EXPLOSION PROOF TABLET ENCLOSURE

An explosion proof enclosure includes a first portion and a second portion, wherein the first portion and second portion are configured to be releasably coupled to each other, wherein the enclosure has an assembled configuration having an internal chamber, wherein the enclosure is configured to house a tablet computer in the internal chamber, wherein, when in the assembled configuration, the enclosure is configured to prevent combustion within the internal chamber from escaping into the surrounding environment.
EXPLOSION PROOF TABLET ENCLOSURE
CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. provisional patent applications Ser. No. 61/592,053 filed Jan. 30, 2012 and entitled “Custom enclosure for iPad2 which allow the user to operate this Apple tablet PC in a Class I Div 2, Class I Zone 2 area, Hazardous Location Listing for the US and Canada,” and Ser. No. 61/635,959 filed Apr. 20, 2012 and entitled “Custom enclosure for iPad3 which allow the user to operate this Apple tablet PC in a Class I Div 2, Zone 2 and Class I Zone 2 area, Hazardous Location Listing for the US and Canada.”

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

BACKGROUND

[0003] The use of electrical devices in hazardous areas may lead to an increased risk of a fire or explosion triggered by the presence of the electrical device. For instance, an electrical device may serve as an ignition source in a hazardous area containing flammable fluids or vapors. For this reason, electrical devices used in hazardous areas are often required to be certified according to the requirements specified in that particular jurisdiction. Further, often the types of protections required vary depending on the risks and hazards involved.

[0004] The types of hazardous environments are broken down into three classes, with each class focusing on different types of hazardous materials in the surrounding atmosphere. For instance: Class I areas include flammable gasses or vapors present in the air in sufficient quantities to produce an explosion in the presence of an ignition source; Class II areas include the presence of combustible dusts; and Class III areas include ignitable fibers or other materials too heavy to be suspended in the air in sufficient quantities to produce an ignitable mixture (e.g., wood chips, cotton, nylon, etc.). Two common types of hazardous areas requiring protection for electrical devices are areas that contain flammable vapors and areas containing dust or other particulates susceptible to ignition. Further, each class is divided into two divisions based on the probability of hazardous materials being present in an ignitable or combustible concentration in the surrounding air. Division 1 defines hazardous environments where the pertinent hazardous material (e.g., vapors, dust, fibers) is present during normal conditions. Division 2 defines hazardous environments where the pertinent hazardous material is present only in abnormal or fault conditions (e.g., in the event of a container failure or other leak).

[0005] Regarding Class I hazardous environments involving flammable vapors, an electrical device may be used in such an area via an explosion proof enclosure or assembly configured to keep an internal explosion within the enclosure itself from escaping outward, where it would ignite vapors outside of the enclosure. Thus, with regard to environments having flammable vapors, explosion proof assemblies are designed to both prevent the entry of flammable materials into the enclosure and also, in the event of an explosion within the enclosure, to prevent the escape of hot or burning material from escaping the enclosure. Regarding Class II hazardous environments involving ignitable dusts and particulates, an electrical device may be used in such an area via a dust-ignition proof enclosure or assembly that is configured to prevent ignitable materials from entering the enclosure and by containing any arcs, sparks or heat within the enclosure that may ignite dust or other particulates in the surrounding environment. Also, there exists assemblies and enclosures for use with an electrical device that are referred to as “intrinsically safe,” where an intrinsically safe assembly including an electrical device is incapable of releasing sufficient electrical or thermal energy to cause ignition of a specific hazardous substance (i.e., Class I, Class II and Class III substances) under normal or abnormal conditions. Further, “nonincendive” components are nonsparking and incapable of releasing sufficient electrical/thermal energy to cause ignitions to hazardous substances during normal (i.e., Division 1) operating conditions.

