

### 13. VLG Connecting Leads

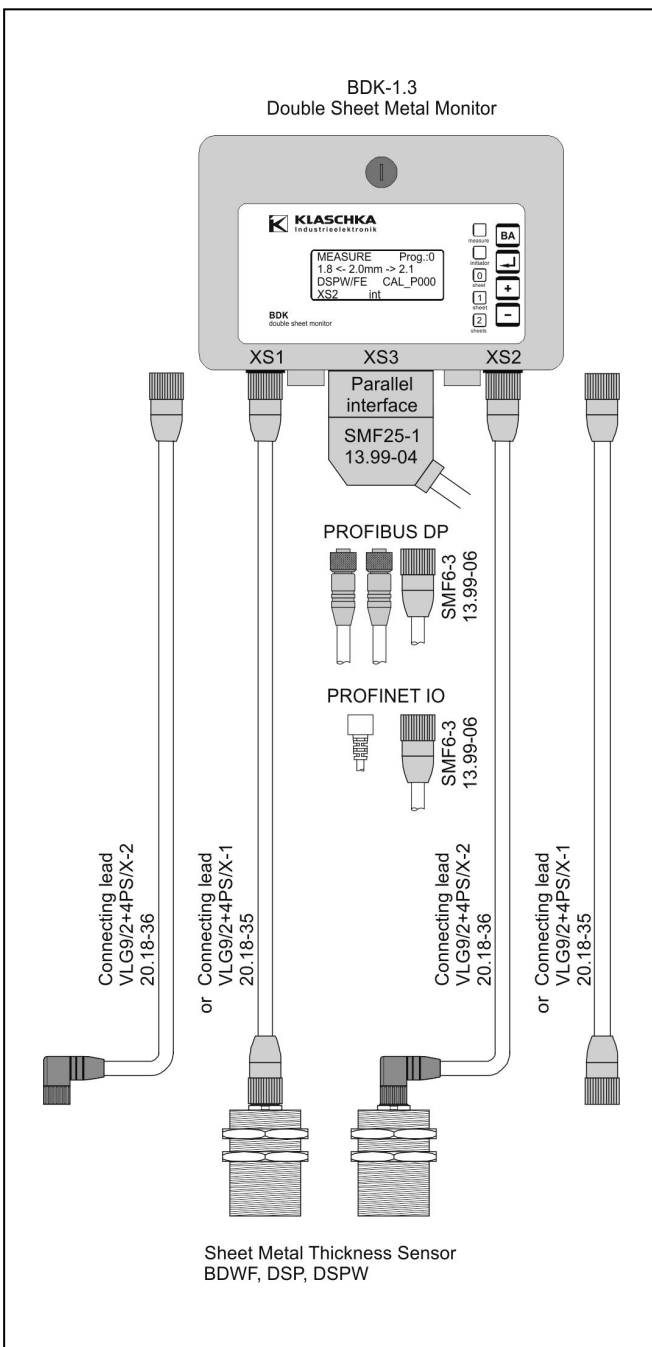
All connecting leads for the connection of the sensors to the evaluation unit are oil-resistant and suitable for drag chains.

The maximum lead length depends on the sensor type.

