

润滑脂层厚测量仪 SonicControl



插图显示货号 917821

产品优点

- 润滑脂层厚的测量，显示和控制
- 软件可从以下网站上免费读取下载：www.kessel.de
- 用于厘米单位精度测量的超声波传感器
- 监测分离器中的废水温度
- 电源故障情况下的电池缓冲警报
- 简易安装（包括 安装套件）
- 超声波探头防护等级 IP 68



安装 设备的调试 培训

由专业企业进行：

姓名/签字

日期

地点

专业企业印章

KESSEL

修订状态： 01/2018
产品编号： 395-016

· 保留技术更改权利

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安全须知

尊敬的客户，

在启用 KESSEL SonicControl之前，请仔细阅读并遵守本操作说明书！

请立即检查收到的设备是否完好无损。

1. 安全须知：

在安装，操作，维护或维修设备时，请遵守相应的 DIN 标准和 VDE 指南事故预防条例，以及当地能源供应公司的规定！

在调试启用之前，必须已经通过专家的检查并确保已采取必要的保护措施。必须接地，调零，具有漏电流保护开关等。符合当地能源供应公司（EVU）的规定/要求。

本设备不得在爆炸危险区域中使用。

本设备带电。如不遵守本操作说明书，则可能导致财产损失，人身伤害甚至致命事故。



在对系统进行任何操作之前，必须断开电源！

必须确保设备的电缆和所有电气装置都处于完好状态。如有损坏，切勿运行设备，或者必须立即关闭。

必须遵守 VDE 0100 的规定。开关设备不得在爆炸危险区域中安装。

为了保持可操作性，必须定期检查和维护设备。我们建议您与安装公司签订维护合同。

概述

开关设备的应用领域:

开关设备监控 KESSEL EasyClean 油脂分离器中油脂层的厚度, 精确至厘米。

2.1 功能描述

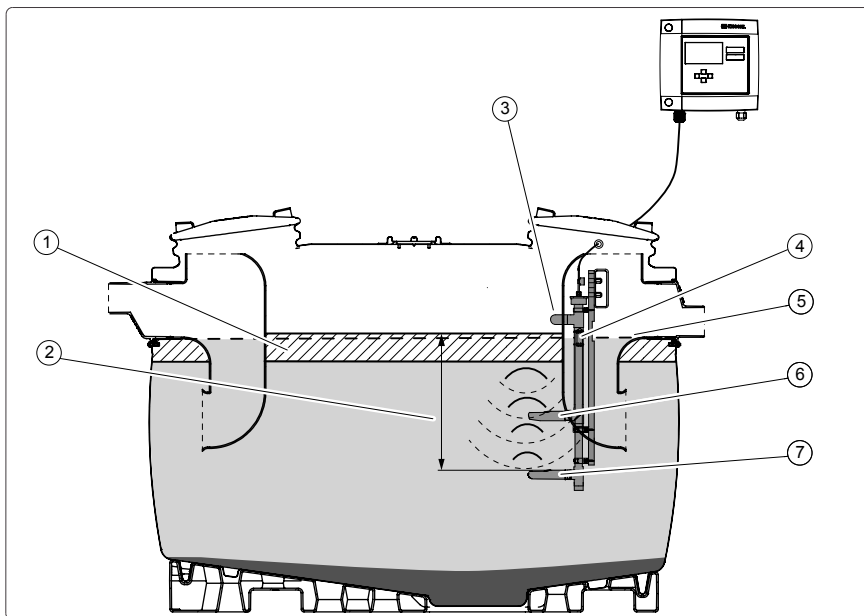
① 油脂:

- 该测量仪针对密度为 0.85 g/cm^3 的油脂和机油而预先设置。
- 预设密度为 0.85 g/cm^3 , 这是实践中最常见的值。

② 50 cm 距离

EN 1825 分离器:

- 静水位到下部超声波传感器上缘的距离
- 此距离被作为水平补偿在开关设备中查询。



③ 校准辅助工具:

通过油脂层上方的校准辅助工具 (黑色端帽), 可以查看下部传感器指针指向的位置。

④ 红色箭头:

将红色箭头的尖端调整到静止水位。

⑤ 静止水位:

下边缘是静水位的水平。

⑥ 上部传感器指针:

传感器指针是下部超声波传感器的参考指标。

⑦ 下部超声波传感器:

从这里, 超声波针对润滑脂层厚发送。

3.1 安装开关设备

开关设备必须安装在干燥和防冻的地方，最好安装在室内，并且可以接收警报信息的地方。避免阳光直射！



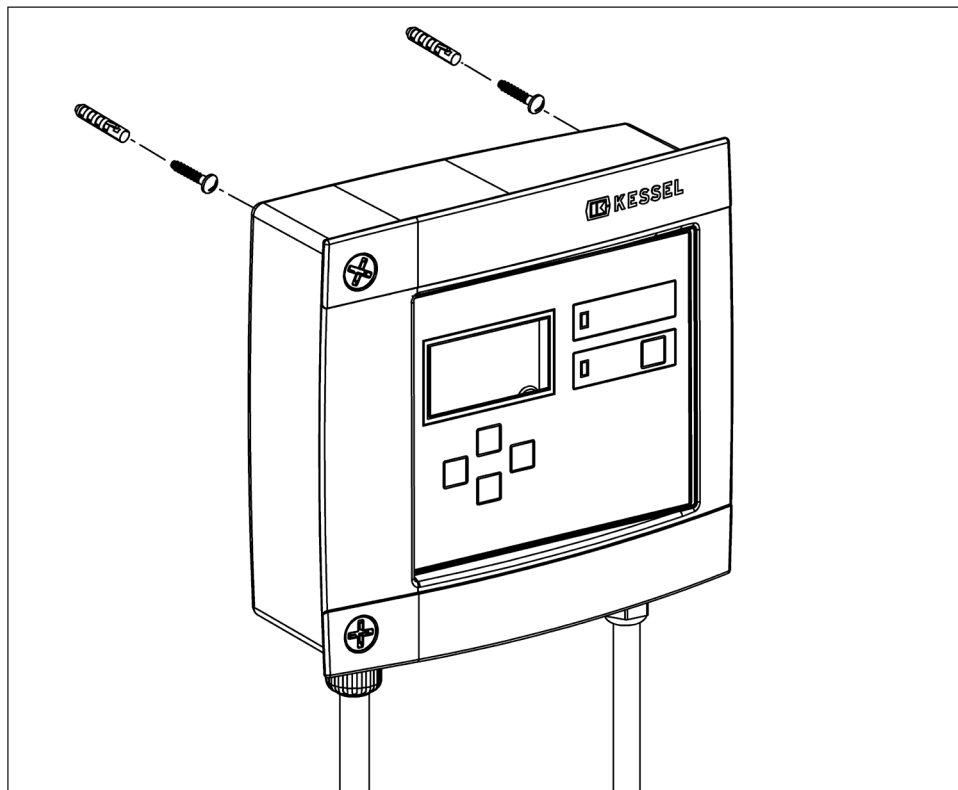
小心！

（开关设备不得安装在分离器中！）

在安装时，不必打开开关设备。按照 168 mm（标准）的间距安装两个 $\varnothing 6$ mm 的水平孔。拧入 2 个半圆头十字螺钉 4,5 x 35 mm (TX20)，直到开关设备可以与墙壁贴平地安装。确保右侧与墙壁有足够的距离，以打开盖子。螺钉，塑料销钉和钻孔模板都包含在交货范围内。

装配：

1. 钻孔
2. 将销钉插入钻孔中
3. 将螺钉拧入适当的位置
4. 将开关设备推到螺钉上
5. 将开关设备下拉并固定在螺钉上。

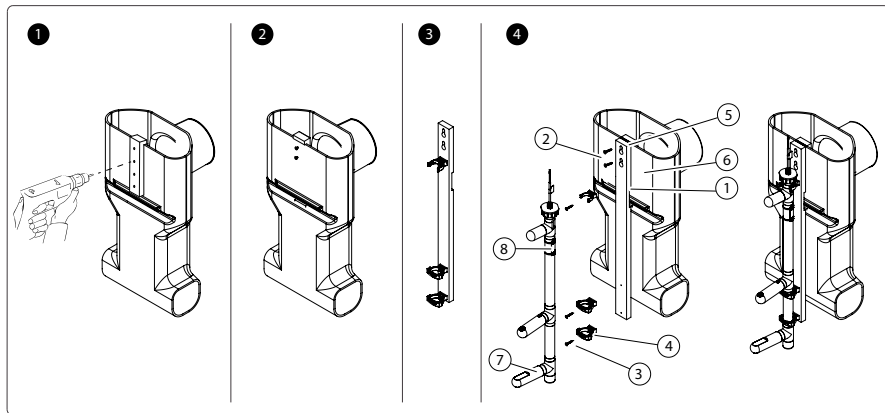


不带电子元件的开关设备的示意图。

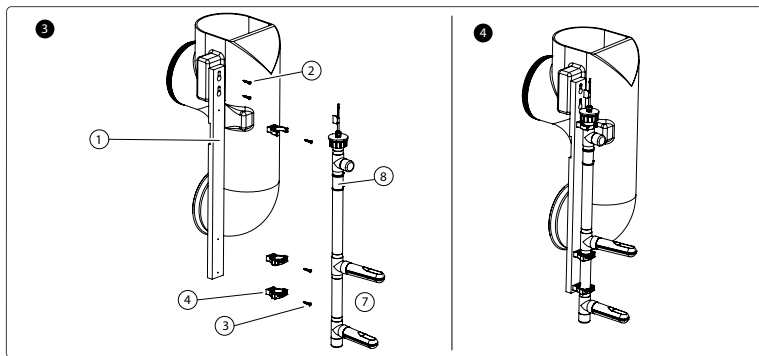
安装和装配

3.2 安装传感器和传感器支架

适用于油脂分离器独立式安装（至 2014 年 3 月）



适用于油脂分离器 EasyClean



安装和装配

3.3 传感器安装尺寸

在使用开关设备配置进行初始调试之后，必须更改以下两个油脂层厚的值。 针对开关设备进行 3.1 设置：

- 访问代码 1000
- 3.1.1 层厚警报（更改为相应的值）
- 3.1.2 层厚预警（更改为相应的值）

适用于油脂分离器独立式安装	产品编号	NS	Abstand Oberkante unterer Finger zu Unterkante Auslauf (Wasserlinie)	层厚警报 cm	层厚预警 cm / 80%	max. Schlammsschichtdicke in cm = 50% des Schlammfangvolumen	
Standard	93002.01 / .02 / .11 / .12 / .21 / .22 / .31 / .32	2	50 cm	14	11	22	
	93003.01 / .02 / .11 / .12 / .21 / .22 / .31 / .32	3	50 cm	17	14	29	
	93004.01 / .02 / .11 / .12 / .21 / .22 / .31 / .32	4	50 cm	17	14	30	
	93007.01 / .02 / .11 / .12 / .21 / .22 / .31 / .32	7	50 cm	21	17	35	
	93010.01 / .02 / .11 / .12 / .21 / .22 / .31 / .32	10	50 cm	21	17	38	
	98201 (Obere beiden Bohrlöcher der Bohrschablone verwenden)	1	58 cm	16	13	46	
	98202 (Obere beiden Bohrlöcher der Bohrschablone verwenden)	2	58 cm	16	13	54	
	Direct	93002.01 D / .02 D / .11 D / .12 D / .21 D / .22 D / .31 D / .32 D	2	50 cm	14	11	22
		93003.01 D / .02 D / .11 D / .12 D / .21 D / .22 D / .31 D / .32 D	3	50 cm	17	14	29
93004.01 D / .02 D / .11 D / .12 D / .21 D / .22 D / .31 D / .32 D		4	50 cm	17	14	30	
93007.01 D / .02 D / .11 D / .12 D / .21 D / .22 D / .31 D / .32 D		7	50 cm	21	17	35	
93010.01 D / .02 D / .11 D / .12 D / .21 D / .22 D / .31 D / .32 D		10	50 cm	21	17	38	
98201.00/D1 (Obere beiden Bohrlöcher der Bohrschablone verwenden)		1	58 cm	16	13	46	
98202.00/D1 (Obere beiden Bohrlöcher der Bohrschablone verwenden)		2	58 cm	16	13	54	
Mix	93002.01/DS, .02/DS, .31/DS, .32/DS	2	50 cm	14	11	22	
	93003.01/DS, .02/DS, .31/DS, .32/DS	3	50 cm	17	14	29	
	93004.01/DS, .02/DS, .31/DS, .32/DS	4	50 cm	16	14	30	
	93007.01/DS, .02/DS, .31/DS, .32/DS	7	50 cm	21	17	35	
	93010.01/DS, .02/DS, .31/DS, .32/DS	10	50 cm	21	17	38	

