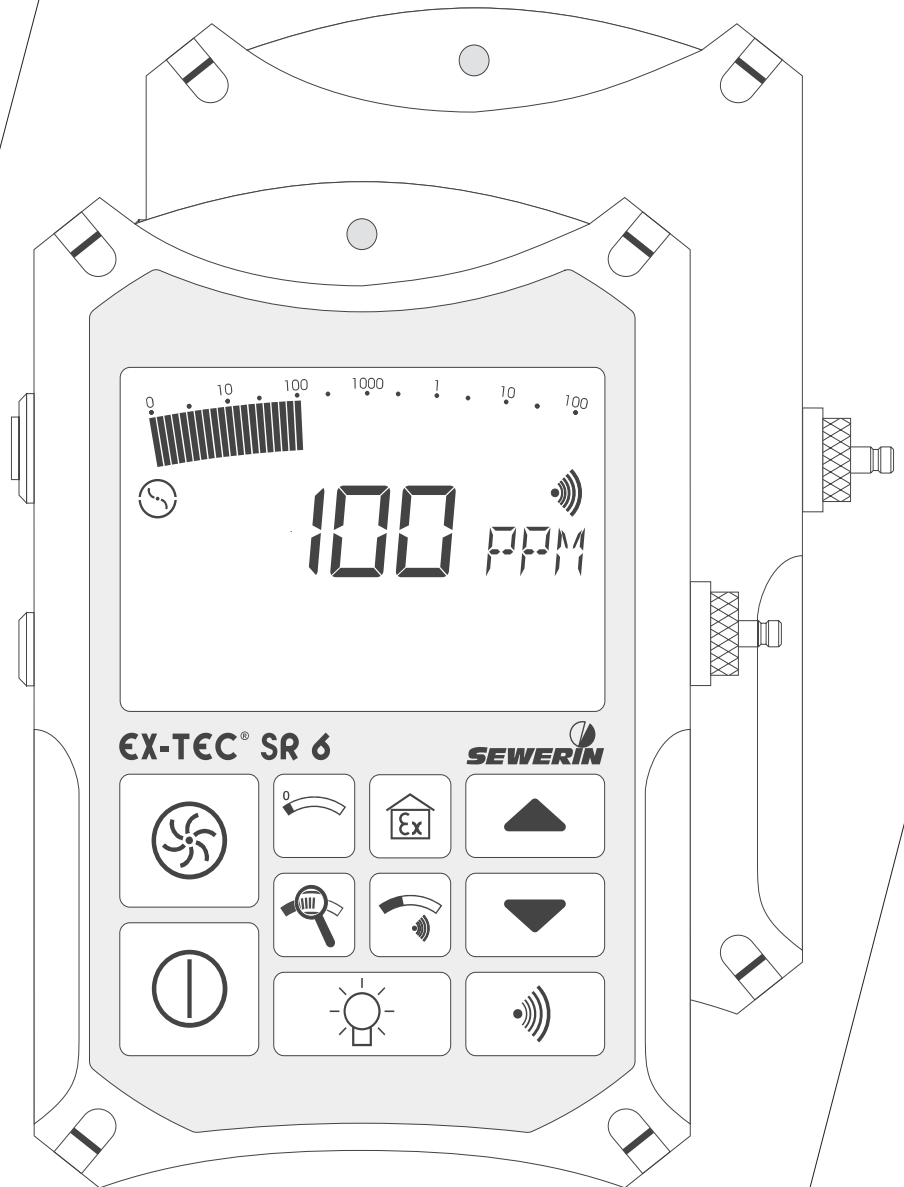


# EX-TEC® SR 6, VARIOTEC® 9-EX

# Operating Instructions



  
**SEWERIN**

GB

103992

## Measurable success by Sewerin equipment

---

You settled on a precision instrument.  
A good choice!

Our equipment stands out for guaranteed safety, optimal output and efficiency.

They correspond with the national and international guide-lines.

These operating instructions will help you to handle the instrument quickly and competently.

Please pay close attention to our operating instructions before usage.


In case of further queries our staff is at your disposal at any time.

Yours

### **Hermann Sewerin GmbH**

Robert-Bosch-Straße 3

D-33334 Gütersloh

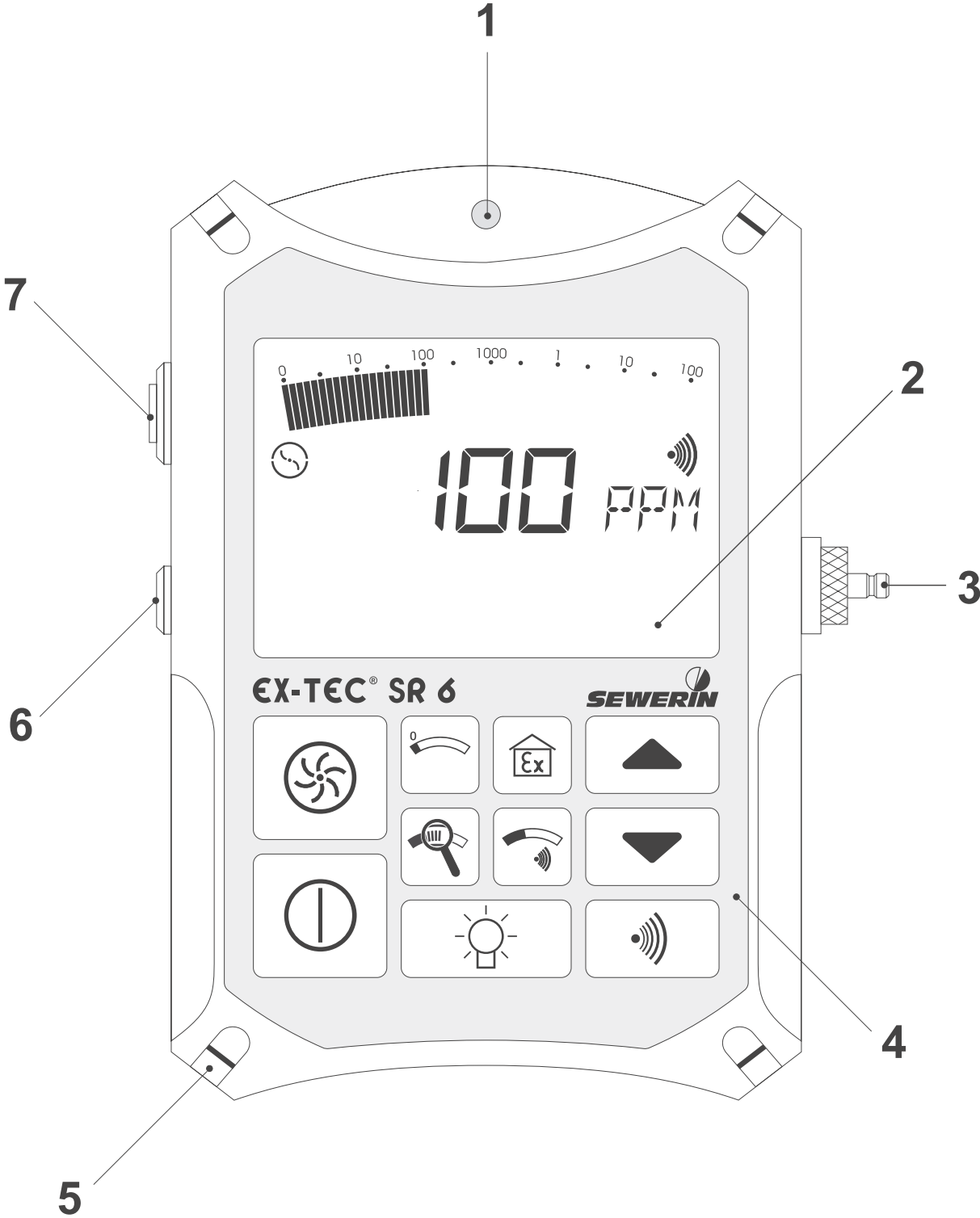
 : +49 - (0) - 52 41/9 34-0

**FAX** : +49 - (0) - 52 41/9 34-4 44

[www.sewerin.com](http://www.sewerin.com)

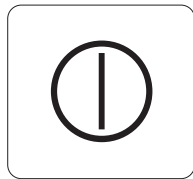
[info@sewerin.com](mailto:info@sewerin.com)

---

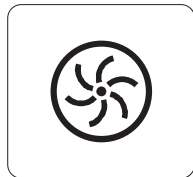


 See page 15 for an explanation of individual items

**Brief operating instructions: EX-TEC SR 6, VARIOTEC 9-EX**



switches the detector on and off



toggles between GAS-WARNING / GAS-MEASURING modes



toggles between total and optimum measuring ranges



zero-point correction



displays the alarm threshold value



acoustic clearance of the alarm signal



switches LC display illumination on and off (... switches off automatically after about 4 minutes)

Operating manual

**EX-TEC<sup>®</sup> SR 6,  
VARIOTEC<sup>®</sup> 9-EX**



103992 - 04.12.2002

This product may only be used after the operating instructions have been read and understood and only by appropriately trained operators.

This product may only be used for its designated purpose, and only in industry and trade.

Repair work may only be carried out by appropriately trained persons.

Changes and modifications to the product may only be carried out with the consent of Hermann Sewerin GmbH. Unauthorised modifications to the product render the warranty null and void.

Only accessories from Hermann Sewerin GmbH may be used with this product.

Only spare parts approved by us may be used for repairs.

Hermann Sewerin GmbH bears no liability for damage attributable to non-compliance with these instructions. The terms of warranty and liability of the conditions of sale and delivery of Hermann Sewerin GmbH are not extended by the above.

We reserve the right to make technical modifications in the interests of further development.

Please comply with general safety rules in addition to these instructions!

### Symbols used:



#### **CAUTION!**

This symbol warns of dangers to the user or product.



#### **Note:**

This symbol indicates information and tips that go beyond actual operation for the product.

