

*User's manual*

# Totalizer

with current input, loop powered

# D 122.Z



Edition of standards 2010, Software version 1.7

User's manual for totalizers

D 122.Z.0.x.x

D 122.Z.3.x.x

D 122.Z.5.x.x



**Gönnheimer  
Elektronik GmbH**

<http://www.goennheimer.de> Email: [info@goennheimer.de](mailto:info@goennheimer.de)






Dr.-Julius-Leber-Straße 2  
67433 Neustadt/Weinstraße  
Postfach 10 05 07  
67405 Neustadt  
phone: +49 (6321) 49919- 0  
fax: +49 (6321) 49919 - 41

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## The symbols WARNING, CAUTION, NOTE

 <b>Warning</b>	This symbol warns of a serious hazard. Failure to observe this warning may result in death or the destruction of property.
 <b>Caution</b>	This symbol warns of a possible failure. Failure to observe this caution may result in the total failure of the device or the system or plant to which it is connected.
 <b>Note</b>	This symbol highlights important information.

# 1 Operation instruction for Explosion protected device

## Application and Standards

This instruction manual applies to explosion-protected control panels of type of protection types below. This apparatus is only to be used as defined and meets requirements of EN 60 079 particularly EN60 079-14 "electrical apparatus for potentiality explosive atmospheres".

Use this manual in hazardous locations, which are hazardous due to gases and vapours according to the explosion group and temperature class as stipulated on the type label. When installing and operating the explosion protected distribution and control panels you should observe the respective nationally valid regulations and requirements.

## General Instructions

The device has to have a back-up fuse as stipulated. The mains connection must have a sufficient short circuit current to ensure safe breaking of the fuse. To achieve an impeccable and safety device operation, please take care for adept transportation, storage and mounting, as well as accurate service and maintenance. Operation of this device should only be implemented by authorised persons and in strict accordance with local safety standards.



The electrical data on the type label and if applicable, the "special conditions" of the test certificate **Fehler! Unbekannter Name für Dokument-Eigenschaft.** are to be observed.

For outdoor installation it is recommended to protect the explosion protected distribution and control panel against direct climatic influence, e.g. with a protective roof. The maximum ambient temperature is 40°C, if not stipulated otherwise.

## Intrinsically Safe Circuits

Erection instructions in the testing certificates of intrinsically safe apparatus are to be observed. The electrical safety values stipulated on the type label must not be exceeded in the intrinsically safe circuit. When interconnecting intrinsically safe circuits it is to be tested, whether a voltage and/or current addition occurs. The intrinsic safety of interconnected circuits is to be ensured. (EN 60079-14, section 12)

## Safety Measures: to read and to comply

 <b>Warning</b>	<p>Work on electrical installations and apparatus in operation is generally forbidden in hazardous locations, with the exception of intrinsically safe circuits. In special cases work can be done on non-intrinsically safe circuits, on the condition that during the duration of such work no explosive atmosphere exists. Only explosion protected certified measuring instruments may be used to ensure that the apparatus is voltage-free. Grounding and short-circuiting may only be carried out, if there is no explosion hazard at the grounding or short circuit connection.</p>
 <b>Warning</b>	<p><b>Danger of static charge!</b>  <b>Clean only with humid cloth!</b></p> <p><b>Do not open when an explosive dust atmosphere is present!</b></p>

## 2 Totalizer with current input D 122.Z

### 2.1 Short description

The 5-digit totalizer D122.Z operates in hazardous area and indicates the sum of measured values of a 4 up to 20 mA current circuit. The device gets its energy from the measure circuit, therefore an extra power supply or batteries are unnecessary. The totalizer measures the current, adds the previous values, scales the sum and displays the sum finally on the LCD.

The present measured signal is also be displayed on a **41 segment bargraph**. It's possible to scale the bargraph separately to the digital value. The totalizer D122 is available in several housings.

The totalizer has 2 intrinsically safe **alarm outputs as an option (D122.Z.x.2)**. These outputs change their state, if the measured value exceeds his alarm limits. It's possible to choose open-circuit or closed-circuit connection. It is possible to refer the alarm monitoring to the sum or to the present measured value. In the last case the limits are displayed on a second bargraph. On one look you're sure that the measured value is in its limits.

Alternative to the option of two digital outputs for external limit monitoring, a **control input and a digital output** are implemented to the totalizer **D122.Z.x.3**. An active intrinsically safe signal (Low < 2V, High > 5V) on the control input sends a reset command to the totalizer.

The digital output port can be configured by software in two different modes: As a setpoint-reached message when the totalizer sum reaches its limit and as a **pulse output for the current flow signal**. In this case, the D122 measures the present flow rate and converts it to a digital signal.

The resolution of the digital signal is directly coupled with the scale configuration of the totalizer: each increment of the least significant digit sends a pulse. **The pulse width is about 7 ms, by a maximum output frequency of 68 Hz.**

The option curve and square root fitting offers a reproduction of an arbitrary monotone function of measured current and displayed value. A square root fitting function especial for measuring a flow through an aperture is implemented.

## 2.2 Features overview

- ☑ Basic functions
  - Loop-powered totalizer with current input (4 .. 20 mA)
  - Connect like passive analogue totalizers, voltage drop ca. 1V
  - LC-Display, 5 digits, up to 30 mm figure-height
  - Scale by keyboard and Display
  - 41-segment bargraph for present value observation
  - Bargraph is scaleable separately
  - Several housings available (control panel- and field housing)
  
- ☑ Options D122.Z.x.2
  - Alarm monitoring: two intrinsically safe alarm outputs on the display
  - Limit-functions with hysteresis and time delay
  - Field housing with additional (2<sup>nd</sup>) PG-Connector
  
- ☑ Options D122.Z.x.3
  - Digital input to receive an external reset signal
  - Digital output with 2 configurations: as an sum limit monitor and as quantity proportional pulse signal
  
- ☑ Curve fitting Option D122.xS
  - Root function
  - Curve fitting with any monotone function by using a list of points

## 2.3 Conformity with standards

The explosion proof indicators type D122.Z meets requirements of listed standards in the attachment (Declaration of conformity). They were developed, manufactured and tested in accordance with state-of-the-art engineering practice and ISO9001:2008.

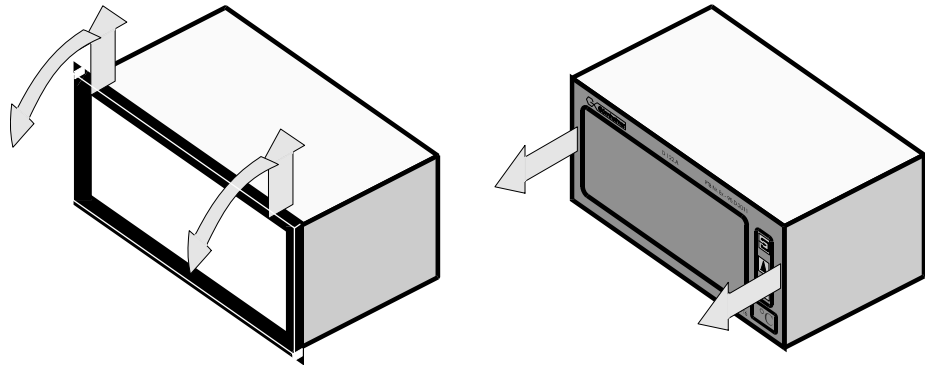
## 3 Installation and Connection

### 3.1.1 Installation of control panel housing D122.Z.0 und D122.Z.3

The totalizers D122.Z.0 and D 122.Z.3 are predicated for installation in a control panel.

#### How to insert the dimension symbol

Insert the dimension symbol (icon) before mounting. Do this by first removing the front frame as shown in the figure at left. Now remove the front panel from the housing as shown in the figure on the right. Cut the desired dimension-symbol from the set and pull it into its intended place on the right side of the panel. Make sure that the symbol is facing the front. Replace the front panel and frame.



#### How to fix the device in the control panel

Fix the device into the control panel with the intend cramps.

### 3.1.2 Connecting of control panel housing D122.Z.0 und D122.Z.3



**Caution**

**Connect the totalizers only to intrinsically safe 4 ... 20 mA current circuits.**

The terminals of the totalizers in the control panel housing are shown in Figure 1. The terminals 5,6 and 7,8 are absent by totalizers without alarm monitoring.

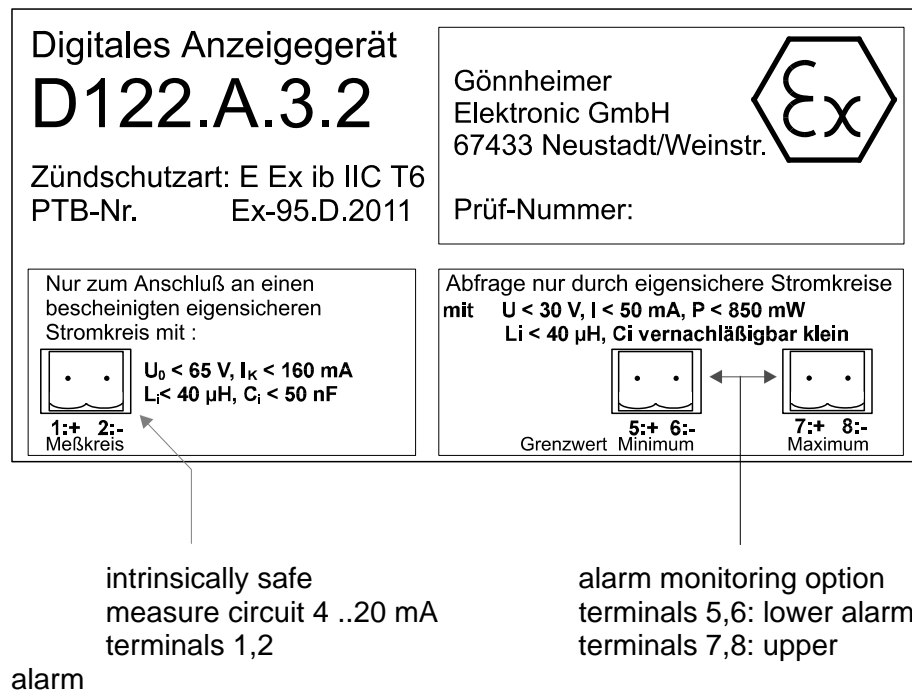


Figure 1: Terminals by totalizers in control panel housing



Caution

**Please regard the terminal maximum values of the attached EC- type certificate TÜV 99 ATEX 1488**

### 3.2 Installation of field housing D 122.Z.5

Choose a solid place to install the totalizers in the field area.

#### How to insert the dimension symbol

First, cut the desired dimension symbol out of the set. Then pull off the four screws of the cap and remove the cap from the housing.

Now push the prepared dimension-symbol into the dimension-symbol-slot. Make sure that the symbol is facing the front.

The dimension-symbol-slot lies below the display, on the internal side of the cap.

Finally replace the cup on the housing.

#### 3.2.1 Connecting of field housing D122.Z.0 und D122.Z.3

The terminals of the totalizers with field housing are inside. The placement of the terminals is shown at the Figure 2..

The terminals 5,6 and 7,8 are absent by totalizers without alarm monitoring.



Caution

**Connect the totalizers only to intrinsically safe 4 ... 20 mA current circuits.**



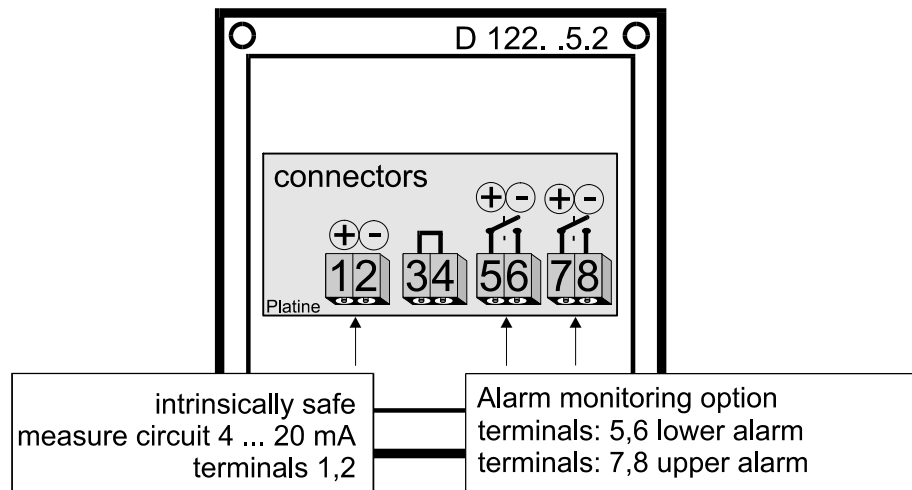


Figure 2: Terminals of D 122.Z.5



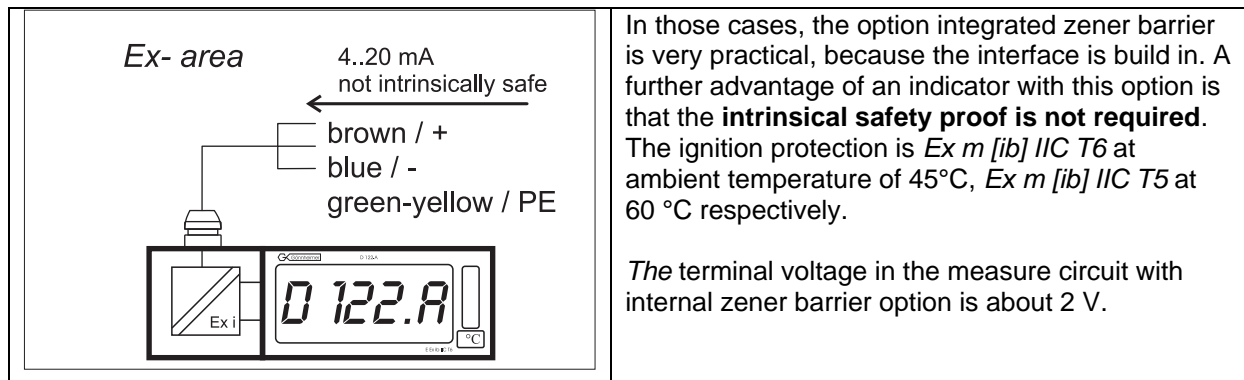
Caution

Please regard the terminal maximum values of the attached EC- type certificate TÜV 99 ATEX 1488

### 3.3 Internal zener barrier option

#### Devices with type code D122.A.x.x.BM

The standard digital indicator D122 works exclusively in intrinsically safe 4..20 mA current circuits (Ex i). If the concerned measure current circuit is **not** intrinsically safe, an extra zener barrier or an isolated interface and a long additional cable to the interface outside the hazardous area and back is needed.