安装和装配

适用于油脂分离器独立式安装	产品编号	NS	Abstand Oberkante unterer Finger zu Unterkante Auslauf (Wasserlinie)	层厚警报 cm	层厚预警 cm / 80%	max. Schlammschichtdicke in cm = 50% des Schlammfangvolumen
Auto Mix	93002.01/DSP, .02/DSP	2	50 cm	14	11	22
	93003.01/DSP, .02/DSP	3	50 cm	17	14	29
	93004.01/DSP, .02/DSP	4	50 cm	17	14	30
	93007.01/DSP, .02/DSP	7	50 cm	21	17	35
	93010.01/DSP, .02/DSP	10	50 cm	21	17	38
Mix & Pump	93002.01/MS, .02/MS	2	50 cm	14	11	22
	93003.01/MS, .02/MS	3	50 cm	17	14	29
	93004.01/MS, .02/MS	4	50 cm	17	14	30
	93007.01/MS, .02/MS	7	50 cm	21	17	35
	93010.01/MS, .02/MS	10	50 cm	21	17	38
Auto Mix & Pump	93002.01/PVS, .02/PVS	2	50 cm	14	11	22
	93003.01/PVS, .02/PVS	3	50 cm	17	14	29
	93004.01/PVS, .02/PVS	4	50 cm	17	14	30
	93007.01/PVS, .02/PVS	7	50 cm	21	17	35
	93010.01/PVS, .02/PVS	10	50 cm	21	17	38
自动搅拌 & 泵	93015.01/PVS	15	50 cm	20	16	
	93020.01/PVS	20	50 cm	20	16	
	93025.01/PVS	25	50 cm	20	16	
	93030.01/PVS	30	50 cm	25	20	
搅拌 & 泵	93015.01/MS	15	50 cm	20	16	
	93020.01/MS	20	50 cm	20	16	
	93025.01/MS	25	50 cm	20	16	
	93030.01/MS	30	50 cm	25	20	
搅拌	93015.01/DS	15	50 cm	20	16	
	93020.01/DS	20	50 cm	20	16	
	93025.01/DS	25	50 cm	20	16	
	93030.01/DS	30	50 cm	25	20	

安装和装配

适用于油脂分离器独立式安装	产品编号	NS	Abstand Oberkante unterer Finger zu Unterkante Auslauf (Wasserlinie)	层厚警报 cm	层厚预警 cm / 80%	max. Schlammschichtdicke in cm = 50% des Schlammfangvolumen
自动搅拌	93015.01/DSP	15	50 cm	20	16	
	93020.01/DSP	20	50 cm	20	16	
	93025.01/DSP	25	50 cm	20	16	
	93030.01/DSP	30	50 cm	25	20	
Basic	93015.01 93015.01/D	15	50 cm	20	16	
标准 (D)	93020.01 93020.01/D	20	50 cm	20	16	
	93025.01 93025.01/D	25	50 cm	20	16	
	93030.01 93030.01/D	30	50 cm	25	20	

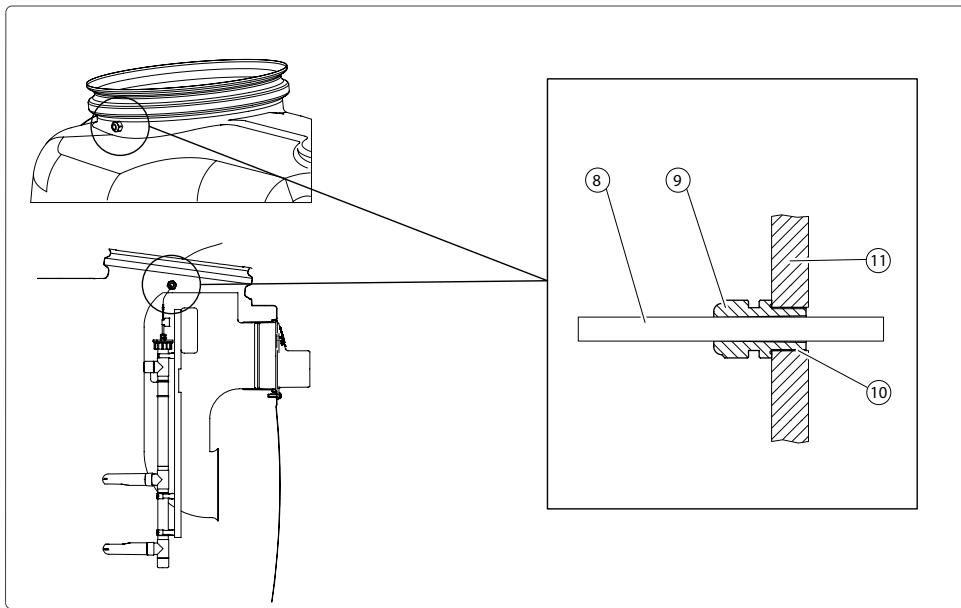
地下安装

Standard	93002 / 80 / 120 B und D	2	50 cm	17	14	15
	93004 / 80 / 120 B und D	4	50 cm	17	14	27
	93007 / 120/170 B und D	7	48 cm	17	14	23
	93010 / 120/170 B und D	10	48 cm	17	14	23
	93015 / 120/170 B und D	15	56 cm	17	14	32
	93020 / 120/170 B und D	20	56 cm	17	14	31
DIN 4040	98201 / 00 / 80 / 120 B und D	1	58 cm	16	13	46
Standard	98202 / 00 / 80 / 120 B und D	2	58 cm	16	13	54
	98204 / 00 / 80 / 120 B und D	4	58 cm	16	13	54
	93925 120 / 170 B und D	25	50 cm	17	14	42
	93930 120 / 170 B und D	30	50 cm	17	14	47
	93935 120 / 170 B und D	35	50 cm	16	13	52

注意：在安装油脂分离器之后，将其完全注满水，检查安装高度，必要时予以校正！当注满水的分离器在手动模式下运行时，开关设备必须显示 Sonic Control “0cm”。如果无法进行机械校正，请更改为“参数 ->水平补偿”（3.1.7 开关设备菜单导航）。参数受密码保护 - 请致电 +49 (0) 8456/27462 联系 KESSEL 工厂客户服务部门。

3.4 安装建议

用于SonicControl独立式安装油脂分离器的电缆套管



油脂分离器

⑧ 电缆

⑨ 格兰头 PG 11

⑩ 电缆接头*

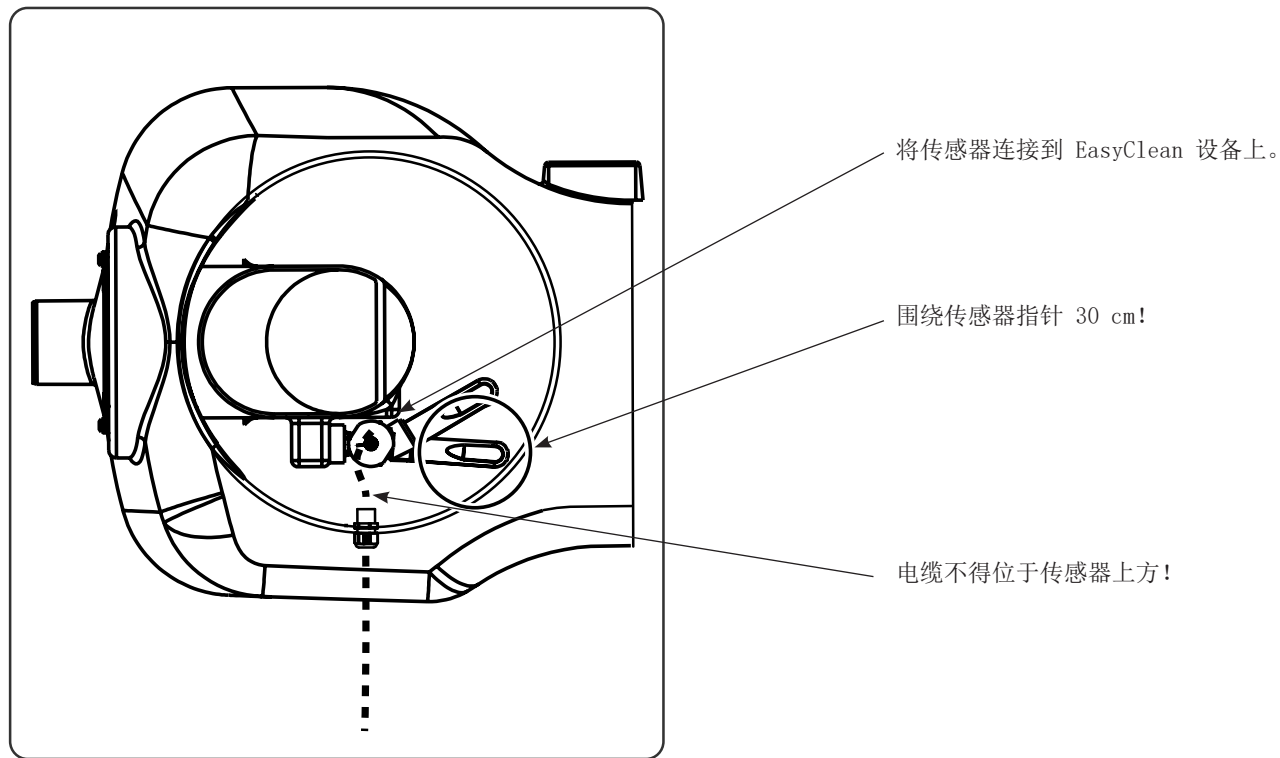
⑪ 容器壁

* 为了避免气味滋扰，应拧紧电缆接头

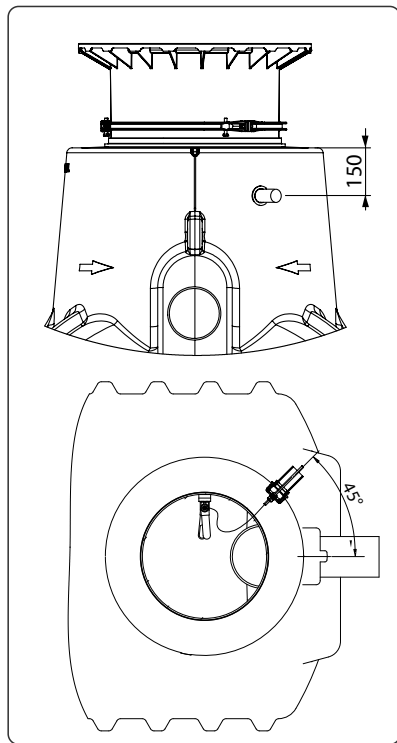
图中所示为 EasyClean free NS4 油脂分离器

安装和装配

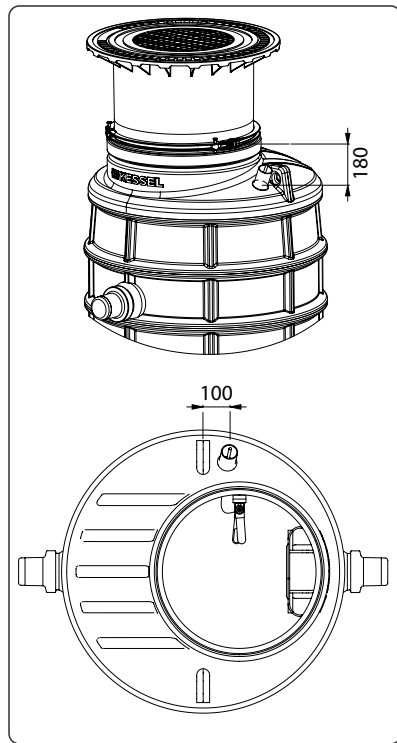
插图为俯视图



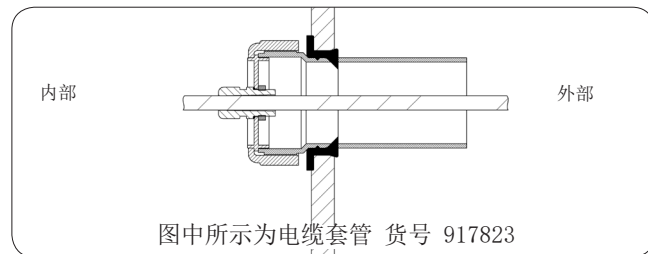
安装和装配



油脂分离器 EasyClean Ground Standard NS 7-35 出口侧，包括 电缆套管

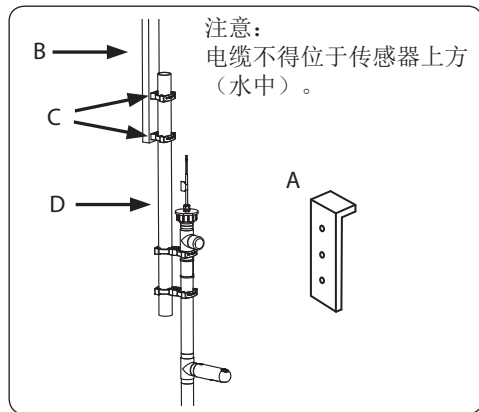


油脂分离器 EasyClean Ground Standard NS 1-4，包括 电缆套管



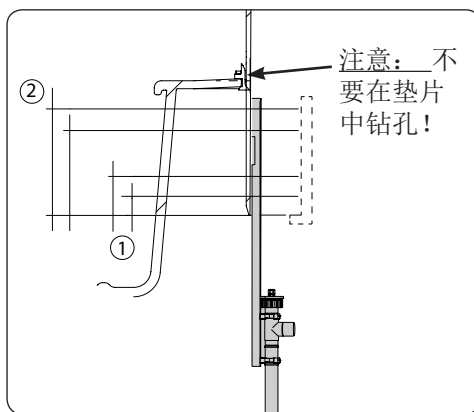
在土方工程中，必须铺设 HDPE 中空管 DN 40 (DA 50 mm)。为此，容器应使用 60 mm 钻头。油脂分离器和开关设备之间的连接距离应尽可能短。应避免不必要的转向，特别是角度超过 45° 的转向。电缆管道应相对于油脂分离器具有连续的坡度。通过气密密封开关设备一侧的空管，可以尽可能压缩减小电缆管道的开口尺寸。为了可能的后续电缆铺设，可以插入电缆线。电缆长度最大可延伸至 60 m。当将电缆拉入到开关设备的管道中时，导管盖处的电缆螺钉连接必须拧紧。然后将锁紧螺母固定在管端。

