

Alarm-Display SD 9648

20 Digital- or 12 Digital- and 8 Analog inputs

Features

- Activation with voltage free contacts, 0/24V signals or 0/4...20mA for monitoring of analog measuring values
- First- or last message, priority
- Internal and external reset
- LCD-text display with background lighting
2 lines, 16 characters each, 6.5mm high
- Text length max. 64 characters
- Programming by frontside keypad or IR-remote control
- Acoustic alarm with integr. Buzzer
- Alarm relay, SPDT
- Real-time clock
- Front protection IP65



General

The Alarm-Display SD9648 will be used for indicating and evaluations of alarm signals as well as analog measured values.

Short information

Sort mode	The messages take place alternatively after their priority or after its occurrence (first/last message).
Display mode	Fault signals are cyclically or permanently displayed. With permanent announcement all messages can be queried by depressing the key.
Display time	It is programmable whether a message is deleted automatically after omission of the cause or additionally an acknowledgement is necessary.
Relay / buzzer	Parallel to the messages buzzers and/or alarm relay can be activated.
Start-up-Delay time	After switching on of the device, for an adjustable time by 0...999s all alarm signals are suppressed.
Message delay time	Programmable from 0.0 ... 9.9s.
Analog input	Display range, alarm setpoints und alarm performance (min / max) are free programmable. Process values can be displayed at any place in the message.
Date / time	Can inserted in arbitrary place into a message (only with real-time clock), alternatively the current time or the time with the occurrence of an alarm.
Note:	With powerless device the inputs became a high resistance.

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Start-up note:

Before the device can be used, it must be configured for the intended use.

Technical data

Power supply

Supply voltage : 230V AC ±10%, 115V AC ±10%, 24V AC±10%, 24V DC ±15%
 Frequency AC : 50/60Hz
 Power consumption : max. 3.5VA
 Working temperature : 0 ... +50°C
 Rated voltage : 250V~ acc. to VDE 0110 between input / output / supply voltage
 degree of pollution 2, overvoltage categoric III
 Test voltage : 4kV-, between input / output / supply voltage
 CE - conformity : EN55022, EN60555, IEC10004-3/4/5/11/13

Inputs

Digital inputs : 0/24V DC, Ri = 10kΩ, switching threshold low <4V, High >11V max. 35V
 Impulse/ break : min. 10 ms
 Analog inputs : 0/4...20mA, Ri = 100Ω voltage drop max. 2.2V at 20mA
 overload app. ≥ 23mA (max. voltage 35V).
 With powerless device the inputs became a high resistance
 Accuracy : 0.1%, ± 1 Digit
 Temperature coefficient : < 0.003%/K
 Transmitter-supply : Uo = 24V, Ri 150Ω, max. 50mA

Display

Display : LCD-text display white/blue, 6.5mm high with background lighting
 Display range : 2 lines 16 characters each
 Refreshing time : 0.5s