## 3.4 Initial operation



After connecting, a **display test** (all segments of the display are turned on) appears immediate during one second. Thereupon the display shows the **software version** of the indicator.

### Note

#### 3.4.1 Default parameters

The following parameters are active ex works:

<b>Scaling (display and bargraph)</b>	4 mA current -> 4.00 20 mA current -> 20.00
<b>Limits</b>	Low: 4.00 mA / High: 20.00 mA
<b>Hysteresis / Delay</b>	0.10 / 0 sec.
<b>alarm outputs (alarm monitoring)</b>	circuit-opening connection
<b>Code words</b>	CODE1: 0001 / CODE2: 0002

#### 3.4.2 Ex works settings – Device reset



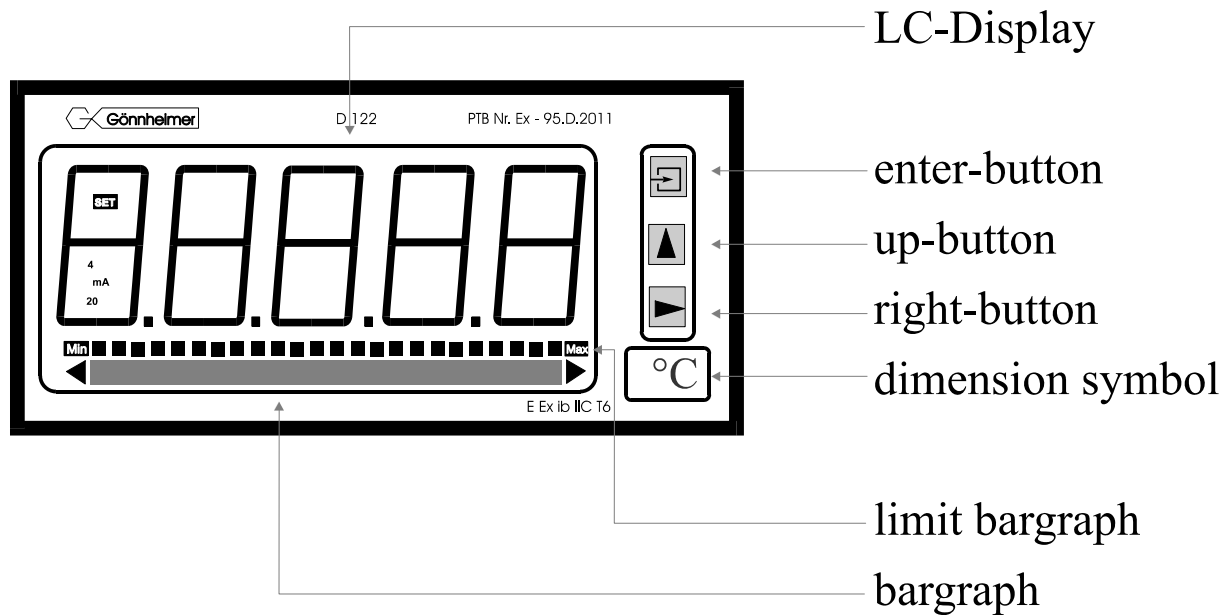
Press the Enter- and Right-button during the start sequence to reactivate the default parameters. (Hardware-Reset)

### Note

A reset activates also the ex works calibration.

## 4 Operating manual

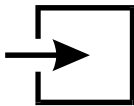
### 4.1 Front view



### 4.2 Keyboard

On the front side of the totalizer are three buttons with several function symbols. With these three buttons the user can activate each function and enter all parameters for any individual setting. Each button is named by its function:

#### *Enter-button*



Pressing the *enter*-button starts the input menu. In general, the *enter*-button activates the menu item or accepts the manipulated value of a parameter.

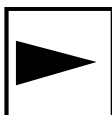
#### *Up-button*



Functions of the up-button are:

1. present measure value button
2. modification of the selected figure
3. pass menu items

#### *Right-button*



Functions of the right-button are:

1. change the display to limit view
2. select figures
3. pass menu items

## 4.3 Configuration

It is easy to set the parameters and change the configuration of the totalizer. The inputs are logical grouped by a menu structure. The **flow charts** of these menus can be found at chapter 6.



### Note

Totalizers without the alarm monitoring option do not have the corresponding menu items.



### Note

**The Input-views in the flow diagrams have additional boxes in their background**, because the Input-views may be changed by pressing any of the buttons.

The procedure, to enter a value, is shown in the flow diagram 'Edit menu', see Figure 13.

#### ☞ Normal state

After connecting, the totalizer D122 starts to initialise its configuration. The configuration data is stored in an internal EEPROM due to the previous run. By the first start, the D122.Z totalizer initialises the default configuration.

Directly past starting sequence the totalizer begins to operate. This state is called the 'normal state' of the D122 and the totalizer is also ready for inputs.

(See also flow diagram in Figure 7)

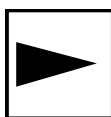
#### ☞ Present-value control



Pressing and holding the *up*-button (**present value control button**) the display shows the present measured value.

(See also flow diagram in Figure 7)

#### ☞ Limit view menu / Counter reset



One touch on the *right*-button starts the limit view menu. Totalizers without the alarm monitoring option propose the counter reset suggest immediately. This reset will be executed by pressing the *enter*-button and entering the right code word.

(See also flow diagram in Figure 8)



Totalizers with the alarm monitoring option proposes on the other hand the lower limit. (Note: if the limits refers to the sum then the lower limit is absent).

The screen shows now [limit low]. Confirm with the *enter*-button to display the value of the lower limit.

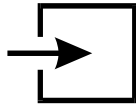


To pass the lower limit press the *right*-button. The menu changes to the upper limit. The screen shows now [limit high]. Confirm with the *enter*-button to display the value of the upper limit.



Pressing the *right*-button for a second time quits the limit view menu and offers the reset of the counter.

To reset the counter hit the *enter*-button. The totalizer is now back

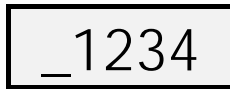


in normal state.

Pass the counter-reset by pressing the *right*-button, the totalizer returns to normal state too.

While watching the limit value it is possible to manipulate it by pressing the *enter*-button. The view changes to the

- Edit mode.



A blinking segment appears below the sign place. Pressing the *right*-button selects the figure and the *up*-button increments the selected figure. To accept the new limit value, press the *enter*-button.

(See also flow diagram in Figure 8)

- Code protection



Before the menu gets to the edit mode the **code 2** must be entered, to **prevent a modification by unauthorised persons**. Entering a wrong code word stops the limit view menu immediately.

The default code 2 is [0002].

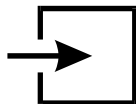


**Note**

The interrogation of **code 2 can be switched off** by modifying the code 2 to **[0000]**. For this reason the flow diagram shows the code interrogation in stroked dots. To change the code you must enter the input menu, later in this chapter.

- Parameter entering

(See also flow diagram in Figure 9)



Back in the normal state of the totalizer we start the

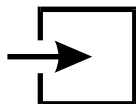
- Input menu

by pressing the *enter*-button.



The **configuration of the totalizer is protected** against manipulations by unauthorised persons with the **code 1**. To get the input menu enter the code 1 default [0001].

It's **impossible to switch off the code 1** interrogation.



After entering the right code word the totalizer proposes to join the



**Scale menu.** The figure on the left hand appears on the screen. To scale the **measured current**, the **bargraph** and to **set the decimal point** join the scale menu by confirming with the *enter*-button.

See also flow diagram in Figure 10).



### Note

tOtAL

Enter the upper scale point correct figured 'as big as possible' (the first figures should not be '0')  
In this case you get the maximum precision of the totalizer.

Press the *right*-button to pass the scale menu and select the second submenu, the total menu. To start the total menu press the *enter*-button.

(See also flow diagram in Figure 12)

LI

To pass the total menu press the *right*-button. The following submenu is called **limit menu**. This menu is naturally only available for totalizers with the alarm monitoring option.

In the limit menu the user enters the limits, as well as the hysteresis and the time delay of the alarm outputs.

(See also flow diagram in Figure 14)

CodE 1

The next two following items allow to manipulate the words for code 1 and code 2. The *enter*-button confirms the input and the corresponding code appears in edit mode.

CodE 2

Remember that the code word [0000] switches off the code 2.

CAL

Finally it's possible to calibrate the totalizer with the following submenu called calibration menu.

(See flow diagram in Figure 15)



### Caution

End

The totalizer is already calibrated ex-works.

**In general, a further calibration is not necessary and only experienced persons are allowed to calibrate it.**

Now we reach the end of the input menu. Confirm the end with the *enter*-button. The totalizer switches back to normal state.

If you want to repeat the input menu, press the *right*-button.



### Note

If an invalid value is entered for any of the parameters, you will not be able to quit the input menu. Instead, the program switches automatically into edit mode to the found invalid value.

## 4.4 Parameter input illustration

### ☑ Prescale factor determination (I-fac)

The totalizer D122.Z adds the measured values to a sum and displays it. The measured value always refers to second, so it is possible to sum short count events. Recording for a long time the sum gets considerable bigger as the dimension of the present value.

To adjust the summation to each application, a prescale factor (I-fac) divides the sum to the desired range. Using the prescale factor it is possible to adjust the dimension of the instantaneous value to the desired dimension of the sum. The prescale factor V is defined by

$V = \text{desired dimension of sum} / \text{dimension of the measured value}$

$$\text{or}$$

$$V = \frac{E_s}{E_M \cdot [s]}$$

Example: An measuring transducer has an output-signal with the dimension g/min. The sum should have the dimension kg. The right prescale factor is

$$V = \frac{\text{kg}}{\frac{\text{g}}{\text{min}} \cdot [\text{s}]} = \frac{1000\text{g}}{\frac{1\text{g}}{60\text{s}} \cdot [\text{s}]} = 60000 = 6 \cdot 10^4 = 6\text{E}4$$

According to this example the prescale factor V changes to 1000 (1E3) for a transducer signal with the dimension g/s, respectively 3600 000 (36E5) for a transducer signal with the dimension g/h.



### Note

The format of the prescale factor V is the **exponent notation**, i.e. the figures in front of the zeros of V lie by the exponent notation in front of the „E“ and the **quantity** of the zeros lie behind the „E“.

### ☑ Creep suppression (StArt)

In some cases, it will be necessary to ignore a transducer signal above 4 mA. This threshold level is named creep suppression value. The figure on the right hand shows its function.

Edit the creep suppression value in the total menu.

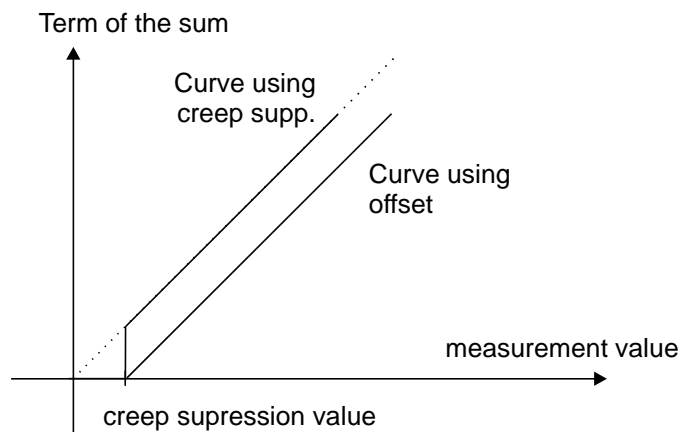


Figure 3: Creep suppression

### 4.4.1 Hysterese and time delay setting

#### Hysterese

A hysteretic curve prevents an unwanted fast switching of the alarm outputs.