安装和装配



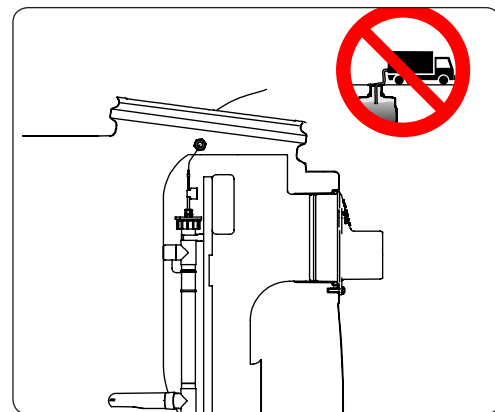
安装 SonicControl

1. 打开分离器的盖子。
2. 将钻孔模板的止动器安装在连接件的下端，在连接件上标出钻孔模板（A）的 2 个孔，并用 $\varnothing 6\text{mm}$ 钻头预钻孔。
3. 将 2 个随附的不锈钢螺钉拧入连接件，并且使得螺钉头和连接件之间保持约 25 mm 的距离。
4. 如果分离器安装在土壤深处，您可以使用随附的管子（D）作为延长件。为此，将管子（D）固定在固定夹（C）中，并



使用随附的 8 个夹子（E）固定 SonicControl 传感器。

5. 将传感器夹入安装支架（B）的固定夹（C）中，并将安装支架固定到 2 个螺钉上。然后拧紧螺钉，以固定安装支架。
6. 现在将 SonicControl 调整到传感器红色标记处的静水位。



随附的标签用于标记公司的参考，以避免在处置过程中损坏传感器。

标签张贴方式如下：

油脂分离器 EasyClean free

在容器外壁的视线高度上。

油脂分离器 EasyClean ground

在连接件的内侧。

注意：告知相应的清理公司有关传感器的信息！

电气接口

4.1 外部信号传感器

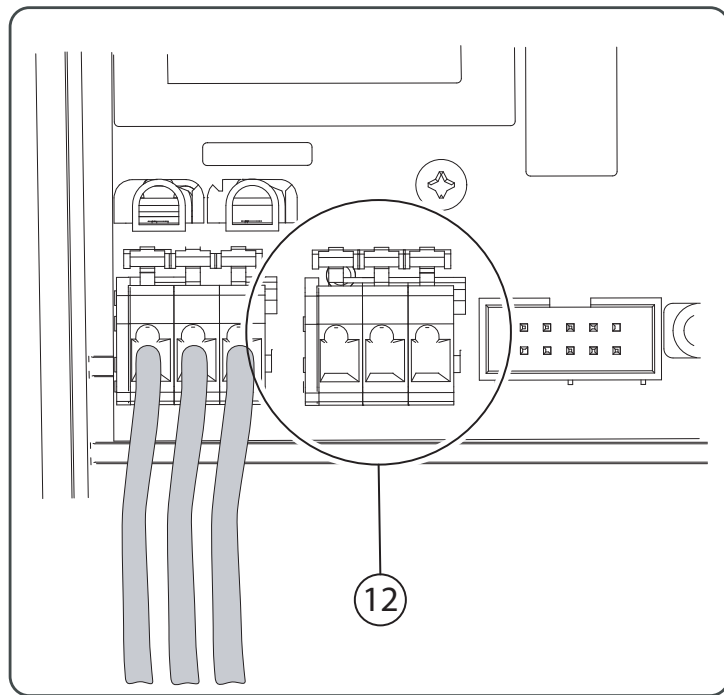
外部信号传感器（订单号 20162）用于将声音警报传输到其他房间，可以根据需要连接（参见接线图）。

4.2 缩短传感器电缆

传感器电缆也可以根据需要缩短。我们只建议在电芯线端头上镀锡处理。当使用芯线端头套筒时，必须确保接线端子针对最大 2,5 mm² 的横截面积设计。不得超过此横截面积。

4.3 无电势触点

将无电势触点连接到接线端子上（12）



电气接口

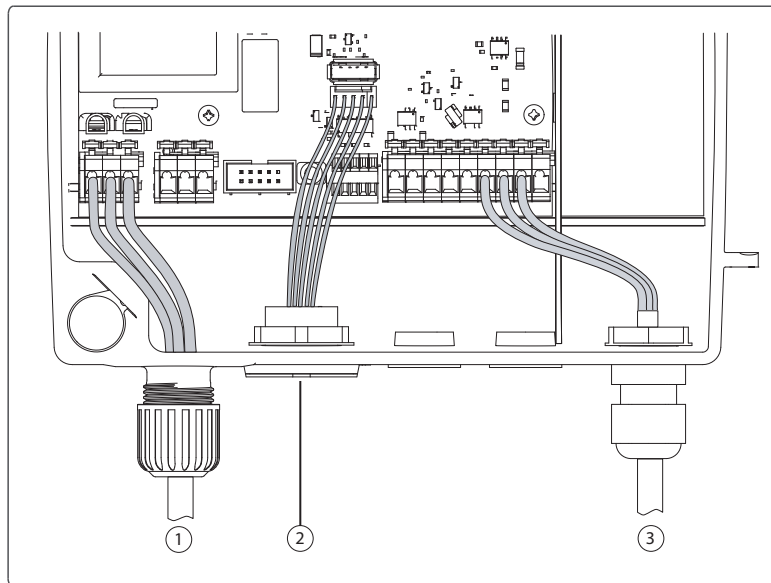
4.4 安装/电缆连接

电缆不得与任何其他电气系统/电路一起铺设。避免将传感器电缆与可能触发故障信号的其他电缆平行铺设，以避免传感器信号和警报功能受损。传感器本身不得接地。

重要：

连接到电气开关设备上的所有电缆应在安装完成时有适当的保护措施（例如：电缆扎带）固定，以确保它们在 1 错误的情况下，即连接松动时，也不会引起危险。

传感器电缆必须与电源电缆分开，以避免干扰。



图中所示是开关设备的连接选项

- ① 电源连接
- ② USB 接口
- ③ 传感器电缆

电气接口

专业现场电缆延长的选项 (IP 68)

SonicControl 的电缆长度为 10 米。在现场, 此电缆可以由专业安装人员无需更改电缆横截面的情况下延长到最多 60 米。

SonicControl 探头延长到最大
60 米 0.75 mm²

注意:

必须遵守 VDE 0100 的规定。开关设备不得在爆炸危险区域中安装。客户可以将 10 米长的电缆延长至最多 60 米。如果电缆与其他频率控制设备的电缆一起铺设在电缆槽中, 则必须使用屏蔽电缆!