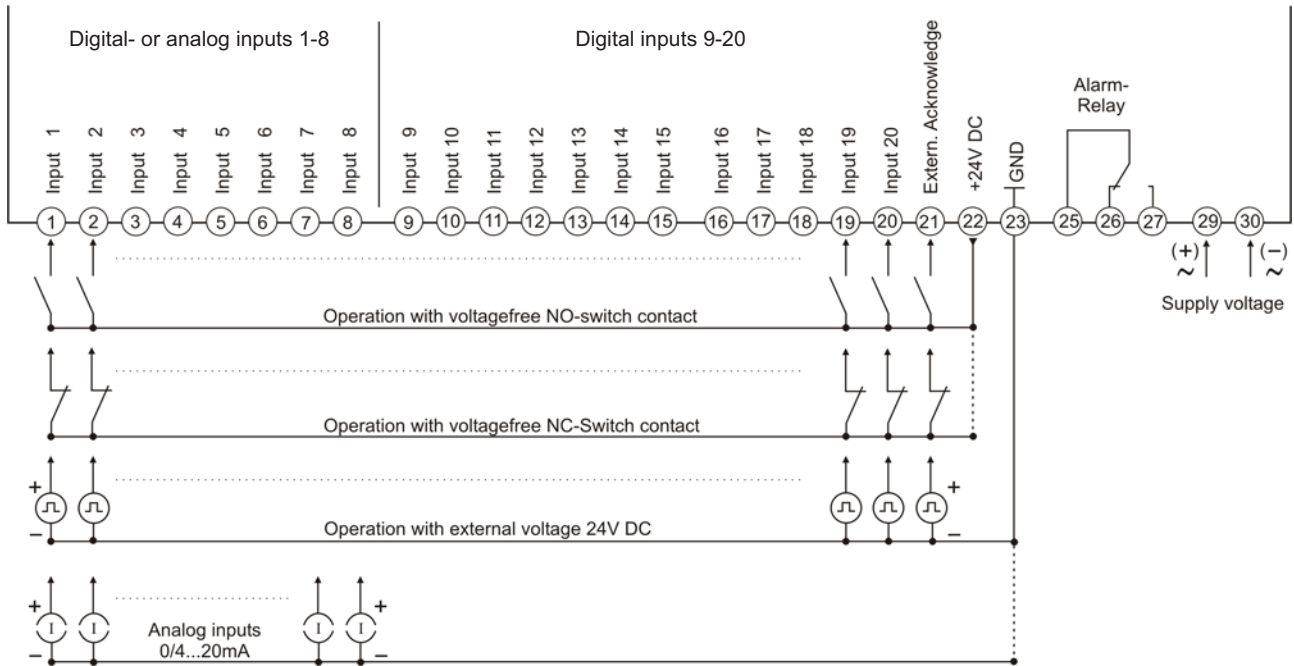
Output

: SPDT <250V AC<250VA<2A, <300V DC<50W<2A

Panel case

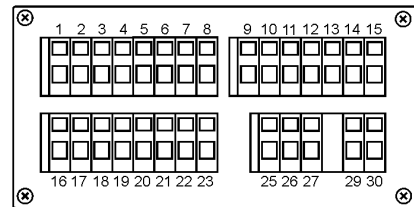
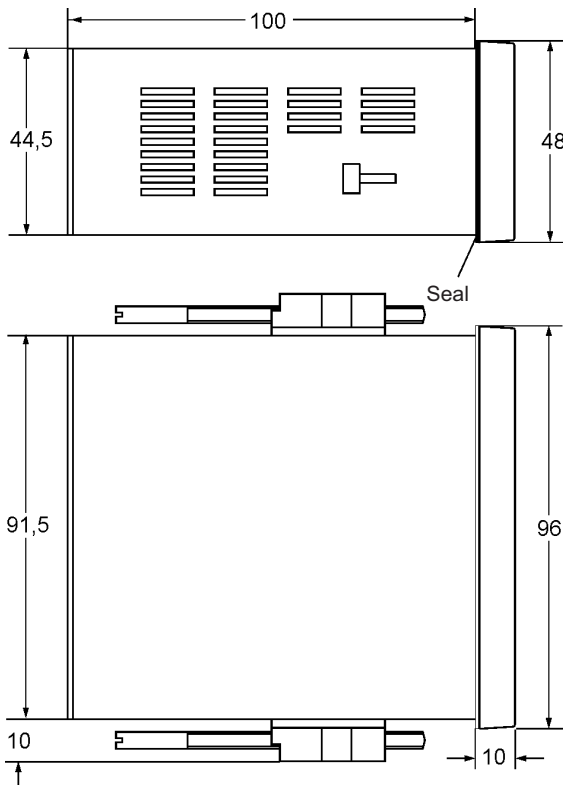
Dimensions : DIN 96x48mm, Material PA6-GF; UL94V-0
 Dimensions : Front 96x48mm, mounting depth 100mm,
 Weight : max. 390g
 Connection : Clamp terminals, 2mm² single wire, 1mm² flexible wire, AWG14
 Protection : Front IP65, terminals IP20, finger safe acc. to German BGV A2

Connection diagram

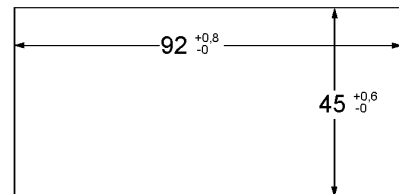


Note! If the analog signal is generated by an device with automatic burden recognition (current/voltage changeover), the analog output must be configured to 4-20mA..

Dimensions

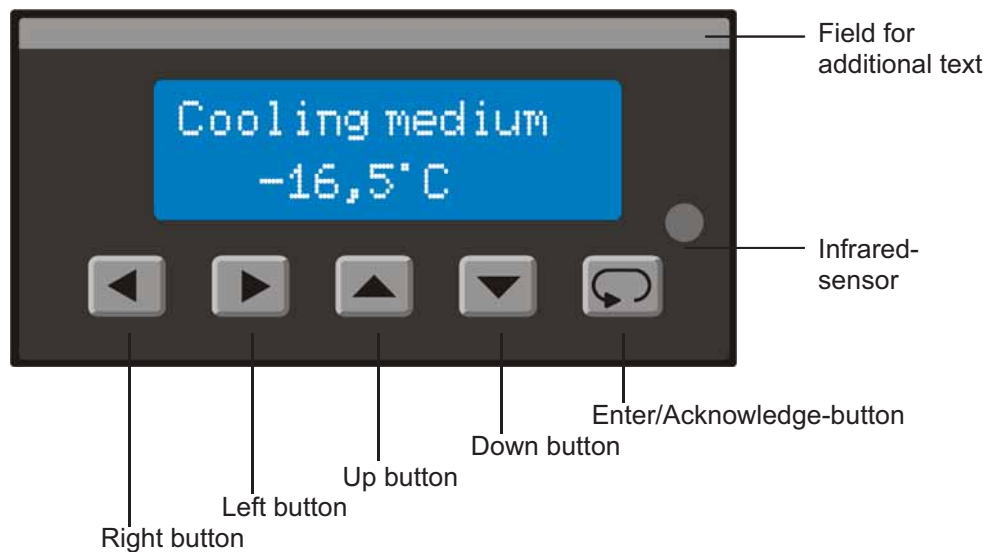


Terminal position





Panel cut-out
acc. to DIN 43700-96x48


Controls and indicators



Description

After switching on the supply the device initializes itself. The display shows the message SD9648 VX.X (X.X Software-Version). After the initializing procedure the device is working in the working level. Displayed messages can be paged and acknowledged with button .


Activating the  button for more than 2 seconds, the program is jumping into the **Configuration menu**. Now all the parameters defining the function of the SD9648 can be programmed.


When longer than 5 minutes no button was pushed, the program jumps back to the working level. Leaving the configuration menu is possible at any time when pushing the button  for 2 seconds.

Programming:

Menu selection

With every new display page 2 menu points will be shown.

The arrow  marks the actual menu point

With button  the next menu point will be selected



With button  the last menu point will be selected



(Over the infrared remote control IR51 the menu items can also be selected by entering of the first letters.)



With button  the wanted menu will be called up.

Parameter





(e.g. input-no.; measuring range, alarm setpoint....)


The wanted value will be entered with  and .

Arrows   indicates that more than 32 characters can be displayed in the arrow direction.

 +  = 1 parameter back

Messages



The wanted *character position* in the message will be selected with buttons  and . The wanted *character* will be selected with buttons  and .



The entered character will be automatically stored with button  and the cursor shows the next position.

Special functions:

 +  = Deletes character at the cursor position. Repeat function by pressing the button continuously.

 +  = Blank  at the actual cursor position. Repeat function by pressing the button continuously.

