Hazardous Temperature Locator / Valuator System

Common Fire Alarms Detect Fires

- Developing situation ...
- becomes a fire ...
- if detected ...
- triggers extinguishing ...
- ending in loss

Early Abnormal Temperature Detection and Intervention

- Developing situation ...
- is detected ...
- located ...
- evaluated ...
- and abated ...
- without loss

Total Temperature Information Management

- Determines normative temperature behavior, monitors and logs it.
- Detects abnormal temperature behavior, evaluates level of intervention needed, provides alerts and takes action, logs event.
- Archival information provides key analysis tools to investigate abnormal events to prevent reoccurrence. Allows assets to operate consistently in their normal temperature zones.

www.puzzltec.com
305-359-3752 phone
Hazardous Temperature Locator / Valuator System Provides Total Temperature Information Management in a Wide Range of Aircraft Applications

- Cargo Bays
- Fuel Tanks
- Special Containers
- Auxiliary Power Unit
- Cable/Wire Trays
- Power Plants
- Avionics, Controls, Wire Trays
- Power Systems, Cable Harnesses
- Hydraulics
- Galleys and Heads
Hazardous Temperature Locator / Evaluator System (HTLS)

Unique Sensor and Powerful Real-Time Information System Provide Unprecedented Functionality and Security

HTLS DETECTS, LOCATES and DISPLAYS abnormal temperature events between -40 and 1490 degrees F

- Highest Temperature Location and Value
- Highest Temperature Value
- Temperature Rate-of-Change
- Duration of Specific Event

HTLS ALERTS, ALARMS, INITIATES PREDETERMINED ACTION TO AVERT DAMAGE AND LOSSES

HTLS CONTINUOUSLY ARCHIVES ALL INFORMATION FOR:

- Total Temperature Information Management
- Root Cause Analysis
Hazardous Temperature Locator / Valuator System - Aircraft Applications

Two Types of Sensor Element for Every Application from – 40 to 1490 degrees F

**Teflon® Jacketed**

-40 to 350°F (-40 to 150°C)

Element weight: 1.63 lb per 100 feet

_Teflon Jacket, Flexible Type K Element. Up to 2000 ft maximum length._

**Inconel® Sheathed**

-40 to 1490°F (-40 to 810°C)

Element weight: 2.56 lb per 100 feet

_High Temperature, Hostile, Rugged Environments_

_Bendable Inconel® Sheathed Type K Element. Up to 140 ft maximum length._
Hazardous Temperature Locator / Valuator System - Aircraft Applications
Wide Variety of Intelligent Display Possibilities

Sequence of Events / Priority Location
Graphic Display

Abnormal Temperature Event
Location/Value/Trend/Log Display

Abnormal Temperature Event Quick Alert

Real-Time Event
Alarm/ Action Log

Archival Event Log
Hazardous Temperature Locator / Valuator System

- **Unique** Lightweight* Sensor and Advanced Electronics System Provide Unparalleled Use of Continuous Real-Time Information

Dectets the Location and Highest Temperature Value Sensed anywhere along its length and provides the following Real-Time Information:

- **Precise Location** of Highest Temperature
- **Value of Highest Temperature** and **Instantaneous Rate-of-Change**
- **Archive and Sequence-of-Events Analysis**
- **Sensor and System Condition / Status**

**Abnormal Temperature Event**

121° F
Zone D6

Rate of Rise 5.2 ° F/minute
Event Duration: 8 minutes
System Status: Capable/Active

Dectets – Locates – Indicates – Alerts – Archives- Analyzes

* 16.4 lb per 1000 feet of Teflon Jacketed Sensor Element; 25.6 lb per 1000 feet of Inconel Sheathed Sensor Element
-Unique Sensor and Powerful Real-Time Information System Provide Unprecedented Functionality and Security

Unlike fixed-point fire sensor systems, HTLS continuously monitors and archives the highest temperature during NORMAL operation in the range of -40 and 350 degrees F (Teflon) or -40 and 1490 degrees F (Inconel). (HTLS is always working, always ready).

➢ HTLS DETECTS and DISPLAYS any abnormal temperature event.
  o Improperly functioning or overheating equipment, power overloads
  o Breached containment, leaks
  o Deteriorated insulation and seals

➢ HTLS PRECISELY LOCATES any abnormal temperature event.

➢ HTLS ALERTS, ALARMS, TAKES PREDETERMINED ACTION. System can be configured to suggest corrective action to operator. HTLS can combine abnormal temperature information with other real-time information about aircraft operation to facilitate on-line real-time operations analysis.

➢ HTLS CONTINUOUSLY ARCHIVES ALL INFORMATION for later investigation:
  o Normal Operations Analysis – the aircraft operates the same correct way each time during normal operation – temperatures within their normal predictable range.
  o Root-Cause Analysis – finding specific underlying causes for variability in temperatures during normal operation, or abnormal temperature events that without intervention, could lead to fire or explosion with ensuing losses and damage.