

**Montageanleitung /
Mounting instructions**



**Tauchsonden mit Modbus RTU Schnittstelle RS485
Tauchsonde LMC / LMS**

**Probe with Modbus RTU interface RS485
Probe LMC / LMS**

LMS 117, LMC 130, LMC 131, LMC 113, LMC 110,
LMC 112, LMC 128, LMC 125, LMC 121, LMC 122,
LMC 124, LMC 126, LMC 114, LMC 111, LMC 123,
LMC 120, LMC 129, LMS 116, LMS 110, LMS 115,
LMS 111, LMS 112, LMS 113, LMS 114



LMS 112

**READ THOROUGHLY BEFORE USING THE DEVICE
KEEP FOR FUTURE REFERENCE**

ID: MA_TS_D-E | Version: 06.2022.0

Diese Montageanleitung stellt einen Auszug aus der ausführlichen Betriebsanleitung dar. Bitte laden Sie sich diese auf unserer Homepage herunter, falls Sie nicht mit dem Produkt vertraut sind.



These mounting instructions are an excerpt from the complete operating manual. It may be downloaded from our homepage, if you are not familiar with the device.

<http://www.bdsensors.de>

– Technische Änderungen vorbehalten –
– Technical modifications reserved –

English

WARNING - In order to avoid hazards to operators and damages to the device, the following instructions have to be performed by qualified technical personnel.

WARNING - Adhere to the safety and operating instructions stated in the operation manual. Effective regulations on occupational safety, accident prevention as well as national installation standards and approved engineering techniques must in addition be complied with.

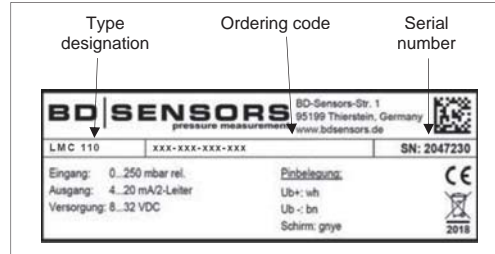
Limitation of liability and warranty

Failure to observe mounting instructions / operating manual or technical regulations, improper use and use not as intended, and alteration of or damage to the device will result in the forfeiture of warranty and liability claims.

Intended use

Ensure that the medium is compatible with the media-wetted parts and that the device is suitable for the application without restrictions. The technical data listed in the current data sheet is binding.

Product identification



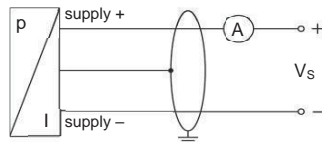
Mounting

Fasten the probe properly according to your requirements. Always immerse the device slowly into the fluid to be measured! If the probe strikes the liquid surface, the diaphragm could be damaged or destroyed.

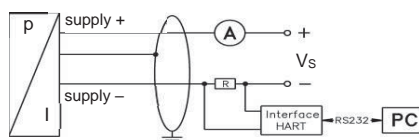
For LMC 121 / LMC 122 in flange version ensure that the mounting thread is clean and undamaged and that the O-ring is undamaged and seated in the designated groove at the probe end. After screwing in by hand, the probe has to be tightened using an open-end wrench (approx. 25 Nm).

Wiring diagrams

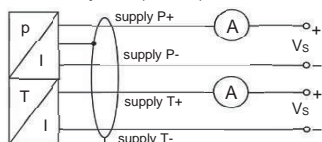
2-wire-system (current)



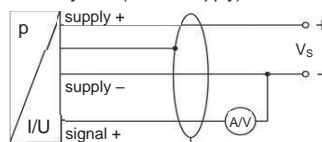
2-wire-system (current) HART®



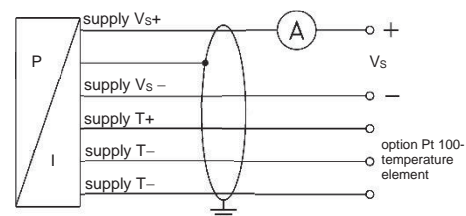
2x2-wire-system (current) for LMC 122 / LMS 111