 +  = Line feed in the next line of the character set (see page 13).

 +  = Simulation for controlling of the edited messages including the variables (see page 13).

Programming

Notes to representation



Parameter is only displayed if configured

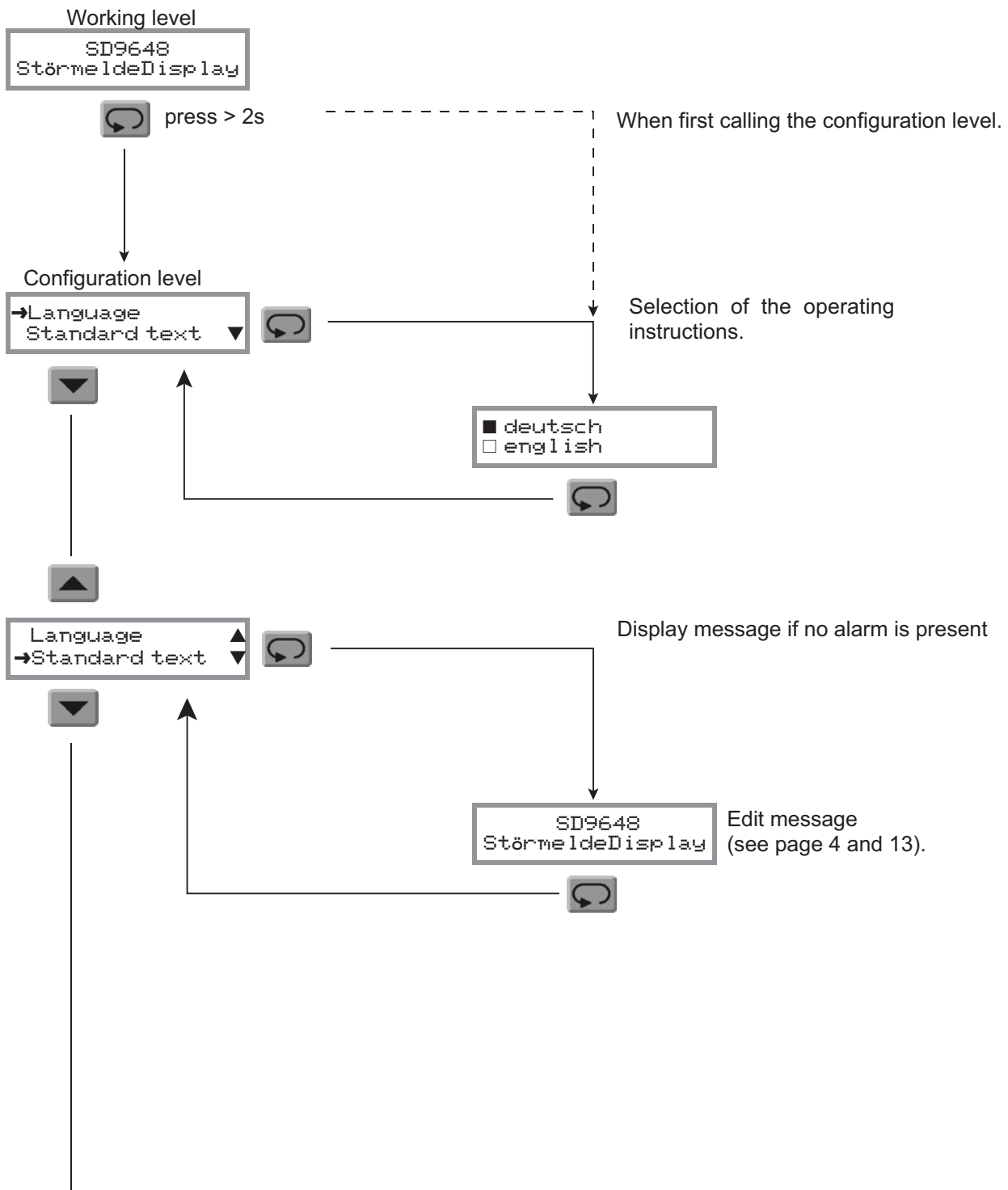


Parameter is only displayed if feature is included (see order code)

Note: All parameters can be called if they are not blocked by other programmed parameters and if they are available. Factory settings are shown.