The switching behavior of the low alarm (min) shows figure 4. The switching behavior of the high alarm (max) shows figure 5.

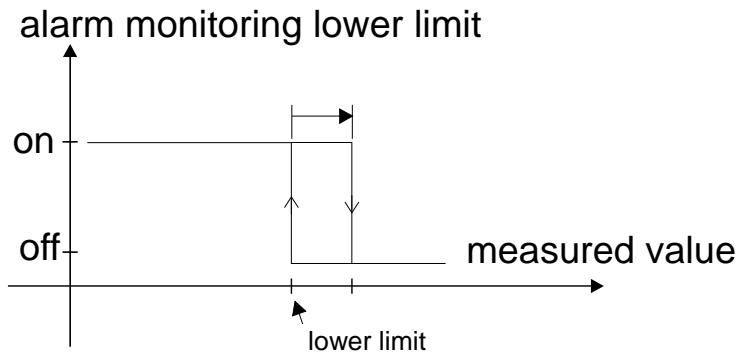


Figure 4: Hysteric curve low alarm

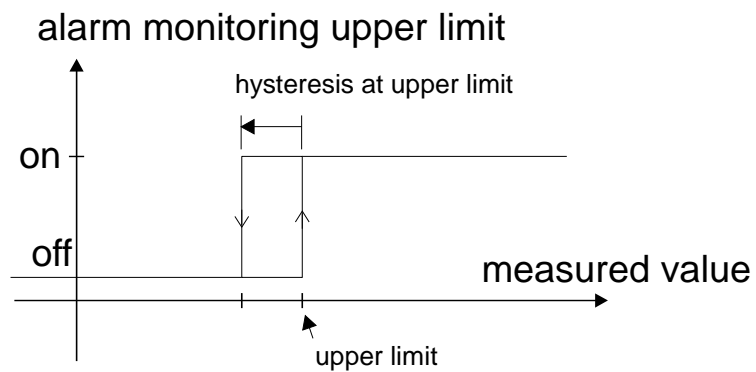


Figure 5: Hysteric curve high alarm

#### Time delay

The span of time ' $t_e$ ' is the difference between the first exceeding of the measurement above the upper limit and the switching of the high alarm (For the low alarm exists an analogous ' $t_e$ ').

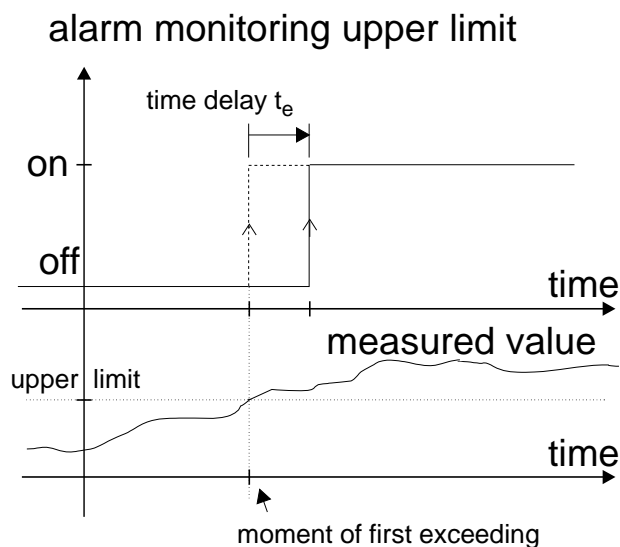


Figure 6: Time delay max respectively min



**Note**

If the measured current falls below the high limit during ' $t_e$ ', the  $t_e$ -timer resets.



## 4.5 Configuration example

For a successful parameter input, see the following example of a flow measurement, with alarm monitoring.

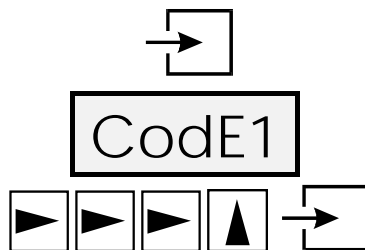
### ↑ Situation

- Sensor range: 10g/min ... 100g/min
- Alarm by reaching a throughput rate of 50 kg
- creep suppression: 12g/min

### ↑ Adjustment

- |                           |  |
|---------------------------|--|
| 1] Measure range:         | 010,0 g/min ... 100,0 g/min<br>for 4 ... 20 mA |
| 2] Bargraph:              | 010,0 g/min ... 100,0g/min                     |
| 3] Limits:                | Limit relates to the sum (Limit):<br>50 kg     |
| 4] creep suppression:     | 012,0 g/min                                    |
| 5] Alarm monitoring mode: | circuit-opening connection                     |

### Procedure:

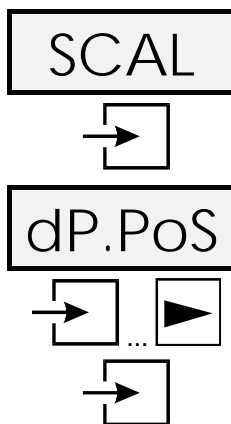


One touch on the enter-button quits the normal state and starts **the input menu**.

The menu interrogates for code 1.  
The default code 1 is [0001].

Enter the right code word using the arrow buttons.  
Finally hit the *enter*-button.

### ☑ Scaling display and bargraph:



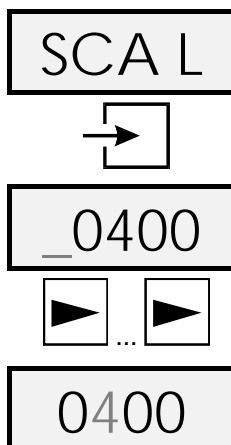
Join the **scale menu** pressing the *enter*-button.

First set the **position of the decimal** point. The position of the decimal point will be used for each parameter, like display, bargraph and limits.

Set the decimal position after the third position (count from left side), because we will enter [1000] (100 g/min) for the high scale point afterwards.

Choose the *enter*-button to edit the decimalpoint position and press the *right*-button for three times.

Confirm with the *enter*-button.



Now the [scale point low] view appears.  
Edit by pressing the *enter*-button and enter the **lower scale point**  
[0100] (10g/min) as follows:

Press the *right*-button for two times to select the second figure.

Now the figure „4“ blinks.



0100



SCA H



### Note

bAr L

bAr H

Hit the *up*-button until ...

... the figure „1“ will be adjusted.

Confirm the lower scale point pressing the *enter*-button. Now the...

... item appears.

Repeat the input procedure for the **upper scale point** like the lower scale point. Enter [1000] (100 g/min) for the upper scale point.

(Confirm by hitting *enter*-button)

Enter the upper scale point correct figured 'as big as possible' (the first figures should not be '0')

In this case you **get the maximum precision of the totalizer.**

Now **scale the bargraph.** Hit the *enter*-button.

Enter [0100] (10 g/min) for the lower bargraph scale point. Confirm by hitting the *enter*-button

Enter [1000] (100g/min) for the upper bargraph scale point.

Hitting *enter*-button accepts and quits the scale menu.

### Prescale factor and creep suppression

tOtAL

Start **total menu** by pressing *enter*-button.

I-FAC

Press *enter*-button a further time to edit the **prescale factor.**

6E4

Enter the value [ 6E4] (60 000) using the arrow-buttons. To define the correct prescale factor see paragraph 4.4.

Confirm by hitting the *enter*-button.

StArt

Press now the *enter*-button to edit the creep suppression value. Use the arrow-buttons to enter [0120] (12 g/min).

(Confirm by hitting the *enter*-button.)

LIS Y

Finally, let the alarm monitoring refer to the sum. Select [LIS\_Y] using the arrow-buttons and confirm with the *enter*-button.

PUL

Totalizer with external reset and current flow signal option (D122.Z.x.3) have additional the option to configure the digital output.

Pass this menu item using the *right*-button, to keep the default setting: pulse output = no (=false)

Limits, Hysteresis and time delay

LI

Start the limit menu by pressing the *enter*-button.

The device skips the input of the lower limit, because the limit refers to the sum.

LI H

The upper limit input appears.

After hitting the *enter*-button enter the limit [0050.0] (50 kg) using the arrow-buttons.

Confirm by hitting the *enter*-button.

The hysteresis and time delay are also skipped.

Con H

Now choose the circuit-opening connection [nc---] (normally closed) using the *up*-button and confirm by pressing *enter*-button.



We pass simply the following menu items (manipulate code words and calibrate) using the *right*-button.

End



Finally quit the scale menu hitting the *enter*-button.

The totalizer is back in normal state. The changes are immediately active and will still be active after power off (disconnecting the totalizer).