[0006] While assemblies or enclosures have been developed for use in hazardous areas, these components are often expensive and not configured for use with particular electrical devices. Also, these components may only satisfy the requirements for a particular class and division, and thus may not be used in other hazardous environments or in hazardous environments under abnormal conditions (i.e., Division 2 conditions). Further, these components may be permanently coupled to the protected electrical device, restricting the use of multiple electrical devices with the same enclosure. Thus, there is a need in the art for an intrinsically safe or explosion proof assembly and/or enclosure capable of being safely used in varying types of conditions hazardous environments. Also, it would be beneficial if such an enclosure was not permanently coupled to or formed integrally with the protected electrical device, allowing the use of different electrical devices with the same enclosure.

BRIEF SUMMARY OF THE DISCLOSURE

[0007] An explosion proof enclosure includes a first portion and a second portion wherein the first portion and second portion are configured to be releasably coupled to each other, wherein the enclosure has an assembled configuration having an internal chamber, wherein the enclosure is configured to house a tablet computer in the internal chamber, wherein, when in the assembled configuration, the enclosure is configured to prevent combustion within the internal chamber from escaping into the surrounding environment. In some embodiments, the enclosure includes a first aperture extending through the first portion and a second aperture extending through the second portion, wherein the first aperture and the second aperture are configured to receive a screw for coupling the first portion to the second portion. In certain embodiments, the enclosure includes a window defined by an outer edge that extends through the first portion. In some embodiments, a sealing surface is disposed about the outer edge of the window, wherein the sealing surface is configured to sealingly engage against a surface of the tablet computer when the enclosure is in the assembled configuration.

[0008] In some embodiments, the enclosure includes an aperture extending through the first portion, wherein the sealing surface is disposed about the aperture. In certain embodiments, the enclosure includes an adhesive or other substance disposed on a surface of the first portion configured to releasably and sealingly couple the first portion to the second portion when the enclosure is in the assembled configuration. In some embodiments, the second portion of the enclosure further comprises a data interface configured to allow the com-
munication of an external electrical signal to the tablet computer when the enclosure is in the assembled configuration. In some embodiments, the data interface of the enclosure includes a cable having a first terminal end and a second terminal end, wherein a first connector is coupled to the first terminal end of the cable, wherein a second connector is coupled to the second terminal end of the cable. In certain embodiments, the first connector comprises a 50-pin dock connector. In some embodiments, the second connector comprises a universal serial bus port. In certain embodiments, the data interface includes a dust cap that is configured to prevent particulates from contacting the second connector. In some embodiments, the dust cap includes a flange and a cap portion and the flange is coupled to a surface of the second portion. In certain embodiments, the dust cap has a first position preventing particulates from contacting the second connector and a second position exposing the second connector. In some embodiments, when the dust cap is in the second position, the data interface is configured to allow for the coupling of an external connector to the second connector.

[0009] A method of forming an explosion proof assembly includes disposing a tablet computer within a first portion and a second portion of an explosion proof enclosure and assembling the first portion and second portion of the explosion proof enclosure such that an internal chamber of the assembled enclosure is sealed from the external environment, wherein, when in the assembled configuration, the enclosure is configured to prevent combustion within the internal chamber from escaping into the surrounding environment. In some embodiments, the method includes coupling an external connector to a connector coupled to the second portion of the enclosure. In certain embodiments, the method includes rotating a dust cap coupled to the second portion of the enclosure so as to expose a port disposed on the second portion. In some embodiments, the method includes actuating a touch screen of the tablet computer when the explosion proof enclosure is in the assembled configuration. In certain embodiments, the method includes transmitting an electrical signal between an external device coupled to the external connector to the tablet computer.

[0010] An embodiment of an explosion proof enclosure includes a first portion, a second portion, wherein the first portion and the second portion are configured to be releasably coupled to retrieve a tablet computer, and a sealing mechanism disposed between the first portion and the second portion configured to create an explosion proof internal chamber to receive the tablet computer.