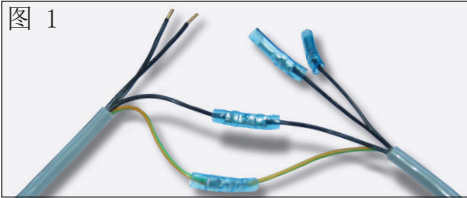


图 1:
使用对接器压接电缆延长线

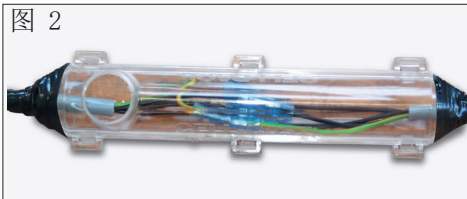


图 2:
将外壳放置在管道周围, 将外壳端部的两侧密封



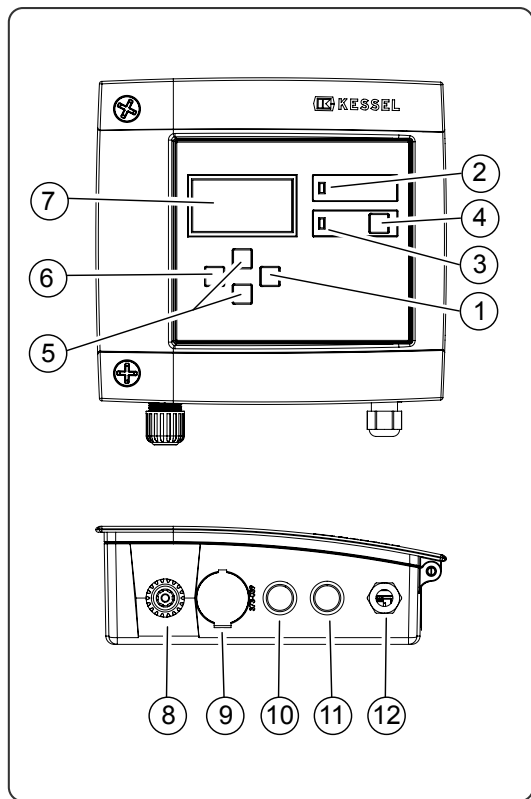
图 3:
用准备好的浇铸树脂浇铸外壳



图 4:
带封闭堵头的最终状态

灭菌要求

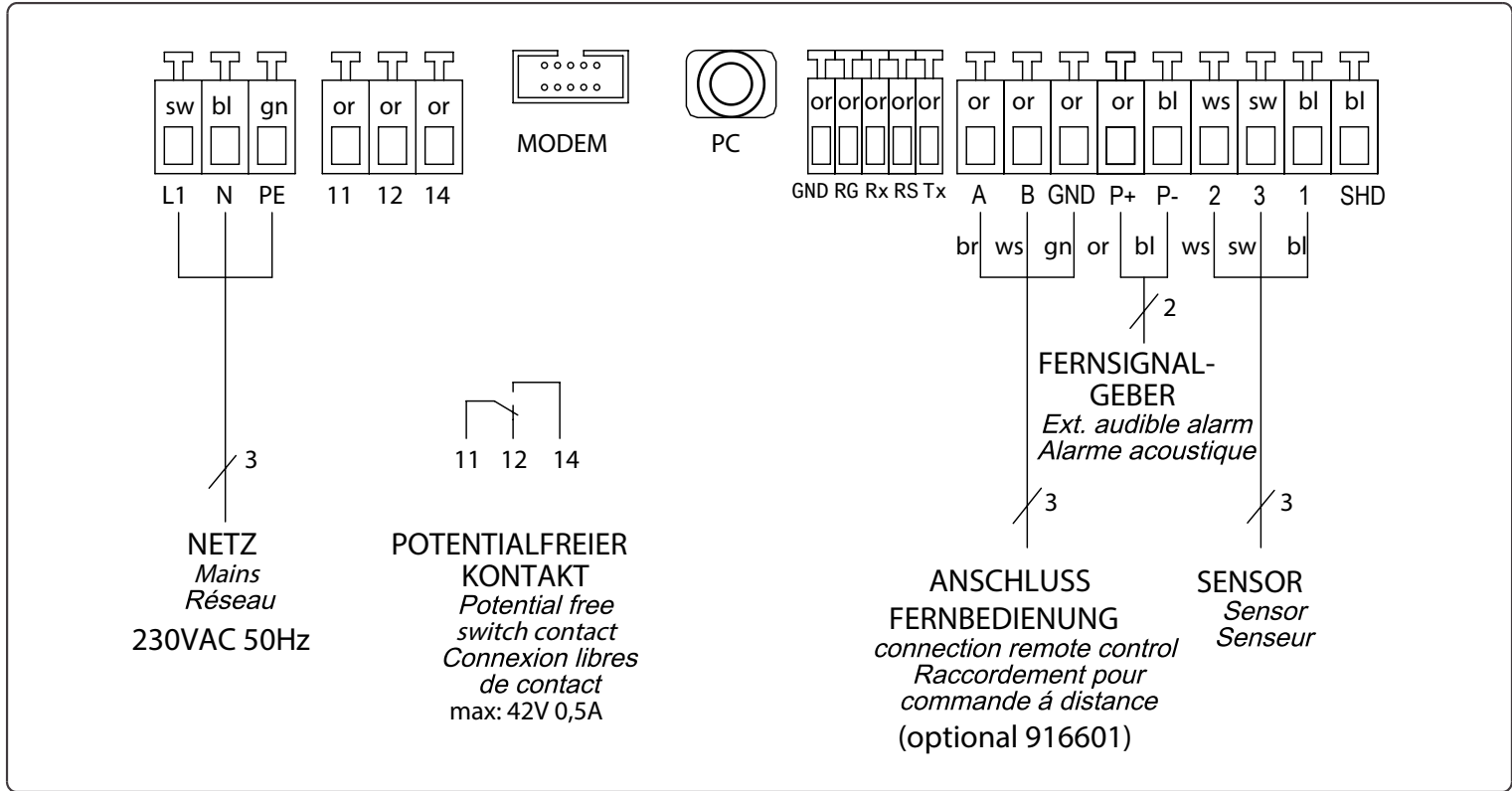
电气接口



- ① 确认键/OK 键
- ② 用于就绪状态的指示灯
- ③ 用于故障信号的指示灯
- ④ 报警按钮
- ⑤ 动作按钮/方向按钮
通过程序菜单控制
- ⑥ 返回按钮/ESC 按钮
- ⑦ 显示/显示面板
- ⑧ 电源连接电缆
- ⑨ USB 插槽
- ⑩ 外部信号传感器的连接选项/
无电势的触点
- ⑪ 调制解调器连接
- ⑫ 传感器连接 SonicControl

电气接口

4.5 接线图



5.1 运行就绪

将开关设备的电源插头插入插座。设备会自动初始化。

在首次初始化时，控制器要求四种基本设置。

1. 语言
2. 日期/时间
3. 标准
4. 公称尺寸
5. 校准

} 正确输入
以确保无缺陷
测量!

► 选择

- 点击“OK”存入系统存储器
- 在设置 1 至 5 后
- 开关设备加载程序存储器
- 启动操作模式
- 设备已准备就绪

5.2 运营商的职责

检查

- 运输或装配损坏
- 结构缺陷
- 所有电气和机械组件的固定和功能情况
- 线路连接

根据安装和操作说明书 (EBA) 培训客户

- 与客户讨论 EBA
- 操作设备 (解释和描述)
- 告知客户运营商的义务
- 提示定期维护 (参见第 6 章)

5.3 培训/移交

必须遵守安全须知一章 (第 4 页)!

调试由专业公司, 或者 KESSEL 代表执行 (收费)。

在移交时必须有以下人员在场:

- 业主的验收负责人
- 专业公司

此外, 我们还建议操作人员/运营商和废物处理承包公司参与。

培训简介:

- 使设备处于运行就绪状态
- 检查设备
- 根据安装和操作说明书培训
- 创建移交报告

在培训完成后, 设备必须进入就绪状态。

检查和维护

请遵守第 1 章中的安全须知。

在清洁时，必须将开关设备全部断开电源。

更换电池时，请使用 9V 电池。维修只能由制造商进行。

开关设备无需维护。

必须检查连接电缆是否损坏。

如果发生损坏，则必须立即关闭设备。

在每次处理时，传感器必须用温水/热水清洗*。

使用高压喷射清洁器时，保持 30 cm 的安全距离。

无需拆下传感器进行清洁。

分离器必须在排空后注满水。

* 对于 KESSEL EasyClean free 油脂分离器 Auto Mix, Mix & Pump 和 Auto Mix & Pump，由于分离器使用温水清洗，因此在下次维护之前无需清洁传感器。如有需要（由于过硬的油脂而导致传感器严重污染）可能在每次处理时都要清洁。

在初始调试之后，直到 24 小时后会显示层厚，因为传感器会在夜间测量油脂层厚度，然后才会显示在显示屏上，直到显示“-”。

事件，错误和整改措施

请遵守第 1 章中的安全须知。

7.1 事件报告：

事件显示在日志中，并且不能通过无电势触点转发。

显示屏中的故障报告	原因	整改措施
首次初始化	首次初始化	--
参数已更改	参数已更改	--
设备类型已更改	设备类型已更改	--
维护	维护日期已输入	--
手动模式	手动模式已输入	--
读取日志	日志已读取	--
关闭开关设备	开关设备已关闭	--
确认警报音	警报音已确认	--
确认错误	错误已确认	--
出厂设置	已重置为出厂设置	--
校准成功	在首次初始化期间已执行校准	--
液位报警	油脂层已达到报警液位（另见 3.3）	--

事件，错误和整改措施

7.2 错误报告：

错误通过无电势触点传递。

显示屏中的故障报告	错误消息	原因	整改措施
未检测到静止阶段	在手动模式中显示 -128 cm。 在显示屏中 *--* 传感器在最后3天无法检测到有效值。	传感器安装错误 在运行阶段的测量间隔时间 污泥覆盖传感器 悬浮物/粗料	检查安装情况 调整测量间隔时间 在污泥层升高时清理分离器 预接粗料收集装置
液位报警	警告音和闪烁（警报）	已达到最大油脂层厚（另见3.3）	通知清理公司
高温报警	警告音和闪烁（警报）	入口温度过高（为设置水平， 请遵守标准规范）	降低进水温度
电池故障	警告音和闪烁（警报）	电池安装错误	检查电池的极性和固定
	警告音和闪烁（警报）	电池损坏或超过使用寿命	更换电池
电源故障	警告音和闪烁（警报）； 电源 LED 灯闪烁	设备已断电 显示屏损坏	检查预熔保险丝和/或 FI 开关 致电客户服务部门

事件，错误和整改措施

显示屏中的故障报告	错误消息	原因	整改措施
通信故障	警告音和闪烁（警报）	<ul style="list-style-type: none"> - 调制解调器接收不良 	<p>第 1 步：检查基本的接收功能；</p> <p>第 2 步：如果基本上不能接收，则不能使用 调制解调器；如果可以接收，则更换调制解调器</p>

7.3 一般错误：

检测到的错误	错误	原因	整改措施
观察窗中的油脂层厚和测得的油脂层厚之间的偏差	由于错误测量引起的功能故障。	<ul style="list-style-type: none"> - 传感器安装错误 - 在安装时定位错误 - 首次初始化错误 - 传感器上有污垢沉积物 - 传感器位于死角 	<ul style="list-style-type: none"> - 松散地固定电缆，然后手动拧紧螺钉 - 注意分离器的类型 - 重新校准传感器 - 检查传感器的位置 - 设置油脂类型 - 通知清理公司并清洁传感器 - 重新定位传感器（参见第11页）

事件，错误和整改措施

7.3 一般错误：

检测到的错误	错误	原因	整改措施
		- 油脂分离器类型和/或设备类型设置错误	- 校正设置
无法发送文本消息/或无法进行远程服务	远程维护功能故障	调制解调器接收不良	第 1 步：检查基本的接收功能； 第 2 步：如果基本上不能接收，则不能 使用调制解调器；如果可以接收，则更 换调制解调器

7.4 设备缺陷

检测到的错误	原因	整改措施
气味污染	由于安装错误导致透气管泄漏	拧紧容器壁上的电缆接头以防止气味泄漏（另见油脂分离器的操作说明书）
设备间漏水	由于安装错误导致透气管泄漏	拧紧容器壁上的电缆接头以防止气味泄漏

如果出现无法确认的错误消息，您可以按住警报按钮 5 秒钟。这样会进入主重置画面。

8.1 菜单导航

开关设备的菜单导航分为系统信息，以及三个不同的主菜单项。按下控制按钮一次可激活背景光。

OK 按钮： 跳转到下一个更高的级别

ESC 按钮： 跳转到下一个更低的级别

▲ 在一个级别内导航
▼

注意：

某些菜单受密码保护。这有助于保护设备免受不当使用。

如有任何疑问，请联系 KESSEL 工厂客户服务部门

(电话 +49 (0) 8456/27462)

警报按钮



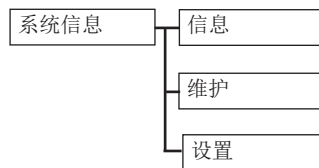
按下一次，可以确认声音信号。

}如果错误已被纠正，则可以再次按下警报按钮以确认错误。

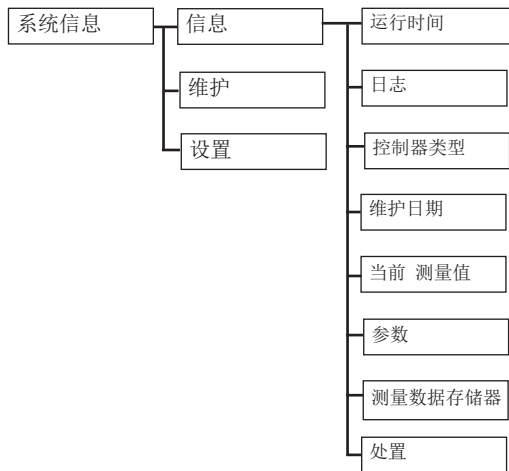
如果故障仍未排除，则再次按下声音警报，以再次出发声音警报。

如果发生电源故障，则系统无法运行。开关设备进入待机模式（电池运行）。这可以通过声光警报识别。通过按下警报按钮，可以确认声音警报。待机模式保持至少 72 小时。然后，开关设备自动关闭。如果在一小时内恢复电源，则程序将自动进入最后一个程序阶段。如果不是这种情况，则设备会在恢复电源连接后重新初始化（已经执行的编程予以保留）。如果在电池运行期间按下警报按钮，则开关设备将会关闭。

8.2 系统菜单



8.3 信息菜单



8.3.1 运行小时

显示设备的所有运行时间。

8.3.2 日志

按时间顺序排列的事件和错误报告（另请参见第 7 章“事件和错误/补救措施”）对设置所做的所有更改都在这里保存。

8.3.3 控制器类型

显示标准/公称尺寸，油脂分离器类型，语言和软件版本。

8.3.4 维护日期

显示下一个必要和最后执行的维护。

注意： 仅当维护伙伴已在“设置”菜单中存储数据时，才能使用这些数据。

8.3.5 当前测量值

按下 OK 按钮可测量当前的油脂层厚。

8.3.6 参数

显示设备的所有设定的控制参数。 在此菜单中无法更改参数。

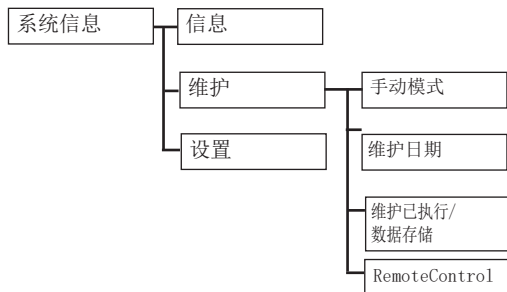
8.3.7 测量数据存储器

显示最后存储的层厚和温度（最大 400 个值）。

8.3.8 处置

显示最后的处置（如果已保存）

8.4 维护菜单



8.4.1 手动模式

通过手动模式取消自动模式。

如果在分离器的运行期间通过“手动模式”进行测量，则测量结果将会失真。在分离器中悬浮物过多，从而影响测量结果。

8.4.2 维护日期

由维护合作伙伴输入上一个执行的维护和下一个维护日期，密码： 1000.