## 5 Flow charts

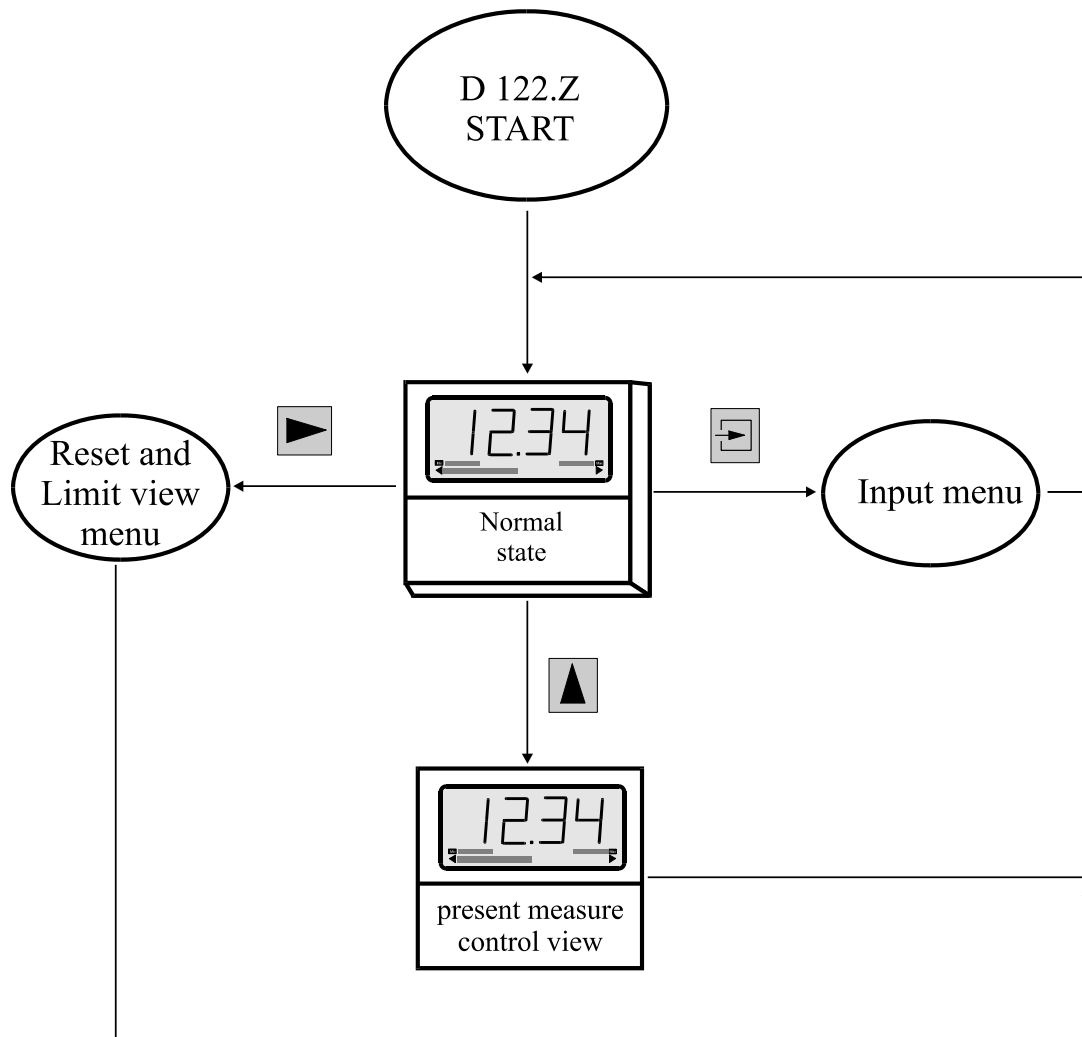


Figure 7: Flow diagram normal state

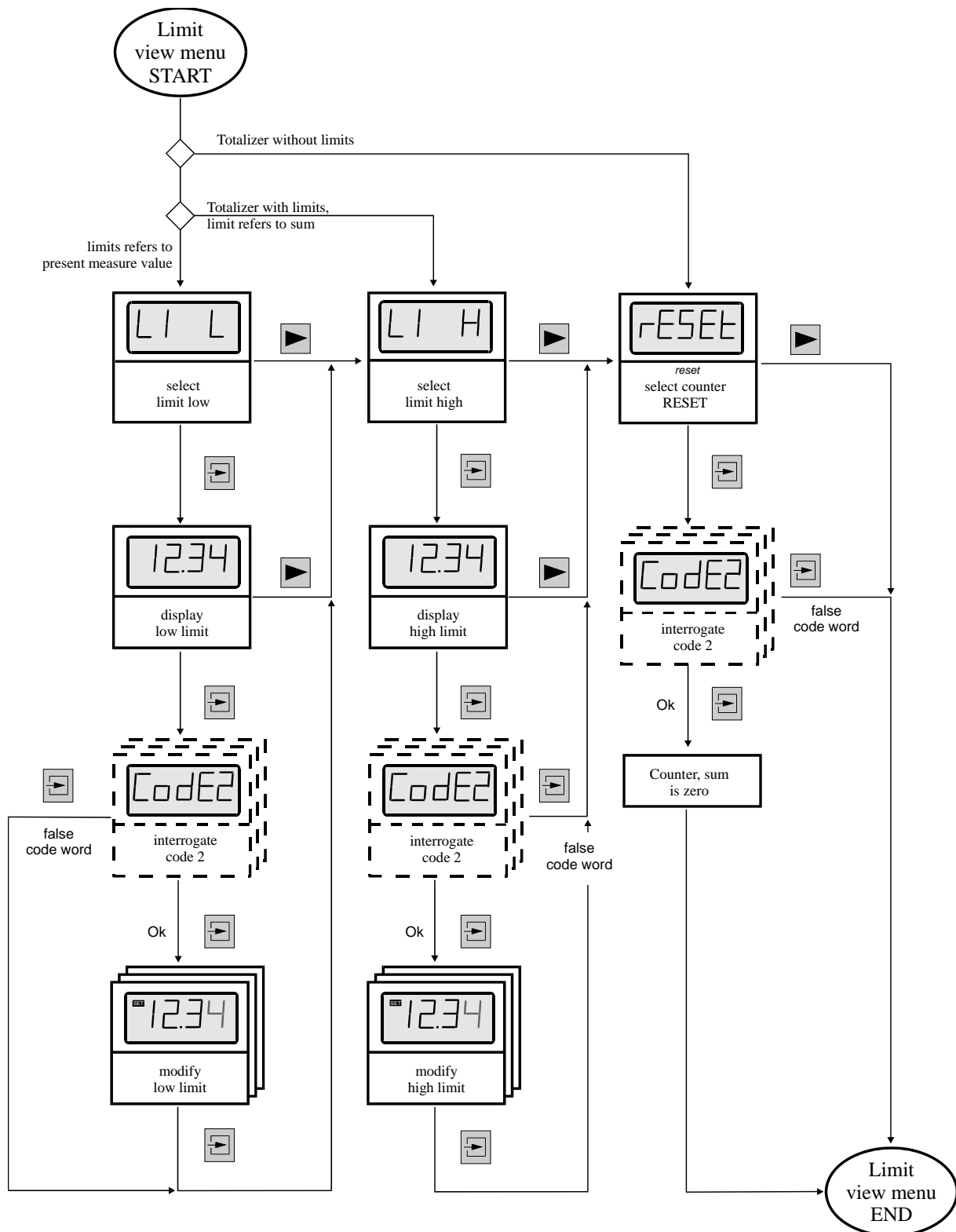


Figure 8: Flow diagram limit view

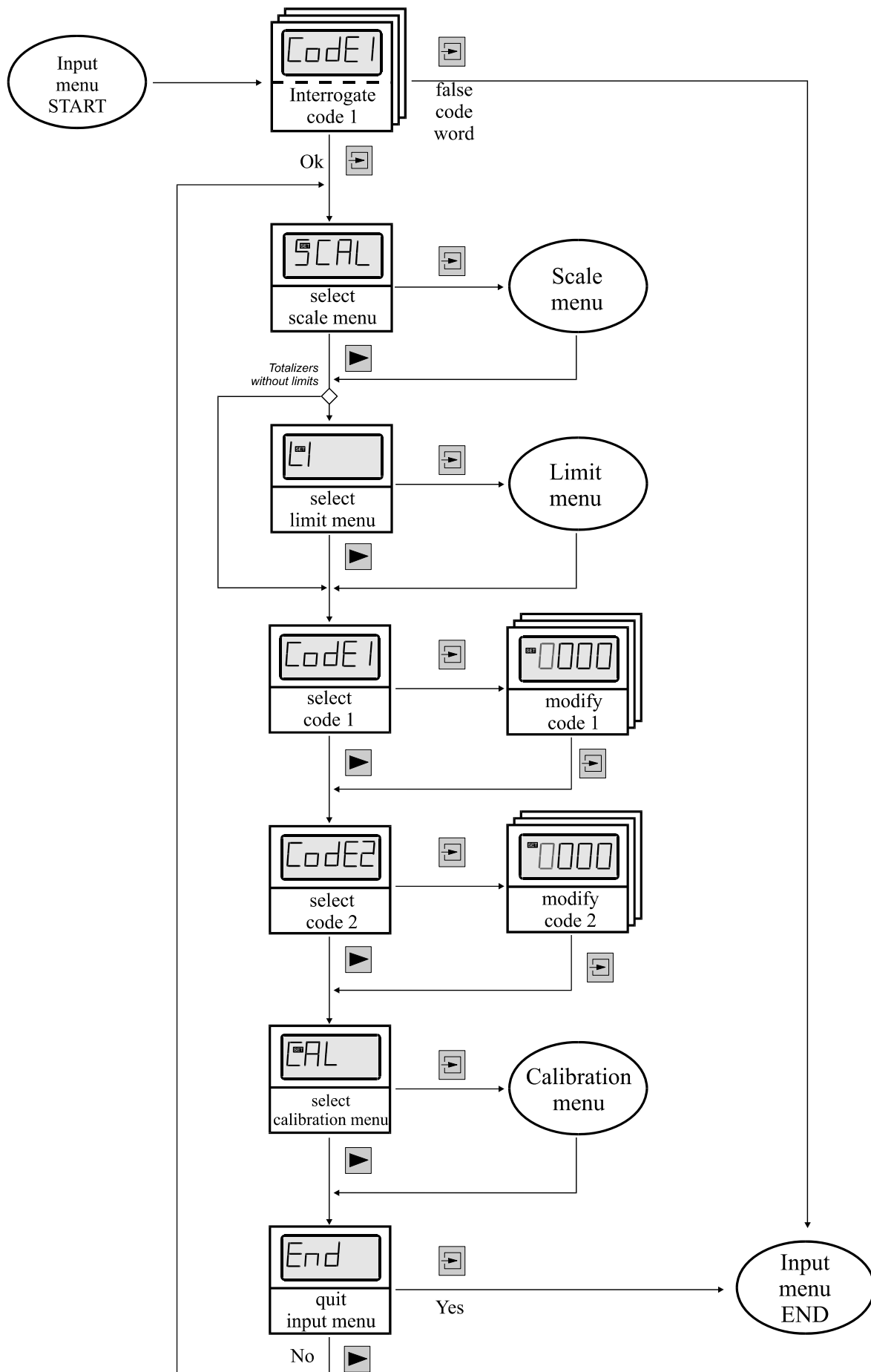


Figure 9: Flow diagram input menu

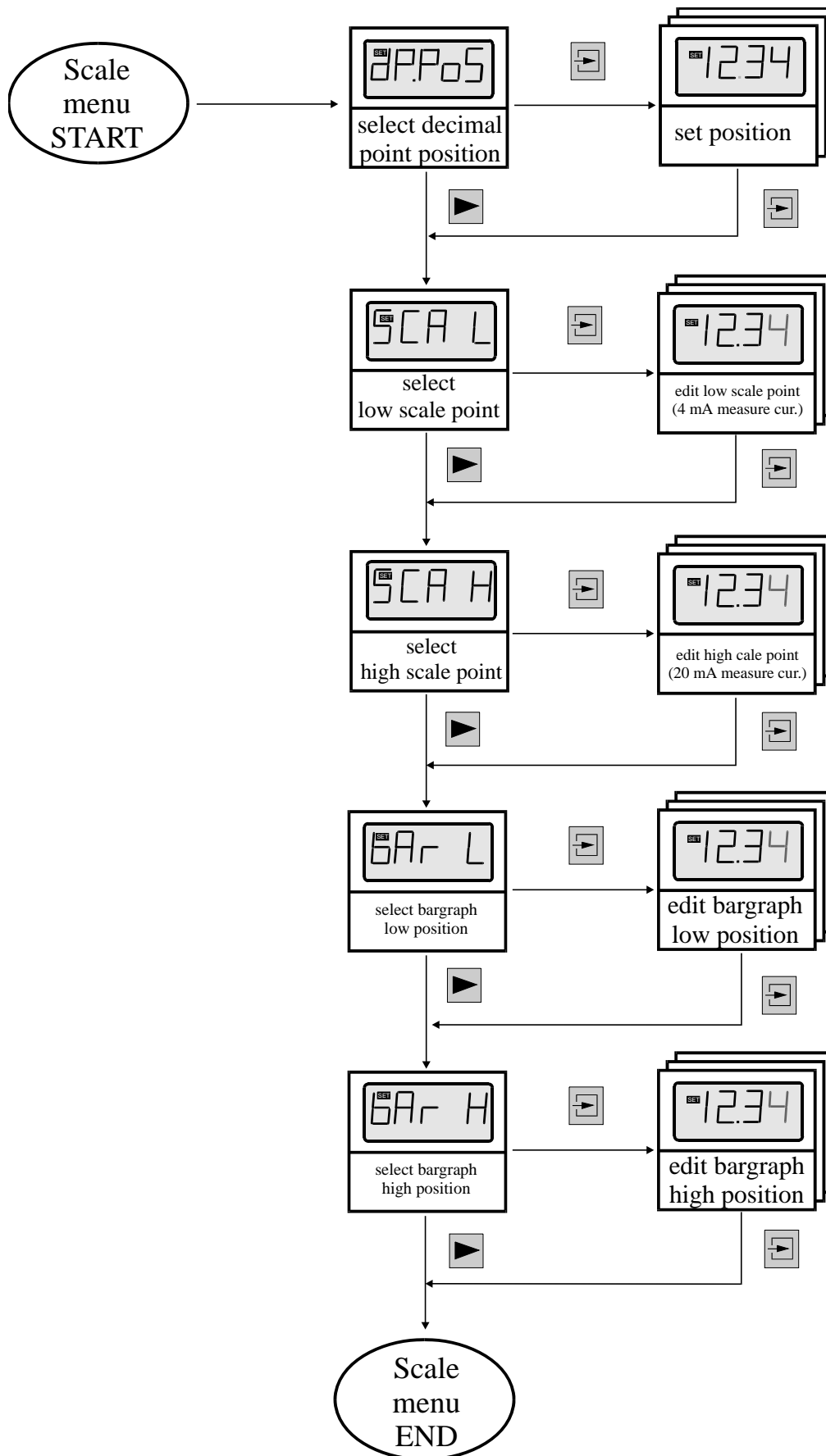


Figure 10: Flow diagram scale menu

Alternative (extended) scale menu for special software option only

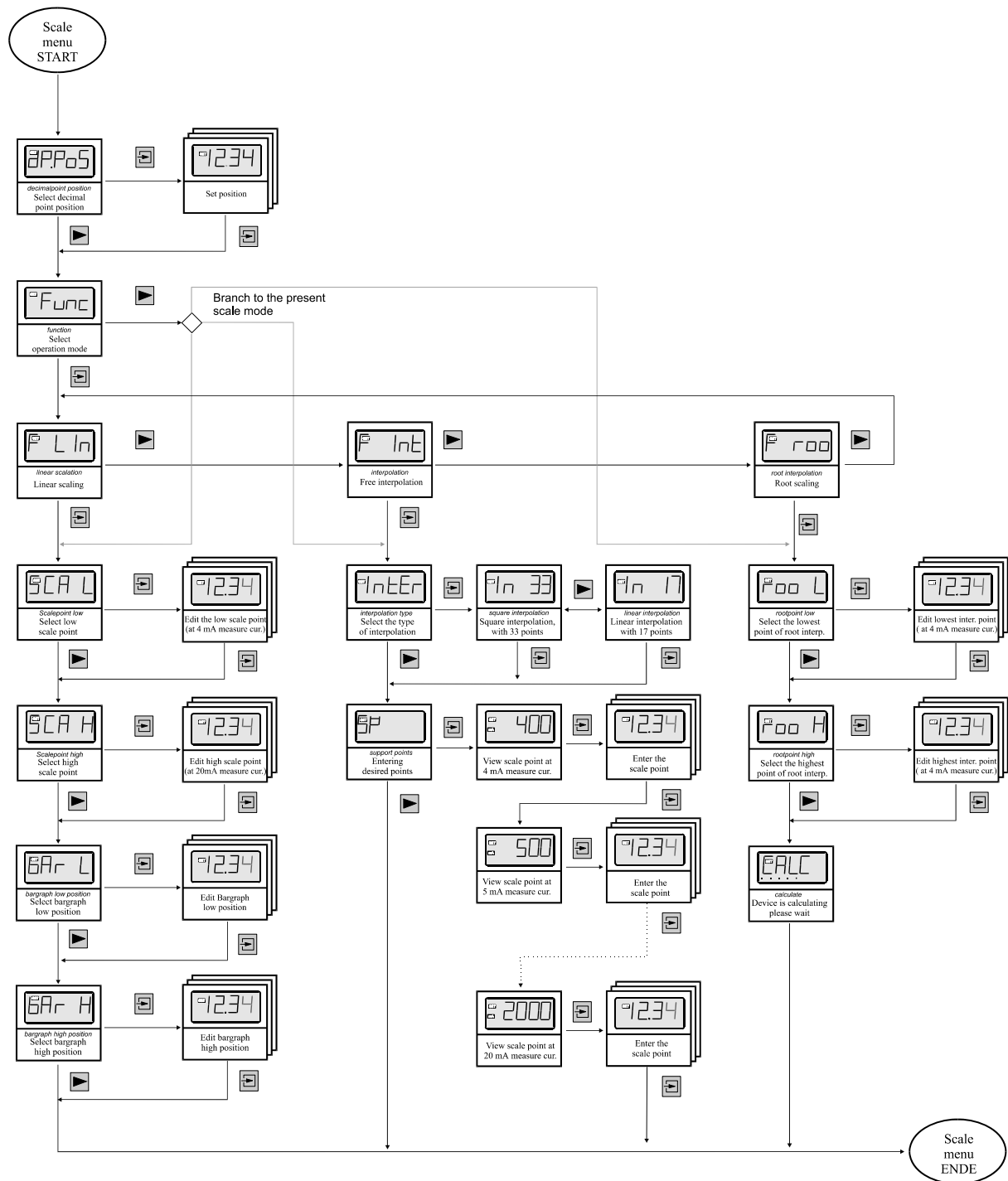


Figure 11: Flow diagram extended scale menu



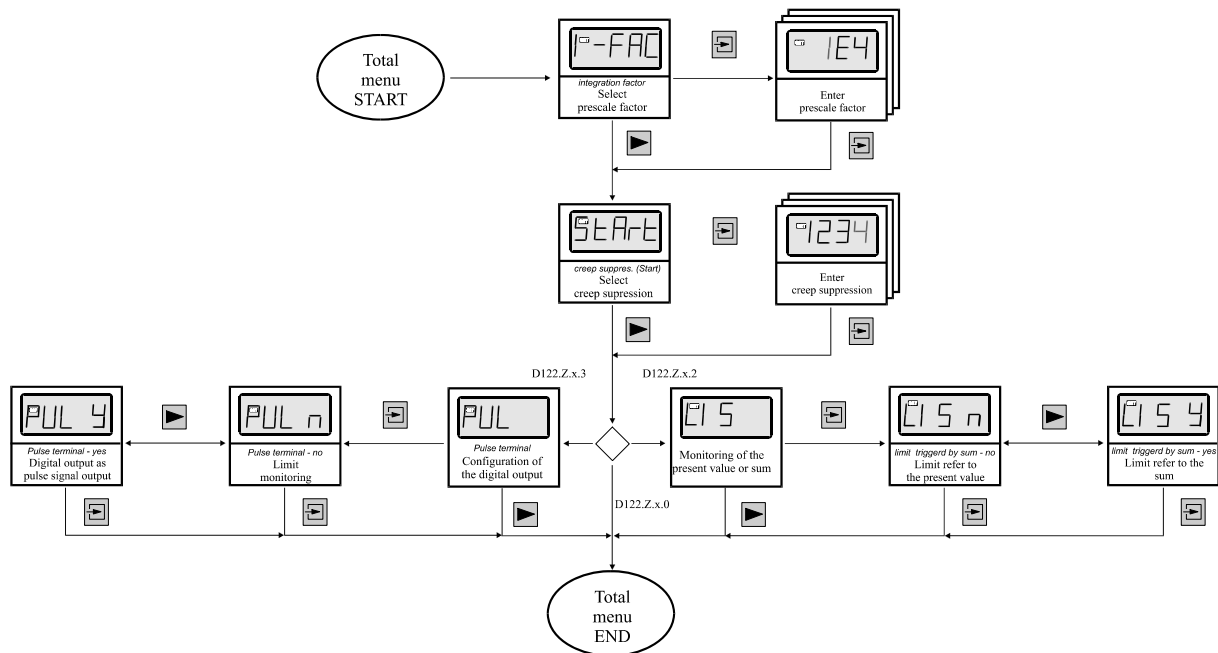


Figure 12: Flow diagram total menu

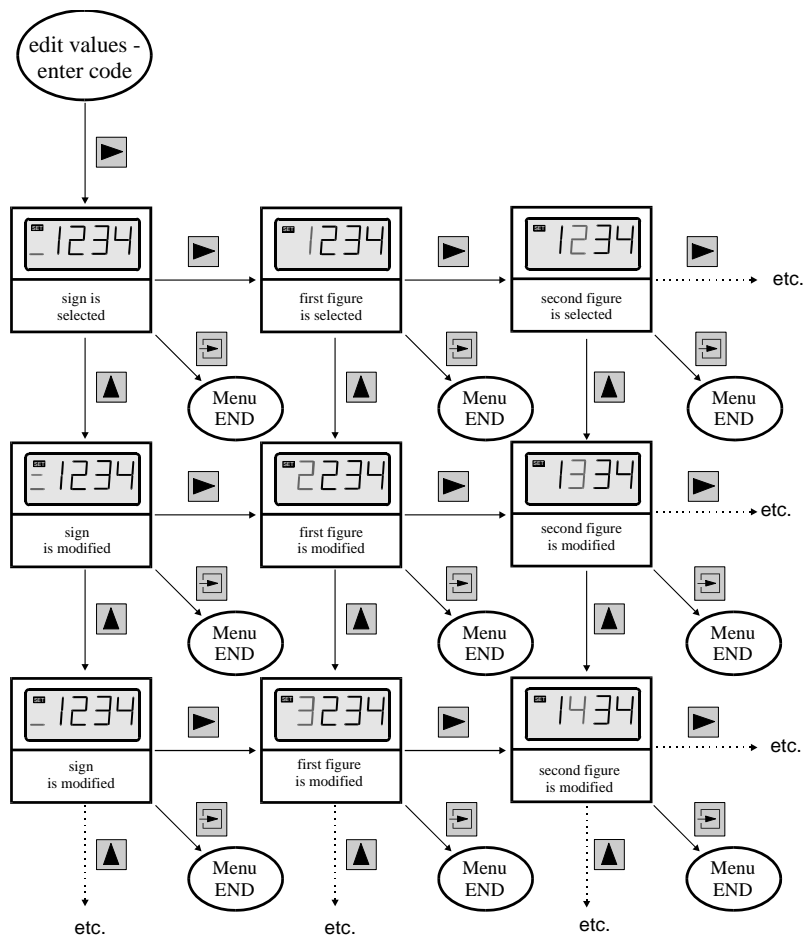


Figure 13: edit mode

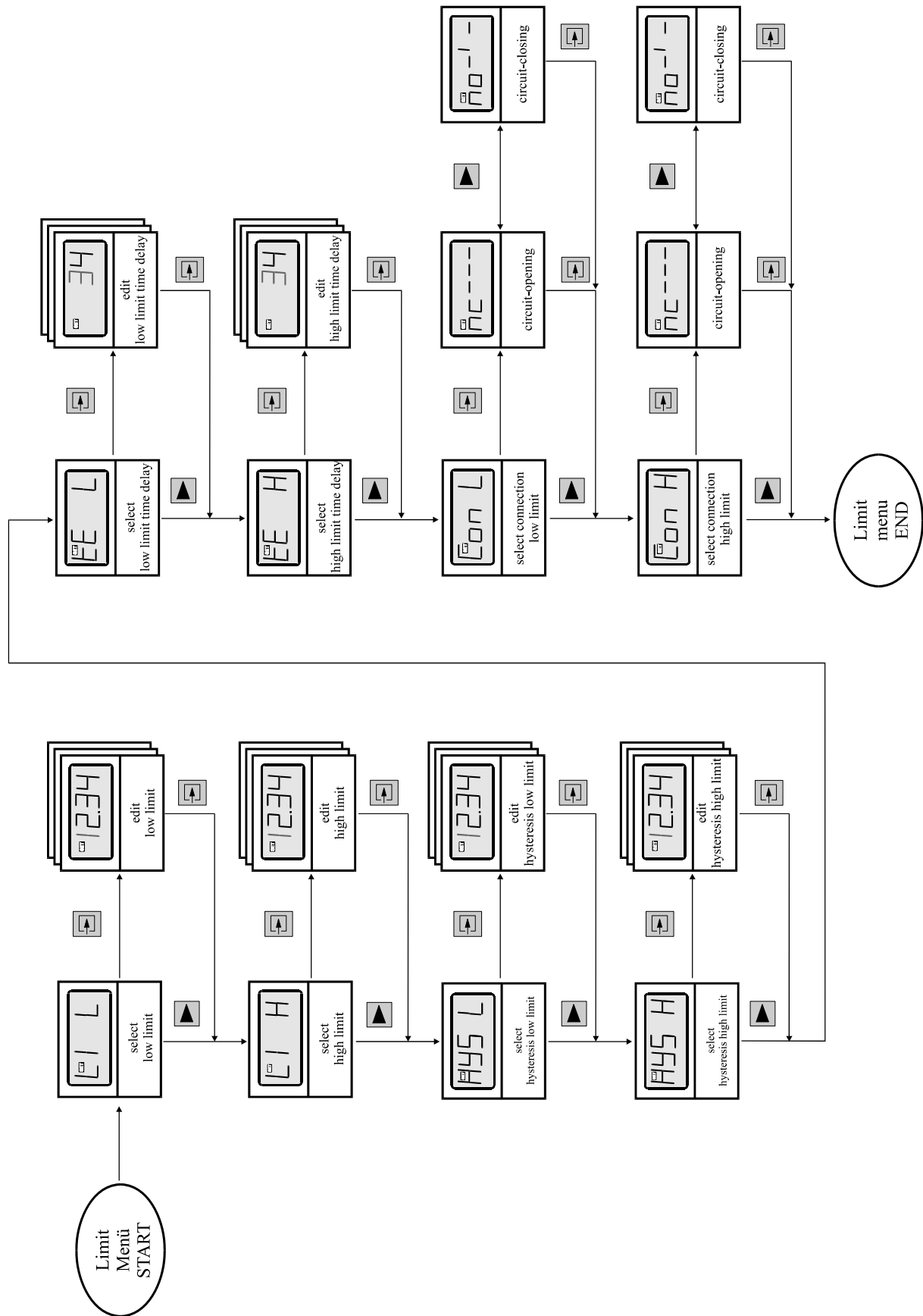


Figure 14: Flow diagram limit menu

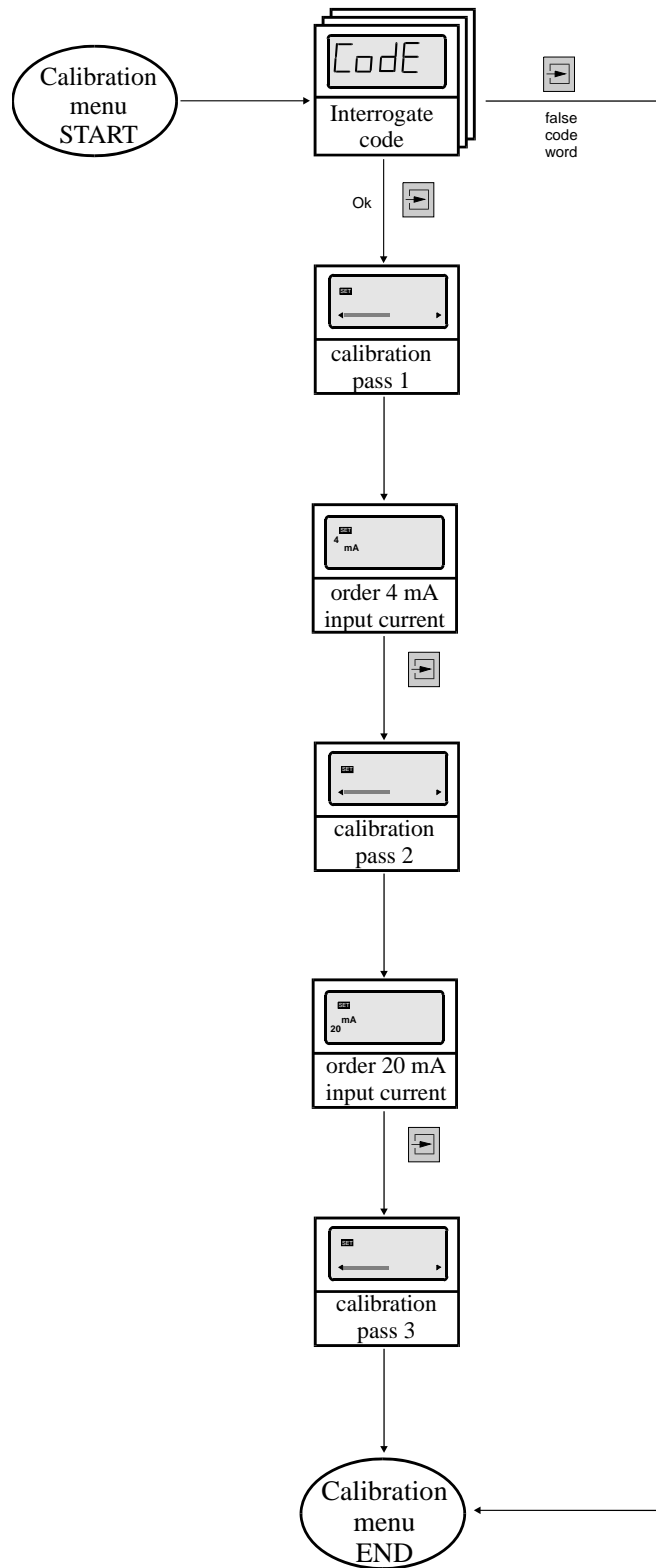


Figure 15: Flow diagram calibration menu

## 6 Appendix

### 6.1 Specifications

	D122.Z.0	D122.Z.3	D122.Z.5	-	D122.Z.7
Device Group	II 2 (1) G				II 2 (1) GD
Explosion protection	Ex ia IIC T6 Gb at Ta < 45°C Ex ia IIC T5 Gb at Ta < 60°C				See left + Ex tb IIIC IP65 T 70°C
EC- type certificate	TÜV 99 ATEX 1488				
Display	5figure LCD-7-Segment display			-	5
Digit height	15mm	30mm	30mm	-	30 mm
Display range	-19999 ... +19999				
Dimension symbols	Selectable with defined symbols				
Decimal points	Selectable by keyboard				
Bargraph	41 Segmentes			-	41 Segmentes
Alarm limits display Versions D122.x.x.2	- Via bargraph - Flashing 'max' or 'min' sign			-	- via Bargraph 'Max'- or. 'Min'
Alarm limit monitoring	Version D122.x.x.2 By means of intrinsically safe control circuits (e.g. NAMUR or DIN 19234)				
Actual value button	Direct display of present measure value in measurement circuit				
Measurement circuit	Intrinsically safe measurement circuit 4 ...20 mA; Voltage drop ca. 1V				
Measurement circuit limits	No-load Voltage $U_0 \leq 65$ V; short-circuit current $I_k \leq 160$ mA Internal inductance: $\leq 40$ $\mu$ H, Internal capacitance: $\leq 10$ nF, see certificate TÜV 99 ATEX 1448				
Alarm monitoring limits	By intrinsically safe control circuits see certificate TÜV 99 ATEX 1448				