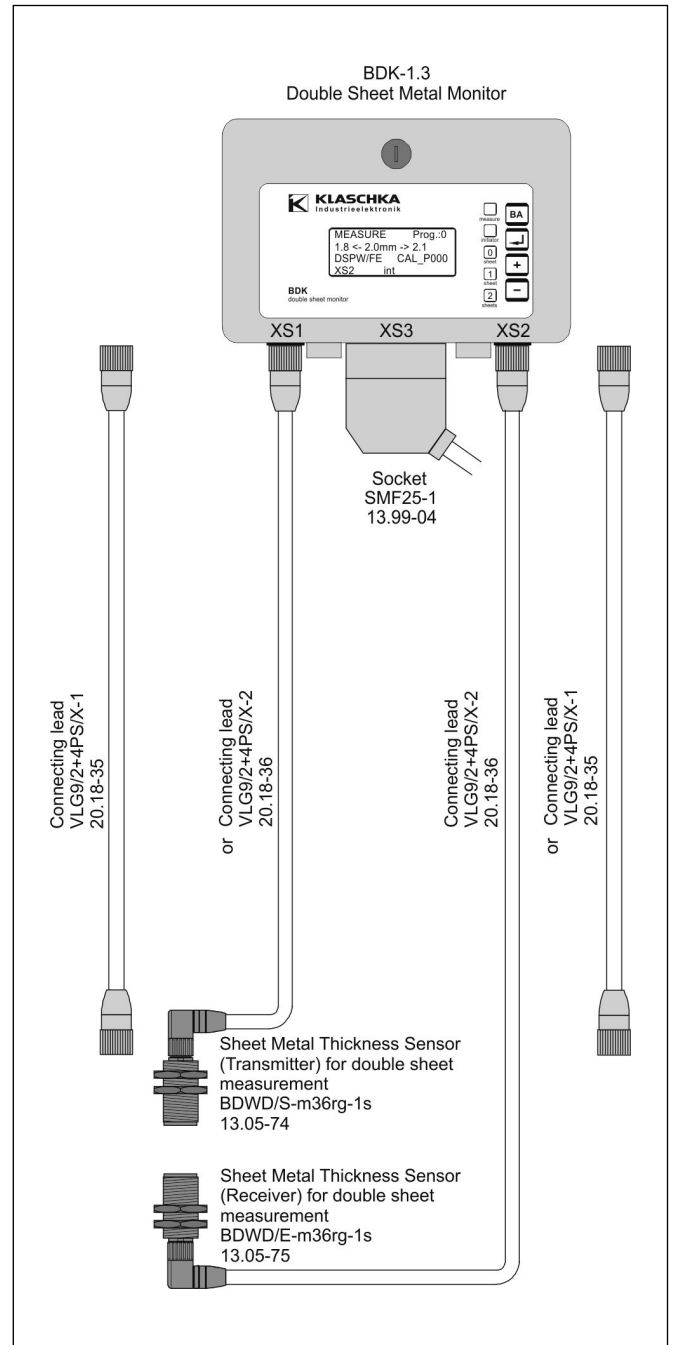
The connectors are mounted straight on the monitoring device side and can be straight or angled on the sensor side, as required.

Depending on the installation situations, the lead with the straight connector VLG9/2+4PS/X-1 (Ref. no. 20.18-35) can be used instead of the lead with the angled connector VLG9/2+4PS/X-2 (Ref. no. 20.18-36).

#### 13.1. Configuration Example for Sheet Metal Thickness Sensors for Single Surface Monitoring



#### 13.2. Configuration Example for Sheet Metal Thickness Sensors for Double Surface Non-contact Monitoring



## 14. ADD1/2-1.3 T-Coupler

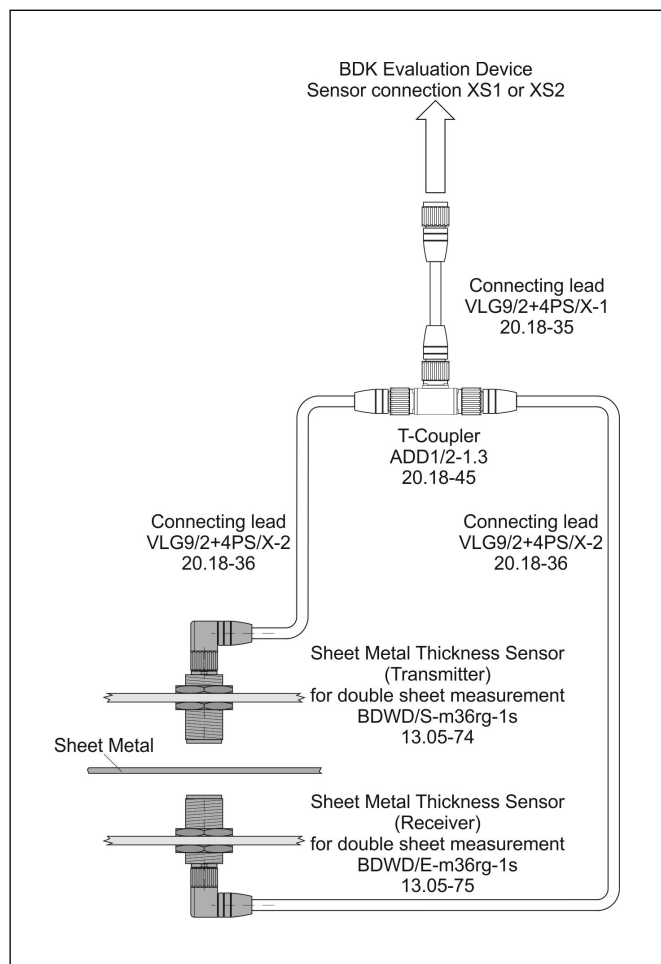
When using the ADD1/2-1.3 T-coupler, two different sensor types can be employed on each (XS1 and XS2) sensor connection of the BDK-1.3 monitoring device.