8.4.3 维护已执行 / 数据存储

确认已执行的维护/输入日志

8.4.4 RemoteControl

激活遥控器（RemoteControl）

8.5 设置菜单



8.5.1 参数

现场更改存储的参数（另见 3.3）。

注意：按下 OK 按钮后立即确认每项更改。这可以在配置文件存储器中进行（加载配置文件/保存配置文件），并且不能在退出参数菜单时查询。

8.5.2 配置文件存储器

加载在初始化期间获取的值以及用新名称添加的值（参见 8.5.1）。您可以在这里保存配置文件（保存当前设置的参数）或加载配置文件。

8.5.3 日期/时间 设置当前日期和时间。

8.5.4 标准

8.5.5 公称尺寸 选择油脂分离器 NS。

8.5.6 通信

输入/更改站名、设备号、调制解调器类型、插脚和手机号码，可通过短信发送可能出现故障的信息（详细描述请参见单独的操作说明书）。

8.5.7 语言 显示/更改语言。

8.5.8 专家模式 通过工厂客户服务部门设置参数

8.5.9 重置

将开关设备重置为出厂设置（运行时间不会被重置）。

技术数据

一般技术数据

外壳尺寸 (长 x 宽 x 高)	180 x 200 x 70 mm
开关设备约重	1 kg
允许的温度范围	0 至 50° C
主电源待机 (运行就绪)	14 mA
工作中的主电源	35 mA
防护等级	I
开关设备防护等级	IP 54
传感器防护等级	IP 68
适于 所有铜导线的电气连接	0.08 - 2.5 mm
电缆护套直径	5 - 9 mm

电源

工作电压	230 V AC 1~
	50 Hz ± 10% L / N
电源连接 开关设备 连接电缆	Schuko 插头 1,4 m
必要的预熔保险丝	最大 C 16 A (安装方面提供), 全极主开关电路

输入

传感器输入	传感器输入 SonicControl
-------	--------------------

输出

无电势触点	<ul style="list-style-type: none"> • 转换器: 中间触点, 常开触点; 常闭触点 • 最大 42 VAC / 0,5 A
选项: 信号传感器 (货号: 20162)	连接选项 外部信号传感器

备件和配件

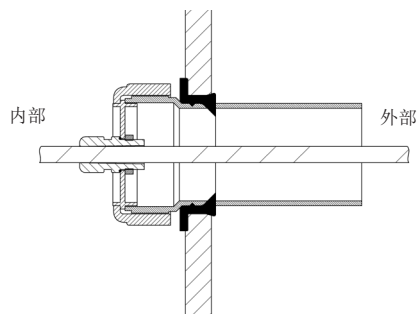
①



②



③



④



订单号

订单号

1. 开关设备

680349

4. 电缆延长 10 m

917871

2. 超声波传感器 (至 09/2011)

917821

4. 电缆延长 20 m

917872

2. 超声波传感器 (自 10/2011)

680348

4. 电缆延长 30 m

917873

3. 地下安装实施套件

917823

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

Grease layer thickness measuring device *SonicControl*



Picture shows No. 917821

Product Advantages

- Measurement, display and control of the grease layer thickness
- Free of charge download software available at www.kessel.de
- Ultrasonic sensor for precision measurement accurate to centimetres
- Monitoring of wastewater temperature in the separator
- Battery-buffered alarm in the event of power failure
- Easy installation (inc. installation set)



Installation Service

of this unit should be carried out by a licensed professional servicer:

Company / Telephone No.

 **KESSEL**

Edition: 2018/01
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Subject to technical amendments

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Security 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.

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.

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/specifications of the local power supply industry.

The system must not be operated in potentially explosive areas.

The system contains electric charges. Non-compliance 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.

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 regulations set out by the directive VDE 0100 must be heeded. The switch unit must not be installed in rooms where there is an explosion hazard.

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.

General

Areas of application for the switch unit:

The switch unit monitors the depth of the grease layer in KESSEL grease separators *EasyClean* accurate to centimetres.

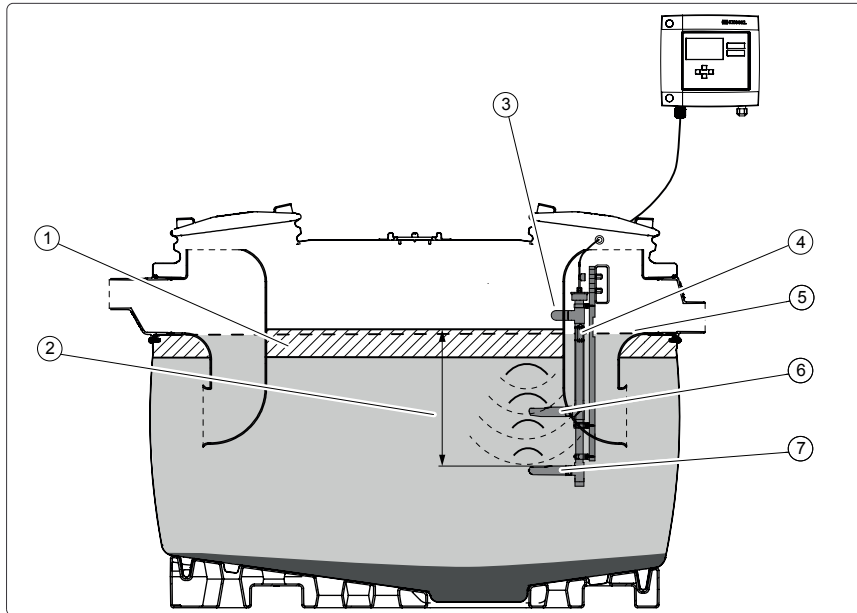
2.1 Functional description

① Grease:

- The measuring device is pre-set for greases and oils with a density of 0.85 g/cm³.
- The pre-set density of 0.85 g/cm³ corresponds to the value most common in practice

② 50 cm gap with EN 1825 separators:

- Gap between the calm surface of the water and the top edge of the lower ultrasonic sensor
- This gap is requested as level compensation by the control unit



③ Alignment aid:

The alignment aid (black end cap) above the grease layer shows you which way the lower sensor fingers are pointing.

④ Red arrow:

Adjust the red arrow so that its point is at the calm surface of the water.

⑤ Calm surface of the water:

The lower edge of the drain outlet is the level of the calm surface of the water.

⑥ Upper sensor finger:

The sensor finger is the reference dimension for the lower ultrasonic sensor.

⑦ Lower ultrasonic sensor:

Ultrasonic waves are emitted from here towards the grease layer thickness

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!

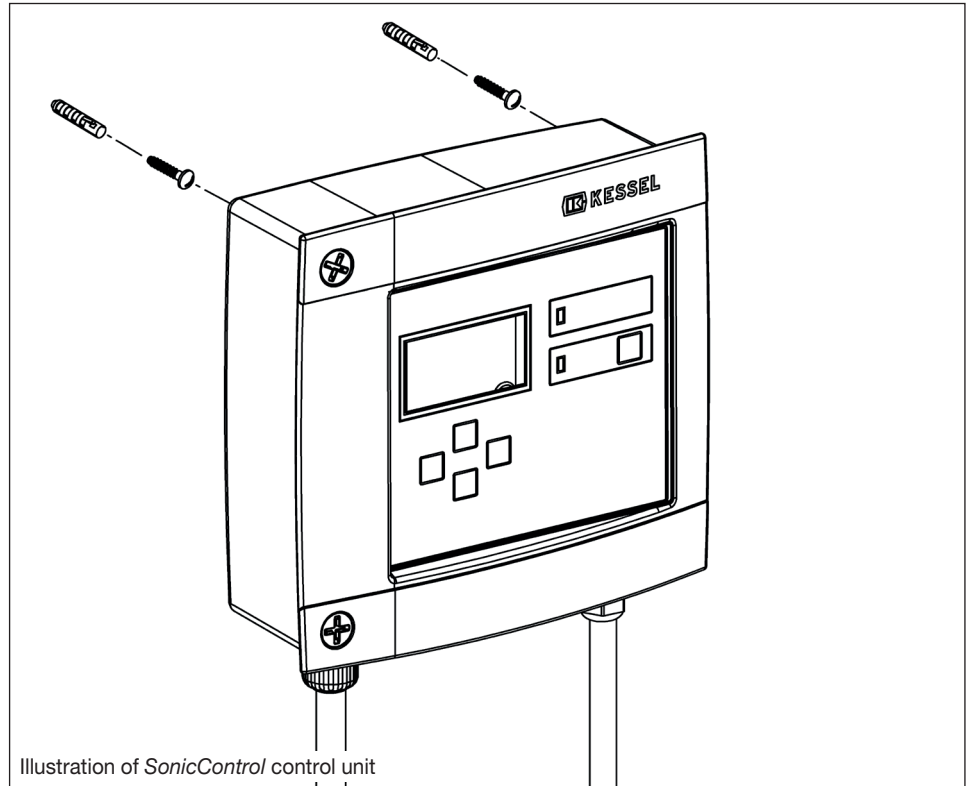


Caution!!!! The control unit is not to be installed inside the oil or coal-science separator!!!

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:

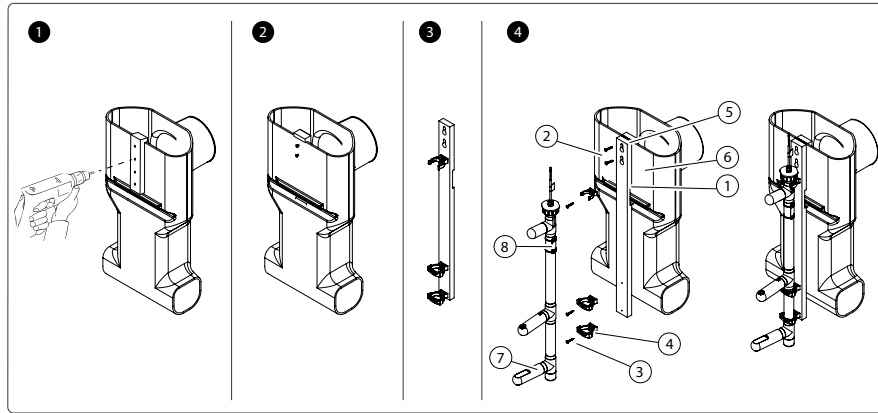
1. Drill two holes
2. Insert two dowels
3. Screw in two screws to proper depth
4. Hang control unit on two screws
5. Affix the control unit on the screws by pushing the control unit down until it seat firmly on both screws.



Installation and Assembly

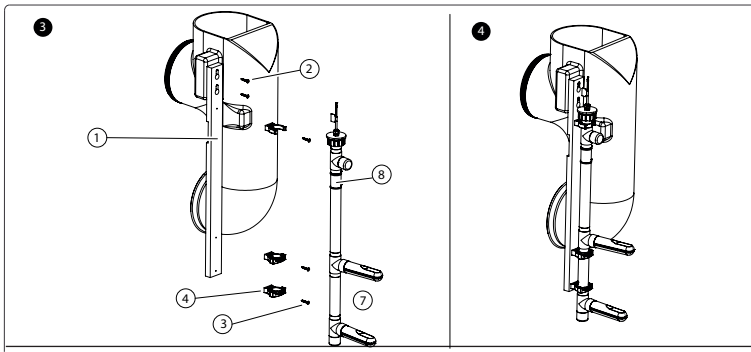
3.2 Installation of sensor and sensor bracket

For grease separator up to 03/2014



- ① Sensor bracket
- ② Hexagon screw SW 10 8 x 40
- ③ Countersunk head screw AW 20 5 x 30
- ④ Pipe clamp PP D32
- ⑤ Drilling template/ screw cover
- ⑥ Outlet structure partition
- ⑦ *SonicControl* sensor
- ⑧ Red arrow marking

For grease separator EasyClean



- ① Place the drilling template on the outside of the outlet structure and drill 2 x Ø 5,5 mm holes (top two holes!).
- ② Place the drilling template on the inside of the outlet structure and fix in place from the outside (see ②).
- ③ Put the sensor and the pipe clamps together to the sensor bracket.
- ④ Screw the sensor bracket to the outlet structure using a torque of 1 Nm and clip the sensor in place.
- ⑤ Clip the brackets on the two lower pipe clamps, leave them off at the top.

Installation and Assembly

3.3 Installation dimensions of sensor

After installation and commissioning of an EasyClean grease separator with a control unit, the following two values for grease layer thickness must be changed. Please do the following:

Enter the '3.1 Settings' section on the digital display of the control unit.

