

CLAIMS

What is claimed is:

1. A heat-detection system, comprising:
at least one heat sensor mounted externally to a local power-box (LPB),
the heat sensor having an area-of-detection to detect heat emitted
from at least one face of the LPB at one or more locations; and
a high-absorptance, infrared-collector (HAIC) formed within the LPB
configured to collect excessive heat generated by a component
within the LPB, the excessive heat being correlated to a pre-
determined temperature level, a temperature of the collected
excessive heat to be measured by the at least one heat sensor, each
of the at least one heat sensor and the HAIC being coupled to a
control module.
2. The heat-detection system of claim 1, wherein the HAIC comprises a
high-absorptance material to collect radiant energy.
3. The heat-detection system of claim 1, wherein the HAIC is formed on an
interior portion of an external wall of the LPB.
4. The heat-detection system of claim 1, wherein the at least one heat
sensor comprises an infrared (IR) sensor.
5. A heat-detection system, comprising at least one volatile-organic-
compound (VOC) sensor mounted within a device to detect reducing
gases produced by outgassing as one or more components within the
device approach their respective melting points, the at least one
VOC sensor being coupled to a control module.

6. The heat-detection system of claim 5, further comprising one or more fans mounted on the device to form a convection current within the device, the convection current to deliver the reducing gases to the at least one VOC sensor.
7. The heat-detection system of claim 5, further comprising at least one heat sensor mounted externally to the device, the heat sensor having an area-of-detection to detect heat emitted from at least one face of the device at one or more locations.
8. The heat-detection system of claim 7, further comprising a high-absorptance, infrared-collector formed within the device configured to collect excessive heat generated by a component within the device, the excessive heat being correlated to a pre-determined temperature level, a temperature of the collected excessive heat to be measured by the at least one heat sensor.
9. The heat-detection system of claim 5, further comprising a number of heat sensors mounted in the device.

10. A heat-detection system for a device, the system comprising:
a number of heat sensors mounted within the device, each of the heat sensors having an area-of-detection to detect heat emitted from at least one of a plurality of components mounted within the device;
and
a control module in electrical communication with the number of heat sensors, the control module being configured to collect electrical signals from the plurality of components, a level of the electrical signals corresponding to a level of temperature, the control module further being configured to make a determination when at least one of the electrical signals received from the plurality of components exceeds a corresponding pre-determined temperature level.
11. The heat-detection system of claim 10, wherein the control module is further configured to shut down the device based on the determination that the corresponding pre-determined temperature level has been exceeded.
12. The heat-detection system of claim 10, wherein the control module is further configured to send an alert to an operator of the device based on the determination that the corresponding pre-determined temperature has been exceeded.
13. The heat-detection system of claim 10, further comprising at least one volatile-organic-compound (VOC) sensor mounted within the device to detect reducing gases produced by outgassing as one or more components within the device approach their respective melting points, the at least one VOC sensor being coupled to the control module.

14. The heat-detection system of claim 10, further comprising at least one heat sensor mounted externally to the device, the heat sensor having an area-of-detection to detect heat emitted from at least one face of the device at one or more locations.
15. The heat-detection system of claim 14, further comprising a high-absorptance infrared-collector (HAIC) formed within the device configured to collect excessive heat generated by at least one of the plurality of components within the device, the excessive heat being correlated to a pre-determined temperature level, a temperature of the collected excessive heat to be measured by the at least one heat sensor.
16. A heat-detection system to detect heat generated by a device, the system comprising:
at least one rope comprised of a plurality of thermocouples that traverses areas within the device, each of the at least one ropes to detect heat emitted from at least one of a plurality of components mounted within the device; and
a control module in electrical communication with the at least one rope, the control module being configured to collect electrical signals from the plurality of thermocouples within the at least one rope, a level of the electrical signals corresponding to a level of temperature, the control module further being configured to make a determination when at least one of the electrical signals received from the plurality of components exceeds a corresponding pre-determined temperature level.
17. The heat-detection system of claim 16, further comprising at least one volatile-organic-compound (VOC) sensor mounted within the device to detect reducing gases produced by outgassing as one or more

components within the device approach their respective melting points, the at least one VOC sensor being coupled to the control module.

18. The heat-detection system of claim 16, further comprising at least one heat sensor mounted externally to the device, the heat sensor having an area-of-detection to detect heat emitted from at least one face of the device at one or more locations.
19. The heat-detection system of claim 18, further comprising a high-absorptance infrared-collector (HAIC) formed within the device configured to collect excessive heat generated by at least one of the plurality of components within the device, the excessive heat being correlated to a pre-determined temperature level, a temperature of the collected excessive heat to be measured by the at least one heat sensor.

20. A heat-detection system to detect heat generated by a device, the system comprising:

at least one linear heat-detection cable placed within the device to detect heat generated therein, the at least one linear heat-detection cable having a polymer-based thermally reactive sheathing to detect heat emitted from at least one of a plurality of components mounted within the device to detect heat generated by at least one of the plurality of components; and

a control module in electrical communication with the at least one linear heat-detection cable, the control module being configured to collect electrical signals from the at least one linear heat-detection cable, a level of the electrical signals corresponding to a level of temperature, the control module further being configured to make a determination when at least one of the electrical signals received from the plurality of components exceeds a corresponding pre-determined temperature level.