The selection of the desired sensor or sensor pair on the corresponding connection takes place via default of the accordingly specified program number.

Depending on the installation situations the lead with the straight connector VLG9/2+4PS/X-1 (Ref. no. 20.18-35) can be used instead of the lead with the angled connector VLG9/2+4PS/X-2 (Ref. no. 20.18-36).

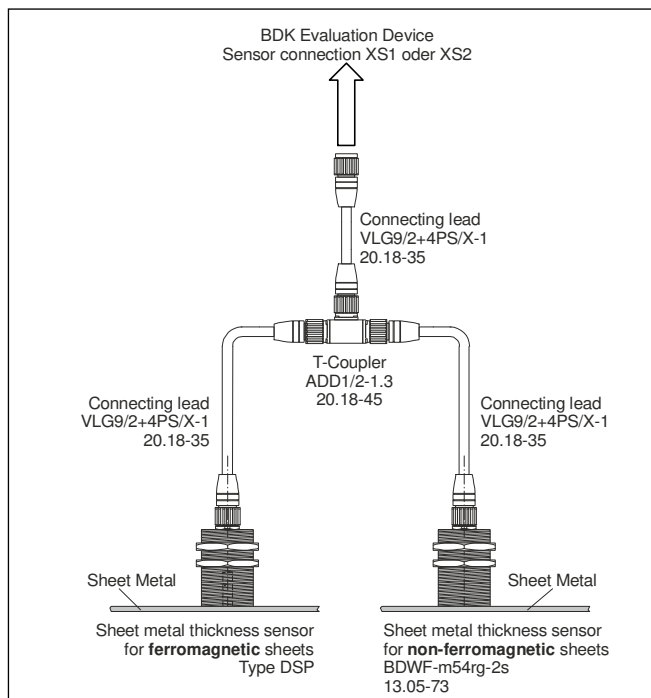
### 14.1. Double Surface Non-contact Monitoring via One Sensor Connection

The ADD1/2-1.3 T-coupling enables the connection of the BDWD/S-m36rg-1s and BDWD/E-m36rg-1s sensor pair to the (XS1 or XS2) sensor connection of the BDK-1.3 monitoring device.



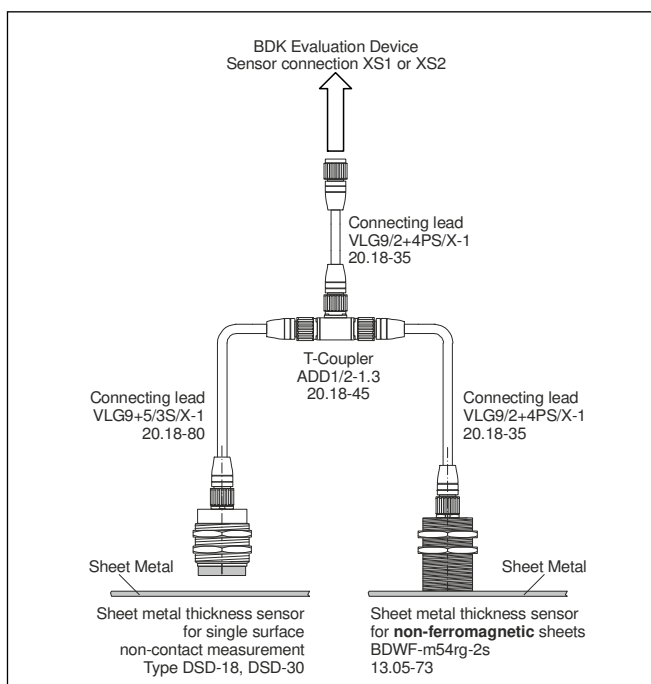
### 14.2. Single Surface Contact Monitoring of Ferrous (Fe) and Non-ferrous (NE) Sheet Metals via One Sensor Connection.

