

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

SonicControl layer thickness measuring device for oil and coalescence separators



Fig. shows no. 917824

Product Advantages

- Ultrasonic sensor for precision measurement accurate to centimetres
- Monitoring of oil thickness, sludge thickness and blockage
- Protective rating ultrasonic probe IP 68
- Battery-buffered alarm in the event of power failure
- Installable in all KESSEL oil and coalescence separators
- Easy installation (inc. installation set)



Installation Commissioning Hand-Over
this unit was installed by the following licensed company

Name/Sign

Date

Company stamp



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1. Safety Instructions

Dear customer,

Before you put your KESSEL SonicControl into operation, please read through the installation instructions carefully and follow them.

Check first whether the system has arrived undamaged. In case of any transport damage, please refer to the instructions in chapter 12 "Warranty".

1. Safety instructions:

During installation, operation, maintenance or repair of the system, the regulations for the prevention of accidents, the pertinent DIN and VDE standards and directives, as well as the directives of the local power supply industry must be heeded.

Installation, Operation and Service of the SonicControl may only handled by a professional licensed service company. The SonicControl may not be repaired, changed or manipulated. In the case of a product defect, the entire SonicControl system should be replaced

Before putting the device into operation, make sure through professional examination that the necessary protective features are available. Grounding, neutral, residual current-operated protective circuit etc. must correspond to the requirements of the local power supply industry.

The system operates on electrical current. Noncompliance with the operating instructions may result in considerable damage to property, personal injuries or even fatal accidents.



The system must be disconnected from the mains before any work is carried out on it!



Beware of all operations on the vessel or to the sensor housing. Risk of electrostatic charging due to friction and flow of fluids! Electrostatics is a potential source of ignition of flammable materials or gases. Sensor housing and cables Clean with damp cloth.

It must be ensured that the electric cables as well as all other electrical system equipment are in a faultless condition. In case of damage, the system may on no account be put into operation or must be stopped immediately.

The system must be inspected and serviced regularly to maintain its operational ability. We recommend that you conclude a servicing contract with your installation company. We recommend that the system is checked on a weekly basis for proper operation.

The installation of the ultrasonic sensor inside the separation tank may only take place when the separator contains no dangerous wastewater, gases or fumes.



2. General

Dear customer,

we are pleased that you have decided to buy a KESSEL product.

The entire system was subjected to a stringent quality control before it left our factory. Nevertheless, please check immediately whether the system has been delivered to you complete and undamaged. In case of any transport damage, please refer to the instructions in the chapter “Warranty” in this manual.

These installation, operating and maintenance instructions contain important information that has to be observed during assembly, operation, maintenance and repair. Prior to carrying out any work on the system, the operator and the responsible technical personnel must carefully read and heed these installation and operating instructions.

SonicControl for oil and coalescence separators:

The SonicControl measuring device for oil and coalescence separators monitors accurately (to the centimetre) the current layer thickness of collected oil / fuel on the surface of the separator as well as sludge at the base of the separator and also warns when back-ups

Proper Operation:

The UltraSonic sensor is a compact system for installation in EX-Zone 0 rated areas inside oil and coalescence separators.



This system is appropriate for explosion rated areas listed as Ex-Zone 0.

The system is designed to monitor the following:

O = oil / fuel layer thickness

S = sludge layer thickness

A = Back-up warning

SonicControl is an automatic operated warning system which according to DIN EN 858-1 is recommended for use with oil and coalescence separators.

The following models are available: 1. OSA, 2. OS, 3. OA, 4. SA, 5. O, 6. S, 7. A

2. General


2.1 System types

SonicControl Control Unit

KESSEL AG, 85101 Lenting /Germany

Art.-Nr. 917831

BVS 11 ATEX E 040 X


 II (1)G [EX ia Ga] IIB

SonicControl OSA

KESSEL AG, 85101 Lenting /Germany

Art.-Nr. 917824

BVS 11 ATEX E 040 X


 II 1G Ex ia IIA T3 Ga

SonicControl OS

KESSEL AG, 85101 Lenting /Germany

Art.-Nr. 917825

BVS 11 ATEX E 040 X


 II 1G Ex ia IIA T3 Ga

SonicControl OA

KESSEL AG, 85101 Lenting /Germany

Art.-nr. 917826

BVS 11 ATEX E 040 X


 II 1G Ex ia IIA T3 Ga

SonicControl SA

KESSEL AG, 85101 Lenting /Germany

Art.-Nr. 917827

BVS 11 ATEX E 040 X


 II 1G Ex ia IIA T3 Ga

SonicControl O

KESSEL AG, 85101 Lenting /Germany

Art.-Nr. 917828

BVS 11 ATEX E 040 X


 II 1G Ex ia IIA T3 Ga

SonicControl S

KESSEL AG, 85101 Lenting /Germany

Art.-Nr. 917829

BVS 11 ATEX E 040 X


 II 1G Ex ia IIA T3 Ga

SonicControl A

KESSEL AG, 85101 Lenting /Germany

Art.-Nr. 917830

BVS 11 ATEX E 040 X

 II 1G Ex ia IIA T3 Ga

3. Installation and Assembly

3.1 Wall mounting of the control unit

The control unit must be installed in a dry and frost free area – preferable indoors where any alarms and control unit message can be seen / heard. Do not install the control unit in direct sunlight!



Caution!!!! The control unit is not to be installed inside the oil or coalescence separator!!!

In order to mount the control unit the control unit cover does not need to be opened. Pre-drill 2 x 6mm diameter holes 168mm apart (use the drilling template if required)

Installation:

1. Drill two holes
2. Insert two dowels
3. Screw in two screws to proper depth
4. Hang control unit on two screws
5. Affix the control unit on the screws by pushing the control unit down until it seat firmly on both screws.