[0011] Embodiments described herein comprise a combination of features and characteristics intended to address various shortcomings associated with certain prior devices, systems, and methods. The various features and characteristics described above, as well as others, will be readily apparent to those skilled in the art upon reading the following detailed description, and by referring to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] For a detailed description of exemplary embodiments, reference will now be made to the accompanying drawings in which:

[0013] FIGS. 2A and 2B are exploded or disassembled views of an embodiment of an explosion proof tablet assembly in accordance with principles disclosed herein;

[0014] FIGS. 2A is a front view of the explosion proof tablet assembly of FIG. 1A in an assembled configuration;

[0015] FIG. 2B is a back view of the explosion proof tablet assembly of FIG. 1A in an assembled configuration;

[0016] FIG. 3 is a perspective view of an enclosure of the assembly of FIG. 1A in an assembled configuration;

[0017] FIGS. 4 and 5 are zoomed-in views of an enclosure of the explosion proof tablet assembly of FIG. 1A;

[0018] FIGS. 6A and 6B are exploded views of another embodiment of an explosion proof tablet assembly in accordance with principles disclosed herein;

[0019] FIGS. 7 and 8 are zoomed-in views of an enclosure of the explosion proof tablet assembly of FIGS. 6A and 6B; and

[0020] FIG. 9 is another embodiment of an explosion proof enclosure in accordance with principles disclosed herein.

DETAILED DESCRIPTION

[0021] In the drawings and description that follow, like parts are typically marked throughout the specification and drawings with the same reference numerals. The drawing figures are not necessarily to scale. Certain features of the invention may be shown exaggerated in scale or in somewhat schematic form and some details of conventional elements may not be shown in the interest of clarity and conciseness. The present disclosure is susceptible to embodiments of different forms. Specific embodiments are described in detail and are shown in the drawings, with the understanding that the present disclosure is to be considered an exemplification of the principles of the disclosure, and is not intended to limit the disclosure to that illustrated and described herein. It is to be fully recognized that the different teachings of the embodiments discussed below may be employed separately or in any suitable combination to produce desired results.

[0022] Unless otherwise specified, in the following discussion and in the claims, the terms “including” and “comprising” are used in an open-ended fashion, and thus should be interpreted to mean “including, but not limited to . . . ”. Any use of any form of the terms “connect”, “engage”, “couple”, “attach”, or any other term describing an interaction between elements is not meant to limit the interaction to direct interaction between the elements and may also include indirect interaction between the elements described. The term “fluid” may refer to a liquid or gas and is not solely related to any particular type of fluid such as hydrocarbons. The terms “pipe”, “conduit”, “line” or the like refer to any fluid transmission means. The various characteristics mentioned above, as well as other features and characteristics described in more detail below, will be readily apparent to those skilled in the art upon reading the following detailed description of the embodiments, and by referring to the accompanying drawings.

[0023] The embodiments described herein include an explosion proof assembly that includes a tablet computer having a touch screen, such as the iPad® produced by Apple, Inc. Particularly, the explosion proof assembly includes a tablet computer disposed within a removably coupled enclosure. The enclosure allows for the use of the tablet computer in hazardous areas including flammable vapors and ignitable dust, corresponding to Class I and Class II areas, respectively. Also, the enclosure allows for the use of the tablet in hazardous areas during Division 2 conditions. Further, the assembly is configured to be nonincendive such that the assembly does
not allow for the release of any sparks or electrical/thermal energy sufficient to cause ignition of hazardous substances in the surrounding environment.

[0024] In an embodiment, a non-incentive, non-modified tablet computer (e.g., iPad2, iPad3, etc.) with an accompanying enclosure is provided that allows a user to operate the tablet in hazardous environments, including Class I/Division 2, Class II/Division 2, ATEX Zone 2 and IECEx classified areas.

