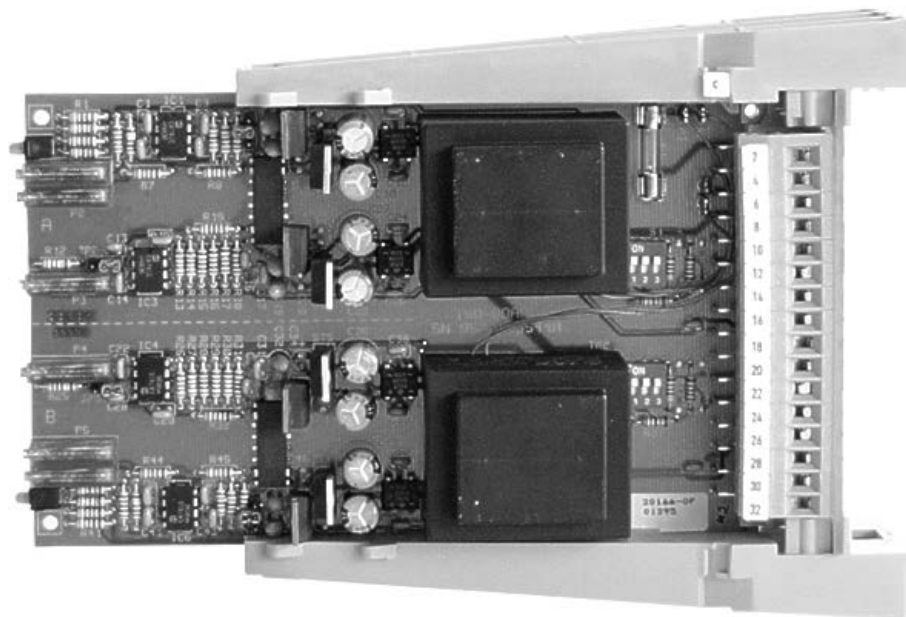


SN9524A

SN9544A

Instruction & Operating Manual

valid for art.-no.. 20165F, 20166 F, 20185 F, 20186 F



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.

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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:

- Productrelated 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.

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.

SN9524A & SN9544A

2. Technical data



With the plug-in-boards SN9544A and SN9524A voltages from 0-500V or currents from 0-20mA can be transformed into voltages from 0-10V and will be galvanically separated from circuit.

The ISO-Board SN9544A consists of two galvanically separated ISO-Amplifiers.

The ISO-Board SN9524A consists of one ISO-Amplifier.

The insulation between input and output is 1 kV.

Supply voltage	230VAC 50/60Hz.
Voltage inputs	±500VDC max.
Optional current inputs	±0 res. 4-20mA
Outputs	±0-10VDC
Ambient temperature	0-40°C
Dimensions	refer to chapter 8.0

3. Terminals of the SN9544A and SN9524A



2a/c - 6a/c Line input (refer to name plate)
 12a/c - 14a/c Input I ±0-500V, 14a/c Δ common input (M1)
 18a - 18c Output I ±0-10V, 18c Δ common output (M2)

Only SN9544A:

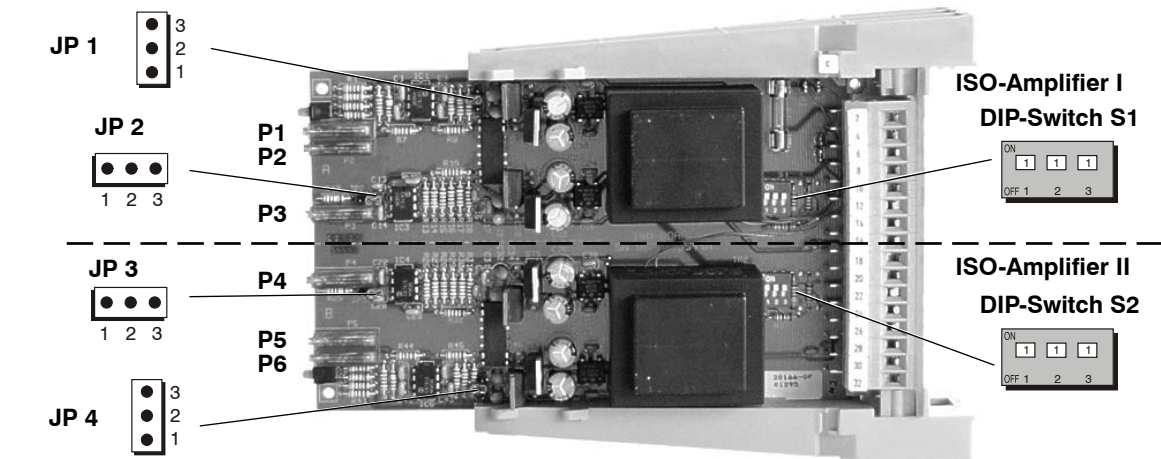
22a/c - 24a/c Input II ±0-500V 24a/c Δ common input (M3)
 28a - 28c Output II ±0-10V 28c Δ common output (M4)

If your input or output signals are grounded, then this potential is also on the inputs, outputs and jumpers.

4. Jumper



For an input current of 4-20 mA and output voltage of 0-10V the jumper (JP1/JP4) has to be set on the pins 1 + 2. For -4 mA the jumper has to be set on the pins 3 + 2. With the jumper (JP2/JP3) the output polarity can be changed.



Factory adjustment:
 polarity input Δ output

5. Potentiometer settings



- P1 - P3** ISO Amplifier I
- P4 - P6** ISO Amplifier II
- P1/P6** Amplification
Caution: The output voltage must not exceed 10V.
- P2/P5** Zero-point input amplifier
This potentiometer is preset by the manufacturer. It can however be used for a statical voltage addition or subtraction.
- P3/P4** Zero-point ISO-Chip
This potentiometer is preset and sealed by the manufacturer.

6. Function and operation

6.1 Iso amplifier with voltage inputs (Art.-No.: 20165-0F and 20166-0F)



The input must be adapted to the requested input voltage by proper setting of the DIP-switch.
Refer to the table se below.
After this the maximum input voltage has to be connected. Measure the output voltage and adjust potentiometer (Amplification) for a maximum output voltage of 10V.

Table

The DIP-switch setting for different input voltages. Adjustment with potentiometer (amplification)

Ue	DIP 1	DIP 2	DIP 3	Ua
490V	0	0	0	10V
440V	0	0	X	10V
270V	0	X	X	10V
170V	X	0	X	10V
10V	X	X	X	10V

X= ON
0= OFF

6.2 Iso amplifier with current inputs (Art.-No.: 20185-0F and 20186-0F)

6.2.1 Input 0-20 mA:

Factory adjustment: 20mA \pm 10V
Output deviate output voltages from 0-10V can be adjusted with potentiometer P1/P6.