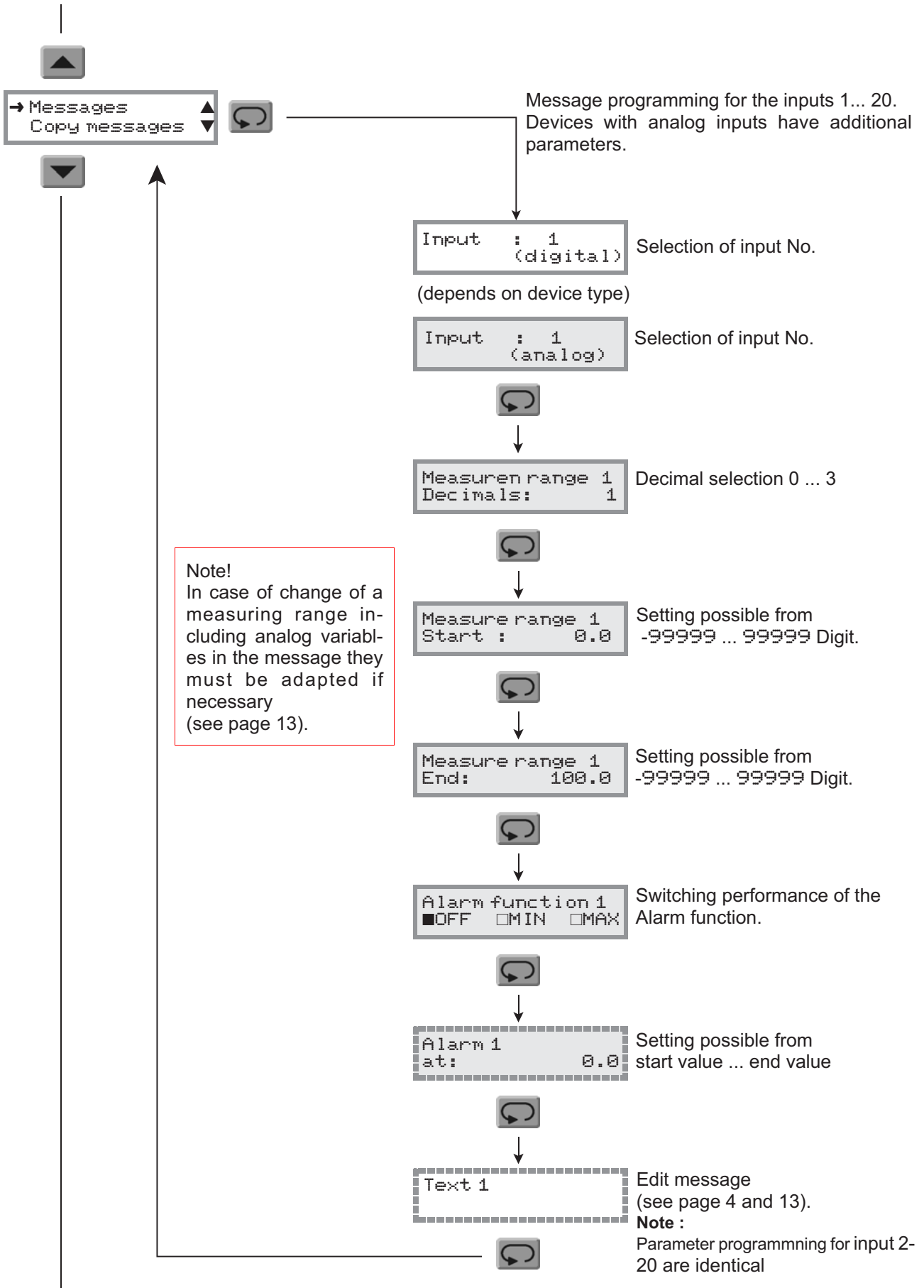
Menu display

Parameter display



Menu display

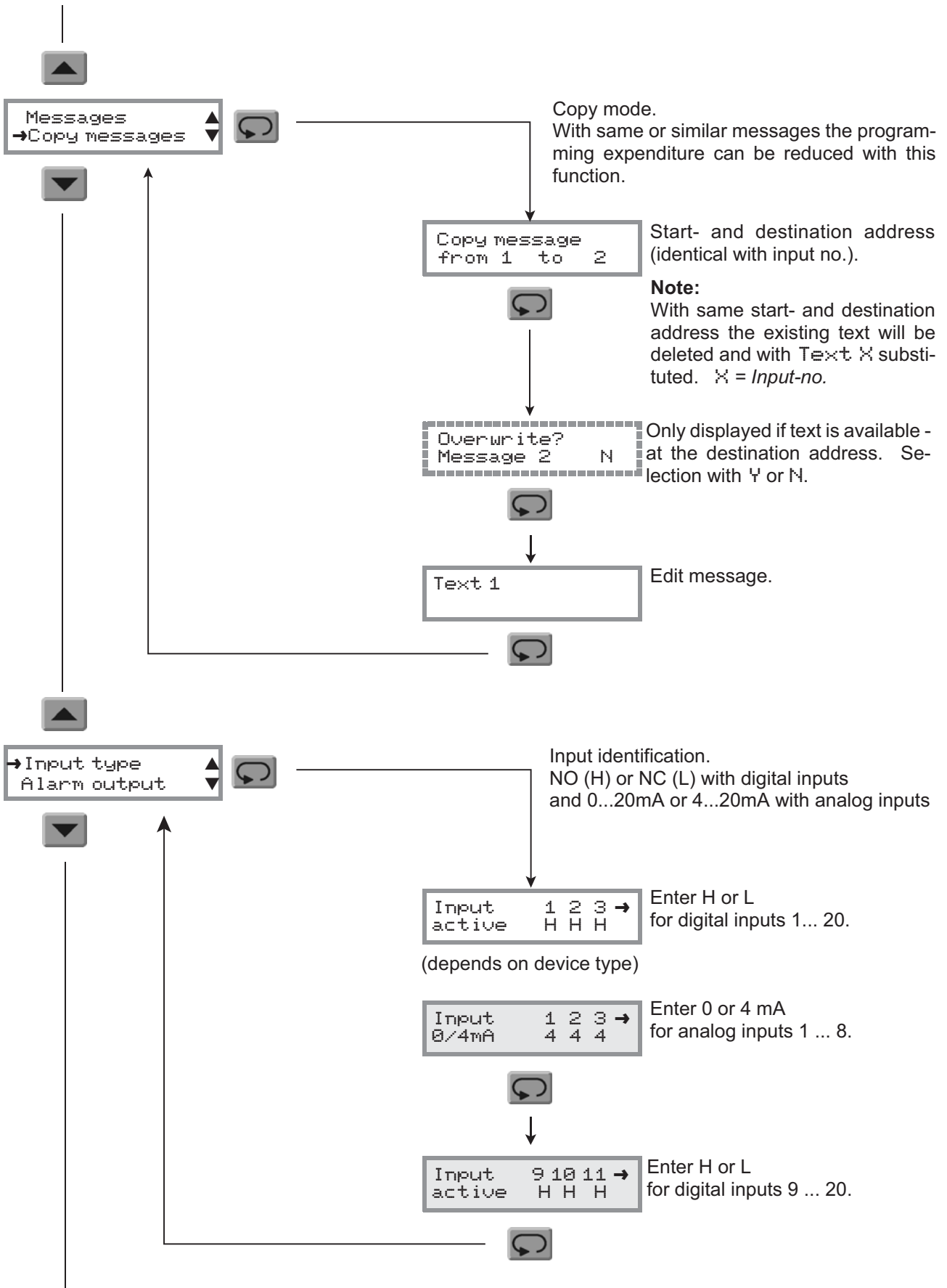
Parameter display



Note!
In case of change of a measuring range including analog variables in the message they must be adapted if necessary (see page 13).