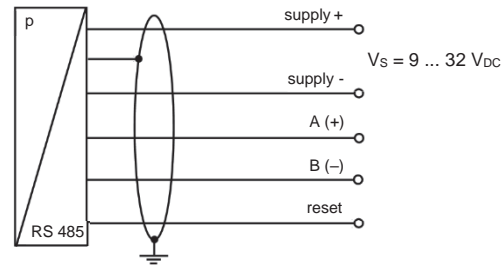
3-wire-system (current/supply)



**2-wire-system HART® (pressure) /
3-wire-system (temperature Pt 100)**



RS 485 / Modbus RTU with reset function



NOTE - In the case of relative pressure gauges, the cable contains a ventilation hose for pressure equalization. Route the end of the cable into an area or suitable connection box which is as dry as possible and free from aggressive gases, in order to prevent any damage.

NOTE - Use a shielded and twisted multicore cable for the electrical connection.

Pin configuration

Electrical connections	cable colours (IEC 60757)
Supply +	WH (white)
Supply -	BN (brown)
Signal + (with 3-wire)	GN (green)
with option Pt 100:	
Supply T+	YE (yellow)
Supply T-	GY (grey)
Supply T-	PK (pink)
Shield	GNYE (yellow/green)
LMC 112 and LMS 111	
cable colours (IEC 60757)	
Supply P+	WH (white)
Supply P-	BN (brown)
Supply T+	GY (grey)
Supply T-	PK (pink)
Shield	GNYE (yellow/green)
LMS 117, LMC 130, LMC 131	
cable colours (IEC 60757)	
Supply +	WH (white)
Supply -	BN (brown)
A +	GN (green)
B -	YE (yellow)
Reset	PK (pink)
Shield	GNYE (yellow/green)

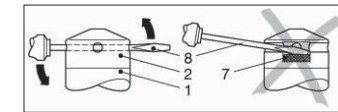
Removal of protective cap (if necessary)

For the protection of the diaphragm, some of the probes have a plugged-on protection cap. If the device shall be used in high-viscosity media such as sludge, a removal of the cap before start-up is necessary. Thus, the sensor becomes flush and the medium will attain quickly to the diaphragm.

Removal by hand

1. Hold the probe in a way that the protection cap points upwards.
2. Hold the probe with one hand on the sensor section (1).
3. Remove the protection cap (2) with the other hand.

Removal with a tool (recommended)



1. Hold the probe in a way that the protection cap points upwards.
2. Slide a small tool such as a screwdriver (8) straight through two opposite drill holes in the protective cap (2).
3. Lever it off by moving up the handle of the screwdriver.

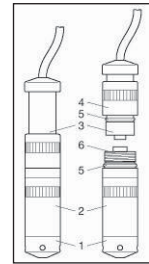
NOTE - Make sure that the sensor (7) under the protection cap will not be damaged!

Separability (with LMC 128, LMC 125, LMC 123, LMC 128, LMS 112, LMS 113 and LMS 114)

In order to facilitate stock keeping and maintenance, the probe head is plugged to the cable assembly with a connector and can be easily changed.

Disassembly

1. Hold the probe on the sensor section (2) with one hand and turn the nut (4) carefully to the left with the other hand. Prevent torsion of the cable section (3) against the housing!
2. While screwing and pulling off the sensor section (2) from the cable section (3), hold it straight to prevent damages on the plugs.



Assembly

- ✓ O-rings are not damaged (5, 6) or damaged O-rings have been replaced.
 - ✓ Radial O-rings (5) have been greased with Vaseline or O-ring grease.
 - ✓ Any grease residues have been removed from the axial O-ring (6).
1. Plug the cable section (3) straight into the plug of the sensor section (2).
 2. Hold the probe onto the sensor section (2) with one hand. Screw on and tighten the nut (4) carefully with the other hand. Prevent torsion of the cable section (3) against the housing!

