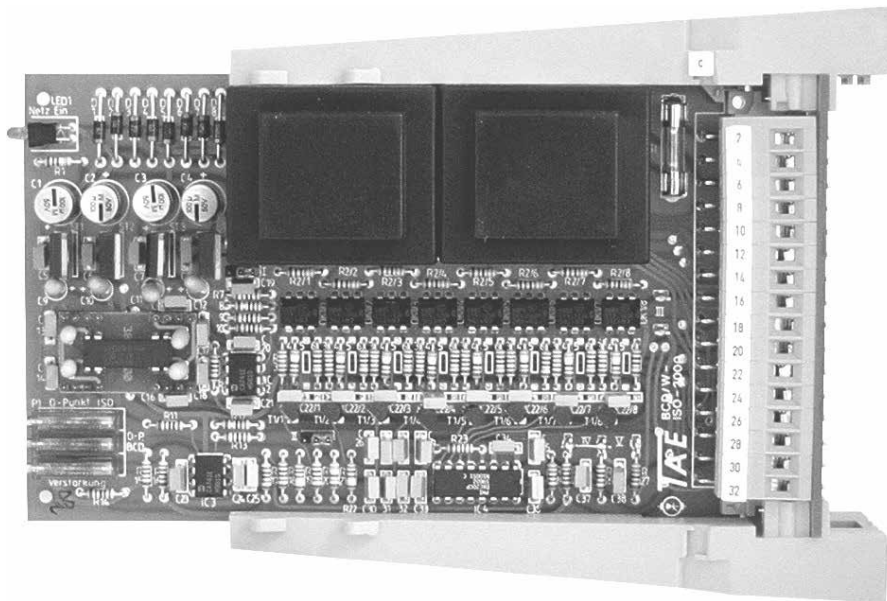


BCD/W ISO 2000

Instruction & Operating Manual



Caution:

As with any form of electrical equipment, there is always a risk involved in the handling of electrical machinery. The greatest care must always be exercised during installation and maintenance, and it is recommended this be carried out by authorized personnel.

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About This Instruction Manual

If you look for some definite topic you can use the table of contents at the beginning of these instruction and operation manual. In these instructions is a row of symbols which shall provide you with a fast orientation and show the importants.

1. Instructions of Safety



Notes and useful informations which shall make the operation easier.
Before you put the device into operation, please read this instruction and operation manual completely. The operation should only be done by qualified personnel.
The precautions and warnings below must be observed at the operation of the device.



Caution - Danger !
Note, disregard means a danger for the operator
Disconnect unit from mains before making any repairs. After the installation make sure that the unit and motor is properly grounded in order to avoid electrical hazzards. Do not connect or disconnect the device when it has power.

1.1 Instructions and Rules

These guidelines for installation have been compiled with regard to the following standards:

EN 60204-1 (VDE 0113: 1992-1)	Electrical equipment for machines
EN 60529:1991 (VDE 0470 Part 1)	Protection by frame
DIN EN 50178 (VDE 0160-1994-11)	Electronic equipment to be used in electrical power installations
DIN VDE 0100	Erection of power installations with nominal voltage up to 1000 V
DIN VDE 0110	Dimensioning of clearances and creepage distances
DIN 40050 (IP-International Protections)	
EN 50081/50082	EMC general rules

Low Voltage Directive

Referring to article 2 only those devices may be introduced which meet "the state of safety technique in the community".

Using a QM system, TAE is watching all steps from development to production of the device. So all norms and directives can be fulfilled referring to this aspect of safety.

Improper installation can lead to exceeding the maximum limits of EMC and to a malfunction of devices of other manufacturers.

DIN EN-50178 (VDE 0160:1994-11)	Electronic equipment for use in Electrical Power installations
DIN VDE 0100	Erection of Power Installations
DIN VDE 0110	Dimensioning of Clearance and Creepage distances
DIN 40050	IP-International Protections
DIN 50081/50082	EMC Basic Standards

1.2 Norms and Directives

Declaration of manufacturer

EMC directive

The EMC directive of November 9th 1992 concerning the electromagnetic compatibility with reference to the EMC directive EMCD 89/336/EEG is a national law. This directive distinguishes between two criteria: Product components and product distribution.

According to these criteria, our products are classified as follows:

- Product components: Parts from suppliers which are inoperative on their own.
- Product distribution: Not commonly available, sold to qualified persons.

The law states that an EC-declaration of conformity, as well as a CE-marking, is not required for such components.

In order to meet the requirements of the EMC-directive we supply the following:

- Product-related documents which describe the interference radiation of our products. This information will enable the user to provide all necessary steps to meet the EMC-requirements during planning and installation.
- EMC-specific components such as filters, chokes, shielded wiring, metal enclosures and others are available from TAE. TAE will furthermore provide specific technical information concerning the proper use of such components for their products in order to meet the requirements of the harmonized standards.

