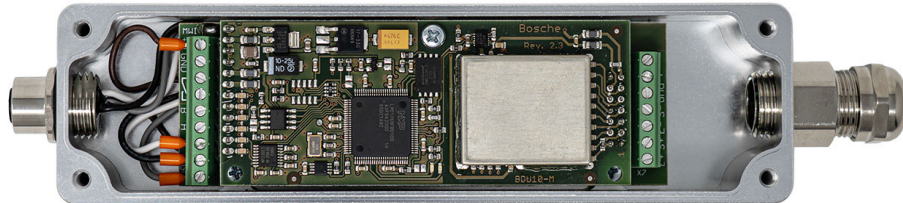
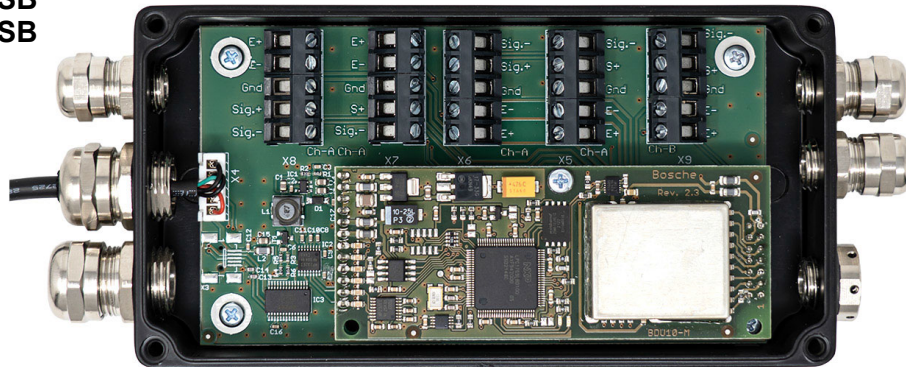


## Digital DMS Measuring Amplifier DBC

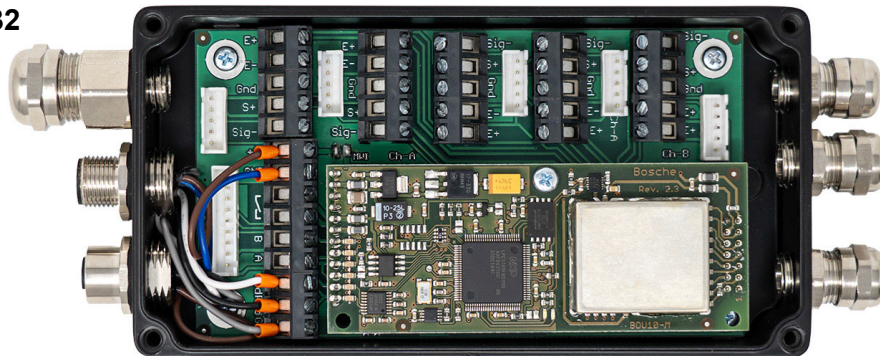
**DBC-11-USB**



**DBC-14-USB\***  
**DBC-44-USB**



**DBC-14-RS232\***  
**DBC-44-RS232**



\* shown

## Operating manual

- Translation of the original -  
(keep for future use)





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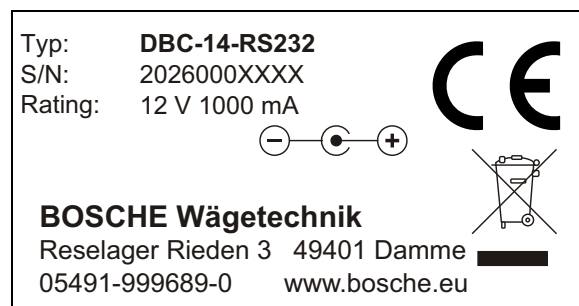
This manual has been created on: 2026-01-12

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### EXAMPLE TYPE PLATE



The type plate is located in the centre of the cable box cover.



## Foreword

These operating instructions provide you with detailed information about the digital DMS measuring amplifier DBC.

These instructions contain safety instructions to guarantee safe use.