[0025] Referring initially to FIGS. 1A-1B, an explosion proof assembly 10 is shown in an exploded or disassembled configuration and generally includes a tablet computer 100 and an enclosure 200 having a first or upper portion 300 that is releasably coupled to a second or lower portion 400. In this embodiment, tablet 100 is an iPad® produced by Apple, Inc. However, in other embodiments tablet 100 may comprise other varying types and styles of tablet computers, including but not limited to those from other manufacturers. In this embodiment, enclosure 200 is formed of milled aluminum satisfying the NEMA 4 standard. However, in other embodiments enclosure 200 may be formed from other rugged materials. Tablet 100 has a flat front face 101 defined by a front outer edge 103, which includes a touch screen 102. Tablet 100 also includes a flat rear face 105 that is defined by a rear outer edge 107. Extending between front outer edge 103 and rear outer edge 107 is a chamfered surface 109 having four chamfered corners 111. Tablet 100 also includes a first button 104 (home button) disposed on front face 101, a camera lens 106 disposed on rear face 105 and a second button 108 (on/off button) disposed on chamfered edge 109. An input connector 110 is disposed on chamfered surface 109. Input connector 110 is configured to allow for data and/or electrical power transfer between tablet 100 and an external electrical device.

[0026] Referring now to FIGS. 1A-1B and 2A-2B, while FIGS. 1A-1B show assembly 10 in an exploded or disassembled configuration, FIGS. 2A-2B show assembly 10 in a closed or assembled configuration where there is no wiring or other conductor exposed to the surrounding environment. Regarding enclosure 200, first portion 300 includes a flat front face 301 having a central window 302 extending therefrom that is defined by an outer edge 303. Extending from face 301 is a curved outer surface 305 that extends around face 301. A first aperture 304 and a second aperture 306 are also disposed on front face 301 and extend therethrough. Thus, first aperture 304 provides a means for actuating first button 104 disposed on front face 101 of tablet 100. Also, second aperture 306 provides a window for a front camera 12 (FIG. 2A) of tablet 100, that may be disposed on front face 101 of tablet 100.

[0027] First portion 300 also includes a flat rear face 307 (FIG. 1B) disposed opposite of front face 301 and having a sealing surface 308 that extends from face 307. Sealing surface 308 extends between an outer edge 309 and the outer edge 303 of window 302. Surface 308 is configured to sealingly engage the front face 101 of tablet 100 so as to prevent or at least substantially restrict fluids or particles (e.g., dust, particulates, fibers, etc.) from entering or exiting enclosure 200 when assembly 10 is in its assembled configuration (FIGS. 2A-2B). Sealing surface 308 also includes a first portion 308a that extends about first aperture 304 and a second portion 308b that extends about second aperture 306. Extending from curved surface 305 is a sealing mechanism 320, which is configured to seal against a corresponding sealing assembly 420 of second portion 400 when first portion 300 and second portion 400 are coupled to each other.

[0028] Second portion 400 includes an inner flat face 401 defined by a rectangular outer edge 402. Extending from edge 402 of face 401 is an inner chamfered surface 403 extending about inner face 401 and having four chamfered corners 405. Portion 400 also includes a flat outer face 411 defined by an outer edge 404. Extending from edge 404 is an outer chamfered surface 407 that extends about outer face 411 and has four chamfered corners 409. Sealing mechanism 420 is disposed between inner chamfered surface 403 and outer chamfered surface 407. A ledge 408 extends from chamfered outer surface 407 and includes an aperture 410, allowing access to actuate second button 108 of tablet 100. Referring briefly to FIG. 3, enclosure 200 in the assembled configuration includes an internal chamber 440 disposed between first section 300 and second section 400. Sealing assemblies 320, 420, and sealing surface 308 of portion 300 are configured to seal internal chamber 440 from the external environment once tablet 100 has been disposed in chamber 440, as shown in FIGS. 2A-2B.