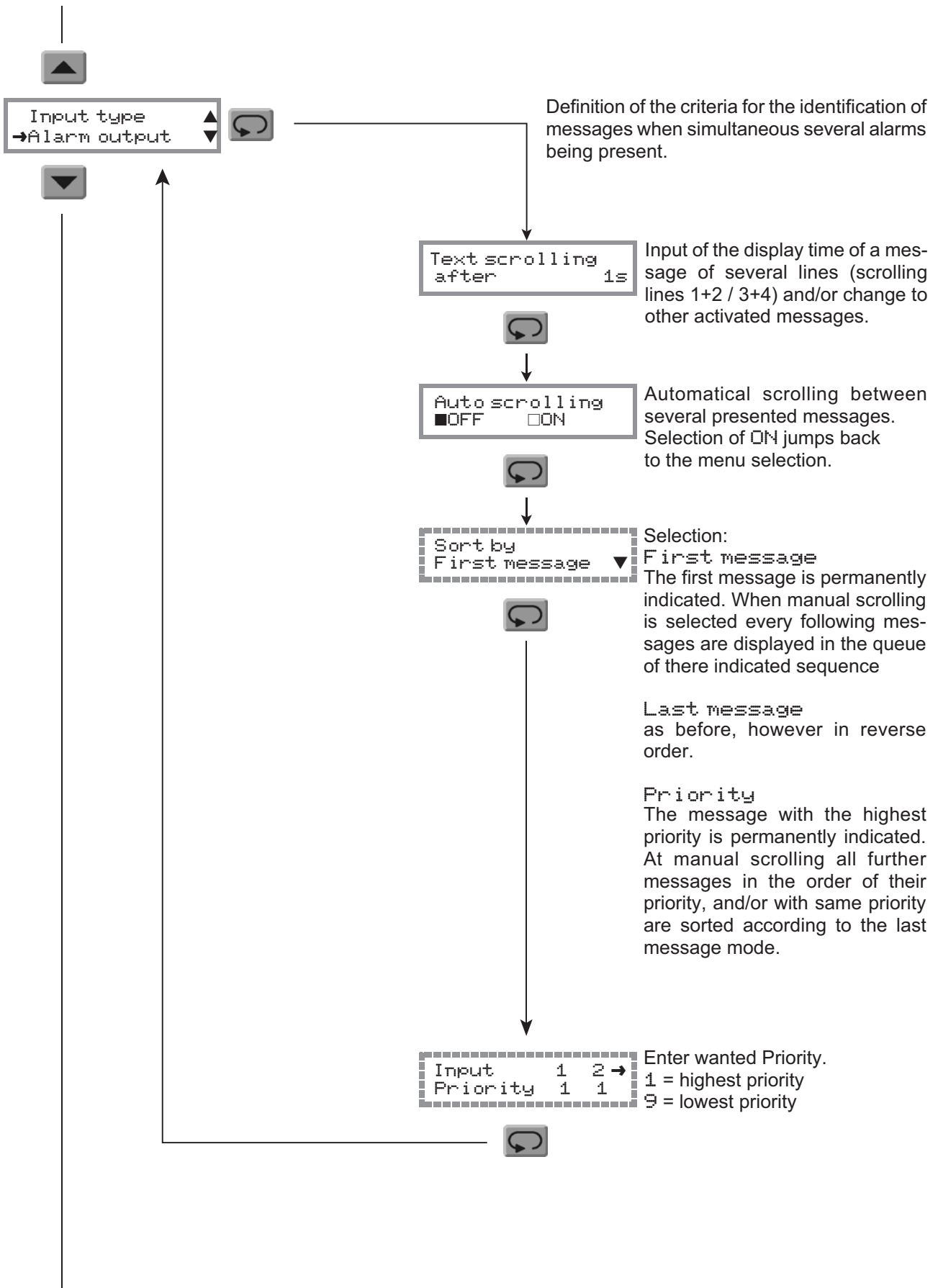
Menu display

Parameter display

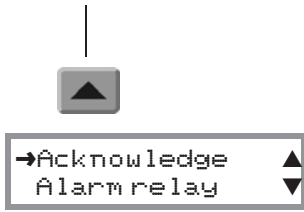


Menu display

Parameter display



Menu display



Parameter display

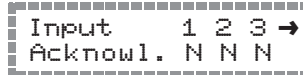
Acknowledge function
extern and/or intern possible



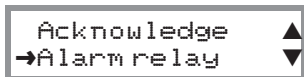
Acknowledge intern, with front button.
Note: only the just displayed and inactive message will be deleted.



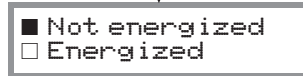
Acknowledge extern
Selection
HIGH (NO)
LOW (NC)
Note: all inactive messages will be deleted



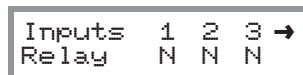
Selection 'Y' activates the general acknowledge function for each input.



Switching performance of the internal alarm relay.

