DESCRIPTION

~~Activation unit for Munitions-Free Decoy Target~~

Decoys and/or smoke grenades based on, for example, red phosphorus (RP) or nitrocellulose (NC) are used in military applications, such as smoke grenades, infrared (IR) effect aircraft decoys, etc. The RP/NC develops the smoke and IR action by burning after suitable ignition. The ignition of RP units (active matter) takes place by means of an ignition or break charge, which ensures that the bodies can ignite optimally for the particular purpose, and so can burn.

The use of such a decoy target in civil air traffic is not possible owing to the munitions component, since explosive substances are not accepted in this context and international safety agreements have to be upheld.

On this basis, a new ignition concept has been developed, which enables the ignition of RP/NC flares without explosives and/or pyrophoric substances.

This new ignition concept is described in more detail in DE 10 2006 004 912 A1. From this, a system for protecting large airborne platforms in particular, such as aircraft, against IR-guided or radar-guided threats is known. Here, the activation or ignition of the active body is preferably carried out without contact. The launching of the active body is then performed pneumatically or mechanically. The active bodies themselves are munitions-free packages, which are ignited by hot air or a laser.

The unpublished DE 10 2009 020 558.6 describes an activation unit, which activates (ignites) the active substances/flare material by supplying thermal energy, wherein the use of explosives is avoided. This has an

PATENT CLAIMS

1. An activation unit (10) for munitions-free active substances or an active body (1) with an ejection tube, characterized by electrode pairs (11, 12, 21, 22) attached around the ejection tube, at least one for producing an electric arc (19, 20), for which the electrode pairs (11, 12, 21, 22) are electrically connected by connecting lines (15-18) to at least one control device (13, 14).

2. The activation unit as claimed in claim 1, characterized in that, said electrode pairs (11, 12, 21, 22) are disposed symmetrically about said ejection tube.

3. The activation unit as claimed in claim 1 or 2, characterized in that, said electrode pairs (11, 12, 21, 22) are disposed in pairs at intervals over the length of said ejection tube.

4. The activation unit as claimed in one of the claims 1 to 3, characterized in that, said unit (10) is installed between an ejection unit and a launching unit of a launcher system.

5. The activation unit as claimed in one of the claims 1 to 3, characterized in that, the electric arc(s) (19, 20) is/are aligned so that it/they pass(es) over the curved area of said active body (1) or even through said active body (1).

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What is claimed is:

1. An activation unit for munitions-free active substances, the activation unit comprising:

an active body comprised of an outer skin containing a plurality of flares therein;

at least one control device; and

electrode pairs attached around the active body, at least one of the electrode pairs produces an electric arc to individually ignite the plurality of flares, wherein the electrode pairs are electrically connected by connecting lines to the at least one control device,

wherein the active body is axially movable with respect to the electrode pairs, such that during movement of the active body, each of the plurality of flares are successively ignited by the at least one electrode pair.

2. The activation unit as claimed in claim 1, wherein, the electrode pairs are arranged substantially symmetrically around the active body.

3. The activation unit as claimed in claim 1, wherein, the electrode pairs are arranged in pairs at intervals over a length of the active body.

4. The activation unit as claimed in claim 1, wherein, the electric arc is aligned so that it passes over a curved area of the active body or through the active body.

5. An activation unit for munitions-free active substances, the activation unit comprising:

an active body comprised of an outer skin containing at least one flare therein, the at least one flare containing the munitions-free active substances;

at least one control device; and

at least one pair of electrodes attached around an exterior surface of the active body, the at least one pair of electrodes produces an electric arc to ignite the at least one flare, wherein the at least one pair of electrodes is electrically connected by connecting lines to the at least one control device,

wherein the active body is axially movable with respect to the at least one pair of electrodes, such that during movement of the active body, each of the plurality of flares are successively ignited by the at least one pair of electrodes.