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Electrics for rolling stock

Series ZH1500

Disconnecting and
Earthing Device

Catalogue F186.en



more information here:
schaltbau-gmbh.com

ZH1500 Disconnecting and Earthing Device

Safety at work on high voltage devices

Disconnecting and Earthing Devices provide easy disconnecting high voltage equipment from a high voltage bus bar and connect these parts to ground potential to take away all electric energy, which might

rest in capacitors and other components. Our modular Disconnecting and Earthing Devices guarantee working safely on disconnected and grounded high voltage installations.

Features

- Switching coupled to the door:**
 Forced and visible disconnecting of a high voltage installation from a supplying bus bar while opening the door or lid of the equipment.
- Protection against unintended connection:**
 An open door of the Disconnecting and Earthing Device may be fixed by up to three padlocks.
- Modular technology – compact dimensions:**
 A new technology of permanent magnetic treating of the arc enables very compact dimensions. The basic contacts are integrated into one module, which may be delivered with additional earthing contacts to discharge capacitors.

Applications

Series ZH1500

A typical domain of our Disconnecting and Earthing Device is the power supply and power distribution of railway coaches. It is used in environments with single and multiple operating. But also in switch gear cabinets and process control, where high voltage is used, this device is the safety standard.

Our ZH1500 guarantees safety while working on installations, where high voltage requires disconnecting and earthing. These applications are to be found where electricity drives large machines or where high power consumption requires high voltage.

Examples are railway coaches as well as industrial automation and power plants. A ZH1500 is mounted to the wall of a switch gear cabinet and the lever is mounted to the door. Opening the door moves the blades and contacts and disconnecting and earthing is done

Specifications

Series ZH1500



Disconnecting and Earthing Device ZH1500

Specifications				
Maximum breaking capacity Disconnecting contact		250 kW		
Disconnecting contacts	HK	1		
Earthing contacts		Version	Earthing contacts	Add. earthing contacts*
	K1	D2	1	0
	K1, K2	D4	1	1
	K1, K2, K3	D6	1	2
Nominal voltage U_{nom}		according to IEC 60364		
Conventional thermal current I_{th}		150 A		
Breaking capacity, resistive load, $T = 1$ msec Disconnecting contact		150 A	at $U_{nom} = 1.0$ kV AC, $f = 16\frac{2}{3}$ Hz	
		100 A	at $U_{nom} = 1.5$ kV AC, $f = 50$ Hz	
		50 A	at $U_{nom} = 1.5$ kV DC	
		50 A	at $U_{nom} = 3.0$ kV DC	
Earthing contacts		50 A	at $U_{nom} = 3.0$ kV DC	
Blow-out method		Arc chamber, Blow-out (permanent magnet)		
Insulation, Testing voltage		14 kV		
Mechanical endurance, cycles		approx. 1,000 (30 years min.)		
Application range		Single and multisystem rail vehicles		
Temperature range		-40 °C ... +85 °C		
Mounting position		horizontal, vertical (see mounting instructions)		
Shock / vibration resistance		Category 1 class B (EN 61373, Nov. 1999)		
Protection		IP 00		
Pollution degree		PD 3		
Weight		9.9 kg (ZH1500 D2)		
Dimensions (L x H x W)		(145 x 415 x 455) mm		
Termination		Disconnecting contact (ZS, WA) M8 Earthing contacts (PE) M6 Housing (⊕) M6		



* Additional earthing contacts to discharge capacitors

Subject to technical alterations

Mounting instructions, Circuit diagram

Standards

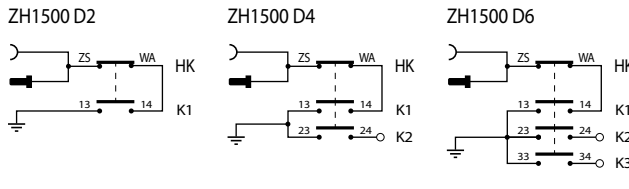
Series ZH1500

Mounting instructions:

May be mounted to left or right wall as well as in bottom of cabinet.
Four elongated holes are provided in both walls and bottom of cabinet.

For a detailed list of all safety, installation and maintenance instructions, download our manual F186-M.en!

Circuit diagram:

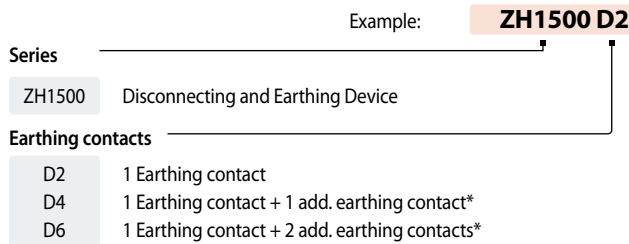


HK Disconnecting contact ZS Train bus bar
K1 Earthing contact WA Vehicle connection
K2, K3 Additional earthing contacts*

- EN 50124: Railway applications - Insulations coordination
Part 1: Clearances and creepage distances for all electrical and electronic equipment
- EN 50153: Railway applications. Rolling stock. Protective provisions relating to electrical hazards.
- IEC 61373: Railway applications – Rolling stock equipment – Shock and vibration tests
- VDE 0115: Railway applications - Rolling stock equipment
Part 1: General construction and safety requirements
Part 2: Protective provisions relating to electrical hazards
Part 102: Supply voltages of traction systems
Part 106: Shock and vibrations tests
Part 107: Basic requirements; clearances and creepage distances
- UIC 550-1: Electrical switch cabinets on passenger stocks
- UIC 550-2: Power supply systems for passenger coaches – Type testing