---

## 1 EX-TEC SR 6, VARIOTEC 9-EX system

1.1	Models .....	7
1.2	Test certificates .....	8
1.3	Charging equipment .....	9
1.4	Carrying equipment .....	10
1.5	Probe systems .....	11
1.6	Test equipment .....	13

## 2 Safety

2.1	Safety instructions .....	14
-----	---------------------------	----

## 3 Measuring operation

3.1	Model overview .....	15
3.2	Switching on .....	16
3.3	Illumination and contrast .....	17
3.3.1	Operating hours in measuring operation .....	18
3.4	Pump operation .....	19
3.5	Alarm signal and volume .....	20
3.5.1	Automatic alarm reactivation .....	20
3.6	Alarm threshold value .....	21
3.7	Switching measuring ranges .....	22
3.8	Location / gas injection / blanketing .....	23
3.9	Delayed-action indicator .....	24
3.10	Zero-point correction .....	25
3.11	Gas-warning mode .....	25
3.12	Battery alarm .....	27
3.13	Switching off .....	27

## 4 Charging operation

4.1	Charging and charge maintenance .....	28
4.2	Spontaneous discharge .....	29

---

## 5 Testing and maintenance

5.1	Function testing, testing display accuracy .....	30
5.2	Test equipment .....	33
5.3	Test gases .....	35
5.4	Function testing .....	36

## 6 Settings menu

6.1	Setting the ppm sensor .....	38
6.2	Setting the LEL sensor .....	40
6.3	Setting the VOL sensor .....	41
6.4	Setting the measurement unit (%LEL range language) .....	43
6.5	Setting 10 ppm sensitivity .....	45
6.6	Activating the ETHANE box .....	46
6.7	Interface mode .....	46
6.8	Checking the LC display .....	47
6.9	Leaving the settings menu .....	47

## 7 Technical aspects

7.1	Technical notes .....	48
7.2	Technical data .....	49
7.3	Error messages .....	52
7.4	Wearing parts .....	54

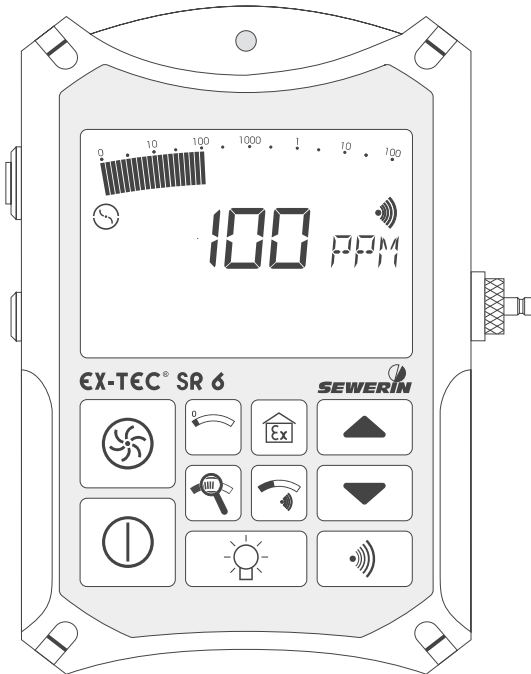
## Appendix

EC-type-examination certificates .....	55
Declarations of conformity .....	60
Test report .....	62



# 1 EX-TEC SR 6, VARIOTEC 9-EX system

## 1.1 Models



### EX-TEC SR 6 (explosion-proof)

- **Gas detection**  
above-ground gas detection for pipeline monitoring (ppm range)
- **Interior installations**  
leak detection for pipelines in buildings (ppm range)
- **Gas warning**  
monitoring proximity to the lower explosion limit (%LEL range)
- **Location**  
concentration measurement in probe holes (vol.% range)
- **Gas injection and blanketing**  
concentration measurement in pipelines (vol.% range)



### VARIOTEC 9-EX (explosion-proof)

- **Gas detection**  
above-ground gas detection for pipeline monitoring (ppm range)
- **Interior installations**  
leak detection for pipelines in buildings (ppm range)
- **Location**  
concentration measurement in probe holes (vol.% range)
- **Gas injection and blanketing**  
concentration measurement in pipelines (vol.% range)

## 1.2 Test certificates

### Passive explosion protection

The **EX-TEC SR 6** and **VARIOTEC 9-EX** models are explosion-proof in accordance with European norms (CENELEC):

EC prototype test certificate:	PTB 96 ATEX 2166
Identification mark:	Ⓔ II 2 G EEx ib d IIB T3
Testing institution:	Physikalische-Technische Bundesanstalt, Brunswick

### Active explosion protection

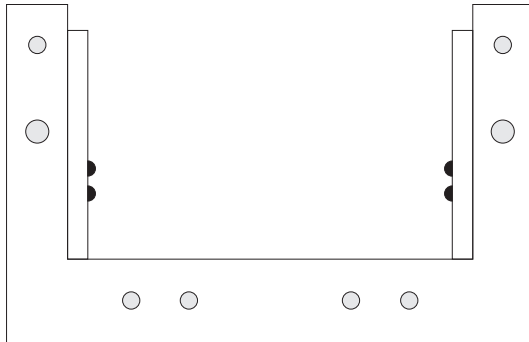
The **EX-TEC SR 6** has also been tested for functional safety in the **gas-warning** field:

Test report:	PFG no. 41300897
Testing institution:	DMT - Gesellschaft for Forschung und Prüfung mbH, Essen

The test certificates can be found on and after page 55.

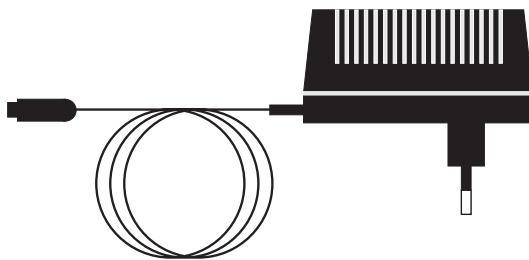
### 1.3 Charging equipment

The **EX-TEC SR 6** and the **VARIOTEC 9-EX** can be charged either in the workshop or in the standby vehicle:



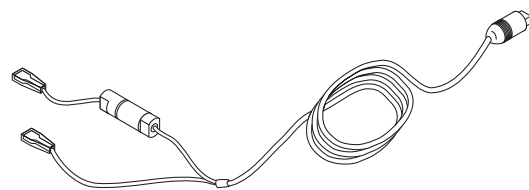
#### **HS charging adapter**

to hold the detector, with a connection socket for the plug-in power pack or a vehicle adapter



#### **230V plug-in power pack**

to connect the HS HS charging adapter to a 230-volt mains supply



#### **12V vehicle adapter**

to connect the HS charging adapter to a 12-volt vehicle battery

(not shown)

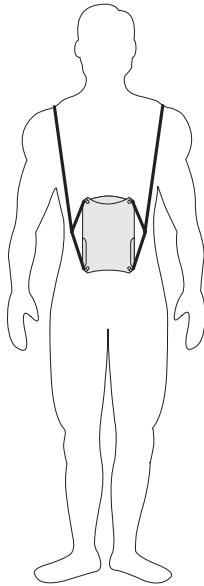
#### **24V vehicle adapter**

to connect the HS charging adapter to a 24-volt vehicle battery

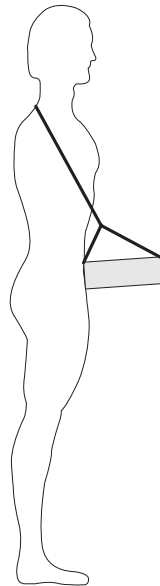
## 1.4 Carrying equipment

### TRIANGEL carrying system

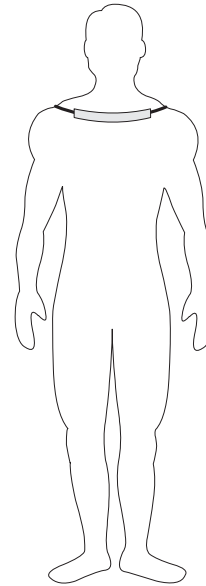
a quick and easy way of carrying the detector, consisting of a carrying strap and neck-pad



front view



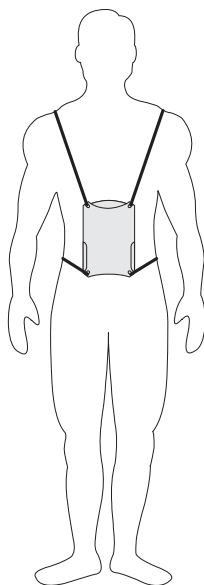
side view



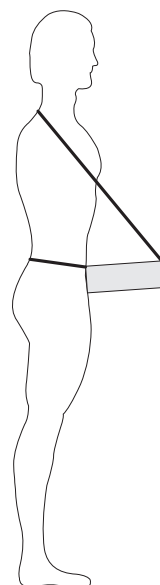
rear view

### CROSS-STRAP carrying system

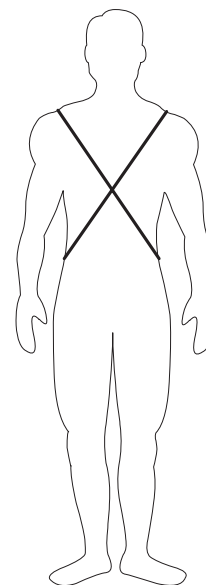
a comfortable way to carry the detector for longer periods, consisting of 2 carrying straps crossed at the back



front view



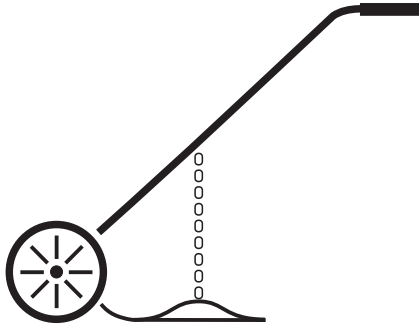
side view



rear view

## 1.5 Probe systems

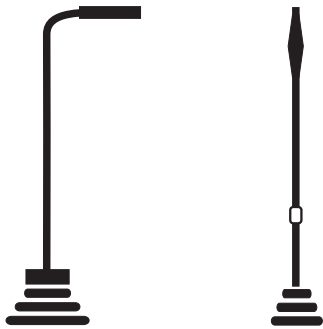
### - Pipe-monitoring probes -



#### **Carpet probe**

for checking stable surfaces.

The sample is drawn into an excrescence in a neoprene mat in contact with the surface with no extraneous emissions



#### **Bell probe, telescopic bell probe**

for checking unstable and overgrown surfaces.

It can be used in confined spaces, e.g. between parked cars or in front gardens

### - Location probes-



#### **Location probe**

for measuring concentrations in probe holes,

with a rigid rubber cone to seal off the probe hole and

2 different probe tips (length 245 mm or 345 mm)

- Probes for use in enclosed spaces -



**Floater probe**

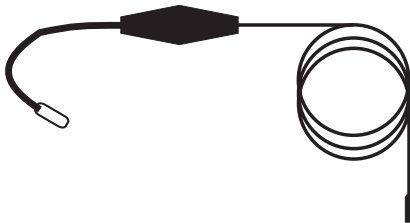
for measuring concentrations in shafts,  
floater with intake orifice and hose connection



**Divisible manual probe**

for use with unenclosed pipes or  
at inaccessible locations,  
measuring concentrations in  
containers, overall length 900 mm

- Probes for interior installations -



**Flexible manual probes**

for use with interior pipework,  
grip with flexible swan-neck and  
probe hose, overall lengths 360 mm  
or 660 mm



Except with the carpet probe, a probe hose should  
always be used with a hydrophobic filter.