[0029] Referring now to FIGS. 4 and 5, sealing mechanism 320 of first portion 300 includes an inner surface 321 that extends from an outer edge 322 of curved surface 305. Mechanism 320 also includes a tab 323 that extends inward (relative to second portion 400) from surface 321. Tab 323 includes four rounded corners 323a and has a vertical inner surface 324 and an oppositely disposed vertical outer surface 325. Correspondingly, sealing mechanism 420 of second portion 400 includes an inner surface 421 that extends from an outer edge 422 of chamfered surface 407. Mechanism 420 also includes a tab 423 that extends inward (relative to first portion 300) from surface 421. Tab 423 includes four rounded corners 423a and has a vertical inner surface 424 and an oppositely disposed vertical outer surface 425. When assembly 10 is in the assembled configuration, as shown in FIGS. 2A-2B, outer surface 325 of tab 323 is configured to sealingly engage inner surface 424 of tab 423, thus preventing or at least substantially restricting fluids or particles (e.g., dust, particulates, fibers, etc.) from entering or exiting enclosure 200 when assembly 10 is in its assembled configuration. First portion 300 and second portion 400 may be releasably coupled to each other by mechanical means, such as evenly distributed bolts or screws extending through curved surface 305 of first portion 300 and chamfered surface 407 of second portion 400. An adhesive or other substance may also be disposed on either surface 321 of portion 300 or on surface 421 of portion 400, thus causing portions 300 and 400 to adhere to each other upon assembly.

[0030] Referring now to FIGS. 6A and 6B, another embodiment includes an explosion proof assembly 20 that generally includes tablet 100 and an enclosure 500 having a first portion 600 and a second portion 700. Enclosure 500 includes similar features as enclosure 200 and thus identical features are numbered similarly. In this embodiment, enclosure 500 is formed from milled aluminum satisfying the NEMA 4 standard. However, in other embodiments enclosure 500 may be formed from other rugged materials. As with assembly 10, when assembly 20 is in the assembled configuration there is no wiring or other conductor exposed to the surrounding environment, as will be explained further herein. In this embodiment, second portion 600 includes a data and/or recharging interface 740 coupled to inner face 401 and outer face 411 of portion 600.
Referring now to FIGS. 7 and 8, data interface 740 generally includes a cable 742 having a first end 742a coupled to a first connector 744 and a second terminal end 742b coupled to a second connector 750. First connector 744 is a 30-pin dock connector configured to electrically couple with input connector 110 of tablet 100 (FIGS. 5A and 5B). Second connector 750 is a universal serial bus (mini-USB) connection port having an opening 752 disposed on surface 411, which is coupled to second portion 400 by two screws 755 extending into surface 411. Thus, when assembly 20 is in an assembled configuration (similar to the assembled configuration of assembly 10 shown in FIGS. 2A-2B), connector 744 is coupled to input 110, establishing an electrical connection between tablet 110 and USB port 750, which may be accessed by an external cable. A dust cap 753 is disposed on surface 411 and is coupled to surface 411 via a flange 754 and screw 755 that extends through flange 754 and into surface 411 of portion 400. A cap portion 756 is disposed directly over opening 752 to prevent dust, fibers and other matter from contacting any pins or other electrical connectors within opening 752 of port 750. In order to access opening 752 of port 750, cap 753 may be rotated about screw 755, such as to expose opening 752 to allow for the insertion of a male connector (FIG. 7 shows cap 753 in the covered position).

Referring now to FIG. 9, another embodiment includes an enclosure 250 configured for use in an explosion proof assembly (e.g., assembly 10). Enclosure 250 includes similar features as enclosure 200 and thus identical numerals are numbered similarly. Enclosure 250 includes a first portion 350 and a second portion 450, where portions 350 and 450 are configured to releasably couple to each other via a plurality of screws 454. Inner surface 321 of first portion 350 and chamfered surface 407 of second portion 450 each include an evenly distributed plurality of apertures 352, 452, respectively, for receiving the plurality of screws 454.

