The Stand-Alone Solution

The rugged Rig Rat III detection system provides multi-point monitoring for toxic gases, combustibles and oxygen hazards. Self-powered and solar-capable, the Rig Rat III features unequalled versatility, with an extensive range of field configurations. With real-time, two-way data transmission and remote sensing capabilities, the Rig Rat III represents the new generation of stand-alone system technology.

Self-contained and intrinsically safe, the Rig Rat III is the ultimate in stand-alone detection.
Rig Rat III is completely modular in design, with plug-in ports for all system components and field interfaces: remote sensors, remote alarms, relays, solar power, etc. Microprocessor-based operation and advanced sensor technology ensure reliability and performance.

Cost-effectiveness is a hallmark of the Rig Rat III. Trenching and cabling costs are eliminated through wireless, two-way digital RF data transmission. Maintenance-free combustible sensors reduce the need for costly upkeep requirements.

Eliminate Power and Signal Lines
Cut installation costs by up to 75% by removing the need for trenching, cabling and wiring conduit.
**Alarm Status**

The large LCD keeps you advised of any gas hazard present. The intelligent LCD readouts provide instant diagnostic information.

**In the event of an alarm condition:**
- Alarm signal is transmitted
- The RED alarm LED flashes and flashes
- The audible alarm pulses
- Alarm port option(s) trigger
- The LCD readouts show the concentration of gas(es) present

**Low or High Gas Alarm**

A LOW alarm condition triggers:
- Alarm signal transmission to the controller (and receiver alarms)
- Alarm port options
- Built-in audible 85 dB alarm

Users can field-select, if desired, the above functions to activate during HIGH alarm only instead of during LOW alarm.

The LOW ALARM or HIGH ALARM gas icon will light, advising alarm level and sensor affected. The field functions will activate on the alarm level selected. Current alarm setpoints can be viewed at any time.

**Sensor Integrity Alarm**

The integrity alarm is triggered if a sensor is missing or a sensor cable is damaged. In addition to the above alarm notification, sensor 1 or sensor 2 FAIL icon will light to advise which sensor or cable is affected.

**Low Battery Alarm**

The battery level is continuously displayed. The longest bar indicates a fully charged battery. If battery power drops below usable levels a low battery alarm will activate the above alarm signals, the Arrow will be under the shortest bar and the Battery Bar will flash.

**Transmitter Status**

The Rig Rat III controller is in constant two-way communication with all remotely located system elements. The radio transmitter (XMTR) icon is continuously displayed on the detector to indicate system communication status.

- In the event of an alarm condition, the digitally coded signal is transmitted to the appropriate controller channel (and/or receiver alarm). The XMTR icon changes and flashes to advise transmission mode.
- If the transmitter has been turned OFF to prevent false alarms during calibration or service, the DISABLED icon will appear below the XMTR icon. The disable button is located in the operation bay.

In the event that communication is lost between the detector and controller, or other system elements, the appropriate alarms will be activated both at the controller and the remotely located detectors.

**Detector Configuration**

The detector can be equipped with one or two remote gas sensor heads in any gas combination desired. A simple rotary switch is used to choose the sensor type and the measuring range for the sensor head. Alarm setpoints can be field-assigned to desired levels.

**Security, Durability, Simplicity**

Housed in a rugged, corrosion-resistant, 14 gauge stainless steel enclosure, the tamper-proof, external hinged door is secured with a key lock and high-tension latch, which protects the control bay. The inner control door is equipped with slip hinges for easy access to the setup and service bay. All electronics are sealed in weatherproof enclosures - only the sensor is exposed to the environment.

**Flexibility and Versatility - Building Block Approach**

Modular Rig Rat III Systems are readily installed, modified and expanded without disturbing the work site.