## 1.6 Test equipment

The following equipment is available for monitoring and testing the pump power and sensitivity of the **EX-TEC SR 6** and **VARIOTEC 9-EX**:



### **SPE1 and SPE3 testers**

for mobile use including in-vehicle use,  
with connections for SEWERIN test-gas bottles, flow meter, release button and connection hose



### **Test-gas bottles**

for testing and adjusting display sensitivity,  
various test-gas concentrations in 1-litre bottles at pressures of about 12 bar



### **SPE2 tester**

for non-mobile use in the workshop, with connections for several SEWERIN pressure cylinders, pressure and flow meter, release button and connection hoses

(not shown)

### **Pressure cylinders**

for testing and adjusting display sensitivity, various test-gas concentrations in 0.4 / 2.0 / 10.0 litre steel cylinders at pressures of 100-150 bar

## 2 Safety

### 2.1 Safety instructions



Always use original SEWERIN accessories with the EX-TEC SR 6 and VARIOTEC 9-EX



Always use a probe hose with a hydrophobic filter



Observe the permissible operating temperature range of minus 10 °C to plus 40 °C



The EX-TEC SR 6 and VARIOTEC 9-EX must not be recharged in areas exposed to the danger of explosion



Test gases may only be used in well-ventilated spaces



The EX-TEC SR 6 and VARIOTEC 9-EX satisfy the limits of the EMV regulation. When using it near (mobile) radio equipment please also follow the instructions in the manuals for that equipment



### 3 Measuring operation

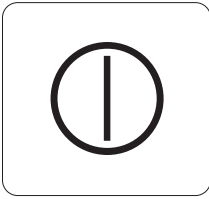
#### 3.1 Model overview



**Fold out the illustration inside the front cover**

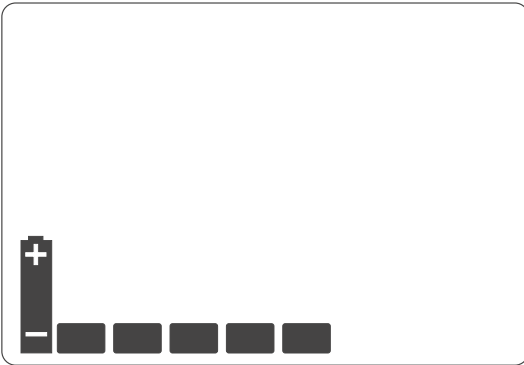
Item	description	function
1	alarm lamp	optical warning on: <ul style="list-style-type: none"> <li>● breaching alarm thresholds</li> <li>● display of error messages</li> </ul>
2	LC display	display of: <ul style="list-style-type: none"> <li>● gas concentrations</li> <li>● menu items</li> <li>● operating conditions</li> <li>● error messages</li> </ul>
3	probe connection	connection for: <ul style="list-style-type: none"> <li>● probe hose</li> <li>● tester</li> </ul>
4	keypad	detector operation
5	attachment	for carrying systems: <ul style="list-style-type: none"> <li>● Triangel</li> <li>● cross-strap</li> </ul>
6	outlet	for the gas sample
7	buzzer	acoustic warning on: <ul style="list-style-type: none"> <li>● reaching alarm thresholds</li> <li>● display of error messages</li> </ul>

#### 3.2 Switching on



- hold the **on/off button** down for about 2 seconds

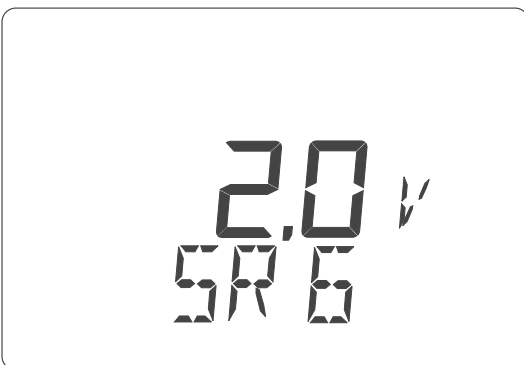
- or, on the **SR 6** only, hold the **gas-warning button** down for about 2 seconds to start the detector in gas-warning mode (see p. 25 ff.)



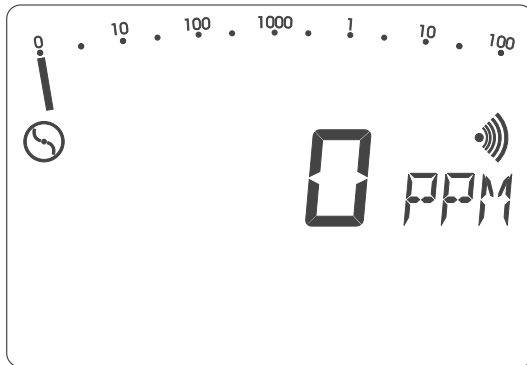
- the optical and acoustic control signals (items 1 and 7) operate for about 2 seconds

- available operating hours are displayed in the form of bars (e.g. 5 hours)

- the integral pump runs at full power



- the software version number (e.g. **2.0**) and detector type (**SR 6**) are displayed



- wait for the zero point to establish itself in fresh air (approx. 1 minute):

**display:**  **0 PPM**  
(after flashing stops)

### 3.3 Illumination and contrast



- pressing the **light button** switches the LC DISPLAY illumination on and off

- the illumination automatically switches off approx. 4 minutes after being switched on



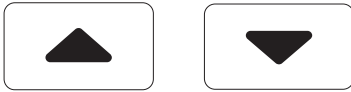
- simultaneously pressing the light button **and** a cursor button increases or reduces the contrast of the LC display



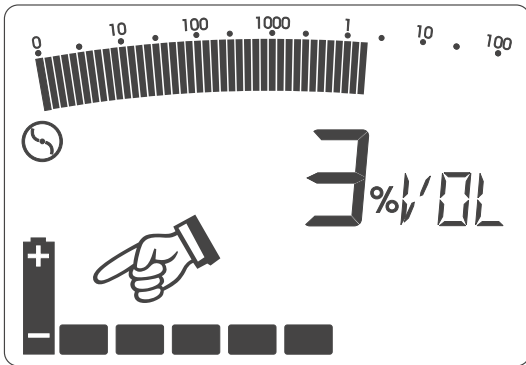
### 3 Measuring operation

---

#### 3.3.1 Operating hours in measuring operation

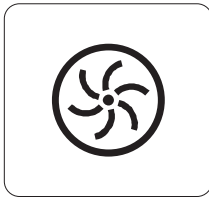


- simultaneously pressing both cursor buttons in measuring operation displays the operating hours still available (e.g. 5 hours)

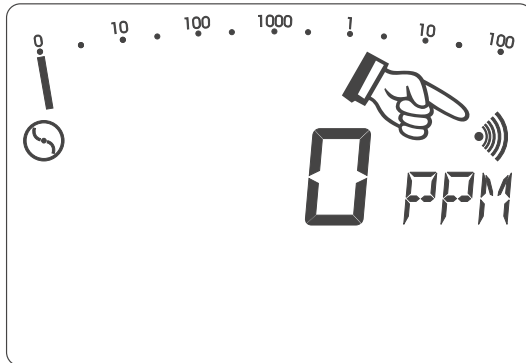


- this display (battery symbol and bars) disappears automatically after about 10 seconds

### 3.4 Pump operation



- pressing the **pump button** switches the pump on and off



- this turns the corresponding symbol on or off in the LC display (item 2)
- this enables you to monitor the pump function



#### Changing the pump power

- simultaneously pressing the pump button **and** a cursor button increases or reduces the pump power



#### **Gas detection**

always use **maximum pump power** for above-ground gas detection in pipelines



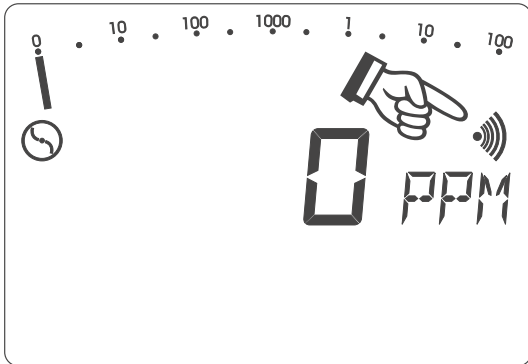
#### **Interior installations**

always use **minimum pump power** for leak detection in pipelines in buildings

#### 3.5 Alarm signal and volume



- pressing the **signal button** switches the alarm signal on and off



- this turns the corresponding symbol on or off in the LC display (item 2)
- this enables you to check the alarm signal



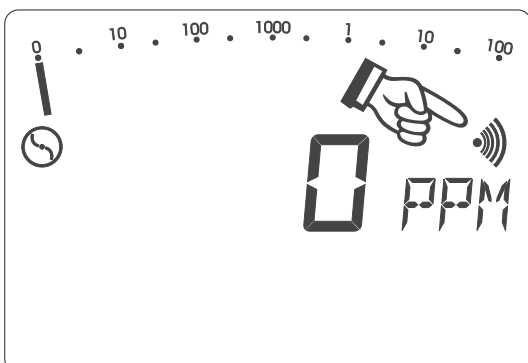
- simultaneously pressing the signal button **and** a cursor button increases or reduces the volume of the buzzer (item 7)



##### 3.5.1 Automatic alarm reactivation



- if you turn off an alarm with the signal button, the alarm signal is automatically reactivated after about 60 seconds

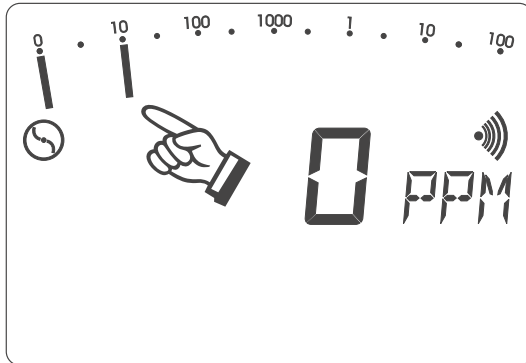


- the corresponding symbol then reappears in the LC display (item 2)
- this avoids the problem of the operator forgetting to reactivate the alarm signal

### 3.6 Alarm threshold value



- hold down the **threshold value button**



- and the alarm threshold value flashes on the scale (**here 10 PPM**)

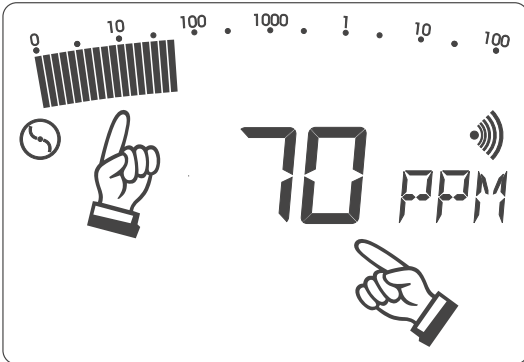


- holding down the the detector's value button **while** pressing a cursor button increases or reduces the alarm threshold value



- this value is preserved even when the detector is switched off

### 3.7 Switching measuring ranges



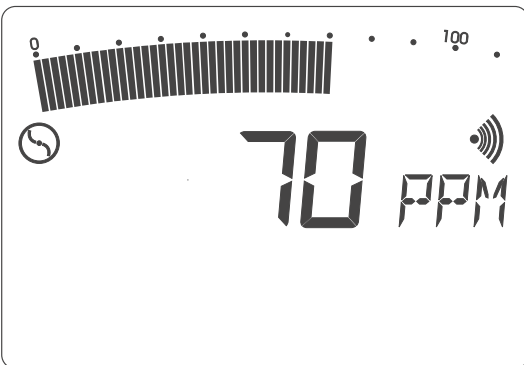
- the detectors have both an **analogue scale** (above - here showing the full measurement range) and a **digital display** (below); both displays show the same concentration (**here 70 PPM**)

- the **scale** is logarithmic, ranging from:  
**0 PPM ... 100 %VOL**

- the scale can display low concentrations in magnified form; the reading is also shown in the digital display



- pressing the **zoom button** toggles between the full and the **optimum measuring ranges**



- depending on the concentration, switching between the following measuring ranges is **automatic**:  
0 ... 10 ppm  
0 ... 100 ppm  
0 ... 1000 ppm  
0 ... 1 %VOL  
0 ... 100 %VOL

- in this example the optimum measuring range is 0 ... 100 ppm



- you can switch manually to your preferred display range by holding down the zoom button and pressing a cursor button



### 3.8 Location / gas injection / blanketing

To carry out a location, gas injection (concentration increase to 100 vol.%) or blanketing (concentration reduction to 0 vol.%), proceed as follows:

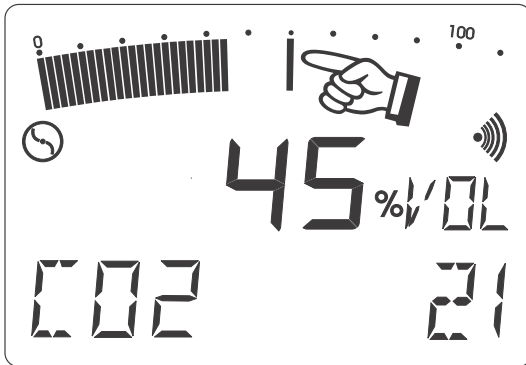


- manually select the **measuring range 0.0 ... 100 %VOL** with the zoom button and the cursor buttons
- this is the only measuring range in which you can reliably monitor location, gas injection and blanketing
- manually switching to the measuring range 0.0 ... 100 %VOL is the only way to make sure that the CO<sub>2</sub> component is also shown in the display
- in this example the readings are: **9.4 %VOL CH<sub>4</sub>** and **5 %VOL CO<sub>2</sub>**



#### 3.9 Delayed-action indicator

To make it easier to compare concentrations - for location purposes, for example - the maximum value is displayed in the form of a flashing **delayed-action indicator**.