Referring to FIGS. 1-5, a method of forming explosion proof assembly 10 generally includes placing or disposing tablet 100 within the second portion 400 of enclosure 200 and sealing tablet 100 within enclosure 200 by coupling first portion 300 with second portion 400. Once coupled, assembly 10 is in the assembled configuration such that assembly 10 satisfies the requirements of Class I, Division 2 and Class II, Division 2 hazardous area classifications. Also, touch screen 102 of tablet 100 may be safely actuated within Class I, Division 2 and Class II, Division 2 hazardous areas without violating the safety requirements of these areas. In other words, the assembly 10 includes an explosion-proof sealing or compartment for the enclosed tablet.

In the embodiment of FIGS. 1-5, placing tablet 100 within second portion 400 includes disposing tablet 100 such that the flat rear face 105 of tablet 100 is aligned with and/or engages the inner flat face 401 of second portion 401 of second portion 400. Also, chamfered surface 109 and corners 111 of tablet 100 are aligned with and/or engage chamfered surface 403 and corners 405 of portion 400. Coupling first portion 300 with second portion 400 of enclosure 200 includes aligning and engaging the sealing mechanism 320 of portion 300 with the sealing mechanism 420 of second portion 400, such that inner surface 321 engages inner surface 421 and outer surface 325 of tab 323 engages surface 424 of tab 423. In the embodiment shown in FIG. 9, coupling the first portion 300 to the second portion 400 further includes extending the plurality of screws 454 through the plurality of apertures 352 and 452. However, in other embodiments coupling portions 300 and 400 may include disposing an adhesive on one or more of the surfaces of either sealing mechanism 320, 420, respectively. In this embodiment, engagement between mechanisms 320 and 420 of enclosure 200 creates a seal satisfying the IP67 standard. However, in other embodiments the seal may satisfy other standards such as IP68 or IP65, etc. In some embodiments, an explosion-proof sealing or compartment is provided thereby.

Referring now to FIGS. 6A-8, a method of forming explosion proof assembly 20 generally includes placing or disposing tablet 100 within the second portion 700 of enclosure 500 and sealing tablet within enclosure 500 by coupling first portion 600 with second portion 700. As with assembly 10, once coupled assembly 20 is in the assembled configuration and thus satisfies the requirements of Class I, Division 2 and Class II, Division 2 hazardous area classifications. Also, touch screen 102 of tablet 100 may be safely actuated within Class I, Division 2 and Class II, Division 2 hazardous areas without violating the safety requirements of these areas. Tablet 100 is disposed within portion 700 in a similar fashion to how tablet 100 is disposed within portion 400. However, in the embodiment of assembly 20, disposing tablet 100 within portion 700 further includes coupling connector 110 of tablet 100 with interface 740 of portion 700. Specifically, coupling connector 110 with interface 740 includes coupling connector 110 with first connector 744 of interface 740. Once coupled, an electrical signal may be communicated between tablet 100 and port 750.

As with enclosure 200 of assembly 10, portions 600 and 700 of assembly 20 are coupled in a similar fashion as portions 300 and 400 are coupled to form assembly 10 (e.g., sealing mechanisms 320, 420, respectively, of portions 600 and 700 are engaged with each other). Portions 600 and 700 may also be coupled via a plurality of screws (e.g., screws 454) that extend through apertures (e.g., apertures 352, 452) disposed in portions 600 and 700. In this embodiment, engagement between mechanisms 320 and 420 of enclosure 500 creates a seal satisfying the IP65 standard. However, in other embodiments the seal may satisfy other standards such as IP68 or IP65, etc.

Once assembly 20 is in the assembled configuration an electrical signal may be communicated between an external electrical device and tablet 100. A method for communicating a signal between an external device and tablet 100 includes rotating cap portion 756 of dust cap 753 about screw 755 such that opening 752 is exposed. Once opening 752 is exposed, a connector of the external device or conduit is coupled to port 750 of interface 740 such that an electrical signal may be communicated between tablet 100 and the external device or conduit. In this manner, tablet 100 may be safely recharged within enclosure 500 while assembly 20 is in a hazardous area (e.g., Class I, Division 2 and Class II, Division 2 areas).