- Enter the access code – 1000

- 3.1.1 Alarm layer thickness (change to the appropriate value shown below)

- 3.1.2 Pre-Alarm layer thickness (change to the appropriate value shown below)

free standing	Article No.	NS	Distance between the upper edge of the lower "finger" and the lower edge of the outlet (water line)	Alarm level layer thickness in cm	Recommended preliminary alarm level in cm (= 2/3 of the max. storage volume)	max. sludge layer in cm (= 50% of sludgetrap volume)	
Standard	93002.01 /.02 /.11 /.12 /.21 /.22 /.31 /.32	2	50 cm	14	11	22	
	93003.01 /.02 /.11 /.12 /.21 /.22 /.31 /.32	3	50 cm	17	14	29	
	93004.01 /.02 /.11 /.12 /.21 /.22 /.31 /.32	4	50 cm	17	14	30	
	93007.01 /.02 /.11 /.12 /.21 /.22 /.31 /.32	7	50 cm	21	17	35	
	93010.01 /.02 /.11 /.12 /.21 /.22 /.31 /.32	10	50 cm	21	17	38	
	98201 (Obere beiden Bohrlöcher der Bohrschablone verwenden)	1	58 cm	16	13	46	
	98202 (Obere beiden Bohrlöcher der Bohrschablone verwenden)	2	58 cm	16	13	54	
	Direct	93002.01 D /.02 D /.11 D /.12 D /.21 D /.22 D /.31 D /.32 D	2	50 cm	14	11	22
		93003.01 D /.02 D /.11 D /.12 D /.21 D /.22 D /.31 D /.32 D	3	50 cm	17	14	29
93004.01 D /.02 D /.11 D /.12 D /.21 D /.22 D /.31 D /.32 D		4	50 cm	17	14	30	
93007.01 D /.02 D /.11 D /.12 D /.21 D /.22 D /.31 D /.32 D		7	50 cm	21	17	35	
93010.01 D /.02 D /.11 D /.12 D /.21 D /.22 D /.31 D /.32 D		10	50 cm	21	17	38	
98201.00/D1 (Obere beiden Bohrlöcher der Bohrschablone verwenden)		1	58 cm	16	13	46	
98202.00/D1 (Obere beiden Bohrlöcher der Bohrschablone verwenden)		2	58 cm	16	13	54	
Mix		93002.01/DS, .02/DS, .31/DS, .32/DS	2	50 cm	14	11	22
		93003.01/DS, .02/DS, .31/DS, .32/DS	3	50 cm	17	14	29
	93004.01/DS, .02/DS, .31/DS, .32/DS	4	50 cm	16	14	30	
	93007.01/DS, .02/DS, .31/DS, .32/DS	7	50 cm	21	17	35	
	93010.01/DS, .02/DS, .31/DS, .32/DS	10	50 cm	21	17	38	

Installation and Assembly

free standing	Article No.	NS	Distance between the upper edge of the lower "finger" and the lower edge of the outlet (water line)	Alarm level layer thickness in cm	Recommended preliminary alarm level in cm (= 2/3 of the max. storage volume)	max. sludge layer in cm (= 50% of sludgetrap volume)
Auto Mix	93002.01/DSP, .02/DSP	2	50 cm	14	11	22
	93003.01/DSP, .02/DSP	3	50 cm	17	14	29
	93004.01/DSP, .02/DSP	4	50 cm	17	14	30
	93007.01/DSP, .02/DSP	7	50 cm	21	17	35
	93010.01/DSP, .02/DSP	10	50 cm	21	17	38
Mix & Pump	93002.01/MS, .02/MS	2	50 cm	14	11	22
	93003.01/MS, .02/MS	3	50 cm	17	14	29
	93004.01/MS, .02/MS	4	50 cm	17	14	30
	93007.01/MS, .02/MS	7	50 cm	21	17	35
	93010.01/MS, .02/MS	10	50 cm	21	17	38
Auto Mix & Pump	93002.01/PVS, .02/PVS	2	50 cm	14	11	22
	93003.01/PVS, .02/PVS	3	50 cm	17	14	29
	93004.01/PVS, .02/PVS	4	50 cm	17	14	30
	93007.01/PVS, .02/PVS	7	50 cm	21	17	35
	93010.01/PVS, .02/PVS	10	50 cm	21	17	38
Auto Mix & Pump	93015.01/PVS	15	50 cm	20	16	
	93020.01/PVS	20	50 cm	20	16	
	93025.01/PVS	25	50 cm	20	16	
	93030.01/PVS	30	50 cm	25	20	
Mix & Pump	93015.01/MS	15	50 cm	20	16	
	93020.01/MS	20	50 cm	20	16	
	93025.01/MS	25	50 cm	20	16	
	93030.01/MS	30	50 cm	25	20	
Mix	93015.01/DS	15	50 cm	20	16	
	93020.01/DS	20	50 cm	20	16	
	93025.01/DS	25	50 cm	20	16	
	93030.01/DS	30	50 cm	25	20	

Installation and Assembly

free standing	Article No.	NS	Distance between the upper edge of the lower "finger" and the lower edge of the outlet (water line)	Alarm level layer thickness in cm	Recommended preliminary alarm level in cm (= 2/3 of the max. storage volume)	max. sludge layer in cm (= 50% of sludgetrap volume)
Auto Mix	93015.01/DSP	15	50 cm	20	16	
	93020.01/DSP	20	50 cm	20	16	
	93025.01/DSP	25	50 cm	20	16	
	93030.01/DSP	30	50 cm	25	20	
Basic Standard (D)	93015.01 93015.01/D	15	50 cm	20	16	
	93020.01 93020.01/D	20	50 cm	20	16	
	93025.01 93025.01/D	25	50 cm	20	16	
	93030.01 93030.01/D	30	50 cm	25	20	

Installation in the ground

Standard	93002 / 80 / 120 B und D	2	50 cm	17	14	15
	93004 / 80 / 120 B und D	4	50 cm	17	14	27
	93007 / 120/170 B und D	7	48 cm	17	14	23
	93010 / 120/170 B und D	10	48 cm	17	14	23
	93015 / 120/170 B und D	15	56 cm	17	14	32
	93020 / 120/170 B und D	20	56 cm	17	14	31
DIN 4040 Standard	98201 / 00 / 80 / 120 B und D	1	58 cm	16	13	46
	98202 / 00 / 80 / 120 B und D	2	58 cm	16	13	54
	98204 / 00 / 80 / 120 B und D	4	58 cm	16	13	54
	93925 120 / 170 B und D	25	50 cm	17	14	42
	93930 120 / 170 B und D	30	50 cm	17	14	47
	93935 120 / 170 B und D	35	50 cm	16	13	52

Note: After installation of the grease separator, fill it completely with water, check the installation height and correct if necessary! When the separator is completely filled with water, the control unit must display "0 cm" in *SonicControl* manual operation. If mechanical correction is not possible, carry out change in "Parameters > level compensation" (3.1.7 Menu guidance control unit). The parameters are password-protected – please contact KESSEL Customer Services at +49 (0) 8456/27462.

Installation and Assembly

3.4 Installation suggestion

Cable duct for *SonicControl* grease separator for free-standing set-up

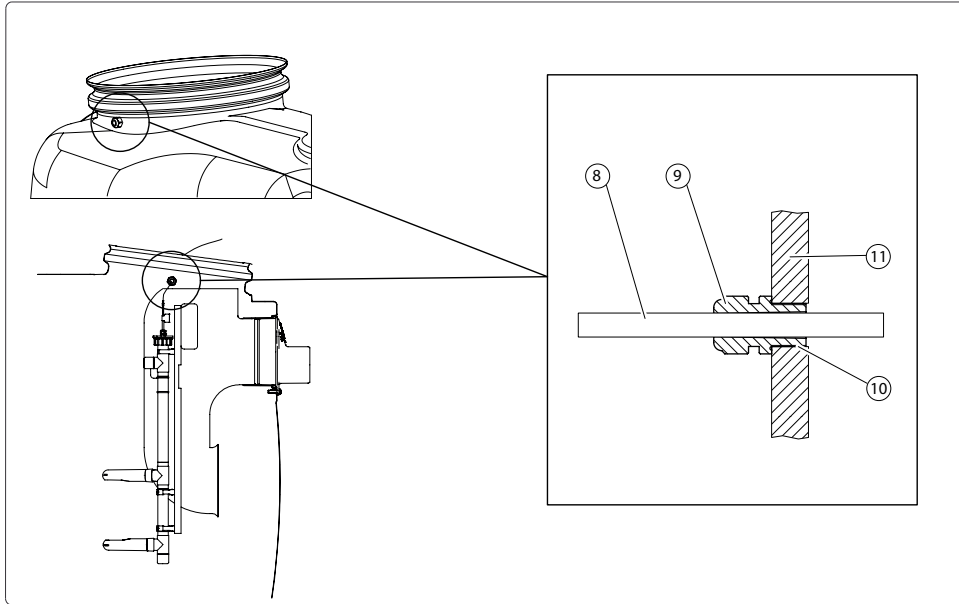


fig. shows grease separator EasyClean free NS4

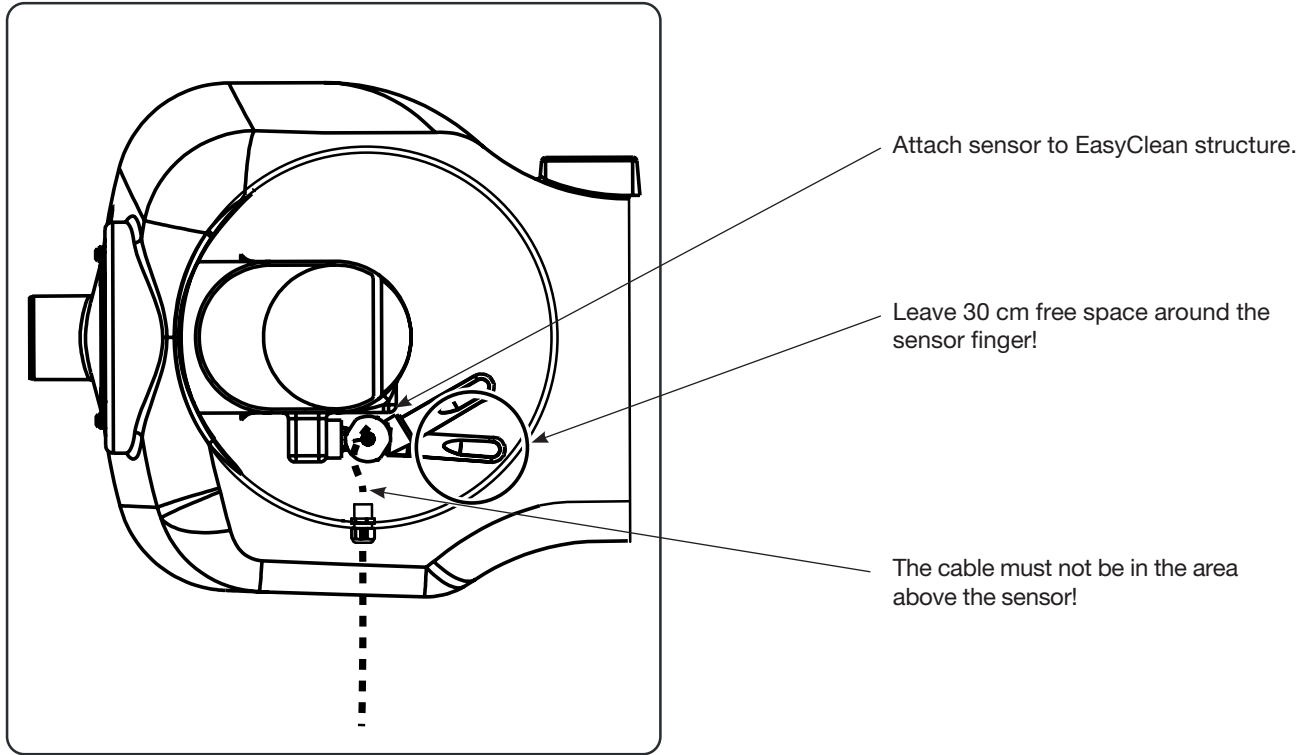
Grease Separator

- ⑧ Cable
- ⑨ Thread PG 11
- ⑩ Cable screw connection*
- ⑪ Tank wall

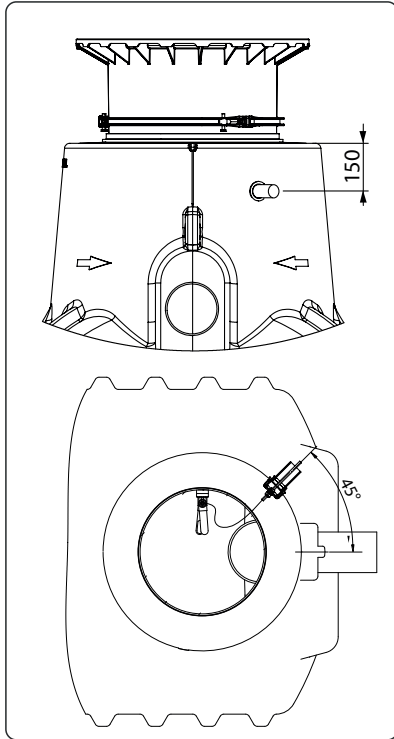
* To avoid odour pollution, fasten the cable screw connection tightly.