- this remains in the LC display (item 2) for about 4 minutes, or if the concentration rises it is updated



- the delayed-action indicator disappears when the zoom button is pressed

#### 3.10 Zero-point correction



- if the detector fails to reach its zero point even after being thoroughly flushed with fresh air, you can manually correct the zero point by pressing the **zero point button**
- the reading display flashes while the correction is under way
- measurement may not continue until **after** the flashing stops

#### 3.11 Gas-warning mode

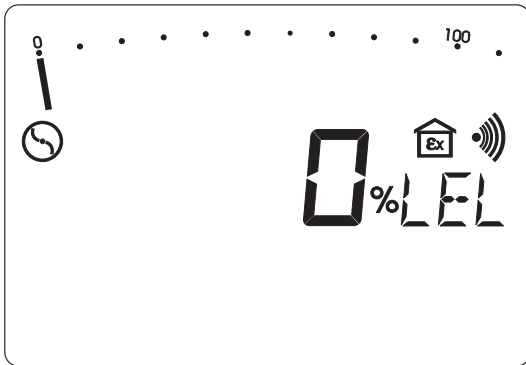


This function is only available on the EX-TEC SR 6

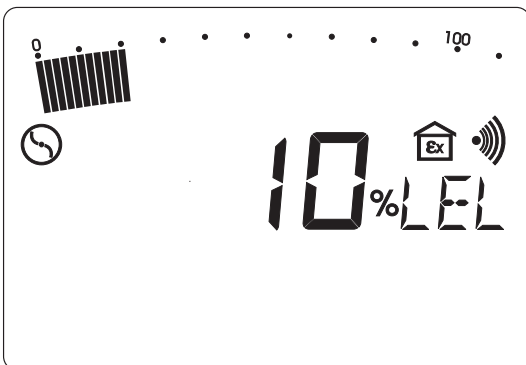


- this function is switched on by pressing the **gas-warning button**
- this button can also be used to switch the detector on direct

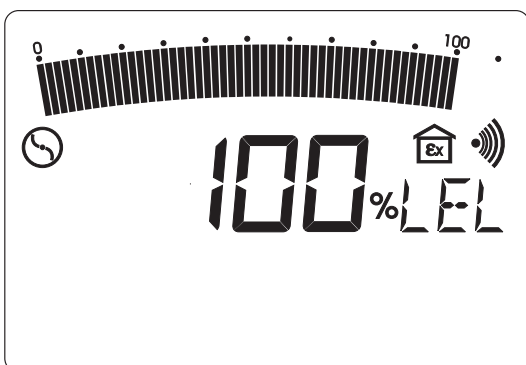
### 3 Measuring operation



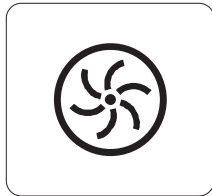
- this measuring range is used to monitor proximity to the **LEL** (**l**ower **e**xplosion **l**imit)
- a stable zero point is reached after about 8 seconds' warm-up time
- the pump runs at minimum power, and the acoustic operating signal (item 7) sounds every 5 seconds



- when the pre-set threshold of 10% LEL = 0.45 vol.% ( $\text{CH}_4$ ) is reached, the **advance alarm** is triggered both optically (item 1) and acoustically (item 7)
- the advance alarm is an intermittent tone quite distinct from the operating signal; it **ceases after a certain period** and cannot be cleared

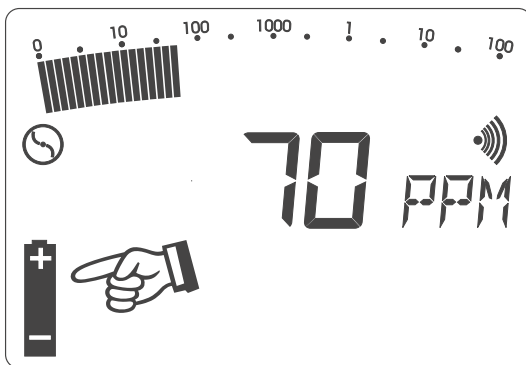


- if the concentration exceeds 100 % LEL of **methane** (100 % LEL = 4.40 vol.%) the **main alarm** is triggered both optically (item 1) and acoustically (item 7)



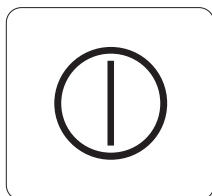
- the main alarm is a continuous tone quite distinct from the operating signal; it **continues indefinitely** and cannot be cleared
- **Leaving gas-warning mode:** hold down the pump button for about 2 seconds or switch the detector off

#### 3.12 Battery alarm



- if the battery symbol appears in the LC display, at least 15 minutes' operating time remains; after that the detector must be recharged
- in **gas-warning mode** the battery alarm sounds as a double beep to distinguish it from the operating signal

#### 3.13 Switching off



- Press the **on/off button** for about 2 seconds
- the optical and acoustic monitoring signals (items 1 and 7) operate for about 2 seconds
- remaining operating hours are displayed in the form of bars

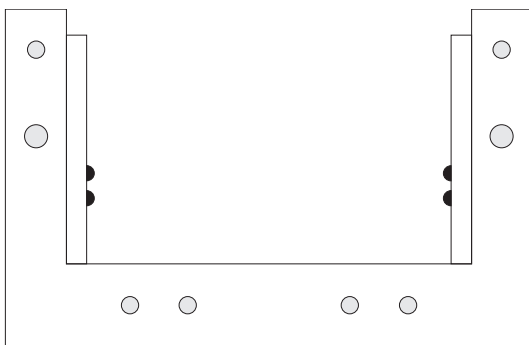
### 4 Charging operation

#### 4.1 Charging and charge maintenance

##### Charging

When fully charged the detector has a **maximum** of 8 hours' operating time with the pump running.

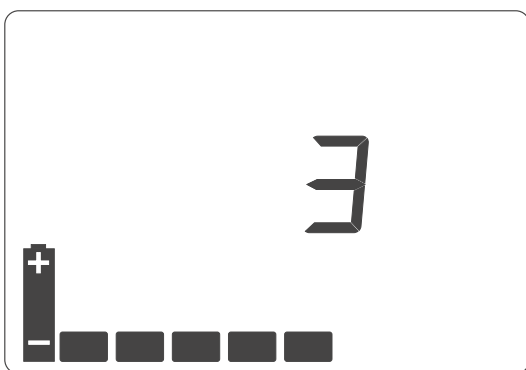
To charge the detector you will need the **HS charging adapter** (see illustration), which can be used either in the workshop or the emergency vehicle.



The following connection sockets can be found on the side of the charging adapter:

- 230-V plug-in power pack
- 12-V vehicle adapter
- 24-V vehicle adapter.

Switch off the **EX-TEC SR 6** or **VARIOTEC 9-EX** and place it in the charger. A display on the following lines appears:



- the detector still has 5 operating hours left (= 5 bars) and will take another 3 hours to be fully recharged
- if it is fully charged, all the bars appear and the numerical display is blank

##### Charge maintenance

As soon as the detector is fully charged it automatically switches to charge maintenance. It can be left in the charging adapter until the next time it is needed.

## 4.2 Spontaneous discharge

If the detector is not placed in the charger when it is switched off, the nickel-cadmium battery spontaneously discharges, thus reducing the available operating hours.

After a maximum of 30 days the indicator shows that there are no operating hours left, and it must be recharged.



**Short periods of operation and prolonged disuse may lead in the long term to the so-called "memory effect", in which the display indicates a higher battery capacity than is actually available.**

**This can be avoided by fully discharging the EX-TEC SR 6 or VARIOTEC 9-EX regularly (e.g. once a month), i.e. leaving it switched on until it automatically switches off, then recharging it.**

## 5 Testing and maintenance



Gas-warning instruments must always be tested by the operator before the gas-warning facility is used and before every working shift. Topics covered by this test include:

- checking the battery charge
- display with neutral gas and test gas

(leaflet T 023/BG chemicals: "Gas-warning instruments for explosion protection - operation and maintenance")



DIN EN 50073 provides that portable gas-warning instruments (such as the EX-TEC SR 6) must be tested immediately before use in accordance with the operating manual. This must include testing the zero point and display sensitivity with a field-calibration device and test gas.

### 5.1 Function testing, testing display accuracy

The test must also cover ancillary equipment. The tests listed above and other activities must be documented, and the documentation preserved for at least 1 year. The required and prescribed instrument tests in accordance with DVGW G 465-4 (Technical reports, note) are divided into the following sections:



What?	Who?	When?
function test	user	before the utility company commences work
display-accuracy test (adjustment)	expert or specialist firm	daily to half-yearly
upkeep (maintenance, repair if necessary)	SEWERIN, utility-company expert	annually or whenever a defect occurs

### **Function test**

This is the simplest form of instrument test. Carried out by the **user** before use, it comprises the following points:

- external condition including probe systems
- function of the operating controls
- battery-charge check
- pump and intake-channel inspection
- pump function
- mechanical/electrical zero point
- display-sensitivity test by gas admission

### **Function control and sensitivity test ("10 ppm test")**

In addition, DVGW worksheet G 465-1 provides that gas-detection instruments used for systematic pipeline inspection must undergo a **sensitivity test with 10 ppm conditioned (i.e. humidified) test gas**. Using the SPE 3 tester ensures that the test gas is conditioned. Depending on the circumstances, this test may have to be carried out (and documented) several times per working day.

### **Checking display sensitivity (adjustment)**

The testing frequency must be specified as a function of the sensors fitted and the use of the detector. It can be anywhere between daily and half-yearly.

Testing must be carried out by an expert on the operator's own staff, by a specialist firm or by Sewerin itself.

The test gas described in section 5.3 must be used. The explosion-protection rules (BGR 104 EX-RL) must be complied with, as must the principles for testing the functionality of non-fixed gas-warning instruments for explosion protection (ZH 1/108.1) and the guidelines for the selection, installation, use and maintenance of instruments for the detection and measurement of combustible gases or oxygen (DIN EN 50073/VDE 0400, part 6).

The function test should be carried out at the same time.

