"Puffer"

Test Gas Generator

PRODUCT WARRANTY

Analytical Technology, Inc. (Manufacturer) warrants to the Customer that if any part(s) of the Manufacturer's products proves to be defective in materials or workmanship within the earlier of 18 months of the date of shipment or 12 months of the date of start-up, such defective parts will be repaired or replaced free of charge. Inspection and repairs to products thought to be defective within the warranty period will be completed at the Manufacturer's facilities in Collegeville, PA. Products on which warranty repairs are required shall be shipped freight prepaid to the Manufacturer. The product(s) will be returned freight prepaid and allowed if it is determined by the manufacturer that the part(s) failed due to defective materials or workmanship.

This warranty does not cover consumable items, batteries, or wear items subject to periodic replacement including lamps and fuses.

Gas sensors, except oxygen sensors, are covered by this warranty, but are subject to inspection for evidence of extended exposure to excessive gas concentrations. Should inspection indicate that sensors have been expended rather than failed prematurely, the warranty shall not apply.

The Manufacturer assumes no liability for consequential damages of any kind, and the buyer by acceptance of this equipment will assume all liability for the consequences of its use or misuse by the Customer, his employees, or others. A defect within the meaning of this warranty is any part of any piece of a Manufacturer's product which shall, when such part is capable of being renewed, repaired, or replaced, operate to condemn such piece of equipment.

This warranty is in lieu of all other warranties (including without limiting the generality of the foregoing warranties of merchantability and fitness for a particular purpose), guarantees, obligations or liabilities expressed or implied by the Manufacturer or its representatives and by statute or rule of law.

This warranty is void if the Manufacturer's product(s) has been subject to misuse or abuse, or has not been operated or stored in accordance with instructions, or if the serial number has been removed.

Analytical Technology, Inc. makes no other warranty expressed or implied except as stated above.

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SPECIFICATIONS:

Power:	9 VDC Alkaline Battery
Generator:	Electrochemical Type
Generator Life:	500-1000 Test Cycles
Pump:	Manual Bellows
Display:	Single Digit LED
Outlet Tube:	6” (152 mm) Polyethylene
Enclosure:	NEMA 4X (IP-66)
Size:	4.7” x 3.2” x 2.4” 120 x 80 x 60 mm
Weight:	0.7 lb. (333 g)

INTRODUCTION

The Series A24 *Puffer* is a portable, battery operated instrument that generates a sample of gas for verifying the operability of gas monitors. The instrument contains a gas generator which produces a sample of the gas, and a simple hand pump that is used to deliver the gas to the instrument under test. Units are available for generating Chlorine, Ammonia, or Hydrogen Sulfide. Each type of *Puffer* is uniquie and cannot be used with generator cells for a different gas. The gas symbol on the front designates which type of generator cell may be used.

