WITT EscS 6 (EKS8)
– Earth Short Circuit Device

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Application

There are dangers with stray currents due to the straight connection to the return conductor with the earthing by a rail system with a DC traction, which need to be prevented. Stray currents could damage buildings, bridges and other metallic (electrically conducting) facilities and parts of them via corrosion. Danger also evolve through improper contact voltage. A temporary short-circuit is one action to protect people against improper contact voltage (DIN EN 50122-1, VDE 0115 part 3).

Description

The WITT EscS 6 (EKS8) is an auto-resetting earth short-circuiting device after DIN VDE 0115 part 300 and part 320. Parameter driven and to survey tension differences between return conductor and the earthing. The Combination of anti-parallel arranged thyristors and a power contactor guaranties a low shuttering time and a high ampacity. This device is built in an especially compact design.

Function

If the set voltage curve is exceeded, the earthing short-circuiting device reacts. That means that if the criteria are fulfilled, the thyristors and the contactor will be ignite at the same time. The thyristors switch in microseconds, the contactors have a shuttering time of about 90 ms. By ignition of the thyristors the tension will collapse to little voltage. The thyristors stay ignited until the closing of the contactor with the help of contactors position of auxiliary contacts will be identified. Afterwards the thyristors will be cleared, and the contactor adopt the load.

Safety

The Witt EscS 6 (EKS8) is built on two channels in its essential modules and has self-test functions. Thereby, malfunctions are very rare and reported directly if they occur.

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General Data

Power supply	230 V WS, Others on demand
Voltage range	-20 ... +10 %
Power consumption	30 VA; 100 VA when switching
Humidity	0 ...95 %, not condensing
External temperature range	-25 ... 55 °C
Protection according to IEC 34	IP 65
Test voltages:	
Control cabinet	7,5 kV WS
All connectors (Ground, Signals, Auxiliary voltages)	min. 1,4 kV GS
Dimension without assembly rails (B x H x T)	300 x 900 x 310 mm

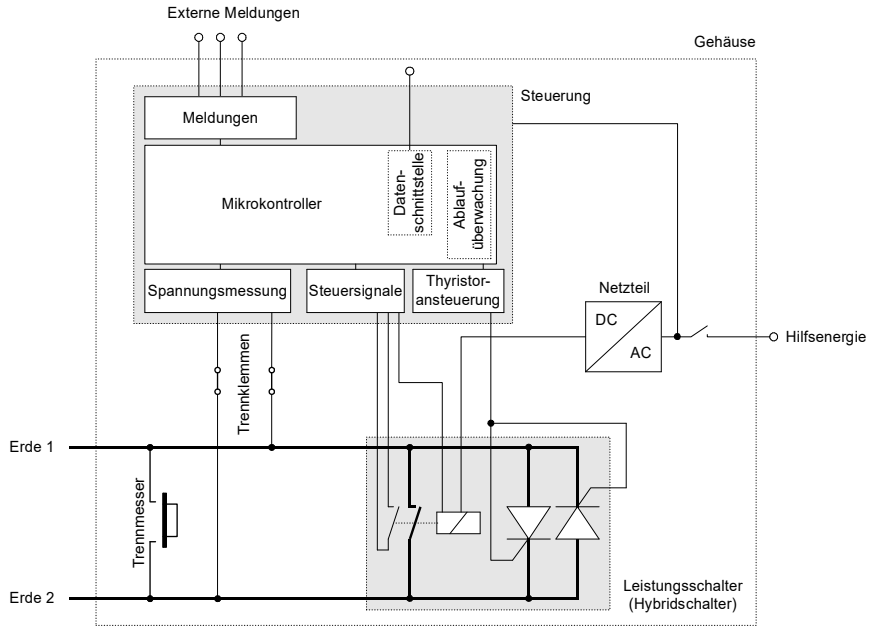
Operating Voltages

Limits for parameter setting	50 ...100 V GS
Accuracy voltage measurements	± 10 V
Tripping time	< 20 ms

Short-circuit currents

1s – current	3.000 A
10s – current	1.000 A
Withstand voltage	min. 1.400 V
Thyristor step (25 msec)	10.000 A

Function diagram



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