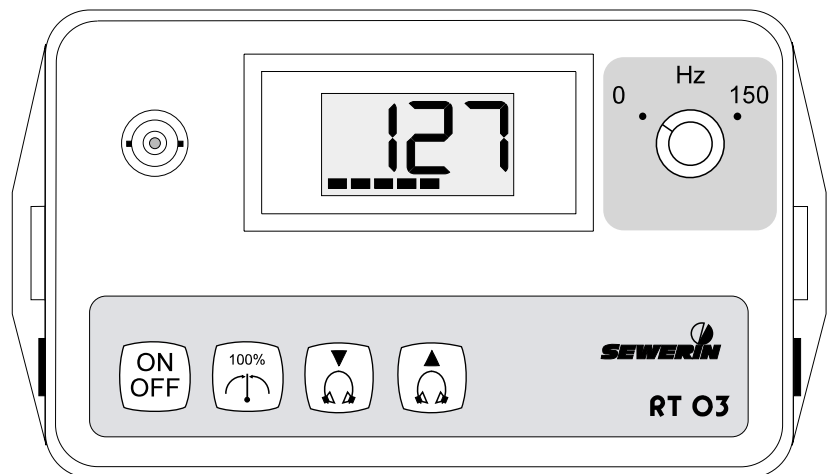


Operating- Instructions

RT 03




SEWERIN
Wir sichern Lebensqualität.

102419

Measurable success with Sewerin equipment

You settled on a precision instrument. A good choice!

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

It corresponds 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

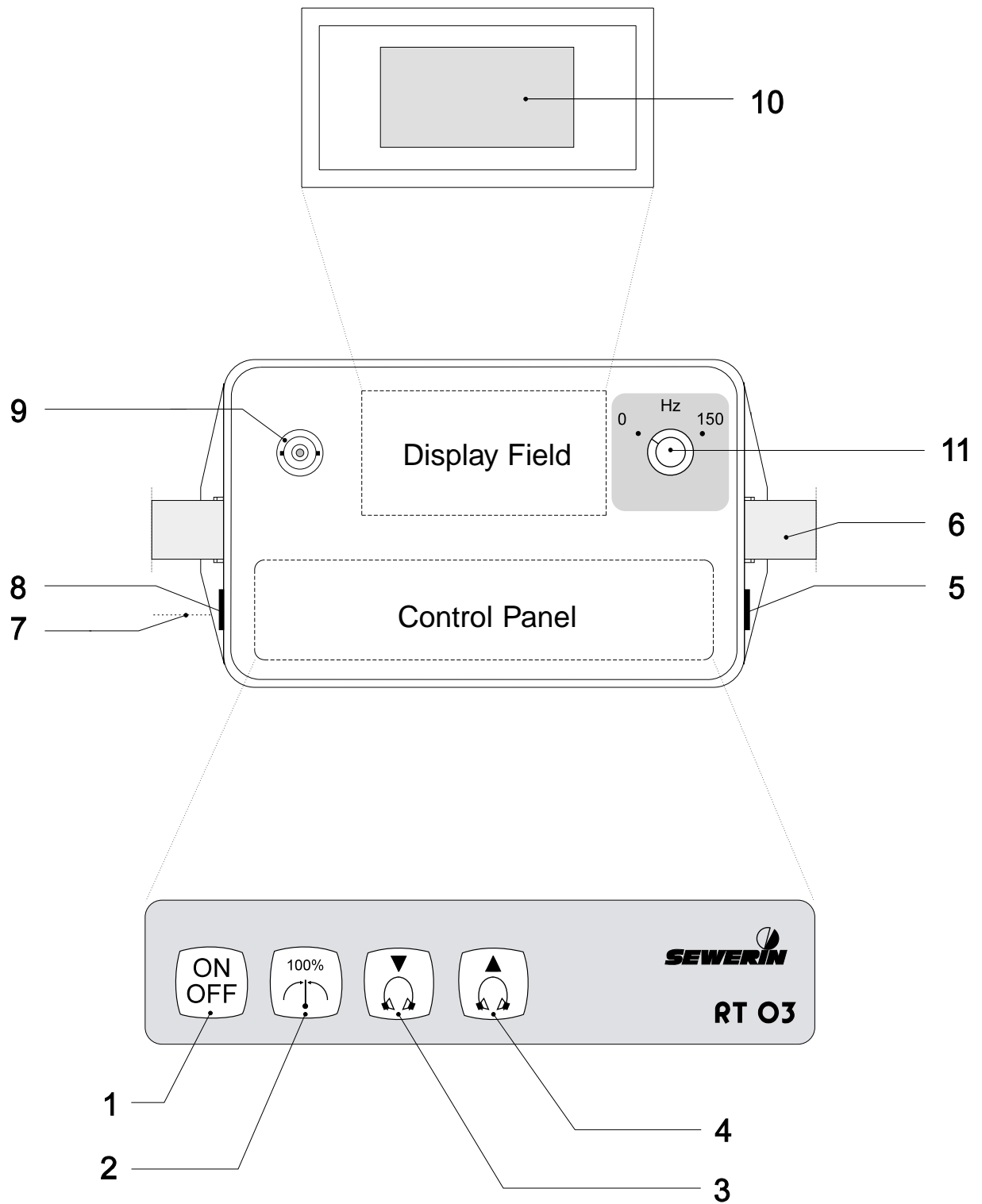
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Design of the : **RT O3**