Installation and Assembly

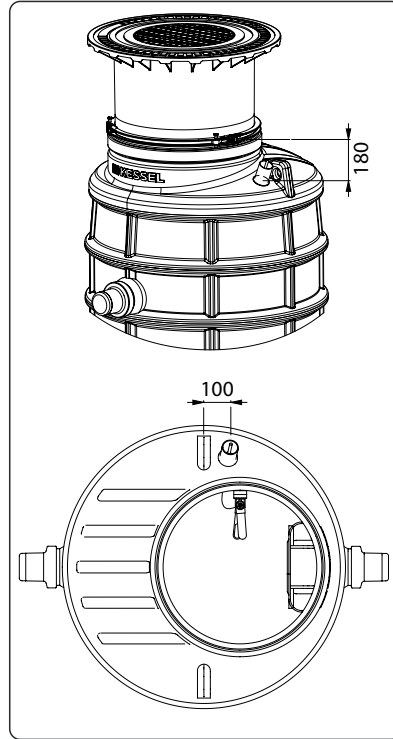
Figure shows top view



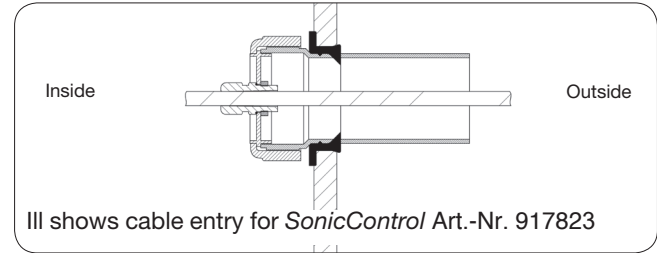
Installation and Assembly



Grease separator *EasyClean* Ground Standard for installation in the ground NS 7-35 outlet side incl. cable duct



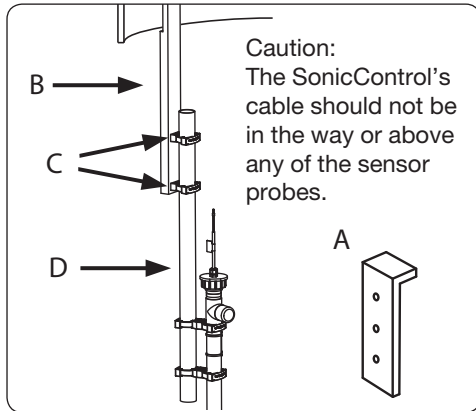
Grease separator *EasyClean* Ground Standard for installation in the ground NS 1-4 incl. cable duct



During ground-moving work, a PE-HD cable conduit DN 40 (outer dia. 50 mm) must be laid. For this purpose, the tank must be scored using a 60 mm saw cap. The connection distance between separator and switch unit must be kept as short as possible. Unnecessary changes of direction, particularly ones at angles greater than 45° must be avoided. The cable conduit must have a continuous gradient to the separator. Condensation inside the cable conduit can be minimised through an airtight seal on the conduit on the switch unit side. A cable pull wire can be included for any later cable installation. The cable can be extended to a max. 60 m. When the cable is drawn into the conduit to the switch unit, the cable screw connection at the conduit cover must be tightened firmly.

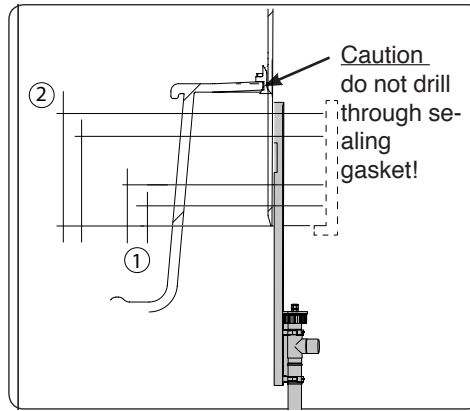
Then the union nut must be fixed on the end of the pipe.

Installation and Assembly

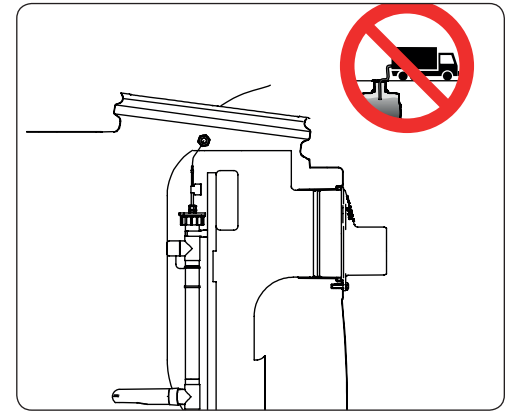


Procedure for installing the *SonicControl* grease separator.

1. Open the separator cover.
2. Attach the drilling template stop at the bottom end of the upper section, mark 2 holes on the upper section (A) through the drilling template and pre-drill these using a 6 mm diameter drill.
3. Screw the 2 stainless steel screws provided into the upper section in such a way that a gap of approx. 25mm remains between the screw head and the upper section.
4. If the separator is installed deep in the



- ground, you can also use the pipe provided (D) as an extension. To do this, fasten the pipe (D) to the retaining clips (C) and fasten the *SonicControl* sensor using the size 8 clips (E) provided.
5. Clip the sensor into the retaining clips (C) of the installation bracket (B) and fasten the installation bracket to the 2 screws. Then tighten the screws so that the installation frame has a firm seat.
 6. Now adjust *SonicControl* on the red marking at the sensor using the calm surface of the



The enclosed sticker serves as a reminder for the disposer, in order to avoid damage to the sensor during disposal.

The sticker must be attached as follows
Grease separator *EasyClean* free:
at eye level on the outside of the tank.
Grease separator *EasyClean* ground:
on the inside of the upper section.

Note: Draw the respective disposers' attention to the sensor!

Electrical connection

4.1 External signal generator

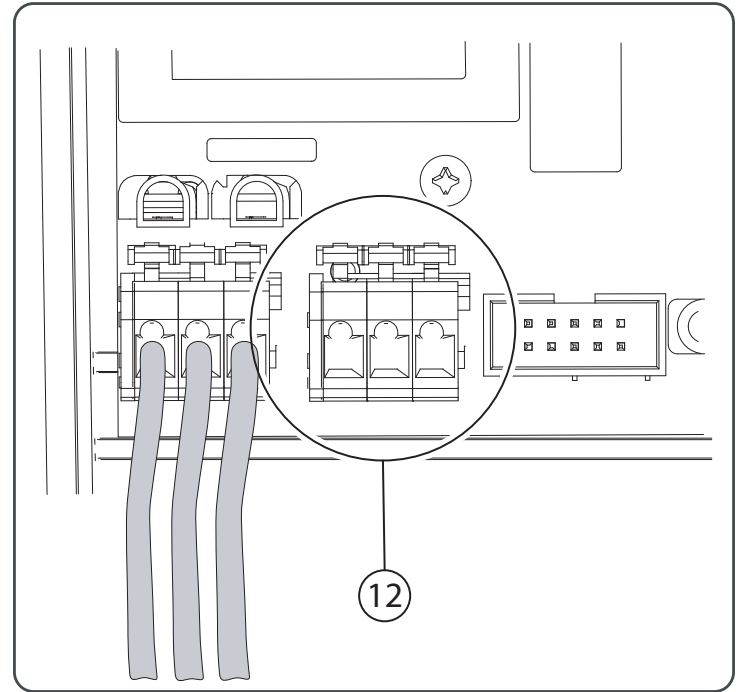
The external signal generator (order no. 20162) for transmitting the acoustic warning to other rooms can be connected if required. (see connection diagram).

4.2 Shortening the sensor cables

The sensor cables can be shortened if required. We only recommend subsequently tin-plating the wire ends. When cable end sleeves are used, care must be taken that the connection terminals are designed for a max. cross-section of 2.5 mm². This cross-section must not be exceeded.

4.3 Potential-free switch contact

Fasten the potential-free contact to the connection terminals.



Electrical connection

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 parallel with any other cables in order to prevent an electrical interference which can cause the *SonicControl* to malfunctions. The sensor itself should not be grounded.

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.

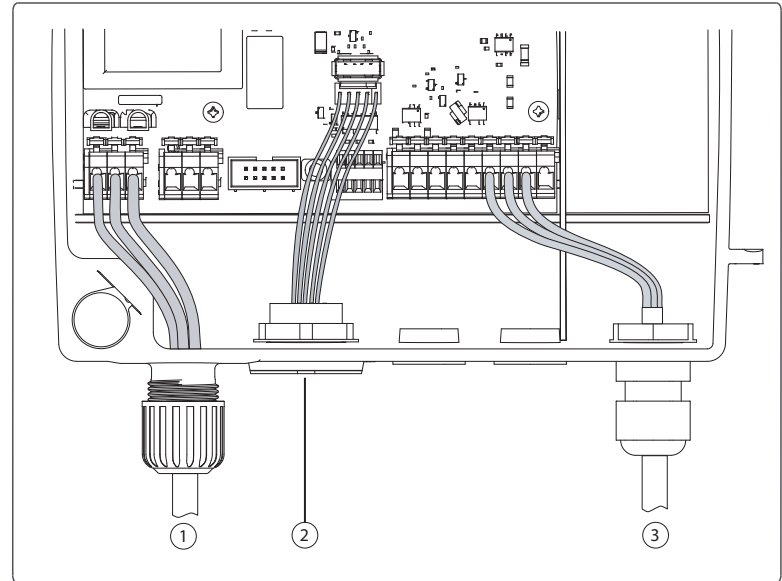


Fig. shows connection possibilities for the control unit

- 1) Power connection
- 2) USB connection
- 3) Sensor cable

Electrical connection

Possibilities of professional cable extension on site (IP 68)

The *SonicControl* cable is 10 metres long. On site, this cable can be extended by a qualified electrician up to max. 60 metres without any change in cross-section being necessary.

SonicControl probe extension to max. 60 metres 0,75 mm²

Note:

The regulations set out by the directive VDE 0100 must be heeded. The switch unit must not be installed in potentially explosive areas. The 10 m cable can be extended on site to up to 60 m. If the cable is routed in a cable channel with cables from other frequency-controlled units, a shielded cable has to be used

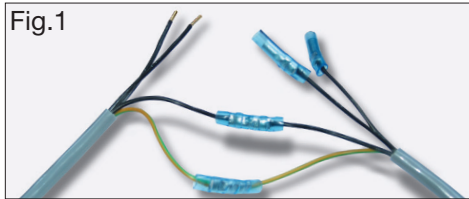


Fig. 1:
Crimp cable extension with butt joint



Fig. 2: Shell is placed around the cable, both shell ends are sealed



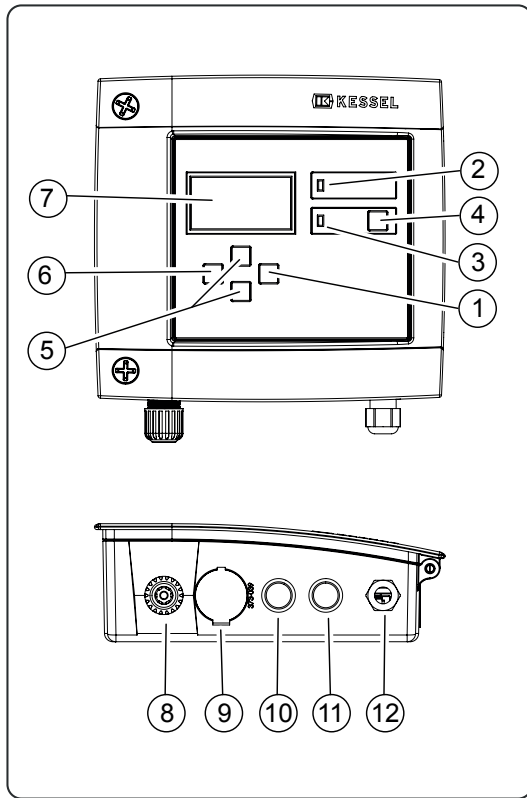
Fig. 3: Cast the shell with prepared casting resin



