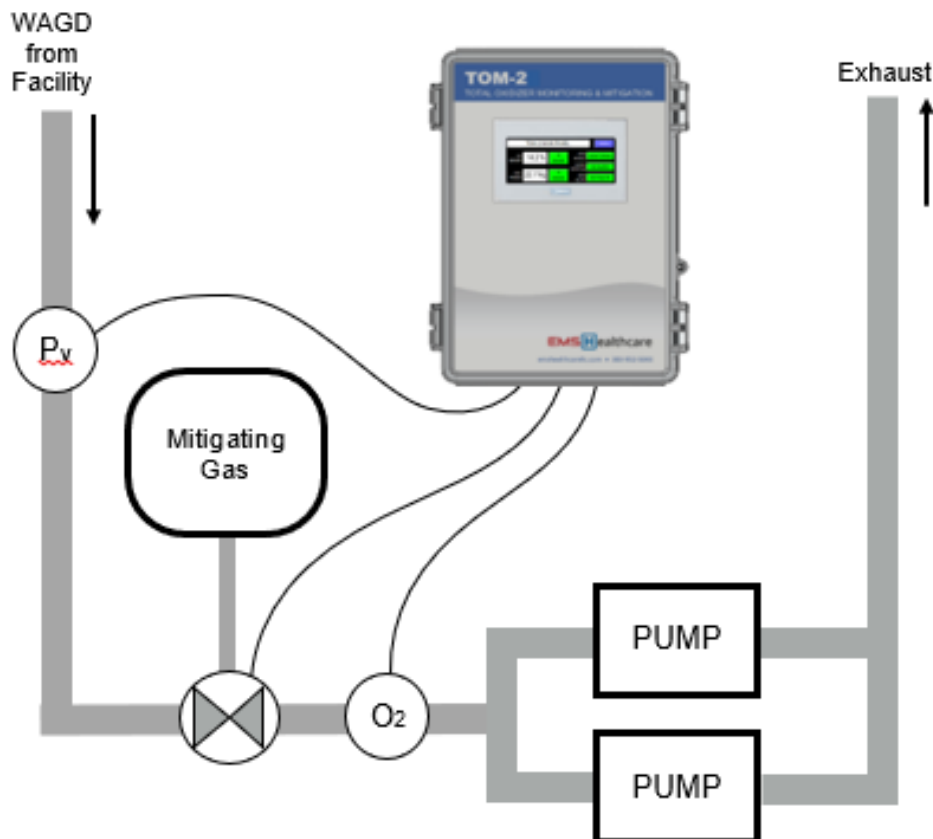


TOM-2 Total Oxidizer Monitor w/Mitigation

With the introduction of NFPA 99 2012 edition came an entirely new requirement for medical-surgical vacuum systems that are also used for Waste Anesthetic Gas Disposal (WAGD). For these combined-use systems, the NFPA now requires the total concentration of oxidizers (oxygen and nitrous oxide) be maintained below 23.6 percent or the materials, lubricants, and sealants within the vacuum pump be inert to these oxidizers for new installations (reference section 5.1.3.8.1.2. (2)). The NFPA 99 2018 edition imposes this requirement on all (existing and new) combined-use vacuum systems and the 2021 edition removes nitrous oxide from the requirement.

The **TOM-2** Total Oxidizer Monitor (patent pending) from EMS Healthcare, LLC is a gas monitoring and mitigation system that's ideal for the continuous regulation of oxygen below the limit of 23.6 percent in combined-use vacuum systems. The heart of the monitoring & mitigation system is a PLC that interfaces to an oxygen sensor, a vacuum transducer, and a control valve. The unit monitors oxygen concentration and vacuum pressure and takes appropriate action based on these input parameters. The PLC will operate a valve plumbed to a regulated gas source (e.g., carbon dioxide or nitrogen) or ambient air to maintain levels below the critical threshold of 23.6%. Maintaining system vacuum pressure is always prioritized over oxygen levels; as long as vacuum pressure remains acceptable, increasing oxygen levels to the vacuum pump inlet will be mitigated.



TOM-2

The **TOM-2** (part number TOM-2095B or TOM-2095M) performs both oxygen monitoring and mitigation and is recommended for use in both in-patient and out-patient facilities where oxygen concentrations may exceed the NFPA 99 threshold of 23.6%. The TOM-2 continuously monitors and logs total oxygen concentration in order to provide periodic reports for compliance purposes.

Part Number		TOM-2095B or TOM-2095M
Description		Oxygen monitoring and mitigation, vacuum pressure monitoring, alarm relay output, data logging
Performance	Response Time	Within 1 second of any change in oxygen levels
	Accuracy	± 0.5% of FS
	Repeatability	± 1% of reading
	Operating Temp	-40° to 122°F (-40° to +50°C)
	Humidity	0 – 98% RH, non-condensing
	Data Logging	Oxygen concentration and Vacuum Pressure readings logged every 10 seconds
	Alarm Output	2-wire dry contact, normally open relay commanded closed during normal operation (opens on alarm of 23.6% O ₂ or loss of power)
Oxygen Monitoring	Range	0 – 95% oxygen concentration
	Sensor Gas Interface	1/2" NPT male threaded connection
	Sensor Electrical Interface	M8 4-pole connector with keyway (5m connectorized cable included with unit)
Vacuum Pressure Monitoring	Range	0 – 30 in Hg, vacuum range
	Sensor Gas Interface	1/4" NPT male threaded connection
	Sensor Electrical Interface	M12 4-pole connector with keyway (5m connectorized cable included with unit)
Gas Mitigation	Gas Type	Carbon dioxide, nitrogen or ambient air (with included muffler)
	Gas Pressure	5 – 10 psig (operating pressure range at valve inlet port)
	Gas Interface	1/2" NPT female threaded connection
	Valve Power	24VDC power is supplied by control unit (5m 3-wire cable included with unit)
Electrical	Voltage Source	110-120 VAC, 60 Hz
	Power (max)	23 Watts including solenoid valve and transducers
Physical (Control Unit)	Dimensions	8" (W) x 12" (H) x 6" (D)
	Weight	10.0 pounds (4.5 kg) including solenoid valve, transducers, and wiring
	Enclosure Type	NEMA 1,2,4,4X rated, polycarbonate, indoor/outdoor use