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It is the users responsibility to carry out our instructions and to use adequate provisions. The user is also responsible that his machine and installation meets the requirements of the EMC-standards.

Based on the EMC directive and its corresponding standards, we have carried out extensive measurements at our premises. These tests have included our complete product line. With the use of filters and proper wiring all our products meet the requirements of standard EN 50081-2 (sweep radiation) and standard EN 55011 class A for industrial use.

1.3 TAE-Products and EMC

Special boards, are all devices which not direct control drives

this means:

- all measuring devices of the DMI-series and the frequency measuring device FM 2000
- Power supplies e.g. SN 8350, amplifier-, rated valueboards
- dancer boards e.g. SN 8802
- Synchronous boards e.g. SD 81/L1
- Control boards
- Converter e.g. SN 9103 f/U-converter
- Supervisor- and voltage indicator boards, e.g. V2000
- Signal insulation e.g. SN 9524 ISO-board, BCD W-ISO
- Digit-Master DGM 2000

Our measuring amount to that, the above mentioned devices meet the requirements of the standard EN 50081-1 and 50081-2 without filters and specific wiring.

2. Technical data



The unit consists of a Digital-Analogue-Converter. All inputs are protected by optocouplers and additional potential-separation is provided by the use of an ISO-Chip (Optical coupled linear isolation amplifier).

The analogue output signal of the D/A-Converter is available before and after this ISO-Chip.

Supply Voltage	230VAC 50/60Hz. (Special voltage on request)
Ext. Supply for BCD-Pre-selection	22-30 VDC
Accuracy	Maximum deviation 0,2%
Maximum Output Voltage	10 Volt
Maximum Output Current	2 mA
Ambient temperature	0-40°C
Dimensions	Refer to chapter 6.0

Further information on enquiry

3. Terminals



a2,c2	Supply connection L1
a6,c6	Supply connection N
a8, 10, 12, 14	BCD-Input 4 Bit (Factor 10)
c8, 10, 12, 14	BCD-Input 4 Bit (Factor 1)
a16, c16	Common connection for BCD-Input
a20	Analog Input before ISO-Chip (without D/A-Converter) 0-10 V analog
a26	+24 Volt before ISO Chip
a28	-24 Volt before ISO Chip
a30	+15Volt before ISO Chip
a32	-15 Volt before ISO Chip
c26	+24 Volt after ISO Chip
c28	-24 Volt after ISO Chip
c30	+15 Volt after ISO Chip
c32	-15 Volt after ISO Chip
a24	Common before ISO Chip
a22	Output before ISO Chip
c24	Common after ISO Chip
c22	Output after ISO-Chip (polarity depends on the poosition of Jumper I).

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4. Function

When the supply voltage is connected LED 1 (green) "Netz ein" (Power On) will light up. After a warm-up time of approximately 2 minutes the unit is ready to operate with an accuracy of less than 0.2%.

The jumpers and soldering jumpers should be placed according to the individual requirements:

- I:** Determines the output-polarity during the BCD-operation
 - a: Output negative (-)
 - b: Output positive (+) (factory adjustment)
- II:**
 - a: Output voltage is multiplied by 10^{-2}
 - b: Output voltage is multiplied by 1 (factory adjustment)
- III:** If the internal supply voltage of 24 V (terminal a26) is used for the BCD-Pre-selection Jumper III must be used for the common connection.
- IV,V:** With the soldering jumpers IV and V you can obtain between an internal reference voltage (IV) an external reference voltage (V) source voltage (0-10 V) for the D/A-Converter.



NOTE !

if an external reference voltage is applied then terminal a24 must be used as common connectionpoint.

