Purpose of the product

The P/N 81550.01 ignition device is designed to create voltage impulses for the spark plug, the resultant sparks in the gap of the plug the ignite a mixture of fuel and air in the combustion chamber of a turbojet engine.
One-channel Ignition Device

Technical data

› Technical parameters

Nominal voltage ............................................. 28 V DC
Nominal current consumption ........................ < 1,5 A
Operating voltage ........................................ 14 V DC ÷ 30 V DC *)
Output voltage ............................................. 2.5 ÷ 3 kV
Supplied energy .......................................... > 0.6 J / channel
Discharge frequency at 14 V DC ........ 3 Hz ÷ 6 Hz
Discharge frequency at 30 V DC .......... 4 Hz ÷ 7 Hz
Operating temperature .............................. -55 ÷ 100 °C
Weight ....................................................... ≤ 0,6 kg
Operational mode ........................................ Intermittent (designed also for continuous operation)

*) The minimum allowable voltage is 12V DC, with a proportional reduction in discharge frequency compared with the discharge frequency at 14 V DC.

› Operating conditions

Requirements for resistance to external influences are based on RTCA/DO-160E documentation and the ISO 2678 standard in the categories detailed in the table below. Any tests marked with an X are not necessary.

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Installation dimension
Technical description

› Description of the P/N 81550.01 ignition device

The P/N 81550.01 is a one-channel ignition device. This is an electrical unit containing electronic circuits for converters on printed circuit boards that are connected with inherent main elements fastened on a bearing structure. This structure is placed in a metal box and embedded in foam. The box is tightly sealed and soldered. The box is equipped with a connector for supply voltage and one connector for attaching connecting cables. The base plate of the ignition device has four holes for fastening the device to the frame.

› Description of function

The ignition device is formed by a freely oscillating converter which charges a capacitor. When a flashover voltage of the internal gap is reached, the energy accumulated in the capacitor discharges in the spark plug. The frequency of discharge depends on the supply voltage; at 14 V it has a value of min. 3 Hz, while at 30 V it is a maximum of 7 Hz.

Other data

› Product marking

Two labels in English are adhered to the ignition device, detailing the type of unit and a warning. The type label contains the following data: the company logo, product name, type designation (P/N) and serial number (S/N) containing the six-digit number of the order, a dot, and a two-digit ordinal number in the order. After this an area is reserved for identifying any revisions – see the picture below. The warning label warns of the presence of high voltage; prior to maintenance it is necessary to disconnect the device from the supply voltage.
Instructions for use

› For installation dimensions, see the Installation Dimensions section.

› When installing the ignition device, it is necessary to ensure correct polarity of the ignition wiring (see Installation Dimensions).

› When installing the ignition device, at least one fastening point must be reliably (electrically) connected to the frame of the engine.

› The recommended intermittent mode consists of 30 seconds of operation + 2.5 minutes of rest. However the device can be used continuously if needed (e.g. when flying in rain).

› No setting has to be made and no special tools or jigs are required during installation.

Maintenance instructions

› The ignition device does not require any special operation and maintenance when in use.

› Once the time to overhaul is reached, it is necessary to send the device to the manufacturer for such maintenance.

Service life, guarantees

› Service life

  Time to overhaul
  – 8 years or
  – 3,000 starts with 30 s duration, i.e. 90,000 seconds (25 hours) in total, whichever comes first

Expected service life
  – 25 years or
  – 9,000 starts with 30 s duration, i.e. 270,000 seconds (75 hours) in total, whichever comes first

› Guarantees

The Supplier guarantees failure-free operation of the product for a period of 12 months or 500 starts from the moment of commissioning at the Customer, whichever comes first. The Manufacturer guarantees failure-free operation only if the installation instructions, installation conditions and operating conditions specified in these Technical Specifications are met.
One-channel Ignition Device

Repair instructions

› The ignition device is an electrical unit that cannot be repaired or disassembled.

Ordering products

› The purchaser is required to state precise data in their order, in particular:
  – The P/N 81550.01 ignition device
  – The number of pieces
  – The method of conservation (short-term or long-term). If the conservation method is not stated in the order, the product will be delivered with short-term conservation.
  – The language of the accompanying documents shall be in English.

P/N 81550.01 Ignition Device delivery

› Full delivery includes the following:
  – P/N 81550.01 Ignition Device 1 pc
  – No spare parts are delivered with the product
  – No tools are delivered with the product
  – The delivery includes the following accompanying documentation – Certificate of Quality and Completeness
PBS Velka Bites, a. s.
Vlkovska 279
595 01 Velka Bites
Czech republic, EU

www.pbsvb.cz
sales@pbsvb.cz
+420 566 822 304