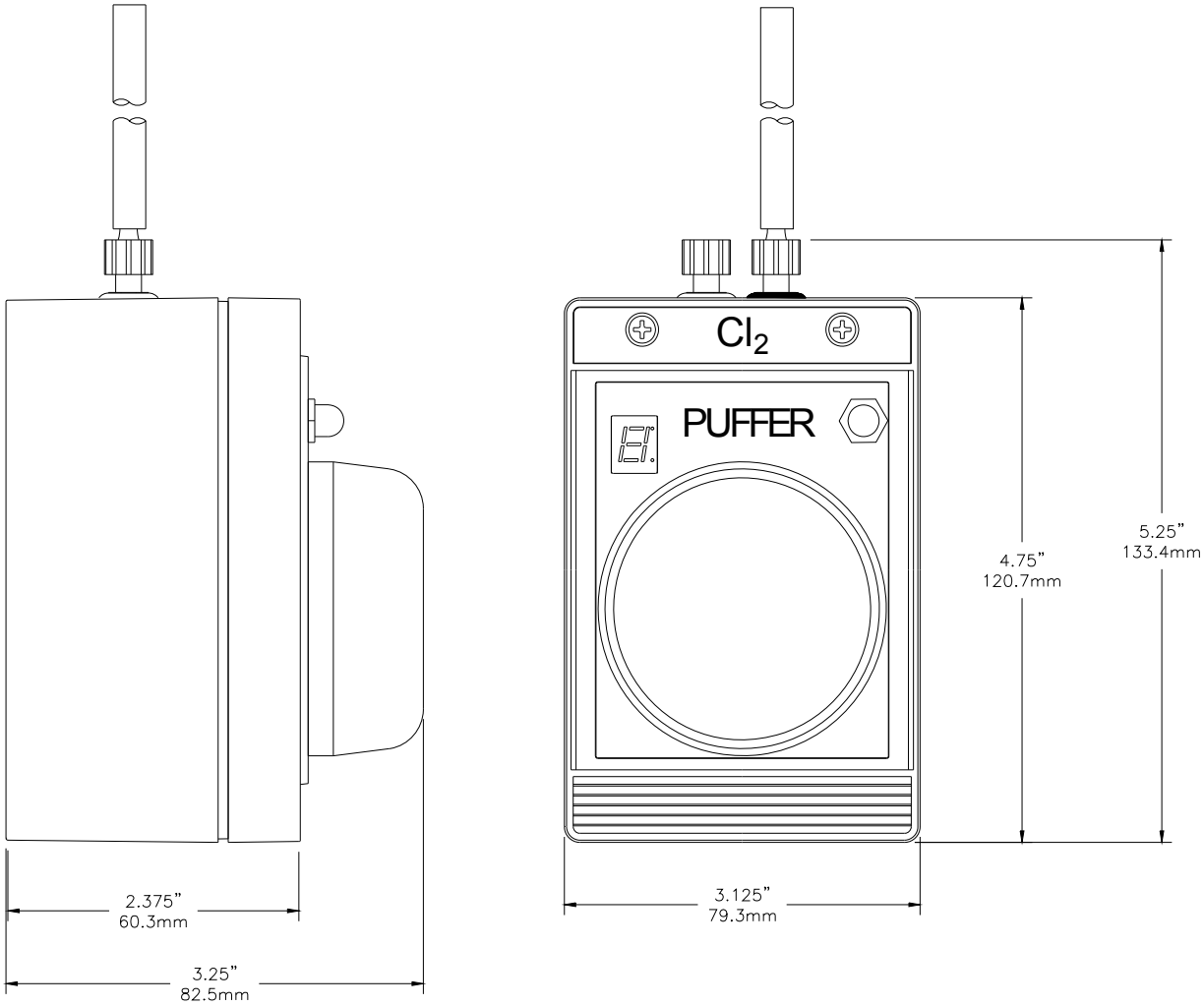

Figure 1 – A24 Portable Generator Dimensional Drawing (ATI-0755)

OPERATION

To activate the gas generator, depress the Activation Switch on the front of the panel and hold until the % Life Indicator flashes three times. Release the switch and wait until the indicator stops flashing. Once the indicator stops flashing (approximately 45 seconds), the sample gas is ready to be dispensed. Gas is ejected from the generator chamber by pressing the black rubber bladder on the front of the unit. This bladder serves as a manual air pump to propel the gas toward the sensor to be tested.

For gas monitors with an internal pump, remove the plug that is next to the outlet tube and connect the sample wand to the exposed port. Do not press the bladder. Allow the gas detector's pump to draw air through the generator chamber at the competion of the generation cycle.