Housing	Acc. to control-panel standard DIN 43700		Field housing		
Protection class	Front panel IP 40 up to IP 65		IP 65	IP 66	
Dimensions HxWxD [mm]	48x96x62	72x144x80	133,5x138x64	138x184x64	140 x 140 x 71
Cut out dimensions	43,5 x 91,5	66 x 136,5	-		
Material	Fiber opt. strengthened Noryl		ABS	Aluminium	
Measuring error	0,1% $\pm$ 2 digits referring to measure range				
Temperature coefficient	< 0,01% of measure range / K				
Ambient temperature limit	-10°C ...+45°C for temperature class 6 -10°C ...+60°C for temperature class 5 totalizers for -20°C ambient temperature on inquiry				

## 6.2 Error messages

At startup:

Message	Symptom	Bug-fix
<b>Error 1</b>	Error, general device fault	Turn off and turn on the device, if the fault remains, send the device back to Gönzheimer
<b>Error 2</b>	The sum from a previous run is lost	press any button, device is ready for run

## 6.3 Dimensions

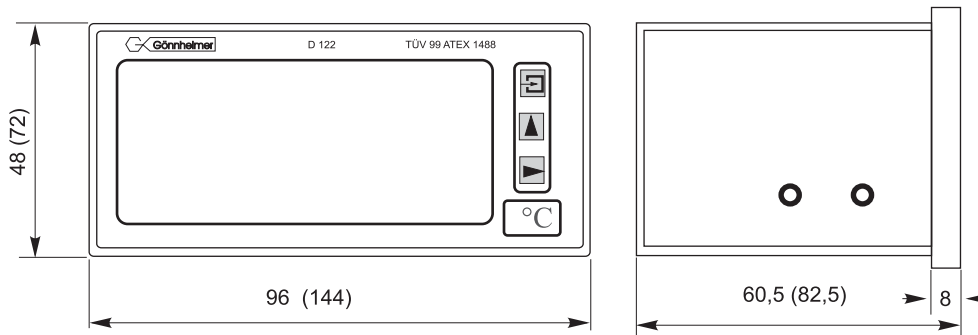


Figure 16: Control panel housing cut-out

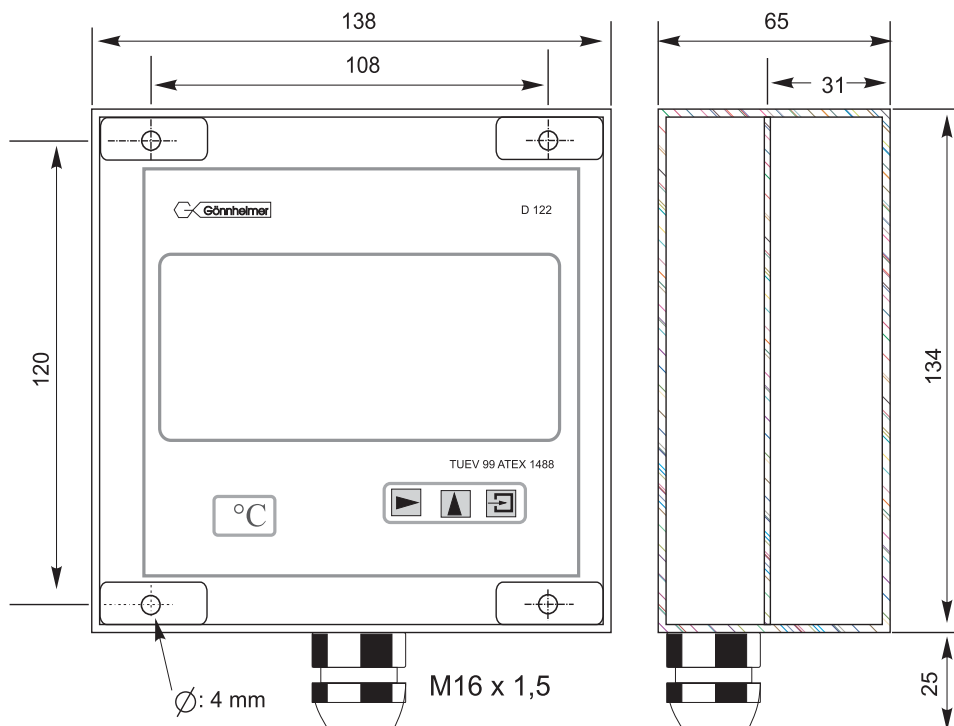


Figure 17: Field housing

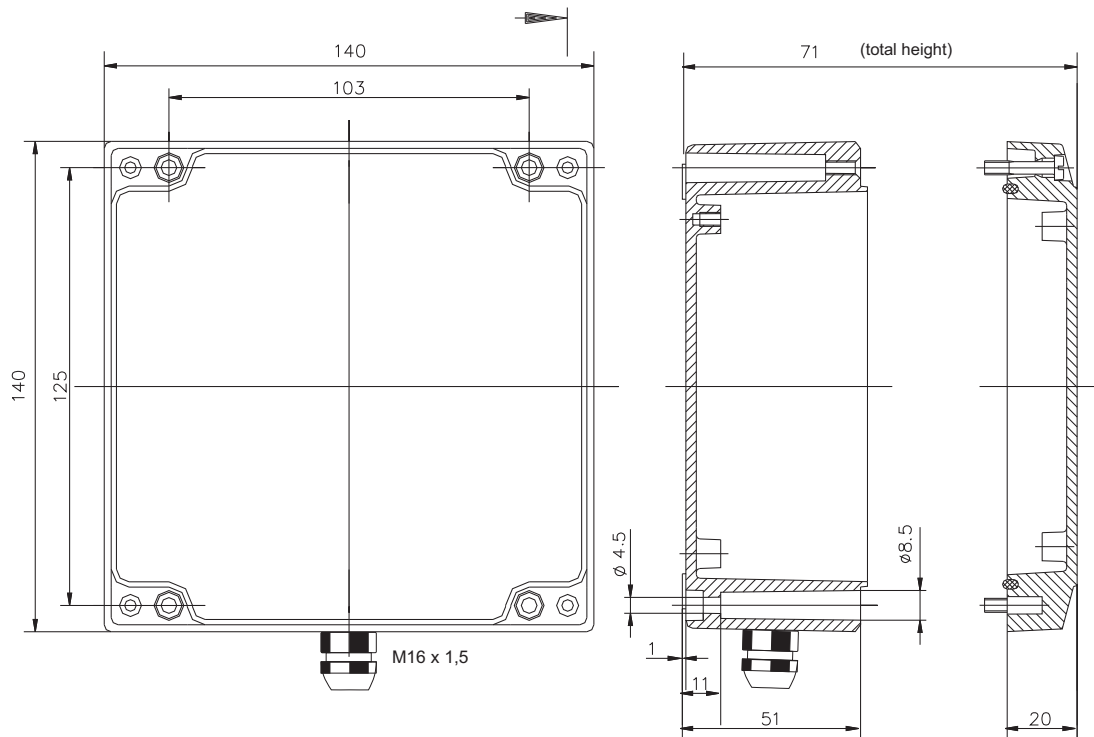


Figure 18: Aluminum field housing

## 6.4 Type code

Device series D122		.	.	.
Device: Indicator	.....	.A		
Indicator with curve fitting option	.....	.AS		
Totalizer	.....	.Z		
Totalizer with curve fitting option	.....	.ZS		
Housing:	Control panel housing 48 x 96 mm	.....	.0	
	Control panel housing 72 x 144 mm	.....	.3	
	Field housing (30 mm figure height)	.....	.5	
	Field housing (50 mm figure height)	.....	.6	
Digital output:	without	.....	.0	
	with 2 digital outputs	.....	.2	
	with reset input and pulse output	.....	.3	
Additional option:				
	Internal zener barrier <sup>1</sup>	.....	.BM	
	Internal two wire readings recorder <sup>2</sup>	.....	.MU	

1: Not suitable for D122.x.0.x.x

2: For flied housings only, a combination with internal zener barrier (.BM) is not possible

## 6.5 Material specification



Device type	Material	manufacturing process
D122.x.0.x.x	Noryl	injection die casting
