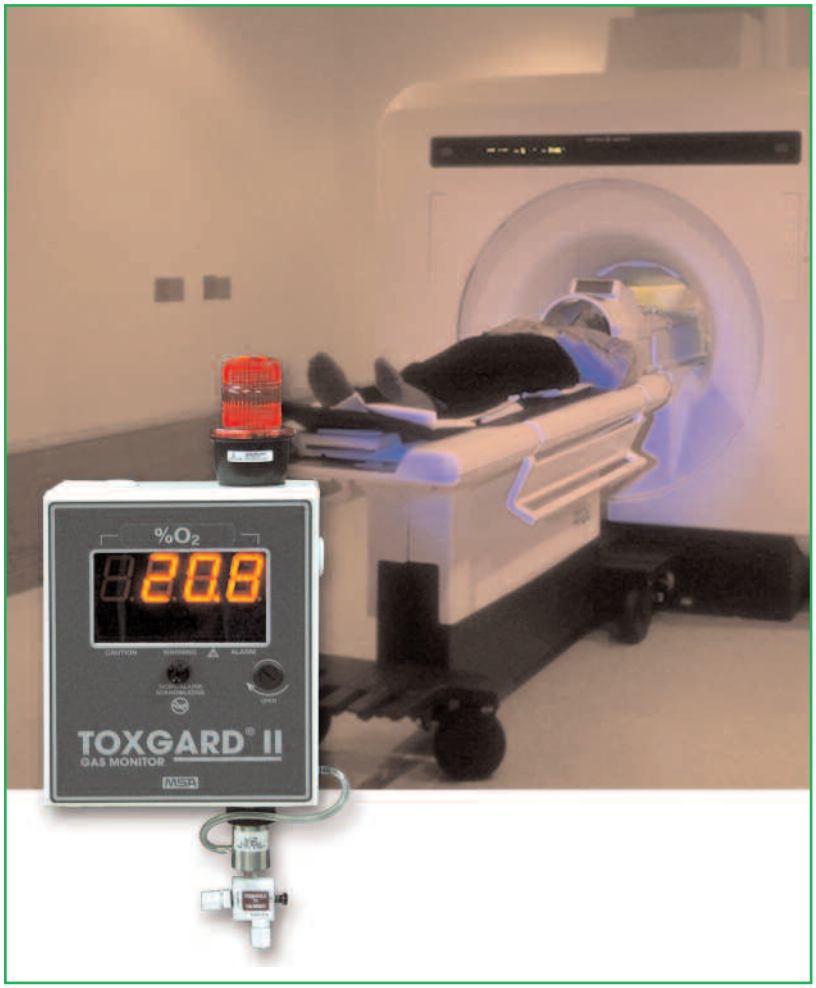

MSA Gas Detection System

[for Detection of Oxygen Deficiency in MRI Units]

Application

In today's MRI units, superconducting magnets are the most commonly used type of magnets. Their construction is similar to that of a resistive magnet—a current of electricity is passed through coils or windings of wire—to create the required magnetic field. The wire is continually bathed in a plumbing labyrinth of liquid helium that is maintained at 452.4 degrees below zero. This extreme cold drops the wire's resistance to zero, reducing the electrical requirements for the system, making it much more economical to operate. The other main component of an MRI system is a very powerful computer system that enables the transmission of RF (radio frequency) pulses into the patient's body while they are in the scanner.

The large quantity of helium required to maintain the magnet's operating temperature creates a critical safety concern. A helium leak can cause an oxygen-deficient atmosphere that can place the patient at risk. At times, MRI patients are sedated and are unable to signal any potential problem to the MRI operator. In addition, early detection of oxygen deficiency caused by a helium leak can offer protection to the MRI unit itself by signaling a shutdown event.

Product Description

The MSA Toxgard® II Gas Monitor outfitted for MRI rooms is a uniquely qualified, economical solution. It offers fast, reliable protection from the hazards of oxygen defiency caused by helium coolant leaks.

The Toxgard II Monitor incorporates a sample draw pump system that uses no metal components near or inside the actual MRI room, eliminating RF interference from the MRI system. The Toxgard II Monitor is mounted in the operator'soffice for almost instantaneous notifica-tion of a leak via the local audible alarmand flashing LED display. A sample drawtube is routed into the MRI room and anend-of-line filter is located above the MRI unit at a point that is most likely to detect the lack of oxygen in the MRI unit.

The ToxGard II Monitor delivers extremely quiet operation via the dampened mount sample draw system minimizing background noise in the operator's office.

Specifications	
Sensor:	2-year, long-life oxygen
Accuracy:	±2% full scale
Response Time:	Typically 12 seconds to 50% step change
Sample Rate:	2 CFH
Temperature Range:	-20° to +50°C (-4° to +122°F)
Power Supply:	110-220 VAC
Audible Alarm:	75 db @ 5 feet
Signal Output:	4-20mA, non-isolated, sourcing
Relay Contacts:	SPDT 5 amp @ 125VAC, 3 user-programmable, plus system fault
Enclosure Dimensions:	10"W x 12"H x 5"D
Enclosure Weight:	13 lbs.
Approvals:	UL fire and shock

For more information on the standard Toxgard II Gas Monitor see data sheet #07-0949.

Note: This is a representative description of this product and its potential applications. Contact MSA Custom Products at ***customproducts@MSAnet.com*** *for information on customizing this unit to fit a specific need.*

Data Sheet 07-2090
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