WHAT IS CLAIMED IS:

1. An ignition protected switch device comprising:

a housing;

a line-side terminal and a load-side terminal coupled to the housing;

a bus structure in the housing and including at least one solid state switching element operable in an arc-free manner to connect the load-side terminal to the line-side terminal and disconnect the load-side terminal from the line-side terminal;

a temperature sensor situated in the housing; and

a controller operating the at least one solid state switching element in reference to a first operating temperature limit for the bus structure, thereby precluding the operating bus structure from being an ignition source in a hazardous location, whereby the ignition protected switch device is compliant for use in the hazardous location without requiring a separately provided explosion-proof enclosure.

2. The ignition protected switch device of claim 1, wherein the housing is configured and designed to operate at a surface temperature at or below a second temperature limit, the controller is further configured to operate the at least one solid state switching element in reference to the second temperature limit, thereby precluding the housing from being an ignition source in the hazardous location.

3. The ignition protected switch device of claim 2, further comprising at least one mechanical switch contact in the bus structure, and the housing including a sealed internal enclosure containing the switch contact, thereby precluding the switch contact from being an ignition source in the hazardous location.

4. The ignition protected switch device of claim 1, wherein the line-side terminal and the load-side terminal each comprise a secure cable terminal assembly including a locking element preventing a cable termination from loosening

over time when subjected to thermal cycling or vibration, thereby precluding the terminal assembly from being an ignition source in the hazardous location.

5. The ignition protected switch device of claim 4, wherein the secure cable terminal assembly further includes a lug terminal and the locking element is a spring element.

6. The ignition protected switch device of claim 5, wherein the lug terminal further comprises a fastener, and wherein the spring element acts upon the fastener to prevent the cable termination from loosening.

7. The ignition protected switch device of claim 6, wherein the spring element acts internally to the box lug.

8. The ignition protected switch device of claim 6, wherein the spring element is one of a coil spring or a spring plate.

9. The ignition protected switch device of claim 5, wherein the secure terminal assembly further comprises a lever, the spring element acting on an end of the lever.

10. The ignition protected switch device of claim 1, wherein the line-side terminal and the load-side terminal comprises either a plug or socket which connects to a cable.

11. The ignition protected switch device of claim 10, wherein the plug or socket provides a reject feature for an incompatible switch device.

12. The ignition protected switch device of claim 10, wherein the controller is further configured to operate the at least one solid state switching element to effect a hot swap feature for the ignition protected switch device.

13. The ignition protected switch device of claim 1, further comprising a display.

14. The ignition protected switch device of claim 1, further comprising a toggle switch, wherein the controller is further configured to operate the at least one solid state switching element in response to the toggle switch.

15. The ignition protected switch device of claim 1, further comprising an active cooling element.

16. The ignition protected switch device of claim 1, further comprising a passive cooling element.

17. The ignition protected switch device of claim 1, further comprising a varistor connected in parallel to the at least one solid state switching element.

18. The ignition protected switch device of claim 1, wherein the controller is further configured to provide motor starter and overload control.

19. The ignition protected switch device of claim 1, wherein the device is configured as a solid state circuit breaker.

20. The ignition protected switch device of claim 1, wherein the device is configured as a hybrid circuit breaker.