Ordering code

Series ZH1500

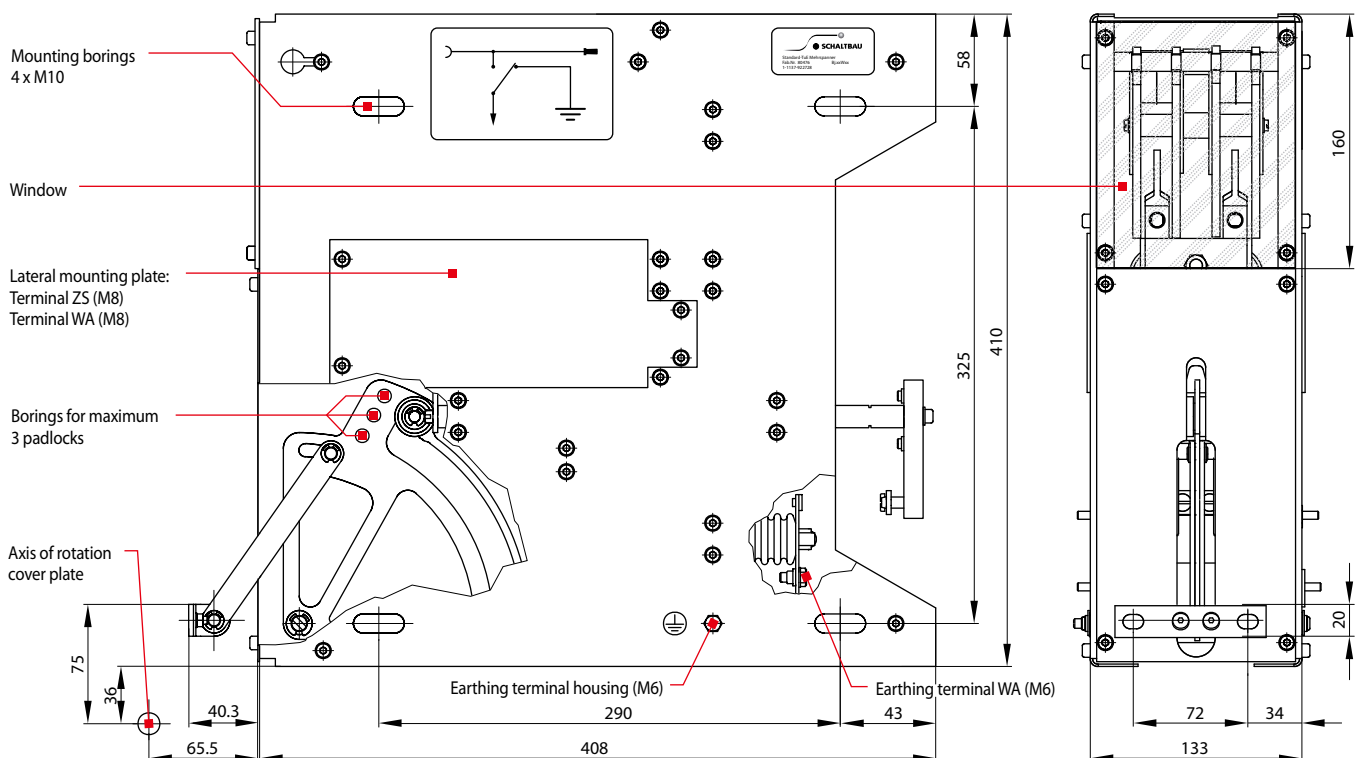


Note:
Only stock items are presented in this catalogue which can be supplied in short delivery time. For some variants minimum order quantities apply. Please ask for conditions.

Special variant:
If you need a special variant, do not hesitate to contact us. Maybe the type of toggle switch assembly you are looking for is among our many special designs. If not, we can also supply customized designs. In this case, however, minimum order quantities apply.

Dimension diagram

Series ZH1500



Schaltbau GmbH

For detailed information on our products and services visit our website – or give us a call!

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with compliments:



Schaltbau GmbH manufactures in compliance with RoHS.



The production facilities of Schaltbau GmbH have been IRIS certified since 2008.



Certified to DIN EN ISO 14001 since 2002. For the most recent certificate visit our website.



Certified to DIN EN ISO 9001 since 1994. For the most recent certificate visit our website.

Electrical Components and Systems for Railway Engineering and Industrial Applications

Connectors

- Connectors manufactured to industry standards
- Connectors to suit the special requirements of communications engineering (MIL connectors)
- Charging connectors for battery-powered machines and systems
- Connectors for railway engineering, including UIC connectors
- Special connectors to suit customer requirements

Snap-action switches

- Snap-action switches with positive opening operation
- Snap-action switches with self-cleaning contacts
- Enabling switches
- Special switches to suit customer requirements

Contactors

- Single and multi-pole DC contactors
- High-voltage AC/DC contactors
- Contactors for battery powered vehicles and power supplies
- Contactors for railway applications
- Terminal bolts and fuse holders
- DC emergency disconnect switches
- Special contactors to suit customer requirements

Electrics for rolling stock

- Equipment for driver's cab
- Equipment for passenger use
- High-voltage switchgear
- High-voltage heaters
- High-voltage roof equipment
- Equipment for electric brakes
- Design and engineering of train electrics to customer requirements