings are highlighted in bold)		Direct access code
		SMTP host Enter your SMTP host here. If necessary, contact your network administrator or e-mail provider.	510062-000
		Server requires SSL Specify whether the e-mail server requires a secure connection (SSL). STARTTLS: Runs on the same TCP port as unencrypted SMTP (port 25 or 587). SMTPS: Completely encrypted with separate TCP port (465). If necessary, contact your network administrator or e-mail provider.	510061-000
		Port Enter your SMTP port here. If necessary, contact your network administrator or e-mail provider. The default value changes depending on the setting in **Server requires SSL** User input: max. 4-digit Factory setting: **25**	510063-000
		Sender Enter the e-mail address of the device here (this text appears as the sender of the e-mail). If necessary, contact your network administrator or e-mail provider. Text entry: max. 60-digit.	510064-000
		User name Enter the user name of the e-mail account here. If necessary, contact your network administrator or e-mail provider. Text entry: max. 60-digit.	510066-000
		Password Enter the password for authentication here. If necessary, contact your network administrator or e-mail provider. Text entry: max. 22-digit.	510067-000
	"Phone numbers" submenu	Enter all the telephone numbers to which a message should be sent in the event of an alarm. **Note:** The assignment to the alarms is performed later.	
		Number 1-20 Enter a telephone number to which a message should be sent. User input: max. 22-digit. **Note:** Some providers also allow e-mails to be sent via SMS. In this case, an @-symbol, followed by the number of the e-mail address (1-20 in the **E-mail addresses** submenu) must be appended to a special telephone number. Example T-Mobile: 8000	510030-000 to 510049-000
	"E-mail addresses" submenu	Enter all the e-mail addresses to which a message should be sent in the event of an alarm.	
		E-mail address 1-20 Enter an e-mail address to which a message should be sent. Enter text in the following format: **x@y.z**, min. 5-digit, max. 60-digit.	510080-000 to 510099-000
	"Errors" submenu	Specify who should receive e-mails when errors (Fxxx messages) occur.	
		Recipient 1 Select who should receive the e-mail. Picklist: **Not used**, E-mail address (all addresses entered in **E-mail addresses**)	510120-000

"Application → Telealarm" menu items	Configurable parameters (factory settings are highlighted in bold)		Direct access code
		Recipient 2 Select who should receive the e-mail. Picklist: **Not used**, E-mail address (all addresses entered in **E-mail addresses**)	510121-000
	"Maintenance required" (submenu)	Specify who should receive e-mails when maintenance is required (*Mxxx* messages).	
		Recipient 1 Select who should receive the e-mail. Picklist: **Not used**, E-mail address (all addresses entered in **E-mail addresses**)	510130-000
		Recipient 2 Select who should receive the e-mail. Picklist: **Not used**, E-mail address (all addresses entered in **E-mail addresses**)	510131-000
	"Send e-mail following analysis" submenu	Specify whether an e-mail should be sent following the analysis. The e-mail has an attached CSV file containing the analysis data. **Note:** The e-mail is not resent if an error occurs (incorrect configuration, e-mail server unavailable etc.).	
		Analysis 1-4 Picklist: Yes, **No**	510140-000 to 510143-000
		Recipient 1-2 selected Select the intended recipient of the analysis. Picklist: **Not used**, Phone number xx, E-mail address xx	510144-000 to 510145-000
"Alarm 1" to "Alarm 35" submenu	Configure the setting for this alarm. **Note:** The **Alarm x** menus only appear if at least one e-mail address or telephone number has been entered. 🖼 4 *Expert → Application → Telealarm, "Alarm 1" submenu*		
	Trigger	Configure the set point or channel that controls the alarm. Picklist: **Switched off**, Set point x, Digital input x, Maths x **Note:** Digital input x: only for on/off event; Maths x: only for **The result is** = **State**	510200-000 to 510200-034
	Send to all recipients	**No**: Once a call has been placed successfully, no additional telephone numbers are called or e-mails sent for the alarm. Yes: In the event of a telealarm, all the telephone numbers configured for the alarm are called or e-mails sent.	510201-000 to 510201-034