The application of the ADD1/2-1.3 T-coupler enables the operation of one sheet metal thickness sensor of the type series DSP for ferrous magnetic sheets and of one BDWF-m54rg-2s sheet metal thickness sensor for non-ferrous magnetic sheets on one (XS1 or XS2) sensor connection.



### 14.3. Single Surface Non-contact Monitoring of Ferrous Sheets (Fe) and Contact Monitoring of Non-ferrous Sheets (NE) via One Sensor Connection

The application of the ADD1/2-1.3 T-Coupler enables the operation of one sheet metal thickness sensor of the type series DSD for non-contact measurement of ferrous magnetic sheets and one BDWF-m54rg-2s sheet metal thickness sensor for contact measurement of non-ferrous magnetic sheets on one (XS1 or XS2) sensor connection.



(regarding 14.2 and 14.3) Instead of the BDWF-m54rg-2s sensor, either a DSPW-42sg-1s or a DSPW-54sg-1s can be connected. (contact monitoring of Fe- and NE-sheets).

## 15. BDIW Sensor Switch

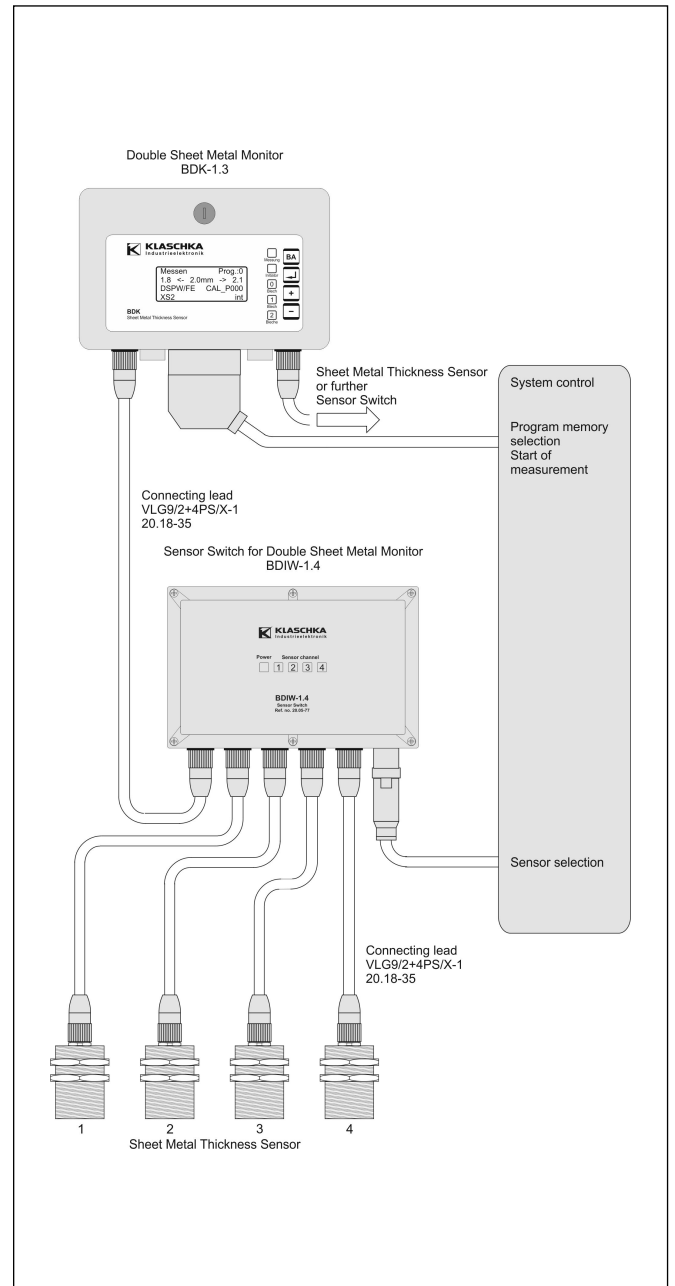
With the operation of BDK Double Sheet Metal Monitors it often occurs that one monitor has to be connected to different sheet metal thickness sensors. This is, for example, the case when working with very different sheet thicknesses and materials at one press or when measuring at different points of material supply.