The manufacturer strives to improve their products on an ongoing basis. They reserve the right to carry out any and all modifications and improvements that they consider to be necessary. However, this means that there is no obligation to carry out retrospective modifications in this connection.



### **Danger**

**Before using the digital DMS measuring amplifier, you must have read and understood the operating instructions and the safety regulations that they contain.**



### **Note**

Errors and omissions in the documentation reserved. If necessary, please inform the Bosche GmbH & Co. KG of any errors in the documentation. We would also be grateful for any suggestions for improvements that you may have.

The manufacturer's contact data is listed on the reverse of the title page. If you have any queries or problems, please contact the manufacturer without delay.



### **Note**

If you have any questions for Bosche GmbH & Co. KG, please have the serial number to hand.

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## 1 Safety

This chapter warns against possible risks when handling the digital DMS measuring amplifier. The information for detection of risks contained in this chapter is intended to allow a safe and correct operation.



**It is important to read and adhere to this operating manual and particularly this chapter prior to operating this digital DMS measuring amplifier.**

### 1.1 For your safety

#### 1.1.1 General

In addition to safety information, the operating manual includes:

- A general product description
- Information about installation and connection of the digital DMS measuring amplifier
- Instructions to operate the digital DMS measuring amplifier
- Maintenance and care instructions
- Troubleshooting and remedy instructions
- Technical data

Always keep this operating manual and additional documents for your personnel at hand in the direct vicinity of the digital DMS measuring amplifier.

#### 1.1.2 Safety symbols in this manual

The following symbols are used on all important positions in this manual. Particularly observe these notes and treat very carefully.



##### **Danger**

**This note indicates the danger of injuries and/or danger to life, if specific behaviour rules are not observed.**

**When this symbol appears in the operating manual, please take all required safety measures.**



##### **Attention**

This note warns against damage to assets as well as financial disadvantages and responsibility under criminal law (e.g. loss of the warranty, cases of third party risks, etc.).



##### **Note**

Important notes and information about efficient, economic and environmental friendly handling are specified here.

## 1.2 Intended use

The digital DMS measuring amplifier DBC converts the analogue output signals of the connected load cells into a digital weight value.

Any further use is considered as not in accordance with the intended use. The manufacturer does not assume any liability for resulting damage.

The intended use also includes:

- Observance of all notes, information, instructions contained in the documentation as well as in all manuals supplied by the manufacturer,
- Adherence of the maintenance and service conditions and intervals prescribed by the manufacturer and
- Observance of technical data.

Adhere to the attendant accident prevention regulations as well as other generally approved technical safety rules.

## 1.3 Liability and warranty

The BOSCHE company offers a restricted warranty for components, which became faulty due to strain or material faults. The warranty starts with the date of delivery. The BOSCHE company retains the right to repair or replace components. Repair work executed during the warranty period will not extend the period of warranty. The warranty becomes null and void:

- In the event of incorrect use / use other than the intended use or incorrect installation
- Incorrect electric connection
- Use of an incorrect or non-licensed analogue / digital converter
- Non-observance of the specifications in the operating manual
- Conversion, modification or opening of the digital DMS measuring amplifier.
- Unintentional or mechanical damage and damage caused by media, liquids, natural wear.

## 2 Technical Data

	DBC-11	DBC-14 / DBC- 44
Operating temperature	0°C - 40 °C	
Relative air humidity	max. 80 % (non-condensing)	
Power supply (external)	9 - 30 V DC	
Calibration	Extern	
Max. resolution	intern 1/1.000.000	
Housing	Aluminium	
Dimensions without screw connection (B x L x H) in mm	170 x 46 x 35	152 x 79 x 35
Weight	approx. 320 g	approx. 450 g
Protection class	IP 65	
Interface RS 232	RS-232 Bi-directional	
Interface RS 485	available on request	
Load cell sensitivity	2 mV/V ~ 3 mV/V	
Number of load cells	1 load cell min. 90 Ω	<b>DBC-14:</b> Up to 4 load cells á 350 Ω or 8 pieces á 1000 Ω. <b>DBC- 44:</b> Up to 4 load cells min. á 90 Ω.