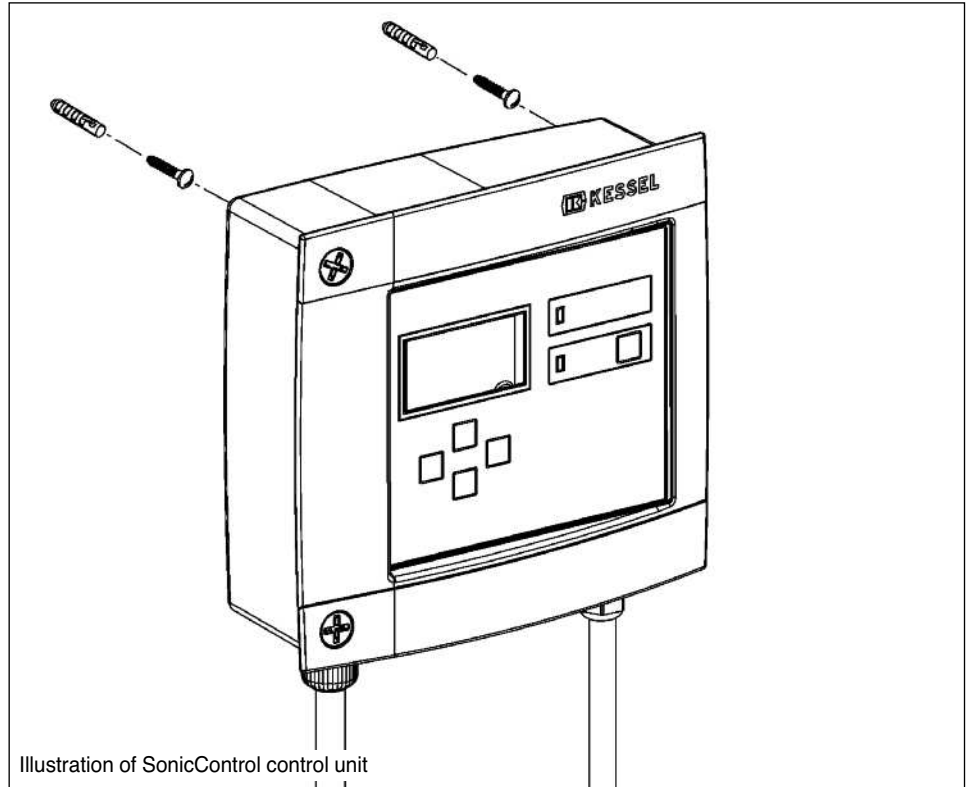


Illustration of SonicControl control unit

3. Installation and Assembly

Installation SonicControl

The SonicControl should be completely disconnected from power before the system is installed or during any maintenance work. The system should only be connected to power after the control unit and the ultrasonic sensor have connected. The ID sticker on the control unit should not be removed.

3.2 Installation of sensor and sensor bracket

The sensor is properly protected and may be installed in Zone 0 explosion rated areas according to 94/9/EG (ATEX).

The cable and the ID sticker are an integral part of the product. The ID sticker must remain on the cable if the cable is to be shortened. If a conduit is required to lay the cable, it is recommended that a conduit with 50mm diameter is used.

The ultrasonic sensor is IP 68 protected and is weather and oil / fuel resistant – due to this it can be installed in oil and coalescence separators.

The ultrasonic sensor is designed for use in temperatures from -10 deg C to + 50 deg C (263K to 323K)



Sensors certified for use in explosion risk areas

In oil and coalescence separators, sensors can only be installed that are certified for use in explosion risk areas.

The ultrasonic installation bracket must be installed with the supplied screws inside the upper section of the fuel separator – this area is above fluid level meaning the installation screws holes will not cause any leaks to the watertight system.

Caution!!!! If the ultrasonic sensor is being installed in a fuel or coalescence separator that is already in use, no electric or battery powered tools such as drills may be used during installation. Only use normal hand help screw drivers.



If back-up (flooding) has occurred within the separator, the ultrasonic sensor should be inspected afterwards that it is still in the proper location and then it is clear of debris.

Please note the safety instructions!

3. Installation and Assembly

Article Number of oil or coalescence separator	Sludge			Oil / Fuel			Distance greens mark to Container ground
	1) % full	Measured layer thickness in mm	Disposal volume in liters	2) % full	Measured layer thickness in mm	Disposal volume in liters	
99403.10B 99403.10BEX 99503.10B 99503.10BEX 99403.10D 99403.10DEX 99503.10D 99503.10DEX	50	650	1000	100	131	187	1050
	40	530	800	80	105	150	
	30	430	600	60	79	112	
	20	330	400	40	52	75	
	10	210	200	20	26	37	
99610.15B 99610.15BEX 99710.15B 99710.15BEX 99610.15D 99610.15DEX 99710.15D 99710.15DEX	50	650	1500	100	131	262	1050
	40	550	1200	80	105	210	
	30	450	900	60	79	157	
	20	340	600	40	52	105	
	10	220	300	20	26	52	
99606.30B 99606.30BEX 99706.30B 99706.30BEX 99606.30D 99606.30DEX 99706.30D 99706.30DEX 99610.30B 99610.30BEX 99710.30B 99710.30BEX 99610.30D 99610.30DEX 99710.30D 99710.30DEX	50	1100	3000	100	138	265	1550
	40	930	2400	80	110	212	
	30	760	1800	60	83	159	
	20	580	1200	40	55	106	
	10	370	600	20	28	53	
99606.80B 99606.80BEX 99706.80B 99706.80BEX 99606.80D 99606.80DEX 99706.80D 99706.80DEX 99610.80B 99610.80BEX 99710.80B 99710.80BEX 99610.80D 99610.80DEX 99710.80D 99710.80DEX 99615.80B 99615.80BEX 99715.80B 99715.80BEX 99615.80D 99615.80DEX 99715.80D 99715.80DEX	50	1100	4000	100	138	380	1550
	40	910	3200	80	110	304	
	30	740	2400	60	83	228	
	20	560	1600	40	55	152	
	10	350	800	20	28	76	

1)The separator contents should be emptied when the sludge layer is 50% full
2)The separator contents should be emptied when the oil / fuel layer is 80% full – not disposing at this stage would exceed the oil / fuel storage capacity of the separator

3. Installation and Assembly

Article Number of oil or coalescence separator	Sludge			Oil / Fuel			Distance greens mark to Container ground
	1) % full	Measured layer thickness in mm	Disposal volume in liters	2) % full	Measured layer thickness in mm	Disposal volume in liters	
99703.04B 99703.04D	50	400	550	100	235	200	980
	40	320	369	80	188	160	
	30	240	305	60	141	120	
	20	160	241	40	94	80	
	10	80	177	20	47	40	
99703.10B 99703.10D	50	800	1050	100	235	200	1480
	40	640	815	80	188	160	
	30	480	587	60	141	120	
	20	320	369	40	94	80	
	10	160	241	20	47	40	
99706.10B 99706.10D	50	400	550	100	235	200	940
	40	320	369	80	188	160	
	30	240	305	60	141	120	
	20	160	241	40	94	80	
	10	80	177	20	47	40	

1)The separator contents should be emptied when the sludge layer is 50% full

2)The separator contents should be emptied when the oil / fuel layer is 80% full – not disposing at this stage would exceed the oil / fuel storage capacity of the separator.

Note:

For more articles please contact the KESSEL customer service. After installation completely fill the separator with water, check height and correct if necessary! Completely filled separator must perform the "manual mode" (2.1) SonicControl "0 cm" show. Should be no mechanical correction possible change in "Parameters -> level adjustment"(3.1.7) to perform.

