

# R/C combination Type 8970

for fault current(FI) - protective switches  
in DC railway power systems in accordance with VÖV 4.33.1

# 8970



## Description

The triggering behaviour of the FI protective switches can be affected by possible compensation DC currents and the earth conductor (PE) and neutral conductor (N) placed at risk.

The German Verband öffentlicher Verkehrsbetriebe (Association of Public Transport Operators), today the Verband Deutscher Verkehrsbetriebe (Association of German Transport Operator)(VDV), has tackled this problem in the VÖV 4.33.1 technical series. The basis was the concluding report of the Wuppertal Technical Academy, »Investigation of protective measures against presence or persistence of excessively high contact voltages in electrical operating systems when different types of current meet.«

FI protective switches (small automatic interrupters) may only be used if the stipulations of VDE 0100, VDE 0115 and VDE 0664 are complied with. In accordance with VDE 0100 Part 410, there must be devices within the system that prevent DC voltages of more than 120 V from arising or persisting between the various earthing systems (see also brochure sheet 8901).

A corresponding R/C combination such as the type 8970 is added to protect the return wire against return currents from the train.

The connection example on the other side of this sheet shows the principle of this function. The 897001 R/C combination complies with the requirements for small FI automatic interrupters with a nominal trigger value of 30 mA for fault current, and the 897002 version has a nominal trigger value of 300 mA.

The R/C combination is completely encapsulated and has 10 mm<sup>2</sup> strands of 1 m in length for connection. The combinations have a snap-type fastener for simpler installation on the carrying rail. See VÖV 4.33.1 for further details and information.



## Technical data

<b>Dimensions</b>	see figure, WxHxD 80x160x53 mm
<b>Housing</b>	Plastic
<b>Attachment</b>	Snap-type socket for standard carrying rail in accordance with DIN EN 50022
<b>Type of protection</b>	IP 67 (cast encapsulation)
<b>R/C combination</b>	
<b>FI trigger value</b>	30 mA (6 µF / 15 kΩ ) → 8970 01 300 mA (60 µF / 1.5 kΩ ) → 8970 02 (values correspond to VÖV 4.33.1)
<b>Connection</b>	Strand 10 mm <sup>2</sup> (2x)
<b>Length</b>	1 m

## Ordering information

Type	Part No.
8970 01	250300
8970 02	250301