Do not switch-on the device without antenna !

THE EASY ACCESS

- Concise Operating Instructions -



Connect the microphone with the appropriate adapter,



Connect the antenna,



Switch-on the transmitter,



Avoid noises for about 6 seconds.



READY !

RT O3

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102419 - 03/11.04.1997

For Your Safety *

The law relating to technical instruments (Gerätesicherheitsgesetz) of June 24th, 1968 (Federal law gazette I, page 717), and the amended law of August 13th, 1979 (Federal law gazette I, page 1432) prescribe the following instruction:

PAY ATTENTION TO THE OPERATING INSTRUCTIONS.

Each operation of this instrument presumes exact knowledge of and adherence to these operating instructions.

The instrument is only for the described purposes.

LIABILITY FOR FUNCTION AND/OR DAMAGES

The liability for the proper function of the instrument is irrevocably transferred to the owner or user in case that the instrument has been serviced or repaired by personnel not employed or authorized by the SEWERIN-Service Team, or if the instrument is operated in a manner which does not correspond to its intended use.

For this reason, always use original SEWERIN accessories for your **RT O3**.

The Hermann Sewerin GmbH does not accept liability for any damages resulting from non-observance of the above indications. The warranty and liability conditions contained in our general terms of sale and delivery are not extended by the above indications.

Subject to technical changes within the scope of further development.

HERMANN SEWERIN GMBH

* Insofar as reference is made to laws, regulations and standards, these are based on the legal order in the Federal Republic of Germany.

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1.0 The RT O3

(Please refer to the picture on the inner front page !)

<u>POS.</u>	<u>DESIGNATION</u>	<u>FUNCTION</u>
	<i>CONTROL PANEL</i>	
1	ON/OFF button	■ Switching on ■ Switching off
2	Level button	Set the optimal value for radio transmission
3	"Turn down" button	Turning down the headphones
4	"Turn up" button	Turning up the headphones
	<i>DEVICE</i>	
5	Microphone socket	
6	Carrier-belt	
7	Loading socket	for car adapter or plug power device
8	Headphone socket	
9	Antenna socket	
	<i>DISPLAY FIELD</i>	
10	LCD display	Display of: ■ Level volumes ■ Instantaneous values ■ Error messages ■ Operating hours still available
11	Filter-switch	Select 0 Hz or 150 Hz as high-pass
■	=	press switch

1.1 Use

The radio transmitter **RT 03** serves to receive the noise coming from fittings and to transmit it by radio to the correlator which is also delivered (⇒ see the appropriate Operating Instructions).

1.2 System components

To make the transmitter ready for use, the following components are necessary:

- antenna,
- headphones (delivered with the correlator),
- piezoelectric microphone,
- adapters (for attachment to hydrants and sliding valves) or
- horseshoe magnet (for fastening on metallic pipes without fittings).

2.0 The Control of the RT 03

2.1 Switching on the device

The start up procedure of the **RT 03** is the following:

- connect the piezoelectric microphone with the microphone socket (pos. 5),
- screw the appropriate adapter (square adapter or horseshoe magnet) to the microphone,
- attach the microphone to the fitting or the pipe,
- connect the antenna (pos. 9) and
- switch-on the device (pos. 1).

 **Do not switch-on the device without antenna !** 

Immediately after the switching on of the device, the **automatic level adjustment** is carried out for about 6 seconds. During this



time you should avoid to make noise (taps, voices or the like). The number of bar segments on the bar chart shows the number of operating hours still available.