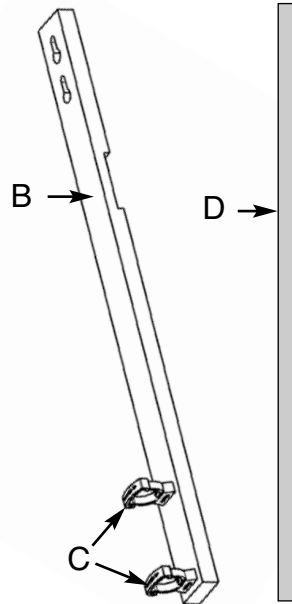
The parameters are password protected - please contact the KESSEL customer service at +49 (0) 8456/27462.

Adjustment of the SonicControl sensor can be handled with two different methods: By measuring with a ruler (separator must be empty in order to use this method) or the sensor is adjusted using the colored marks. The separator must be filled with clean water in order to use this method (must not be filled with oil or fuel).

3. Installation and Assembly

3.3 Installation of sensor holding bracket.

1. Open the cover on the oil or coalescence separator (use caution removing the heavy cast iron or concrete covers – a lifting aid system is recommended).
2. Using the including drilling template bracket, mark on the upper section of the separator the two holes located on the bracket. Drill two 6mm holes in the location of the two marks.
3. Screw two included screws into the two holes in the upper section until there is a distance of 25mm between screw head and upper section wall.
4. In the case that the separator has installed deeper than the standard installation depths, use the supplied pipe (D) as an extension.
5. Now clip the SonicControl sensor in the holding clips (C) and then secure the bracket (B) by hanging it onto the two screws. Now fully tighten the two screws so that the bracket is securely fixed to the separator's upper section.
6. Now adjust the SonicControl sensor to the green mark on the sensor with the full water level (for information on the sensor green mark, please see the next page).

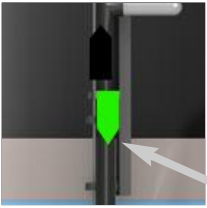


Caution: – the SonicControl's cable should not be in the way or above any of the sensor probes.

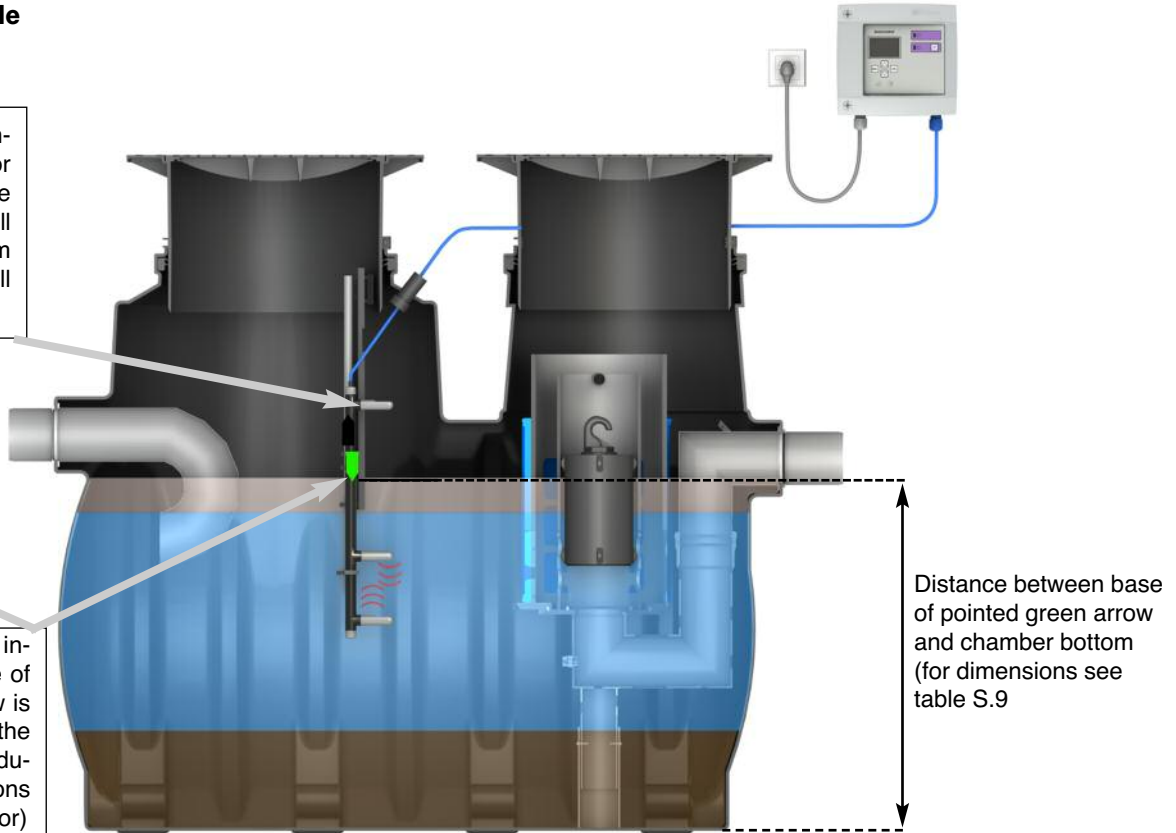
3. Installation and Assembly

3.4 Installation Example

The sensor should be installed so that the sensor fingers point toward the center of the tank, this will protect the sensors from any debris that may fall into the separator.

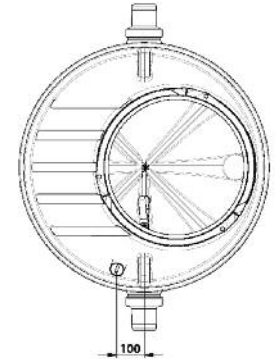
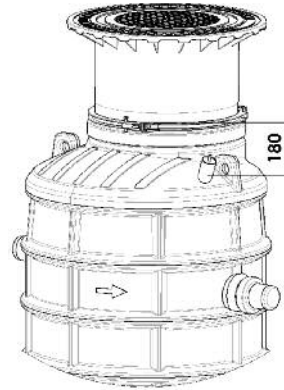
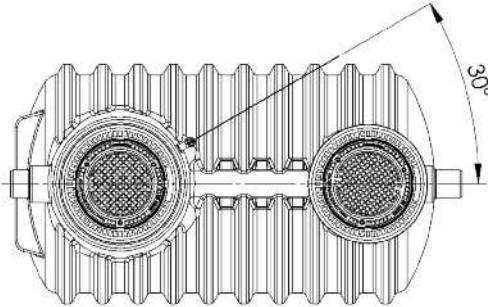
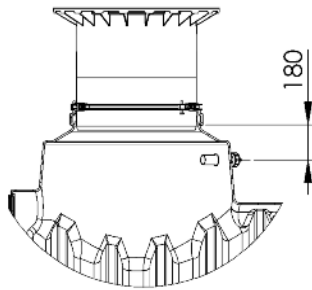


