WHAT IS CLAIMED IS:

1. A configurable modular hazardous location compliant circuit protection system for a hazardous environment, the system comprising:

at least one modular switch device comprising:

a housing;

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

a 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; and

a controller configured to operate the solid state switching element to share a current load with at least one mechanical switching device to limit arcing energy to a level below that which presents an ignition concern in the hazardous location:

whereby the at least one modular switch device and the at least one mechanical switching device are each compliant for use in the explosive environment without requiring a separately provided explosion-proof enclosure.

2. The system of claim 1, in combination with the at least one mechanical switching device, the at least one mechanical switching device provided in a separate modular package from the at least one modular switch device.

3. The system of claim 2, wherein the at least one modular switch device is a single pole device.

4. The system of claim 3, wherein the at least one mechanical switch device is a single pole device.

5. The system of claim 4, wherein a number of mechanical switch devices is greater than the number of modular switch devices.

6. The system of claim 1, wherein the at least one modular switch device includes line and load terminals configured for plug in connection to separately provided line and load terminals.

7. The system of claim 6, wherein the line-side and load-side terminals of the at least one modular switch device include either posts or terminals for plug-in connection with the separately provided terminals.

8. The system of claim ~~6~~7, wherein the line-side and load-side terminals and the separately provided line and load terminals are configured in combination to reject incompatible devices from being connected.

9. The system of claim ~~6~~7, wherein the line-side and load-side terminals and the separately provided line and load terminals are configured in combination to allow connection of the at least one modular switch device only with the proper polarity.

10. The system of claim 6, wherein the separately provided line and load terminals are provided on a panelboard assembly.

11. The system of claim 1, wherein the controller is separately provided from the at least one modular switch device, and wherein the controller is external to the housing.

12. The system of claim 1, wherein the at least one modular switch device and the at least one mechanical switching device are each configured as a circuit breaker.

13. The system of claim 12, wherein the at least one modular switch device is configurable to emulate the circuit protection of an overcurrent protection fuse.

14. The system of claim 12, wherein the at least one modular switch device is configurable to coordinate its time-current profile with a separate circuit protector.

15. The system of claim 12, wherein the at least one modular switch device is configurable to coordinate its time-current profile with an inrush current of an electrical load.

16. The system of claim 12, wherein the at least one modular switch device is configurable to emulate a circuit protection profile of thermal motor protector.

17. The system of claim 12, wherein the at least one modular switch device is configurable to be coordinated with a motor damage curve.

18. The system of claim 1, wherein the at least one mechanical switching device is sealed to prevent ingress of ignitable elements in the hazardous location.

19. The system of claim 18, wherein the at least one mechanical switching device is vacuum sealed.

20. The system of claim 18, wherein the at least one mechanical switching device filled with a dielectric material, dielectric fluid, potting material, or sand to contain, absorb or dissipate heat and energy in the operation of the solid state switching element to ensure that the surface temperature of the mechanical switching device will remain below a selected target temperature for the hazardous environment.