The **RT 03** now is transmitting and permanently signals the relation between the actual and the adjusted level.

By means of the headphones (pos. 8), you can listen to the noise coming from the fitting. Now, all adjustments of the transmitter having been made, you can begin with the correlation.

2.2 Operating modes

To change the operating mode, the „Turn down“ button (pos. 3) and the „Turn up“ button (pos. 4) are to be pressed at the same time.



For a moment, the display will indicate that now an adjustment operation is executed.

You can select between the **three possible operating modes** by actuating the „Turn down“ (pos. 3) or the „Turn up“ button (pos. 4):



Automatic level adjustment

⇒ *normal adjustment when switching on the transmitter and for correlation;*

By actuating the level button (pos. 2), this adjustment can be repeated at any time. This is recommended when e.g. the environment noises were too loud during the first automatic level adjustment.



Manual level adjustment

⇒ *operating mode for the sonic speed measurement;*

During transmission the level button (pos.2) is locked; now the level is adjusted by the "Turn down" button (pos. 3) or the "Turn up" button (pos. 4) and can be controlled with the headphones.



Radio module switched off

⇒ *operating mode for the electro-acoustic water leak detection;*

For this you will need an appropriate ground microphone or a test rod. This adjustment is announced by the regular blinking of the LCD display. With the level button (pos. 2) the headphones can be switched on or off.

The desired adjustment is acknowledged by activating the level button (pos. 2).

2.3 Adjustment of the headphone volume

The desired headphone volume can be adjusted by means of the „Turn down“ button (pos. 3) or the „Turn up“ button (pos. 4).



This is displayed by a „migrating gap“ within the segment range of 8 bars.

In this connection:

Gap on the left means - headphone volume at „0“,
Gap at right means - volume at maximum.

After switching off the transmitter the finally adjusted headphone volume will be preserved.

2.4 The Filter selection

With the rotating switch the following is being chosen:

"ØHz" high pass, every noise portion is being amplified and transmitted.

"160 Hz" high pass, only noise portions above 160 Hz are being transmitted.

The optimum setting depends on a particular situation and has to be tried out. With the position "160 Hz" interfering noises within the deep frequency range can (i.e.) be suppressed effectively. The position 0 Hz should be tried out amplified when using the hydrophone.

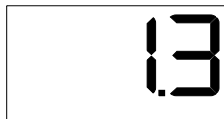
Basically the same filter position should be used for the radio transmitter 1 and 2.

2.5 Function control

It is recommended to control the functioning of the transmitter by regular intervals. For this, switch-off the device and activate simultaneously the ON/OFF button (pos. 1) and the level button (pos. 2).



Follows a bar segment check by the LCD display, and



the display of the number of the software version.

Afterwards the **automatic level adjustment** is carried out and the device is transmitting.

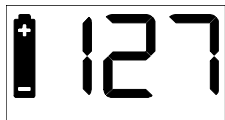
3.0 Charging

During operating mode, the loading position of the **RT 03** is constantly being displayed by segments.



The number of segments displayed indicate the remaining hours of operation.

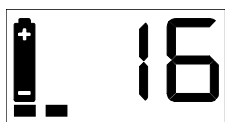
If the **RT 03** has not been charged for a substantial time, the remaining operation period decreases by way of self-discharging. Under these circumstances, the remaining operation time indicated can be higher than the time actually still available.



If the battery symbol is displayed during normal operation time, the accu-voltage has fallen so much that the remaining operation time stands aprox. by 15 min.

In case the accu-voltage is falling further, the **RT 03** automatically switches off.

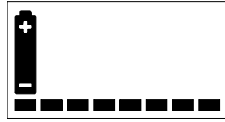
The transmitter can either be recharged by the plug power device, delivered with the **RT 03** (230V \approx /12V \approx) or by the car connection adapter (12V \approx /12V \approx or 24V \approx /12V \approx) respectively. Hereby the transmitter - in switched-off position - is connected via its charging socket with the chosen loading adapter. After a short acustic signal the following message is displayed:



e.g. 16 Hrs. charging time are still required before the battery is recharged fully.


(In this instance the remaining operating time is 2 Hrs).


After that time the transmitter is fully charged and changes automatically into the buffer operation, thus covering the self discharging loss. The transmitter is ready for continued use, the accu is not sustaining any damage.