2.1 Construction



**Note**

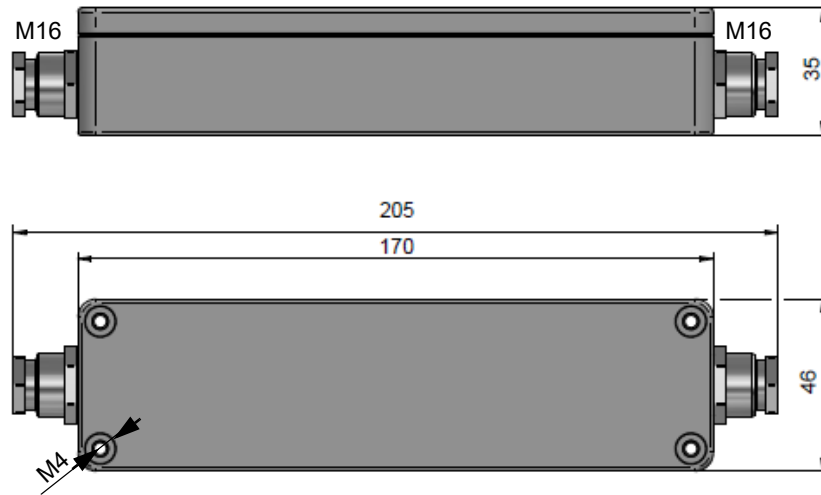
To close/open the cable box, you need a 3 mm allen key, the tightening torque is 2.5 Nm.



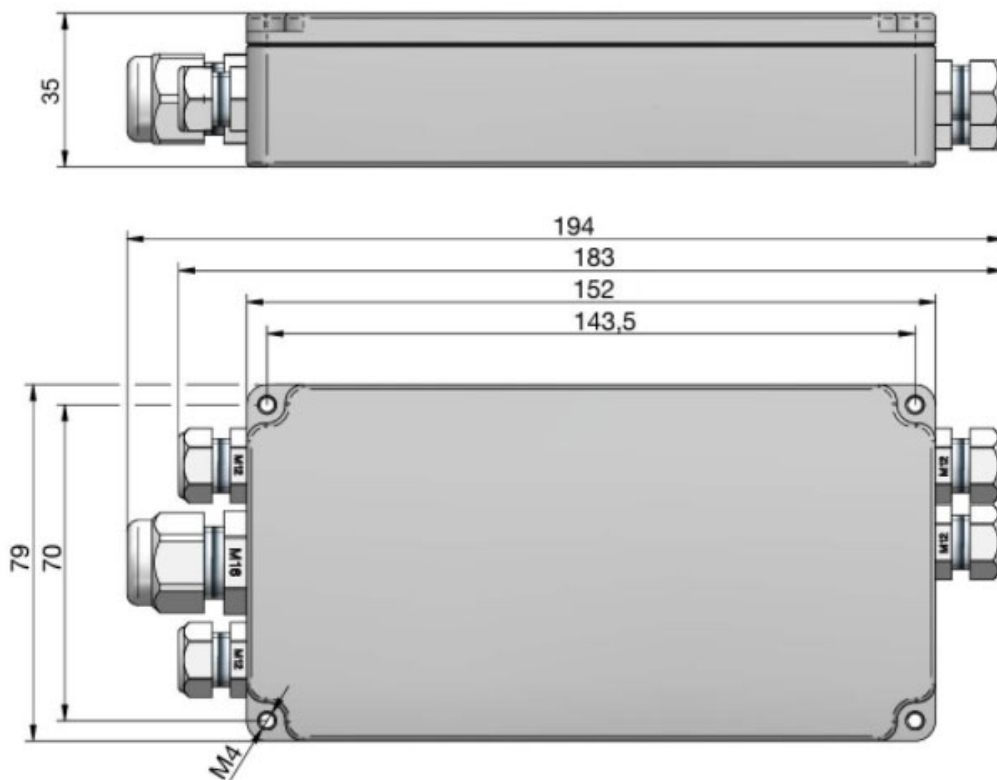
**Note**

You will need a 19 mm and a 24 mm open-end spanner for the cable glands.

