



# BD SENSORS DCL 531 Probe DCL with Modbus RTU Interface Instruction Manual

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**BD SENSORS DCL 531 Probe DCL with Modbus RTU Interface**



## Mounting instructions

- Tauchsonden DCL mit Modbus RTU Schnittstelle RS485
- Tauchsonde LMK / LMP Probe DCL with Modbus RTU interface RS485 Probe LMK / LMP

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

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>

## Technical modifications reserved

- **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.

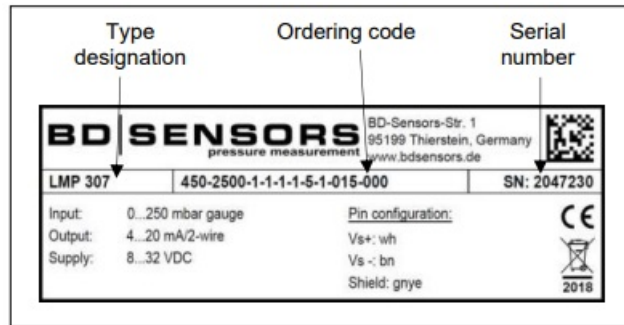
## Limitation of liability and warranty

- 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



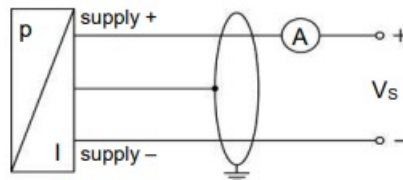
## Mounting

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.

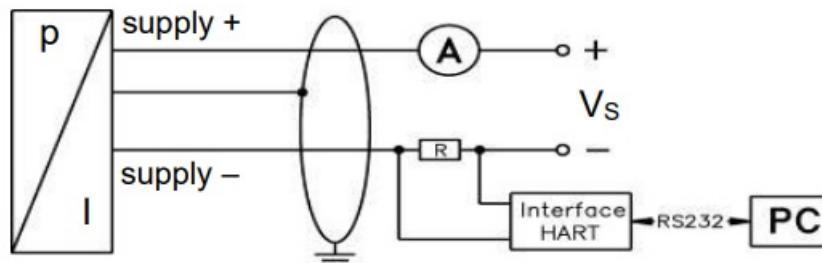
For LMK 382 / LMK 382H in flange version ensure that the mounting thread is clean and undamaged and that the O-ring is undamaged and seated in the designated groove at the probe end. After screwing in by hand, the probe has to be tightened using an open-end wrench (approx. 25 Nm).

## Wiring diagrams

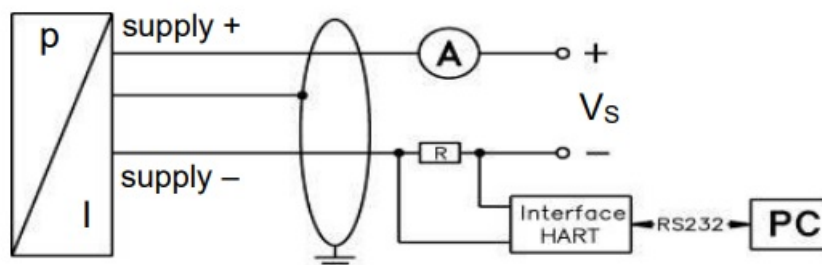
### • 2-wire-system (current)