Pin configuration of plug

Electrical connections	Binder series 723 (5-pin)	Binder series 723 (7-pin)
2-wire system		
Supply +	3	3
Supply -	1	1
Shield	5	2
3-wire system		
Supply +	3	3
Supply -	4	1
Signal +	1	6
Shield	5	2
Communication interface		
RxD	-	4
TxD	-	5
GND	-	7

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安装说明 /
Mounting instructions

Probe with Modbus RTU interface RS485
Probe LMC / LMS

液位变送器带有 Modbus RTU 接口 RS485 液位
变送器 LMC / LMS

LMS 117, LMC 130, LMC 131, LMC 113, LMC 110,
LMC 112, LMC 128, LMC 125, LMC 121, LMC 122,
LMC 124, LMC 126, LMC 114, LMC 111, LMC 123,
LMC 120, LMC 129, LMS 116, LMS 110, LMS 115,
LMS 111, LMS 112, LMS 113, LMS 114



LMS 112

使用前请仔细阅读!

ID: MA_TS_D-E | 版本: 06.2022.0

These mounting instructions are an excerpt from the complete operating manual. It may be downloaded from our homepage, if you are not familiar with the device.



这些安装说明书选自完整的操作手册。您也可以从我们的主页下载。

– Technical modifications reserved –
– 保留技术修改权利 –

中文

警告 - 为了避免对操作人员造成危险或损坏设备，以下操作要求必须由有资格的专业技术人员进行操作!

警告 - 请遵守操作手册中的安全和操作说明。必须遵守有关职业安全、事故预防的有效规定以及国家安装标准和工程技术参数。

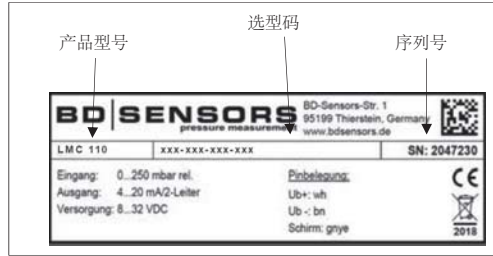
责任限制

对于因不遵守操作手册或技术法规、使用不当、自行改动和毁坏导致仪器损坏的，本公司不承担赔偿责任并且不提供维修服务。

预期用途

确保介质和介质浸湿部件兼容，并确保产品适用于该应用。当前样本中列出的技术参数真实有效。

产品标识



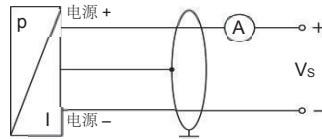
安装

根据要求，正确地固定探头。始终将设备缓慢地浸入待测液体中！如果探头撞击液体表面，膜片可能损坏！

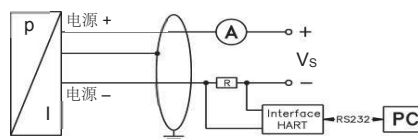
对于液位变送器 LMK382 / LMK382H 的法兰形式，请确保安装螺纹清洁且无损坏，O型圈没有损坏且固定在液位变送器一段的指定沟槽中。固定液位变送器时，用手拧入后，必须使用开口扳手拧紧液位变送器！（约 25 Nm）。

信号线定义

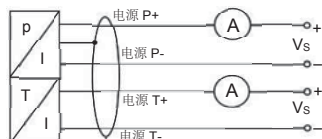
2-线制系统 (电流)



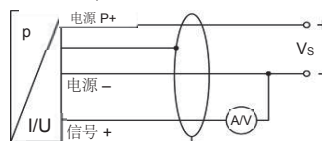
2-线制系统 (电流) HART®



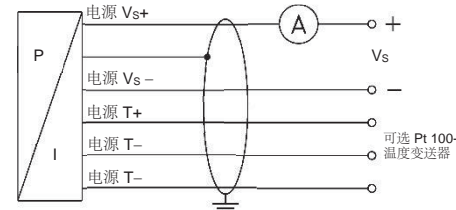
2x2-线制系统 (电流) LMC 122 / LMS 111



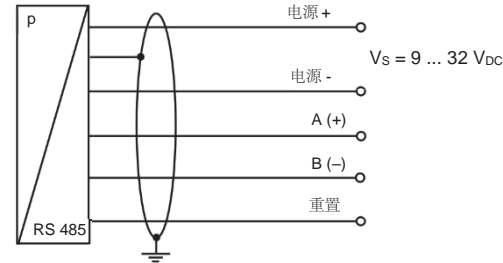
3线制系统(电流 / 电压)