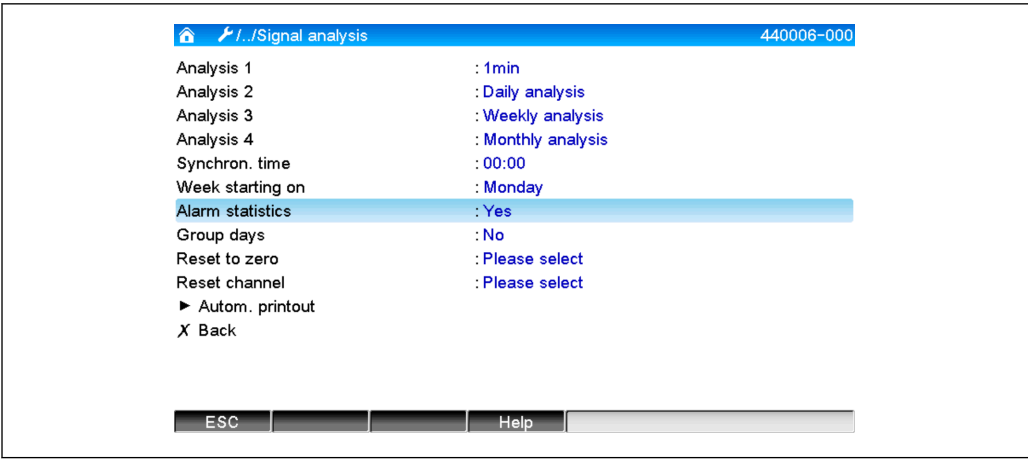| "Application → Telealarm" menu items	Configurable parameters (factory settings are highlighted in bold)		Direct access code
	Release by (only for **Trigger - Digital input x** or **Maths x**)	Alarm is output when the digital input is switched on (L->H) or off (H->L). Picklist: **Flank change L->H**, Flank change H->L, L->H and H->L	510202-000 to 510202-034
	Recipient 1	Select who should receive a message (e-mail or mobile communications provider). Picklist: **Not used**, E-mail, Cellular phone E-mail: The message is sent by e-mail as **plain text**. No e-mails with attachments are sent. If there are problems delivering the e-mails, a maximum of 3 attempts to send the e-mail are made, each 5 minutes apart. Subject of the e-mail: <device tag>. Cellular phone: The message is sent to a cellular phone as an SMS. (Option only possible if **GSM terminal** is selected under **General → Setup SMS → Modem type**.) Note: The messages sent and delivery problems are logged in the event logbook.	510203-000 to 510203-034
	Recipient 1 selected (Only if **Recipient 1** is selected)	Select who should be notified in the event of an alarm. Picklist: **Not used**, Phone number x, E-mail address x Note: Can only be selected if a number or e-mail address has already been entered (see **Application → Telealarm → General → Phone numbers/e-mail addresses**)	510204-000 to 510204-034
	Recipient 2	(See **Recipient 1**)	510205-000 to 510205-034
	Recipient 2 selected (Only if **Recipient 2** is selected)	(See **Recipient 1 selected**)	510206-000 to 510206-034
	Recipient 3	(See **Recipient 1**)	510207-000 to 510207-034
	Recipient 3 selected (Only if **Recipient 3** is selected)	(See **Recipient 1 selected**)	510208-000 to 510208-034
	Recipient 4	(See **Recipient 1**)	510209-000 to 510209-034
	Recipient 4 selected (Only if **Recipient 4** is selected)	(See **Recipient 1 selected**)	510210-000 to 510210-034

2.3 Setup → Advanced setup → Application → Signal analysis (alarm statistics)

Settings in order to obtain signal analyses for user-definable time ranges/cycles and the function to manually reset the signal analyses.

ℹ️ Only settings relevant for the telealarm are described here. For all the other signal analysis functions, see the Operating Instructions.

Depending on the selected function, the device's user interface is adapted so that each time only required parameters have to be checked/set.