**Applications**

Some common applications include:
- Drilling Rigs
- Service Rigs
- Offshore Platforms
- Refineries
- Petrochemical Plants
- Gas Plants
- Perimeter Monitoring
- Plant Turnarounds/Shutdowns
- Pipelines
- Tank Farms
- Wellheads and Pump Jacks
- Pulp and Paper Mills
- Hazardous Waste Sites
- Sewage Treatment Facilities
- Loading Docks
- Ammonia Plants
- Nuclear Plants
- Emergency Response Teams
- Fire/HAZMAT

**Radio Signal - The Practical Solution**

For optimal signal transmission and reception, a variety of antennas are available.
The Rig Rat III stainless steel controllers are the central communication center for the Rig Rat III gas detection system. The standard Rig Rat III controller allows the simultaneous display of readings and alarm state messages for up to eight remotely located sensors. The system uses a built-in digital 2.4 GHz, license-free ISM band (RF) transceiver, which allows two-way real-time communication with system elements located up to 1.8 miles (3 km) away. The controller is in constant communication with system elements. Detectors transmit a discretely coded radio signal to the controller, advising the detector of a gas alarm or integrity alarm condition.

**Rugged and Durable:**
Rugged, stainless steel enclosure

**Alphanumeric Display:**
Real-time readings for all detectors and sensors.

Channel alarm LCD indicator flashes and latches to indicate alarm condition.

Each channel receives unique digitally coded alarm signals from the detector.

**System Reset:**
Alarm acknowledgement/alarm reset switch

**Signal Transmission:**
2.4 GHz digital, spread-spectrum, ISM band RF transceiver with 1.8 mile (3 km) transmission radius with 8 DBi antenna

**Optional:**
Plug-in RS-485/MODBUS module

**Channel Activation:**
Individual enable/disable channel control switches

**Audible:**
Built-in audible (85 dB) and visual alarms

**Security Locks:**
Heavy duty stainless steel latches.

**Security ON/OFF Keylock:**
Protects access to operations bay

**Power Port:**
Operate controller via line power, or connect to external emergency power supply. Battery backup with auto recharge.

**Status LED:**
Advises power status:
- Green - A/C
- Red - Battery

**Multi-Point Systems:**
The system can be expanded to include up to several hundred individual monitoring points. Larger systems require more than one controller.
**Remote Plug-In Accessories and Options**

A wide range of rugged, versatile, plug-in options enable you to configure a system to meet your specific monitoring needs. Add, change or move system components as requirements evolve.

### Remote Sensors

- **Maintenance-free combustible, toxic and oxygen sensors**
- **Select cable length:** up to 250 ft. / 76 m

### Remote Sensor Cables

- Toxics and oxygen: 250 ft. / 76 m
- Combustibles: 100 ft. / 30 m
- Standard cable length is 10 ft. / 3 m. Optional cables of up to 250 ft. / 76 m are available.

### Power Choices

- **Independent battery power**
- Solar-capable: 5, 10, 20 or 30 watt
- 120/230 VAC line chargers
- 24 VDC Direct

### Continuous Power

- **Solar:** Plug-in, stainless steel, solar panels allow continuous operation in remote and isolated locations. Available in 5, 10 and 20 watt versions to accommodate system power requirements.
- **Line Power:** 12 or 24 VDC direct or 110/230 VAC trickle chargers power each detector at an adjacent power supply, with short cable runs.

### Independent Battery

Detector will operate on batteries only for up to 30 days depending on sensors and data transmission interval used.

### Audible/Visual Alarms

Remote, plug-in audible/visual alarms alert personnel that there is an alarm condition on site. Alarms are powered by the controller or detector. Optional receiver alarms are equipped with their own RF transmitter with a 1.8 mile (3 km) transmission radius. Receiver alarms include built-in backup battery. Contact BW Technologies for availability.

### 10 Amp AC/DC Relays

- **Discrete alarm relay**
- **Weatherproof**
- **Explosion-proof**

### Solenoid Driver

Activates process or fluid control systems, if required.

