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Electrical polarized drainage EPD160

Installation and Operation Instructions

Electrical polarized drainage EPD160 consists of DRN206 module supplemented by fuse and overvoltage protection. DRN206 is transistor-based switch that works as a diode with a very low voltage drop in the forward direction. The module is supplied from an alkaline battery that is partially recharged from the differential voltage.

From electrical safety point of view the electrical polarized drainage is a device with a safe voltage.

Installation

Electrical polarized drainage EPD160 is designed for installation in an electrical switch-board panel, located either in indoor or outdoor environment. There are four monting holes on the main board. Input conductors equipped with cable eyes Φ 8 mm are connected to terminals marked "KOLEJ" ("RAIL") and "POTRUBÍ" ("PIPE").

For the proper cooling a free space of at least 10 cm above the module cooler shall be provided . EPD160 can be installed inside an electrical switchboard panel with minimum dimensions of 300 x 450 x 160 mm with a bottom feeder.

Operation and Maintenance

Maintenance of the device consists of periodical inspection of battery charge, the fuse, overvoltage protection and overall functionality of the device. Inspection interval is specified by the keeper.

By pressing the test button for at least 2 seconds the battery charge will be tested and 5-minute measurement of drainage current will be activated .

If the battery is fully charged the red "BAT" LED lights for 1 second after pressing the button. The lower the voltage of the battery is, the shorter the LED lights. In case of voltage lower than 7.5V the LED is off and the battery is considered flat. The device uses exclusively an alkaline 9-volt battery. The battery is not recharged, service life is up to 5 years depending on operating conditions.

By pressing the test button the green LED "MER" is turned on for the next 5 minutes. That means the drainage current is being measured. After those 5 minutes the green LED goes off and the ammeter will return to value 0, regardless the actual drainage current.

If the drainage current occurs during the measurement, the fuse is also checked. If the current is zero, the fuse should be checked manually by fuse tester or by ohmmeter after disconnecting the fuse disconnector. er.

Overvoltage protection includes mechanical fault indicator . Overvoltage protection fault is indicated by the indicator release. Faulty overvoltage protection shall be immediately replaced by a device with the same parameters. The system uses overvoltage protection 60V 15KA 8/20 μs.

Functionality of EPD160 can be checked by a tester after disconnecting the fuse.. The tester is connected directly to the output of DRN206 module. In case of testing current of 0.1A in the forward direction there should be a voltage drop of 15 to 25 mV. In the reverse direction there should be current of 0.5 to 15 mA using testing voltage of 9V depending on the charge level of battery in EPD160. If a malfunction is detected either the whole EPD160 device or only DRN206 module can be replaced. Disconnected DRN206 module needs to be protected against mechanical damage, especially the bottom side of the circuit. It is recommended to store the module immediately after replacement into its original wrapping.

Technical parameters of EPD160

constant current capacity	160A
maximal reverse voltage	26V
resistance for current of 160A	1.9 mΩ
voltage drop of DRN206 module for low current	20 mV (15 - 25)
battery current supply	3 μA
current measuring accuracy	3 %
operational temperature range	from -20 to +70 ºC
dimensions	253 x 280 x 141 mm
weight	3.5 kg

Type and characteristics of the fuse

The fuse used in EPD160 is a size 000 safety fuse link with nominal current of 160A. Overload capacity of DRN206 module matches fast fuse characteristic (aR, gR) with limited current increase slope to maximum of 100A/μs due to inductivity of a rail circuit. In the referenced mode the current in EPD circuit doesn't exceed 5000A on the fuse trip. . In case of maximal short-circuit current under 1000A is possible to use also a fuse with gG characteristic. If the EPD panel is placed on the direct sunlight it is recommended to use 125A gG fuse so the maximum short-circuit current in the EPD circuit can reach up to 1500A.

Service

Both the warranty and after-warranty service is provided by the manufacturer.