The sensor should be installed so that the base of the pointed green arrow is at the exact height of the separator's water level during calm / clean conditions (no fuel or oil in separator)



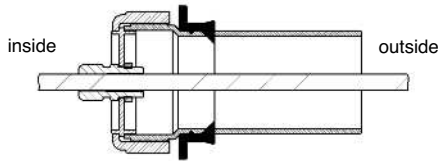
Distance between base of pointed green arrow and chamber bottom (for dimensions see table S.9)

3. Installation and Assembly



III. shows an underground fuel separator size NS 6 to NS 15

III. shows an underground fuel separator size NS 3 to NS 6



During the installation of the underground fuel separator, a DN 40 (OD 50mm) conduit pipe should be laid two the separator dome that will contain the SonicControl sensor. In the dome area of the separator tank (as seen in the above ill.) a 60mm hole should be drilled out of the tank using a hole saw. The control unit and the separator should be located as close to each other as possible. The conduit pipe should be laid with no bends over 45 degree (maximum fitting bend should be 45 degrees). The conduit pipe should be installed with a constant slope toward the separator so that any condense water will flow back into the separator and not toward the control unit or pond in the conduit pipe. In the case that the conduit may need to be extended at a later date or the sensor cable needs to be replaced, a string can by laid in the conduit pipe to aid running new cables. The SonicControl cable may be extended to a total length of 60 meters. The cable screw must be tightly fastened before running the SonicControl cable back toward the control unit. Finally secure tightly the black plastic conduit pipe cover. **If a back up occurs inside the separator the SonicControl sensor must be inspected and cleaned if necessary.**

Order-Nr. 917822

4. Electrical Connections

4.1 External Signalling device

The external signalling (alarm) device (Article number 20162) can be connected inside the control unit if required. This device is used so that audible alarms can be heard in other locations of the building

4.2 Shortening the SonicControl cable

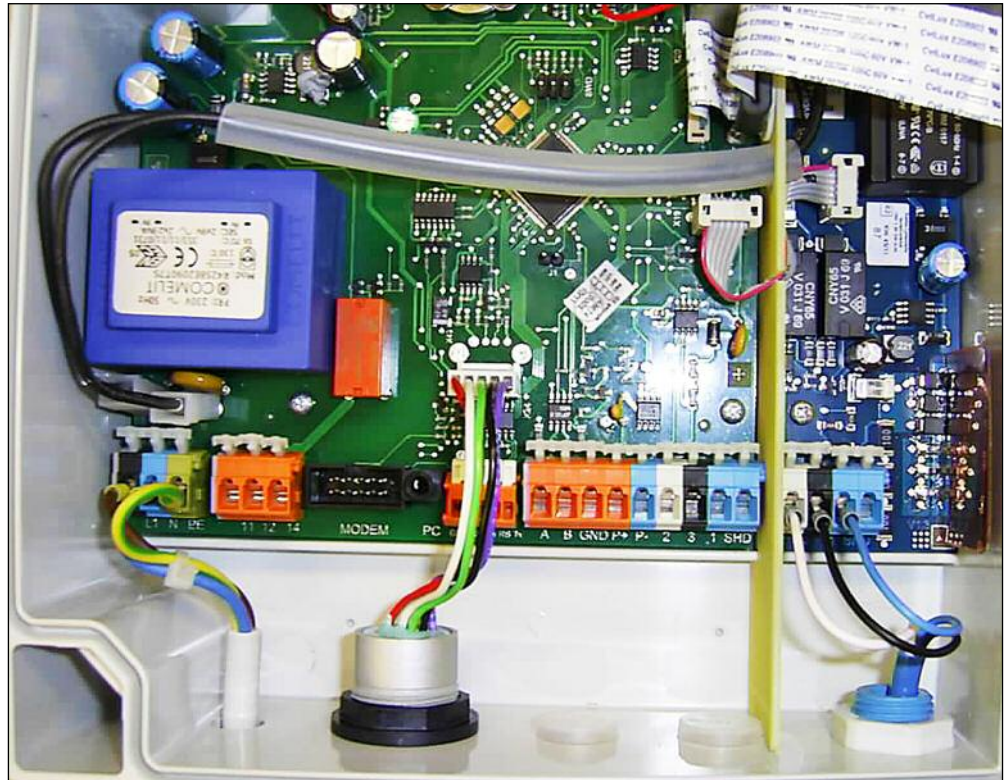
The SonicControl cable can be shortened if required. If cable jackets are used the connection jacks must be able to handle a cross sectional area of max 2.5 square mm. This cross sectional area cannot be exceeded

ATEX regulations should be followed if shortening the SonicControl cable – ATEX Standard 94/9/EG

4.3 Extending the SonicControl cable

The SonicControl sensor is supplied with 3 x 0.75 square mm cables inside a jacket with a length of 30 m.

To extend the cable length, please use the extension sets of KESSEL, please contact our service centre.



4. Electrical Connections

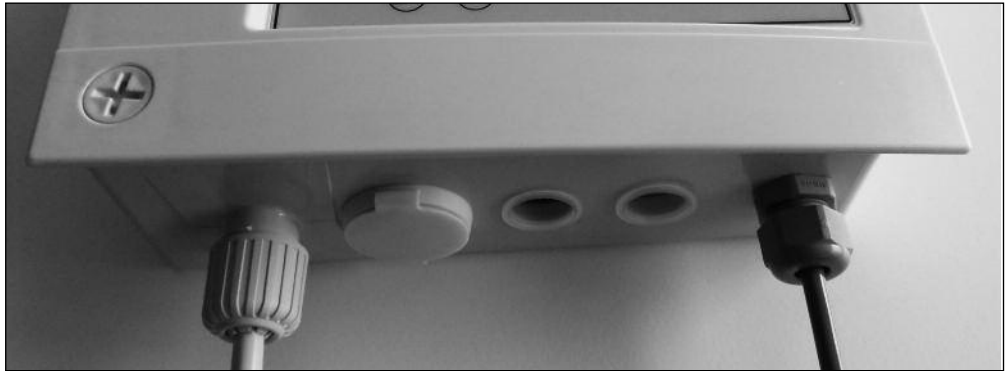
4.4 Installation / Cable Connections

The SonicControl cable may not be laid with together with any other electrical systems / circuits. Do not lay the cable with any other cables in order to prevent electrical interference which can cause the SonicControl to malfunction. The sensor itself should not be grounded.