Fig. 4: Final state with sealing plug

Individual parts on request

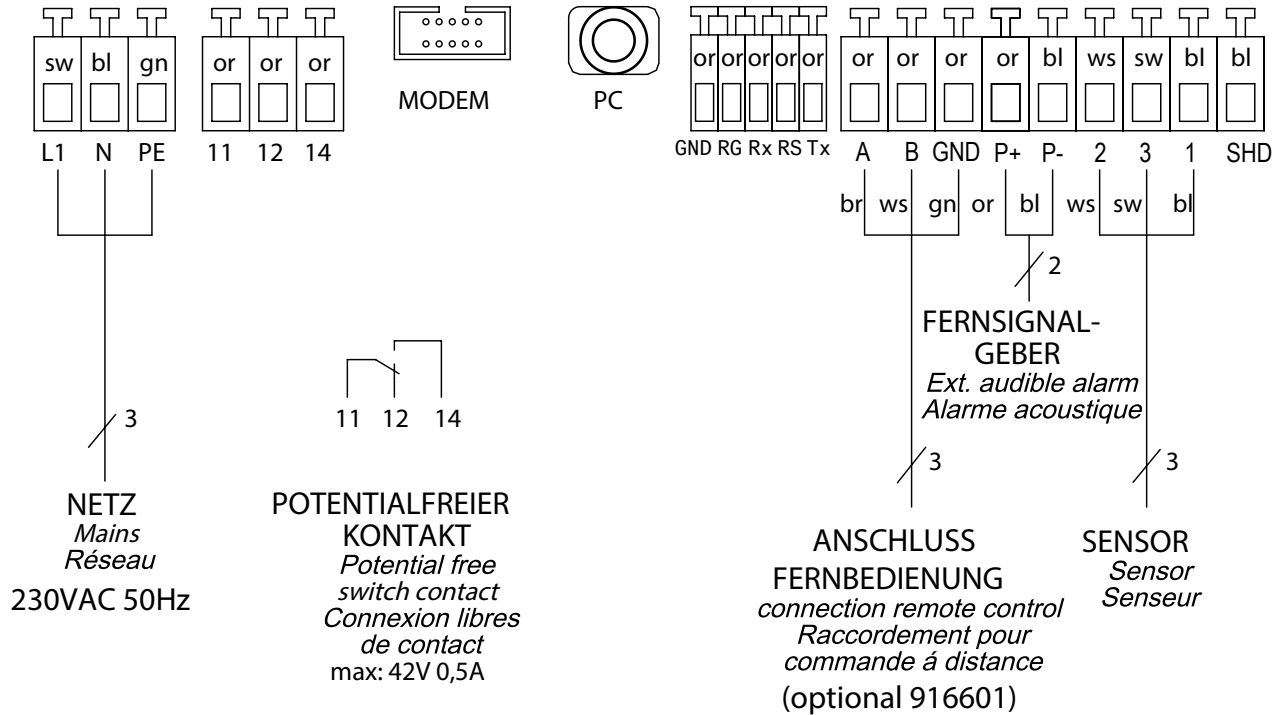
Electrical connection



- ① Enter key/OK key
- ② Pilot lamp indicating readiness for operation
- ③ Pilot lamp for malfunction message
- ④ Alarm key
- ⑤ Movement keys / direction keys
for moving through the program menu
- ⑥ Back key/ESC key
- ⑦ Display
- ⑧ Mains power supply cable
- ⑨ USB-Slot
- ⑩ Connecting socket for potential-free
switch contact / external signal generator
- ⑪ Modem connection
- ⑫ Connection for ultrasonic sensor

Electrical connection

4.5 Connection diagram




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 requests four basic settings.

1. Language
2. Date/time
3. Standard
4. Nominal size
5. Calibration

} Correct enter
necessary for
measuring

- Selection using 
- Stored in system memory by pressing "OK"
- After setting 1 to 5.
- Switch unit loads program memory
- Start operating mode
- System is ready for operation

5.2 Operator's duties Checking

- 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 instruction:

- Get the system ready for operation
- Check the system
- Instruction based on the installation and operating instructions
- Preparation of the handover certificate

Once instruction is completed, the system must be made ready for operation.

Inspection and Maintenance

Please heed the safety instructions in chapter 1.

The switch unit must be completely disconnected from the mains for cleaning. When replacing the batteries, use 9-V Block. Repairs may only be carried out by the manufacturer.

The switch unit does not require any maintenance.

The connection cables must be checked for damage. If any damage can be detected, the system must be put out of operation immediately.

The sensor has to be cleaned at regular intervals.

Every time disposal takes place the sensor must be cleaned with warm/hot water*. When a high-pressure jet cleaner is used, main-

tain a safe distance of 30 cm. The sensor does not have to be removed for cleaning.

The sensor does not have to be removed for cleaning. The grease separator must be filled with water after emptying.

* In the case of KESSEL EasyClean free grease separators systems Auto Mix, Mix & Pump- and Auto Mix & Pump, cleaning can wait until the next servicing date since the separator is cleaned with warm water. If necessary (heavy sensor soiling by strong hardening grease) carry out cleaning every time disposal is carried out.

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, "-" will be displayed until then.

Errors and Malfunction

Please heed the safety instructions in chapter 1.

7.1 Incident display:

Events are displayed in the log and not forwarded via the potential-free contact.

Incident 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	--
Close down switch unit	Switch unit has been closed down	--
Acknowledge acoustic alarm	Acoustic alarm has been acknowledged	--
Acknowledge fault	Fault has been acknowledged	--
Default settings	Reset to default settings	
Calibration successful	The device was calibrated during first initialisation	--
PRE-ALARM layer thickness	The grease layer height for pre-alarm level has been reached (refer also to 3.3)	--

Errors and Malfunction

7.2 Fehleranzeige:

Errors are forwarded via the potential-free contact.

Incident display	Fault	Cause	Remedy
No rest phase detected	128 cm is indicated in manual mode. Display shows *__* Sensor has not been able to determine a valid value for the past 3 days	<ul style="list-style-type: none"> - Sensor installed incorrectly - measuring interval during operating phase - sensor covered by sludge - suspended matter - coarse material 	Check the installation situation/ adapt the measuring interval/ dispose of the separator in the event of an increased sludge layer/ fit a coarse particle filter upstream
ALARM layer thickness	Acoustic signal and flashing	Maximum grease layer thickness has been reached	Inform the disposer
ALARM temperature	Acoustic signal and flashing	Inlet temperature too high (heed standard requirements when setting the level)	Reduce temperature of inlet water
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
Mains failure	Acoustic signal and flashing ; Power LED is flashing	<ul style="list-style-type: none"> - The system is currentless - The display is defective 	<ul style="list-style-type: none"> - Check pre-fuse and / or RCD - Call Customer Services

Errors and Malfunction

Incident display	Fault	Cause	Remedy
Communication error	Acoustic signal and flashing	Faulty modem reception	<p>Step 1: Check basic reception possibility;</p> <p>Step 2: If no reception is possible then a modem cannot be used; if reception is basically possible, replace the modem</p>

7.3 General faults:

Recognised fault	Fault	Cause	Remedy
Deviation between the grease layer depth in inspection window and the measured depth of grease layer	Faulty function caused by the faulty measurement	<ul style="list-style-type: none"> - Faulty sensor installation - Positioning during installation - Faulty initial initialisation - Dirt deposited on the sensor 	<ul style="list-style-type: none"> - Tighten the cable a little and then tighten the screw connection by hand - Take the type of separator into account - Re-calibration of the sensor - Check the position of the sensor - Set the type of grease - Set the type of grease and clean the sensor

Errors and Malfunction

7.3 General faults:

Recognised fault	Fault	Cause	Remedy
		<ul style="list-style-type: none"> - Sensor is in the blind spot - Grease separator type / and/or system type not set correctly 	<ul style="list-style-type: none"> - Reposition the sensor (see Page 11) - Correct settings
Text message cannot be sent and/or remote servicing is not possible	Faulty function of remote servicing	Faulty modem reception	<p>Step 1: Check basic reception possibility;</p> <p>Step 2: If no reception is possible, then a modem cannot be used; if reception is basically possible, replace the modem</p>

7.4 System faults

Recognised fault	Cause	Remedy
Odour pollution	Leak in the cable duct through faulty installation	Tighten the cable screw connection in the tank wall so that it is odour-proof (see the operating instructions of your grease separator as well)
Water in the service room	Leak in the cable duct through faulty installation	Tighten the cable screw connection in the tank wall so that it is "odour"proof

Switch 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 key Skip to the next higher level

ESC key : Skip to the next lower level



Navigation within a level

Alarm key 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 once 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). This becomes noticeable by means of an acoustic and visual alarm. The acoustic alarm can be acknowledged by pressing the alarm key. Stand-by mode is maintained for at least 72 hours. Afterwards, the control unit switches off au-

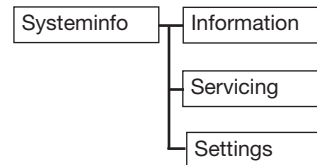
tomatically. If the mains connection is re-established within one hour, the program will automatically continue with the last program phase. If this is not the case, the device re-initialises itself when the mains connection returns (programming already carried out remains). If the alarm key is kept pressed in battery operation, the control unit shuts down.

Note:

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

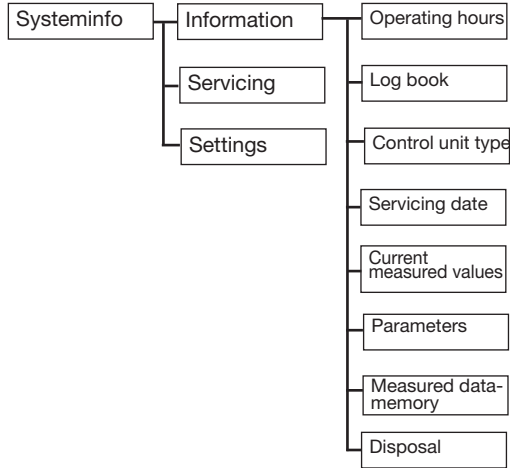
If you have any questions, please contact KESSEL Customer Services (Phone +49 (0) 8456 / 27462)

8.2 System menu



Switch unit

8.3 Information menu



Δ8.3.1 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, standard/nominal size, 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.

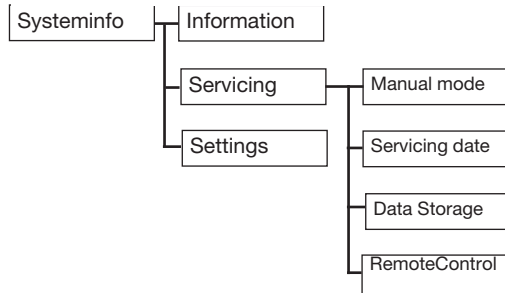
8.3.7 Measured data memory

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)

8.4 Servicing menu



8.4.1 Manual mode

Manual operation overrides automatic operation.

In the case that a grease layer thickness reading is taken while the grease separator is in operation (which can occur by pressing the button on the control unit), the reading will be inaccurate. Inaccuracy is due to too much suspended matter inside the separator during operation.

8.4.2 Servicing date

Entry of the last servicing to be carried out and the next servicing date by the servicing partner. Password: 1000

8.4.3 Servicing carried out / data storage

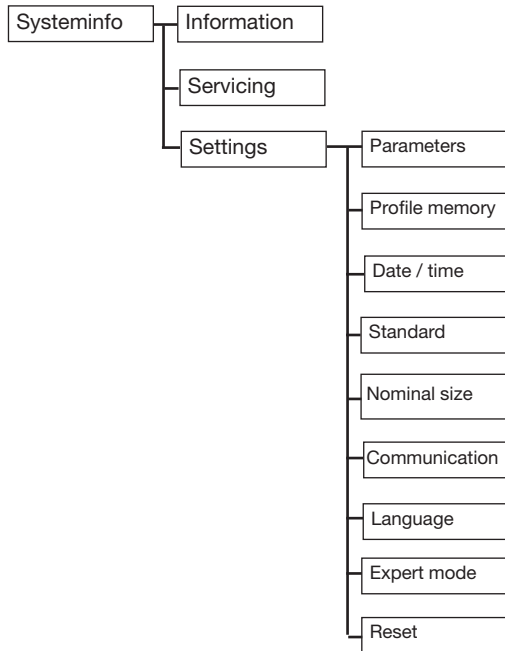
Confirmation that servicing has been carried out/logbook entry

8.4.4 RemoteControl

Connection of the remote control.

Switch 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, on quitting 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). Here, a profile can be saved (saves the parameters currently set) or loaded.

8.5.3 Date/time Setting the current date and time.

8.5.4 Standard

8.5.5 Nominal size selection of grease separators NS

8.5.6 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).

8.5.7 Language Display / change the language.

8.5.8 Expert mode setting of parameters through factory customer services

8.5.9 Reset

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

Technical data

General technical data

Housing dimensions (L x W x H)	180 x 200 x 70 mm
Weight of switch unit	approx 1 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 switchgear	IP 54
Type of protection probe	IP 68
Electrical connections suitable for all copper conductors	0,08 - 2,5 mm
Cable sheath diameter	5 - 9 mm

Supply

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

Inputs

Sensor input	<i>SonicControl</i> sensor input
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Outputs

<i>Potential-free switch contact</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 (Article-no. 20162)</i>	Connection possibility for an external signal generator

Accessories

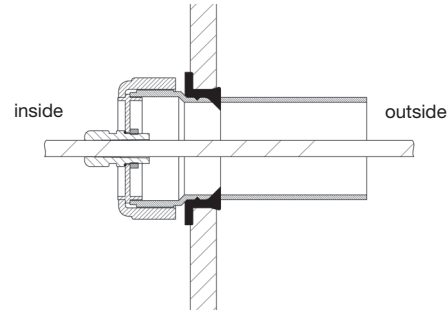
①



②



③



④



	Order-Nr.		Order-Nr.
1. Control unit	680349	4. Cable extension 10 m	917871
2. Ultrasonic sensor (until 09/2011)	917821	4. Cable extension 20 m	917872
2. Ultrasonic sensor (from 10/2011)	680348	4. Cable extension 30 m	917873
3. Duct set for installation in the ground	917823		

