



PBS Velká Bíteš



One-channel Ignition Device

ONE-CHANNEL IGNITION DEVICE

P/N 81550.01

Technical specifications

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 ignite a mixture of fuel and air in the combustion chamber of a turbojet engine.



Technical data

› Technical parameters

Nominal voltage	28 V DC
Nominal current consumption	< 1,5 A
Operating voltage	14 V DC ÷ 30 V DC * ^{1.})
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)

*^{1.}) The minimum allowable voltage is 12V DC, with a proportional reduction in discharge frequency compared with the discharge frequency at 14 V DC.

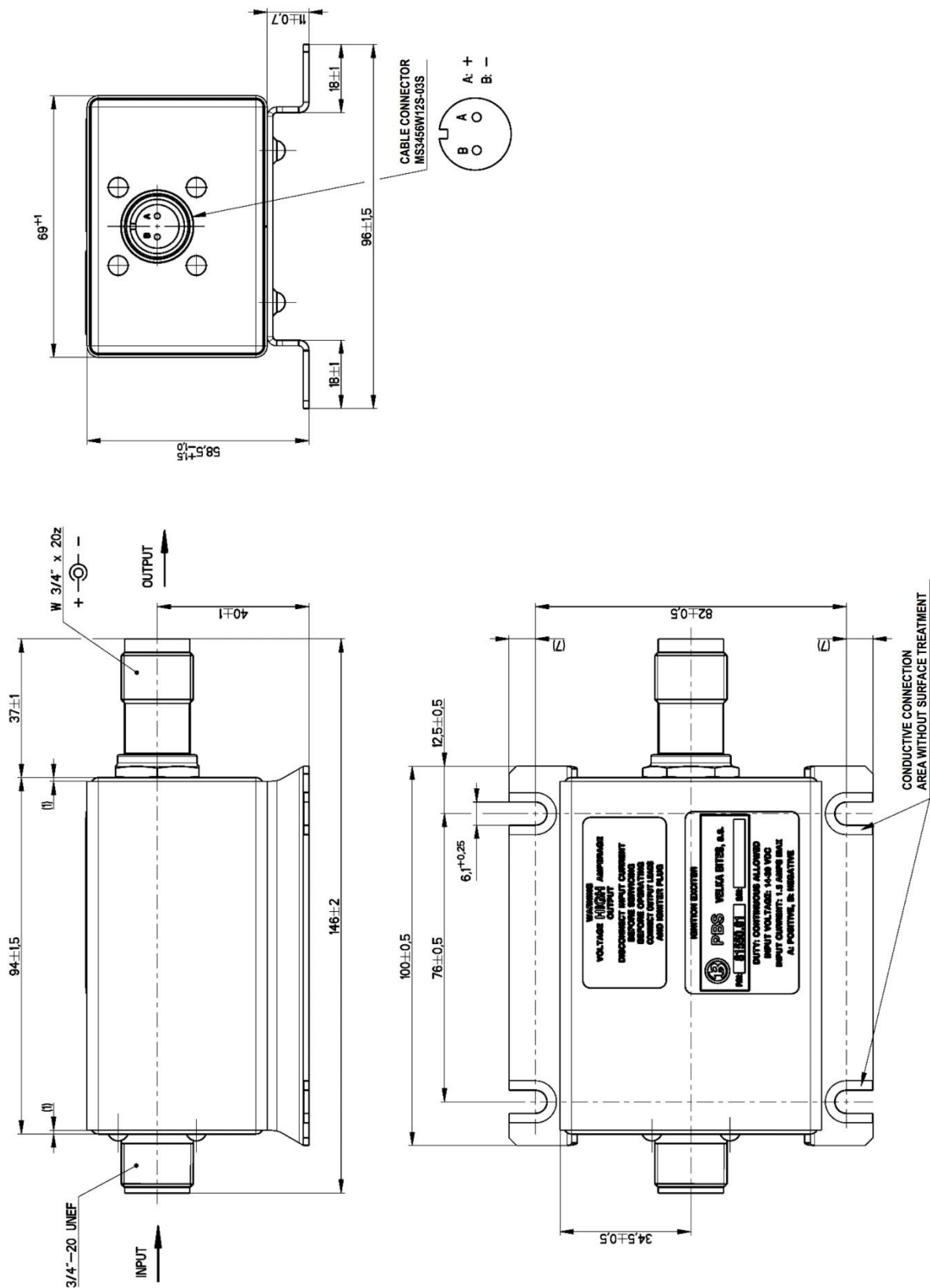
› Operating conditions

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.

Section	Environmental Conditions	Categories	
4	Temperature and Altitude	C3	
5	Temperature Variation	B	
6	Humidity	C	
7	Operational Shocks and Crash Safety	6g/11ms	
8	Vibration	W curve	
9	Proof against Explosion	X	
10	Waterproofness	W	
11	Fluid Susceptibility	F	
12	Resistance to Sand and Dust	D	
13	Resistance to Fungus	F	
14	Resistance to Salt Spray	S	
15	Magnetic Effects	Z	
16	Power Input	Z	
17	Voltage Spikes	A	
18	Audio Frequency Conducted Susceptibility	Z	
19	Induced Signal Susceptibility	Z	
20	Radio Frequency Susceptibility (Radiated and Conducted)	T	
21	Emission of Radio Frequency Energy	Input	L
		Output	B
22	Lightning Induced Transient Susceptibility	XXC2	
23	Lightning Direct Effects	X	
24	Icing Test	A	
25	Electrostatic Discharge	X	

One-channel Ignition Device

› 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.

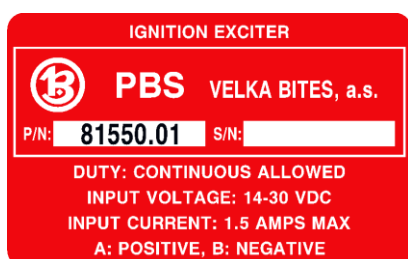
Other data

› 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.

Type label



Warning label



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.

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



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