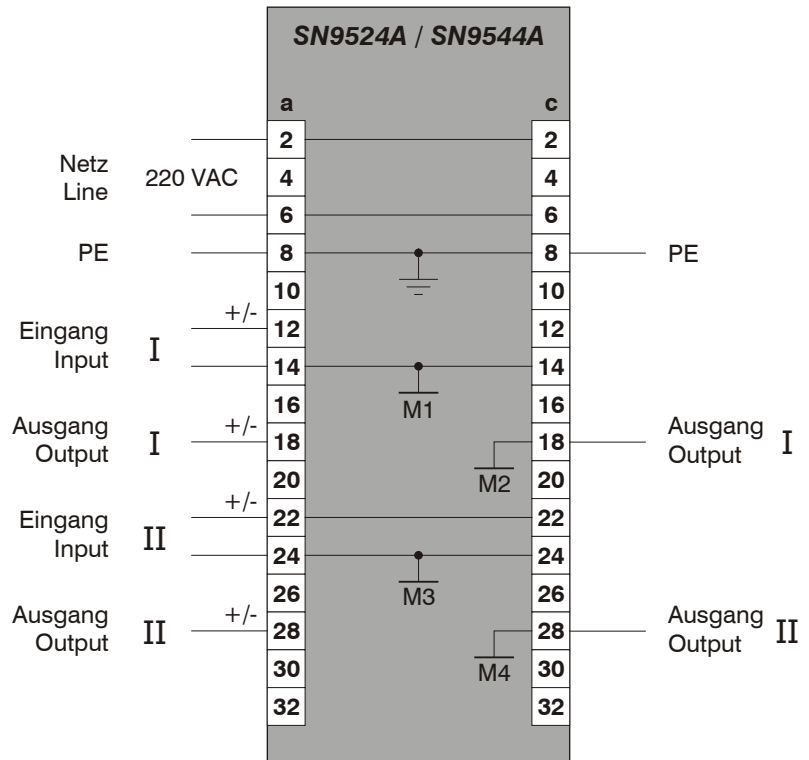
6.2.2 Input 4 - 20 mA:

1. realize 16 mA on the input and adjust the output voltage 10V with Potentiometer P1/P6.
2. Jumper settings refer to point 4.
3. Connect 4 mA and adjust the output voltage to 0 volt with potentiometer P2/P5.

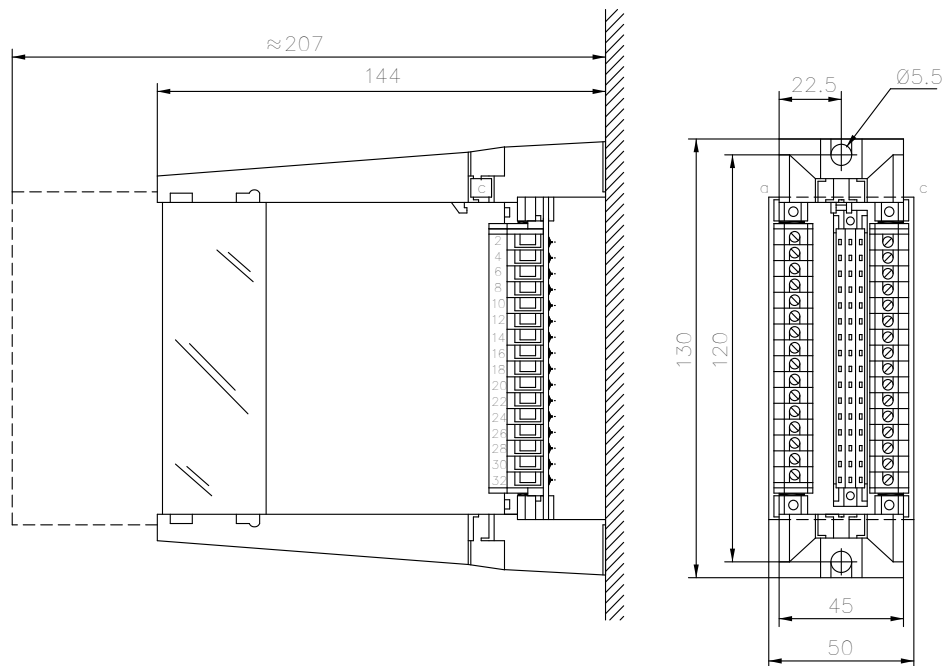
SN9524A & SN9544A

7. Connections

Output: 0 - 10V
 Input: 0 - max. 500V
 Art.-Nr.: 20165-0F
 Art.-Nr.: 20166-0F
 Input: 0 / 4-20 mA
 Art.-Nr.: 20185-0F
 Art.-Nr.: 20186-0F



8. Dimensions



9. Wiring diagram