D122.x.3.x.x	Noryl	injection die casting
D122.x.5.x.x	ABS	injection die casting
D122.x.6.x.x	ABS	injection die casting
D122.x.7.x.x	Aluminum	die-casting

## 6.6 Transport, Storing, Repairs und Disposal



<b>Transport</b>	Vibration-free in origin package, do not pitch, handle carefully
<b>Storing</b>	Store the device dry, inside of the origin package
<b>Disposal</b>	When the explosion proof multipurpose distribution, switching and control units are eventually disposed of, the national regulations governing the disposal of waste materials in the country concerned must be rigorously observed.
<b>Repairs</b>	Defective parts may only be replaced by the Manufacturer or by personnel specially trained and supervised by the Manufacturer. Only genuine spare parts from the Manufacturer may be fitted.

## 6.7 Marking

Marking of device types D122.Z.0.x.x, D122.Z.3.x.x, D122.Z.5.x.x

  0044	Marking according to 50014 ff	Marking according to EN 60079:2010
D122.x.x.x.0 D122.x.x.x.MU	II 2 G; EEx ia IIC T6 bei Ta bis 45°C II 2 G; EEx ia IIC T5 bei Ta bis 60°C	II 2 G; Ex ia IIC T6 Gb bei Ta bis 45°C II 2 G; Ex ia IIC T5 Gb bei Ta bis 60°C
D122.x.x.x.BM	II 2 G; EEx ia [ib] IIC T6 bei Ta < 45°C II 2 G; EEx ia [ib] IIC T5 bei Ta < 60°C	II 2 G; Ex ia [ib] IIC T6 Gb bei Ta < 45°C II 2 G; Ex ia [ib] IIC T5 Gb bei Ta < 60°C

Marking of device types D122.Z.7.x.x

  0044	Marking according to 50014 ff	Marking according to EN 60079:2010
D122.x.7.x.0 D122.x.7.x.MU	II 2 G; EEx ia IIC T6 bei Ta < 45°C II 2 G; EEx ia IIC T5 bei Ta < 60°C II 2 D; Ex IP65 T70°C	II 2 G; Ex ia IIC T6 Gb bei Ta < 45°C II 2 G; Ex ia IIC T5 Gb bei Ta < 60°C II 2 D; Ex tb IIIC IP65 T70°C Db
D122.x.7.x.BM	II 2 G; EEx ia [ib] IIC T6 bei Ta < 45°C II 2 G; EEx ia [ib] IIC T5 bei Ta < 60°C II 2 D; Ex IP65 T 70°C	II 2 G; Ex ia [ib] IIC T6 Gb bei Ta < 45°C II 2 G; Ex ia [ib] IIC T5 Gb bei Ta < 60°C II 2 D; Ex tb IIIC IP65 T70°C Db

## 6.8 Parameter list

The customer is free to use this chart for archiving the parameters of his indicator D122.

