

# High-Voltage Contactors

Kiepe HzS

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## Introduction

Kiepe Elektrik took over the production of the HzS high-voltage contactors from the former AEG in 1993.

Since then, these contactors have been manufactured in accordance with the original AEG documents. This brochure reproduces the contents of the last AEG published leaflet (A 3411.5.2/0789-862).

## Description

In modern passenger coaches, much of the equipment is operated with electric energy. Heating, ventilation, air-conditioning, lighting, door control, etc. are some of the components which consume electric energy.

Heating and air-conditioning have the highest power requirements. These are supplied with high voltage by the train line from the locomotive. This leads to the demand for high voltage switching devices for a large number of tasks.

Contactors of different switching frequencies are needed for the regulation of the heating circuits depending on the type of heating.

For convection and hot-water heating, contactors with small switching frequencies are sufficient, whereas contactors of higher switching frequencies are necessary for air heating and air-conditioning units.

If DC-voltage is switched it is necessary to observe the correct polarity of the connection of the high voltage.

Depending on how the vehicles are used, the installations are constructed as single or multi-voltage installations. Accordingly, the contactors are designed for the following kinds of UIC-stipulated electricity and nominal voltages:

AC 1~16 $\frac{2}{3}$ Hz	1000 V
AC 1~50 Hz	1500 V
DC	1500 V
DC	3000 V

The following designs are available:

### For 1 Million Operations

Type HzS 3000.100

The HzS 3000.100 contactor's design corresponds to the isolation group D in accordance with VDE 0110 for DC 3000 V. The HzS 3000.100 contactor consists of two contact systems positioned

next to each other. These are driven via an axis by a shared magnet. The two contacts are connected in series.

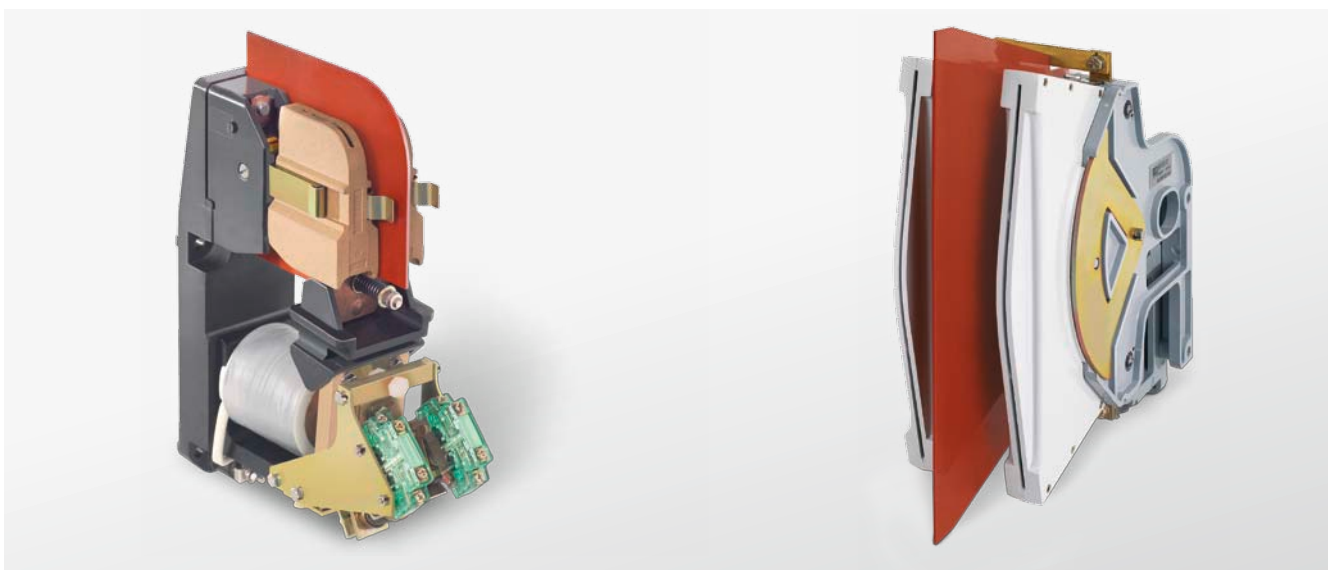
### For 10 Million Operations

Type HzS 1000.63 S  
HzS 4000.16 S  
HzS 4000.50 S

The contactor's designs of this series correspond to the insulation group D in accordance with VDE 0110 for AC 1500 V (HzS 1000.63 S) and DC 3000 V (HzS 4000.16 S and HzS 4000.50 S).