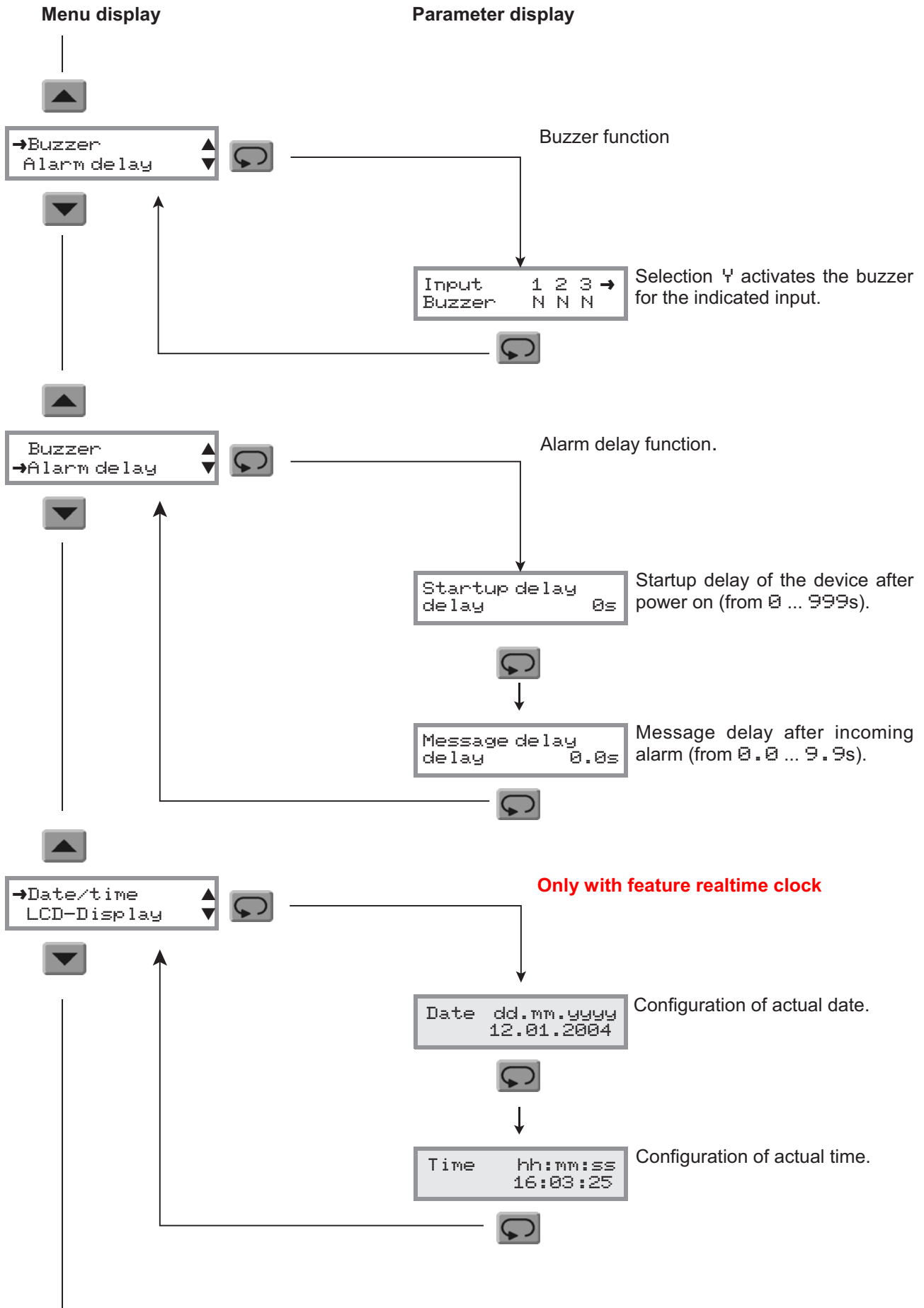


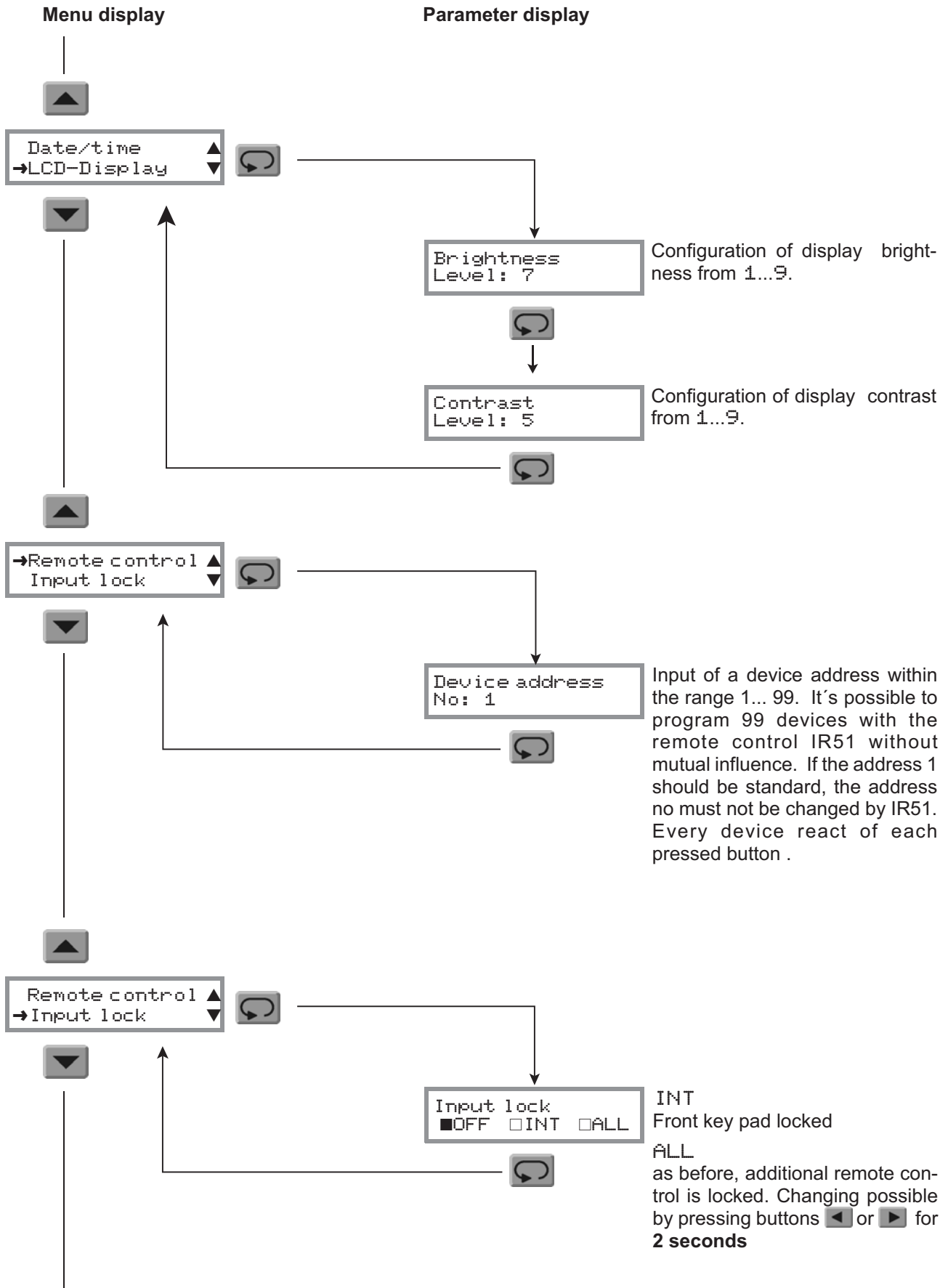
Switching performance
Not energized
Relay active at alarm
Energized
Relay inactive at alarm