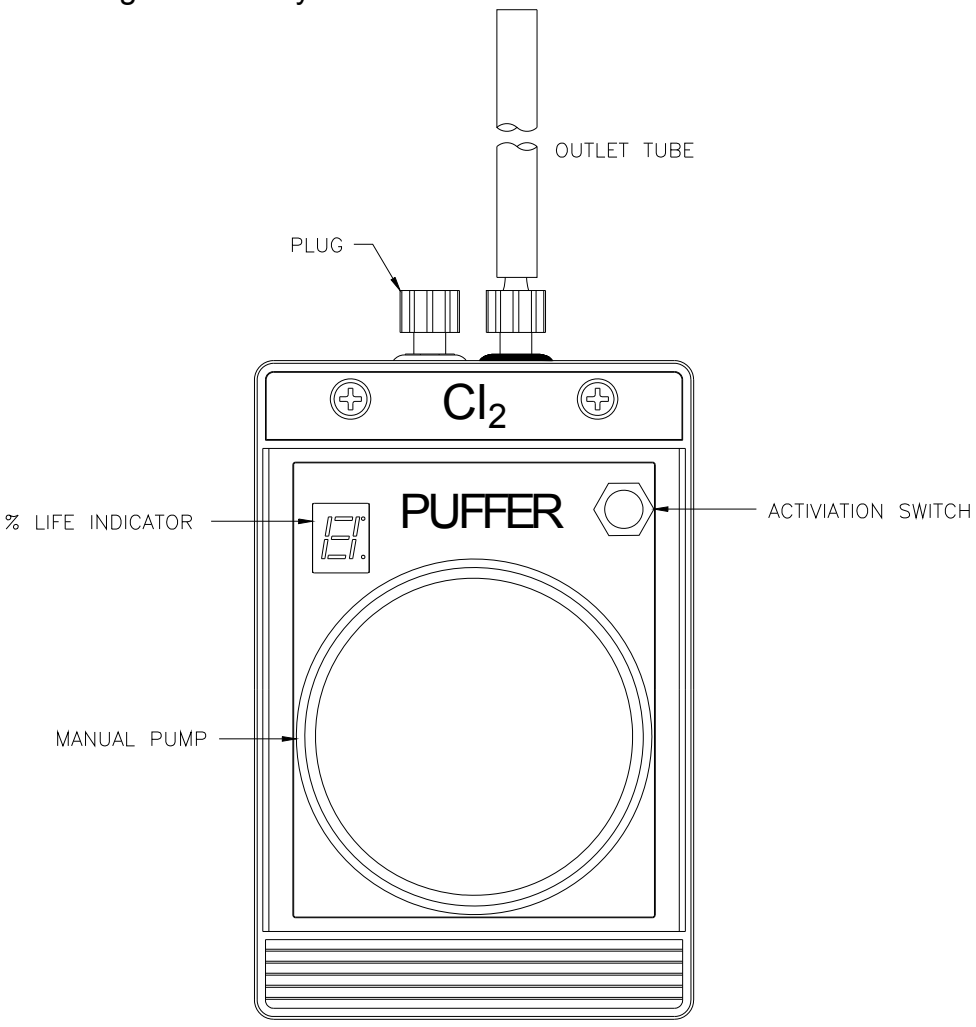

Figure 2 – Portable Gas Generator Callouts (ATI-0756)

MAINTENANCE

The number of generator cycles provided by the gas generator cells depends on the type of gas as follows.

Chlorine	1200	cycles
Hydrogen Sulfide	650	cycles
Ammonia	650	cycles

To check the cell capacity of the generator cell, press (DO NOT HOLD) the activation switch. The number displayed is the percent life remaining (i.e. F = 100%, 9 = 90%, etc.). When the number displayed is 0, the generator cell has delivered the expected number of cycles.

NOTE: You can continue to use it if you verify that it is still delivering gas, but a spare generator should be kept on hand for immediate replacement as the generator could stop working at any time.

Generator Cell Replacement

The generator cell is located inside the ***Puffer*** as shown in Figure 3. Note that the screw cover on the bottom of the generator must be removed to access the inside of the unit. Slots at the bottom of the cover allow you to remove it with a thin screwdriver blade. The 4 screws holding the cover are captive and should not be removed all the way. Loosen the 4 screws enough to allow opening of the enclosure.

Unplug the generator from the circuit board. The generator is held in place in the generator flow chamber with an o-ring. Simply pull the generator cell out to remove. Insert the new cell and plug it into the control circuit board. The connector is keyed so it will only connect in the proper orientation.

Generator Counter Reset

After replacing a generator, the numerical life indicator should be reset to its starting point of “F”, indicating “full”. To reset the counter, press and hold the switch and count the number of times that the life indicator flashes a number. Hold the switch down and count EXACTLY 21 flashes and then release the switch. If the reset is successful, the decimal point in the lower right corner of the display will flash once.

Battery Replacement

The Puffer is powered by a 9-volt battery inside the unit. This battery will normally run the instrument for 9-12 months. We recommend that the battery be replaced every 12 months. The battery replacement requires simply unplugging the old one and plugging in the new one.