2-线制系统 HART® (压力) /
3-线制系统 (温度 Pt 100)



RS 485 / Modbus RTU 带重置功能



注意 - 表压/相关设备配有空气管用于大气参考压力。安装电缆的末端置于控制柜或接线盒的干燥区域，可避免腐蚀性气体对其的损害。

注意 - 对于电气连接推荐使用带屏蔽的多芯线缆。

管脚定义

电气连接	线缆色 (IEC 60757)
电源 +	白
电源 -	褐
信号 + (3 线制)	绿
带有 Pt 100:	
电源 T+	黄
电源 T-	灰
电源 T-	粉
屏蔽	黄/绿
LMC 112 和 LMS 111	线缆色 (IEC 60757)
电源 P+	白
电源 P-	褐
电源 T+	灰
电源 T-	粉
屏蔽	黄/绿
LMS 117, LMC 130, LMC 131	线缆色 (IEC 60757)
电源 +	白
电源 -	褐
A +	绿
B -	黄
重置	粉
屏蔽	黄/绿

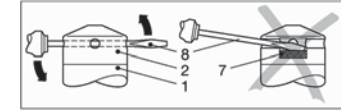
移除保护盖 (如有必要)

为了保护隔膜，有些液位变送器有一个插接的保护盖。如果液位变送器在高粘度介质（如淤泥）中使用，则必须在启动前移除保护盖。因此，介质很快到达膜片。

移除保护盖

- 使投入式液位计保护盖朝上。
- 用一只手握住传感器部分探头 (1)。
- 用另一只手移除保护盖 (2)。

用工具移除(推荐)



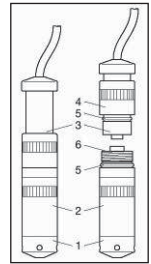
- 使投入式液位计保护盖朝上。
- 将细长的棒状工具，例如螺丝刀 (8) 穿过防护帽上两个相对的孔 (2)。
- 通过向上移动螺丝刀手柄把它撬开。

注意 - 确保保护帽下的传感器(7) 不会被损坏!
可分体式 (LMC 128, LMC 125, LMC 123, LMC 128, LMS 112, LMS 113 和 LMS 114)

为了方便储存和维护，投入式液位计探头部分可以通过一个电气插头与线缆部分组装，并且可以简单地更换。

分体

- 用一只手握住探头部分 (2)，用另外一只手小心地向左转动螺母 (4)，同时防止线缆部分 (3) 随着壳体扭转！
- 当从线缆部分 (3) 拧下并取下部分 (2) 时，请保持它的无相对转动或扭动，以免破坏电气插头。



组装:

- ✓ 检查 O 型圈 (5, 6)，如有损坏请更换完好的 O 型圈。
- ✓ 用凡士林或者 O 形圈润滑脂均匀涂抹 O 形圈。
- ✓ 去除轴向 O 型圈 (6) 上的残留润滑脂。

- 将线缆部分 (3) 直接插入传感器部分 (2) 的插头。
- 用一只手握住探头部分 (2)，用另外一只手仔细旋紧并锁紧螺母 (4)。防止线缆部分 (3) 与外壳间没有相对扭转！

信号线定义

电气连接	Binder series 723 (5 针)	Binder series 723 (7-针)
2 线制系统		
电源 +	3	3
电源 -	1	1
屏蔽	5	2
3 线制系统		
电源 +	3	3
电源 -	4	1
信号 +	1	6
屏蔽	5	2
通讯接口		
RxD	-	4
TxD	-	5
GND	-	7