Parameter	Description	previous Display	Value
<b>Scale menu</b>			
Decimalpoint position		dP.PoS	0 0 0 0
Low scale point	Display at 4 mA input current	SCAL L	
High scale point	Display at 20 mA input current	SCAL H	
Bargraph low position	Display of starting bargraph	bAr L	
Bargraph high position	Display at full bargraph	bAr H	
<b>Total menu</b>			
Prescale factor	Dvides the actuell measured value to scale the sum	I-FAC	
Creep suppression	To ignore transductor signals below this value	StArt	
Alarm refer to the sum	or refer to the present measure value	LI S Y LI S n	
<b>Limit menu</b>			
Low limit		LI L	
High limit		LI H	
Hysteresis of low limit		HYS L	
Hysteresis of high limit		HYS H	
Alarm connection of low limit	Choice between normal open (no) and normal closed (nc)	Con L	nc no
Alarm connection of high limit	Choice between normal open (no) and normal closed (nc)	Con H	nc no
Code word Nr. 1		CodE 1	
Code word Nr. 2		CodE 2	
<b>Only on Option Sondersoftware</b>			
Low scale point root function	Display at 4 mA input current	roo L	
High scale point root function	Display at 20 mA input current	roo H	



**Linear or square Interpolation**

	Choice between linear or square Interpolation	INTER	In 33	In17
Setpoint		400		
		450		
		500		
		550		
		600		
		650		
		700		
		750		
		800		
		850		
		900		
		950		
		1000		
		1050		
		1100		
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		1500		
		1550		
		1600		
		1650		
		1700		
		1800		
		1850		
		1900		
		1950		
		2000		

## 6.9 Index

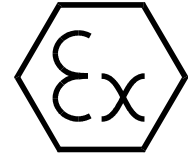
<b>—A—</b>		
alarm limit monitoring.....	27	
<b>—B—</b>		
bargraph .....	4, 5, 12, 16, 17	
<b>—C—</b>		
closed-circuit connection .....	4	
configuration .....	11, 12	
creep suppression .....	14	
current control button.....	10	
<b>—D—</b>		
decimal point .....	16	
decimalpoint .....	16	
dimension symbol.....	6, 7	
<b>—E—</b>		
ex works .....	9	
<b>—H—</b>		
hardware-reset.....	9	
hysteresis.....	5, 9, 13, 18	
<b>—L—</b>		
limit high.....	11	
limit view .....	20	
limit view menu .....	11, 12	
lower scale point .....	16, 17	
<b>—M—</b>		
mounting.....	6	
<b>—N—</b>		
NAMUR.....	27	
<b>—P—</b>		
precision .....	13, 17	
prescale factor .....	14, 17	
		present measure value..... 10
<b>—R—</b>		
reset .....	11	
<b>—S—</b>		
scale....	4, 12, 13, 16, 17, 18, 22	
starting .....	11	
<b>—T—</b>		
temperature.....	27	
time delay.....	5, 13, 15, 18	
totalizer .....	4, 5, 10, 11, 14, 18	
transducer .....	14	



(1) **EC- TYPE- EXAMINATION CERTIFICATE**  
(Translation)

(2) Equipment and protective systems intended for use in potential explosive Atmospheres – **Directive 94/9/EC**

(3) EC- type- examination Certificate number



**TÜV 99 ATEX 1488**

(4) Equipment: Digital Indicator Type D122...

(5) Manufacturer: Gönzheimer Elektronik GmbH

(6) Address: D-Neustadt an der Weinstraße

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The TÜV Hannover/Sachsen-Anhalt e.V., TÜV CERT-Zertifizierungsstelle, notified body No. 0032 in accordance with Article 9 of the Council Directive 94/9/EC of March 1994, certifies that equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report No. 99/PX24090

(9) Compliance with to essential Health and Safety Requirements has been assured by compliance with:

**EN 50 014:1997 EN 50 020:1994 EN 50 028:1988**

(10) If the sign "X" is places after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC- type- examination Certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

(12) The marking of the equipment shall include the following:

 **II 2 (1) G EEx ia IIC T6 bzw. EEx m [ib] IIC T6**

TÜV Hannover/Sachsen-Anhalt e.V.  
TÜV CERT-Zertifizierungsstelle  
Am TÜV 1  
D-30519 Hannover

Hannover, 02.11.1999



Der Leiter



(13)

## SCHEDULE

(14) EC- TYPE-Examination CERTIFICATE No. TÜV 99 ATEX 1488

(15) Description of equipment

The digital indicator type D122 ... serves as direct indicator of measured values of intrinsically safe 4 ..20 mA current circuits in explosive endangered areas.

The maximum ambient temperature is 45°C in temperature class T6 and 60°C in the temperature class T5.

### Electrical details

Supply and  
signal current  
circuit  
(Terminal 1,2)

Exclusive connection to a certificated intrinsically safe current circuit with the following highest values:

$U_i = 65 \text{ V}$   
 $I_i = 160 \text{ mA}$

Effective internal inductivity 40  $\mu\text{H}$   
Effective internal capacity 10 nF

### Only Type D122.T.x.x.x

Supply and  
signal current  
circuit  
(Terminal 1,2)

Exclusive connection to a certificated intrinsically safe current circuit with the following highest values:

$U_i = 30 \text{ V}$   
 $I_i = 160 \text{ mA}$   
 $P_i = 1,6 \text{ W}$

Effective internal inductivity 40  $\mu\text{H}$   
effective internal capacity 10 nF

Terminals 3,4

Bridget

### Only TYP 122.x.x.x.BM with additional protection type moulding and the sign EEx m [ib] IIC T6 bzw. EEx m [ib] IIC T5

Input current  
circuit (wire)

$U_m = 250 \text{ V}$  and to connect to ground



Schedule EC- Type- Examination Certificate No. TÜV 99 ATEX 1488

---

**Any types**

Alarm current circuits (Terminal 5,6; 7,8) Outputs:	Exclusive connection to a certificated intrinsically current circuit with the following highest values each current circuit:  $U_i = 30 \text{ V}$ $I_i = 160 \text{ mA}$ $P_i = 850 \text{ mW}$
Inputs:	$U_i = 30 \text{ V}$  Effective internal inductivity $\leq 40 \mu\text{H}$ the effective internal capacity is negligibly small

All current circuits are safe galvanically separated up to a nominal voltage of 90 V to each other. The input current circuit by the type D122.x.x.x.BM is internally connected to the supply and signal circuit.

- (16) Report No. 99/PX24090
- (17) Special conditions for safe area  
None
- (18) Essential health and safety requirements  
No additional



# 1. Amendment to the Conformity Certificate Nr. TÜV 99 ATEX 1488

Manufacturer: Gönzheimer Elektronik GmbH  
Dr.-Julius Leber-Str.2  
D-67433 Neustadt/Weinstraße

The digital indicator type D122 can also be manufactured according to the examination protocol, listed in the associated examination certificate.

The changes concern the enlargement around the type D122.x.7.x.x. and the application of type in explosion areas by dust up to ambient temperatures of 65°C. The marking for it is:

**II 2 D IP 65 T70°C**

Bases of the standards: EN 50281 1 1:1999

The electric data and all other information are valid consistently for this supplement.

The test documentation is listed in test report Nr. 04YEX551218

TÜV NORD CERT GmbH & Co. KG

Hannover, 17.02.2004

TÜV CERT-Zertifizierungsstelle  
Am TÜV 1  
0-30519 Hannover  
Tel.: 0511 986-1470  
Fax: 0511 986-2555

Der Leiter



## 2. Amendment to the Conformity Certificate Nr. TÜV 99 ATEX 1488

Manufacturer:           Gönzheimer Elektronik GmbH  
                               Dr.-Julius Leber-Str.2  
                               D-67433 Neustadt/Weinstraße

The digital indicator type D122 can also be manufactured according to the examination protocol, listed in the associated examination certificate. The change concerns the enlargement around the types D122.PA.7.0.0 and D122.FF.7.0.0 for the binding to intrinsically safe field busses Profibus PA respectively FF.H1.

The application of the supplemental types can occur in explosion-threatened areas, Which requires devices of the category 2. By the application in areas of explosion-threatened by dust, the at most allowed ambient temperature is +65°C.

By the application in areas explosion-threatened by gas is the maximum ambient temperature depending on the temperature class according to the following table:

Temperature classe	Ta
T6	Up to 45°C
T5	Up to 60°C

### Electrical data of the types D122.PA.7.0.0 and D122.FF.7.0.0

Signal and power supply circuit  
(terminal 1,3 and 2,4)

Ex- protection Intrinsically safe EEx ia IIC  
only to the connection in certified intrinsically safe circuits. Maximum ratings:

$$U_0 = 30 \text{ V}$$

$$I_0 = 660 \text{ mA}$$

$$P_0 = 1,6 \text{ W}$$

max reactances

$$L_0 = 0 \text{ } \mu\text{H}$$


$$C_0 = 0 \text{ nF}$$

The electrical data remains unchanged.

2. Amendment to the Conformity Certificate Nr. TÜV 99 ATEX 1488

---

The marking of the equipment:

 **II 2 (1) G EEx ia IIC T6 or T5; resp. II 2 D IP65 T70°C**

The marking of the further types remain unchanged.

The digital indicator type D122... according to the EC-type certificate TÜV 99 ATEX 1488 incl. 1. and this 2nd supplement also fulfils the demands of

EN 50 014 :1997 + A1+A2	General directives
EN 50 020:2002	Intrinsically safe "i"
EN 50 281-1-1:1998+A1	Electrical devices with protection by case - construction and check

All remaining data remain unchanged for this 2. Amendment.

The test documentation is listed in test report Nr. 04YEX551692

TÜV NORD CERT GmbH & Co. KG

Hannover, 03.11.2004

TÜV CERT-Zertifizierungsstelle  
Am TÜV 1  
0-30519 Hannover  
Tel.: 0511 986-1470  
Fax: 0511 986-2555

Der Leiter





### 3. Amendment

**to certification number:** TÜV 99 ATEX 1488

Device: Digital indicator type D122...  
 Manufacturer: Gönheimer Elektronik GmbH  
 Dr.-Julius Leber-Str.2  
 Address: D-67433 Neustadt/Weinstraße  
 Germany  
 Order Number: 8000553381  
 Date of issue: 10.10.2006

**Changes:**

The digital indicator type D122 can also be manufactured according to the examination protocol, listed in the associated examination certificate. The change concerns the enlargement around the types D122.PA.7.0.3K and D122.FF.7.0.3K for the binding to intrinsically safe field busses Profibus PA respectively FF.H1 as a three channel indicator.

The application of the supplemental types can occur in explosion-threatened areas, which requires devices of the category 2. By the application in areas of explosion-threatened by dust, the at most allowed ambient temperature is +65°C.

The information to the allowed ambient temperature is valid consistently accordingly of the second supplement also for the supplemental types.

The electric data of the second supplement are changed as follows or complemented:

Electric data of the types D122. PA.7.0.0, D122.FF 7.0.0, D122. PA.7.0.3K and D122.FF.7.0.3K:

<p>Signal and power supply circuit (terminal 1,3 and 2,4)</p>	<p>By the application in by gas explosion-threatened areas in Ex protection Intrinsically safe EEx ia IIC.</p> <p>Field device FISCO to the connection with a device according to the FISCO model or</p> <p>Only to the connection in certified intrinsically safe circuits. Maximum ratings:</p> <p><math>U_0 = 30 \text{ V}</math>  <math>I_0 = 660 \text{ mA}</math>                  max reactances <math>L_0 = 0 \mu\text{H}</math>  <math>C_0 = 0 \text{ nF}</math></p> <p>By the application in by dust explosion-threatened areas max. limit input power</p> <p><math>P_0 = 1,6 \text{ W}</math></p>
---	--

The electrical data remains unchanged.




---

### 3. Amendment to the Conformity Certificate Nr. TÜV 99 ATEX 1488

---

The marking of the equipment:

 **II 2 (1) G EEx ia IIC T6 or T5; resp. II 2 D IP65 T70°C**

The marking of the further types remain unchanged.

The digital indicator type D122... according to the EC-type certificate TÜV 99 ATEX 1488 incl. 1. and this 2nd supplement also fulfils the demands of

EN 50 014 :1997 + A1+A2	General directives
EN 50 020:2002	Intrinsically safe "i"
EN 50 281-1-1:1998+A1	Electrical devices with protection by case - construction and check
DIN EN 60079-27:2006	Concept for intrinsically safe field bus systems (FISCO) and concept for non sparking field bus systems (FNICO)

The test documentation is listed in test report Nr. 06 YEX 553381.