⊞ 5   *Setup → System → Signal analysis → Alarm statistics*

"Setup → Advanced setup → Application → Signal analysis" menu items	Configurable parameters (factory settings are highlighted in bold)	Direct access code
Alarm statistics	The following data can be determined via the signal analysis cycles (e.g. daily analysis): • How often was the set point violated (frequency) • How long was the set point violated (duration in operating hours format 0000h00:00) Picklist: **No**, Yes Notes: • The alarm statistics are generated for every active signal analysis (same run time). In the case of externally controlled signal analysis, alarm statistics are not generated for the time the analysis is not active. • The alarm statistics are only generated for **analog** set points (upper, lower, inband/outband or gradient). No statistics are generated for **set points at counter**. • Set points can be set for the data of the alarm statistics. These set points can monitor the frequency or duration of set point violation for the analysis duration. Configuration under **Setup → Application → Set points → Set point x → Channel or Type** (see Operating Instructions). • **Yes** should be selected here for the **Rain spillway basin RSB** option.	440006-000
Group days (only for **Alarm statistics - Yes**)	Set how often the weekly, monthly or yearly analyses should be calculated. **No**: Each individual set point violation is counted. Yes: The number of days during the analysis cycle on which at least one set point violation occurred is recorded (e.g. required for the number of overflows in the rain spillway basin). Picklist: **No**, Yes **Note: Yes** should be selected here for the **Rain spillway basin RSB** option.	440008-000

2.4   Setup → Advanced setup → Communication → Ethernet

Settings required if you are using the Ethernet interface of the device.

Only settings relevant for the telealarm are described here. For all the other signal analysis functions, see the Operating Instructions.

"Setup → Advanced setup → Communication → Ethernet" menu items	Configurable parameters (factory settings are highlighted in bold)	Direct access code
Domain Name System (DNS)	Please enter the IP address of the DNS server (you can get this from your network administrator). Factory setting: **000.000.000.000** Is needed if you wish to send e-mails and want to use the e-mail server name instead of the IP address (e.g. smtp.example.org).	150009/000

2.5   Setup → Advanced setup → Outputs → Relay

Relay settings for the **Telealarm** function.

It is possible to control the relays in the device remotely with the **Telealarm** option. An acoustic or optical signal, or a pump, can be switched on or off by controlling the device relays remotely using a cellular phone or PC before someone is present onsite.

ℹ️ Only settings relevant for the telealarm are described here. For all the other functions of the outputs and relays, see the Operating Instructions.
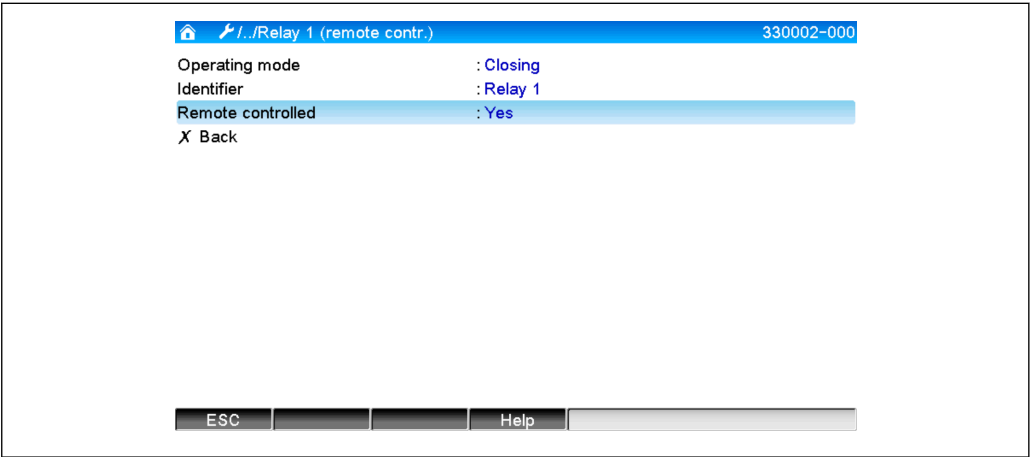
A0051862