### **Upkeep - maintenance and repair**

The detector must be maintained at least once a year by **SEWERIN Service**, a specialist firm authorised by SEWERIN or an authorised specialist of the gas-supply company.

Certificates must be issued accordingly.



The test disc on the detector confirms when maintenance was last carried out and indicates the next scheduled date (e.g. 5/02 = May 2002).

Annual maintenance and repair must cover at least the specialist care and adjustment of the detector and the replacement of components with a limited useful life.



**Where detectors are explosion-proof the applicable regulations must be observed**



**Maintenance specialists must have been trained and instructed by Sewerin**

## 5.2 Test equipment

The pump power, zero point and sensitivity should be tested with the **SPE 1** or **SPE 3** testers and a suitable test gas:

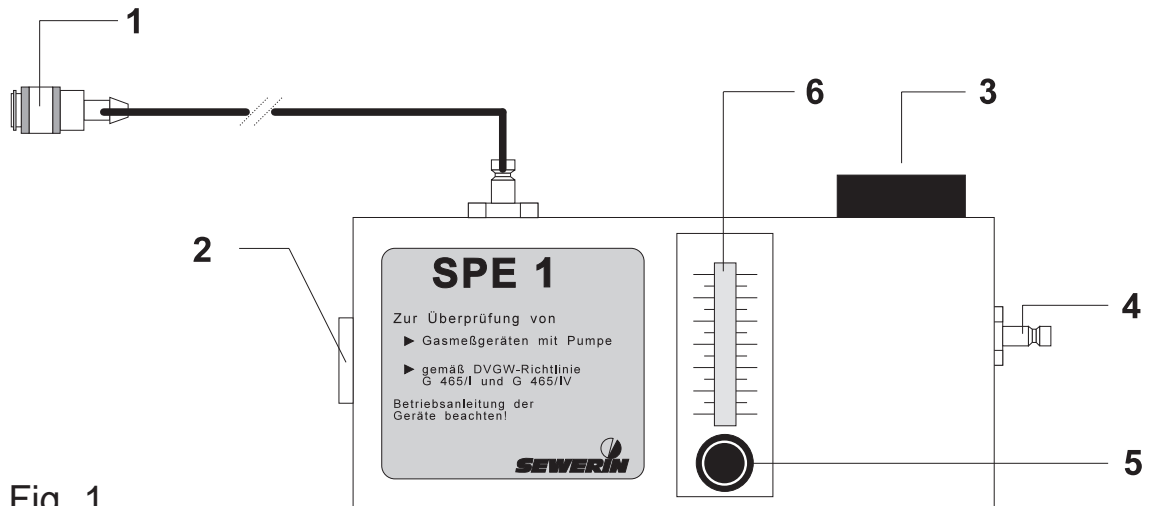


Fig. 1

The **SPE 1** is used to test:

- pump power
- the zero point in the %LEL and %VOL ranges
- sensitivity in the %LEL and %VOL ranges.

It is used with the following test gases:

- |                                  |   |
|----------------------------------|---|
| methane CH <sub>4</sub> :        | <ul style="list-style-type: none"> <li>● 1.00 vol.%</li> <li>● 2.20 vol.% (50% LEL)</li> <li>● 100 vol.%</li> </ul> |
| carbon dioxide CO <sub>2</sub> : | <ul style="list-style-type: none"> <li>● 100 vol.%</li> </ul>   |

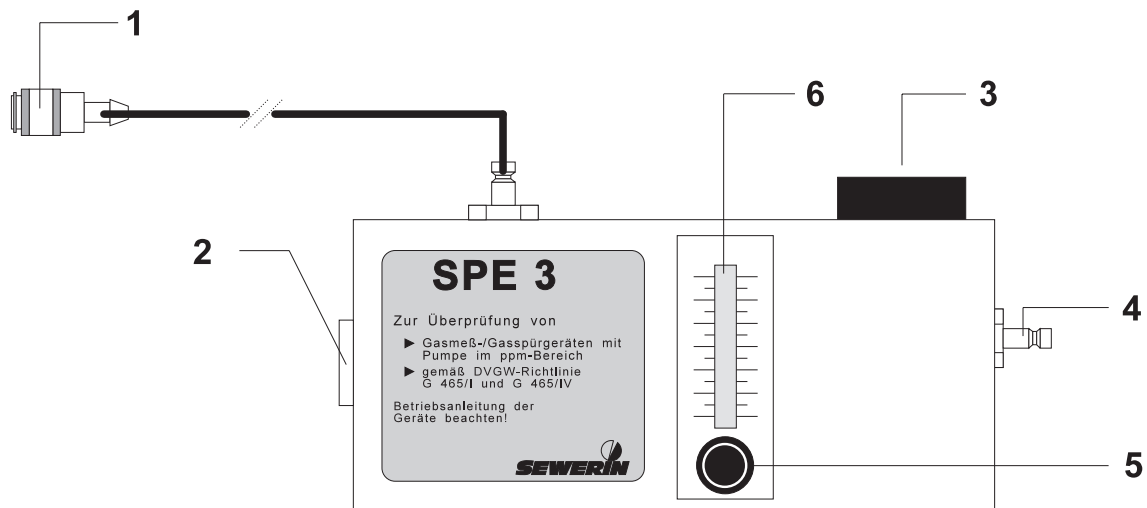


Fig. 2

The **SPE 3** tester is used to test:

- pump power
- the zero point in the **PPM** range
- sensitivity in the **PPM** range.

It is used with the following test gases:

- methane CH<sub>4</sub>:
- 10 ppm
  - 100 ppm
  - 1000 ppm

### 5.3 Test gases

The following test gases are used to function-test the detectors:

		CH <sub>4</sub>	CO <sub>2</sub>
<b>EX-TEC SR 6</b>	ppm range (gas detection, interior installations)	10 ppm 100 ppm 1000 ppm 1.00 vol.%	
	%LEL range (gas warning)	2.20 vol.% (50% LEL)	
	vol.% range (location, gas injection, blanketing)	100 vol.%	100 vol.%
<b>VARIOTEC 9-EX</b>	ppm range (gas detection, interior installations)	10 ppm 100 ppm 1000 ppm 1.00 vol.%	
	vol.% range (location, gas injection, blanketing)	100 vol.%	100 vol.%

### 5.4 Function testing

Proceed as follows:

- screw the selected test-gas bottle onto the tester as far as it will go (fig. 1/2 - item 2)
- connect the probe nipple of the detector (item 3) to the tester hose (fig. 1/2 - item 1)
- switch the detector on: the pump draws in **fresh air** through the tester (fig. 1/2 - item 4)
- maximise the flow rate with the needle valve (fig. 1/2 - item 5) - it must be greater than 50 l/h (fig. 1/2 - item 6)
- wait for the detector to warm up and reach a stable zero point
- press the tester's release button (fig. 1/2 - item 3) and correct the flow rate to the value with fresh air (fig. 1/2 - item 6)
- hold it down until the displayed concentration has reached a stable value

Admissible display values with methane CH<sub>4</sub> test gas:

- test gas 10 ppm : > 10 ppm
- test gas 100 ppm : 70 ... 140 ppm
- test gas 1000 ppm : 800 ... 1.200 ppm
- test gas 1.00 vol.% : 0.80 ... 1.20 vol.%,
- test gas 2.20 vol.% : 2.00 ... 2.40 vol.% (45 ... 55% LEL)
- test gas 100 vol.% : 98 ... 102 vol.%

Admissible display values with carbon dioxide CO<sub>2</sub> test gas :

- test gas 100 vol.% : 98 ... 102 vol.%

If display values are outside these tolerances the detector must be readjusted (cf. section 6.0: Settings menu).

## 6 Settings menu

The **EX-TEC SR 6** and **VARIOTEC 9-EX** detectors are factory-set for all measuring ranges.

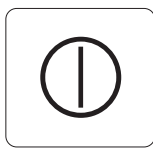
You can adjust each of the ranges using appropriate test gases (one for each range).



**All the following adjustment steps are shown on an EX-TEC SR 6, the more comprehensive version. They also apply to the VARIOTEC 9-EX.**

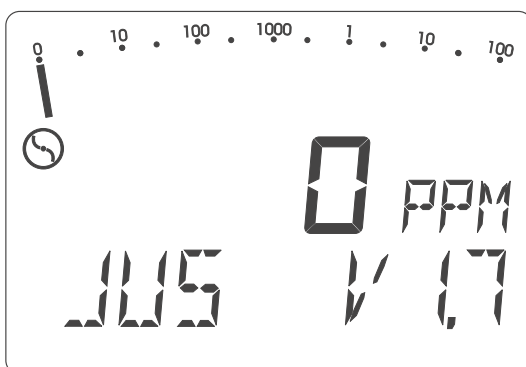
### Testing procedure

Connect your detector (switched off) to the **SPE 1** or **SPE 3** tester and a test gas.



- now press these 3 buttons simultaneously

Once the number of available operating hours has been displayed the detector is in **adjustment mode**:



- the software version number (e.g. V1.7) is displayed and the pump runs at maximum power
- the reading display flashes until the zero point of the sensor has been automatically established

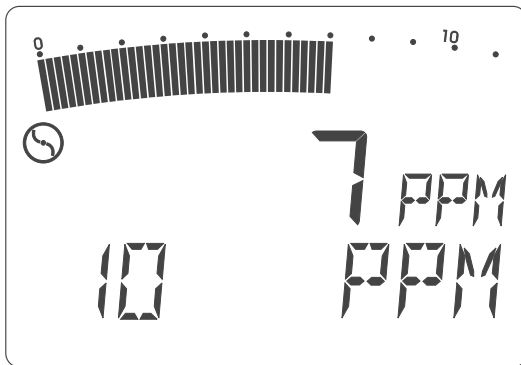


- once the zero point has been set, press the cursor-up button to move to the next step

### 6.1 Setting the ppm sensor

#### 10 ppm setting

Now release the **10 ppm methane CH<sub>4</sub> test gas** from the **SPE 3** tester.



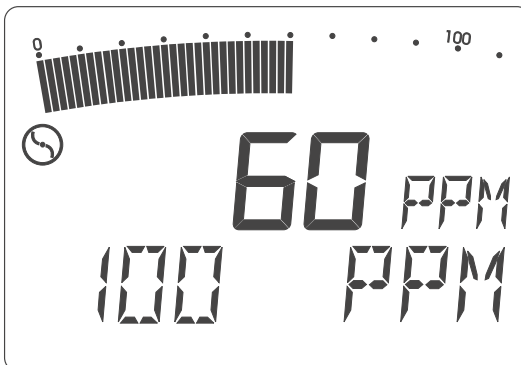
- wait for the display to stabilise
- confirm the setting with the on/off button (**OK** appears in the LC display)
- turn off the test-gas feed



- press the cursor-up button to move to the next step

#### 100 ppm setting (not absolutely essential)

Now release the **100 ppm methane CH<sub>4</sub> test gas** from the **SPE 3** tester.



- wait for the display to stabilise
- confirm the setting with the on/off button (**OK** appears in the LC display)
- turn off the test-gas feed

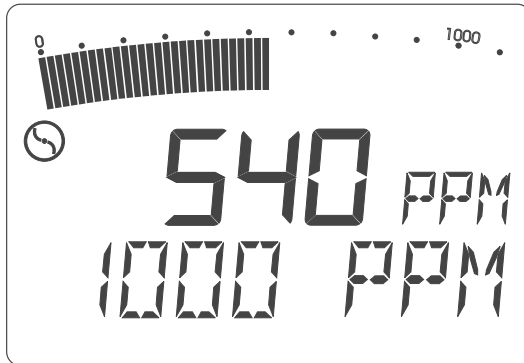


- press the cursor-up button to move to the next step



**1000 ppm setting (not absolutely essential)**

Now release the **1000 ppm methane CH<sub>4</sub> test gas** from the **SPE 3** tester.