(17) Special conditions for safe area

None

(18) Essential health and safety requirements

No additional

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, akkreditiert durch die Zentralstelle der Länder für Sicherheitstechnik (ZLS), Ident. Nr. 0044, Rechtsnachfolger der TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

Der Leiter der Zertifizierungstelle

Schwedt

Geschäftsstelle Hannover, Am TÜV 1, 30519 Hannover, Tel.: +49 (0) 511 986-1455, Fax: +49 (0) 511 986-1590



## (1) EG-Baumusterprüfbescheinigung

- (2) Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 94/9/EG**
- (3) EG Baumusterprüfbescheinigungsnummer



### TÜV 99 ATEX 1488

- (4) Gerät: Digitales Anzeigegerät Typ D122...
- (5) Hersteller: Gönzheimer Elektronik GmbH
- (6) Anschrift: D-67433 Neustadt/Weinstraße, Dr.-Julius Leber-Str.2
- (7) Die Bauart dieses Gerätes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser Baumusterprüfbescheinigung festgelegt.
- (8) Die TÜV Hannover/Sachsen-Anhalt e.V., TÜV CERT-Zertifizierungsstelle, bescheinigt als benannte Stelle Nr. 0032 nach Artikel 9 der Richtlinie des Rates der Europäischen Gemeinschaften vom 23. März 1994 (94/9/EG) die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie.

Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht Nr.99/PX24090 festgelegt.

- (9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit

**EN 50014:1997**

**EN 50 020:1994**

**EN 50 028:1988**

- (10) Falls das Zeichen "X" hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Gerätes in der Anlage zu dieser Bescheinigung hingewiesen.
- (11) Diese EG-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Prüfung des festgelegten Gerätes gemäß Richtlinie 94/9/EG. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Inverkehrbringen dieses Gerätes.
- (12) Die Kennzeichnung des Gerätes muss die folgenden Angaben enthalten:



**II 2 (1) G EEx ia IIC T6 bzw. EEx m [ib] IIC T6**

TÜV Hannover/Sachsen-Anhalt e.V.  
TÜV CERT-Zertifizierungsstelle  
Am TÜV 1  
D-30519 Hannover

Hannover, 02.11.1999

Der Leiter





(13)

## ANLAGE

(14) **EG-Baumusterprüfbescheinigung Nr. TÜV 99 ATEX 1488**

(15) Beschreibung des Gerätes

Das digitale Anzeigegerät Typ D122... dient zur Anzeige von Messwerten aus eigensicheren 4-20 mA Stromkreisen innerhalb des explosionsgefährdeten Bereiches.

Der höchstzulässigen Umgebungstemperaturen betragen 45°C für die Temperaturklasse T6 und 60°C für die Temperaturklasse T5.

### Elektrische Daten

Versorgungs- und  
Signalstromkreis  
(Klemme 1, 2)

in Zündschutzart Eigensicherheit EEx ia IIC bzw. EEx ib IIC  
nur zum Anschluss an bescheinigte eigensichere  
Stromkreise mit folgenden Höchstwerten:

$$\begin{aligned}U_i &= 65 \text{ V} \\I_i &= 160 \text{ mA}\end{aligned}$$

wirksame innere Kapazität 10 nF  
wirksame innere Induktivität 40 µH

### nur Typ D122.T.x.x.x

Versorgungs- und  
Signalstromkreis  
(Klemme 1, 2)

in Zündschutzart Eigensicherheit EEx ia IIC bzw. EEx ib IIC  
nur zum Anschluss an bescheinigte eigensichere  
Stromkreise mit folgenden Höchstwerten:

$$\begin{aligned}U_i &= 30 \text{ V} \\I_i &= 160 \text{ mA} \\P_i &= 1,6 \text{ W}\end{aligned}$$

wirksame innere Kapazität 10 nF  
wirksame innere Induktivität 40 µH

Klemme 3, 4

gebrückt

### nur Typ D122.x.x.x.BM mit zusätzlicher Zündschutzart Vergusskapselung und der Kennzeichnung EEx m [ib] IIC T6 bzw. EEx m [ib] IIC T5

Eingangstromkreis  
(Kabelschwanz)

$U_m = 250 \text{ V}$  und zum Anschluss an den  
Potenzialausgleich

**alle Typen**

Grenzwertstromkreise  
(Klemme 5, 6; 7, 8) in Zündschutzart Eigensicherheit EEx ib IIC  
Nur zum Anschluss an bescheinigte eigensichere  
Stromkreise mit folgenden Höchstwerten:

Für Schaltausgänge	$U_i = 30$	V
	$I_i = 160$	mA
	$P_i = 850$	mW
bzw. für Schalteingänge	$U_i = 30$	V

wirksame innere Induktivität 40  $\mu$ H  
die wirksame innere Kapazität ist vernachlässigbar klein

Alle eigensicheren Stromkreise sind voneinander bis zu einem Scheitelwert der Nennspannung von 90 V sicher galvanisch getrennt. Beim Typ D122.x.x.x.BM ist der Eingangsstromkreis intern mit dem Versorgungs- und Signalstromkreis verbunden.

(16) Prüfungsunterlagen sind im Prüfbericht Nr.:99/PX24090 aufgelistet.

(17) Besondere Bedingung

keine

(18) Grundlegende Sicherheits- und Gesundheitsanforderungen

keine zusätzlichen



**1. E R G Ä N Z U N G**  
zur  
**EG-Baumusterprüfbescheinigung Nr. TÜV 99 ATEX 1488**

Der Firma: Gönzheimer Elektronik GmbH  
D-67433 Neustadt/Weinstraße  
Dr.-Julius Leber-Str.2

Das digitale Anzeigegerät Typ D122... darf künftig entsprechend den im Prüfbericht aufgelisteten Unterlagen gefertigt und betrieben werden.

Die Änderungen betreffen die Erweiterung um den Typ D122.x.7.x.x. und den Einsatz dieses Typs in durch Staub explosionsgefährdeten Bereichen bis zu Umgebungstemperaturen von 65°C. Die Kennzeichnung dafür lautet:

**II 2 D IP 65 T70°C**

mit den Prüfgrundlagen: EN 50281-1-1:1999

Die elektrischen Daten und alle weiteren Angaben gelten unverändert für diese Ergänzung.

Prüfungsunterlagen sind im Prüfprotokoll Nr. 04 YEX 551248 aufgelistet.

TÜV NORD CERT GmbH & Co. KG  
TÜV CERT-Zertifizierungsstelle  
Am TÜV 1  
D-30519 Hannover  
Tel.: 0511 986-1470  
Fax: 0511 986-2555

Hannover, 17.02.2004

A handwritten signature in black ink, appearing to read 'St. W. W. W.', written in a cursive style.

Der Leiter



## 2. E R G Ä N Z U N G zur EG-Baumusterprüfbescheinigung Nr. TÜV 99 ATEX 1488

Der Firma: Gönzheimer Elektronik GmbH  
D-67433 Neustadt/Weinstraße  
Dr.-Julius Leber-Str.2

Das digitale Anzeigegerät darf künftig auch entsprechend der im Prüfbericht aufgeführten Prüfungsunterlagen gefertigt werden. Die Änderung betrifft die Erweiterung um die Typen D122.PA.7.0.0. und D122.FF.7.0.0. für die Anbindung an eigensichere Feldbusse Profibus PA bzw. FF.H1.

Der Einsatz der ergänzten Typen kann in explosionsgefährdeten Bereichen erfolgen, die Betriebsmittel der Kategorie 2 erfordern. Beim Einsatz in durch Staub explosionsgefährdeten Bereichen beträgt die maximal zulässige Umgebungstemperatur +65°C.

Beim Einsatz in durch Gas explosionsgefährdeten Bereichen ist die maximale Umgebungstemperatur abhängig von der Temperaturklasse der folgenden Tabelle zu entnehmen:

Temperaturklasse	T <sub>a</sub>
T6	Bis 45°C
T5	Bis 60°C

### Elektrische Daten der Typen D122.PA.7.0.0. und D122.FF.7.0.0.

Signal- und Versorgungsstromkreis (Klemme 1,3 und 2,4)	in Zündschutzart Eigensicherheit EEx ia IIC nur zum Anschluss an bescheinigte eigensichere Stromkreise Höchstwerte:  U <sub>i</sub> = 30V I <sub>i</sub> = 660mA P <sub>i</sub> = 1,6W  wirksame innere Induktivität L <sub>i</sub> = 0 µH wirksame innere Kapazität C <sub>i</sub> = 0 nF
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Die elektrischen Daten der weiteren Typen gelten unverändert.



## 2. Ergänzung zur EG-Baumusterprüfbescheinigung Nr. TÜV 99 ATEX 1488

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Kennzeichnung des Prüfgegenstandes:

 II 2(1) G EEx ia IIC T6 bzw. T5 bzw. II 2 D IP 65 T70°C

Die Kennzeichnung der weiteren Typen gilt unverändert.

Das digitale Anzeigegerät Typ 0122... gemäß der EG-Baumusterprüfbescheinigung TÜV 99 ATEX 1488 incl. der 1. und dieser 2. Ergänzung erfüllt auch die Anforderungen der

EN 50 014:1997 +A1+A2 Allgemeine Bestimmungen  
EN 50 020:2002 Eigensicherheit "i"  
EN 50 281-1-1:1998+A1 Elektrische Betriebsmittel mit Schutz durch Gehäuse - Konstruktion und Prüfung

Alle übrigen Angaben gelten unverändert für diese 2. Ergänzung.

Die Prüfungsunterlagen sind im Prüfbericht Nr. 04 YEX 551692 aufgelistet.

TÜV NORD CERT GmbH & Co. KG  
TÜV CERT-Zertifizierungsstelle  
Am TÜV 1  
D-30519 Hannover  
Tel.: 0511 986-1470  
Fax: 0511 986-2555

Hannover, 03.11.2004

Der Leiter



### 3. E R G Ä N Z U N G

**zur Bescheinigungsnummer:** TÜV 99 ATEX 1488  
**Gerät:** Digitales Anzeigegerät Typ D122 ...  
**Hersteller:** Gönzheimer Elektronik GmbH  
 Dr.-Julius Leber-Str.2  
**Anschrift:** 67433 Neustadt/Weinstraße  
 Deutschland  
**Auftragsnummer:** 8000553381  
**Ausstellungsdatum:** 10.10.2006

#### Änderungen:

Das digitale Anzeigegerät darf künftig auch entsprechend der im Prüfbericht aufgeführten Prüfungsunterlagen gefertigt werden. Die Änderung betrifft die Erweiterung um die Typen D122.PA.7.0.3K und D122.FF.7.0.3K für die Anbindung an eigensichere Feldbusse Profibus PA bzw. FF.H1 als 3-kanaliger Anzeiger.

Der Einsatz der ergänzten Typen kann in durch Gas oder Staub explosionsgefährdeten Bereichen erfolgen, die Betriebsmittel der Kategorie 2 erfordern.

Die Angaben zur zulässigen Umgebungstemperatur gelten unverändert entsprechend der zweiten Ergänzung auch für die ergänzten Typen.

Die elektrischen Daten der zweiten Ergänzung werden wie folgt geändert bzw. ergänzt:

Elektrische Daten der Typen D122.PA.7.0.0, D122.FF.7.0.0, D122.PA.7.0.3K und 122.FF.7.0.3K:

Signal- und Versorgungsstromkreis (Klemme 1,3 und 2,4)	Beim Einsatz in durch Gas explosionsgefährdete Bereiche in Zündschutzart Eigensicherheit EEx ia IIC. FISCO-Feldgerät zum Anschluss an ein Gerät entsprechend dem FISCO-Modell oder zum Anschluss an bescheinigte eigensichere Stromkreise. Höchstwerte: $U_i = 30V$ $I_i = 660mA$ wirksame innere Induktivität $L_i = 0 \mu H$ wirksame innere Kapazität $C_i = 0 nF$ Beim Einsatz in durch Staub explosionsgefährdete Bereiche ist die max. Eingangsleistung zu begrenzen $P_i = 1,6W$
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Die elektrischen Daten der weiteren Typen gelten unverändert.

3. Ergänzung zur EG-Baumusterprüfbescheinigung Nr. TÜV 99 ATEX 1488

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Kennzeichnung des Prüfgegenstandes:

 **II 2(1) G EEx ia IIC T6 bzw. T5 bzw. II 2 D IP 65 T70°C**

Die Kennzeichnung der weiteren Typen gilt unverändert.

Das digitale Anzeigegerät Typ 0122... gemäß der EG-Baumusterprüfbescheinigung TÜV 99 ATEX 1488 incl. der 1. bis 3. Ergänzung erfüllt die Anforderungen der

EN 50 014:1997 +A1+A2	Allgemeine Bestimmungen
EN 50 020:2002	Eigensicherheit "i"
EN 50 281-1-1:1998+A1	Elektrische Betriebsmittel mit Schutz durch Gehäuse - Konstruktion und Prüfung
DIN EN 60079-27:2006	Konzept für eigensichere Feldbussysteme (FISCO) und Konzept für nichtzündbare Feldbussysteme (FNICO)

Die Prüfungsunterlagen sind im Prüfbericht Nr. 06 YEX 553381 aufgelistet.

(17) Besondere Bedingung

keine

(18) Grundlegende Sicherheits- und Gesundheitsanforderungen

keine zusätzlichen

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, akkreditiert durch die Zentralstelle der Länder für Sicherheitstechnik (ZLS), Ident. Nr. 0044, Rechtsnachfolger der TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

Der Leiter der Zertifizierungsstelle



Schwedt

Geschäftsstelle Hannover, Am TÜV 1, 30519 Hannover, Tel.: +49 (0) 511 986-1455, Fax: +49 (0) 511 986-1590