🖻 *6   Setup → Outputs → Relay → Relay x → Remote controlled*

"Setup → Advanced setup → Outputs → Relay → Relay x" menu items	Configurable parameters (factory settings are highlighted in bold)	Direct access code
Remote controlled	Configure whether the relay may be controlled remotely (e.g. PC or SMS). Picklist: **No**, Yes **Notes:** • The relay in question may then not be used for other purposes, such as set point monitoring. • The names for the relays can be set in the device (see Operating Instructions). • Relay remote control is logged in the event logbook. • If user administration is enabled, the user who last logged on remains logged on. If no user is logged on, the remote control function does not log any user onto the device. However, the event logbook records who controlled the relay remotely. • The relays' last status (ON or OFF) remains even after a power failure. **Function:** **By OPC server:** The relays of the device can be switched on and off with the optional OPC server (remote controlled). If user administration is enabled, the following user is used for the event logbook/audit trail: **ID: Remote, Name: OPC.** **By PROFIBUS/Modbus/PROFINET:** The relays of the device can be switched on and off by PROFIBUS/Modbus/PROFINET (option) (**remote controlled**). If user administration is enabled, the following user is used for the event logbook/audit trail: **ID: Remote, Name: Fieldbus**. **By SMS:** The relays of the device can be switched on and off by SMS (**remote controlled**). **Note:** A GSM modem must be connected to the device so that the SMS message can be received. The device can only be accessed by SMS via the telephone numbers saved in the device (authentication). Calling line identification restriction must be disabled on the cellular phone for this purpose! If user administration is enabled, the following user is used for the event logbook/audit trail: **ID: SMS, Name: <Phone number>.** The user must send the following SMS message to switch a relay: Open: RELAY<no.>=OFF (example: **RELAY3=OFF** opens relay no. 3) Close: RELAY<no.>=ON (example: **RELAY3=ON** closes relay no. 3) **Note:** <no.> is the relay number (1 to 12); a maximum of 1 relay can be controlled per SMS. These commands are based on the **Closing** operating mode. If the relay is working in the **Opening** operating mode, the commands have exactly the opposite effect. No spaces are permitted within the command. The commands are recognized regardless of whether they are upper case or lower case. The sender receives a status message in the form of an SMS.	330002/000 to 330002/011

The modified settings do not take effect until you return to display mode (group display) after parameterization. Exit the operating menus by repeatedly pressing the **Back** menu item.

2.6   Use during operation

2.6.1   Text messages in the event of an alarm

If an alarm occurs, an individual message with the following contents is sent per alarm to the selected recipients:

• Date/time (in the format configured at the device);
• The device name <device tag> entered;
• A unique 10-digit message ID generated by the device (only for SMS if the **Confirm message** function is active)
• A text message, depending on what triggered the message:

Trigger	Contents of SMS or e-mail
Set point violation	The alarm text entered under **Setup → Advanced setup -> Application -> Set points → Set point x → Event text LV on** is sent. If no message has been stored, the device automatically generates its own unique text (e.g. **Analog 1 > 90%**).
Switching digital inputs	The alarm text entered for **L->H** or **H->L** under **Setup → Advanced setup → Inputs → Digital inputs → Digital input x** is sent. If no message has been stored, the device automatically generates its own unique text (e.g. **Digital 1 L->H**). **Note:** The function is only possible if **On/Off event** or **Event + operation time** has been selected for the digital input.

Example of a complete alarm: **27.02.2015 15:23:16 <device name> Analog 5 > 50.0 %**

2.6.2   Example of forwarding telealarm messages/SMS messages

Procedure for activating the function for forwarding telealarms:

1. Activate the telealarm under **Setup → Advanced setup → Application → Telealarm → General**.

2. Make the necessary settings under **Setup → Advanced setup → Application → Telealarm → General → Setup SMS**:

   Select **Yes** to confirm the message and configure "Confirm timeout" (e.g. **10 minutes**).

3. Create at least 2 telephone numbers under **Setup → Advanced setup → Application → Telealarm → General -> Phone numbers**.

4. Make the necessary settings under **Setup → Advanced setup → Application → Telealarm → Alarm x**:

   Send to all recipients: **No**

5. Recipient x: "Cellular phone".

At least 2 recipients must be assigned.