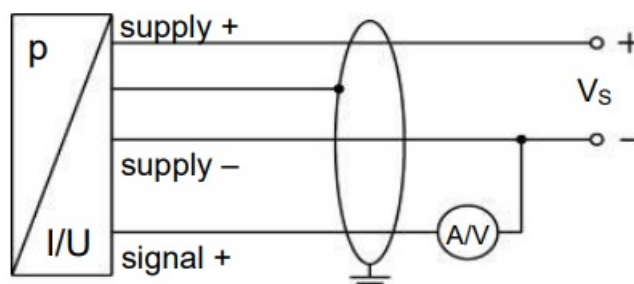
### • 2-wire-system (current) HART



### • 2x2-wire-system (current) for LMK 307T / LMP 307T

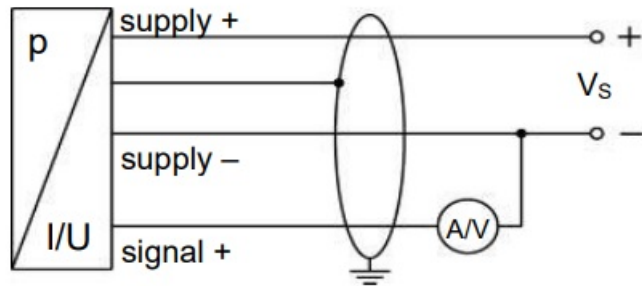


### • 3-wire-system (current/supply)

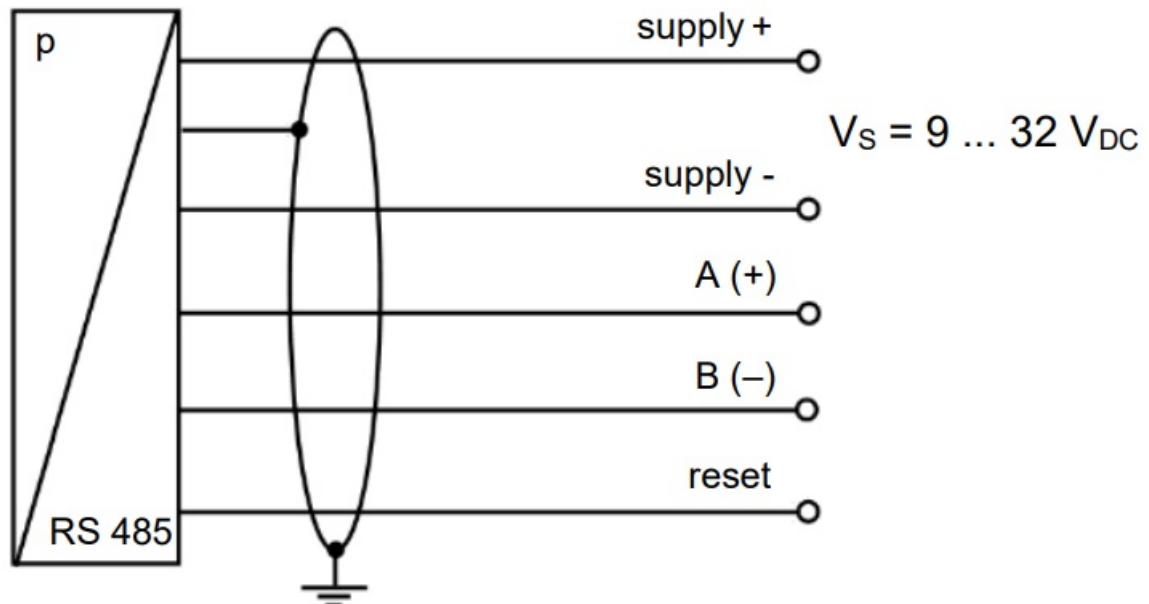


### • 2-wire-system HART (pressure) /

### 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 + Supply – Signal + (with 3-wire) with option Pt 100: Supply T+ Supply T– Supply T–	WH (white) BN (brown) GN (green)  YE (yellow) GY (grey) PK (pink)
Shield	GNYE (yellow/green)
LMK 307T and LMP 307T	cable colours (IEC 60757)
Supply P+ Supply P– Supply T+ Supply T–	WH (white) BN (brown) GY (grey) PK (pink)
Shield	GNYE (yellow/green)
DCL 531, DCL 551, DCL 571	cable colours (IEC 60757)

Supply + Supply – A + B – Reset	WH (white) BN (brown) GN (green) YE (yellow)  PK (pink)
Shield	GNYE (yellow/green)

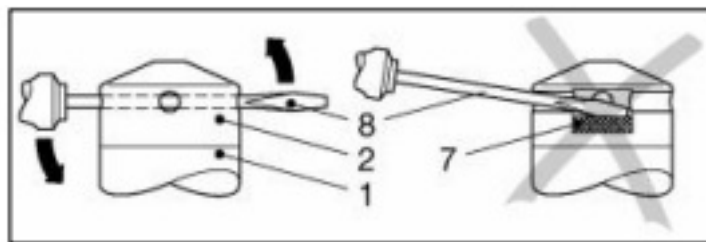
### Removal of protective cap (if necessary)

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 up-wards.
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 up-wards.
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!

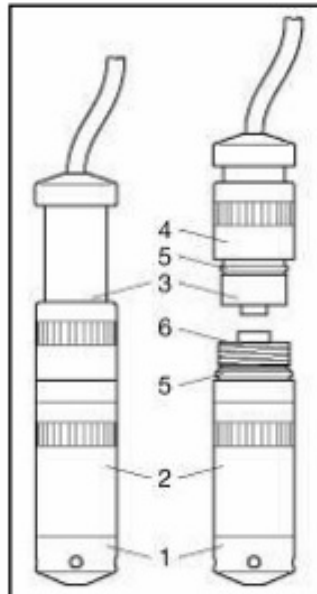
Separability (with LMK 358, LMK 358H, LMK 808, LMK 858, LMP 308, LMP 308i and LMP 808)

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 sen-sor 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!

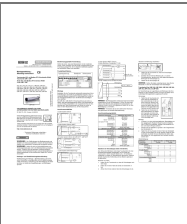
### Pin configuration of the plug

Electrical connections	Binder series 723 (5-pin)	Binder series 723 (7-pin)
<b>2-wire system</b>		
Supply +	3	3
Supply –	1	1
Shield	5	2

<b>3-wire system</b>		
Supply +	3	3
Supply –	4	1
Signal +	1	6
Shield	5	2
<b>Communication interface</b>		
RxD	–	4
TxD	–	5
GND	–	7

- **BD-Sensors-Str.1; 95199 Thierstein**
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## Documents / Resources

	<b><a href="#">BD SENSORS DCL 531 Probe DCL with Modbus RTU Interface</a></b> [pdf] Instruction Manual DCL 531, DCL 551, DCL 571, LMK 306, LMK 307, LMK 307T, LMK 309, LMK 358, LMK 358H, LMK 382, LMK 382H, LMK 387, LMK 387H, LMK 806, LMK 807, LMK 808, LMK 809, LMK 858, LMP 305, LMP 307, LMP 307i, LMP 307T, LMP 308, LMP 308i, LMP 808, DCL 531 Probe DCL with Modbus RTU Interface, DCL 531, Probe DCL with Modbus RTU Interface, Modbus RTU Interface, RTU Interface, Interface
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## References



- [BD Druckmesstechnik für die Industrie von BD|SENSORS - hier informieren](#)

Manuals+.