2.1.1 DBC-11

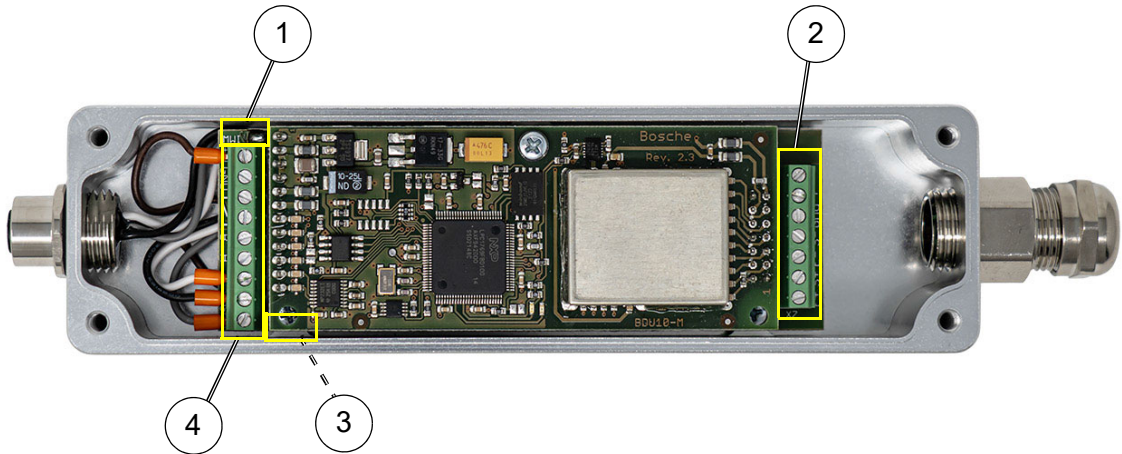


2.1.2 DBC-14 / DBC-44



2.2 Connections

2.2.1 DBC-11-USB



Pos.	Description
1	MWI - soldering jumper
2	Load cell connections
3	RS 485 terminating resistor - soldering jumper (not shown)
4	Power supply, data transfer

**Power supply, data transfer**

- 1. UB+            -> 9 - 30 V DC
- 2. GND           -> Ground
- 3. TA            -> Connection of an external key for taring the scale
- 4. TA            -> Connection of an external key for taring the scale
- 5. A              -> 2-wire RS 485
- 6. B              -> 2-wire RS 4856.
- 7. TXD           -> Data transfer to the PC
- 8. RXD           -> Receiving data from the PC
- 9. GND           -> Ground for data transfer

**Load cell connections**

- 1. E+ --> EXC + (Supply voltage cell 5V DC)
- 2. S+ --> Sense +
- 3. E- --> EXC - (Supply voltage cell 5V DC)
- 4. S- --> Sense -
- 5. Gnd --> Ground
- 6. + --> Signal +
- 5. - --> Signal -