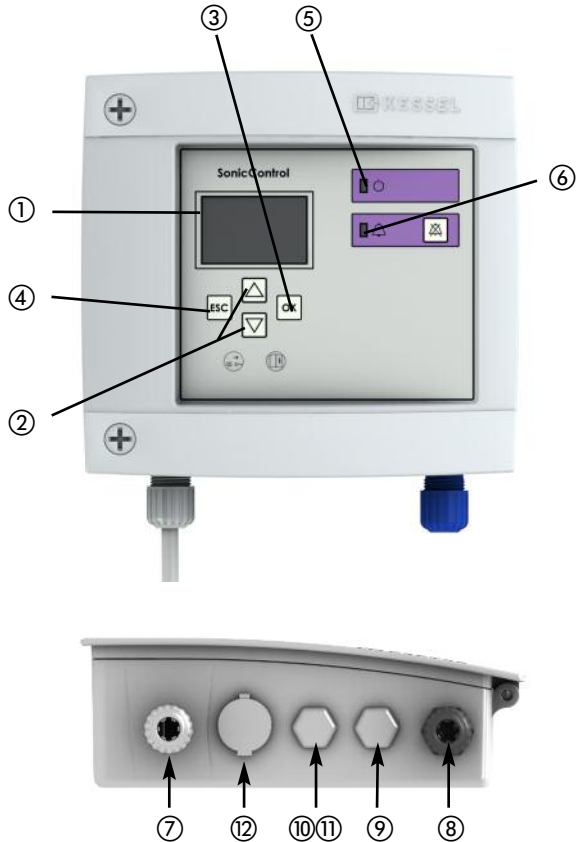
The SonicControl cable is to be connected to the control unit as stated in this manual. Connect the cable to the connection jacks located on the left side inside the control unit near the partition wall.

IMPORTANT:

All cables entering the control unit should be secured properly secured with a tie-wrap or cable clip to prevent any danger to the unit or the operator in the case that a cable connection comes loose. The sensor cable should be laid separately from the control unit's power cable to prevent interference



4. Electrical Connections



- ① Control unit digital display
- ② Movement keys / direction keys for moving through the program menu
- ③ Enter key / OK key
- ④ Return key / ESC key
- ⑤ LED for operation
- ⑥ LED for malfunctions / warnings
- ⑦ Power cable
- ⑧ SonicControl sensor cable connection (Article Number 395-074 . . . 395-080)
- ⑨ Modem connection
- ⑩ Remote warning speaker connection
- ⑪ Potential free contact connection
- ⑫ USB connection

* 9, 10 and 11 – see connection plan on page 31

4. Electrical Connections

4.5 Installation of electrical equipment in explosion risk areas

The self protected electrical systems of the SonicControl, which are identified by their blue color, are certified for installation in explosion risk areas and to be used with the Ex i-connections of the SonicControl ATEX.

The electrical installation in explosion risk areas must follow EN 60079-0 and EN 60079-14 regulations.

Installations in Germany must also follow EIN 60079-14VDE 0165 Part 1 regulations.

When connecting the intrinsically secured circuit of the associated equipment - installation in a secure area- (SonicControl ATEX control unit) and when connecting of the intrinsically secured equipment - installation in explosion rated area - (SonicControl ATEX sensor), be sure that all related max values (U; I; P) are followed and met.

Sine the connection of both explosion protected systems have been certified with the EG type examination certificate BVS 11 ATEX E 040 X, no individual verification is required according to RL 94/9/EG and ATEX 95.

Related Norms and Regulations

EN 60079-0:2010-03 (Explosion risk areas / atmospheres)

EN 60079-11:2007-08 (Protection classes, self safety; Ex i)

EN 60079-26:2007-10 (Operating material with system protection level (EPL Ga)

EN 60079-14:2009-05 (Explosion risk areas / connection of electronic systems)

EN 61000-6-1 (2007 (interference resistance)

EN 61000-6-3 (2007) (emitted interference)

Regulation RL94/9/EG (ATEX 95)

Low current regulations 2006/95/EG


5. Operation

5.1 Getting the system ready for operation

Plug the mains plug of the control unit into the socket. The system will initialise automatically.

During initial initialisation of the system, the control unit requires that the user select four basic settings.

1. Language
2. Date/time
3. Type of system*
4. Typ of coalescence separator*

- Selection using 
- Stored in system memory by pressing "OK"
- After setting 1 to 4
- Switch unit loads program memory
- Start operating mode
- System is ready for operation

5.2 Operator's duties

Checks

- for transport or installation damage
- for structural defects of all electrical and mechanical components for seat and function
- the cable connections

Customer instruction based on the installation and operating instructions

- Go through installation and operating instructions with the customer
- System operation (explaining and describing)
- Explanation to the customer about the operator's duties
- Remind about regular servicing (see chapter 6)

5.3 Instruction / Handover

The chapter "Safety instructions" must be heeded (page 4)!

Commissioning is carried out by a specialised firm or by an authorised KESSEL agent (at an additional charge). The following persons should be present for the handover:

- Person authorised to perform the acceptance on behalf of the building owner
- Specialised firm

In addition, we recommend the participation of operating personnel/operator and the waste disposal contractor.

Summary of instructions:

- Get the system ready for operation
- Check the system
- Instruction based on the installation and operating instructions
- Preparation of the handover certificate (see chapter 13)
- Once instruction is completed, the system must be made ready for operation.

6. Inspection and Maintenance

Please heed the safety instructions in chapter 1.

All power should be disconnected from the system when any maintenance or service work is being performed. If the two 9-volt batteries in the control unit are to be replaced, use only 450 mAh types. Repairs to this system should only be handed by the manufacturer. The control unit itself requires no maintenance.

Cable connections should be checked for damage.

The SonicControl sensor needs to be cleaned on a regular basis. Proper operation of the back up / flooding sensor (if included) must be checked during the semi-annual inspection and maintenance of the system! This can be done by simply placing the back up / flood sensor under water (approx 10 cm) which after max 4 seconds should result in the control unit displaying an optical and audible alarm.

Every time the oil / coalescence separator is emptied / disposed, the sensor must be cleaned with warm/hot water*. When a high-pressure jet cleaner is used, maintain a safe distance of 30 cm.

The sensor does not have to be removed for cleaning.



The SonicControl control unit and the sensor are connected by a cable with a maximum total length of 30 meters. Only this cable should be used, no other cable is allowed for connection.

Beware of all operations on the vessel or to the sensor housing. Risk of electrostatic charging due to friction and flow of fluids! Electrostatics is a potential source of ignition of flammable materials or gases. Sensor housing and cables Clean with damp cloth.

The sensor may not be used with corrosive fluids.

The sensor is maintenance free. In order to assure proper operation of the entire system, the sensor function should be checked once per year.