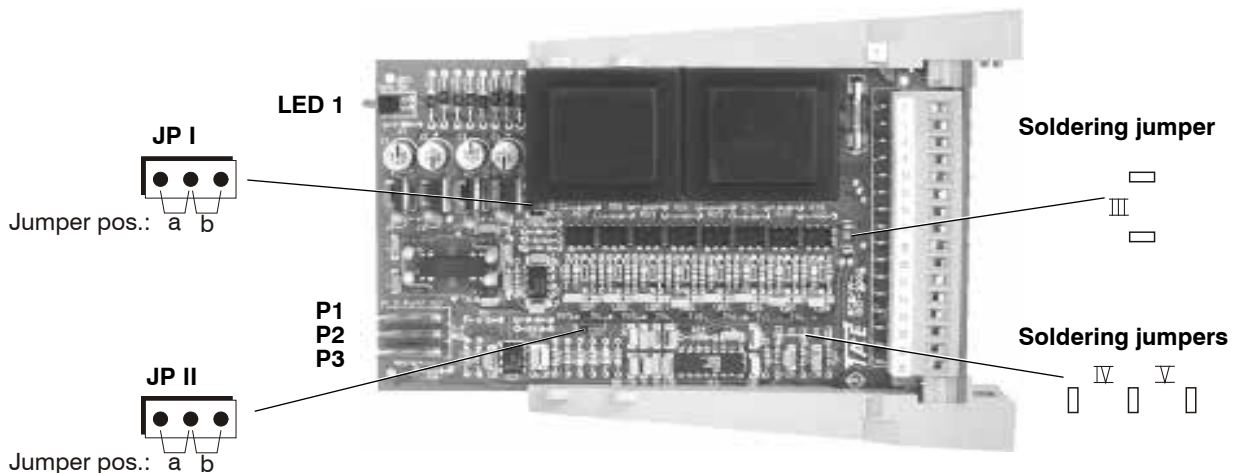
Adjust now the BCD-Input.

The potentiometers P1 and P2 are factory adjusted and sealed.

Now a suitable 8 Bit or 4 Bit signal is induced to the inputs and potentiometer P3 is adjusted for the requested output voltage.

Terminal a20: This terminal permits an analogue input before the ISO-Chip.
A rated analogue value which is applied to this terminal is therefore galvanically separated from the line supply. Maximum input voltage: 10V.

4.1 Layout



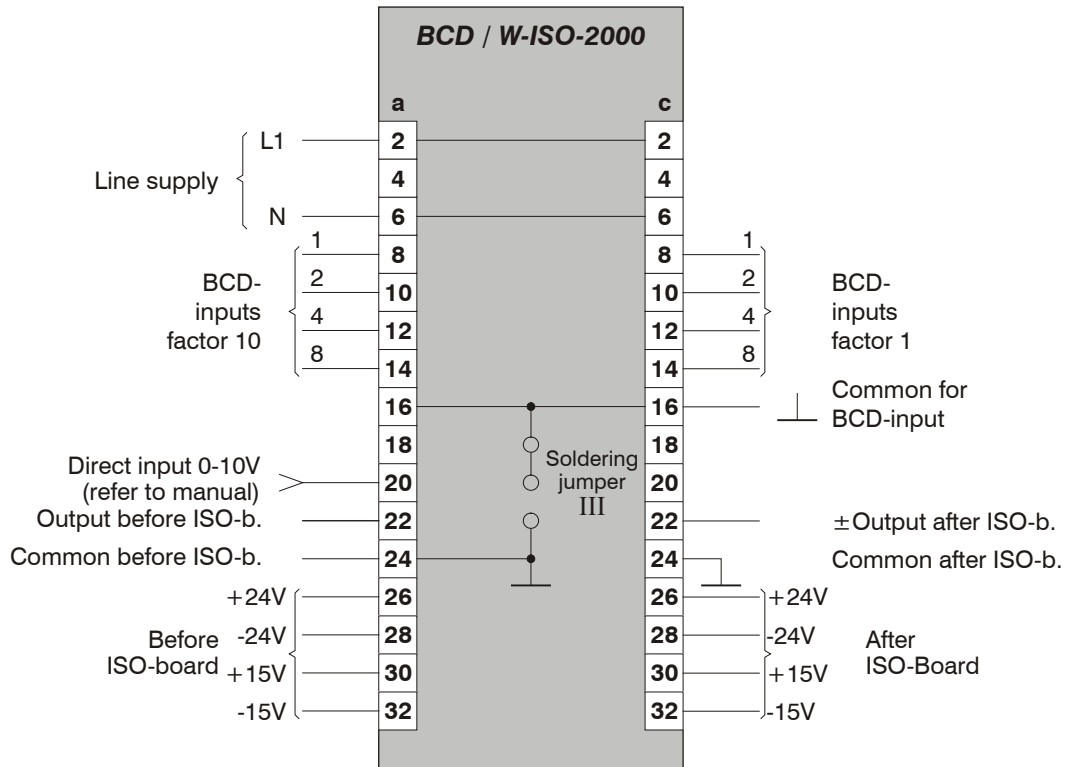
Note:

After production all devices are checked and were being ran a 200 hours continuous test. Before delivering the devices are checked again. By this procedure we want to ensure that only flaw less devices are delivered.

In normal case there are no failures expected if the drive has been adjusted correctly and the issues of the operating manual have been followed.

If, in spite of this, a failure occurs, get in contact with one of our agents or contact us directly.

5. Connections



6. Dimensions