- wait for the display to stabilise
- confirm the setting with the on/off button (**OK** appears in the LC display)
- turn off the test-gas feed



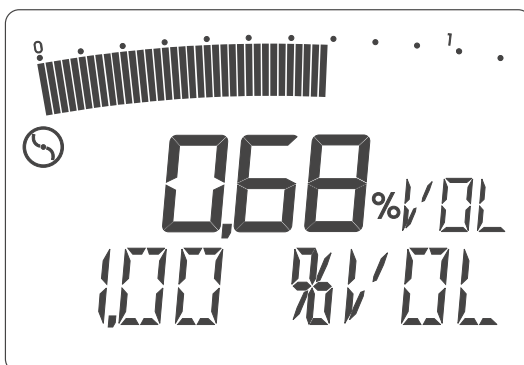
- press the cursor-up button to move to the next step



**NB: change the tester**

**1.00 vol.% setting**

Now release the **1.00 vol.% methane CH<sub>4</sub> test gas** from the **SPE 1** tester.



- wait for the display to stabilise
- confirm the setting with the on/off button (**OK** appears in the LC display)
- turn off the test-gas feed

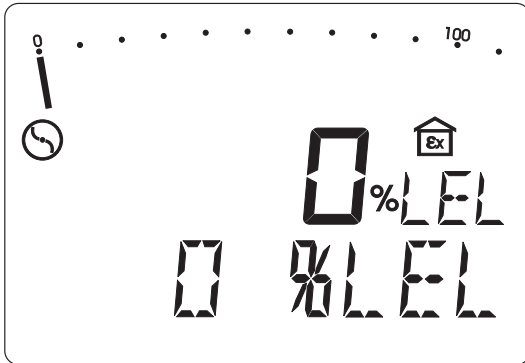


- press the cursor-up button to move to the next step

## 6.2 Setting the LEL sensor

### 0 %LEL setting

Now set the zero point of the % LEL range with fresh air using the **SPE 1** tester.



- wait for the display to stabilise
- confirm the setting with the on/off button (OK appears in the LC display)



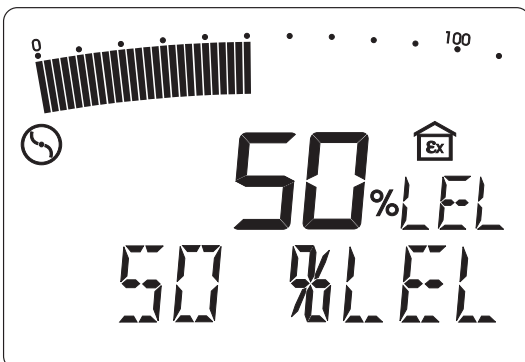
- press the cursor-up button to move to the next step

### 50 %LEL setting

Now release:

**2.20 vol.% methane CH<sub>4</sub> test gas = 50 %LEL**

via the **SPE 1** tester.



- wait for the display to stabilise
- confirm the setting with the on/off button (OK appears in the LC display)
- turn off the test-gas feed

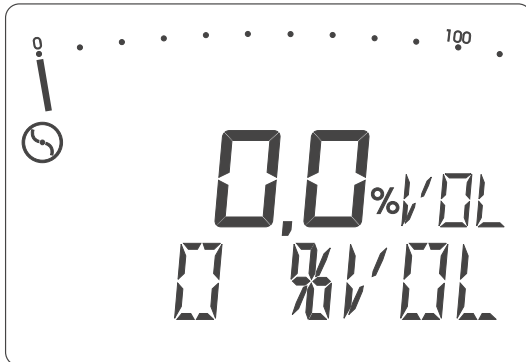


- press the cursor-up button to move to the next step

### 6.3 Setting the VOL sensor

#### 0 vol.% setting

Now set the zero point of the vol.% range with fresh air using the **SPE 1** tester.



- wait for the display to stabilise
- confirm the setting with the on/off button (OK appears in the LC display)



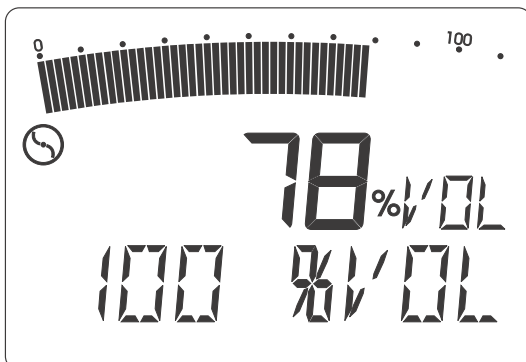
- press the cursor-up button to move to the next step

#### 100 vol.% methane (CH<sub>4</sub>) setting

Now release the:

#### **100 vol.% methane (CH<sub>4</sub>) test gas**

via the **SPE 1** tester.



- wait for the display to stabilise
- confirm the setting with the on/off button (OK appears in the LC display)
- turn off the test-gas feed



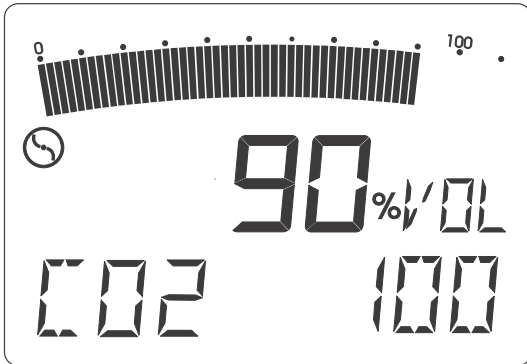
- press the cursor-up button to move to the next step

### 100 vol.% carbon dioxide (CO<sub>2</sub>) setting

Now release the:

### 100 vol.% carbon dioxide (CO<sub>2</sub>) test gas

via the **SPE 1** tester.

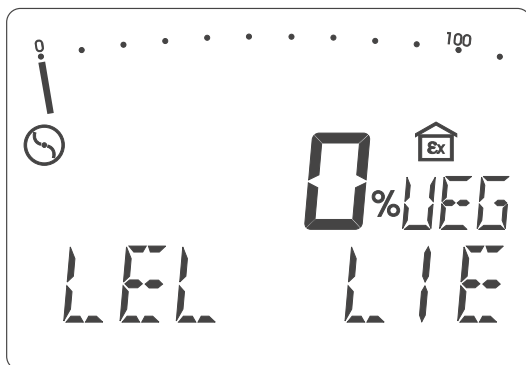


- wait for the display to stabilise
- confirm the setting with the on/off button (OK appears in the LC display)
- turn off the test-gas feed
  
- press the cursor-up button to move to the next step

## 6.4 Setting the measurement unit (%LEL range language)

Repeatedly pressing the on/off button enables you to select among the following displays in the %LEL range:

- %UEG** - **U**ntere **E**xplosions**g**renze (German)
- %LEL** - **L**ower **E**xplosive **L**imit (English)
- %LIE** - **L**imite **I**nférieure d'**E**xplosion (French)
- %VOL** - concentration display in vol.% (German/English)
- %GAZ** - concentration display in vol.% (French)



- confirm the display, e.g. **%UEG**, with the on/off button (OK appears in the LC display)
- this display is retained even when the detector is switched off

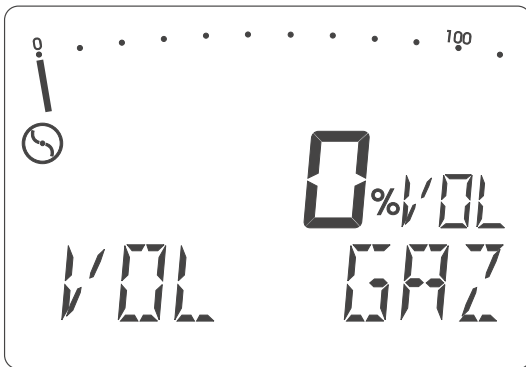


- press the cursor-up button to move to the next step

### %VOL range language

By repeatedly pressing the on/off button you can choose between the following displays in the vol.% range:

- %VOL** - concentration display in vol.% (German/English)
- %GAZ** - concentration display in vol.% (French)



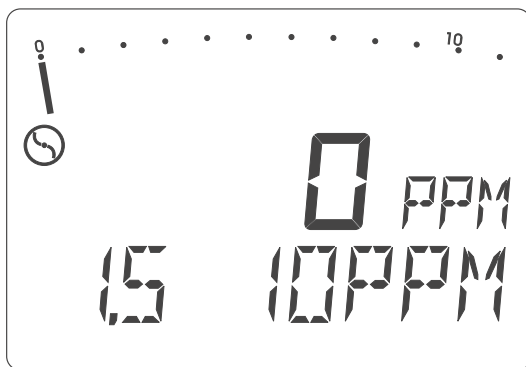
- confirm the display, e.g. **%VOL**, with the on/off button (**OK** appears in the LCD display)
- this setting is retained even when the detector is switched off
- press the cursor-up button to move to the next step

## 6.5 Setting 10 ppm sensitivity

Depending on whether synthetic or fresh air is used for the zero-point adjustment, you must always achieve sensitivity of > 5 ppm when using 10 ppm methane CH<sub>4</sub> test gas.

To this end you can select from the following amplification ratios in the 10 ppm range by repeatedly pressing the on/off switch:

- 1.0 x 10 ppm** - 100% amplification
- 1.2 x 10 ppm** - 120% amplification
- 1.5 x 10 ppm** - 150% amplification (factory setting)



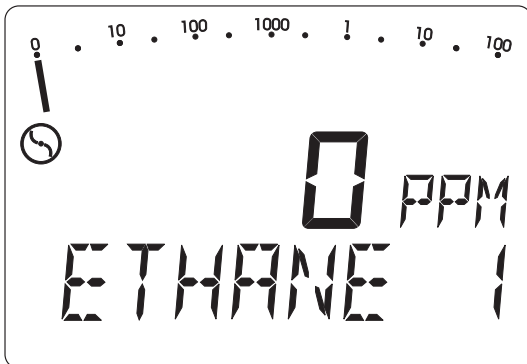
- confirm the selected amplification (e.g. **1.5 x 10 PPM**) with the on/off button



- press the cursor-up button to move to the next step

### 6.6 Activating the ETHANE BOX

If you are using an **EX-TEC SR 6** or **VARIOTEC 9-EX** in conjunction with the **ETHANE BOX**, this function must be enabled:



- pressing the on/off button switches the function on and off:

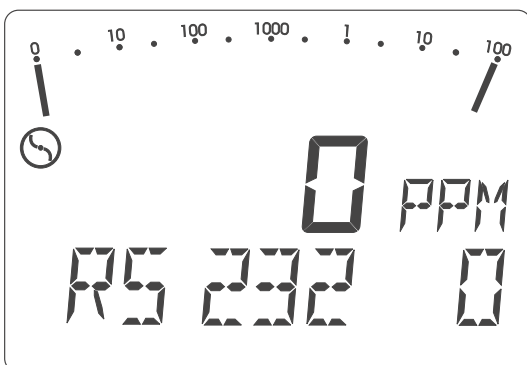
<b>ETHANE</b>	<b>1</b>	= (on)
<b>ETHANE</b>	<b>0</b>	= (off)



- press the cursor-up button to move to the next step

For further details see the **ETHANE BOX** operating manual.