Repairs

The SonicControl system may not be repaired, changed or manipulated. In case the SonicControl is damaged or defective it must be replaced by a new system.

Disposal

In the case that the SonicControl is damaged or no longer required and needs to be disposed of, please follow all local and national disposal regulations in your area.

The SonicControl control unit contains two 9-volt batteries which should be disposed of properly.

Please follow this all the safety instructions in this operating manual when operating this system.

The control unit will only display a grease thickness layer 24 hours after being placed into operation due to the fact that the reading is taken at night. .

7. Errors and Malfunction

Please heed the safety instructions in chapter 1.

7.1 Incident display (only in the log book):

Message on digital display	Cause	Remedy
First initialisation	First initialisation	--
Parameters changed	Parameters have been changed	--
Type of system changed	Type of system has been changed	--
Servicing	Servicing date has been entered	--
Manual mode	Manual mode has been entered	--
Readout log book	Log book has been read out	--
Shut down control unit	Control unit has been shut down	--
Acknowledge acoustic alarm	Acoustic alarm has been acknowledged	--
Acknowledge fault	Fault has been acknowledged	--
Factory settings	Return to factory settings	--

KESSEL Customer Service Contact – telephone +49 8456 27 462

7. Errors and Malfunction

7.2 Errors and Malfunctions

Message on digital display	Type of warning	Cause	Remedy
PRE-ALARM layer thickness	Blinking (alarm)	Oil / Fuel layer has reached pre-alarm thickness	Monitor oil / fuel layer and dispose when required
No rest phase detected	Blinking (alarm)	Measurement took place during operation (waste-water entering separator) – inaccurate results	Check measurement in Parameter section of control unit and re-set if required
ALARM layer thickness	Acoustical alarm and flashing LED	Maximum oil / fuel layer thickness reached	Dispose separator contents
Power outage	Acoustical alarm and flashing LED	System is no longer received power	Check fusing, F1 switch and mains power supply
Battery fault	Acoustic signal and flashing	Battery contact error	Check battery polarity and seat
	Acoustic signal and flashing	Battery defective or service life exceeded	Replace the battery

7. Errors and Malfunction

Message on digital display	Type of warning	Cause	Remedy
Communication error	Acoustical alarm and flashing LED	Insufficient modem reception	Step 1 – check reception Step 2 – If no reception is then do not use modem, if reception is existing then replace modem Extend GSM antenna

KESSEL Customer Service Contact – telephone +49 8456 27 462

7. Errors and Malfunction

7.3 General Errors

Known error	Type of warning	Cause	Remedy
Difference between displayed oil / fuel layer thickness and manually measured thickness	Error due to improper SonicControl measurement	<ul style="list-style-type: none"> - SonicControl sensor improperly connected - SonicControl position incorrect - Improper initialization - Debris on sensor - Separator size / Article number improperly entered 	<ul style="list-style-type: none"> - Check all cable connections (please follow section 3.4 – Installation) - Check to make sure type and size of separator has been correctly entered - Service the oil / fuel separator - Empty / dispose of separator and clean SonicControl sensor - Check sensor position and re-position if necessary (see p. 11) - Check settings and correct if necessary
SMS use or remote maintenance not possible	Remote maintenance error	Insufficient modem reception	<p>Step 1 – check modem reception</p> <p>Step 2 - If no reception is available then do not use modem, if reception is existing then replace modem</p> <p>Extend GSM antenna</p>

8. Control Unit

8.1 Menu guidance

The control unit's menu navigation is subdivided into the system information as well as three different main menu items. The background lighting is activated if one of the control keys is pressed once.

OK Button: Skips to the next higher level

ESC Button: Skip to the next lower level

▲ Navigation within a level
▼

Alarm Button The acoustic signal can be acknowledged by pressing this key once. If the fault has been eliminated, the visual fault can also be acknowledged by pressing the alarm key again for 3 seconds or more.



If the fault has not been eliminated, the acoustic alarm is triggered again when the alarm key is pressed again.

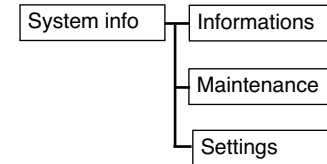
In case of a mains power failure, the system is not ready for operation. The control unit switches to stand-by mode (battery operation) which will last for at least 72 hours if the batteries are completely full. This becomes noticeable by means of an acoustic and visual alarm. The acoustic alarm can be acknowledged by pressing the alarm key. By pressing the Alarm button for 5 seconds or more, the power outage warning mode can be acknowledged and the control unit will be automatically turned off – this can serve to save battery power. If the mains connection is re-established, the program will automatically continue with the last program phase.

Note:

Certain menus are password-protected. This serves to protect the system against inappropriate use.

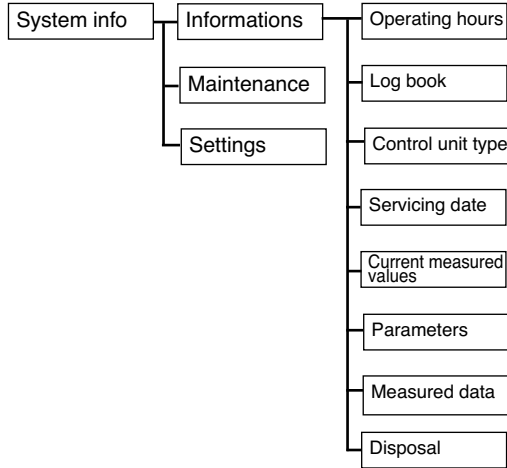
If you have any questions, please contact KESSEL Customer Services (Phone +49 (0) 8456 / 27462)

8.2 System-Menü



8. Control Unit

8.3 Information menu



8.3.1 Operating hours

Display of all system operating times.

8.3.2 Log book

Chronological display of incidents and faults (see also chapter 7 “Incidents and faults / remedial measures”)

All changes made to the settings are saved at this point.

8.3.3 Control unit type

Display of system time, grease separator type, language and software status.

8.3.4 Servicing date

Display of the next necessary and last performed servicing.

Note: Data are only available if these have been stored in the “Settings” menu by the servicing partner.

8.3.5 Current measured values

Pressing the OK key carries out a measurement of the current grease layer thickness.

8.3.6 Parameters

Display of all set control parameters of the system It is not possible to change the parameters in this menu.

8.3.7 Measured data

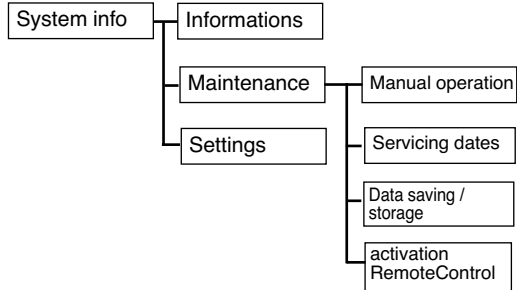
Display of the last layer thickness and temperature stored (max. 400 values).