### Datalogger

Data collected is expressed in % LEL, ppm or % by volume, as required. IBM compatible.

**Note:** The detector is equipped with two option ports. A 4-port MOB (multiple option box) is available for the inclusion of additional interfaces.

### Mounting Kits

Tripod and wall mount kits are available to simplify installation. Tripod kits accept 5, 10 and 20 watt solar panels.

### Repeater Station

The repeater station effectively doubles the transmission range of the detector. The repeater station is equipped with both a radio receiver and a transceiver that relays the alarm signal to the controller. A solar panel will provide continuous power. Contact BW Technologies for availability.

**Increased Flexibility**

**Rig Rat III provides continuous monitoring for combustibles (0-100 %LEL), oxygen hazards and toxic gases.**

**Remote Sensors**

Mix, match or change the gas type and/or measuring range. Install one or two sensors as desired. Configuration is simple with plug-in, rugged sensor units and simple rotary switch to change type of sensor and range.

**Remote Sensor Cables**

Toxics and oxygen: 250 ft. / 76 m
Combustibles: 100 ft. / 30 m
*Standard cable length is 10 ft. / 3 m. Optional cables of up to 250 ft. / 76 m are available.*

**Continuous Power**

Solar: Plug-in, stainless steel, solar panels allow continuous operation in remote and isolated locations. Available in 5, 10 and 20 watt versions to accommodate system power requirements.

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Remote, plug-in audible/visual alarms alert personnel that there is an alarm condition on site. Alarms are powered by the controller or detector. Optional receiver alarms are equipped with their own RF transmitter with a 1.8 mile (3 km) transmission radius. Receiver alarms include built-in backup battery. Contact BW Technologies for availability.

**Relays**

Plug-in, 10-amp SPDT AC/DC single and dual relays trigger site-specific interfaces and are powered by the controller or detector.

**Solenoid Driver**

Activates process or fluid control systems, if required.

**Datalogger**

Data collected is expressed in % LEL, ppm or % by volume, as required. IBM compatible.

**Note:** The detector is equipped with two option ports. A 4-port MOB (multiple option box) is available for the inclusion of additional interfaces.

**Mounting Kits**

Tripod and wall mount kits are available to simplify installation. Tripod kits accept 5, 10 and 20 watt solar panels.

**Repeater Station**

The repeater station effectively doubles the transmission range of the detector. The repeater station is equipped with both a radio receiver and a transceiver that relays the alarm signal to the controller. A solar panel will provide continuous power. Contact BW Technologies for availability.
Rig Rat III
Multi-Point Wireless
Gas Detection System

Gases Monitored: Change the gas monitored and/or the measuring range at any time.
- Combustible Gases/Vapors
- Oxygen
- Toxics: Ammonia
  Carbon Monoxide
  Chlorine
  Chlorine Dioxide
  Ethanol
  Hydrogen
  Hydrogen Chloride
  Hydrogen Cyanide
  Hydrogen Sulfide
  Nitric Oxide
  Nitrogen Dioxide
  Ozone
  Phosgene
  Phosphine
  Sulfur Dioxide

Power Independence: The following sensor configuration lists the duration of the internal, rechargeable battery life (per charge):
- 2 toxic sensors: Up to 30 days
- 1 toxic, 1 LEL: Up to 5 days
- 2 LEL sensors: Up to 3 days
Note: Battery life will vary depending on transmission interval and temperature.

Order Information
For full system order information and system configuration, contact BW Technologies.

RR-3000: Rig Rat III Wireless Gas Detector (standard) comes with one 5 DBi antenna.
RR-3000S: Rig Rat III Non-Wireless Gas Detector comes complete with all standard Rig Rat III configuration, contact BW Technologies.
RR-3CMBUS: RS-485/MODBUS output module.
RR-REPO-1-x: Rig Rat Repeater re-transmits wireless signal from four (4) detectors to controller.
RR-3BAT-01: Optional 12 V, 10.4 amp hr.

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