**MWI - soldering jumper (voltage supply of the cells)**

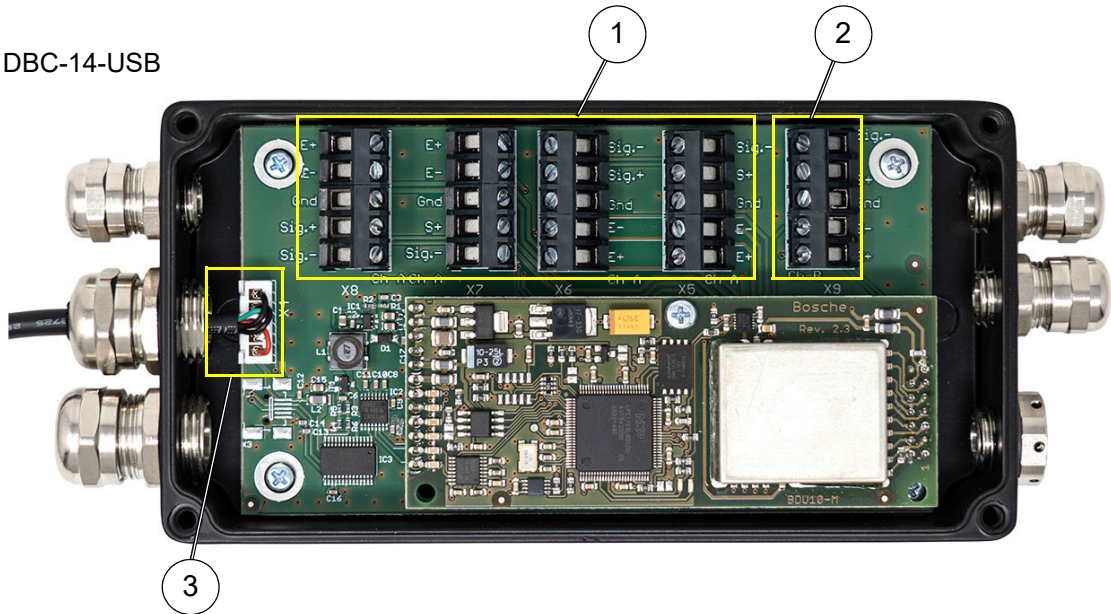
Is the digital DMS measuring amplifier DBC connected directly to an MWI / MCI / EWI, or via USB, the MWI soldering jumper must be closed. The MWI soldering jumper is open with external voltage supply.

**RS 485 terminating resistor - soldering jumper**

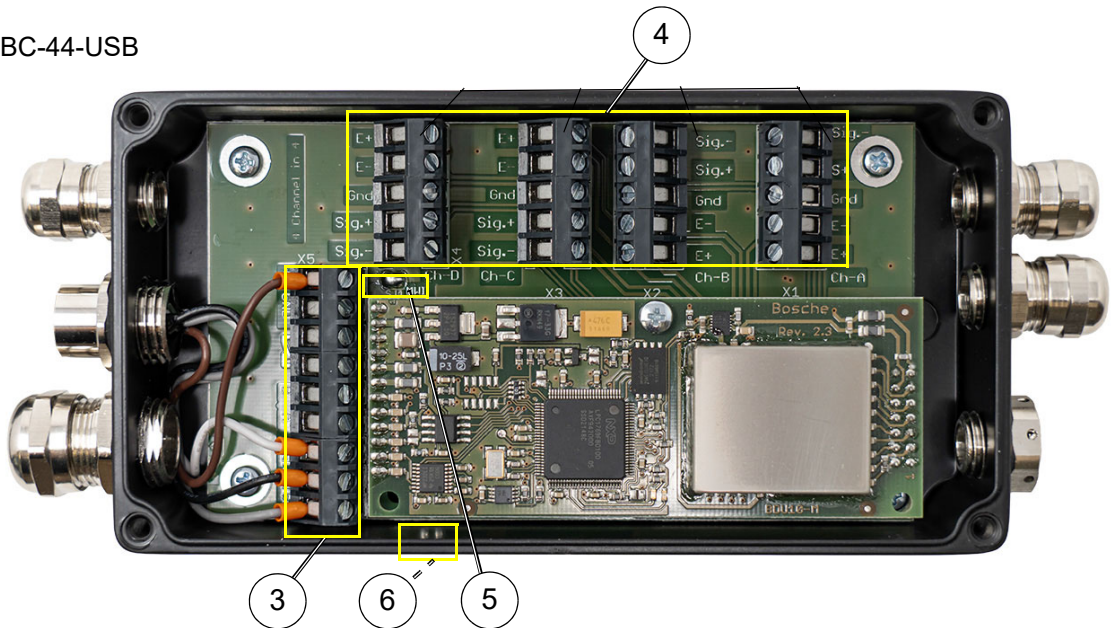
The RS-485 terminating resistor - soldering jumper is used to connect a 120  $\Omega$  resistor for the existing RS 485 interface, if required. By default, this soldering jumper is open on all DBC-11 boards.