Procedure in the event of an alarm:
- The device sends the SMS to the first recipient configured (e.g. recipient 1).
- If this recipient does not send an SMS confirming receipt within the set time (**Confirm timeout**, e.g. 10 minutes), the device sends the SMS to the next recipient configured (e.g. recipient 2) (=**forwarding**).
- If this recipient now confirms the message within the set time (**Confirm timeout**, e.g. 10 minutes), the telealarm message is concluded.
- If this second recipient does not acknowledge the message in time, the device sends the SMS to the next recipient configured. If no other recipient is configured, an error message is output at the device, an entry is saved in the event log and a relay is switched if **Setup → Advanced setup → Application → Telealarm → General, on error:** is configured.
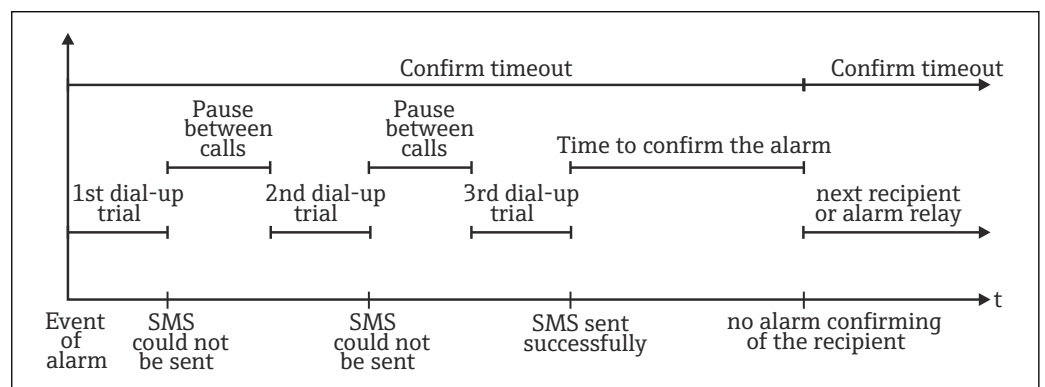
🖼 7   *Sequence of steps in the event of an alarm: sending and acknowledging telealarms by SMS*

NOTICE

To be able to acknowledge receipt of the SMS, the recipient has to send the unique message ID they received by SMS back to the device.
This is done in 2 different ways (depends on cellular phone):
▶ Select **Reply**, and enter the ID (e.g. **ID=12345678**) manually in the SMS,
▶ Select **Forward** and select the telephone number from the address book.

A valid message ID must be sent back to the device before the SMS is considered to be **sent successfully**.

ℹ If several events occur at the same time, they are sent one after the other. This can result in a delay in delivering the message (no real-time alarm).

2.6.3 Querying values by cellular phone/SMS

Instantaneous values of individual channels and groups, as well as analyses of the device, can be queried by SMS.

ℹ The message is always in English.

ℹ A GSM modem must be connected to the device so that the SMS message can be received. The device can only be accessed by SMS via the telephone numbers saved in the device (authentication). Calling line identification restriction must be disabled on the cellular phone for this purpose! If user administration is enabled, the following user is used for the event logbook/audit trail: **ID: SMS, Name: <Phone number>**.

ℹ No spaces are permitted within the command. The command is recognized regardless of whether it is upper case or lower case. If the commands are invalid (incorrect format, unknown channels/groups, channel switched off, analysis switched off etc.), an error message is sent to the sender by SMS (except when authentication is incorrect). A maximum of 1 instantaneous value or the values of a group can be queried per SMS.

Querying instantaneous values and analyses of individual channels

The user must send the following SMS message to query a value by SMS:

GET	<type> channel type:	<ch> channel number	<mode> type of measured value	
GET	**A;** Analog channel	**1 to 40;**	1	Instantaneous value
GET	**D;** Digital channel	**1 to 14;**	2	Counter status, analysis 1
GET	**M;** Math channel	1 to 8;	3	Counter status, analysis 2
GET			4	Counter status, analysis 3
GET			5	Counter status, analysis 4
GET			6	Totalizer

Example:

An SMS with the text **GETA;8;1** calls up the instantaneous value of analog channel 8.

An SMS with the text **GETM;1;6** calls up the totalizer of analysis 1 from mathematics channel 1.