The contactors are operated by hinged armature solenoids. For the limitation of excess voltage when switching off, the solenoid is equipped with a voltage suppressor element. Therefore it is necessary to observe the correct polarity of the connection of the control voltage.

If the contactors are set up next to each other, partitions are to be planned between them.



HzS 1000.63S

HzS 3000.100

Technical data				
Type	HzS 1000.63S	HzS 4000.16S	HzS 4000.50S	HzS 3000.100
<b>Switching Element</b>				
Main contact (normally open contact)	1	1	1	1
Rated insulation voltage $U_i$ (VDE 0110 / group D)	AC 1.5 kV	DC 3 kV	DC 3 kV	DC 3 kV
Rated thermal current $I_{th}$	80 A	40 A	80 A	125 A
<b>Rated Breaking Capacities</b>				
Resistive Load				
AC 16 2/3 Hz	1000 V	63 A	16 A	50 A
AC 50 Hz	1500 V	40 A	10.7 A	33.4 A
DC	1500 V	-	10.7 A	33.4 A
DC	3000 V	-	5.3 A	16.7 A
Switching category DC 4/5	750 V	-	10 A	25 A
<b>Auxiliary Switch <sup>1)</sup></b>				
Rated thermal current $I_{th}$	10 A			
Rated breaking capacities <sup>3)</sup> DC 24 V (DC 110 V)	3 (0.5) A			
<b>Solenoid Coil</b>				
Rated control supply voltage $U_c$ <sup>2)</sup>	DC 24 / 110 V $\pm$ 25%			
Coil suppression	VDR + Diode			
Solenoid coil power consumption	10 W	7 W	12 W	16 W
<b>Other</b>				
Mounting position	vertical as shown in the following dimensional drawing			
Degree of protection	IP00			
Mechanical life expectancy	$10 \times 10^6$	$10 \times 10^6$	$10 \times 10^6$	$1 \times 10^6$
Weight approx.	3.5 kg	3.4 kg	4.1 kg	7 kg