With the two equivalent sensor connections XS1 and XS2 as well as the use of the ADD1/2-1.3 T-coupler, the monitoring device disposes of a lot of possibilities for the connection of further sensors. The BDIW sensor switch allows to operate up to 4 additional sensors via each of the XS1 or XS2 sensor connections of the BDK-1.3 monitoring device.

Please find more details in description KB 20.05-77.

### 15.1. Example

Application of max. 2 Sensor-Switches BDIW with each max. 4 Sensors



## 18. Order Data (designation / ref. no.)

### 18.1. Evaluation Devices

<b>BDK-1.3 (Relay outputs)</b>	<b>20.05-80</b>
<b>BDK/OB-1.3 (Semi-conductor relay outputs)</b>	<b>20.21-01</b>
<b>BDK/FS-1.3 (InterBus - S)</b>	<b>20.05-81</b>
<b>BDK/FP-1.3 (PROFIBUS DP)</b>	<b>20.05-82</b>
<b>BDK/PN-1.3 (PROFINET IO)</b>	<b>20.05-93</b>

### 18.2 Sheet Metal Thickness Sensors for single-surface contact measurement

<b>DSPW-42sg-1s</b> for Fe sheets up to 3.0 mm / NE sheets up to 2.0 mm, thread M42 x 1.5 - For using the DSPW-42sg-1s sensor, the evaluation device has to be equipped with software version E118 (January 2014) or higher.	<b>13.05-66</b>
<b>DSPW-54sg-1s</b> for Fe sheets up to 3.5 mm / NE sheets up to 2.5 mm, thread M54 x 0.75	<b>13.05-67</b>
<b>BDWF-m54rg-2s</b> for NE sheets up to 5.5 mm, thread M54 x 0.75	<b>13.05-73</b>
<b>DSP-36sg-1s</b> for Fe sheets up to 1.5 mm, thread M36 x 1.5	<b>13.05-86</b>
<b>DSP-42sg-1s</b> for Fe sheets up to 2.5 mm, thread M42 x 1.5	<b>13.05-87</b>
<b>DSP-54sg-1s</b> for Fe sheets up to 3.5 mm, thread M54 x 0.75	<b>13.05-89</b>
<b>DSP-75sg-1s</b> for Fe sheets up to 5.5 mm, thread M75 x 1.5	<b>13.05-90</b>

### 18.3 Sheet Metal Thickness Sensors for double-surface non-contact measurement

<b>BDWD/S-m36rg-1s (transmitter)</b> for Fe sheets up to 3.0 mm / NE sheets up to 6.0 mm, thread M36 x 1.5	<b>13.05-74</b>
<b>BDWD/E-m36rg-1s (receiver)</b> for Fe sheets up to 3.0 / NE sheets up to 6.0 mm, thread M36 x 1.5	<b>13.05-75</b>
<b>BDWD/S-60aq30-1Y1 (transmitter)</b> for Fe sheets up to 3.0 / NE sheets up to 6.0 mm, rectangular housing 60x60 mm	<b>13.05-76</b>
<b>BDWD/E-60aq30-1Y1 (receiver)</b> for Fe sheets up to 3.0 / NE sheets up to 6.0 mm, rectangular housing 60x60 mm	<b>13.05-77</b>

### 18.4 Sheet Metal Thickness Sensors for single-surface non-contact measurement

<b>DSD-18mg61n0,5/3-1Sd1</b> for Fe sheets up to 3.0 mm for Fe sheets up to 3.5 mm with software version F119 (Au- gust 2014) or higher for NE sheets (depends on sheet type, on demand), thread M18 x 1	<b>13.05-91</b>
<b>DSD-30mg74n3/6.5-1Sd1</b> for Fe sheets up to 6.5 mm for NE sheets (depends on sheet type, on demand), thread M30 x 1.5 from software version F120 (April 2022).	<b>13.05-94</b>

### 18.5 Connecting Leads and Accessories

All connecting leads are oil-resistant and suitable for drag chains. Please indicate the lead length X when ordering (standard length X = 5 m). The connectors are device-sided straight and sensor-sided optionally straight or angled.