8.3.8 Disposal

Display of details of the last disposal carried out (if stored)

8. Control Unit

8.4 Maintenance menu



8.4.1 Manual mode

Manual operation overrides automatic operation.

8.4.2 Servicing date

Entry of date of last service / maintenance and the next servicing date by the servicing partner.

8.4.3 Data saving / storage

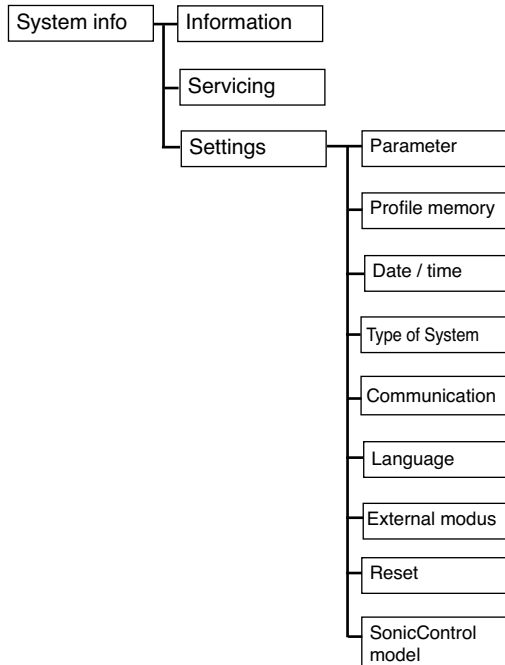
Using the data storage, measured SonicControl values can be transferred onto a USB stick

8.4.4 Remote Control activation

Here you have the capability of activating a remote control (optional accessory)

8. Control Unit

8.5 Settings menu



8.5.1 Parameters

Changes to default parameter settings (refer also to 3.3)

Note: Every change is immediately accepted when the OK key is pressed. In addition, when exiting this menu it is possible to save these values in the profile memory under a separate name.

8.5.2 Profile memory

Loading of the values accepted on initialisation and of the values added under a new name (see 8.5.1).

8.5.3 Date/time Setting the current date and time.

8.5.4 Type of system

Selection of the separator size (NS).

8.5.5 Communication

Input / change of the station name, the device number, the modem type, the PINS and the number of the mobile phone to which possible malfunctions can be sent by text message (for a detailed description see separate operating instructions).

8.5.6 Language Display / change of digital display language.

8.5.7 Expert mode access only by KESSEL Customer Service

8.5.8 Reset

Reset the switch unit to the default setting (operating hours are not reset).

8.5.9 SonicControl model

In this mode, SonicControl models from Model O to Model OSA can be selected

9. Technical Data

9.1 Control Unit technical data



The automatic coating thickness gauge consists of a switching device (No. 395-035) and an intrinsically safe sensor layer thicknesses of up to three finger sensor electronics (according Series No. 395-074 to 395-080). This interconnection, and values below must be followed for safe operation!

General technical data

Housing dimensions (L x W x H)	190 x 210 x 70 mm
Weight of switch unit approx	1.3 kg
Permissible temperature range	0 bis 50 °C
Mains standby (ready for operation)	14 mA
Mains current in operation	35 mA
Protective class	I
Type of protection	IP 54
Electrical connections suitable for all copper conductors	0,08 - 2,5 mm
Cable sheath diameter	5 - 9 mm
Battery	2 x 9V – 680 mAh

Inputs

Sensor input	Sensor input SonicControl
--------------	---------------------------

Power Supply

Operating voltage	230 V AC 1~50 Hz ± 10% L / N
Mains connection	Safety plug on the switch unit with 1.4 m connection cable
Pre-fuse required	max. 16 A (provide on installation side), all-pole main switch in the supply cable

9. Technical Data

Outputs

<i>Potential-free</i>	<ul style="list-style-type: none"> • Changeover contact: centre contact, • Make contact; break contact • max. 42 VAC / 0.5 A
<i>Option: Signal generator</i> (Article Nr. 20162)	Connection possibility for an external alarm device

9.2 Sensor Technical Data

General Technical Data

Housing Dimensions (L x W x H)	700 x 200 x70 mm
Sensor weight	approx 1 kg without sensor cable
Allowable operating temp. range	0 bis 50 °C
Protection class	IP 68

Safety related maximum sensor values

Intrinsically safe supply circuit	[KI. U _e (+) / KI. GND (-)] U _i ≤ 7,88 V; I _i ≤ 277 mA; P _i ≤ 544 mW; Characteristic curve: linear C _i + L _i Negligibly small
Intrinsically safe outgoing circuit	[KI. LIN (+) / KI. GND (-)] U _i ≤ 7,88 V; I _i ≤ 20,4 mA; P _i ≤ 40,2 mW; Characteristic curve: linear C _i + L _i Negligibly small