### 6.7 Interface mode



- if your detector has an external RS 232 interface, you can enable it:

<b>RS 232</b>	<b>1</b>	= (on)
<b>RS 232</b>	<b>0</b>	= (off)

- if your detector lacks this interface, the interface function must be deactivated



- press the cursor-up button to move to the next step



## 6.8 Checking the LC display

With this function you can check whether all elements of the LC display are operating normally.

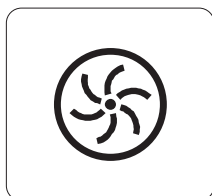


- confirm the LCD check with the on/off button



- press the cursor-up button to return to the first step

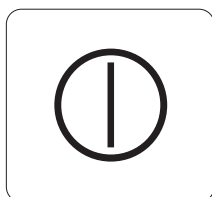
## 6.9 Leaving the settings menu



- press the pump button for about 2 seconds



- hold down the gas-warning button for about 2 seconds to return to **gas-warning mode** or



- press the on/off button to switch the detector off

## 7 Technical aspects

### 7.1 Technical notes

#### **Oxygen concentration**

In order to guarantee electrical safety the detectors may not be used in an oxygen concentration exceeding 21 vol.%.

An oxygen deficiency may lead to deviations from the correct reading.

#### **Cleaning**

Clean the detectors only with a damp cloth. No solvents, benzenes or similar substances may be used.

#### **Static charging**

Generally speaking electrostatic charging should be avoided. Objects with no electrostatic earth (including, for example, metallic housings with no earth connection) are not protected from charges resulting from dust, vapour flows and the like.

#### **Fine dust filters**

There are fine dust filters in the screw-on probe connector (item 3) and in most probes.

The filters can be cleaned by tapping or blowing them to remove the dust.



**After the filters have been cleaned, they must be replaced in exactly the same position as before**

**Heavily-soiled filters should be replaced by new ones (accessories)**

#### **Sensor sensitivity**

The sensors are deleteriously affected by gaseous components of silicones, oils and phosphate esters, which irreversibly reduce their sensitivity.

Pollution of the measuring environment by halogens, burnt neoprene, PVC, trichloroethylene and the like also weakens the sensitivity of the sensors, but in this case it can be regenerated.


## 7.2 Technical data

<b>Models</b>	:	<b>EX-TEC SR 6</b> <b>VARIOTEC 9-EX</b>
<b>Setting</b>	:	methane CH <sub>4</sub> /carbon dioxide CO <sub>2</sub>
<b>Measuring systems</b>		
- ppm range	:	semiconductor sensor
- %LEL range	:	heat-tinting sensor
- vol.% range	:	2 thermal-conductivity sensors
<b>CH<sub>4</sub> measuring range</b>	:	10 ppm - 1 ppm steps 100 ppm - 2 ppm steps 1000 ppm - 20 ppm steps 1 vol.% - 0.02 vol.% steps 10 vol.% - 0.1 vol.% steps 100 vol.% - 1 vol.% steps
<b>CO<sub>2</sub> measuring range</b>	:	100 vol.% - 1 vol.% steps
<b>gas warning</b>	:	100% LEL - 1% LEL steps
or	:	4.40 vol.% - 0.05 vol.% steps
<b>t<sub>90</sub> times</b>		
- ppm range	:	≤ 4 seconds
- LEL range	:	≤ 4 seconds
- VOL range	:	≤ 8 seconds
<b>Lifetime</b>		
Heat-tinting sensor		
- guaranteed	:	1 year
- expected	:	5 years
Semiconductor sensor		
- guaranteed	:	1 year
- expected	:	5 years
Thermal-conductivity sensor		
- guaranteed	:	1 year
- expected	:	5 years
<b>Cross-sensitivity</b>		
- ppm/LEL range: all combustible gases		
- vol range: all gases with thermal conductivity different from that of air		
<b>Measurement error</b>		
- ppm range ± 30 %		
- LEL range ± 5 % in accordance with norm EN 50054/57		
- vol range ± 5% in accordance with norm EN 50054/58		

### **Pump power**

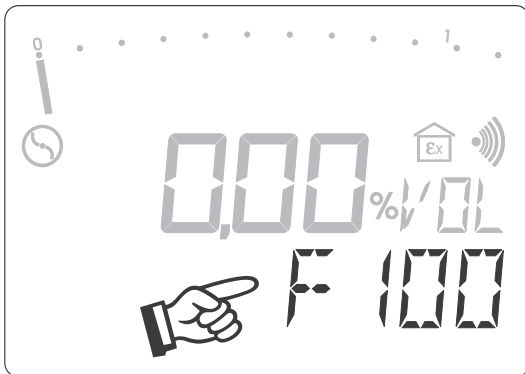
- gas detection / location : > 50 l/h and >150 mbar
- gas-measuring mode : > 35 l/h

### **Explosion protection (CENELEC)**

- Testing institution : Physikalisch-Technische  
Bundesanstalt, Brunswick
  - Test number : Ex-96.ATEX.2166
  - Identification mark :  II 2 G EEx ib d IIB T3
- Test report : PFG no. 41300897
- Testing institution : DMT - Gesellschaft für Forschung  
und Prüfung mbH, Essen

<b>Alarm thresholds</b>	:	4 ppm to 2 vol.% (variable) 10% LEL (fixed, in gas-warning mode only) 100% LEL (fixed, in gas-warning mode only)
<b>Dimensions (WxHxD)</b>	:	129 x 192 x 65 mm
<b>Weight</b>	:	1500 g
<b>Type of protection</b>	:	IP 54
<b>Operating time</b>	:	up to 8 hours
<b>Power supply</b>	:	NiCd rechargeable batteries
<b>Operating temperature</b>	:	- 10 °C ... + 40 °C
<b>Storage temperature</b>	:	- 25 °C ... + 70 °C
<b>Humidity range</b>	:	5 ... 90 % r.h., non-condensing
<b>Pressure range</b>	:	900 h Pa ... 1100 h Pa

### 7.3 Error messages



- the detectors self-diagnose faults and display an error code in the LC display (item 2)

<b>Error code</b>	<b>Cause and remedy</b>
F10 - F14 .....	adjustment error in the ppm range check test gas or repeat adjustment
F15, F16, F19, F20 ...	adjustment error in the %VOL range check test gas or repeat adjustment
F17, F18 .....	adjustment error in the %LEL range check test gas or repeat adjustment
F21 .....	component error contact SEWERIN service
F31 .....	synchronisation alarm (not clearable) in gas-warning mode error due to nitrogen or carbon dioxide in the gas sample switch off detector and switch on again in fresh air
F50 - F56 .....	component errors contact SEWERIN service

- F61 ..... breakage in the heat-tinting sensor:  
contact SEWERIN service
- F62, F63 ..... breakage in the thermal-conductivity sensor  
contact SEWERIN service
- F64 ..... breakage in the flow sensor:  
contact SEWERIN service
- F65 ..... breakage in the semiconductor sensor  
contact SEWERIN service
- F66 ..... defective humidity sensor  
contact SEWERIN service
- F100 ..... pump power too low:  
switch detector off and on again, inspect filters  
in detector and probes



**Should any other error codes occur, please contact  
SEWERIN service**

### 7.4 Wearing parts

<b>Fine dust filters</b>	in the probe connection of the detectors (item 3) and in most probes
<b>Hose filter</b>	in the carpet probe
<b>Probe filter inserts</b>	in the bell probe and the gas-detection probe
<b>Hydrophobic filters</b>	in the 1m, 2m and 6m probe hoses
<b>Neoprene mat</b>	for the carpet probe
<b>Test-gas bottle</b>	various concentrations in synthetic air or nitrogen



**Test-gas bottles are under pressure, do not store above 50 °C**



# Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin



## (1) EG-Baumusterprüfbescheinigung

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

(3) EG-Baumusterprüfbescheinigungsnummer

**PTB 96 ATEX 2166**



(4) Gerät: Gasmeß- Gasspürgerät Typ 041 yy xxxx ... 044 yy xxxx

(5) Hersteller: Hermann Sewerin GmbH

(6) Anschrift: Robert-Bosch-Straße 3  
D-33334 Gütersloh

(7) Die Bauart dieses Gerätes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser Baumusterprüfbescheinigung festgelegt.

(8) Die Physikalisch-Technische Bundesanstalt bescheinigt als benannte Stelle Nr. 0102 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. PTB Ex 96/2/0081 festgelegt.

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

**DIN EN 50014:1994-03      DIN EN 50018:1995-03      DIN EN 50020:1996-04**

(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.

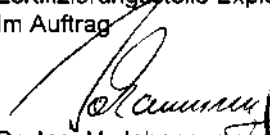
(11) Diese EG-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Bau des festgelegten Gerätes gemäß Richtlinie 94/9/EG. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Inverkehrbringen dieses Gerätes.

(12) Die Kennzeichnung des Gerätes muß die folgenden Angaben enthalten:

 **II 2 G EEx ib d IIB T4**

Zertifizierungsstelle Explosionsschutz  
Im Auftrag

Braunschweig, 08.01.1997

  
Dr.-Ing. U. Johannsmeyer  
Oberregierungsrat



Seite 1/2

EG-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit.  
Diese EG-Baumusterprüfbescheinigung darf nur unverändert weiterverbreitet werden.  
Auszüge oder Änderungen bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig

# Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin



## Anlage

(13)

(14) **EG-Baumusterprüfbescheinigung PTB 96 ATEX 2166**

(15) Beschreibung des Gerätes

Das Gerät dient zur Messung und zum Aufspüren von Gaskonzentrationen, vorzugsweise Methan vom 10-ppm-Bereich bis zum 100-Vol%-Bereich. Die eingebaute Pumpe fördert das Meßgas.

(16) Prüfbericht Nr. PTB Ex 96/2/0081 (bestehend aus 3 Seiten und 27 Zeichnungen)

(17) Besondere Bedingungen

nicht zutreffend

(18) Grundlegende Sicherheits- und Gesundheitsanforderungen

nicht zutreffend

(19) Hinweisschild

Das Wechseln und Laden des Akkumulators darf nur außerhalb des explosionsgefährdeten Bereiches erfolgen.

Zertifizierungsstelle Explosionsschutz  
Im Auftrag

Braunschweig, 08.01.1997

Dr.-Ing. U. Johannsmeyer  
Oberregierungsrat



Seite 2/2

---

EG-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit.  
Diese EG-Baumusterprüfbescheinigung darf nur unverändert weiterverbreitet werden.  
Auszüge oder Änderungen bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig

**Physikalisch-Technische Bundesanstalt**  
Braunschweig und Berlin



**1. ERGÄNZUNG**

gemäß Richtlinie 94/9/EG Anhang III Ziffer 6

**zur EG-Baumusterprüfbescheinigung PTB 96 ATEX 2166**

Gerät: Gasmeß-Gasspürgerät Typ 041 yy xxxx ... 044 yy xxxx  
Hersteller: Hermann Sewerin GmbH  
Anschrift: Robert-Bosch-Straße 3  
D-33334 Gütersloh

Beschreibung der Ergänzungen und Änderungen

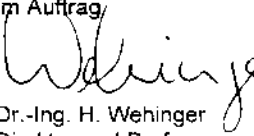
1. Die Sensorkammer des oben genannten Gerätes darf künftig auch mit Sintermetallelementen als Atmungseinrichtung gefertigt werden.  
Technische Einzelheiten und Prüfergebnisse enthält der vertrauliche Prüfbericht Nr. PTB Ex 97-17045.
2. Werden die Gasmeß-Gasspürgeräte mit einer Meßfunktion für den Explosionsschutz betrieben, ist gemäß Richtlinie 94/9/EG Anhang II Ziffer 1.5.5 bis 1.5.7 eine Funktionsprüfung erforderlich.  
Dies ist in geeigneter Form dem Betreiber mitzuteilen, z.B. in der Betriebsanleitung.