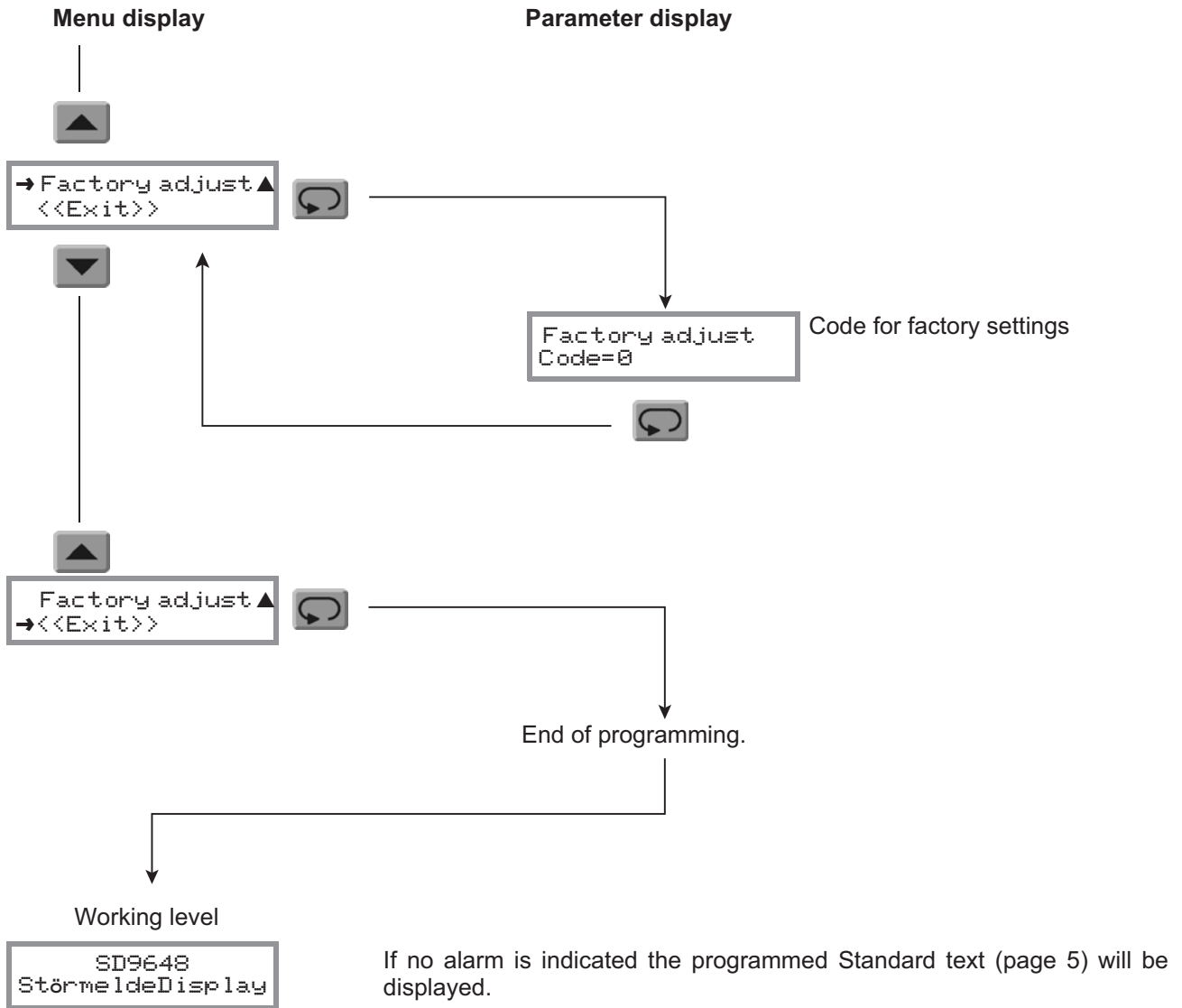


Selection 'Y' activates the alarm relay for the indicated input









Error codes:





Parameter error
-> Please check





If this messages appears, an configuration error is present. This message will be deleted by entering the Configuration level. The device is working with factory settings of this / these parameter(s). The function must be tested. If the same messages appears again, the device must be sent for factory repair.

write protected!