Structure of the SMS response:

If OK:

<date/time>

<device tag> (device name)

<channel identifier> = <value> <dim> I(<counter type>)I

In the event of an error

<date/time>

<device tag> (device name)

error message

Example of an SMS response:

05.10.2015 15:08:00

<device tag> (device name)

tank1 = 20 m

Legend:

<date/time> = time when the instantaneous values were measured (in the format set at the device)

<channel identifier> = channel identifier

<value> = measured value

<dim> = unit/dimension

<counter type> = type of analysis (optional, i.e. only if counters are read out)

Querying values of a group

The user must send the following SMS message to query an instantaneous value of a group by SMS:

GROUP	<no> group number:	
GROUP	1 to 10	group number

At the very maximum, the values of one group can be queried per SMS. The measured values (instantaneous value/counter) that are displayed in the group are the values that are returned.

Special situation: If a measured value is displayed **in alternation** (i.e. the instantaneous value and counter alternate on the display), only the instantaneous value is sent.

An SMS can contain a maximum of 160 characters. If the response is longer than this, the response is split into several SMS messages.

Structure of the response:

If OK:

<date/time>

<device name>

<group name>

For every channel of the group: <no> = <value> <dim>

In the event of an error

<date/time>: error message

Legend:

<no> = channel of the group (1 to 8)

<value> = measured value

<dim> = unit/dimension

2.6.4   Event logbook/audit trail

During operation, the event logbook can be called up in the measured value display by pressing softkey 1 (user-definable) or via **Main menu → Display/operat. → Event log/ audit trail**:

⊡ 8   Event log/audit trail

The following events can be viewed here:
- Messages sent and delivery errors
- Telealarm function test
- Relay remote control
- Instantaneous value polling by SMS
- If user administration is enabled, authentication which has been approved and denied via remote control (with user names)

For this, select the relevant entry in the event logbook and press softkey 3 **Details**. To return to instantaneous value display, press softkey 1 **Esc**.

2.6.5   Alarm statistics in signal analysis

During operation, signal analysis with alarm statistics can be called up in the measured value display via **Main menu → Extras → Signal analysis**:

⊡ 9   Signal analysis with alarm statistics

The alarm statistics are displayed here in addition to the selected signal analysis (see Operating Instructions).

To return to instantaneous value display, press softkey 1 **Esc**.

The alarm statistics are reset via normal signal analysis **Setup → System → Signal analysis → Reset to zero**.

The data of the alarm statistics can also be displayed (in the measured value table), printed out and exported with the PC software supplied.

2.6.6   Checking/displaying reception quality

The device checks the reception quality (field strength) of connected GSM wireless modems and displays the current GSM network (provider). The information is displayed under **Main menu → Diagnostics → GSM terminal**.

ℹ This function is only available if a GSM modem is connected and the modem supports the corresponding commands.

2.6.7   Status telealarm

The device displays information about the status of the individual alarms. The information is displayed under **Main menu → Diagnostics → Status telealarm**.

ℹ This function is only available if the telealarm was switched on under **Setup → Application → Telealarm** and parameterized completely.

2.6.8   Test function of the remote-controlled relays

The relays enabled for remote control can be activated manually with the following function: **Main menu → Diagnostics → Simulation → Relay**. Select the corresponding relay and change the status (open/closed).

ℹ The change in the status is logged in the event log. If user administration is enabled, the user needs the necessary rights in the user administration function (see Operating Instructions).

2.6.9   Test function for sending SMS/e-mail

The alarm (transmission of SMS/e-mails) can be tested with the following function: **Main menu → Diagnostics → Simulation → Test telealarm**

Select one of the alarms that is set. The device then sends a message (SMS or e-mail, depending on the setting) to ALL the recipients assigned (acknowledgment is not taken into account during the test). A neutral text is used as the alarm (alarm <x>: test) so that the recipients know that this is a test. The test is also logged in the event logbook.

3   Error messages and troubleshooting

Your unit informs you of faults or incorrect entries using plain text on the screen. During display operation (measured value display), the error codes are displayed in the upper right-hand corner of the screen.

Version with navigator and front interfaces:

In addition a red LED signals failures or flashes in the event of warnings or required maintenance.

ℹ Detailed error messages and troubleshooting can be found in the **Diagnostics and troubleshooting** section of the Operating Instructions.

4   Technical data

ℹ The technical data of the Operating Instructions apply for this device option.

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