Once the **RT 03** has been recharged, the charging time is no longer displayed. The available operating time will be at least 10 Hrs.

In case the accu has been almost completely discharged thus making a further operation impossible, it can also be worked via external 12V= instead of recharging: connect the transmitter to a 12V and actuate the on/off key.

-  While charging heat is developing within the instrument. When charging in increased outside temperatures (i.e. during summer or inside the vehicle) please open the case.

-  There will be a 16 hour charging cycle with each new power supply. To obtain the max. accu level, a new charging cycle should only be started once the accu has been discharged.

4.0 Possible operating trouble

<u>LCD-Display</u>	<u>Description of fault</u>
	Warning tone: no Source : headphone volume to full Remedy : device switches itself over to a lower value
	Warning tone: yes Source : multiply overflow Remedy : SEWERIN-Service
	Warning tone: yes Source : error when activating the last headphone adjustment Remedy : SEWERIN-Service
	Warning tone: yes Source : ROM error Remedy : SEWERIN-Service
	Warning tone: yes Source : RAM error Remedy : SEWERIN-Service
	Warning tone: yes Source : EEPROM error Remedy : SEWERIN-Service

LCD-Display

The image shows a rectangular box containing the error code 'F60' in a bold, black, digital-style font. The 'F' is on the left, and '60' is on the right, all within a thin black border.

Description of fault

Warning tone: yes
Source : radio module
voltage differs from
the nominal value
Remedy : SEWERIN-Service

ROM = read-only memory
RAM = random access memory
EEPROM = electrical erasable programmable read-only memory

5.0 Technical hints

The radio transmitter **RT 03** corresponds to the legal prescriptions relating to radio technical installations. Its transmitting power is sufficient for the transmission of signals over a distance of about 1,000 m. In that case the transmitting and the receiving antenna are in direct visual contact.

The range is reduced if the transmitter or the receiver are in metal-cased places (e.g. in a car or a metal-armored cellar). Nevertheless a reliable measuring situation can be established, if necessary, by means of the extension of the microphone cable.

To ensure a better handling, the radio transmitter can be operated from a case which is delivered with the device. The connections for aerial, microphone and loading adapter are outside of it. Should water or humidity have penetrated into it, the device is to be stored with opened case.

6.0 Technical specification

Serial number	:	009	02	...
		└	└	└
		Type	Design	Number
Characteristics	:	automatic adjustment of the level of leakage noises, display of the leakage noise level as percent-age, micro-processor controlled loading technics, under voltage switching off		
Connections	:	sockets (6.3 mm) for microphone and headphones, charging socket, BNC socket for antenna		
Power supply	:	incorporated accumulator (12 V, 4 Ah), operating hours: approx. 10, charging cycle 16 h, charging current 700 mA		
Acoustic signals	:			
- Errors	:	continuous tone		
- Low voltage	:	interval signal		
Transmitting power	:	500 mW		
Range	:	approx. 1,000 m		
Band width	:	8 Hz ... 4 kHz		
Dimensions (WxHxD):	:	175 x 145 x 105 mm		
Weight	:	approx. 2.6 kg		
Range of temperature	:			
- Device operating	:	-10° up to +40°C		
- Device stored	:	-10° up to +70°C		
Protection	:	according to IP 54		

7.0 Accessories

<i>CARRIER-BELT</i>	Leather, adjustable from 0.5 to 1.0 m, for carrying the device
<i>CHARGING UNIT</i>	
- Plug power device	Power supply by mains-connection, 230 V \approx / 12 V $=$
- Car connection adapter	Power supply by the car battery, 12 V $=$ / 12 V $=$ or 24 V $=$ / 12 V $=$
<i>PIEZOELECTRIC MICROPHONE</i>	with an extremely high noise sensitivity and in a moisture-sealed and rust-proof design
<i>HYDROPHONES</i>	sound recorder particularly recommended to be placed into the water column, also recommended for the leak location in non metallic pipes
<i>GAS AND AIR SOUND MICROPHONE</i>	to locate leakages on pipes which contain a gaseous medium
<i>CABLE EXTENSION</i>	to extend the microphone cable to a length of 5/10 m
<i>ADAPTERS</i>	for hydrants, slide and stop valves in houses and for a fixed attachment of piezoelectric microphones
<i>HORSESHOE MAGNET</i>	to attach the piezoelectric microphone to fittings or pipes
<i>HEADPHONES</i>	stereo design, for the controlling of leak noise

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