2.2.2 DBC-14 / DBC-44

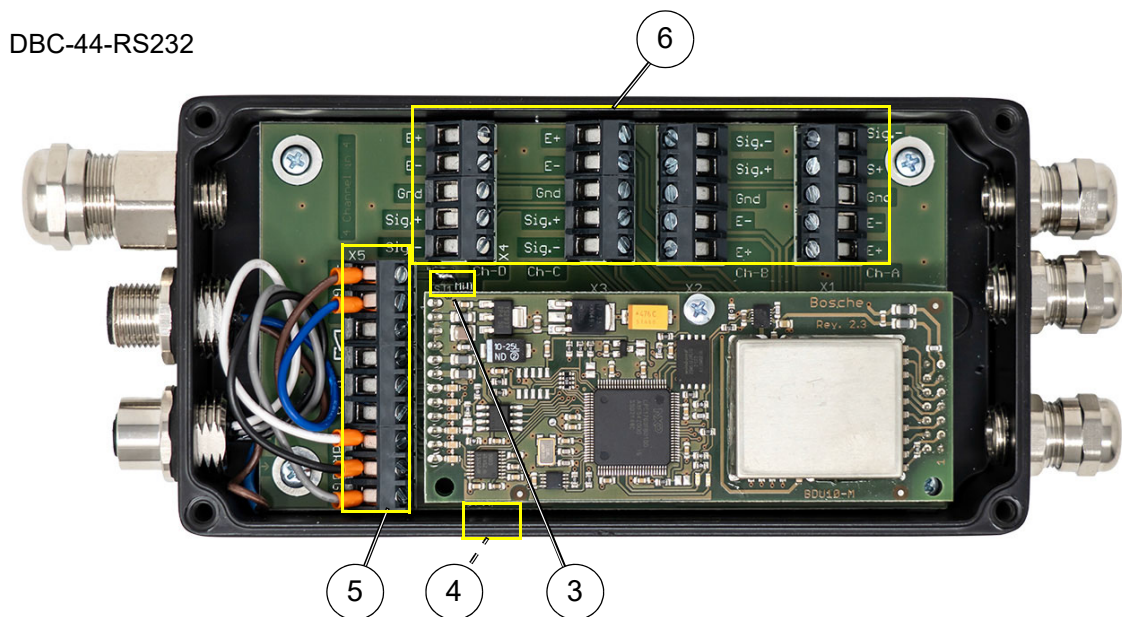
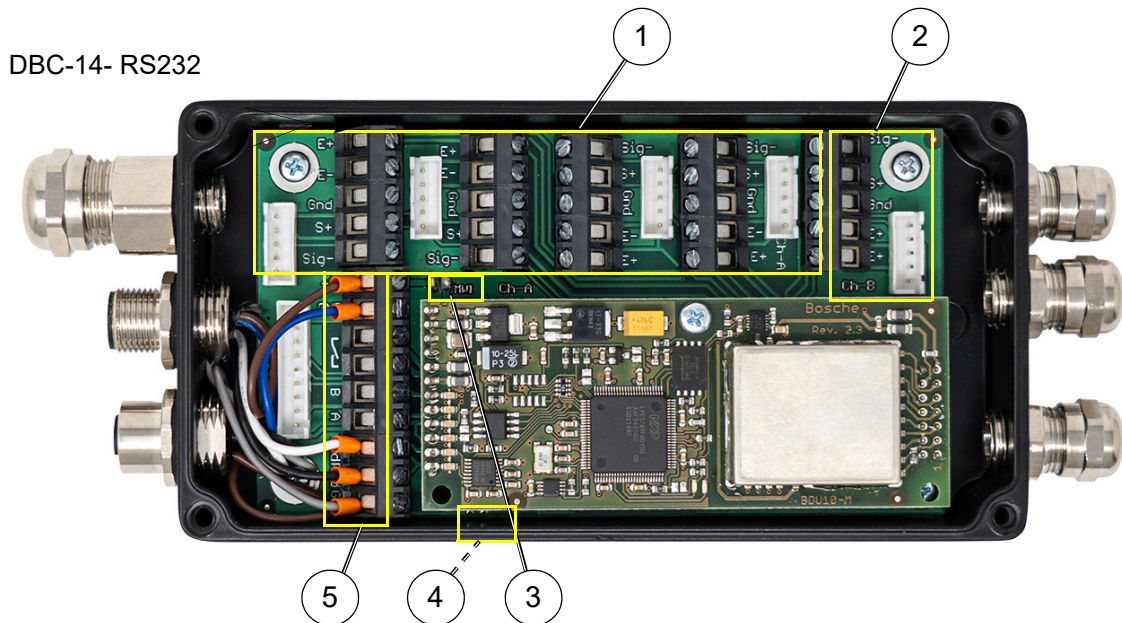
DBC-14-USB