The above discussion is meant to be illustrative of the principles and various embodiments of the present disclosure. While certain embodiments have been shown and described, modifications thereof can be made by one skilled in the art without departing from the spirit and teachings of the disclosure. The embodiments described herein are exemplary only, and are not limiting. Accordingly, the scope of protection is not limited by the description set out above, but is only limited by the claims which follow, that scope including all equivalents of the subject matter of the claims.
What is claimed is:
1. An explosion proof enclosure comprising:
a first portion; and
a second portion, wherein the first portion and the second portion are configured to be releasably coupled to each other;
wherein the enclosure has an assembled configuration having an internal chamber;
wherein the enclosure is configured to house a tablet computer in the internal chamber;
wherein, when in the assembled configuration, the enclosure is configured to prevent combustion within the internal chamber from escaping into the surrounding environment.
2. The enclosure of claim 1, further comprising:
a first aperture extending through the first portion; and
a second aperture extending through the second portion;
wherein the first aperture and the second aperture are configured to receive a screw for coupling the first portion to the second portion.
3. The enclosure of claim 1, further comprising a window defined by an outer edge that extends through the first portion.
4. The enclosure of claim 3, wherein:
a sealing surface is disposed about the outer edge of the window;
wherein the sealing surface is configured to sealingly engage against a surface of the tablet computer when the enclosure is in the assembled configuration.
5. The enclosure of claim 4, further comprising:
an aperture extending through the first portion;
wherein the sealing surface is disposed about the aperture.
6. The enclosure of claim 1, further comprising an adhesive disposed on a surface of the first portion configured to releasably couple the first portion to the second portion when the enclosure is in the assembled configuration.
7. The enclosure of claim 1, wherein the second portion of the enclosure further comprises a data interface configured to allow the communication of an external electrical signal to the tablet computer when the enclosure is in the assembled configuration.
8. The enclosure of claim 7, wherein the data interface comprises:
a cable having a first terminal end and a second terminal end;
wherein a first connector is coupled to the first terminal end of the cable;
wherein a second connector is coupled to the second terminal end of the cable.
9. The enclosure of claim 8, wherein the first connector comprises a 30-pin dock connector.
10. The enclosure of claim 8, wherein the second connector comprises a universal serial bus port.
11. The enclosure of claim 8, wherein the data interface includes a dust cap that is configured to prevent particulates from contacting the second connector.
12. The enclosure of claim 11, wherein:
the dust cap comprises a flange and a cap portion; and
the flange is coupled to a surface of the second portion.
13. The enclosure of claim 11, wherein the dust cap has a first position preventing particulates from contacting the second connector and a second position exposing the second connector.
14. The enclosure of claim 13, wherein, when the dust cap is in the second position, the data interface is configured to allow for the coupling of an external connector to the second connector.
15. A method of forming an explosion proof assembly comprising:
disposing a tablet computer within a first portion and a second portion of an explosion proof enclosure; and
assembling the first portion and second portion of the explosion proof enclosure such that an internal chamber of the assembled enclosure is sealed from the external environment;
wherein, when in the assembled configuration, the enclosure is configured to prevent combustion within the internal chamber from escaping into the surrounding environment.
16. The method of claim 15, further comprising coupling an external connector to a connector coupled to the second portion of the enclosure.
17. The method of claim 15, further comprising rotating a dust cap coupled to the second portion of the enclosure so as to expose a port disposed on the second portion.
18. The method of claim 15, further comprising actuating a touch screen of the tablet computer when the explosion proof enclosure is in the assembled configuration.
19. The method of claim 16, further comprising transmitting an electrical signal between an external device coupled to the external connector to the tablet computer.
20. An explosion proof enclosure comprising:
a first portion;
a second portion, wherein the first portion and the second portion are configured to be releasably coupled to retrieve a tablet computer; and
a sealing mechanism disposed between the first portion and the second portion configured to create an explosion proof internal chamber to receive the tablet computer.