10. Replacement Parts and Accessories

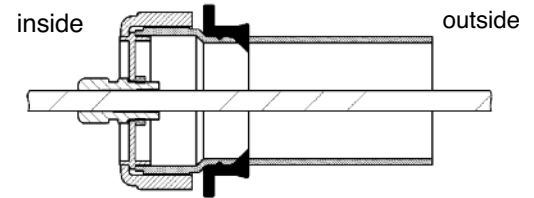
①



②



③



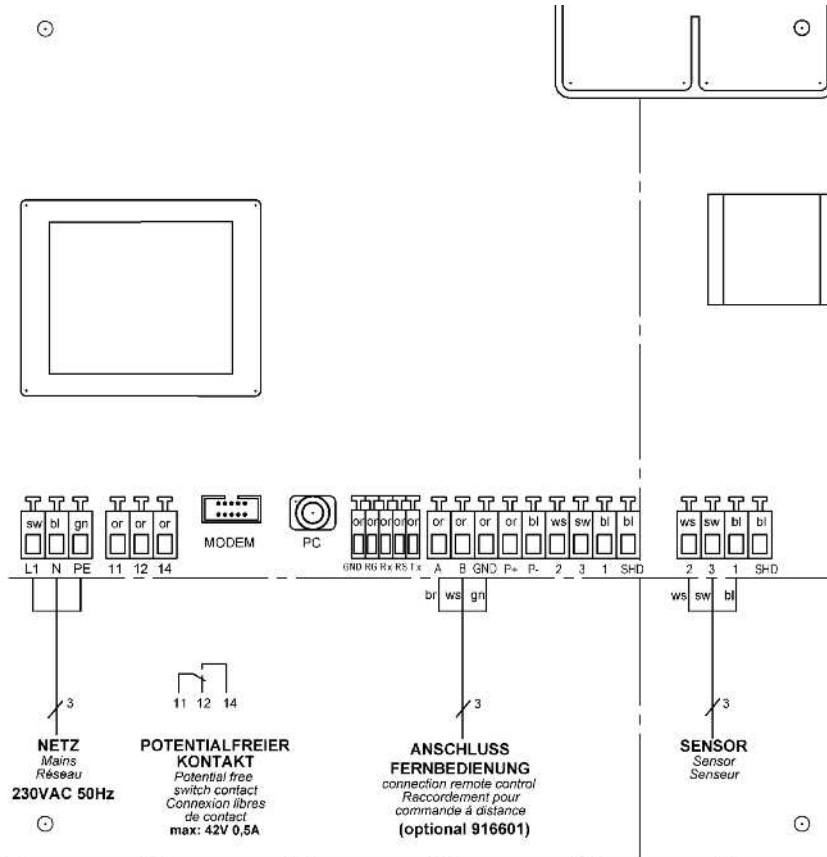
Article

Order Nr

1. Control unit		395-037
2. Ultra sonic sensor	OSA	917840
	OS	917841
	OA	917842
	SA	917843
	O	917844
	A	917846
3. Cable conduit wall penetration system (for underground separators)		917822
4. Alarm speaker		20162
5. Cable extension SonicControl Sensor	10 m	917861
	20 m	917862
	30 m	917863

O = oil / fuel layer measurement
 S = sludge layer measurement
 A = Back up / over flow warning

11. Connection Plan



395-111



EU-KONFORMITÄTSERKLÄRUNG EC declaration of conformity/ Déclaration CE de conformité

Nach der Richtlinie 94/9/EG (ATEX 95), der Niederspannungsrichtlinie 2006/95/EG, Richtlinie der elektromagnetischen Verträglichkeit 2004/108/EG, zur Kennzeichnung der Übereinstimmung der Produkte ist auf dem Typenschild das Zeichen der Richtlinie 93/68/EWG angebracht.// According to the Guidelines 94/9/EG (ATEX 95), the Low Voltage Guidelines 2006/95/EG, Electromagnetism Guidelines 2004/108/EG and the 93/68/EWG.//

Selon les directives mécaniques 94/9/EG (ATEX 95), les directives de basse tension 2006/95/EG, les directives pour la compatibilité électromagnétique 2004/108/EG et 93/68/EWG

Hiermit erklären wir, / Herewith we declare, / Par la présente, nous déclarons,

KESSEL AG, Bahnhofstraße 31, D-85101 Lenting

dass das Produkt/ that the product/ que le produit


KESSEL- SonicControl für Leichtflüssigkeitsabscheider

den folgenden Normen entspricht./ is in agreement with/ est en accord avec:

EN 60079-0:2010-03 (Gas-Explosionsschutz; allg. Anforderung), EN 60079-11:2007-08 (Zündschutzart: Eigensicherheit; Ex i), EN 60079-26:2007-10 (Kategorie 1G, für Zone 0), EG-Maschinenrichtlinie 2006/42/EG; EN 60204-1 (2006), EN 61000-6-1 (2007), EN 61000-6-2 (2006), EN 61000-6-3 (2007), EN 61000-6-4 (2007); EWG EN 61326

Lenting, den 03.01.2012

M. Rinckens 
Leiter Innovationsmanagement / Dokumentationsverantwortlicher
Innovation Management Manager / Responsible for Documentation
Responsable du management pour innovation et de la documentation

E. Thiemt 
Vorstand
Managing Board
Conseil d'administration

13. Warranty

1. In the case that a KESSEL product is defective, KESSEL has the option of repairing or replacing the product. If the product remains defective after the second attempt to repair or replace the product or it is economically unfeasible to repair or replace the product, the customer has the right to cancel the order / contract or reduce payment accordingly. KESSEL must be notified immediately in writing of defects in a product. In the case that the defect is not visible or difficult to detect, KESSEL must be notified immediately in writing of the defect as soon as it is discovered. If the product is repaired or replaced, the newly repaired or replaced product shall receive a new warranty identical to that which the original (defective) product was granted. The term defective product refers only to the product or part needing repair or replacement and not necessarily to the entire product or unit. KESSEL products are warranted for a period of 24 month. This warranty period begins on the day the product is shipped from KESSEL to its customer. The warranty only applies to newly manufactured products. Additional information can be found in section 377 of the HGB.

In addition to the standard warranty, KESSEL offers an additional 20 year warranty on the polymer bodies of class I / II fuel separators, grease separators, inspection chambers, wastewater treatment systems and rainwater storage tanks. This additional warranty applies to the watertightness, usability and structural soundness of the product.

A requirement of this additional warranty is that the product is properly installed and operated in accordance with the valid installation and user's manual as well as the corresponding norms / regulations.

2. Wear and tear on a product will not be considered a defect. Problems with products resulting from improper installation, handling or maintenance will also not be considered a defect.

Note: Only the manufacturer may open sealed components or screw connections. Otherwise, the warranty may become null and void

01.06.2010

14. Commissioning Protocol for installer

Type: _____
Day / Hour _____
Project description /Building services supervisor _____
Address/Telephone / Fax _____
Builder _____
Address/Telephone / Fax _____
Planner _____
Address/Telephone / Fax _____
Contracted plumbing company _____
Address/Telephone / Fax _____
KESSEL-Commissions no.: _____
System operator /owner _____
Address/Telephone / Fax _____
User _____
Address/Telephone / Fax _____
Person of delivery _____
Other remarks _____

The system operator, and those responsible, were present during the commissioning of this system.

Place and date

Signature owner

Signature user



14. Handover Certificate

Handover certificate (copy for the company carrying out the installation)

- The initial operation and instruction was carried out in the presence of the person authorised to perform the acceptance and the system operator.
- The system operator/person authorised to perform the acceptance was informed about the obligation to service the product according to the enclosed operating instructions.
- Initial operation and instruction were not carried out.

The client/ person responsible for initial operation was handed the following components and/or product components

Initial operation and instruction is being carried out by (company, address, contact, phone)

The exact coordination of the dates for initial operation/instruction is being carried out by the system operator and person responsible for initial operation.

Place, date

Signature of person
authorised to perform acceptance

Signature of system operator

Signature of the company
carrying out the installation work



- Backwater protection
- Lifting Stations and pumps
- Drains and shower channels
- Separators
 - Grease Separators
 - Oil-/Fuel-/Coalescence Separators
 - Starch Separators
 - Sediment Separators
- Septic Systems
- Inspection Chambers
- Rainwater Management Systems



 **KESSEL**