DBC-44-USB

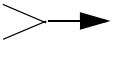


Pos.	Description
1	Load cell connections on channel A
2	Load cell connections on channel B
3	Power supply, data transfer
4	Load cell connections each on one channel A/B/C/D
5	MWI - soldering jumper
6	RS 485 terminating resistor - soldering jumper (not shown)



Pos.	Description
1	Load cell connections on channel A
2	Load cell connections on channel B
3	MWI - soldering jumper
4	RS 485 terminating resistor - soldering jumper (not shown)
5	Power supply, data transfer
6	Load cell connections each on one channel A/B/C/D

**Power supply, data transfer**

1. UB+           -> 9 - 30 V DC
2. GND           -> Ground
3. TA            -> Connection of an external key for taring the scale
4. TA            -> 
5. A             -> 2-wire RS 485
6. B             -> 2-wire RS 485
7. TXD          -> Data transfer to the PC
8. RXD          -> Receiving data from the PC
9. GND          -> Ground for data transfer

**Load cell connections**

1. E+ --> EXC + (Supply voltage cell 5V DC)
2. E- --> EXC - (Supply voltage cell 5V DC)
3. Gnd --> Ground/shield
4. Sig+ --> Signal +
5. Sig- --> Signal -

**MWI - soldering jumper (voltage supply of the cells)**

Is the digital DMS measuring amplifier DBC connected directly to an MWI / MCI / EWI, or via USB, the MWI soldering jumper must be closed. The MWI soldering jumper is open with external voltage supply.

**RS 485 terminating resistor - soldering jumper**

The RS-485 terminating resistor - soldering jumper is used to connect a 120  $\Omega$  resistor for the existing RS 485 interface, if required. By default, this soldering jumper is open on all DBC-14/-44 boards.

### 3 Installation



#### Note

For configuring and parameterising the evaluation electronics:

Standard interface RS 232:

56000 baud, data bits 8, stop bit 1, no parity

Standard interface RS 485:

115000 baud, data bits 8, stop bit 1, no parity

#### 3.1 Connecting the board

- Loosen the housing screws and place the cover aside.
- Now insert the cables of the scale as well as the data cable through the cable glands into the housing.
- Then screw the cable gland so that the cable will not release in light train from the gland.
- Now connect the individual wires to the board.

##### Load cell connections DBC-11-USB

1. E+ --> EXC + (Supply voltage cell 5V DC)
2. S+ --> Sense +
3. E- --> EXC - (Supply voltage cell 5V DC)
4. S- --> Sense-
5. Gnd --> Ground
6. + --> Signal +
7. - --> Signal -

##### Load cell connections DBC-14/-44 USB

1. E+ --> EXC + (Supply voltage cell 5V DC)
2. E- --> EXC - (Supply voltage cell 5V DC)
3. Gnd --> Ground
4. Sig+ --> Signal +
5. Sig - --> Signal -

Bosche load cells have the following standard wire allocation:

EXC +	-->	red
EXC -	-->	black
Signal +	-->	green
Signal -	-->	white
Shielding	-->	purple/blue/yellow



#### Note

If you are using load cells from other manufacturers, please refer to the cable assignment from the data sheets of the load cell.

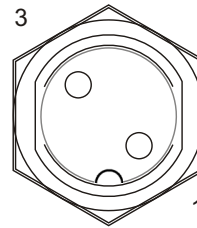
**3.2 Connections DBC-14/- 44 RS 232**

**3.2.1 Power supply**

**Pin assignment socket (A-coded):**

- 1. +V
- 3. GND

Voltage range: 12 - 24 VDC



**3.3 Interfaces DBC-14/- 44 RS 232**

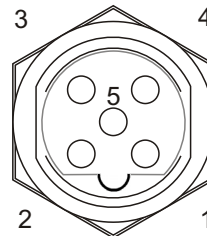
**3.3.1 USB to RS 232 connection cable**

This interface is used to connect the digital DMS measuring amplifier to a PC via USB.

