1. **Scope**
   - **1.1.** The specification applies to the High Thermal Event System which includes the high speed RTU module and the Human Machine Interface
   - **1.2.** The specification shall cover the enclosure of the High Thermal Event System.

2. **Application Standards**
   - **2.1.** UL-50- Enclosures for Electrical Equipment
   - **2.2.** UL-508-Industrial Control panels
   - **2.3.** ANSI/ISA 12.12.01 (formerly UL 1604) Class I, Div 2-Hazardous Locations
   - **2.4.** 2.4 UL-50 Type 4X- Industrial Control panels

3. **General**
   - **3.1. RTU**
     - **3.1.1.** Live data gathered or generated by the RTU is stored in a database. This database is stored in the random access memory (RAM) of the processor module, and the RTU allocates this database at startup. The various IO modules connected to the processor continuously update this database, and data may originate from an external source, such as a DNP slave device connected to a communications port that is programmed as the DNP master.

Data is organized into five types.

1. Binary Input data
2. Binary Output data
3. Counter data
4. Analog Input data
5. Analog Output data

   - **3.2. HMI**
     - **3.2.1** The High Thermal Event System's HMI is designed and built for your most rugged applications. Industrially hardened to perform in extreme environments, the HMI meets NEMA-4x and IP66 specifications and is UL 50 Type 4X, Class 1 Div 2 and marine ABS certified.
       This rugged HMI features universal connectivity, a bright 12.1" (307 mm), 800 x 600 TFT-LCD display, resistive touch screen, Ethernet 10/100Base-T with two USB 2.0 full-speed host ports, two serial ports to connect to nearly any device, and an optional 2-port CAN module.
   - **3.3 Enclosure**
     - **3.3.1.** Standard configurations including hinged or non-hinged lids in 2-screw, 4-screw, or stainless steel metal latched lids. The Standard color is light gray with a gloss finish.

4. **Construction**
   - **4.1 RTU Construction**
     - **4.1.1** A passive backplane connection board connects a main processor module to various input/output (IO) modules via a high-speed bus. All boards plug into this backplane. The entire assembly is enclosed in a heavy-duty

aluminum chassis. Two screws hold each board securely to the chassis, and provide an electrical path for the surge protection grounds.

4.2 HMI Construction

4.2.1 The rugged human machine interface will connect to your RTU Module. The HMI includes a large touch screen display, optional CANbus, is UL listed Class I Div 2 and marine ABS certified and can operate in -30 to 70 °C.

4.3 Enclosure Construction

4.3.1 Best material – bases, opaque covers and clear covers are all made of high-impact, UV resistant polycarbonate. Flexible interior mounting – features the unique and adjustable depth “T-Rail” back panel mounting system.

5. Configuration Requirements.

5.1 RTU Configuration

5.1.1 The current required to power the RTU is mainly dependent on the power supply voltage and IO module configuration

Module Type	Description	Current as 12 V (mA)	Current at 24 V (mA)
PDC	Processor	38	22
16s	16 status inputs	5	2
8R	8 relay outputs (all relays off)		
ACVI	12 AC analog inputs w/low impedance current inputs	20	10
ACVV	12 AC analog inputs w/low impedance current inputs	22	110
16 DC	16 DC analog inputs	15	10

5.2 HMI Configuration

Processor	Type	xSCALE PXA 300 ARM 624 MHz
Memory	RAM	128 MB
	Flash	4GB
Power	Input	10 to 32 VDC
	Consumption	9 Watts @ 24 VDC (typical, 13 Watts @ 24 VDC (max)
	POE	10.5 Watts @ 48 VDC (typical) 14.2 Watts @ VDC (max)

6. [Optional VaultGard]

6.1 Connect up to 32 MPCV relays on one VaultGard for application flexibility.

6.2 Easy to navigate on-board web pages so there is no software needed.

6.4 Compatible with Power Xpert software if you want to link all Gateway units in a network.

6.4 VaultGard can easily communicate with third-party devices: DNP 3.0 up and downlink, over Ethernet; and DNP 3.0 via RS-485 connection.