Input lock activated. See page 11




Character set: = Blank

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 
a b c d e f g h i j k l m n o p q r s t u v w x y z ä ö ü ß ñ 
0 1 2 3 4 5 6 7 8 9 ² ³ ⁻¹
\$ ε @ - + ± * ÷ ^ [] () < = > ← → ~ • ∞ % # & α γ μ Ω Π Σ ¯ ° / “ ’
 ! ? : ; , . _ 

-  = 1 character forwards
-  = 1 character backwards
-  +  = Line feed to the next line of the character set

Variable

Variable can be inserted in arbitrary place into a message.

Variable	Function
\$c	Number of the indicated message (= input number)
\$a	Number of indicated messages
\$o	Priority of the indicated message (does not work at “Standard text”)
\$n	Recording counter of repeated messages on one input until acknowledge appears. (f ≤ 1Hz; n _{max} =99; if no. >99 flashes)
[xxxx]	All characters between [] are flashing (no combination with analog values possible)
<u>Only with feature real-time clock</u>	
\$h	Actual hour (24h mode)
\$i	Actual hour (12h mode)
\$p	am / pm (12h mode)
\$m	Actual minute
\$s	Actual second
\$d	Actual day
\$x	Actual month
\$y	Actual year
\$w	Actual week day, 2 letters identification
eh, ei, ep, em, es, ed, ex, ey, ew	as before, if messages appears (does not work at “Standard text”)
et	Additional time 1/100 seconds
<u>Only with feature analog inputs</u>	
\$1 ... \$8	Shows permanent the analog value of the actual inputs 1 ... 8. By pressing the button  after entering the input number, a number of substitute symbols is inserted automatically of the configured measuring range into the text. This preemption can be adapted if necessary to the requirements. _ is a substitute symbol for a number. "," or "." indicates the decimal point. Maximally 5 numbers can be indicated, whereby already the variable name reserves \$x already 2 numbers and/or signs and 1 number. If the difference between measuring range end and measuring range start is more than 10000, the last number is kept automatically to "0". If are less digits reserved than necessary for the measuring range, this is marked in the simulation mode (buttons  +  at the same time) by flashing squares.
ε1 ... ε8	Shows the analog value at input 1 ... 8 to the actual time of the presented signal (does not work at “Standardtext”)

After entering the variables (e.g. \$x or εx) the button  must be pressed. Reserved positions for the analog variables will be inserted in the working mode.

Example: \$2_Reserved Positions for the analog-display of the measuring range from 0 ... 160.0

If reserved positions will be overwritten, the displayed value of the variable is incorrect.

More examples next page.

Variable examples























- Displaying of date and time in `Standard text` if no alarm appears..
- Displaying of date and time in messages at the time of the incoming signal.
Identification possible for time and sequence of the signals.
- Displaying of the actual analog measuring value in messages or `Standard text`.
- Displaying of several analog values in the messages, at the time of incoming signal .
This function allows to make an analysis for process problems possible.
- Identification of the alarm input (identical with input number).

Programming examples:

Line		Line	Display
	Actual date and time		
1	\$w, \$d.\$x.\$y	1	Mo, 16.02.04
2	\$h:\$m:\$s	2	14:23:30
	Time at indicated input		
1	εh:εm:εs	1	16:10:33
2	Less water	2	Less water
3	Raw water	2	Less water
		3	Raw water
	Analog value (actual process value)		
1	Press 6: \$1_._°C	1	Press 6 160.5°C
2	Over temperature	2	Over temperature
	Analog value (process value at time of incoming signal)		
1	Press 6: ε1_._°C	1	Press 6 158.5°C
2	Over temperature	2	Over temperature
	Number of indicates input		
1	\$C Door open	1	01 Door open
	Recording counter		
1	Door open,	1	Door open
2	\$n Messages	2	33 Messages
	Flashing Text		
1	[Attention!]	1	Attention!
2	No pressure	2	No pressure













Remote control IR51

Button functions

-  Jumps into the configuration menu if only one display is present and the factory-installed reserved device address was not changed before.
-  If this key is pressed, all in the working level presented alarm displays announce themselves with its device address in the range of the remote control. The address of the device which can be programmed must be entered within 10s and confirmed with the button  .
-  Selection of a menu point or storing the actual parameter (corresponding with button  in the display keypad).
-  Exit to the configuration menu **without** storing the actual parameter. And leaving the configuration menu to the working level.
-   Corresponding with buttons  and  in the display keypad.
-  Line scrolling at the configuration menu or messages.
- 
-   Corresponding with buttons  and  in the display keypad.
-  All yellow marked characters will be displayed after pressing the Alt-button
-  The letter following the Shift-button will be displayed in capitalization . Not possible in combination with Alt-button.
-  Inserts a blank at the cursor position in the message. The blank can be overwritten.
-  Deletes the character at the cursor position.
-  Deletes the character left from the cursor.
-  Recall the parameter display brightness (in the working level only with device address 1 possible).



Button-combinations (Action one after another)

-   Recall the parameter display contrast (in the working level only with device address 1 possible).
-   1 parameter backwards
-   Simulation and test of the programmed messages incl. the variables (see page 13):
-   Entering of : _ (reserved blank)
-   Entering of: [(the following characters are flashing)
-   Entering of:] (the characters between [...] are flashing)

Order code

SD9648 - 1. - 2. - 3. - 4. - 5.

1. Inputs

- 1 20 digital inputs
- 2 12 digital + 8 analog inputs

2. Real-time clock

- 0 without
- 1 with Real-time clock

3. Supply voltage

- 0 230V 50/60Hz ±10%
- 1 115V 50/60Hz ±10%
- 4 24V 50/60Hz ±10%
- 5 24V DC ±15%

4. Option

- 00 without option

5. Additional text

(appears in the field for additional text, max. text field 3mm x 90mm)

Accessories

- IR51 IR-remote control incl. 4 Batteries (Type 3A Micro)