Prüfbericht Nr.: PTB Ex 97-17045

Zertifizierungsstelle Explosionsschutz

Braunschweig, 12.06.1997

Im Auftrag

  
Dr.-Ing. H. Wehinger  
Direktor und Professor



Seite 1/1

EG-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit.  
Diese EG-Baumusterprüfbescheinigung darf nur unverändert weiterverbreitet werden.  
Auszüge oder Änderungen bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig

**2. ERGÄNZUNG**

gemäß Richtlinie 94/9/EG Anhang III Ziffer 6

**zur EG-Baumusterprüfbescheinigung PTB 96 ATEX 2166**

Gerät: Gasmeß-Gasspürgerät Typ 041 yy xxxx ... 044 yy xxxx  
Hersteller: Hermann Sewerin GmbH  
Anschrift: Robert-Bosch-Str. 3  
D-33334 Gütersloh

Beschreibung der Ergänzungen und Änderungen

Die Meßwertausgabe und/oder der Alarm des Gasmeß-Gasspürgerätes in den Varianten Typ 041 11 xxxx, Typ 041 12 xxxx, 042 11 xxxx und 042 12 xxxx kann auch im Sinne der Richtlinie 94/9/EG, Anhang II, Ziffer 1.5 "Sicherheitseinrichtungen", zur Auslösung von sicherheitsgerichteten Maßnahmen verwendet werden.

Die grundlegenden Sicherheits- und Gesundheitsanforderungen in Bezug auf die Meß- und Warnfunktion werden erfüllt durch Übereinstimmung mit

EN 50054:1993

EN 50054/A1:1996

EN 50057:1993

Prübericht: DMT PFG-Nr. 41300897

Zertifizierungsstelle Explosionsschutz  
Im Auftrag

Braunschweig, 23.02.1998

Dr.-Ing. U. Johannsmeyer  
Regierungsdirektor



Seite 1/1

EG-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit.  
Diese EG-Baumusterprüfbescheinigung darf nur unverändert weiterverbreitet werden.  
Auszüge oder Änderungen bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt.  
Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig


**Physikalisch-Technische Bundesanstalt**  
Braunschweig und Berlin



**4. ERGÄNZUNG**

gemäß Richtlinie 94/9/EG Anhang III Ziffer 6

**zur EG-Baumusterprüfbescheinigung PTB 96 ATEX 2166**

Gerät: Gasmeß- Gasspürgerät Typ 041 yy xxxx ... 044 yy xxxx  
 Kennzeichnung:  II 2 G EEx d ib IIB T3/T4  
 Hersteller: Hermann Sewerin GmbH  
 Anschrift: Robert-Bosch-Straße 3  
 33334 Gütersloh, DEUTSCHLAND

Beschreibung der Ergänzungen und Änderungen


Die Typreihe von Gasmess- Gasspürgeräten wird auch mit alternativen galvanischen Zellen, Sensoren sowie einer angepassten Leiterplatte gefertigt.

Änderungen für Anwendung und Betrieb ergeben sich nicht.

Prüfbericht: PTB Ex 02-22070

Zertifizierungsstelle Explosionsschutz  
 im Auftrag

Braunschweig, 05. April 2002

  
 Dr.-Ing. U. Klausmeyer  
 Regierungsdirektor



Seite 1/1

EG-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit.  
 Diese EG-Baumusterprüfbescheinigung darf nur unverändert weiterverbreitet werden.  
 Auszüge oder Änderungen bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig

## Konformitätserklärung / Declaration of Conformity

Gerätebezeichnung: Type of Product:	<b>tragbares, batteriebetriebenes Gasmeßgerät</b> <b>portable battery-operated gas measuring device</b>
Geräte-Typ: Product Name:	<b>EX-TEC SR 6 Methan</b>
Fabrikations-Nr.: Fabr.No.:	<b>041 11 5xxx</b>

Hiermit erklären wir, dass oben genanntes Produkt mit der / den folgenden Norm(en) oder dem / den folgenden normativen Dokument(en) übereinstimmt. Bei einer mit uns nicht abgestimmten Änderung des Produkts verliert diese Erklärung ihre Gültigkeit.

We hereby declare that the above product complies with the following norms or standardized directives. In the event of any modification of this product which has not been authorized by us, this declaration becomes invalid.

Norm(en) / Norm(s):

<b>DIN EN 50 081-1</b>	<i>EMV – Fachgrundnorm Störaussendung</i> <i>Generic Emission Standard</i>
<b>DIN EN 50 082-1</b>	<i>EMV – Fachgrundnorm Störfestigkeit</i> <i>Generic Immunity Standard</i>
<b>DIN EN 50 014/18/20</b>	<i>Ex – Allgemeine Bestimm. /Druckf. Kapselung/ Eigensicherheit</i> <i>General Requirements /Flameproof Encl./ Intrinsic Safety -i-</i>
<b>DIN EN 50054/57</b>	<i>El. Geräte für das Aufspüren brennbarer Gas</i> <i>El. devices to detect and measure combustible gases</i>

Fundstellen bez. EN 50 081/82 sind Amtsblätter der EG Nr. C 44/12 bzw. Nr.C 90/2  
The Norms EN 50 081/82 are recorded in the Gazette of the EG no. C 44/12 and no. C90/2 respectively.

Gemäß den Bestimmungen der Richtlinie(n) / The unit complies with:

<b>89/336/EWG</b>	<i>EG-Richtlinie : Elektromagnetische Verträglichkeit</i> <i>EG-Directive: Electromagnetic Compatibility</i>
<b>92/31/EWG</b>	<i>Änderung dazu /amendment to above</i>
<b>93/68/EWG</b>	<i>Änderung dazu /amendment to above</i>
<b>94/9/EG</b>	<i>ATEX 100a</i>

Gütersloh, 3.12.2001

**HERMANN SEWERIN GMBH**



( Geschäftsführer / Managing Director )

## Konformitätserklärung / Declaration of Conformity

Gerätebezeichnung: Type of Product:	<b>tragbares,batteriebetriebenes Gasmeßgerät portable battery-operated gas measuring device</b>
Geräte-Typ: Product Name:	<b>Variotec 9 Ex Methan</b>
Fabrikations-Nr.: Fabr.No.:	<b>044 05 xxxx</b>

Hiermit erklären wir, dass oben genanntes Produkt mit der / den folgenden Norm(en) oder dem / den folgenden normativen Dokument(en) übereinstimmt. Bei einer mit uns nicht abgestimmten Änderung des Produkts verliert diese Erklärung ihre Gültigkeit.

We hereby declare that the above product complies with the following norms or standardized directives. In the event of any modification of this product which has not been authorized by us, this declaration becomes invalid.

Norm(en) / Norm(s):

<b>DIN EN 50 081-1</b>	EMV – Fachgrundnorm Störaussendung Generic Emission Standard
<b>DIN EN 50 082-1</b>	EMV – Fachgrundnorm Störfestigkeit Generic Immunity Standard
<b>DIN EN 50 014/18/20</b>	Ex - Allgemeine Bestimm. /Druckf. Kapselung/ Eigensicherheit General Requirements /Flameproof Encl./ Intrinsic Safety -i-

Fundstellen bez. EN 50 081/82 sind Amtsblätter der EG Nr. C 44/12 bzw. Nr.C 90/2  
The Norms EN 50 081/82 are recorded in the Gazette of the EG no. C 44/12 and no. C90/2 respectively.

Gemäß den Bestimmungen der Richtlinie(n) / The unit complies with:

<b>89/336/EWG</b>	EG-Richtlinie : Elektromagnetische Verträglichkeit EG-Directive: Electromagnetic Compatibility
<b>92/31/EWG</b>	Änderung dazu /amendment to above
<b>93/68/EWG</b>	Änderung dazu /amendment to above
<b>94/9/EG</b>	ATEX 100a

Gütersloh, 3.12.2001

**HERMANN SEWERIN GMBH**



( Geschäftsführer / Managing Director )

# Appendix

<b>Test Report</b> <b>Calibration:</b> <b>Serial Number (e.g.: 041 11 5001)</b>	<b>EX-TEC® SR 6, VARIOTEC® 9-EX</b> methane CH <sub>4</sub> /carbon dioxide CO <sub>2</sub> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 60px; height: 20px; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 60px; height: 20px; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 60px; height: 20px;"></div> </div>
---	--

04.12.2002

<b>1.0</b>	<b>Device status</b>											
1.1	- status correct (e.g.: Y / N)											
1.2	- fine-dust filters correct (e.g.: Y/ N)											
1.3	- remaining operating hours (e.g.: 5 h)											

<b>2.0</b>	<b>Pump test</b>											
2.1	- low pressure > 150 mbar											
2.2	- volume flow > 50 l/h											

<b>3.0</b>	<b>PPM measuring range (gas detection)</b>											
3.1	zero point - fresh air reading											
3.2	test gas 10 PPM CH <sub>4</sub> - display ≥ 10 PPM											
3.3	test gas 100 PPM CH <sub>4</sub> - display 70 ... 140 PPM											
3.4	test gas 1.000 PPM CH <sub>4</sub> - display 800 ... 1.200 PPM											
3.5	test gas 1,00 VOL.% CH <sub>4</sub> - display 0,80 ... 1,20 VOL.%											

<b>4.0</b>	<b>%LEL measuring range (gas warning)</b>											
4.1	zero point - display -3 ... +3 %LEL or - display -0,15 ... +0,15 VOL.%											
4.2	test gas 50 %LEL = 2,20 VOL.% CH <sub>4</sub> - display 45 ... 55 %LEL or - display 2,00 ... 2,40 VOL.%											
4.3	optical alarm (e.g.: Y/ N)											
4.4	audible alarm (e.g.: Y / N)											

<b>5.0</b>	<b>VOL.% measuring range (location, gas injection, blanketing)</b>											
5.1	zero point - display -1 ... +1 VOL.%											
5.2	Testgas 100 VOL.% CH <sub>4</sub> - display 98 ... 102 VOL.%											
5.3	Testgas 100 VOL.% CO <sub>2</sub> - display 98 ... 102 VOL.%											

<b>6.0</b>	<b>Observations</b>											
	- housing broken - adjustment, repair - factory inspection - or the like											

<b>7.0</b>	<b>Test</b>											
	- day											
	- month											
	- year											
	- signature											



**Hermann Sewerin GmbH**  
Robert-Bosch-Strasse 3 · 33334 Gütersloh · Germany  
Telephone +49 (0) 52 41 93 40 · Fax +49 (0) 52 41 93 44 44  
[www.sewerin.com](http://www.sewerin.com) · [info@sewerin.com](mailto:info@sewerin.com)