5-pin socket connection for interface RS232

**Pin assignment socket (B-coded):**

- 1. NX
- 2. TxD (Transmitted Data from PC)
- 3. NC
- 4. RxD (Received Data from PC)
- 5. GND (Ground)



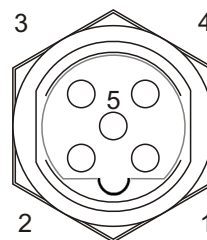
**3.3.2 RS 232**

This interface is used to connect the digital DMS measuring amplifier to a PC or a printer. When a printer is connected, the weighing result is printed in the selected weighing unit.

5-pin socket connection for interface RS232

**Pin assignment socket (B-coded):**

- 1. NX
- 2. TxD (Transmitted Data from PC)
- 3. NC
- 4. RxD (Received Data from PC)
- 5. GND (Ground)



**3.3.3 RS 485 optional**

**3.4 Calibrating the scale with LPC commands**



**Note**

Please refer to the separate operating instructions for the "Bosche LPC Scale" software.

## 4 Maintenance, care, disposal

### 4.1 Cleaning

**Attention**

Do not use aggressive cleaning agents.

- Before cleaning, please disconnect the unit from the operating voltage.
- Remove dust and other soiling with a moistened cloth.
- Wipe all surfaces with a dry, soft cloth after use.

**Note**

Please observe the cleaning instructions for protection class IP 65.

### 4.2 Disposal

Disposal of packaging and equipment must be carried out by the operator according to valid national or regional law of the user location.

## 5 Declaration of Conformity



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<b>EU-Konformitätserklärung</b> Declaration of conformity • Déclaration de conformité Conformiteitsverklaring • Declaración de conformidad	
<b>Typ / Modell</b> Type / Model • Modèle Model • Tipo / Modelo	<b>Digitaler DMS-Messverstärker DBC</b> Digital DMS measuring amplifier • Amplificateur de mesure numérique DMS • Digitale DMS-meetverstärker • Amplificador de medición digital DMS
<b>Seriennummer siehe Typenschild.</b> For the serial number, see the nameplate. • Pour le numéro de série, voir la plaque signalétique. Voor het serienummer, zie het typeplaatje. • Para el número de serie, consulte la placa de identificación.	
<b>Hersteller</b> Manufacturer • Fabricant Fabrikant • Fabrikante	<b>Bosche GmbH &amp; Co. KG</b>

**Die alleinige Verantwortung für die Ausstellung trägt der Hersteller.**

The sole responsibility for the issue carries the manufacturer. • La seule responsabilité de l'exposition porte le fabricant. • De verantwoordelijkheid voor de uitgifte draagt de fabrikant. • El único responsable de la publicación lleva el fabricante.

**Der oben genannte Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union:**

The above-mentioned object of the declaration complies with the relevant harmonization legislation of the Union • L'objet de la déclaration susmentionné est conforme à la législation d'harmonisation pertinente de l'Union • Het bovengenoemde voorwerp van de verklaring voldoet aan de relevante harmonisatiewetgeving van de Unie • El objeto de la declaración mencionado anteriormente cumple con la legislación de armonización pertinente de la Unión

<b>2014/30/EU</b> <b>EMV-Richtlinie</b> EMC Directive	<b>EN IEC 61326-1:2021</b> <b>EN IEC 61326-2-3:2021</b> <b>EN IEC 61000-6-3:2021</b> <b>EN IEC 61000-6-1:2019</b>
<b>2011/65/EU RoHS</b>	<b>EN IEC 63000:2018</b>

Unterzeichnet für und im Namen von Bosche:

Damme, 15.02.2023

**Dipl. Ing. Jarmila Bosche, PhD.**  
**Geschäftsführer • Managing Director**  
 Directeur général • Directeur • Director general

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