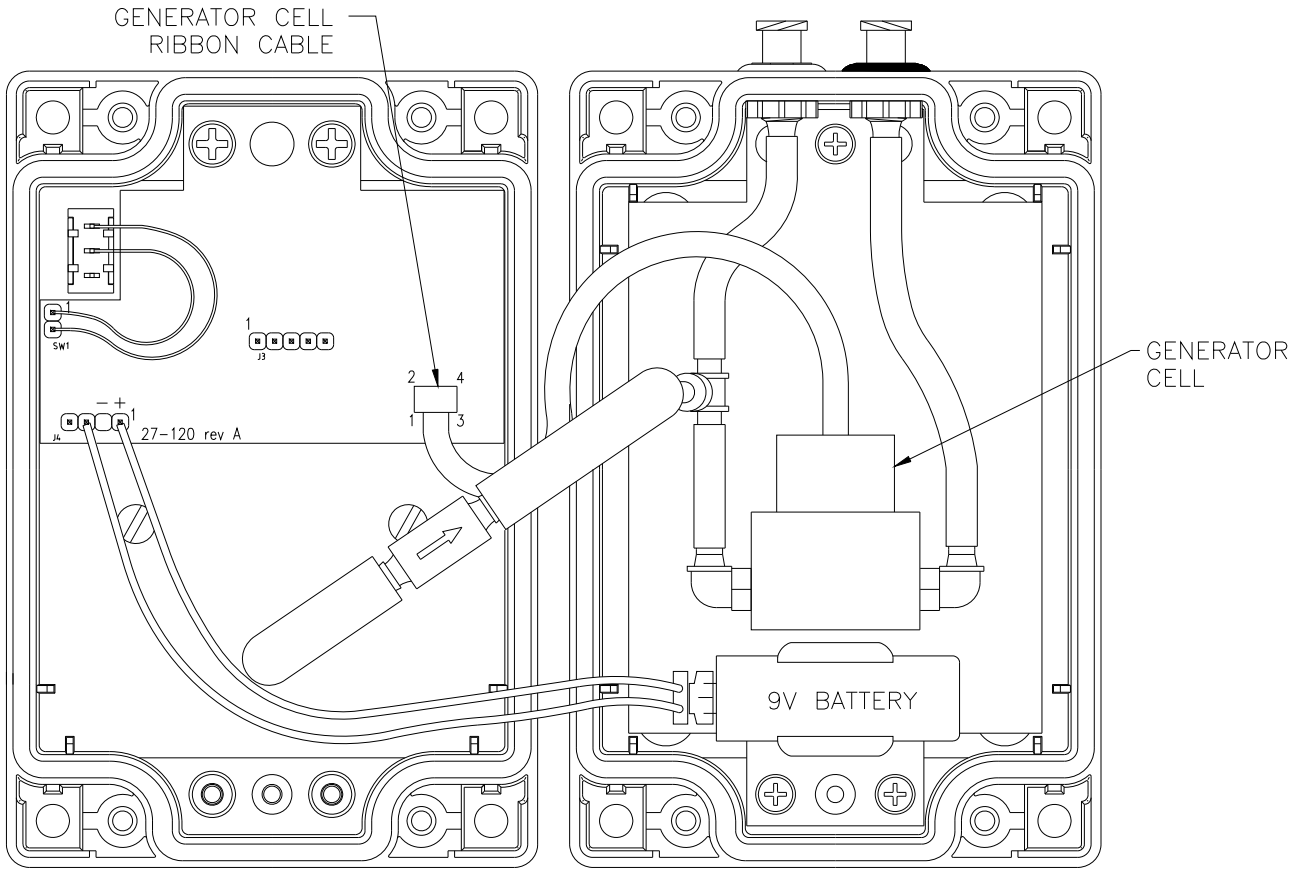

Figure 3 – Generator Cell Replacement (ATI-0757)

SPARE PARTS

PART NO.	DESCRIPTION
00-1433	D18-11 Chlorine Generator Cell
00-1434	D18-15 Ammonia Generator Cell
00-1436	D18-24 Hydrogen Sulfide Generator Cell
01-0243	Control circuit board assembly (specify gas type)
45-0219	Generator flow chamber
42-0024	Flow chamber o-ring
44-0257	Flow orifice
44-0253	Bulkhead leur fitting
44-0171	Leur cap
44-0164	Leur outlet fitting
36-0036	Rubber bellows pump
26-0017	Activation Switch
26-0018	Rubber boot for switch

Note: Spare generator cells should be stored in the refrigerator in the sealed container in which they are shipped.