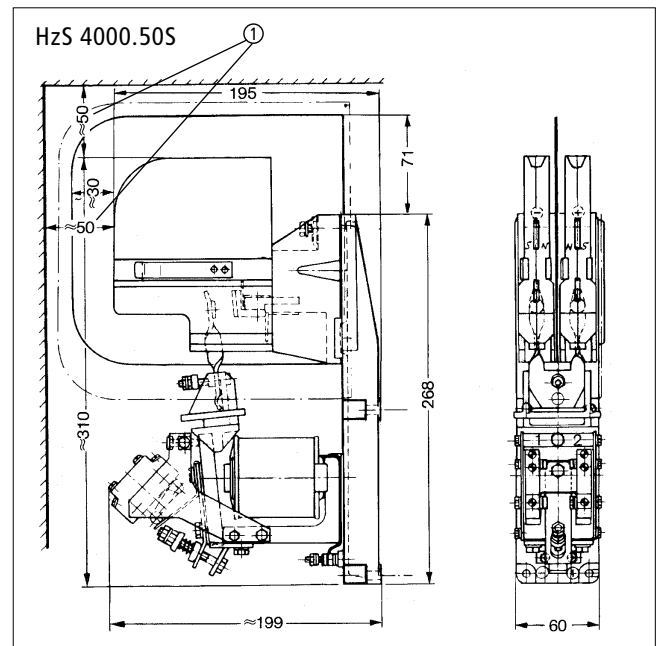
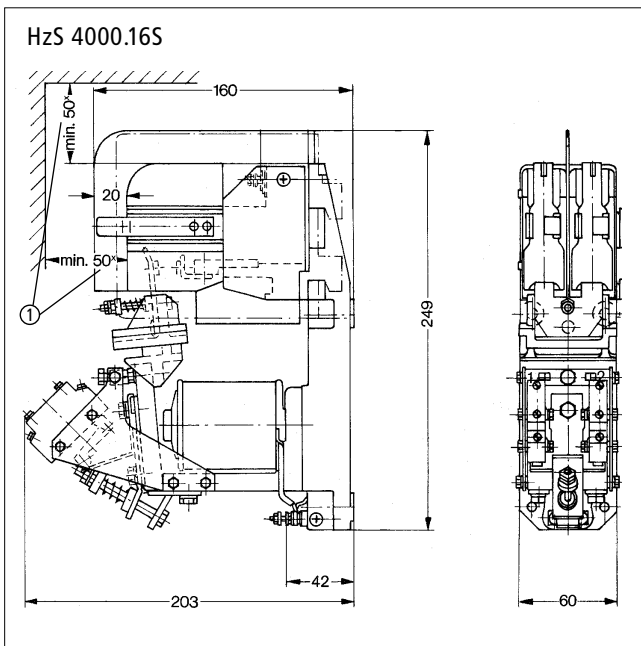
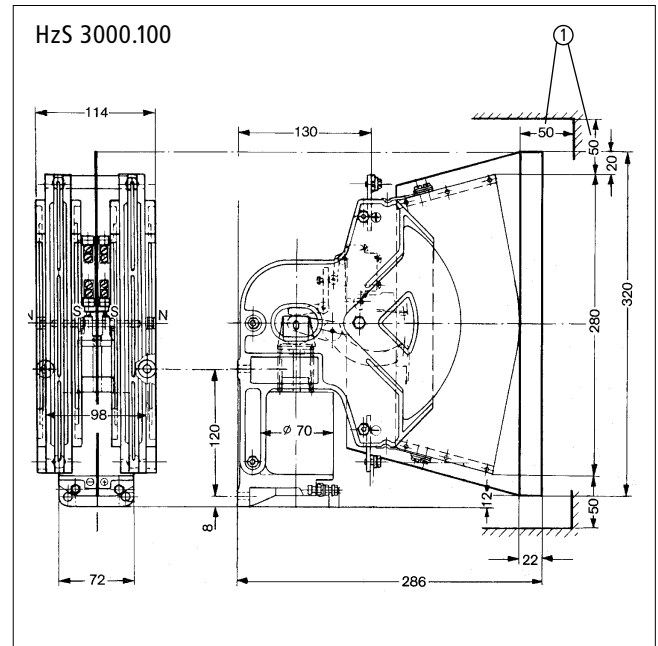
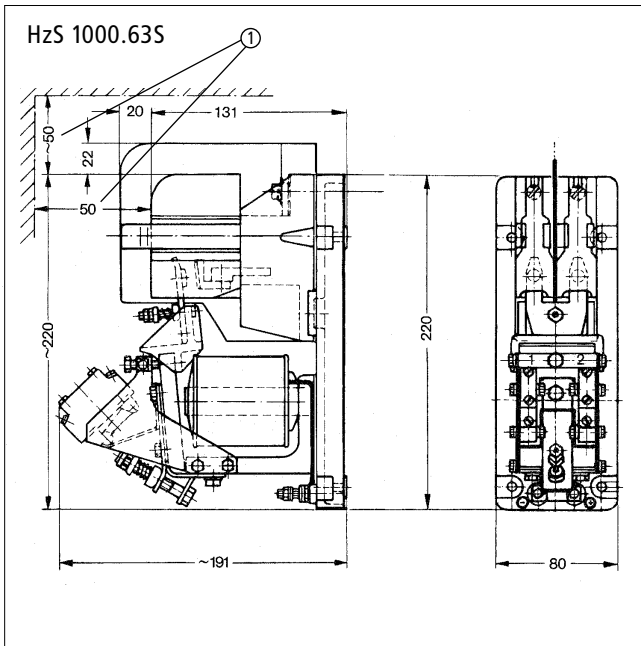
<sup>1)</sup> Please indicate with order, up to 2 x 1NO 1NC possible, <sup>2)</sup> Other voltages on demand, <sup>3)</sup> L/R = 30 ms



HzS 4000.16S

HzS 4000.50S

## Dimensions



① Distance to insulated parts  $\geq 50$  mm and to grounded parts  $\geq 100$  mm

Subject to change without notice

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