<b>VLG9/2+4PS/X-1</b> Connecting lead BDK <---> sensor, lead socket sensor-sided straight	<b>20.18-35</b>
<b>VLG9/2+4PS/X-2</b> Connecting lead BDK <---> sensor, lead socket sensor-sided angled	<b>20.18-36</b>
<b>VLG9/2+4PS/X-3</b> Extension lead: BDK-lead (VLG) <---> sensor, lead socket sensor-sided straight	<b>20.18-37</b>
<b>VLG9/2+4PS/X-4</b> Extension lead: BDK-lead (VLG) <---> sensor, lead socket sensor-sided angled	<b>20.18-38</b>
<b>VLG9E/2+4PS/X-1</b> Connecting lead BDK and multiple coupling	<b>20.18-39</b>
<b>VLG9E/2+4PS/X-2</b> Connecting lead multiple coupling and sensor, lead socket straight	<b>20.18-40</b>
<b>VLG9E/2+4PS/X-3</b> Connecting lead multiple coupling and sensor, lead socket angled	<b>20.18-41</b>
<b>VLG9+5/3S/X-1</b> Connecting lead BDK <---> DSD-18/DSD-30, lead socket sensor-sided straight	<b>20.18-80</b>
<b>VLG9+5/3S/X-2</b> Connecting lead BDK <---> DSD-18/DSD-30, lead socket sensor-sided angled	<b>20.18-81</b>
<b>ADD1/2-1.3</b> T-Coupler for connecting additional sensors, 1 x pin, 2 x socket	<b>20.18-45</b>
<b>SMF25-1</b> Lead socket for connection of power supply and control leads for devices with parallel interface.	<b>13.99-04</b>
<b>SMF6-3</b> Lead socket for connection of power supply leads for InterBus, PROFIBUS and Profinet devices.	<b>13.99-06</b>

## 18.6 Switch for connecting additional Sensors

**BDIW-1.4** 20.05-77  
Sensor switch for selecting one out of four sensors (BDWF, BDWD, DSP, DSPW, or DSD), Power supply 24 VDC.

### Connecting leads for BDIW-1.4

#### Connecting Leads

All connecting leads are oil-resistant and suitable for drag chains. Please indicate the lead length X when ordering (standard length X = 5 m).

The connectors are device-sided straight and sensor-sided optionally straight or angled.

**VLG9/2+4PS/X-1** 20.18-35  
Connecting lead BDK <---> BDIW and BDIW <---> Sensor connection BDWF, BDWD, DSP, or DSPW, plug sensor-sided straight.

**VLG9/2+4PS/X-2** 20.18-36  
Connecting lead BDIW <---> Sensor connection BDWF, BDWD, DSP, or DSPW, plug sensor-sided angled.

**VLG9+5/3S/X-1** 20.18-80  
Connecting lead BDK <---> DSD-18/DSD-30, lead socket sensor-sided straight

**VLG9+5/3S/X-2** 20.18-81  
Connecting lead BDK <---> DSD-18/DSD-30, lead socket sensor-sided angled

**SPF8-1** 13.99-05  
Lead socket for connecting supply and control leads.

## 18.7 Sensor Bracket for installing Thickness Sensor

**Sensor bracket M42 x 1.5**, spring-mounted, with suction ring, flexible spherical bearing ZBF/FBF42-1 13.99-77

**Sensor bracket M42 x 1.5**, spring-mounted, with bellows ZBF/FBF42-2 13.99-84

**Sensor bracket M54 x 0.75**, spring-mounted, with bellows ZBF/FBF54-1 13.99-69

**Sensor bracket M54 x 0.75**, spring-mounted, with suction ring, flexible spherical bearing ZBF/FBF54-2 13.99-87

## Spare Parts for Sensor Brackets

**Suction cup for sensor bracket M42**  
ZBF/FB42-1 13.99-78

**Bellows for sensor bracket M42**  
ZBF/FB42-2 13.99-85

**Bellows for sensor bracket M54**  
ZBF/FB54-1 13.99-68

**Suction cup for sensor bracket M54**  
ZBF/FB54-2 13.99-88

## 19. Data Backup

**PROPAR/BDK-1** 40.43-33

The software for data storage of the complete parameter set of the evaluation device BDK-1.3 on a PC via the serial interface is available on CD-ROM.

Operating system: MS Win9x, NT4, 2000, XP, WIN7, WIN10.

### 19.1. Connecting lead BDK to PC

**VLG9/4S/X-1** 30.13-25  
Connecting lead BDK <---> data backup PC (RS232, 9 pol. SUBmin D )

We are certified according to DIN EN ISO 9001.

Subject to changes!